Data Standards for Mental Health

Decision Support Systems

A Report of the Task Force to

Revise the Data Content and System Guidelines of the

Mental Health Statistics Improvement Program

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Foreword

The National Institute of Mental Health shares a commitment with mental health practitioners to a service delivery system that treats those with mental illness *humanely,* efficiently, and effectively. Thus, the Institute has an enduring interest in the operation of the service system and a commitment to facilitating improvements within it. These activities are reflected not only in the research portfolio of the Institute, but also in its capacity-building activities. One of the Institute's longest and most successful capacity development partnerships has been collaboration with the Stale mental health agencies around the specification and adoption of data standards for the statistical systems operated by the States and the Institute. Collectively, this endeavor is known as the Mental Health Statistics Improvement Program. This partnership is based on the shared assumption that one of the fundamental ways in which improvements can be made in service delivery is through examination of data on routine operations. The managerial and research implications of these data emerge quite clearly when uniformity in their content permits the data lobe compared across a number of settings. Through such comparisons of data, virtually every setting can serve as a site for field research, yielding ideas about exemplary approaches and emerging trends. This monograph extends the prior work of the Mental Health Statistics Improvement Program. For the first time, information systems that permit the linkage of data on patients, treatments, human resources, and finances are proposed as a standard for mental health service providers. All mental health programs, whether affiliated with State mental health agencies or not, can benefit from the application of these standards. The guidelines documented in the monograph will enhance the availability of data that present opportunities for rational, beneficial change to be introduced in many mental health service delivery programs. The results will present challenges and opportunities not only for managers, but for clinical staff, researchers, policy makers, and consumers and their families. The Institute has made a major commitment to the implementation of these standards in State programs. Through a competitive grant program, the institute is using fiscal year 1989 Alcohol, Drug Abuse, and Mental Health Services Block Grant set-aside funds for State implementation of the data standards. The present monograph will contribute to the success of these grants, as well as facilitate the data collection activities of other collaborators as the Institute works to implement these standards.

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Acknowledgments

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A Guide to Readers

This monograph was written with several professional audiences in mind. The following suggestions identify the chapters that are considered to be of most interest or relevance to each of the groups of readers noted.

For all readers

It is suggested all readers be familiar with the two chapters that lay out the basic concepts that run throughout the monograph: Chapters 1 and 3.

Personnel within mental health organizations

Directors of management information systems, data processing, research, evaluation: Chapters 2, 4-10 are recommended. If these personnel also provide data for external reporting, chapter 12 is also recommended. Directors of specific organization operations, e.g., clinical care, finances, personnel: Specific titles for chapters 5-8 should be examined for guidance. Managers who want greater

familiarity with the role of data and decision support systems within their organizations: Chapters 2, 9, and 10 are recommended. In addition, the uses sections in chapters 5-8 and the commentary following each data item in these chapters will prove useful.

Personnel within agencies that receive data from mental health organizations
Directors of management information systems, data processing, research: Familiarity with the full monograph is recommended. Directors of specific programs within these agencies, e.g., human resource development, clinical care, quality assurance: Specific chapter titles from chapters *5-8* and 13-17 should be examined for guidance. Executive directors of these agencies: Chapter 1 and the first sections of chapter 3 are recommended.

Researchers
The uses sections of each data chapter are recommended, as well as the commentary after each data item. In addition, chapters 2, 11, and 18 convey concepts that may affect a research agenda.

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Section 1 Fundamentals of the Mental Health Statistics Improvement Program

Chapter 1 Data, Standards, Decisions, and the Mental Health Statistics Improvement Program

In order to provide better care to persons with mental illnesses, at least two major tracks of activity have to be maintained. One, clearly, is basic research on causes and effective treatments of mental illness. The second is continuing improvements in the system that provides services for those with mental illness. This monograph is pertinent to the second track of activity. Although it will not address the full range of possible system improvements, its contributions derive from a specific set of beliefs about how most system improvements come about.

The Importance of Data

Briefly stated, improvements occur mainly because decision-makers elect to make rational changes based on good, data-based information about the operation of their programs. Obviously, this is not intended to be a full theory for how systems of service change. It can be argued that visionaries and undesired publicity do more to change systems than do routine operational reports. However, unlike these more dramatic sources, the latter are constant and dependable sources of information available to managers. And, in contrast to anecdotal sources of information, these reports can be objective, reliable, and comparable - factors that can be crucial when a decisionmaker is trying to decide which option is better and which is worse. The monograph attempts to present specific data that decisionmakers should consider. It will not focus on the process of making decisions. While decisionmaking theory is a field unto itself, the only aspect of the process relevant to these materials is that decisionmakers accumulate and assess various kinds of inputs that lead them to select one course of action over another. Any decision carries with it some element of risk. Consequently, decisionmakers are likely to try to reduce the risks inherent in choosing one alternative over another by accumulating a variety of inputs that might help them to assess their risks (Hildebrand and Ott 1987). Empirical data are one such input. They are the input that will be emphasized throughout this report. Such inputs as political forces, crises, personal influences, past experience, intuition, and citizen action all play a role in decisions to change the mental health service system. While they are actively used by many mental health program managers, they are not covered in this document. It is important that this be recognized so that the monograph is not seen as naive or irrelevant for decisionmakers. A fairer assessment is that it is highly targeted to one of the sources of input that is considered when a manager is concerned with whether the program is doing an acceptable job of providing care to the mentally ill or whether it can do a better job.

Why Standards?

In the context of decision support systems, standardization refers to the field's general acceptance of concepts, quantities, terms, and definitions that serve as reference points against which comparisons can be made. Only occasional appeals for the development or adoption of standards pertinent to mental health data occur in the literature (Chang 1987; Laska and Craig 1982). However, in fields that have established standards, the absence of standards would make the conduct of business impossible. One does not usually think of contemporary chemists arguing about the definition of oxygen. Chemistry functions because it has accepted the periodic table as a statement of standards as well as an embodiment of theory. Standards accepted about U.S. electrical current mean that voltage, amperage, outlets, and plugs are so widely accepted that users of appliances incorporate them into their behaviors and do not have to worry about different standards with every use of an appliance or about moving from one locale to another. Designers of appliances benefit from these standards as well. Finally, when microcomputers and personal computers began to be widely available in the early 1980s, there was so little standardization that operating systems and software packages frequently were applicable only to specific pieces of hardware. The situation took only a few years to be corrected, and operating systems and compatibility across manufacturers became the norm. However, in mental health it is extremely common for each service-delivery program to develop its own content for clinical records or its information system. If the program does incorporate standards, it is usually to comply with demands of a funding authority or an accreditation agency. This diversity, which has been commented on elsewhere

(Zinober and Leginski 1984), creates problems for the aggregation of data across different programs - an activity occurring frequently in mental health either for external reporting or to compare one programs operation with that of another. The adoption of standards permits communication, judgments, and comparisons. Communication is enhanced because standards provide clearer definitions of terms and concepts used in the conduct of the business. Judgments can be made against the standards - does an item, product, or degree of performance meet, exceed, or fail the test? And once standards are operationally in place, comparisons are possible by allowing the manager to aggregate data to foster an understanding of differential performance. While it is hoped the document will contribute in all of these areas, the latter effect is the one most highly desired. Comparisons and judgments about performance permit decisionmakers to make alterations in their service programs intended to improve their approaches to the care of the mentally ill.

Why Compare?

To some, the question "Why standards?" is less significant than the question "Why compare?" Comparisons in mental health service provision are important for theoretical and practical reasons. In regard to theory, Scott (1986) notes, "The theoretical models underlying and guiding our research on organizations have gradually shifted... from an emphasis on organizations as relatively independent entities to a view that stresses their interdependence with other units" (p.31). This change is not of merely academic interest. It is assumed that most changes in social science theory reflect better understanding by experts of actual operations. The theoretical statement better explains what is observed: Organizational performance must be under-stood in a context. For practical reasons, comparisons are important because it is extraordinarily rare in the American mental health system of the eighties to find an organization that is able to view itself with complete autonomy. For most providers it is essential that there be an awareness of organizations that are both complementary and competitive with them. Without this awareness, the program may provide duplicative services; may not know how to market what it does best; may not link patients with the right services; or may lose clients, staff, and financial resources if it does not acknowledge and somehow accommodate the existence of these other organizations. This requires knowledge of the performance of these other providers and, significantly, a comparison of performance if they are similar to the managers organization. Such comparisons are not confined to the provider level. State mental health agencies and corporate sponsors also examine performance of organizations within a system of care to determine relative standings. States also make comparisons of their system of services with other States (NASMHPD, 1983, 1986). Competition alone is not the motivator for these comparisons. Knowledge of the availability and performance of other mental health resources may mean an opportunity to learn so that desirable changes can be made. It may also mean an opportunity to participate in a diversified network of services to meet the full range of needs of citizens with mental illnesses. Thus, both in theory and practice, it is suggested that contemporary managers must attend to the environment of other settings and systems, as well as to the performance of the organization. Attending to this environment means a vigilance about process and a willingness to make frequent adjustments in order to improve performance (Jaeger et al. 1987). Data are one way to stay in touch with process and one way to assess the risks associated with deciding how performance can be improved. This monograph emphasizes the importance of empirical and comparable information in the form of standards for data content.

What Decisions?

It would be an oversimplification to leave management decisionmaking in mental health as just described - as judgments about whether the program is doing an adequate job or could do a better job. Some time must be taken to consider the types of decisions managers must make in operating a program or a system of care. This is necessary in order to get to a point at which one can begin to understand what data items are needed as input to the decisions so that the process of specifying standards for these specific items can be presented. Before addressing what decisions managers must

make, it is necessary to understand what responsibilities managers have. Managers[(1)] are responsible for the resources of their organization. In mental health this translates into responsibility for the financial assets of the organization, its property, the staff, and the patients. Management decisionmaking centers around various actions that managers must take in relation to each of these resources. The goals and objectives of the organization define the relative value of these areas and may, therefore, define which actions are important. For instance, if a primary goal of an organization is profit (to increase its financial assets), then managers may devote considerable amounts of time and behavior to this goal. It affects the types of staff they hire, and how they deploy, evaluate, and reward them. Managers might assess the physical plant relative to whether it conveys a sense of organizational prosperity. In addition, this goal affects the types of patients they might be willing to take on, the concern being minimizing bad investment by ensuring high volumes of paying clients. On the other hand, if an organization promotes patient care as its most important goal, the needs of the patients might drive management actions. As in the previous example, staff configurations are considered, but in relation to patient needs rather than to finances. Patient's ability to pay may be secondary to their need for services. The quality of the physical setting is judged from the perspective of whether it is adequate for patient care and certification rather than as an end in itself. These examples are meant to contrast and clarify, not to convey which might be the better value and certainly not to convey that management must always single out only one of these areas. No matter what resource is being considered, *there are also consistent actions that managers must take.* Actions mean not only behaviors in which the manager may engage, but also administrative manifestations of these actions such as establishing policy, documenting procedures, and delegating authority and responsibility.

Five specific actions are proposed. As each of these is noted, consider the extent to which data-based operational reports can aid decisionmaking on each.

1. *Acquisition* - action taken to obtain or secure appropriate resources for the organization. Depending on the resource, this can mean obtaining financing, hiring staff, advertising one's services, contracting for services, establishing contracts with area employers to provide mental health services, or obtaining a Medicaid waiver to allow reimbursement for an otherwise excluded service.

2. *Distribution* - the allocation or parceling out of the resources within the organization. Frequently this is structured around budget preparations and appeals from programs within the organization. In other instances, there may be a formal methodology such as a regulation, an allocation formula, or a performance contract that determines resource distribution. Negotiation, historical patterns, and playing favorites are also methods for actions in this area.[(2)]

3. *Monitoring* - the maintenance of oversight on the use of resources within the organization. This is frequently the action most people see as management. It variously depends on the review of operational reports or other observation such as management by walking around. Many managers use a detection system, such as exception reports or the examination of key indicators. There is a considerable management literature in this area.

4. *Accounting* - the ability to document or acceptably demonstrate control over the use of resources. Usually this is thought of in a financial context - that ledgers, balance sheets, accounting practices, etc. are in place to document where the money comes from and where it goes. In addition, accountability actions can involve establishing stated policies about staff conduct, specific actions that must occur with respect to clinical treatment, or a certificate that life-safety standards are met. That is, managers must provide evidence of control over all the resources within the organization. It is interesting to note than managers at lower levels are required to account so that upper level managers can monitor.

5. Assessment -judgments about the application of both resources and actions. The word judgment is

used specifically to convey that this action is value laden - a judgment is made against some criterion thought to be desirable, whether it is known only intuitively or specifically stated. Specific criteria should always be favored. While substantial literature on mental health is devoted to program evaluation, it almost always is focused on the patient resource. Managers have a broader responsibility and must also assess the other resources noted above. Of additional importance is that this action is applied to the above actions as well. That is, managers must assess their actions as well as their resources. Assessments fall into two basic categories, depending on whether they are about resources or actions. First, from a manager's perspective, things either exist or are supposed to happen as a result of actions taken. These are referred to as *compliance assessments.* These might involve increased hiring of minorities, providing a monitoring report, redirecting resources, or changing a policy on a clinical or administrative matter. The manager will be interested in the degree to which there is compliance with the action and will probably demand accountability for noncompliance. At the provider level, it may often be that compliance assessments are done in response to some external authority rather than in strict response to internal decisionmaking. A second kind of assessment relates to the resources and is labeled *impact assessments.* These also depend on observing some change or achieving a desired state as a result of the organization's resources. Most obvious might be a concern about impacts observed among the clients of the agency. Here arises one of the enduring concerns in mental health for the past 30 years: Did treatment make a difference? Staff performance and finances (i.e., cost effectiveness) are also judged from this patient impact perspective, but it is common for managers to expect staff growth to result in productivity increases and for increased financial resources to produce program growth or increased revenue generation. Whether the concern is impact or compliance assessment, data fed back to the decisionmaker play a vital part in the assessment. A detectable change is expected and even managers who claim not to be especially interested in data can be observed to be quite interested in whether they are producing a change. Managers who are inclined to use data use them to evaluate the success of their decision and to help them manage the risks inherent in choosing one alternative over another.

Throughout the remainder of this monograph, these themes of data, standards, and decisionmaking will be revisited. Subsequent chapters show the transformation of these concepts into data content and systems that provide managers and decisionmakers with information that will assist them in taking actions. As the above materials have been presented, they deliberately have covered a wide range of managers, from those responsible for a particular clinical unit within a mental health agency to those, such as county or State commissioners, responsible for an entire system. It is felt there is more commonality than discontinuity in the types of decisions these individuals make. Generally, it is the level of detail or aggregation that differs as one moves through this managerial hierarchy. However, as later material is presented, these various levels will be differentiated.

Why the Mental Health Statistics Improvement Program?

The Mental Health Statistics Improvement Program (MHSIP) is most often viewed as the codification of the recommended minimum content needed to facilitate mental health program management as well as the basic guideline for the system that is needed to collect and report this information in a way that will be useful in making decisions. The MHSIP manifests itself in at least four forms. As an *ideology* the MHSIP emerges clearly from a stream of thinking that combines the values of rationality and deliberation with those of action-taking. It anticipates relatively noble motives among decision-makers and data users and de-emphasizes self-interest or defeatist thinking about the value of mental health service programs. Empirical data figure importantly into this ideology. They are reflections of program performance and, therefore, contribute to management's changes in the system that provides services to the mentally ill. Second, the MHSIP is a *style of approach* to an area of professional involvement and interest. The MHSIP grows out of a tradition of collaboration among individuals who are felt to have both insights about these data and rights to have their points of view considered. This tradition was first established between the National Institute of Mental Health (NIMH) and the State mental health

agencies under a program called the Model Reporting Area. This was begun in the 1950s, when State psychiatric hospitals were the most significant source of service to the mentally ill. The program required that States agree to and demonstrate compliance with common data content and definitions in reporting their hospital data. These standards were established at annual meetings of MMH and those States participating or applying for acceptance in the Model Reporting Area program. These meetings later evolved into the National Conference on Mental Health Statistics, covering all States, which has a history of nearly 40 annual meetings. Evolution of both the MHSIP and the National Conference continues and attempts to address individuals with a variety of data perspectives on mental health programs-service providers, academic researchers, advocacy groups, regulatory agencies, payers for services, vendors of information systems, etc. All those with an interest in mental health services information or who use such statistics, will find the MHSIP lays the groundwork for content; addresses questions of abiding and general interest; and provides a forum for discussions about the substance and technology of service data, as well as for its analysis and interpretation. To enlist interest, another hallmark of the MHSIP style of approach is its reliance on volunteerism. There are neither inducements nor penalties associated with voluntarily subscribing to the principles of the program. The benefits are felt to lie in the acceptance of standards and the improved access to comparable data. But it is also recognized, as with the acceptance of standards in any area, that there are tradeoffs between the pursuit of creative autonomy and the restrictions inherent in accepting rules, definitions, norms and the other hallmarks that begin to characterize an area as a culture. Third, the MHSIP is most frequently associated with documentation about the *content of an information domain,* specifically, the minimum data sets for the content of a mental health decision support system. In this form, the MHSIP provides statements of the minimum items that should be in such a system as well as their definitions or categories (NIMH 1983b). This content is used by system designers so that their systems are compatible and responsive to information requests dependent on this minimum content. It is also used in the collection of data from mental health organizations. Minimum content is emphasized throughout this monograph and reflects the philosophical aspects of the MHSIP, i.e., that operational data produces improvements in service systems. The content standards established by the MHSIP evolved from work begun in 1976. At that time an ad hoc advisory group that guided policy directions for the program determined that content should be established for three statistical areas: mental health organization data, patients/clients, and the workforce. Task forces were developed, minimum data sets proposed, and reviews and feedback gathered at several of the National Conferences on Mental Health Statistics. In 1981, these data sets were consolidated into a report recommending a design and content for a national mental health statistics system (NIMH 1983). This work was accomplished after input from almost 200 individuals who had involvement on some aspect of this product. In addition, every National Conference since 1977 has had an MHSIP track that provided input. The program and its content have consistently been characterized by this openness to collegial input. Finally, the MHSIP manifests itself as a *set of projects and operations.* Most frequently, this involves data collection in which a wide array of organizational levels participate (see Manderscheid et al. 1987). In addition, the MHSIP enables networking. To date, this has been confined largely to State mental health agencies and shows up as the sharing of materials, such as design statements for major systems acquisitions, technical as assistance exchanges in which the experiences of one site serve as a positive object lesson to another, and other demonstrations of feasibility or usefulness of an approach or analysis. As a broader audience becomes involved in the MHSIP, it is hoped this set of operations and projects expands to include them or that they initiate their own exchanges in response to unique needs or interests. An ad hoc advisory group shapes the policy and direction of the MHSIP and selects the projects and operations to be carried out. The group is currently composed of representatives from State mental health agencies and the National Institute of Mental Health. To date, these have been the most intensive users of the MHSIP materials. The advisory group is constantly open to input regarding the Program from those who subscribe to it. The work reflected in this monograph emerged from a decision by the advisory group that the data standards articulated in the initial statement of the MHSIP (NIMH 1983) needed to be revisited. This necessity was stimulated not only by changes that had occurred in the mental health services delivery field, but also by the availability of computer technologies that permitted sophisticated processing of

data at relatively low cost. In addition, an explicit decision was made by the advisory group that the statement of the MHSIP must focus on a broader constituency than that which was addressed in the first monograph. As a result, a task force was convened and charged with reconsidering the data standards and recommending proposed changes to the system-design guidelines of the MHSIP. This task force, referred to in the manuscript as the Revision Task Force, submitted its recommendations and products to the advisory group. As the advisory group accepted or clarified the task force's proposals, the materials and concepts were taken to those who attended the National Conferences on Mental Health Statistics in 1986, 1987, and 1988. It is hoped that the report reflects the benefits gained from this type of open review. It is also hoped that users from many sectors, such as private psychiatric settings, psychiatric service programs of general hospitals, insurance carriers, researchers, advocacy groups, and others will find that the MHSIP addresses an important area. The increasing involvement of these sectors will extend these materials and add to their robustness.

Summary

This chapter has introduced some of the most fundamental assumptions behind the materials presented in the remainder of the report. As has been noted, a primary stimulus to providing better systems to care for the mentally ill is decisionmaking by managers to make informed and rational changes. Data describing the operation of their organizations are a critical input to these decisionmakers. The more reliably defined the data, the more certain the manager can be in comparing differential performance and deciding what performance is desirable or unacceptable. Decisions can then be made about both the resources and actions thought necessary to effect these system changes. The Mental Health Statistics Improvement Program is the label for the effort to develop and promote these standards and principles.

Chapter 2

What Is a Mental Health Organization?

A definition of a mental health organization is needed for two reasons. First, some boundary must be set that allows a determination to be made about whether a setting is or is not a mental health organization. Second, if a fundamental goal is to facilitate comparisons that help in the management of these organizations, it is critical that like is compared to like. Comparisons are baseless if common characteristics cannot be documented. Consequently, the task for this chapter is to provide a definition for a mental health organization and a taxonomy that assists in selecting comparisons that are valid and meaningful. This section of the report focuses on settings that actually provide mental health services to persons with mental illnesses. These shall be referred to as the *provider level or service delivery level.* A later section shall deal with other organizations that are involved in mental health, which use information for comparison and management but are usually not direct providers of care. They, too, play a role in the MHSIP.

Mental Health Organizations: The Provider Level

Nominal vs. Functional Definitions

Two approaches are possible in developing a specific definition for these service delivery settings. The first is a nominal approach. It is widely used in identifying or defining health agencies, but has been rejected in favor of a less prevalent approach in which functional characteristics form the basis for a definition. The original approach typically sets a definitional criterion based on a label or a set of labels. A user determines whether a setting meets the criterion or not. The label might cover a type of service provided (e.g., acute care), a target group (e.g., geriatric), or a characteristic of the setting (e.g., residential center). Specifically, a nominal criterion in mental health could be whether a place has in its title or name a phrase, adjective, or noun associated with the care of the mentally ill: mental health,

psychiatric, psychological, mental illness, behavioral, etc. One could then begin a list of places that would meet this criterion, e.g., psychiatric hospital, mental health center, residential center for the emotionally disturbed, psychological services, and so on. As stated, a nominal approach is not used. It has been rejected for a number of reasons. First, labels operate with different rates of success. At first glance, the labels above may appear reasonable, but in actual practice two contradictory problems emerge: They are too loose and they are too restrictive. Examples illustrate this point.

They are too loose. Applying the labels would include a great many organizations that do not actually deliver services, e.g., a county mental health board that primarily allocates money to fund places within the county that actually deliver services, a citizen action group with mental health in its title, a research foundation that funds others to do research on some aspect of this health area, etc. That is, even though fairly restrictive, the nominal approach may include places that are felt to be inappropriate at the provider level.

They are too restrictive. Settings complain that they have been excluded by the application of the labels and feel they should be included. Fictitious instances drawn from real names are the Yellow Door, Center for Wellness, Seek a New Horizon, Collingshead Lodge, or Preskot Prison. Nominally, nothing about these places suggests their involvement with the mentally ill. However, with investigation it becomes apparent that they should be counted because of their function, i.e., they serve the mentally ill.

A second reason why a nominal approach has been rejected is that a label conveys a degree of uniformity that is often unjustified. The label "hospital" can cover the types of acute care/surgical service settings most people would think of. But it might just as easily apply to long-term stay facilities that focus on rehabilitation or care to persons with head trauma, to places that serve the psychiatrically ill, or even to veterinary settings. Thus, while a label may serve as a rough type of screener, unless one pursues further information, the label may lead to the assumption that all those settings to which it applies can be compared or otherwise thought of as similar. Experience has shown this assumption is usually faulty. A third reason stems from a frequent solution to the dilemma just posed. In order to make a set of nominal criteria effective, either more labels are added or one finds that the labels actually begin to analyze the functions of the setting. Suppose one adds other service-oriented labels that are quite commonly associated with mental health organizations, such as rehabilitation, outpatient, shelter, or group home. It should be apparent that with the addition of these labels, one can begin to do a better job of delimiting a universe of settings that provide mental health services. But one also runs the same risks as earlier, viz, over inclusion and potential exclusion. If the solution has been to explore the functions of the organization, it must be asserted that this is no longer a nominal approach to definition. What frequently happens in practice is that nominal criteria are applied only loosely. If their application leads to the suggestion that the organization should be counted into the universe, a set of decision rules is often evoked. These decision rules apply to characteristics of the organization that are more than nominal - they depend on an understanding or analysis of the functions or activities the organization carries out. A set of such decision rules might be determined by asking,

Were the patients mentally ill and how was this determined?

What percentage of the patients were mentally ill, and what types of mental illnesses were prevalent among them?

Did the setting actually provide mental health services?

Was it staffed by psychiatrists or other mental health professionals, and were they involved in the delivery of specialized services to these patients?

These types of questions are no longer confined just to the use of labels or descriptors. More

problematic is that when these types of decision rules are a part of a nominal definition, they are often used informally, tacitly, or inconsistently. As a basis for classification, nominal approaches that permit tacit criteria to be used cannot be accepted. Their use results in unstable and unreliable boundaries for a domain of study. If one is concerned with reliably classifying whether places or things are in or out of a universe, a nominal approach should be viewed with suspicion. There should be clear evidence that the labels alone work sufficiently and that no additional criteria are evoked. Although widely used in defining universes to be considered in health research, it was felt a nominal approach carried too many liabilities. The alternate approach used by the MHSIP is a clearly articulated functional approach to definition. This presents a set of decision rules that are to be applied. It states the activities that must be observable or the extent to which a place must meet these rules before it can be counted in. From the existing MHSIP (NIMH 1983b), the functional definition of a mental health organization has been incorporated.

Functional Definition of a Mental Health Organization

A mental health organization must have five characteristics:

1. Formal establishment by law, regulation, charter, license, or agreement

2. An established organizational structure, including staff

3. A primary goal for all or part of the organization of improving or maintaining the mental health of its clientele or seeking to prevent impairments to mental health from developing

4. A clientele with psychiatric, psychological, or associated social adjustment impairments

5. Provision of mental health services

Such locations and settings as psychiatric hospitals, psychiatric outpatient clinics, psychiatric partial hospitalization programs, multiservice mental health programs, and many others clearly meet the definition. However, a part of another kind of agency can also be a mental health organization, according to this functional definition. For example, a separately organized psychiatric unit in a general hospital can be such an organization, as can the psychiatric service program of a health maintenance organization, if it is separately organized. All five characteristics must be met for a place to be classified as a mental health organization. Two instances clarify this. First, emphasizing characteristics 3 and 5, the provision of mental health services must be a primary goal for all or a specific part of an organization for it to be included. Such an instance occurs in the separately organized psychiatric unit in a general hospital. However, a general hospital that treats mentally ill persons on its regular wards, in scatter beds, but does not have a separately organized psychiatric unit is not a mental health organization. The provision of mental health services does not automatically make an organization a mental health organization; the other criteria must be met. The second instance emphasizes characteristic 4. Specifically, the presence of mentally ill individuals in a setting without the inclusion of the other characteristics does not make an organization a mental health organization. A licensed and staffed residential setting that provides room and board to mentally ill people and also provides counseling or other mental health services to its residents meets the definition of a mental health organization. If it does not offer counseling or some other mental health service, but only room and board, then it does not fit within the definition. The presence of mentally ill individuals within an organization's clientele does not automatically make it a mental health organization; the other criteria must be met. The functional characteristics specified above can be translated into a definition of a mental health organization:

Any administrative and functional structure of one or more service-providing units and a grouping of persons within this structural entity, defined by law, charter, license, contract, or agreement to provide mental health services to persons for the purpose of preventing, identifying, reducing, or stabilizing mental disabilities.

The importance of this definition cannot be overemphasized if later discussions are to be understood and found satisfactory. It sets the boundaries on the universe of settings, places, facilities, and organizations to which these materials are felt to apply. Those settings that do not meet the definition may find these materials of interest, but they are not within the domain of the MHSIP.

Who Applies the Definition?

Most users find this functional definition specific and meaningful. They are able to recognize readily whether an organization meets or fails to meet the criteria. For other users, the definition is not fully satisfactory because of ambiguities or omissions. For example, nothing is said about the degree or kind of mental problems that the clientele may have. Consequently, organizations that deal with severely disturbed patients, as well as those dealing with groups that have been labeled the "worried well" may meet the definition. For some users, this range of settings may be problematic. Also, nothing is said about what constitutes a mental health service. This is necessary because of the extraordinary complexity of this issue and because neither the field itself nor payers for service agree on what constitutes a mental health service (Meyer 1985). It is recommended that these ambiguities and omissions be tolerated. As concrete and identifiable problems with the definition are demonstrated, resulting from philosophy, implementation efforts, or an empirical demonstration of its faults, the definition can be incrementally modified. The question remaining is, Who should apply this definition? A first layer of application of the definition is self-selection. This may be either organizational or individual. That is, a setting may determine that it meets the functional definition and that the materials and concerns expressed in this report are relevant and should be accommodated. On an individual level, someone with management responsibilities in a setting may decide the definition is relevant and, therefore, that some attention should be given to the materials. A second layer of application is discussed in a later section of the report. This is application by the *auxiliary level.* It is apparent that there are levels that are usually organizationally separate from these provider mental health organizations. Typically, they do not provide mental health services, but are intimately linked to the provider level by nature of funding, legislation, history, ownership, management, collegiality, or regulation. This may be a Federal Government agency, a corporate sponsor, a county funding administration, a State mental health agency, an insurance payer, a national organization, etc. This level is referred to as the auxiliary level to imply that its role is not exclusively oversight, but, as frequently, involves assistance and advocacy. It is assumed that agencies at the auxiliary level are interested in defining mental health organizations so that they know how many are in their universe of concern, and so they can make other uses of the information about them. Clearly, a State mental health agency (SMHA) is a major focus for such concerns, as may be a clearinghouse for information on where particular types of services can be obtained. It is recommended that if there is uncertainty about whether a place is a mental health organization - and that this determination is critical to a policy matter relating to the numbers of such places or to an administrative matter, such as licensing or financing-the SMRA ultimately make the determination.

Evolving a Taxonomy of Mental Health Organizations

The functional definition sets the boundaries for what organizations fall within the universe of settings. However, a second goal of this chapter is to suggest ways in which like organizations can be identified so that comparisons can be meaningful. If one is interested in understanding further the operation of these organizations and accounting for variations between them, some additional classification is required. Such classification schemata are usually referred to as taxonomies. A substantial amount of

conceptual work, involvement with relevant constituencies, and testing is needed before a formal taxonomy of mental health organizations is possible. Presenting a preliminary classification basis and the reasoning behind it is the remaining task of this chapter. In looking for a basis for a taxonomy, the task force felt several criteria had to be considered:

The basis for it could not be too abstract - it had to be understood by a wide and disparate audience.

It had to identify those critical dimensions that had the best explanatory power, i.e., that explained the variations between facilities fairly, well.

The taxonomy also had to reflect the scientific principle of parsimony, i.e., be brief yet inclusive

It had to translate into a feature that would be useful in furthering the development of decision support system.

The organization chart was selected as the starting point.

The Organization Chart

If, as the definition states, the organization is formally established and has one or more service-providing units, it has an organization chart - some actual or conceptual schematic that shows the organization's component parts and their relation to one another. An organization chart for a fictitious mental health provider program 15 shown in figure 1. Although the chart has been made somewhat complex to facilitate subsequent examples, is not totally unrealistic.
This organization has an administrative level that carries out much of the business side of the facility, i.e., most of the staff in these functional areas are not involved directly in patient/client care. The organization sustains three major service-providing units: inpatient care, ambulatory care provided in three different settings, and a program of services to patients in community setting. In addition, because of geography, the organization operates a program in a satellite location that offers all three of the above services within one program. Depending on the preferences of the organization or an auxiliary level, the organization depicted in figure 1 might be labeled either a hospital (because of the inpatient program) or a multiservice mental health organization. Each of the boxes in the organization chart has assigned functions to perform, staff to perform them, and other resources (notably space and money) to make performance possible. Resources within the organization may be distributed on the basis of these boxes, and information may be collected from the various departments in order to monitor and account for the use of resources. This concept provides an important beginning for an organization taxonomy, because it demonstrates that even within an organization, differentiations are needed. Not all of the programs will be comparable to one another. They have different functions; their patients require different types and intensities of treatment; they require different resources; and their productivity is measured in different units (e.g., a day vs. an hour of care vs. a payroll cycle vs. a monthly information report). Most organizations recognize this and group these noncomparable programs into more comparable units so as to better manage them. These major subdivisions are conceptualized as *cost centers,* components of a mental health organization to which relatively dedicated resources are assigned. Such components perform relatively unique activities or produce relatively distinct products. In the sample, the major cost centers have been outlined in bold. However, as the sole basis for developing an organization taxonomy, any organization chart is problematic. The most obvious reason is that not all facilities organize themselves in the same fashion. Settings that are simpler than the one in the example have fewer cost centers, while other settings may offer the identical services, but configure them completely differently. A second reason is that boxes in an organization chart may actually mix up a number of categories that need to be separated in order to obtain information that is comparable. This is true of functions, staff, patients, space, and frequently, dollars. If one's goal is to derive normative data or other empirical standards against which managers can contrast their program's performance, the

data must be derived or aggregated in a way that ensures it is reasonably comparable. Failing that, the justification for the use of standards for content of decision support systems is considerably reduced. To convey this situation better, the organization chart is translated into a matrix in exhibit 1. The cost centers have been arrayed down the side, and a variety of mental health setting functions displayed across the top. If the function is carried out even partially in that cost center, a mark has been placed in the appropriate cell. Examination of the marked cells suggests that there is not a great deal of uniformity in this matrix. This is problematic for two reasons:

1. The comparability of information is critical if it is to be useful managerially. Activities or programs defined differently provide no basis for comparing them. This means discussion about the activities is subject to misinterpretation - each party decodes the information according to idiosyncratic experience. More important, it means that a manager attempting to use normative data or information from a different program to compare performance, data, cost, productivity, or any derived measure of the organization can have little confidence that like is being compared with like. For example, in the sample organization, the ambulatory program contains a number of activities that other organizations might choose to configure differently. They may feel that partial day programs are sufficiently different from outpatient programs and that the two should not be under a common clinical program. Thus, if the sample organization were reporting on its ambulatory program, mixed within the information would be data on partial day activities, outpatient services, and consultation activities. This would be useless or misleading comparison data for another organization that has chosen to structure its ambulatory program to include only outpatient services.

2. This matrix fails to meet an important criteria noted earlier, viz, it does not provide a basis for development of a generic decision support system. If one were attempting to derive principles for the design of such a system, a much lighter degree of uniformity would be required. Without such uniformity, an efficient decision support system could not be suggested. One would need relatively uniform data content and a system design for the collection or processing of data that could be applied throughout the organization.

If the matrix in exhibit 1 were the basis for the system, much of the content and design would be uniquely tailored to individual cost centers. The only functions that appear to be uniform are administration/support and involvement with clinical record keeping. Using another of time criteria mentioned in the introduction to this section, it is arguable whether these functions explain much of the variation between organizations. Few managers make critical decisions based on such information, and most of them cannot afford to forgo information about the activities of their staff, the characteristics of their clientele, and the financial viability of their operations.

Taxonomy Dimension I - Program Elements

In short, a conceptual structure is required that is either much simpler or more uniform than that provided by an organization chart. This structure should be recognizable to the field, flexible, and sufficiently generic to accommodate most actual organization configurations, and it must be meaningful in how it organizes data. Diffused through the organization chart and the matrix are two critical dimensions which provide a basis for just such a conceptual structure. The first dimension is that of a *cost center.* It is essential that one be able to propose internal structures for mental health organizations that characterize the uniqueness of the functions performed, the staffing involved, the types of clientele served, the product delivered, and the resources assigned and consumed. Since the function of mental health organizations, as defined, is to deliver services, the cost centers that are of fundamental importance are those that have a clinical orientation, i.e., those that provide clinical services. Clinically oriented services are those that provide a specific patient, family, or group with diagnosis and prognosis of the recipient's mental health status relative to a disabling condition or problem, and where indicated, provide the recipient with treatment and/or rehabilitation to restore, maintain, or increase adaptive

functioning. Clinical services are distinguished from other services by their emphasis on identification and remediation of specific mental or emotional problems, conditions, or diseases. This clinical emphasis means that organizational segments that deal with nonclinical activities, such as administration, physical plant maintenance, dietary operations, relations with the community, etc., are not part of this core. The core set of cost centers employed to characterize a mental health organization is derived from a concept proposed in the original MHSIP, that of a *program element.* A program element is a conceptual convenience for labeling and for facilitating the derivation of comparable information about mental health programs. Program elements are conceptualized as *clusters of major clinical program areas within mental health organizations that are relatively homogeneous with respect to one or more of the following:*

the types of functions they perform

the staffing intensity or type needed to perform them

patient/client groups that would be assigned to or treated in the area

the types and relative amounts of resources needed

the outputs produced

One approach to the identification of such program elements is empirical, i.e., the use of a technique, such as a cluster analysis or a factor analysis, to identify aggregations within organizational settings that have relatively low within-group variance and that might maximize the between-group variance. While such an approach is attractive, it is a major undertaking, and the literature in this area is simply too thin to use as a foundation. An alternate approach has been used by the task force, that of professional judgment. The previous MHSIP provides the starting point for this identification. However, in recognition of changes that have occurred in the industry, the original program elements are not regarded as immutable. The task force identified six program elements that account for the substantial volume of clinical activity carried out in mental health organizations. The six program elements, each with distinct functional characteristics follow:

1. *Inpatient* - 24-hour care in a hospital setting.

2. *Residential* - Overnight care in a residence that is also responsible for either an intensive treatment program or supervised living and other supportive mental health services. Common names for programs often providing these kinds of services include residential centers for emotionally disturbed children, halfway houses, community residences, shelters, hostels, and supervised apartments. The crucial factor is not the name of the program element, but what kinds of services are provided. More than room and board must be provided for it to be a residential program element in a mental health organization.

3. Partial day - Structured programs of treatment, activity, or other mental health services provided in clusters of 3 or more hours per day. These programs are often called day treatment, partial hospitalization, partial care, psychosocial rehabilitation, and activity centers.

4. *Outpatient* - Programs of mental health services provided to clients on an hourly schedule, on an individual or group basis, and usually in a clinic setting. Services such as screening, crisis intervention, and psychiatric treatment can be included.

5. Case management - Programs characterized by individualized attention emphasizing some type of intervention or participation in the natural environment of the patient involving one or more of the following activities (Kanter 1989):

a. outreach, engagement, or assessment of the patient and subsequent planning for a range of services, entitlements, and assistance;

b. brokering, coordinating, or advocating for the range of services needed;

c. clinical intervention with the patient to assist adaptive functioning in the environment;

d. monitoring receipt of service and/or patient's response to services.

6. *Emergency* - Programs that provide immediate and short-term services to patients experiencing psychiatric emergency or crisis situations. This covers telephone counseling, immediate services, and referral services.

A primary criticism that is leveled against the program elements is that they have been defined too broadly. For example, the MHSIP originally proposed two residential program elements, characterized as either treatment or supportive, with the differentiation based on the intensity of supervised treatment delivered. Or, the partial day program element could distinguish partial day programs that deliver active treatments from those that provide structured activities to the clients. The problem for the task force was that virtually every one of the program elements could be so "refined," and no end was in sight. Consequently, the principle of parsimony seemed best advised. The fewest categories that accounted for the widest inclusion have been offered. If these six program elements are applied to the organization in figure 1, it is possible to relabel many of the boxes associated with clinical services with one of the program element identities. This is shown in figure 2. Later chapters explain what happens with regard to the staff, activities, and money associated with those boxes that retain their labels from the original figure. As noted, professional judgment of the task force fostered the selection of these program elements as the dimensions that largely satisfied the criteria that had been set out. Particularly salient are the criteria

allowing for meaningful aggregations of comparable data;

explaining differences in program costs and productivity reasonably well;

forming a basis for additional development of a generic decision support system for the local level.

It was the experience of the task force that there is a reasonable history or weight of evidence for these program elements. The field is dynamic, however, and revisions to the list are needed periodically. Although current data bases have been insufficiently exploited to test for these distinctions on an empirical basis, empirical research is favored for developing these distinctions. Many managers who encounter the program element listing for the first time are puzzled about what to do when they offer a service that matches one of the program elements but is not separately organized, i.e., is not a cost center. This is a common situation. For example, every clinical program in a mental health organization may offer emergency services, but that organization may not have a cost center it would label an emergency program element. Or, the activities described for the case-management program element may simply be diffused into the organizations outpatient services. In these settings, the program element dimension creates confusion because it does not suggest how they should handle these features. The solution is a two-part suggestion. The first part is an advisory decision rule and the second part depends on a dimension of the taxonomy yet to be discussed. As to the decision rule, *If the organization offers a set of services that matches one of the program element definitions but does not conventionally aggregate these services into a cost center, the organization should not artificially create a program element in order to demonstrate adherence to this listing.* This does not necessarily mean that the organization "loses credit" for these services or that comparability decisions are

jeopardized. This is so because of the second taxonomy dimension.

Taxonomy Dimension 2--Services

In introducing the program element concept, it was noted that differences should be reasonably apparent on such dimensions as

staffing, e.g., professional qualifications or intensity of staff coverage;

types of clientele, e.g., a psychiatric or functioning characterization of the patient that suggests a best match with the types of treatments offered in a program element;

services, e.g., types, intensities, or configurations of services provided in the elements;

products, e.g., the units used to measure output or productivity of the program element;

costs, e.g., the dollars attached to one of the measures, but usually linked to products in the form of a cost per product unit such as a day of care, an outpatient visit, an emergency contact, etc.

Although any of these might be eligible for an additional taxonomy dimension, only one appeared to be workable. It was the task force's judgment that staffing and clientele simply had too little commonalty across the programs with which members were familiar. They did not make reliable bases for the additional dimension. On the other hand, products and costs appeared to be relatively "high end" concepts - sophisticated measures requiring a substantial working knowledge of program operation, data aggregation, and linkage ability, and ultimately, dependent on staff and services data for their derivation. This left services as the remaining candidate. Since the program element was based on clusters of clinical programs, the addition of services as a second dimension was attractive. One encounters immediate dilemmas, however. First, the concept of service is not a very uniform concept in mental health. Not all mental health organizations offer the same menu of services. Some, like the fictitious one in figure 1, may offer a wide array of services. Others, which specialize, may offer services of only limited types to patients with selected diagnoses. Also, "services" as a term in mental health is used to cover everything from specific procedures to units of measure (units of service) to programs of care (residential services). Because there are so many interpretations of service, dilemmas may arise as one attempts to aggregate specifics, such as activities or organized programs, into more general categories. As an alternate to service, the notion of an activity or transaction might be possible. However, as noted above, there is not a great deal of agreement on what activities constitute a mental health service. Some third-party payment programs reimburse an activity as mental-health related, whereas in another jurisdiction, the same activity is excluded. This situation is quite common m the Medicaid program. In addition, the naming conventions for activities are not nearly as well agreed upon as names for major clusters of clinical programs. This is especially true as one moves away from somatic treatments, such as psychotropics or electroconvulsive therapy, to treatments involving verbal exchange or rehabilitation involving an instrumental daily activity. Thus, one can have little confidence in activities as a basis for comparability. These dilemmas can be resolved if parameters are set out that suggest how activities aggregate into more comparable groupings or if service is used to apply to something more operational. Thus, it should be apparent that an order of abstraction is needed for this dimension that will overcome or accommodate these problems. Such a dimension was provided by work from a definitions manual (NIMH 1980b), stimulated by work of the mental health program of the Southern Regional Education Board (SREB).[(3)] The activities performed by the staff of a mental health program element fall into one of four general categories labeled *services.* Each service category shares similar characteristics or goals. The four service categories are

1. *direct services* - face-to-face as well as other transactions (usually telephone) with patients/ clients or

groups of patients/clients;

2. *adjunctive services*- activities on behalf of a patient/client who is not present;

3. *consultation services* - activities for the benefit of another organization, association or group;

4. *administrative and support services* - activities for the benefit of the organization that cannot be assigned to a specific patient or agency. Meetings, training, research, travel, down time, etc., fall in this category. It also serves as a default category for activities that do not fit under the above.

Exhibit 2. Critical structural dimensions for understanding the comparability of mental health organizations based on clinical programs and the services provided

Service areas

Program elements	Direct	Adjunctive	Consultation	Administration and support
Inpatient				
Residential				
Partial day				
Outpatient				
Case management				
Emergency				

Of significance in this listing is the recognition that not all activities are treatment specific. Many are devoted to organization maintenance, such as relations with the outside community and administrative business within. Later chapters elaborate on these services and incorporate them into the design of a decision support system. As with the program elements, the four service groups represent a conceptual structure that can be used to categorize the activities or programs of a mental health organization. As the second dimension of the taxonomy, they can be grafted onto the first dimension to provide the schematic for much of the following material. This is presented in exhibit 2.

Advantages of the Taxonomy

The primary advantage of this schematic is to demonstrate the relationship between services and program elements. One point of view is that services are nested within program elements, but it is possible to examine either dimension independently. That is, one's interest may be only whether certain program elements exist within an organization or how many of them are identified. Switching to the other dimension, one may be interested in only the amount of direct service provided by an organization, which suggests that only the direct services column would be examined.(4) At first glance it may appear that all program elements are engaged in the same services. This may be only partially true. It is expected that both direct services and administrative and support activities occur in these clinical program elements. However, it is not always expected that the other two services are nested within every program element. The most compelling case for this involves consultation and education activities. According to the

taxonomy, these would be classified as consultation services. In the organization in figure 1, consultation was nested only in the ambulatory cost center. Therefore, if these activities were to be displayed in the schematic in exhibit 2, a case could be made that the consultation services would be entirely ascribed to the outpatient program element. No other program element is involved in such services. One of the situations that this schematic also accommodates is the dilemma left open at the end of taxonomy dimension 1 - what to do with the staff, activities, and money associated with functions that are not clinical program elements. A chapter on financial data discusses the common convention of handling this as overhead and suggests that each organization have a documented method for how overhead is handled. Generally, it is distributed according to an allocation rule within the organization. Therefore, referring back to figure 2, those cells that are not covered by program element labels have their staff, activities, and costs distributed by some allocation method to the program elements. In this way, all the costs, staff, and activities of a finance and accounting department could be considered an administrative and support service and allocated to the existing program elements. Further refinement is possible by considering service categories as well. For example, some aspects carried out in the clinical records department would be adjunctive (on behalf of patients) and the remainder, administrative and support services. Thus, that department could be distributed in two service categories and across all the program elements that applied. Although this report does not suggest which allocation method should be used, it is the *consequence of its application that is desired.* What results is an accounting of 100 percent of the mental health organization. The taxonomy presented facilitates this. Emphasizing clinical factors first, it arrays the major clusters of clinical programs that are found across a universe of mental health organizations. It then recognizes that each program element has nested within it a range of possible activities and that these further assist in the selection of programs that are comparable. Finally, it offers a framework for accommodating other aspects of the organization that do not fit immediately within the program element/services framework. It accomplishes the latter by permitting these aspects to be allocated across both the program elements and the service dimension. In short, each organization should be able to account for all of its activities, staff, and monies via this taxonomy. At the same time, the organization should be able to come to a better understanding of what aspects of other organizations need to be examined if comparisons in data are to be made.

Summary

In order to circumscribe the universe of places to which a mental health decision support system is applicable, a functional definition has been developed. This specifies the characteristics such a setting must have in order to be included within the universe. The issue of differentiation within this universe must then be confronted. The fundamental problem is that comparable content from a decision support system is meaningless if the settings that are being compared are completely unlike. A taxonomy concept has been offered. It is felt this taxonomy must be grounded in something relatively common to the universe of mental health organizations, must advance the task of developing a generic decision support system, and must aid in understanding and explaining differences between organizations. After examining an organization chart as a starting place, two dimensions are offered. One dimension emphasizes the major clinical programs offered by an organization. Six clusters of program elements are detailed as parsimoniously encompassing the vast majority of clinical programs. To be labeled a program element, they have to be relatively identifiable in an organization's chart of organization. A second dimension covers types of services within the program elements. In order to eschew the problems inherent in a lengthy list of transaction or activity codes, four categories of services have been suggested. The resulting schematic has both conceptual and practical applications. Conceptually, it provides a basis for identifying similar mental health organizations and aggregating comparable information on them. Practically, it provides a framework with which an organization can fully reflect the activities it accomplishes, the staff who accomplish them, the

clientele it serves, and the costs of doing its business.

Chapter 3
Management and Decision Support in a Mental Health Organization

Managers of mental health organizations typically must keep a watchful eye on two differing goals that are often in conflict. The first goal relates to providing care and services to patients and clients who are mentally ill. Specifically, the managers may wish to provide the highest quality services in the quantity demanded by the clientele. In America of the eighties, where mental health programs primarily are supported by public funds or third-party payments, this goal must be tempered by pricing these services at a level that is acceptable to the payers, while demonstrating that the services produce a benefit. Consequently, a second goal emerges. Managers must also behave in ways that ensure the solvency and survival of the program. They must make intensive efforts to get reimbursed for services, endeavor to price these services acceptably, ensure that staff remain productive, identify and promote the benefits produced by their program, try to save costs where possible, turn a profit where appropriate, and otherwise keep the program liquid. If either of these two goals gets out of hand, it is suggested that the other goal suffers. The standards against which service quality, service adequacy, or program solvency can be judged are usually referred to as performance standards. The MHSIP historically has not taken the position of establishing performance standards. However, the MHSIP does provide data-content standards, the individual items that ultimately lead to the construction of performance standards. Thus, the issue for this chapter is to come to some consensus on those areas of performance that are Critical for management attention so that subsequent chapters have a basis for offering content standards that are applicable to the performance areas. The two goals just noted, services and solvency, are the focus on which organizational performance is elaborated.

What Performance Areas Does a Manager Need To Know About?

As the previous chapters have attempted to clarify, the primary business of mental health organizations is to provide treatment and service to patients/clients who are mentally ill. This provides two starting anchor points. The terminology comes from a paradigm that is virtually lore in the mental health information systems field. These anchor points are *who* and *what.* They are usually linked as: *who* receives *what. Who* refers to the clients or patients served by the organization and is elaborated by collection of demographic as well as clinical characteristics of this group. *what* refers to the services provided to the patients or clients and may be described generally as the program elements discussed in the previous chapter -quasi-specifically by classification of services into categories such as those in the previous chapter, or microscopically by detailing each specific transaction or activity administered.
Complications arise, however. If one focuses exclusively on services provided to the clientele, a substantial volume of work within any mental health organization can be lost. As noted in the previous chapter, this may involve activities related to clinical records, meetings, filing bills and tracking receipts, keeping the organization running, etc. Consequently, the what anchor point should not be interpreted solely as services to clients or patients. Keeping the business solvent and productive, while ensuring its survival means that other "what's" must be examined. Furthermore, this leads to another performance area for elaboration, namely, the staff of the organization. Someone must produce the what within the organization and, therefore, it is logical to ask about who is generating the product. In the terminology initiated above, this inclusion of a staff focus is linked as follows and as shown in figure 3. *who* receives what from *whom. Whom* is usually elaborated within an organization by job titles or functions and may also be examined by the person's professional training. Like the client focus, demographic characteristics figure prominently, as does information essential to personnel functions, such as salary and payroll

taxes. Whom also should apply to the full mental health organization and not only to those staff involved in providing clinical services. These points made about the expansion of the what and whom dimensions are in keeping with the discussion near the conclusion of the preceding chapter. For the organization to account for all of itself, there must be a systematic way to embrace those activities and staff not directly associated with the taxonomy dimensions and to distribute them within the taxonomy. This allocation issue is visited later in the report. Next comes a performance area that relates profoundly to the goal of organizational solvency and survival: cost. In competitive business, it is axiomatic that no enterprise lasts if what it produces costs more than what it takes in. As mental health organizations attempt to operate more like businesses, they keep a closer eye on the bottom line of cost. A later chapter makes clear that cost is driven by two of the factors that are noted in figure 3: *what* and *whom.* Costs in mental health, as in most human services, result basically from an interaction between the services in which the organization engages and the staff who are involved. In figure 4, the relation of this additional performance area to the original three is shown. The terminology expressing this is: *who* receives *what* from *whom* at what *cost.*

Finally, if a manager is to maintain a balance between supplying a sufficient quantity of quality services, at a price that ensures satisfactory survival of the program, one additional anchor is desirable. The outcome, benefit, or effect of the service is valuable information. This is frequently assessed in terms of either an improvement in the client's condition or a prevention of deterioration in clients status. However, examination of effects can also be extended to the nonclinical activities and staff of the organization. The terminology is modified as follows (the relation of this final performance area is shown in figure 4). *who* receives *what* from *whom* at what *cost* and with what *effect.* This phrase is recognized by many individuals who have been involved in the design or acquisition of an information system for a mental health organization. It is felt by many to encapsulate the basic areas in which managers need information and, therefore, is used as an acid test for what a system should produce.

Why Do Managers Need To Know This?

In chapter 1, a fundamental proposal was offered: Managers are interested in making improvements in their programs and do so by making "rational changes based on good, data-based information about the operation of their programs." It is assumed that these improvements are targeted primarily toward realizing the goals of service and survival. These improvements are brought about by actions taken with the resources for which the manager is responsible. Four resource domains have been noted: patients, staff, money, and property. Five specific actions can be applied to these resources: acquire, distribute, monitor, account, and assess. This results in the matrix shown in exhibit 3. Thus, a manager may determine that a program improvement can be made by changing behavior with respect to one or more of these actions, applied to one or more of the resource domains. For example, regarding the first cell in the matrix in exhibit 3, i.e., acquire patients, a manager may have evidence that there is an undersupply of new patients and that this is reflected by patients being treated too long or that the staff is not sufficiently productive. This may lead to an effort to acquire more patients. An advertising campaign, an appearance on a local radio talk show, or a contract with a local employer to provide employee assistance programs may be specific actions taken by management to acquire more patients or clients. Each cell can be examined in this fashion, as can scenarios in which multiple cells are targeted. Although the buck ultimately stops at the executive director, CEO, or superintendent, in most mental health organizations, it is rare to find a single manager who assumes daily responsibility for all these actions. Management actions usually are divided and delegated as duties to others within the agency. Therefore, one finds acquisition functions variously distributed to boards of directors, directors of marketing, planners, recruitment specialists, and fiscal officers, as well as the CEO. Other actions are also delegated. Monitoring and accounting may often be delegated to those in charge of information systems, utilization review committees,

ombudsmen, human resource managers, etc.

Exhibit 3. The association between management actions and resource domains in a mental health organization

Resource domains

Management actions	Patients	Staff	Money	Property
Acquire				
Distribute				
Monitor				
Account				
Assess				

In addition, the four resource areas to which these actions are applied are usually delegated. In many instances, almost all of a resource domain is under the responsibility of specialized managers. Therefore, one finds clinical managers, fiscal officers, property/maintenance managers, personnel directors, and even delegations within these management categories so that all the necessary actions can be carried out. All the individuals are legitimately involved in managing some aspect of the mental health organization. Consequently, they may all be viewed as part of the management team, even if many of these individuals do not regularly participate in the executive meetings in which official management decisions are made. However, it is primarily those managers with a responsibility for the clinical activities of the organization who are assumed to have an interest in this report. This narrowing of focus is deliberate, driven by the statement above that the primary business of these organizations is the provision of services to patients who are mentally ill. Whether delegated or centralized, formally assigned or informally assumed, management requires action, action requires choosing, and choosing involves weighing accumulated inputs. As stated in chapter 1, how a manager mentally gets all these inputs, processes them, and weighs the risks associated with various alternatives is not the focus of this monograph. It is the position of the MHSIP that at least some of these inputs can be generically characterized as the performance areas noted in the previous section. A manager who has information about program clientele, staff, activities, costs, and impacts presumably has a substantial amount of the inputs needed to make the decisions and take the actions that will improve the performance of the program. There are two general caveats, however. First, one might need some contextual information in order to make decisions. This might relate to policy, a recent historical event, the geographic area, a law, a cultural or demographic feature of the population served, etc. The MHSIP does not address these contextual factors. Information on them is too variable and, more to the point, they do not readily translate into data that can be formally entered into or derived from an organization's information system. The second caveat is more pertinent to this report, viz, a manager's decisions benefit from comparable data. As the previous chapter emphasized, managers must have confidence that the data are in fact relevant and comparable. Some comparable data come from within the organization, e.g., data from a previous period or from an identical program element. The notion of corn-parable data taken from outside the organization is addressed in a later section, which deals with a broader system perspective. Leaving these concerns aside temporarily, the issue remaining is how the manager gets access to these kinds of information.

Where Does the Manager Get This Information?

Managers have numerous methods open to them for obtaining information on the performance of their programs. Meetings, observation, gossip, reports, and many other formal and informal sources are available to them. However, empirical data are the focus of this report. Therefore, it is assumed that formal, structured systems are preferred to provide managers with this empirical input. One label applied to such systems is management information systems. There is nothing particularly objectionable about this label; it has been used several times already. Nonetheless, it is felt that it fails to convey the decisionmaking and action-taking nature of management. As an alternative, *decision support systems* is used. "Decision support systems . . . are computer-based information systems that are designed to support decision making and decision implementation" (LeBlanc 1987, p.73). Two unique features of this definition are worth noting:

The systems are computer based. The era of manually based information systems is rapidly disappearing. Cost and user-friendliness, once obstacles of genuine reckoning, are no longer substantial impediments.

The systems play a role in decisionmaking and implementation. They are not neutral in intent; they are not mere accumulation points for data.

Managers are expected to interact with these systems as they make decisions about their resources, including the monitoring and assessment of their use. Managers, therefore, need to have access to decision support systems that provide them with empirical input formatted in a way they can use to make decisions about program operations. These systems should be able to provide information in areas specified in the stated paradigm: who, what, whom, cost, and effect. As stated above, a manager who has information about clientele, staff, services, costs, and impacts has a substantial amount of the inputs needed to make decisions about the resources of the program. The frequency with which this information is provided to the manager, its timeliness, and its degree of detail are local decisions, not within the scope of the MHSIP.

How Is This Information Available?

Independent Components Approach

The simplest approach to designing a decision support system that satisfies the conditions noted would be one where who, what, whom, cost, and effect constitute separate systems. It is not unusual to find multiple systems, each dedicated to only one function, within a mental health organization. This is especially true if one considers the match between these performance areas and the resource domains noted earlier. This can be noted as follows:

Resource area	Performance area	System parallel
Patients	Who	Clinical records
Staff	Whom	Personnel
Money	Cost	Accounting
Property[(5)]	(Where)	Maintenance

Many mental health organizations operate with separate systems dedicated to these areas. The original statement of the MHSIP (NIMH 1983b) was based on such an approach: independent

data components relating to organizations (a version of whom), clients (who), and staff (another version of whom) were proposed.[(6)] At first glance, the approach is attractive. Data are available that are both relatively well-tailored and pertinent to one of the performance areas or resource domains. This implies quick retrieval of such information and, therefore, an ability to accelerate the decision-making process. But on further examination, this attraction begins to fade. In the previous chapter it was suggested that for managers to make reliable comparisons, it was necessary to be able to categorize and allocate data about the organization's activities consistently. With a discrete systems approach it is extremely cumbersome to engage in this process of categorization and allocation. Data from the separate Systems have to be merged so that the who-what-whom-cost data can be distributed in the matrix shown in exhibit 2. If the systems are not carefully designed to permit this, the attempt to merge and combine data is time-consuming and error-ridden. This is hardly inspirational news to a decisionmaker who wishes to derive comparison data from such an in-house system or to know if comparison data from other programs are reliable. In addition, there is substantial inefficiency and overhead in maintaining this discrete systems approach. Data items may have to be keyed in multiple times in order to be posted to the respective system, and the generation of reports may take considerable time when multiple systems need to be accessed.

Even more important, however, is that such an approach is ultimately hindered by its descriptive limitations. That is, the types of information derivable from an independent systems approach are basically descriptive. They tell a manager about each of the performance areas, such as the types of patients being seen, types of staff employed and their stations, revenues and expenditures of the program, volumes of service being provided, and the impacts of the programs. This is useful, but most managers who are trying to understand cause and effect, to move a program in a particular direction, find the approach limited. With it, for example, one cannot address any questions that might require a crosswalk between these independent systems. This points to the fundamental problem of an independent systems approach: It confines a manager's ability to the description rather than to the analysis of program performance. Although a clinical manager would undoubtedly find information useful about the demographic and clinical characteristics of the patients, without an ability to link this information with data from the other performance areas, it would be difficult to examine such questions as

What types of professionals are serving different patient types?

Does the payment source of the client affect the types or amounts of services received?

Do some clinical types show maximum improvement in functioning after limited, intensive therapy?

Are the staff in program *X* better at working with their clients than the staff in program *Y*?

Why do our costs per outpatient visit run 30 percent higher than the other outpatient program elements?

It is hoped that none of these questions is esoteric and that managers have had to confront analogous issues in making decisions about their programs. As the questions are considered, it should be apparent, at least regarding mental health organizations, that most management decisions require more than just descriptive information about production, distribution, or volume. While the latter can be exceptionally potent variables in many businesses, telling a great deal about success and solvency, they are potent only so long as they point in the desirable direction. When there is a failure, management in these situations inevitably turns to an *analysis* of contributing factors. For example,

Did problems occur with raw material supplies or costs?

What factor did labor contribute?

Was the product defective?

Were targets not met because of breakdowns in equipment or other maintenance problems?

Did customers find an alternate product that is better or cheaper?

Thus, even in business environments that rely on a small set of descriptive indicators, a time may arrive when such businesses need to analyze other factors that have contributed to their performance on this set of indicators. If these other data are not readily available from the business' information system, the decision-maker may make an educated guess, take a wait-and-see attitude, or do research that is costly and takes time.

Integrated Components Approach

In mental health businesses, there is not usually a clear bottom line tied to production or profit. It is generally acknowledged that a small set of indicators, especially narrowly defined indicators, is not sufficient. The reason for this is evident in the performance paradigm. As the paradigm was originally presented, the interdependencies between each of the performance areas were noted. Each interacts with the others. *Ultimately, it is the full paradigm that must concern a mental health decisionmaker.* This is true for any performance area one begins to analyze independently:

Effects do not occur without a patient, a provider, and an event; effects are also achieved at some cost.

There can be no patients unless there is a service provided to them and a staff that provides it; patients will not continue unless the cost of what they receive is reasonable and an effect observed.

A staff cannot provide a service unless there is a recipient for it; as they provide it, they produce a cost and an effect.

This recitation can be continued, but it is hoped that the interdependency of each of these components is evident. Therefore, preferable to an independent systems approach is one that allows for these interdependencies to be readily examined. In systems design, this type of system is variously described as an integrated or relational data base. Such an approach is characterized by the following:

efficient input of the data (usually entered once);

the capability of merging data items whose combination pathways did not have to be spelled out a priori, i.e., not spelled out as part of the system analysis and design nor included in the routine programming code that operates the system;

relatively straightforward programming to achieve the combination;

flexibility in the preparation of specialized and ad hoc reports and analyses.

While these terms have been relatively common among system designers for several years, and

while there is both hardware and software to accommodate the data processing, mental health programs appear to have made intermittent progress, at best, in implementing systems that can be characterized as integrated or relational (NIMH 1987a). At one time, NIMH was attempting to provide public-domain software that would operate on a wide variety of computers and meet these characteristics (Wurster and Goodman 1980). Funding limitations, rather than technical issues, halted progress. This integration capability was judged by the Revision Task Force as absolutely essential to a redesigned MHSIP. Although the initial statement of the MHSIP proved invaluable in establishing and demonstrating the power of data standards for mental health information systems, with time, the limitations of an independent systems (components) approach became evident. For the reasons noted above, descriptive data are valuable, but limited. Therefore, the task force adopted as a working premise that the revised MHSIP would have to accommodate the progress and content of the initial MHSIP, but would also build toward a data base that was integrated and, consequently, useful to management decisionmaking. This *integration is achieved by focusing on one of the performance areas stated above, viz, the generic area labeled what.* In subsequent chapters this is presented as an event component, and it serves as the keystone that unifies the other suggested components into an integrated whole. For an event component to function and for integration to be achieved, the MHSIP offers one unequivocal rule: *Staff would be required to report on their activities.* The task force saw no other mechanism by which information could be obtained that would allow the areas to be integrated. For some organizations this could be a major shift. For others, the rule would be pedestrian. Some activity report from the staff, in the form of a staff log, a service slip, or an administrative action that defaults their time to activity categories, would provide such essential information as:

staff identity

client identity (when appropriate)

type of event

location/place/program assignment of event

From these items, all of which are picked up in the later minimum data sets, it is possible to link data; derive costs; distribute activities, clients, and staff to program elements; and access data in each of the performance areas. All of these points are discussed in subsequent chapters. The next task for this report is an elaboration on the specific content under the generic areas, and additional demonstration of the requirement that this content be integrated and useful to decisionmaking. The technology for such a system, its computer requirements, its file structures and software, the specific types of reports, the specification of frequencies or dates, and issues about legal or clinical procedures and policies are not covered. While these may be areas in which standardization is attractive, little evidence can be collected that the field has attempted to achieve commonality on any of them. Some of them involve concerns relevant to accreditation or eligibility for reimbursement. Others rely on market factors and shakeouts in the hardware and software industries. Agencies and vendors affiliated with those concerns may establish de facto standards. This version of the MHSIP does not venture into these areas.

Summary

As managers in mental health programs make decisions and take actions concerning their resources, they need access to empirical data that are pertinent to the management issue at hand. These data come from both the program itself and from other programs that are similar and comparable to the target program. Such data are best derived from ongoing systems within each organization that are explicitly designed to aid decision-makers. Thus, the derivation of the

phrase: decision support system. In designing these systems, several generic principles can be offered. A fundamental one is that the decision-maker must stay cognizant of a variety of performance areas, including patients, staff, services, costs, and impacts. Decisionmakers must understand that these factors interact. Most mental health managers do not have the freedom to focus on only one of these factors. If they try to narrow their focus, it is predicted that in order to remain viable, they eventually will be forced to consider the contribution of the performance areas they have tried to ignore. Therefore, any decision support system should be able to facilitate linkages among these factors, such that reasonable conclusions and hypotheses about cause and effect can be made by managers. The conclusions are the basis for the decision about what actions will be taken with which resources so that program performance can be altered. In order to make integrated information available to managers, it is necessary for staff to report on their activities and on who they served.

Chapter 4
Minimum Data Sets and Guidelines for Decision Support Systems

Justifications for the adoption of standards for mental health decision support Systems have already been presented. It was argued that such standards facilitate communication, judgment, and comparison. Standardization of content is feasible and is pursued in this section of the report. Standardization of systems that collect, report, and analyze the content is more difficult and is not pursued. Instead, system *guidelines* are be offered. This terminology distinction is not trivial and is further explained so that a common set of expectations pervades this material.

Minimum Data Items and Minimum Data Sets

Minimum data items refer to the specification and definition of individual data items that are identified as essential to the description and analysis of some topical area, viz, the program performance of mental health organizations. A collection of such items is referred to as a minimum data set. Items are identified for candidacy as minimum through the convergence of need, tradition, professional judgment, and empiricism. None of these factors dominates, but each has a distinct role. *Need* is narrowly conceptualized here to mean items that are critical to the subsequent processing and categorization of the data. This might mean the name of an organization, a telephone number, or a code number for a record that allows follow-back for editing. Such items can be thought of as overhead, a necessary burden on the minimum data set in order to facilitate its collection or analysis. *Tradition* identifies those items that are labeled as minimum due to the contribution of history, law, or idiosyncrasy of a given topic.

***Professional judgment* contributes or deletes items based on representative and informed experience and knowledge that such items are, are not, or will be important in addressing either a question in the topical area or the explanation of patterns in the data.**

***Empiricism,* probably the least used, is based on tests using actual data bases that determine the extent to which an item contributes to the explanation of variance in the data base.**

Regardless of the process by which an item enters the set of minimum data items, fundamental to the item's inclusion is the assumption noted above: Stated areas of mental health program performance cannot be satisfactorily described, analyzed, or explained without it. This description or explanation uses either the item alone or in combination with other items in the minimum set. The full set should have greater descriptive and explanatory power than the individual items. Other characteristics of the minimum data items are also worth noting.

1. They are usually well integrated into the routine operations of the organization, such that they

are collected or updated as a part of the clinical or administrative operations in which the organization is involved. If specialized data-collection initiatives are regularly required at the service-provider level, this calls into question either the inclusion of the item in the minimum data set or the quality of management in the organization.

2. Individual minimum data items can always be expanded or tailored to meet local needs. The specified basic categories allow one to expand any of them as long as the added details can be collapsed without belying the basic categories. For example, the basic categories "applicable" and "not applicable" could be satisfied by a local organization that actually uses a continuous measurement scale with values ranging from 1 to 10. The organization would have more information available to it than the basic categories indicate, but it would be able to satisfy them if it used a version of the following rule.

Scale values	Basic data set categories
1-4	Applicable
5-10	Not applicable

3. The articulation of a minimum data set implies a hypothesis or set of hypotheses that the items presumably address. However, experience shows that in most instances of minimum data sets, the hypothesis is not stated, nor is it necessarily overtly evident. Systems designers know this principle well and are not free to ignore it. Thus, a conspicuous phase of system design is often labeled the *requirements analysis* or *requirements statement:* What does the system do; what reports are generated; what management actions are supported? Conventional wisdom suggests that these types of questions be answered clearly before a new system is purchased or an old one, redesigned. The preceding chapters have presented the foundation of the hypothesis that drives the minimum data sets. Restated,

For managers of mental health organizations to make decisions about their program's performance and to take actions to ensure that services of acceptable quantity and quality are being provided in a manner that sustains the organization's solvency, these managers need to have data on *who* received *what* from *whom* at what *cost* and with what *effect.* These data must be comparable not only within the organization, but also with similar organizations so that the manager understands performance within a broader context.

In the next chapters of this section, each of the generic performance areas is described as a potential data component of a decision support system. In order to facilitate presentation, which is shown as minimum data sets, the performance areas are relabeled as follows:

Performance area	Minimum data set
Who	Patient/client
What	Event
Whom	Workforce
Cost	Financial
Effect	(To be explained)

Minimum data sets should not be regarded as isomorphic with the full content of a decision support system or management information system. Every such system requires tailoring to accommodate local policy information that affects decisions; to address procedures that account for who has responsibility for and access to data; and to satisfy the culture of the organization, its clientele, and staff. Preceding chapters have suggested the generic areas and generic decisions that shape the minimum data sets that are presented later in this section.

System Standards vs. System Guidelines

Standards denote specificity. Quantities, values, terms, definitions, and concepts, all accepted as reference points for comparison, constitute standards. When dealing with minimum data sets, the employment of standards is reasonable. As one begins to consider how these items are collected within a service setting, and how they are maintained, retrieved, updated, and combined within a computer system, a far more formidable task becomes apparent. This task requires that the MHSIP define the frequency for the collection of data; the timeliness of the data; the quality-control procedures that designate acceptable completion rates or error levels; the file structures used to sustain, retrieve, and combine the data; the computer configurations able to match these requirements; the minimum and routine outputs that must be provided; and numerous other specifications. These steps are possible and, for the organization involved in system design or acquisition, they are essential. For the MHSIP, however, they are daunting and, to date, unneeded. In addition, such specifications could unduly restrict service providers in their attempt to develop locally responsive systems. They could preclude system designers from incorporating state-of-the-art developments or from otherwise demonstrating their creativity. Some would argue that there is a need for specificity in the system-design area, and they cite evidence that many State mental health authorities have shared requirements analyses and requests for procurements for systems. Nevertheless, for the present, the MHSIP approach has been to provide standards only for content and guidelines for systems. This means less specificity and only general suggestions about the nature of actual system operations. Some of these suggestions emerge in the data components below. A major guideline was inherent in the previous chapter, viz, that the system be integrated. However, the MHSIP has not established a standard that a relational data base design be used, nor a standard that separate data components be addressable with data base management software, nor any other standard for the system aspects. A later chapter comments on issues related to system operations as an organization shifts from a discrete systems approach to an integrated systems approach.

Summary

In order to build toward comparability, it is necessary to adopt conventions about terminology so there is some degree of certainty about how pertinent data were aggregated. Terms and their definitions that are suggested for inclusion in a mental health decision support system are labeled minimum data sets. Specificity about these minimum sets is possible and necessary. How these minimum items are included in actual practice implies that the MHSIP must also provide specificity with respect to systems for the collection, retrieval, updating, and analysis of the items. Historically, the MHSIP has held back in this area and has provided only general guidelines. That tradition is maintained in this document.

Section II

Decision Support Systems at the Organization Level: Data Components and Minimum Data Sets for an Integrated System

Chapter 5

Patient/Client Data

In considering the nature of a data component for patient/client[(7)] information, it is important to keep the concept of a minimum data set in mind. First, no effort is being made to describe the nature of the clinical record at the service-provider level. Local and individual clinical orientations, as well as legal considerations, must be given recognition and must take precedence. In addition, professional associations, especially those with an accreditation or auditing orientation, provide considerable guidance in this area. Second, the decision support system or information system does not supplant the clinical record. Rarely is there a need for these Systems to carry a substantial share of the information that is contained in clinical records. Although automated clinical records have a place as well as a history in mental health, they should be seen as a complement to a decision support system, i.e., as a source of data for the system. There is no need for 100 percent of the data in clinical record, automated or manual, to reside in a management information system. Third, in keeping with the management orientation espoused in the report, the focus is on those pieces of patient information that assist in the management of the organization, in answering the *who* part of the question in which decision makers are interested. It should also have some value in carrying out routine administrative tasks, especially in the preparation of reports. As will become evident, the revised patient/client data set is quite similar to the earlier MHSIP version. The major change comes not so much from the items as from the possibility of linkage with other MHSIP data sets. Of major interest are the linkages with the event component. This linkage helps to profile service use by client type. When linked with the human resources component, the organization is able to analyze the types of staff serving subgroups of patients.

Definition of a Patient/Client

Registered and Nonregistered Clients

Mental health organizations inevitably encounter the situation in which services are provided to an individual, but they lack all the information on the person that would normally complete a clinical record, i.e., information that enables them to register the individual. This may be due to the nature of the contact; e.g., an emergency or a telephone contact, or the nature of the client, e.g., a desire to protect the patient; or the patient's unwillingness to provide essential information. In some organizations, services to persons on whom complete data are not available can absorb significant amounts of staff time. For statistical reporting purposes, these direct-care staff should receive full credit for their activities, including those clinical services provided to nonregistered patients on whom complete data may not be available. For most organizations, patient/client refers primarily to those individuals who are registered with the organization. The distinction between registered and nonregistered clients is retained from the initial MHSIP:

Registered: An individual identifiable by actual name, code name, or unique identifier, who has a case record (medical record or clinical chart), and has received services from the organization...

Nonregistered: An individual who may or may not be identifiable by actual or code name or number, who does not have a clinical record, but has received services from the organization... (NIMH 1983b, p.51)

Registration does not necessarily mean the record that is opened must contain the name or other obvious identification of the patient, or that this identification is readily accessible by staff members. Systems designers can suggest mechanisms related to data coding or to access that

permit reliable, unique identification, and restrict unauthorized access to identifying information on individuals receiving service. Even without these mechanisms, good clinical practices and staff professionalism can maintain confidentiality at the local level. This can be reinforced by appropriate regulation and law, usually required by each State. Although full records cannot be maintained on non-registered clients, organizations should be able to determine the amount of service rendered to these individuals. It is also very useful to categorize these individuals by such variables as sex, gross age group, and general category of problem. This helps measure both the kinds of clients receiving services from the organization and staff productivity. Whether or not an individual is registered is typically an organizational and clinical decision. In some cases, however, the patient decides. For example, an individual comes into a clinic, talks to a member of the staff about a mental health problem, but refuses to identify himself. The staff member may feel that a clinical service has been provided, but if the individual does not return and no identifying information is available, a record cannot be opened and the individual cannot be registered. Organizations also differ in their rules about registration. Some organizations may choose not to register clients until diagnostic services have determined whether they can be appropriately served by the organization. Other organizations might register such clients, but discontinue the relationship or refer them if diagnosis suggests the organization cannot provide appropriate services. As a consequence of these varying rules, organizations could reflect very different numbers of nonregistered clients while providing essentially identical services. For comparability of data across organizations, *the following guideline is recommended:* An individual seen by direct-care staff for the first time, on a face-to-face basis should be registered as a patient if

an appointment is made for another visit, or

the staff member expects the patient to return, or

the activity on this single encounter is judged by organization rules or therapist assessment as one of clinical significance.

A patient who is not registered during the first encounter should be subject to the above rules on subsequent encounters. Any individual charged for a clinically oriented activity should be registered. If an activity or procedure is significant enough to warrant payment, then on a clinical basis, it would seem significant enough to be recorded in a patient record. Once a record has been opened, the client should be considered registered.

Collaterals and Families

Another area that has proved troublesome in developing data reporting systems is the registration of collaterals. In treating an individual, a staff member may have to interview a relative or friend of the client. In this situation, the relative/friend would be recorded as a collateral in the client's record. This occurs very frequently in the treatment of children and can involve many interviews with one or both parents. Confusion in recordkeeping may arise when contact with the collateral leads the staff to believe the collateral is also in need of treatment. A minimum organization policy should be to rely on the staff member to decide whether to (a) open a record on the individual and add a new client to the rolls, or (b) attempt to involve the collateral in couple, family, or group therapy in which the original patient also figures. In some forms of family therapy, therapists often feel that the family is the client and that the treatment process should handle the family as an entity. This implies that a single treatment record for the family should be maintained. One solution is to maintain a single treatment record for the family, but to enroll or admit each member of the family as a patient, with a unique identifier. Each family member could then be independently included in a patient/client report, but a summary of

services would show the number of individual, group, and family sessions.

Uses of Patient Data

In the paradigm presented in chapter 3, this data component is intended to assist the decisionmaker by providing information about the "who" element. Questions about the patient population are among the most persistent questions asked by managers, clinicians, researchers, and the public. The specificity of the questions varies, and there should be no expectation that the decision support system will be sufficient to answer all of them. This is especially true of those questions asked by researchers and the public. On the assumption that the patient/client component is integrated with the remaining data components in a local decision support system, it is theoretically possible, when answering questions, to merge data from this component with data from the others. This ability can be critical for complex managerial analyses. A few such instances are noted below. The data exclusively from the patient component are also of extraordinary value in providing descriptive information. The repetitive set of concerns related to patient data follow.

Comparisons Between Patient Groups and the General Population

Not all mental health organizations accept among their goals the requirement that they target the general population in their area as their market. However, for organizations that are largely publicly funded, the matter of equity of access by all citizens is a critical concern. Some of the most basic quest ions asked about the mental health services are related to how well all population groups are being served. For example, if the organization has a geographic area for which it is responsible, are clients coming from all parts of the service area? Are all age groups being served? Are minority groups receiving services? To what extent are indigent clients represented in the case load? These kinds of questions come from outside the mental health organization at least as frequently as from inside. In general, answers to these questions depend on comparing patient data with U.S. Census data. It becomes important, therefore, that items in the system be compatible with items collected for the census in order to make valid comparisons.

Comparisons Between Patient Subgroups and the Total Patient Group

Questions in this area deal with the differential characteristics among various subgroups of the patient population and their representation in case loads, program elements, or over time. These questions bear on both equality of access to services, epidemiologic concerns about greater need for service by some subgroups, and organizational goals that may emphasize some subgroups over others. Do children, for example, experience longer periods of treatment in a program element than other age groups? Are divorced individuals more likely to be represented in a case load than single or married persons? Do clients from low-income families have similar experience profiles (e.g., type of program elements, length of treatment, prior care in the organization, referral patterns on discharge, etc.) to clients from higher income families? What percentage of clients have problems related to multiple disability areas, such as substance abuse and mental illness? Do patients with multiple disabilities exhibit different experience profiles than those disabled by mental illness alone? Are difficult-to-treat clients channeled through the organization in ways that raise questions about good clinical practices?
Answers to these kinds of questions are of keen interest to program managers when they are related to staff utilization or resource allocation within the organization. The study of the distribution and use of resources by various client subgroups is a necessary and useful part of organization management. In the data set below, references to the development of client typologies are intended to facilitate answering this set of questions.

Differential Use of Services Among Patient Groups

Questions in this area recognize that not all subgroups of clients need to use the same amounts and kinds of services. Service use as a measure can be direct (tabulating amounts of direct and adjunctive activities or units of service derived from the event component) or approximated by less direct measures (length of episode, intensity of service as reflected by program element exposure, disposition of the patient by the organization, etc.). Being able to profile service use by various sub-groups is of value in planning for services, i.e., ensuring sufficient service availability if high-need groups are well represented in the case load; for utilization review, i.e., determining if service use for differential subgroups parallels those suggested by the literature or professional judgments; and for understanding differences in the costs of various programs, i.e., those that serve the most disturbed patients are likely to have higher costs because of amounts of services provided and the personnel needs to deliver those services. Although the field is not yet near the point at which systemwide standards of service delivery by patient sub-groups can be articulated, the availability of comparable data across the system creates de facto norms, providing an empirical beginning for such standards. It is predominantly in this area that concerns related to issues of prospective payment would occur.

Issues of Continuity of Care

A final significant use of client data appears to be on the ascent within mental health settings. This is the issue of ensuring continuity of care to clients, as they either move through a multiservice organization or reenter an organization at some subsequent time. Although the decision support system does not carry the burden of determining whether the patient has been served before, or of tracking the client through the organization during an episode, the system establishes the groundwork for this to be done. It does this primarily through the use of the patient-identification information. A uniform policy with regard to client identification and authority to access client's data is helpful within an organization. It enables or encourages the clinical records system or the therapists to determine if other records on the patient exist within the organization, so that previous treatments or diagnoses are known. In addition, in large or geographically diverse organizations, such access may indicate if the client is under active care elsewhere within the organization and who is responsible. Such linkage checks may also flag a prescribed clinical linkage between program elements that has been made or has failed. In large organizations, the "loss" of patients in either of these ways has been known to happen. The data set recommendation for unique patient identifiers directly supports a focus on continuity of care for the patient within the organization.

Minimum Data Set

The following items constitute the minimum data content for the patient/client component of a provider-level decision support system. Each item is named, followed by either its minimum recommended categories or a brief explanation of its content. As noted in chapter 4, categories can be elaborated by the service provider depending on local needs. However, elaborations should always be designed to be collapsible into the minimum categories. This facilitates comparison of data with another organization or the reporting of comparable data to an auxiliary level. Comment sections follow the recommended categories. The comments are intended to explain the item further, discuss the importance or potential use of the data, or note advisable rules of interpretation. Many mental health organizations also have responsibilities for patients whose principal diagnosis is alcohol- or drug-related. Efforts have been made to ensure the MHSIP data set is compatible with the data sets promulgated by the National Institutes on Drug Abuse (NIDA) and on Alcohol Abuse and Alcoholism (NIAAA). The details of the data sets of these Institutes should be given priority when a patient is to be reported to their data systems or when the

organization maintains its substance abuse programs separately from its mental health programs. For patients with alcohol- or drug-related diagnoses treated in the mental health programs, the organization may wish to regard the NIDA/NIAAA data sets as a valuable complement of information to collect. The data permit comparisons with published reports from MDA, NIAAA, or comparable State agencies. The organization should check for the latest version of these data sets.

1. Organization Identifier
The 8-digit NIMH master facility code is recommended as the identifier.

Comment. **Mental health organizations that are not aware of their NIMH-assigned facility code can obtain it from the Survey and Reports Branch of NIMH. If NIMH does not list the organization already, an identifier can be generated on request. Because the first two numbers in the NIMH code string always identify the State in which the organization is located, it may be possible to drop these from the string for routine local operations and to develop a procedure to add them in automatically when preparing the data for external reporting purposes. As unique patient data are maintained at the local level, it may not be necessary to have the organization identifier actually be a physical part of the data set. It is more important to be able to append this when reporting externally for statistical, billing, or other purposes.**

2. Client status

Nonregistered - an individual who may or may not be identifiable by actual name or code name or number, who does not have a clinical record, but has received service from the organization

Registered - an individual identifiable by actual name, code name, or unique identifier, who has a case record (medical record or clinical chart), and has received services from the organization.
Comment: **See text for comment.**

3. Unique patient/client identifier
No minimum specifications

Comment. **The organization should assign a unique identifier that enables the record to be identified and the data to be reliably associated with a particular individual. At the local level, this could be the patient name, a case number, the Social Security number, or other alphanumeric information. The identifier proves useful for follow back verification of information or editing of submitted data, and to *access statistical information in other MHSIP components.* The identifier should be stable from one reporting period to another in order to access that patient's information if the patient reenters the organization for service at a later time. In addition, it is useful to assist the organization in managing the patient's case and providing continuity of care within the organization and with other service providers. The format specifications for a unique identifier may be established by an agency at the auxiliary level. This agency may be legitimately interested in, or legally responsible for, patients throughout many local organizations that constitute its domain of concern. Most often this auxiliary level is a State mental health agency, obligated by law to collect information by patient name or unique identification algorithm. The local level should honor these specifications. Aside from the legal consequences, this facilitates the subsequent reporting of data by local organizations, and facilitates the discharge of responsibility at the auxiliary level for continuity of care or linkage of clients with other organizations in the service area.**

4. Date of most recent admission to organization
Month, day, year

Comment: **This date is important for tracking the initiation of service for the current episode of care,[(8)] as well as for calculating other measures used in figuring service contact and intensity. In integrated systems of care, the client may be transferred out of one setting into another. This date of transfer in should be treated as a date of admission to the organization, because it implies that clinical responsibility for the patient has been accepted as of the transfer date.**

5. Date of discontinuation/discharge/death
Month, day, year

Comment: **While it is recognized that organizations vary considerably in their policies regarding when a patient's record should show a discharge or discontinuation from the organization, the standard established in the 1983 MHSIP has generally been accepted. Specifically, patients who have had no program contact in 90 days should be administratively discontinued. That is, even though the patient may not be available to participate in subsequent treatment planning, appropriate entries should be made in the record by the therapist responsible or by the organization, to close out that case from the current, active roster of clients. Similar to the previous item, a client who is transferred out of the organization should be regarded as discontinued, and the date of (he transfer satisfies this item. Transfers within an organization, especially a multiservice organization, may be entered in the patient's clinical record, but they are not regarded as discontinuations or discharges under this item. Item 6, however, is relevant to this point.**

6. Program element activity

This item refers to the program elements in which the patient has been/is active since the most recent date of admission to the organization, and the dates of the last service or discontinuation provided in each program element, as applicable:

Inpatient Month, day, year

Residential Month, day, year

Partial day Month, day, year

Outpatient Month, day, year

Case management Month, day, year

Emergency Month, day, year

Comment: **Organizations that operate several program elements may provide services to a client in more than one of these during an episode. Often, the client remains enrolled in one of the program elements and is sent for service or transferred to another program element without formal discharge/admission or transfer in/out entries in the record. For a discharged patient, one of the dates in this item would correspond to the date in item 5. A simple count of the applicable program elements in which the patient has been active during the episode of care provides a brief measure of service intensity; aids in understanding the costs associated with the episode; and facilitates a typology of clients that may have bearing on the severity of the problem.**

7. Sex
Male, female

Comment: **A patient's sex is a variable important in the epidemiology of mental illness and especially covaries with diagnostic clusters. In addition, as a demographic variable related to population characteristics, it reflects on the use of and access to mental health services by each sex. When linked with other data in the MHSIP data sets, it has relevance to issues of equity.**

8. Date of birth
Month, day, year

Comment: **Patient age is a variable important in the epidemiology of mental illness, and is associated with particular diagnostic clusters. As a demographic variable, it can be compared with the characteristics of the population area served, to assess issues of accessibility or unintended exclusion of age groups. When linked with other data in the MHSIP data sets, it has relevance to issues of appropriateness and equity of treatment.**

9. Race[(9)]

American Indian/Alaskan Native - A person having origins in any of the original peoples of North America and who maintains cultural identification through tribal affiliation or community recognition.

Asian or Pacific Islander-A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes, for example, China, India, Japan, Korea, the Philippine Islands, and Samoa.

Black/African American - A person having origins in any of the black racial groups of Africa.

White - A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

Other-A default category for use in instances in which the patient is not classified above or whose origin group, because of area custom, is regarded as a racial class distinct from the above categories. Appropriate details should be maintained.

Comment: **See next item.**

10. Hispanic origin

Hispanic origin - A person of Mexican, Puerto Rican, Cuban, Central American, South American, or other Spanish origin or descent, regardless of race:

-Mexican/Mexican-American

-Puerto Rican

-Cuban

-Other Hispanic

-not of Hispanic origin

Comment: **Items on the race and ethnicity of the clientele are important for both epidemiologic reasons and for comparisons with the population characteristics for the area served. Issues of accessibility, appropriateness of service, and equity can be examined.**

11. Current marital status

Never married

Now married

Separated

Divorced

Widowed

Comment: **Persons whose only marriage had been annulled are classified as never married. Individuals living as married are counted as married. Individuals reporting as separated (either legally or otherwise absent from their spouse because of marital discord) are classified as separated. Categories are compatible with the U.S. Census. Therefore, the item is of value in calculating rates of representation within an organization's case load in comparison to the overall population served. In addition, marital status has implications for prognosis (e.g., potential availability of a support system), and figures significantly in the epidemiology of mental illness.**

12. Veteran status

Not a veteran

Yes, has served on active duty

Comment: **A veteran is any person who has served on active duty in the armed forces of the United States, including the Coast Guard. Not counted as veterans are those whose only service was in the Reserves, National Guard, or merchant marines. Veteran status may be associated with particular diagnostic clusters or presenting problems, and may also be a pointer for the need to check on patient history in other mental health service systems.**

13. Legal status

Voluntary - a person who voluntarily seeks admission

Involuntary civil - a person committed for a non-criminal proceeding, whether for purposes of examination and observation or for treatment, either by a physician's certificate, a court proceeding, or police or related agencies.

Involuntary criminal - a person committed pursuant to one of the following:

- charges and/or convictions pending

- determination of competency to stand trial

- found "not guilty by reason of insanity" or "guilty but insane"

- determination of sexual psychopathy and related legal categories

- transfers from correctional institutions

***Comment*: The item is of profound importance to understanding variations in differential length of episode/contact with an organization or in the types of services a patient may receive. In addition, it helps to characterize important variations in patient mix across mental health organizations, which can explain staffing variations and cost differences.**

14. Coded area of residence prior to admission to organization

Zip code and county code

No fixed address

***Comment*: The address of the client's residence should be recorded in the original clinical record in sufficient detail so that it can be coded as above. In public organizations, the State mental health agency may promulgate a coding scheme for the State. However, it should be capable of providing the zip code or county code. Most mental health organizations have a relatively targeted geographic area from which clients come. The item, therefore, is a de facto characterization of the service area of responsibility. This is sometimes referred to as the "market area." When further related to population characteristics such as those derivable from census data, viz, the Health Demographic Profile System (NIMH 1984a), the item enables the organization to check the degree to which patients come from areas within its service region that are associated with a high risk of mental illness.**

15. Current coded area of residence

Zip code and county code

No fixed address

***Comment*: In addition to the comment on the previous item, also applicable here, patient residence may have changed in the period around the time of admission, or it may change during an episode of care. This information may be of value in understanding the case, in prognoses, or it may tell the organization that it must transfer responsibility of the patient to another setting.**

16. Presenting problem(s) at time of admission

Each applicable category should be indicated.

Marital/family problem

Social/interpersonal (other than family problem)

Problems coping with daily roles and activities (includes job, housework, daily grooming, financial management, etc.)

Medical/somatic

Depression or mood disorder

Attempt, threat, or danger of suicide

Alcohol

Drugs

Involvement with criminal justice system

Eating disorder

Thought disorder

Abuse/assault/rape victim

Runaway behavior

***Comment*: The list of presenting problems is representative of the vast majority of descriptors used by mental health organizations to label or categorize the reasons why patients are entering for services. Many organizations find these listings to be as valuable as diagnostic groupings in describing their case loads. That is, they are used as both a complement and an alternative to diagnosis in presenting typologies for the clients served. Presenting problems are frequently used in the development of treatment plans, as they highlight salient areas for treatment and monitoring.**

17. Diagnosis-admission, most current or updated, and discharge

Coding should be derived from the current Diagnostic and Statistical Manual of Mental Disorders (DSM) of the American Psychiatric Association or the International Classification of Diseases (ICD).

If using DSM-III-R: Five digit code(s) for Axis I (clinical syndromes and V codes), Axis II (developmental disorders and personality disorders), and Axis III (physical disorders and conditions). For multiple diagnoses involving Axes I and II, the principal diagnosis should be noted. For multiple diagnoses within an axis, the diagnosis noted first is to be regarded as the one that is the focus of attention or treatment.

If using ICD-9-CM: Five digit code(s) for all diagnoses that apply, with the principal diagnosis (the one that is the focus of attention or treatment) listed first.

***Comment*: It should be assumed that the diagnosis appropriate to the type of record or report is provided: For a discontinued patient, the discharge diagnosis; for a recently admitted patient, the admission diagnosis; and for a census report, the most current or admission diagnosis. While a case can be made for reporting a diagnosis at more than one time point, a management use would need to be articulated. The issue of concurrent disabilities among clients who are mentally ill is a critical one to many organizations. A count of such individuals is an important piece of descriptive information. The DSM multiaxial system obviates the need for additional, cumbersome coding to assist in the identification of patients with multiple disabilities. Of concern are such groups of the mentally ill who also are diagnosed with substance abuse problems, communication disorders, visual or hearing impairments, physical/medical problems, and those who are developmentally disabled or mentally retarded. If the ICD system is used, the recording of all diagnoses that apply similarly facilitates the identification of the multiply disabled. The issue is not whether the organization assumes responsibility for services related to concurrent**

disabilities, but whether patterns of service use differ as a consequence of the disabilities. That is, the presence of multiple disabilities may account for unique referral patterns, for whether case-management action related to the patient is appropriate, and, significantly, for whether patients who are multiply disabled place greater demands on the resources of an organization than other patients. For patients who are coded under alcohol or drug abuse disorders, it is advised that the data recommendations promulgated by NIDA/NIAAA be considered as an essential complement to the MHSIP data recommendations. Not only do these provide additional data of clinical relevance, but they will be of assistance in the case that specialized data reporting on these patients is required.

18. Severity of condition or level of functioning at admission

No minimum specifications

***Comment*: While partially redundant with a recommendation below to collect Axis V data, some indication of how dysfunctional the patient may be, that is, how incapacitated by the condition or symptoms, is considered important information. The ad hoc advisory group to the MHSIP commissioned a feasibility study to determine if there was an approach to the collection of data in this area that could be recommended for the minimum data set. It found no single approach that could be recommended at this time, but it did find substantial, worthwhile effort in mental health programs devoted to the measurement of the concept (Pokorny 1986). Therefore, it is recommended that organizations consider the collection of such data, but the MHSIP does not advise on the approach to be used. Severity as a descriptor of the client population can be a potent piece of information. It maybe used to examine the level of care being provided to a patient or the appropriateness of the patient's placement. Severity is generally assumed to account for more variance in the resources consumed (e.g., the length of stay) by patients than do many other variables (Jencks et al. 1987). Thus, it may be associated with differences within and between organizations on costs, staffing configurations, treatments, etc. Level of functioning is often the concept organizations use when they are attempting to measure the change in their populations associated with the receipt of treatment services. That is, data on level of functioning are likely to be associated with outcome studies, and collected to show change in pre- and post-assessments. Because of design complications in these types of studies and the difficulties in making correct inferences, it should not be assumed that mere availability of these data for multiple time points permits outcome studies to be done. Therefore, organizations considering the minimum under this item should adopt a measure of severity or functioning related to the patient's condition at admission. This provides useful data with which to describe the population served by the organization. There is much to be said for periodically updating this information during treatment. Clinicians in particular may find that in individual cases, a change in severity or functioning has clinical significance. Assigning a severity/functioning assessment at the time of discharge or administrative termination can also provide valuable descriptive data. The MHSIP remains wary about the use of these types of data in aggregate, however, especially to make claims about treatment or clinician effectiveness. Additional data and controls are needed before such statements can be made with certainty.**

19. Chronicity of mental illness

According to a documented operational or functional definition maintained by the organization, patients can be classified as chronically (severely and persistently) mentally ill or not.

Yes, the patient meets the definition.

No, the patient does not meet the definition.

Not applicable; the organization does not maintain an operational or functional definition.

***Comment*: As this report is issued, a work group representing research, treatment, advocacy, and management issues relevant to this special clinical population is preparing a set of operational criteria that will better identify this group. One of the work group's concerns is that the criteria be useful and feasible for implementation at the service-provider level for inclusion in a decision support system. These criteria will be valuable in supplanting this item. Until their recommendations are available, the MHSIP would recommend that this population be identified by considering data from items 17, 18, 19, 20, and 22 of this data list, and the second item from the other recommended data list (see below). It is strongly recommended that service providers significantly involved with patients who could be described as "severely and persistently mentally ill" be able to cite criteria that support the assignment of such a label. If these criteria are available, the organization may wish to replace the categories above with its criteria in the decision support system. if the data on this characteristic need to be reported externally, they can be reformatted to match the above minimum categories. In the absence of a documented standard, it is recognized that the basis for comparing data on this item is compromised. However, the population is of extreme significance, while simultaneously presenting the problem of being more difficult to identify than other special populations (e.g., multiply disabled, children, frail elderly, homeless). In addition, there is every expectation that minimum criteria will be available shortly.**

20. Eligibility determination

In reference to either the Supplemental Security Income (SSI) or Social Security Disability Insurance (SSDI) programs of the Social Security Administration, the patient should be typed as one of the following.

Eligible and receiving payments

Eligible but not receiving payments

Potentially eligible, i.e., the case has not yet been submitted for determination or is in the process of determination

Determined to be ineligible, i.e., the case has been submitted and reviewed and a decision of in-eligible was returned

Not applicable

***Comment*: The degree to which a client is disabled by a mental illness is an important factor in the identification of the chronically, severely mentally ill. The more objective and uniform this determination of disability can be, the more valuable the information for use in the reliable, valid classification of the chronically mentally ill. The referenced programs of the Social Security Administration contain both criteria and a determination review that include mental illnesses among the disabilities that qualify a person for payments from these programs. Thus, patients who have been reviewed under these programs can be more confidently included or excluded from the count of persons with chronic mental illnesses. Furthermore, the patient's eligibility for these programs has income consequences for the organization, because reimbursement for services through Medicare or Medicaid may be possible. Payments to patients can also be used to provide residential care in noninstitutional settings.**

21. Source of referral (as arranged by one of the following):

Self

Family or friend

Police (except court or correction agency)

Court or correction agency

School system or education agency

Social service agency

Inpatient/residential organization (indicate specific type)

- State or county psychiatric hospital

- General hospital inpatient psychiatric program

- Other inpatient psychiatric organization Alcohol treatment inpatient/residential organization

- Drug abuse treatment inpatient/residential organization

- Nursing home, extended-care organization

- Community residential organization

- Other (detail should be maintained)

- Other referral source (indicate specific type)

- Multiservice mental health agency (including community mental health centers)

- Outpatient psychiatric service or clinic

- Private psychiatrist

- Other physician

- Other private mental health practitioner

- Partial day organization

- Shelter for the homeless/abused

- Alcohol treatment organization other than inpatient/residential

- Drug abuse treatment organization other than inpatient/residential

- Other (detail should be maintained)

***Comment*: This is valuable information in a marketing sense, as well as in a clinical sense. Managerially, it i prudent to know the sources that are referring patients to the organization. Such information is of value it'. taking actions in the resource acquisition area. Clinically, the source of referral is a variable of potential significance in developing a typology of clients and in under standing the course of the episode of illness, differences in utilization patterns, or the patient's prognosis.**

22. History of use of mental health services prior to most recent admission to the organization

Previous treatment by mental health organization of any kind

No

Yes

If yes, previous treatment within the past year

No

Yes

If yes, previous treatment by this organization

No

Yes

If yes, program elements in which previous services were received (each applicable category should be completed)

Inpatient Yes/no/not applicable

Residential Yes/no/not applicable

Partial day Yes/no/not applicable

Outpatient Yes/no/not applicable

Case management Yes/no/not applicable

Emergency Yes/no/not applicable

***Comment*: Whether the client has had prior mental health treatment may serve as an important indicator of whether the patient has chronic mental illness, flag the organization that it may be valuable to seek information on the prior episode(s), and it could help to anticipate imminent and future use of services. The recency of the past episode(s) may also be of clinical value, but the time period may vary as a consequence of the disorder. A year is offered as the minimum, but the organization may find other time periods are advisable. Within an organization, the linkage of data on previous episodes is frequently not done. This item reinforces the importance of**

examining the patient's prior care within the organization and noting the program elements in which the care occurred. This operation, as well as the data, may produce desirable efficiencies in staff time and clinical treatment.

23. Residential arrangement-admission, most current or updated, and discharge

The patient's usual residential situation or arrangement is classified as follows.

On the street or in a shelter for the homeless

Private residence/household

Other residential setting

Jail or correctional facility

Other institutional setting

***Comment*: It is assumed that the residential arrangement is related to the type of report or record. For discharged clients, the setting to which the patient is being released should be indicated. If the residential arrangement over time is to be reported, a management use needs to be articulated. Availability of a support system is regarded as significant both in the etiology and prognosis for a mental illness. The residential arrangement provides a ready indicator for the potential for such a support network. It has at least face validity bearing on the stability or stressfulness of the patient's residential arrangement. Importantly, changes in a patient's residential arrangement during treatment are regarded by many clinicians as instances in which the client may need special attention due to increased stress.**

24. Living arrangement-admission, most current or updated, and discharge

The patient's usual living arrangement is classified as follows.

Lives alone

Lives with relatives

Lives with nonrelated persons

***Comment*: It is assumed that living arrangement is related to the type of report or record. For discharged clients, the living arrangement to which the patient is being released should be indicated. In conjunction with the previous item, an indication of the extent to which a social and support network is available to the patient can be derived. However, assumptions about stability and stress around different living arrangements cannot be made; they must be judged on an individual basis.**

25. Expected payment source

None, organization to absorb total cost

Personal resources (patient's or patient's family)

Commercial health insurance

Service contract (i.e., contract with an employee assistance program, health maintenance organization, public mental health authority, etc., to provide mental health services under a written agreement on a fee-for-service, capitation, or lump-sum basis)

Medicare (Title XVIII)

Medicaid (Title XIX)

Veterans Administration

CHAMPUS

Worker's compensation

Other public sources

***Comment*: As part of the intake process, it is extremely common for prospective patients to be required to indicate how their bills will be paid. In many instances, and for many reasons, the source indicated early on is different from the source that actually pays. However, because of iterative billing, last-party-of-responsibility determinations, and the nature of reimbursement from many public programs, it can be quite difficult to indicate actual source of payment. Expected source of payment can be important information to help an organization describe its clientele. It also serves as a marker to determine if treatment strategies, amount of treatment, or assignment to particular types of staff correlates with expected payment source.**

26. Discontinuation status

Transferred - responsibility for the patient officially accepted by another organization and patient transferred to that organization

Administratively discontinued (no contact with organization for 90 days)

Patient/client died

Patient/client terminated services against advice

Patient/client lost to contact

Discharged - treatment completed; no referral

Discharged - additional services advised; no referral

Discharged - additional services advised; referral made

Not applicable

***Comment*: Organizations may maintain many more options than this minimum listing. Patients who have eloped or are a.w.o.l. (absent without official leave) should be categorized under the "against advice" category. Patients on trial leave, weekend passes, etc., or who are otherwise assumed to remain under the clinical responsibility of the organization are not considered discontinued, i.e., the item is nonapplicable. They should not be reported in one of the**

discontinuation categories until the category is appropriate. Patients who are the organization's responsibility under a time-limited court order or service order and who then return to the responsibility of the originating agency may be counted in either the "transferred" or "discharged, with referral" categories. Which category depends on the nature of the arrangement or organization policies. Organizations differ markedly on their policies regarding the issues of transfer, discharge, referral, and elopement. A client in one organization may be shown as transferred while the identical circumstance in a different organization is counted as a discharge with referral. This must be accepted. Nevertheless, these categories suggest potentially different cohorts of patients who may exhibit different patterns of service use, or follow particular paths through an organization or organized system of services.

27. Referral upon discontinuation

No referral (self, family, friend took responsibility)

Inpatient/residential care (indicate specific type)

- State or county psychiatric hospital

- General hospital inpatient psychiatric program

- Other inpatient psychiatric organization

- Alcohol treatment residential organization

- Drug abuse treatment residential organization

- Nursing home/extended care organization

- community residential organization

- Return to penal/correctional institution

- Other (detail should be maintained)

Other referrals (indicate specific type)

- Multiservice mental health agency (including community mental health centers)

- Outpatient psychiatric service or clinic

- Private psychiatrist

- Other physician

- Other private mental health practitioner

- Partial day organization

- Returned to court for adjudication

- Alcohol treatment organization other than inpatient or residential

- Drug abuse treatment organization other than inpatient or residential

- School system or education agency

- Social service agency

- Other (detail should be maintained)

***Comment*: As with the source of referral item, knowing the organizations to which patients are referred is valuable marketing information. It also may prove useful in utilization and quality-assurance reviews, in which patterns of use and case disposition can be examined in relation to clinical factors or potential patient typologies. In some instances lengthy treatments are also accounted for if one understands that appropriate referrals may not be available. However, the latter represents a type of important data that is not typically associated with a decision support system.**

28. Current primary therapist or case manager

Name or identification number of organization staff who is currently the client's primary therapist, case manager, or advocate

***Comment*: Most organizations typically assign responsibility for each patient to a staff member of the organization. Some may actually build in administrative tension by having two different parties take responsibility for different aspects of treatment. Being able to aggregate patients assigned to particular staff provides a useful report about current case loads and the types of clients assigned to types of staff. It allows a linkage to other MHSIP components, viz, event and human resources, to determine the degree to which the primary therapist, case manager, or advocate is involved in the provision of services. It is also recognized that ibis assignment shifts during the client's episode of care. The organization may find it useful to track this, but at minimum, the criterion remains the current responsible staff.**

29. Date of report

Month, day, year

***Comment*: The report date allows for data to be aged and for other calculations using patient/client items such as date of birth, date of last service, etc.**

Other Recommended Data Items

The following items are recommended for inclusion in a service provider's information system. They are not listed as minimum, however, because they are of less significance to decisionmaking or because of difficulties in specifying uniform categories. Like the previously mentioned items, basic categories have been specified for recording. This ensures that organizations collecting the data have a basis for comparison, while permitting them to collect more detail, if appropriate.

Diagnosis

Using DSM-III-R, Axes IV (severity of psychosocial stressors) and V (global assessment of functioning).

***Comment*: This not only provides a diagnostic profile on all five of the DSM axes, but also provides added useful additional data. Especially of value to the organization may be the use of Axis V as a de facto measure of severity.**

Duration of disability

For patients who are disabled by their psychiatric condition, an indication of the length of time for which the disability has existed:

A year or longer

Less than a year

Not applicable

***Comment*: Disability is usually interpreted from the perspective of the patient being able to participate in work or work-like situations or being able to discharge major role responsibilities. This information is used widely as one of the considerations in identifying the severely mentally ill. It attempts to categorize whether the patient's psychiatric condition has disabled the patient for an appreciable period of time. Duration of disability figures importantly in the Social Security Administration's review under both the SSI and SSDI programs. It is not synonymous with the date for the onset of the patient's condition.**

Handicaps/impairments (other than mental illness) at time of admission

Developmental disability/mental retardation

Organically based problem in expressive communication

Blindness or severe visual impairment

Deafness or severe hearing loss

Nonambulation or major difficulties in ambulation

Moderate-to-severe medical problems

***Comment*: Each applicable category should be indicated. This item is offered because many mental health programs lack the diagnostic expertise to use the three DSM axes recommended in item 17 (above). This would result in loss of information about the multiply disabled.**

History of use of mental health services prior to most recent admission to the organization

If inpatient, number of admissions:

Within the past year

Ever

***Comment*: The additional categories round out the data provided under item 22. The recency and**

total numbers of inpatient episodes contribute to the profile of patients who may be especially problematic cases and place special demands on the resources of the organization.

Education at time of admission

Never attended school

Special education

Preschool/kindergarten

Some elementary school (grades 1-7)

Completed elementary school (grade 8)

Some high school or vocational education (grades 9-11)

Completed high school or vocational education (grade 12 or high school equivalent)

Some college (less than 4 years)

Completed college (4 or more years)

***Comment*: For patients with special education, there may be an interest in obtaining additional information on the number of years in special education or the type of education provided. Educational level is frequently used in determination of socioeconomic level. The latter is strongly associated with epidemiologic patterns. Individuals with different education levels may show systematically different patterns of contact with mental health organizations, use different points of access, or show preferences for only certain types of program elements. These patterns may be judged clinically or financially unacceptable. Education levels may also be associated with particular patterns of service configurations provided to patients, which the organization may identify as potentially discriminatory or clinically questionable.**

Employment[(10)]

Employed, including on vacation or sick leave

Part time

Full time

Unemployed

On layoff from job

Looking for work; available to accept a job during the past 4 weeks

In the Armed Forces

Not in the labor force

Homemaker

Student

Retired

Resident/inmate of institution

Other (e.g., volunteer worker, disabled)

***Comment*: Employment is correlated with socioeconomic level. The item may also play a role in understanding service patterns in areas marked by recent employment changes. It may also correlate with a number of other items such as severity of mental illness, eligibility determination, and expected payment source and, thus, contribute to the development of client typologies.**

Annual gross income and number of dependents

Total annual gross household income, as well as the number of household members dependent on that income

***Comment*: These data are critical in determining socioeconomic level and would contribute to the development of client typologies that are fundamental to analyzing equity, patteflis of service use, and prognoses.**

Income-principal source

Employment/wages

Public assistance

Other

***Comment*. See above comment.**

Coverage

The MHSIP recommendation is that the items in the minimum data set be collected on 100 percent of the registered patients/clients of the organization, and as many of the items as possible should be collected on the nonregistered clients. The process of intake, registration, or admission is so routine in mental health organizations, and is the source for so many of the minimum items, that issues of burden evaporate. Other items in the minimum set are collected or updated at one time of service provision, during discharge planning, or as part of periodic reviews of clinical records. As noted elsewhere, how much of this information also besides in the clinical record, how much additional information is keyed into the decision support system, how frequently it is reported out, to whom it is reported, and in what style are issues for resolution within each organization.

Summary

The minimum data set for patient/client data:

1. Organization identifier

2. Client status

3. Unique patient/client identifier

4. Date of most recent admission to organization

5. Date of discontinuation/discharge/death

6. Program element activity

7. Sex

8. Date of birth

9. Race

10. Hispanic origin

11. Current marital status

12. Veteran status

13. Legal status

14. Coded area of residence prior to admission to organization

15. Current coded area of residence

16. Presenting problem(s) at time of admission

17. Diagnosis

18. Severity of condition or level of functioning at admission

19. Chronicity of mental illness

20. Eligibility determination

21. Source of referral

22. History of use of mental health services prior to most recent admission to this organization

23. Residential arrangement

24. Living arrangement

25. Expected payment source

26. Discontinuation status

27. Referral upon discontinuation

28. Current primary therapist or case manager

29. Date of report

Chapter 6

Event Data

Mental health organizations are service organizations. They exist to provide mental health services to patients. Their staff either provide services directly to patients or facilitate the provision of services to patients. To manage these organizations satisfactorily, it is not enough to know static pieces of information, such as the characteristics of the staff, the amount of service the organization provides, and the characteristics of the patients receiving the services - the kinds of data that were provided by the initial statement of the MHSIP. Not only are some key pieces of information missing, but one cannot address the relationship between these three sets of data. Managers in mental health organizations need to be able to address: Who receives what from whom at what cost and with what effect. By accumulating and analyzing these data, rational and defensible decisions can be made about allocating staff and resources within the organization, meaningful evaluations of staff performance can be started, a basis for measuring treatment effectiveness can be developed, and a start can be made on discovering the most cost-effective treatment methods. To move toward the availability of this type of integrated data, an event component is being introduced into the MHSIP. In addition to supplying data that reflect the activities and services provided, i.e., addressing the receives what performance area, the event component is the mechanism that allows linkage between the MHSIP components. Thus, it plays a dual role in the Program.

What Is an Event?

An event is characterized as

a transaction between a staff member of a mental health organization and a client in which a significant activity occurs;

a significant action by a staff member on behalf of a client, i.e., interviewing a collateral, providing various kinds of adjunctive services, and many case-management activities;

other actions by staff that facilitate the provision of services to or on behalf of patients, i.e., activities that support the continued operation of the organization.

The event data system refers to the method of collecting, categorizing and reporting data on the transactions that involve patients and/or staff members in a mental health program. At the service-provider level, it is intimately associated with billing, activity tickets, or staff logs - all methods widely used in mental health organizations to collect information on staff activities; what was received by, done for, or done to the patient/client, or what was done to support the organization itself. In its simplest expression, an event is a therapy session with a staff member in an outpatient setting and an individual client. In more complicated situations, an event can involve more that one staff member, more than one activity, and more than one client. The latter might be the case in a partial day program element, in which the organized program of service

entails a clinical team that provides a small group of patients with a service package; it might consist of group therapy, medication, rehabilitative skill training, and case management.

Event vs. Unit of Service

The latter example points to the need to distinguish an event from a unit of service. In chapter 2, a service was identified as a cluster of activities that shared similar targets, characteristics, or goals. A unit of service is usually a concept intended to categorize or measure production outputs or capacities and intimately associated with the costs of doing business and the way an organization prepares its bills.

For mental health programs, production is a reflection of full agency effort and, therefore, all activities must be factored into the agency's costs and reflected in the units that are billable. A billed unit of service reflects both clinical activities provided and activities that contribute to overhead. Thus, units of service are aggregates of behaviors or actions that have the potential to be more discretely identified. For example, in the partial day program above, the unit of service may be a 3- to 5-hour partial day session with a group of clients. When a client or a third party receives a bill, it is for this unit of service. The billed unit of service reflects not only the distinct actions directed to the patients, but the actions that constitute the overhead costs of sustaining the program as well. These more distinct behaviors and actions constitute what is meant by events. For a manager trying to understand agency effort and what constitutes the makeup of the organization's cost of providing a unit of service, it is necessary to know what events contribute to these units of service. It is important because organizations that appear to offer the same unit of service may find that such units are made up of quite different events. That is, two psychiatric inpatient settings may each agree that they provide a unit of service labeled a "patient-day," but what occurs during these units of service may differ substantially between the two settings. This variability can explain why costs differ, why patients do not move through one program as quickly as another, and why staffing configurations vary. In short, there is no guarantee that the concepts of unit of service or service production are similarly understood or decoded by mental health organizations. For standardization, additional abstraction or definition is required; hence, the event. It was suggested earlier that similar measures of effort or units of service are distinguishing conceptual features of program elements, i.e., an inpatient program element produces different units of service than an outpatient program element. Accordingly, units of service must be differentiated by the program element to which they are ascribed. For the program elements identified in chapter 2, the units of service are:

Program element: **Unit of service**
Inpatient: **Patient day - 24-hour period or any portion of the day during which a patient was the clinical responsibility of that program element.**

Residential: **Residential day 24-hour period or any portion of the day during which a patient was the clinical responsibility of that program element.**

Partial day: **Partial-day session - a continuous period, usually of at least 3 hours and always less than 24, during which a patient or group participates in the receipt of services from that program element.**

Outpatient: **Outpatient hour - a continuous period measured in fractions or multiples of an hour during which a patient or group participates in the receipt of services from that program element. Many outpatient program elements find it necessary to detail their units of service in fractions of hours because of the nature of their business (e.g., medication checks). An accepted convention in mental health service is that continuous service for a period of 45 to 50 minutes is usually**

rounded to 1 hour rather than reported as three-quarters of an hour.

Case management: **Case-management hour - a continuous period measured in fractions or multiples of an hour during which a patient participates in or benefits from the receipt of services from that program element.**

Emergency: **Emergency hour - a continuous period measured in fractions or multiples of an hour during which a patient participates in the receipt of services from that program element. For comparability across emergency program elements, those elements providing emergency services as days (e.g., crisis stabilization for up to 72 hours) should have the ability to report their units of service based on an emergency-hour.**

The unit of service is used managerially to compare and assess similar program elements on their productivity, potential productivity, or efficiency. These comparisons range in complexity from examining simple tabulations of numbers of units of service to complex ratios involving data from other MHSIP components. For example, units of service can be linked with staffing data as ratios of production to numbers of staff or to numbers of hours of staff (usually referred to as full-time equivalents, or FTEs). Units of service can also be linked to financial data to provide one of the most sought-after management measures in mental health: the cost per unit of service. More is be said about this in a subsequent chapter.

The Rationale for Event Reporting

Unit of service measures are invaluable as management information. However, their aggregate nature can be a hindrance to decision makers because it tends to mask a considerable amount of detail. This detail can be critical in reconciling differences between similar program elements. Although knowing variations in patient types and the staff mix among these program elements is helpful, this information, too, can be limited. For managers to analyze performance, a more basic unit of measurement is required. This is where the event enters. The event is thought of as a more finite, specific piece of information that is usually based on the behaviors or actions of the staff of the organization. Furthermore, the behaviors of all the staff affect performance. While a manager's primary concern may be on transactions with a clinical orientation, in order to understand performance and costs, it is ultimately necessary to examine both services to patients and the activities of the staff. Staff in many program elements who submit daily activity logs or service tickets are familiar with the notion of events and event reporting. Such tickets or logs frequently help to drive the billing system and are commonly associated with outpatient care. In other program elements, the idea that staff may be required to report, even on a sample basis, any detail about their activities may meet with resistance. Staff who do not get involved with actual clinical service provision, e.g., office workers, maintenance staff, administrators, etc., may view the suggestion that event data be collected from them as heretical. As this section attempts to clarify, all staff of the organization have to participate in event reporting. Some need to do this continuously, on a 100-percent basis; others need to participate only during sample periods. As noted above, the event data system refers to collecting, categorizing and reporting data on the activities that involve patients or staff members in a mental health program. This event system is critical for a number of reasons. First, it is critical to the integration of data in an organization's decision support system. This is clarified as the chapter discusses the minimum data items to be included in event reporting. Task force members saw no mechanism other than event reporting that would permit this integration. Second, an event data system is critical to understanding the unit of service. Events are the building blocks from which units of service are constructed. Some part of a unit of service for a program element consists of clinical transactions, either provided directly to clients or performed on their behalf. Other parts of the unit of service within a program element consist of behaviors that are nonclinical, e.g., administrative actions, reports,

meetings, downtime, leave, etc. Still other parts of the unit of service consist of behaviors and actions that have been distributed or allocated to the program elements, e.g., the time used by a payroll office may be allocated to the program elements based on their number of employees, the dollar amount of their payroll, etc. All these behaviors and actions must be factored into units of service if one is to understand them as indicators of productivity, and if one is to understand their cost structures. Event reporting creates the mechanism by which staff can provide the detail needed for either the construction or the analysis of units of service in program elements. Third, an event data system meshes well with a substantial volume of data collection occurring in many program elements. Probably the only exceptions are the inpatient and residential program elements. In most of the others, the collection of detailed information on the actions that transpire is quite common. This is attributable to such management actions as

acquisition, i.e., the intent to submit a bill for the service;

accountability, i.e., the need to satisfy a quality-assurance requirement or to make an entry into a clinical record;

monitoring, i.e., a tally of some type of utilization data.

In addition to these management needs, as more regulatory bodies are involved with mental health service providers, and as more auxiliary levels work with providers to supply additional types of information, the prevalence of event reporting is increasingly reinforced. Finally, the relationship of staff, client, and activity, brought together by an event data system, is essential information when a manager of a mental health organization considers issues of cost, especially differential cost among similar program elements. Focusing on only one of these pieces of information may be inconclusive. Differences attributed to different patient populations imply that needs for service and, thus, staffing types explain the cost variations. Cost differences attributed to staffing configurations imply that the mixes are needed because of different treatment populations and their service needs. Differences in service provision imply that patient needs and staff competencies account for the cost variations. Unless the amount of time that types of staff are spending on different activities, with different clients, can be computed, the manager cannot understand how resources are being expended or why differences in resource consumption are occurring. It is only when these kinds of data are available and understood that the manager can sensibly propose alternative strategies. Otherwise, the manager experiments at random, by intuition, or accepts the patterns as they are. In summary, a system to capture event data is well integrated with the performance paradigm spelled out in chapter 3. It fosters not only the integration of the various performance areas, but provides the manager with a base for analyzing performance so that necessary corrective action can be better targeted.

Efficiency and the Event Data System

An event has various attributes in addition to the who, what, and whom. These include the time the event took place, the place where the event occurred, the duration of the event, its cost, and the result. All of these important concepts have to be considered in designing a statistical system to provide the data needed to manage a mental health organization. At the local organization level it is entirely appropriate to maintain considerable detail on events. This is the essential data needed for billing, clinical audit, and management analysis. In the explication that follows, this greater amount of detail is assumed. However, the examples are not meant to convey that as event data may be reported to auxiliary levels, the level of detail is constant. In order to keep this system reasonable and manageable, some condensation of detail is highly advisable, as event data move from the provider level to auxiliary levels. This becomes apparent in a later section dealing with data at the auxiliary level. The event system is based on staff members reporting their

activities. A major challenge in developing an event system is to design a method for staff to do this reporting with the least possible burden. The vital currency in any mental health program is staff's time, and the goal should always be to maximize the most productive use of staff time. It would be ideal if data were available on each staff member in every program element for every activity performed for each working day. These data would include a code description of the activity, the identification of the patient or patients involved, and the identification of the place where the activity was occurring. Automation would be needed to handle such volume. Such a system would allow detailed summaries to be prepared with basic data about staff and patients that outline service costs, individual staff productivity, and many other analytic tabulations. This ideal system, however, would require a substantial investment of staff time in recording and managing the system, as well as a major investment in computer hardware and software. The recommended details of event reporting that follow are an attempt to provide for as many of the values of this ideal event data system as possible, while minimizing the investment of staff time in recording and also minimizing the associated data processing costs.

Recommended Guidelines for the Collection of Event Data by Staff

These guidelines provide recommendations for the collection of event data by staff members of mental health organizations. They are specific to two groups of program elements, the components of which were defined above:

1. outpatient, case management, and emergency

2. partial day, residential, and inpatient

They are also specific for two groups of staff:

1. direct-care staff

2. all other staff

Direct-care staff includes all staff, professional as well as nonprofessional, providing direct or adjunctive services to patients as defined in chapter 2. Examples of these services include

diagnostic examination

a treatment session or visit involving a staff member and a client

dispensing of medication

an interview with a patient's family member

a group session with several patients and several staff members

the participation of a patient in an occupational therapy session

a dental exam of a patient

contacting of other programs and agencies to determine if they can provide a needed service to a patient

Note that direct-care staff also includes individuals providing adjunctive services. This includes a wide range of case-management services, such as arranging for the patient to receive services from another agency; trying to locate the patient; securing program entitlements, such as income maintenance, housing, or food stamps for clients; or any other service or intervention on behalf of a client. It also includes staff work related to the patient's clinical record, such as contacting family members to obtain patient histories and making entries related to the treatment plan. Staff that meet neither of these criteria are referred to as all other staff. This includes office workers, administrative staff, maintenance staff, etc. For example, in the organization chart in figure 1, a consultation services component was shown. If staff assigned to this component provide only consultation and are never involved m direct or adjunctive care, they would be classified as all other staff. Exhibit 4 summarizes the two dimensions of consideration. The following text elaborates on the details within each cell, and on various data collection alternatives.

Exhibit 4. Recommendations for the minimum recording of events by type of event, time period, type of staff Involved, and program element

Program elements

Type of staff	Outpatient Case management Emergency	Inpatient Residential Partial day
Direct care	Report: All activities(11) Time period: 100 percent of time	Report: All activities Time period: Sampling window of a defined time period
All other	Report: All activities Time period: Sampling window of a defined time period	Report: Program element assignment only; by hours, if necessary Time period: Sampling window of a defined time period

Outpatient, Case Management, and Emergency Program Elements

Direct-care staff includes all persons - regular employees, contract employees, trainees, residents, volunteers, and attending staff-who engage in activities directly with or on behalf of clients. The recommended guidelines for direct-care staff in these program elements require these staff members to maintain a log in which they record all their activities. This staff log would record each event, including the minimum data about that event, and it would be maintained year-round. It could provide the basis for a patient and third-party billing system. As a routine function of the local organization, schedule and activity forms could be designed and provided to the staff, which would substantially reduce the data recording involved. The recommended guidelines provide that all other staff in these program elements maintain the same kind of log as the direct-care staff, but not all year-round. The recommendation is that these logs be maintained only for sample periods during the year. The exact frequency and length of the sample periods

can vary depending on the degree of change in the program over time, the need for current data, the size of the program, and many other variables. One schedule that has been found useful is 1 week each quarter.

Partial Day, residential, and Inpatient Program Elements

The recommended guideline is that direct-care staff in partial day, residential, and inpatient program elements maintain staff logs for sample periods during the year. It is recommended they record all their activities during that period. During these sample periods, the concept of a unit of service should remain as described above, i.e., an Inpatient or residential day or a partial day session, but this is not a meaningful unit of time for staff to use in reporting their activities. The recommendation is that during the sample periods, staff use actual time it takes for the activity. It then becomes possible to move in one of two directions:

1. To pull together those reports from the direct-care staff that accumulate to represent a day or session (i.e., a unit of service in a program element) or

2. To remain on a discrete level and analyze gross units of service by smaller units of time/activity.

The recommended guideline for all other staff in these program elements is that during sample periods, a person who works in more than one program element records the hours worked in each program element. If the staff member works exclusively in one program element, a staff log need not be maintained. That person's time is automatically defaulted to the program element to which he or she is assigned, and the hours are allotted to the appropriate activity category. In these three program elements, it is also necessary to maintain a patient attendance log. The expectation is that a patient attendance log is so fundamental that it probably would be available throughout the year. If not, it should be maintained at least to correspond to the sample reporting period. The log is used to provide the roster of patients to whom events may be directed. In some instances a patient may be in the log, but not identified in any of the staff event reports. Also, in some instances the event is directed to all patients in the log, and to list them uniquely on a staff person's log would be inefficient. In the partial day program element, the log would list the unique identifier for each patient in attendance each day, as well as the length of time that the patient was in attendance. The remaining information about the activities the patient received or participated in would come from the staff logs. In the residential and inpatient program elements, the log is also called a roll, roster, or census. It need only contain the unique identifiers of each patient and each day they are resident. Again, any remaining information about activities the patient received or participated in would come from the staff logs.

Justification for a Staff Log

The concept of event reporting is relatively straightforward. Managers are seeking basic data either on the services to patients or on the activities of staff. The mechanics of event reporting and the full use of event data are far more challenging than the concept, however. Minimally, one is seeking the association of a service event, the recipient of the service, and the provider of the service, i.e., who receives what from whom. This means there must be a method of making this association, and it must be built in to the mechanism for the collection of event data. The staff log is one such mechanism and is the basis for the event data system as it is described here. A staff log also provides a mechanism for gathering data on the events/activities of the nondirect-care staff. As stated earlier, the task force was able to conceive of no other mechanism than staff participation in the reporting of their activities that would make these data available. The staff log must contain all the information about the event itself. The minimum content is described

below. The log must also include identifiers of the staff member and the patient. However, there may be instances when the staff log does not contain patient identifiers, e.g., logs from administrative staff. Patient identifiers are needed on the staff log in order to bring together data about the patient and the staff with data about the event. Stated differently, it would be inefficient to require the staff log to collect data on patient characteristics repeatedly, or to include items about the staff person, when such data are already resident in the client and human resources components. By making the latter data accessible via the event report, they can be linked to data about the event.

Uses of Event Data

In programs or program elements that collect event data on a 100 percent basis, at least from direct-care staff, the most obvious use of data from the event component is for billing purposes. That is, the information can be obtained in a way that meets documentation or reporting requirements for the preparation and submission of a bill to the party responsible for payment. The other uses of data from an event component divide themselves into a dichotomy of event reports and event analyses. Event report is the term used when tabulations, summary statistics, and even statistical analyses are confined to the data items in the event component. These data are obtained via the staff logs. Event reports might cover the number of direct events provided, the number of patients receiving group therapy vs. individual therapy, the ratio of direct-service time to intraorganizational support, etc. Event analysis is the term used when additional data are merged with the event report to conduct more probing analyses of the event and which require the linkage of event component data with data from other MHSIP components.

Event Reports

Event reports are summaries of the data items that constitute the component. Most often these are descriptive statistics used for monitoring. More elaborate statistics can also be applied, especially if the event data are thought of as a longitudinal data base (i.e., changing over time), or if a manager is making contrasts among comparable programs and needs more than percentage or tally data (i.e., assessment of differential performance). Whether descriptive or more analytic statistics constitute the event report, there are three general clusters of event reports possible: type, volume, and location. In practice, these usually are not separated, i.e., the most useful management reports include all three.

***Type*. This is the most fundamental dimension on which to distinguish event data within an organization. Type reports summarize the kinds of activities that go on within the organization, usually by the volume of such events, their location (e.g., in a program element), or both. Data on event type may tell a manager in a quick fashion if certain types of events are occurring, e.g., adjunctive services in a case-management program, administrative and support services in an administrative unit, diagnosis and assessment in a testing services program, etc. As noted, these reports usually have some data on volume or location. However, event type examined over time provides a change profile of the organization - how activities are added or dropped in response to environments, patient types, treatment philosophies, payment sources, or management actions.**

***Volume*. Event reports focusing on volume present data on either numbers of events, the amount of time taken by selected transactions, or ratios contrasting different events, e.g., hours of direct service vs. scheduled staff time available. Volume reports presume that components of the organization have been clustered to be comparable either to one another or to other sources. Minimally, this implies that program elements are used to organize the information in the event report. As noted in chapter 2, comparing activity volumes across dissimilar program components is an empty exercise. Volume reports also presume that type of event is an organizing factor for**

the report. With volume data added to type, management reports are far more useful and may begin to suggest to managers what patterns of production need management intervention. Volumes are usually judged against some standard such as past patterns or volumes across similar programs. Thus, the occurrence of occasional variations in volumes of events may not necessarily signal a manager that intervention is needed. A flu virus may affect a program element one month, resulting in lowered billable hours and increased administrative hours. Maintaining certain levels of productivity, anticipating slack or high-demand seasons, observing a marked or slow decline in particular activities in a program element, and noting other time-related patterns are made possible by examining event volume statistics over time. Many of these changes may be in response to management intervention and, therefore, become assessment reports. Others may be occurring because of subtle changes in patient types, staff morale, or inadvertent management action. These reports serve a valuable monitoring function. The more marked or persistent such volume differences appear, the stronger the need for the manager to investigate.

***Location*. Within an organization, location event reports attribute activities to particular components, as well as to physical sites in many cases. Some components of the organization may be expected to engage in the majority of their events in particular locations. For example, a case-management program element or a consultation and education service within the organization may be expected to provide the majority of their events outside of the organization. If a location event report reveals that the events are not occurring in the location expected - for example, 80 percent of the case-management events occur on site - it prompts the manager to examine the situation further, inquiring about the cause or the accuracy of the data. Event reports combining data on location and event type can be quite useful for exception reporting, i.e., to detect the occurrence of events where they do not belong. Events that occur where they are unexpected or prohibited may be a sign of minor error in the system, or may be more serious and require management intervention. For example, staff in a consultation service might occasionally report that they provide direct service to a patient when they sit in on a therapy session. The addition of volume data enhances the value of these reports, especially for monitoring productivity of various organizational components. If the consultation staff report a direct-service event periodically, perhaps for 1 hour of a 35-hour week, this may be accepted. If the consultation service reports direct services for significant amounts of time, this may not be a situation a manager can accept sanguinely. As noted above, event reports are most useful when they combine type, volume, and location in one report.**

Event Analysis

Event analysis refers to the generation of information reports based on the linkage of event component data with data from other MHSIP components. While additional MHSIP components on the workforce and finances have yet to be described, the concept of linkage can still be discussed. This linkage was described earlier in this chapter, and it is made possible by the fact that the event component includes data items that overlap explicitly with data items in the other areas. Therefore, in using the event data component, it is possible to exploit simultaneously the content in these other areas. The obverse is true as well, i.e., in using the other components, it is possible to draw on the content of the event data base. Linkage with other data allows the event component to remain lean, while the value of the data expands exponentially. The types of reports possible with event analysis are exactly parallel to the basic information paradigm presented in chapter 3, viz, "who receives what from whom at what cost and with what effect". Whether the full paradigm is addressable depends on whether the organization has all of the information components in place with established linkage pathways. If these pathways exist, there are over 10 unique event analyses that can be generated from the four MHSIP data components, ranging from combinations of just two components to all four. Some of the more useful types of event

analyses follow:

1. Patients/clients and services received - Typologies of patients can be developed using the patient component and might include target groups based on age or clinical characteristics. It is then possible to analyze the service or specific activities these groups receive (or benefit from) by type, volume, and location. Such data are useful for utilization review and quality-assurance monitoring, demonstrating accountability of the service program, decisions about the distribution of resources, and assessments about the suitability of these patterns. Suppose that a provider operates a residential program for mentally ill young adults between the ages of 16 to 30, and observes that some residents are discharged after an average length of stay of 45 days, while the remaining residents have a length of stay at 150 days. Although the patient component alone would enable the manager to determine if there are clinical or demographic differences at admission between these two groups, linkage of patient data and event data would be of even greater value. This linkage might:

a. suggest a treatment model that could be used elsewhere,

b. uncover a pattern of service discrimination that requires correction, or

c. reveal problems both in efficiency and effectiveness, in which a service pattern is provided to a patient subgroup to which it is not appropriate.

2. Patients/clients and workforce - Because of cultural background, language skills, patient's diagnosis, or staff preparation, it is often assumed that certain staff/patient combinations are better than others. Event analysis provides a means of efficiently examining which staff are serving which patients. The manager may find evidence of desirable equal access by all types of clientele to all the direct-service staff. It is also possible for a pattern to emerge that the manager finds problematic, e.g., staff preferences that exert too strong a force on client assignment. Intervention or additional analysis may be necessary in the latter case. The manager, for example, may inquire about the type of staff providing services to the two resident groups with different lengths of stay. This might reveal that

a. Certain staff identifiers are always associated with one of the cohorts.

b. The treatment teams for the cohorts are systematically different on some dimension, e.g., case managers and skill rehabilitation trainers might be present on the short length-of-stay cohort.

c. Some match between clients and staff on some dimension might appear to be related to treatment, e.g., the level of patient's disability might correspond systematically with the professional level of the staff, language skills of the patient and staff, ethnicity, etc.

3. Workforce and services provided - Because of the intimate association between staff effort and program costs, the overall productivity by staff is a perennial concern for managers. Event analysis permits a useful, discrete examination of staff involvement in particular activity categories. This provides the manager with opportunities to understand the nature of resource consumption within various programs. For supervisors responsible for personnel guidance and evaluation, these data are also invaluable. They not only provide documentation, but also help develop career paths, select in-service or extracurricular training, or nip problems before they become disruptive. Staff may gravitate toward certain activities because of their interest and talent in performing them. On the other hand, the same pattern could make some staff feel they are stymied, being unfairly treated, or that their skills are being misused. In the residential example, the manager might inquire about the service profiles for similar groups of direct-service

staff. The data could be by hours in activities or, more useful, by portion of the total time available in selected activities or services. Both averages and ranges of service for that group could be examined. The latter would suggest whether there is wide variability and, therefore, whether additional probing is needed. A number of patterns might emerge, using the preceding example on length of stay.

a. Among the senior, higher trained, or team leader professionals, wide differences could occur in participation in direct treatment of patients.

b. Differential ranges of effort could be devoted to case management, clinical super-vision, and in-service training.

c. When activity profiles for individual staff are examined, similar professionals could show markedly different patterns, ranging from involvement in a wide assortment of activities to involvement in one or two categories.

4. Patients, services, and workforce interactions - Event analyses that seek to examine more complex interactions between the elements in the information paradigm can be daunting. They should be undertaken initially to understand the operation of the program, to suggest new configurations that might be more effective or efficient, or to investigate data patterns that cannot be understood otherwise. Managers will probably come to depend on them quickly. The fact that the event component makes them possible is the main point. The value of event analyses can be extraordinary, even if they are complex to do and to interpret. Continuing with the above example, a manager who has observed such a marked difference in a program element probably would not waste effort with the piecemeal analyses suggested above. Although they are valuable in raising questions and demonstrating linkages between components, separate analyses rarely provide satisfactory explanations. As should be evident, however, an event analysis that links clients, staff, and activities quickly provides the manager with insights about the nature of performance or cost differences. For the scenario created for the residential program, the following profile emerges:

a. The director of the residential program provides no direct services and distributes time between administration and community consultation. This director also maintains a private practice, and there is some concern that active management of the residential program is being ignored. Questions arise, therefore, about the actual nature of the community consultation.

b. The shorter length-of-stay cohort is served exclusively by one treatment team that is professionally staffed no differently than the treatment team serving the longer length-of-stay residents.

c. The shorter length-of-stay treatment team provides an intensive team workup on each of its new admissions and develops a treatment plan appropriate to the patient's strengths and problems. The latter is evident in that patients receiving higher amounts of individual and group therapy are rated as more disabled, and those receiving higher amounts of rehabilitative skill training and case management have been referred from an inpatient program. The latter group also exhibits the shortest length of stay.

d. The longer length-of-stay treatment team provides each of the patients with a similar profile of treatment, consisting of personal care provided by psychiatric nurses, recreation services provided by activity counselors, group therapy provided by social workers and weekly medication checks provided by a psychiatrist. This team, especially certain members, shows higher proportions of down time than the organization's standard, has above-average use of sick

leave, and shows little diversity in the service categories used by individuals reporting.

Many other facets could be examined-in service training directed to team members dealing with various resident types; team meetings on patients; the amount of clinical supervision provided to lower level staff by more senior staff; types of referrals and placements for discharged residents; recidivism rates for the patients from the two teams; revenues generated by teams; time devoted to work with collaterals, etc. Although the example is fictitious, it demonstrates that an event analysis capability added to the MHSIP helps the manager explore all the areas of the performance paradigm without resorting to ad hoc data or anecdotal reports from staff or patients. As noted, many unique event analyses are possible. In practice, not all of them are likely to be pursued as stand-alone reports. In remaining sections of this document, some of these analyses, made possible via event reporting, are reinforced.

Minimum Data Set(12)

The following items constitute the minimum data content for the event component of a provider-level decision support system. Each item is named, followed by either its minimum recommended categories or a brief explanation of its content. As noted in chapter 4, categories can be elaborated by the service provider depending on local needs. However, elaborations should always be designed to be collapsible into the minimum categories. This facilitates comparison of data with another organization or the reporting of comparable data to an auxiliary level. Comment sections follow the recommended categories. The comments are intended to explain the item further, discuss the importance or potential use of the data, or note advisable rules of interpretation.

1. Organization identifier

The 8-digit NIMH master facility number is recommended as the identifier.

***Comment*. Mental health organizations that are not aware of their NIMH-assigned facility code can obtain it from the Survey and Reports Branch of NIMH. If NIMH does not have the organization listed already, an identifier can be generated on request. Because the first two numbers in the NIMH code string always identity the State in which the organization is located, it may be possible to drop these from the string for routine local operations, and to develop a procedure to add them in automatically when preparing the data for external reporting purposes. As unique event data are maintained at the local level, it may not be necessary to have the organization identifier actually be a physical part of the data set. It is more important to be able to be able to append this when reporting externally for statistical, billing, or other purposes.**

2. Date of event

Month, day, and year

***Comment*: The date of the event is a key variable so that an information system can properly handle, assign, and operate with the other data in the event file. For the analysis of data by reporting periods and for use in relational editing using data in other components -especially client and workforce components - the date is critical.**

3. Staff member reporting

A unique identifier that can be used to associate the data in the human resources component or file with the staff member reporting.

***Comment*: As stated, this item provides the critical link to the data in the workforce file. See item 9 below for participation of other staff members.**

4. Program element identifier and attendance logs

A code identifying the type of program element under whose auspices the event occurred. Recommended categories:

Inpatient

Residential

Partial day

Outpatient

Case management

Emergency

Not applicable - event did not occur under auspice of a clinical program element

A patient/resident attendance log must be provided for inpatient, residential, and partial day program elements for each day on which events are recorded.

***Comment*: As noted earlier in the chapter, events, units of service, and costs may be unique to each program element. Thus, it is important to be able to partition the data initially so that meaningful aggregations are possible later. Program element definitions were provided in chapter 2. For inpatient, residential, and partial day program elements, a patient attendance log for each day of event reporting must also be submitted. This lists all patients by unique identifier (see next item) on the rolls/census of the program element for that day. If patients attend the partial day program for variable lengths of time, the hours in attendance must be included. The unit of service count for these program elements (i.e., days or sessions) is derived from these logs. Organization components that do not have a clinical orientation must still be accounted for, and their activities and resources must be distributed. For this reason, when staff logs are being maintained by staff in parts of the organizations that do not meet the program element definition, a "not applicable" category allows them to default their activities. Subsequently, the organization may distribute their time according to its allocation rules.**

5. Patient(s) Involved In the event

Unique identifier(s) that can be used to associate the data in the patient/client component or file with the patient(s) involved in the event.

***Comment*: This item provides the critical link to the data in the client component. Unique identifiers should be used under each of the following circumstances:**

If the activity is with a patient or on behalf of a patient.

If more than one patient is involved, the unique identifiers of each patient should be recorded.

If the activity is not with or on behalf of a patient but involves an organization or association, codes for these organizations or groups receiving services should be developed. This guideline includes the service organization itself as well as its program elements or components.

If the patient has not been admitted to or registered with the organization, nor assigned a unique identifier, then the sex, approximate age, and presenting problem should be recorded.

6. Type of event

Individual mental health organizations maintain considerably different schemas for the classification of the activities of their staff. This is encouraged, as is a rich amount of detail that can be justified for management, billing, or clinical accountability purposes. The categorization of events, transactions, or activities should be collapsible into the following recommended categories.

Direct-service events - face-to-face as well as other contacts (usually telephone) with patients/clients or groups of clients. Direct events are further categorized as to whether they are one of the following:

- Engagement and outreach events - activities usually directed to potential/nonregistered patients intended to establish trust and rapport, explain services and assistance available to the potential/nonregistered patient, and dispel likely or actual resistance on the part of the potential/nonregistered patient.

- Diagnosis and assessment events - activities intended to defame or delineate the patient's diagnosis and problems. These activities are used to document the nature and status of the recipient's condition in terms of psychiatric, psychological, interpersonal, somatic, social, or situational factors. They serve as the basis for formulating a plan for subsequent activities or services.

Diagnosis and assessment events usually include transactions such as examination (somatic or neurologic), testing, interaction, observation, interview, and laboratory work.

- Treatment events - activities based on the patient's diagnosis or problem intended to arrest, reverse, or alleviate the disorder or problem. Treatment events are most often provided in relation to a treatment plan and may be delivered to the recipient individually or as a group member.

Treatment events include such transactions as the administration of prescribed medications, medication checking and monitoring, behavior modification, psychotherapies, somatic therapies other than medications (e.g., electroconvulsive therapy), stabilization of crisis reactions or symptoms, social therapy (increasing patient awareness of interpersonal environment), and therapeutic education (information sharing or the development of recognition skills that help the patient to sustain adaptive functioning).

- Rehabilitation events - activities and services intended to train or retrain a patient to function within the limits of his or her original or residual disability. Rehabilitation events are most often provided in relation to a treatment plan and may be delivered to the recipient individually or as a group member.

Rehabilitation events include skill training in activities of daily living (e.g., personal grooming, eating) or instrumental activities of daily living (e.g., shopping, managing money, managing

personal possessions, housework, simple meal preparation, use of public transportation); special education; vocational training; mobility restoration or improvement; and activities that assist the patient to participate in recreation or hobbies. Note: if the activity does not involve training in activities of daily living or instrumental activities of daily living, it falls into the next group.

- Personal care events - life support activities and services provided to meet the client's needs for food, shelter, and safety.(13)

Personal care activities include assistance in the performance of activities of daily living; providing meals, shelter, or a bed; protective oversight; or transportation.

- Adjunctive service events - activities on behalf of a patient/client who is not present.

The vast majority of the events in this category are related to case management. They involve staff assessment of a patient's need for other services, entitlements, or care that may not be within the authority of the organization to provide. Staff may then develop a plan for acquisition of these services, link the client to the service or otherwise refer them, advocate for the client, and monitor the client's receipt of and benefit from these services. In addition, adjunctive services may include work related to the patient's record; clinical consultation within the organization about the patient's diagnosis, treatment, prognosis, or referral; and the collection of additional information on the client.

- Consultation service events - activities that benefit another organization, association, or group.

The recipient of these activities and services is from outside the organization. The activities are intended to impart knowledge about mental illness and mental health that aids in prevention, recognition of mental problems, appropriate referrals and linkages to treatment sources, and general improvement of understanding within the community of mental illness and its treatment. These services are often labeled "consultation and education."

- Administrative and support events - activities for the benefit of the organization that cannot be assigned to a specific patient or agency.

Meetings, training, research, supervision, travel, vacation, sick leave, report preparation, down time, etc., usually fall in this category. It also serves as the default category for activities that do not fit into any of the above event categories.

***Comment.* The minimum categories echo the service taxonomy dimension provided in chapter 2. These categories capture generic activity clusters that can be used to describe and analyze service profiles by patients, staff, program elements, and organization, i.e., both event reports and event analyses, as described earlier. They also may provide much of the data needed for use in the financial component, presented below, to calculate the cost of providing a unit of service within a program element. Of special concern may be the relevance of these categories to non-direct care staff. As discussed, if there is no management interest in knowing what makes up the employment time of these staff, there is little need for their participation in event reporting. For non-direct care staff with 100 percent of their time assigned to one unit, all their time maybe defaulted to the administrative and support event category. For example, the staff of the payroll office may not participate in event reporting for the sample period, and 100 percent of their time would be defaulted to a nonclinical care component, with the event type recorded as administration and support activities. If any of the nondirect-care staff spread their time among several components, e.g., maintenance staff, at a minimum they need to report their hours in these components.**

7. Scheduled event

Event was scheduled, i.e., the activity, patient, and staff involved in the event were known at least 24 hours in advance.

Event was unscheduled, i.e., the activity, patient, and staff involved in the event were not known at least 24 hours in advance.

***Comment*. For many mental health agencies, the bulk of daily activity consists of planned events, i.e., those that are known about, planned for, or scheduled in advance. It may also be important for quality-assurance purposes to know if the event coincides with a critical date established by the treatment plan, a judicial agency, third-party payer, etc. Some volume of unscheduled activity is also to be expected. High incidence might suggest the need for closer management attention to treatment plans, adequacy of care, quality of the scheduling system, or other contributing variables. The following conditions are also of significance:**

Nondirect care staff, such as administrative or maintenance staff, may not always know the specific activities they are to be involved in. However, in the event types in item 6, they do know they are administrative and support events. Therefore, it is anticipated that their time can usually be defaulted to scheduled events.

Staff involved in direct care may find unscheduled events in any of the event types. In emergency program elements, unscheduled events may be the norm. That is, staff in these program elements may know that they are going to provide activities in advance, but usually the recipient is unknown. In emergency program elements with an inpatient focus, e.g., 72-hour crisis stabilization, events subsequent to the in-take assessment are probably classifiable as scheduled.

8. Event duration.

Actual time staff member was involved in the reported event in minutes and hours

Event canceled by staff

Event canceled by organization

Patient failed to show

***Comment*. Event duration is critical data for tallying staff time, amount of service received by patients, and for bill preparation. When multiple staff members are involved in an event, it is not intended that the amount of time be multiplied by the numbers of staff present. For example, the event duration of two staff members involved in 60 minutes of group therapy is 1 hour, although each staff person receives credit for 1 hour of a direct treatment event. When multiple clients are involved in an event, each client is credited with receipt of that amount of service, i.e., eight patients participating in 60 minutes of group therapy each are recorded as having received 1 hour of direct treatment. Bills are usually prepared from the latter perspective, i.e., the amount of service received by the patient. When events are scheduled and the patient fails to make the appointment, staff productivity measures can be affected. These no-shows may vary by particular types of clients or events, and thus have clinical as well as administrative importance. Organizations may also find that some staff have above-average rates of client no-shows. Staff that cancel an above-average number of their events need to be looked at more closely. In addition, the cancellation of an event by the organization or staff may serve as a valuable management index at the local level. Frequent cancellation of events by an organization**

component may be a sign of mismanagement, poor scheduling, or resource problems.

9. Presence of other staff members

No other staff members involved in the event

Other staff involved in the event, with identifiers for each, including a special flag identifying the staff who is regarded as primarily responsible and accountable for the event, e.g., primary therapist, team leader, etc.

***Comment*. Only other staff who share in the performance of the event should be indicated. Staff who may also have been on duty or present physically, but not involved, should not be associated with the event. The special flagged identifier should only be used if the staff identifier in item 3 does not identify the primary staff. These data are needed for the correct preparation of billing information; for the correct tallying of events so that staff receive credit for their activities; and, in some program elements, for producing unit of service counts.**

10. Location of event

Premises of the program element or the mental health organization

Other clinical setting

Patient's place of residence

Street or other public place

Other (detail should be maintained)

***Comment*. As payment authorities expand their definitions of where allowable services may be provided, and as mental health organizations expand their concepts of where they may provide services, it becomes important to attribute services to different locations. In addition, it is expected that locations vary systematically according to program element and type of activity or service.**

Other Recommended Data Item

Presence of collaterals

The number of family members or significant others directly involved in the event

***Comment*: These are persons who are relevant in some way to the treatment plans of individual clients, not merely others who may be physically present.**

Methods of Linkage

Two approaches to the linkage of event data with other MHSIP data components are viable. Neither is offered as a standard, but the implications for the degree of real integration in the decision support system are different. In the first, the staff logs themselves provide the critical data for specialized, ad hoc analyses. In the second, other files are enhanced with event information so that it is more routinely available for a variety of management and analysis questions.

A Temporary Event Analysis File

In the first approach it is probably best to think of a separate, new file being created. This is labeled an event analysis file and is a conceptual convenience, rather than a prescription that a system be constructed in this fashion. It can also be thought of as a temporary work file created to answer specific questions or to generate unique reports that require linkage of event, client, and/or staffing data. The file begins with the staff log from which are obtained the recommended minimum data elements about the event, especially the unique identifiers of the patient and the staff. These identifiers are the mechanism for linking event data with the data on file for patients and for staff. If it is assumed that the latter also exist as separate files, the linkage can be thought of as a computer-based matching procedure, keyed on the appropriate identifiers. That is, all or part of the patient and staff data files can be linked with the event information file by matching the files on the identifiers common in each of the separate files. As this matched identifier is found, appropriate data from the client and staff components can be added to the new file. Suppose, for example, the organization is interested in knowing if patients with particular diagnoses are systematically being channeled to certain clinical disciplines. To answer this basic question, two critical pieces of data need to be picked up for the new file. Beginning with the staff and attendance logs, a search of the staff and patient files proceeds. When a match for the staff identifier occurs, the data element on discipline/training of the staff is added to the new file. When a match for the patient identifier occurs, the patient's diagnosis or presenting problem is added to the file. Once the organization does this matching, it is possible to conduct an analysis pertinent to the above question. More data items could be factored into this analysis, or the analysis could be rerun if the initial findings raised more questions. A temporary event file could be created either to address an ad hoc question or to produce a routine report on the organization, either for internal use or for an auxiliary level. The important point is that the staff logs provide the basic event information, and client and staff data are pulled from those files as needed.

Enhancing Existing Files With Event Data

An alternate approach assumes that automated client and human resources files exist within the organization. The information collected by the staff log is distributed to each of these components rather than maintained in a separate or temporary file. Thus, when the staff log contains a patient's identifier, some information about that event, such as the staff identifier, the date, duration, type of event, etc., is added to that patient's automated file. Similarly, some of the information from the staff log is added to the staff person's automated file in the human resources component. For example, the type, amount (duration), and program element codes for the event could be added to the staff person's record, along with data on the cost per hour of that staff to the organization. As various types of event analyses are done, information is retrieved from either or both of these components. Issues concerning staff productivity and cost can derive the bulk of the needed data from the human resources file, which has been enhanced with event and cost data. Issues about the types or amounts of activities received by clinical groups can be handled by the patient/client file, which has been enhanced with the event data. Finally, if the issue is whether certain clinical groups are receiving particular kinds of activities or services from one of the therapeutic professions, the analysis draws on both of the enhanced patient and staff files in order to accumulate all the needed data. This approach may require more storage space and cause small reductions in analytic speed, but as a primary advantage, it makes the event data more or less permanent within the files of the appropriate client and staff. To summarize, in order to provide an analysis of who receives what from whom, three files - event, patient, and staff- are required. In preparing this analysis for a particular period of time:

the staff logs must report on all the events occurring in that period,

the patient file must include all patients who could have received service during the time period (normally, all patients on the rolls of the organization during that time period), and

the human resources file must include all staff members who could have produced any activity or provided any service to clients during the period.

The event analysis is prepared by linking data from these three sources. ideally, this kind of system is based on computer files. The details of a computer system that can support these mechanics is beyond the scope of this publication. Mental health organizations have successfully operated such systems and have found them to be manageable. There is a cost in money, staff time, and management involvement for such a system to succeed and these must certainly be acknowledged. However, fundamental to the inclusion of an event component in the MHSIP is the belief that the benefits exceed the costs.

Summary

The minimum data set for event data is:

1. Organization identifier

2. Date of event

3. Staff member reporting

4. Program element identifier and attendance logs

5. Patient(s) involved in the event

6. Type of event

7. Scheduled event

8. Event duration

9. Presence of other staff members

10. Location of event

Chapter 7

Human Resources Data

Providing human services is labor intensive. The fundamental mode in which human services are provided has one provider interacting with one client for at least several minutes. As a consequence, it is usually necessary to have fairly sizable labor forces. In State governments, it is not uncommon for the mental health department to be among the largest of the State departments with a human services mandate. The delivery of mental health services, at least until the present, has not lent itself to many of the innovations that promise to reduce labor intensity, such as mass production, high technology, and automation. Consequently, a continued need is anticipated for large numbers of people to be involved in the delivery of these services. Because of this labor intensity, the human resources side of the mental health enterprise has a special

significance to managers: It is their biggest cost. Labor costs are typically cited as accounting for approximately 75 percent of the budget of mental health programs. Yet, it is the general sense of the field that managers tend to assign the lowest priority to examining data about the who dimension of the performance paradigm. This statement is based on the fact that in the original articulation of the MHSIP, a manpower component was included to provide better data in this area. However, of the three original components, this is the one that has received the least attention, and has had the most hesitant implementation history. In 1982, the Mental Health and Human Services Program of the Western Interstate Commission on Higher Education (WICHE) received a contract to study the regional implementation of a human resources component in cooperating western States. The results of this effort have been fundamental not only in the revision of this component, but also, in subtle ways, to the more basic reorientation recommended for the MHSIP (WICHE 1984). Among the findings of particular significance to the task force were the following:

Several of the items as originally proposed, were not workable due either to their definitions, categories, or assumptions about the ease of data retrievability.

The component, when treated independently, did not have the same viability of either an independent organization or patient/client component; too many questions arose that required an ability to link human resources data with patient data or to better categorize workforce data within organizations.

The data set was unable to address frequently asked questions about mental health human resources because initial concerns about sensitivity or the negative impact on completion rates had led the MHSIP to exclude some items.

Each of these has been considered in the revised human resources component of the MHSIP.

Who Are the Human Resources of an Organization?

Workforce and staff will be used as synonyms for the human resources of an organization. However, those terms tend to apply more correctly to the individuals who receive a salary or some type of compensation from the organization. Human resources will refer to a broader complement. It covers all the individuals who, under the auspice of the organization, provide a service to the organization's clientele, support the administrative structure that provides services, or support the organization itself. Included are those who

are employed by the organization, either fulltime or part-time, in direct-care or nondirect care services;

are volunteers;

are placed with the organization through a formal arrangement, such as a training program, internship, or residency;

provide services under a contractual or other administrative arrangement with the organization, e.g., interagency agreement or attending privileges, and who abide by the clinical and administrative rules of the organization as part of the arrangement.

Managers may be initially reluctant to acknowledge that this spectrum of individuals requires their attention, yet all of the groups listed contribute to the performance of the organization and share some responsibility in both its accomplishments and the costs of these accomplishments.

Managers who are attempting to understand performance in order to improve it, ultimately must confront the role of each of these groups. A focus on only the employees provides substantial information and accounts for the bulk of the cost data. However, since most organizations have at least some complement from the other groups, a more robust analysis of performance and costs necessitates that all of the human resources be examined.

Uses of Human Resources Data

The questions that a manager has about the workforce are not confined to the two dimensions just suggested, viz, performance and costs. It should be apparent that answering questions in these areas will require linkage with data from the event and financial components. However, there are a number of descriptive questions that may precede or accompany performance and cost issues. A human resources data component can contribute to addressing these concerns.

The Composition of the Human Resources

The most basic questions managers will have about their human resources will relate to their numbers, distribution, demographics, training, and employment characteristics (NIMH 1987b). These pieces of data are critical in addressing basic management responsibilities, as recruitment, nondiscriminatory employment, standards compliance, and shortage areas. It is quite common for managers to regard these statistics as peripheral until a factor external to the organization such as an accreditation visit, a lawsuit, or the defense of a budget request spotlights their importance. Prudent management practices suggest relatively continuous examination of these statistics. Size of the mental health human resource pool is variously measured as numbers of people or as the full-time equivalents (FTEs)[(14)] available. The latter is an attractive conversion of raw numbers because it smoothes out certain anomalies that can be caused, for example, by a large number of part-time employees; by use of service contracts to employ scarce clinical professionals; and by part-time operation of some programs. To make the data even more comparable, these numbers are often converted by using numbers of clients on the rolls (staff to client ratios) or use of civilian population figures (e.g., numbers or FTEs per 100,000 civilian population). While no widely accepted minimum staffing standards have been set for such figures, the data inevitably evoke public health concerns about how adequately patients and citizens are being served. An organization that has 1 social worker for every 15 clients would appear to provide its clientele with better potential clinical access than an organization with a ratio of 1 to 45. Managers also need to know composition of their staff by such characteristics as training, degree, job assignment or function, demographic makeup or other category needed to answer management questions. These data can be tabulated either by numbers of persons or by FTEs. Such data may be needed to recruit particular kinds of personnel, to compare the human resources configuration of the organization with that of another, to complete a report to a funding agency, to calculate ratios or indexes, or to provide background information for additional querying. In addition to knowing the size and makeup of the workforce, the manager may be interested in the distribution of these individuals within the organization. This is essential information, especially if one is to know areas/services/programs that are inadequately supplied. Such information is also valuable in a compliance assessment where certain staff configurations or intensities are needed for accreditation of a program type or to assess compliance to a staffing pattern intuitively expected because of the client population it serves or the cost data it reports. In some organizations, staff may not be dedicated to unique programs; they may split their time between several. If the latter situation exists on an as-needed rather than absolute basis, the data collected by event reporting will enable the organization to make an empirical determination of where staff are distributed by their actual time. To repeat, data on the composition of the human resources of the organization are valuable for the manager. They assist in addressing a variety of questions about the nature of the organization. Some suggested applications are accreditation,

access to care, equal employment opportunity demonstration, workforce recruitment, and relative comparisons with similar organizations. In addition, composition data are crucial in understanding event analyses as described in the preceding chapter. They provide a context for evaluating, probing, and understanding data which may show a manager patterns of performance, client movement, and cost that cannot be accepted at face value.

The Quality of the Human Resources

Quality of the human resources is not easy to assess, nor is it consistently judged. Some would assess it on the basis of staff qualifications such as degrees, amount of training, prior jobs held, continuing education endeavors, etc. Others feel these static measures are insufficient and look to on job performance to judge quality. Data on effectiveness, workloads, personnel appraisals, upward mobility, etc. are felt to be better indicators of the quality of the organization's staff. Measures of quality are made more difficult in mental health by the absence of standards. However, the MHSIP recommendations are able to provide some indexes that satisfy both static and dynamic orientations to quality assessment. The static measures derive largely from the human resources data component and include comparisons about professional attainment, as measured by degree or advanced training, certification or licensure, years of experience in the field, and involvement in relevant outside activities (e.g., private practice or teaching). The dynamic measures derive from event analyses and could include the proportion of time in direct care or staff caseload, analyzed by an algorithm for the difficulty of the client (e.g., chronic recidivistic patients, dually disabled, low functioning level, etc.). In addition, there are measures of human resource quality that are contingent on the citizens being served. A frequent assumption is that there should be some relationship between the demographic or cultural composition of the patients being served and the workforce that serves them. Language would be an obvious in-stance of this. Similarly, one could expect to observe systematic variations among the workforce depending on the clinical characteristics of the caseload. For example, one would expect to observe that physicians on the staff have a higher percentage of patients with diagnoses that respond to psychotropic medications than do clinical psychologists. Failure to detect these correlations between staff and client characteristics implies that the organization does not have a staff of the right quality, or that there is a problem with the deployment of the staff within the setting. Whatever the nature of the question about the quality of the human resources of the organization, the value of comparable data and the importance of linkage of the data through event analysis should be apparent. The comparable data may be from similar organizations, or they may be population-based data that allow for the derivation of rates or comparisons of staff characteristics to these population characteristics. Even fuller use may be made of the human resources component via the event analysis capability. This allows the organization to tap into the data in the human resources file and address, at least somewhat, issues of staff quality derived from performance of the staff. This leads to a third use of workforce data.

Productivity and Performance of the Human Resources

A frequent concern of managers is whether staff are using their time efficiently. In mental health, this most often means: Are the direct-care and adjunctive care staff delivering a substantial amount of billable service? Linkage with other data components is the only mechanism by which questions in this area can be addressed:

If the concern is about the units of service delivered by the various professions, data from the event component are needed.

If concerns exist about staff costs relative to type of activity, data from both the event and financial components are necessary.

Data from the client component are needed to know whether desirable variations are occurring in the clinical profiles of patients served by the different core professions.

The absence of standards in the area of productivity makes judgment and interpretation somewhat subjective. However, many programs have established minimum productivity standards, and clinical staff are routinely monitored on this basis. The proposed data for human resources and the event analysis capability neither contain nor set recommended productivity standards, but jointly they facilitate the collection of data that either form an empirical foundation or permit a better degree of comparability across the mental health service system. The linkage of workforce data with the other components also provides the manager with valuable information for training, personnel assessment, understanding staff burnout, retention of staff, and recruitment. Turnover among staff may be apparent from the human resources component alone, and most managers are able to spot problems with their staff well before the announcement of separation. However, linkage of staff data with client and event information can help the manager analyze these problems and plan an intervention. For example, a new organizational liaison may bring a new type of clientele to a setting, to which the existing staff have had little exposure. This could result in an increased stress level, leading to avoidance behaviors (staff cancellations of appointments) acting out (data errors), increased costs (frequent use of sick leave), or other manifestations. Solutions, such as in-service training, case consultations, or the need to acknowledge that staff are not prepared to deal with this clientele, can be entertained by an event analysis that focuses on staff variables.

Longitudinal Perspectives on the Human Resources

A final use of human resources data takes a longitudinal view. Such a perspective can be taken with any one of the previous uses. For example, a manager might examine how composition of the staff has changed over a period of years. This type of analysis may be done in response to a management initiative to reconfigure staff, foster growth of particular programs, decrease overhead, etc. If they are not done frequently by organizations, such analyses can lead to some surprising insights about declines, rises, and turnovers in professions or program areas (NIMH 1981b). Similarly, one could examine longitudinal changes in staff productivity or quality. Longitudinal analysis on staff data can also be done on individual staff rather than on the collective workforce. Most of these analyses will depend on an event analysis capability rather than the human resources data component alone. This is made possible in that the minimum data set proposes a unique staff identifier be implemented that is stable from one reporting period to another. As noted previously, the staff identifier permits the linkage of human resources data with the other MHSIP components. Patterns over time for individual staff are valuable in personnel evaluations, developing career ladders, and spotting potential burnout before it becomes irremediable.

Minimum Data Set

The following items constitute the minimum data content for the human resources component of a provider-level decision support system. Each item is named, followed by either its minimum recommended categories or a brief explanation of its content. As noted in chapter 4, categories can be elaborated by the service provider depending on local needs. However, elaborations should always be designed to be collapsible into the minimum categories. This facilitates comparison of data with another organization or the reporting of comparable data to an auxiliary level. Comment sections follow the recommended categories. The comments are intended to explain the item further, discuss the importance or potential use of the data, or note advisable rules of interpretation.

1. Organization Identifier

The 8-digit NIMH master facility number is recommended as the identifier.

***Comment*: Mental health organizations that are not aware of their NIMH-assigned facility code can obtain it from the Survey and Reports Branch of NIMH. If NIMH does not have the organization listed already, an identifier can be generated on request. Because the first two numbers in the NIMH code string always identity the State in which the organization is located, it may be possible to drop these from the string for routine local operations and develop a procedure to add them in automatically when preparing the data for external reporting purposes. As unique human resources data are maintained at the local level, however, it may not be necessary to have the organization identifier actually be a physical part of the data set. It is more important to be able to append this when reporting externally for statistical, billing, or other purposes.**

2. Staff/record Identifier

No minimum specifications

***Comment*: The organization should assign a unique identifier that enables the record to be identified and the data to be reliably associated with a particular individual. At the local level this could be the person's name, Social Security number, or other alpha-numeric information. The identifier is also useful for follow-back verification of information or editing of submitted data, and to access statistical information in other MHSIP components. The identifier should be stable from one reporting period to another. The format specifications for a unique identifier may be established by an agency at the auxiliary level. This agency may have a legitimate interest in or be the official "employer" of all persons covered by the human resources component. Most often this auxiliary level will be a State mental health agency, obligated by law to collect this information by the person's name or unique identification algorithm. The local level should honor these specifications. Aside from the legal considerations, this facilitates the subsequent reporting of data by local organizations and facilitates the discharge of responsibility at the auxiliary level for payroll taxes, civil service matters, or other affiliation issues.**

3. Date of report

Month, day, year

***Comment*: This is used as an anchoring point for aging the information provided, such as the number of years employed, age of the person, etc. It is also of value in linkage with the other components, especially for event analysis where knowledge of the human resources complement serves as a context for understanding production.**

4. Date of birth

Month, day, year

***Comment*: The distribution of ages among the human resources of an organization is of significance to managers. This tells if the workforce is an aging one; implies whether fresh ideas or recent academic training experiences are being introduced into the programs; may suggest when retirements would impact the agency significantly; identifies where questions of leadership in a program may be of special concern (e.g., everyone is very junior or senior); and allows the manager to contrast the age of the organization's human resources with that of the population**

served.

5. Sex

Male/Female

***Comment*: In addition to its use for analyzing and reporting on equal employment opportunity issues, the sex composition of the human resources is of value in comparing to the sex composition of the client population and that of the population area served. Analysis of career opportunities and productivity by sex may yield some of the most challenging human resources management issues that the organization must confront.**

6. Race

American Indian/Alaskan Native-A person having origins in any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition.

Asian or Pacific Islander-A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes, for example, China, India, Japan, Korea, the Philippine Islands, and Samoa.

Black/African American-A person having origins in any of the black racial groups of Africa.

White - A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

Other - A default category for use in instances in which the staff is not classified above or whose origin group, because of area custom, is regarded as a racial class distinct from the above categories - appropriate details should be maintained.

***Comment*: See next item.**

7. Hispanic origin

Hispanic origin-A person of Mexican, Puerto Rican, Cuban, Central American or South American, or other Spanish origin or descent, regardless of race:

- Mexican, Mexican-American

- Puerto Rican

- Cuban

- Other Hispanic

Not of Hispanic origin

***Comment*: Items on the race and ethnicity of the human resources of the organization are important for both administrative and clinical reasons. Virtually every mental health organization will, at least occasionally, be asked to report these data for equal employment or nondiscriminatory employment practices. It was noted above that certain matches between**

direct-care workers and patients are often considered fundamental in arranging clinical treatment. Race and ethnicity are key dimensions of consideration regarding a match or compatibility between client and direct-care staff. Many managers consider these factors in recruitment, attempting to have a race and ethnicity mix among their human resources that is compatible with that of the community at large or with the population under treatment.

8. Date of employment/affiliation

Most recent date when current employment or affiliation with this organization began - month, year

***Comment*: The longevity of employees and other staff with an organization provides information to a manager indicative of staff quality, but it must be interpreted within an overall employment context. Where job opportunities are numerous, longevity can be interpreted positively, e.g., to convey job satisfaction, competitive salaries, and career stability. It seems most desirable for organizations to be able to demonstrate some balance between a cadre of employees who have been with the organization for some time and the addition of some new members to the workforce. If most employees are new (but the organization is not), the manager certainly needs to attend to this. The costs of recruitment and for the time for new staff to reach an optimum level of job proficiency would indicate that the organization is wasting valuable time and money. In areas with high unemployment, longevity of staff may have less of a direct relationship to job satisfaction, salary scales, etc. Good management practices would suggest that the manager remain concerned about staff morale and job satisfaction and that he or she not exploit the lack of opportunity for employment elsewhere.**
In addition to the employment and job satisfaction considerations, affiliation duration has other uses. In con-junction with the individual's birth date, this gives managers an ability to track the aging of their workforce and to anticipate patterns of retirement. Length of affiliation may vary by type of profession, training, and job functions. Productivity and involvement in particular patterns of services maybe related to the amount of time the person has been with the organization. It may also have a bearing on in-service and extracurricular training. That is, most managers are concerned about keeping the skills of the workforce contemporary. High proportions of staff who have longevity with the organization may raise questions about the training opportunities they have taken or been exposed to.

***Note*: For persons who separate from the organization and return subsequently, the most recent date of affiliation should be used.**

9. Discipline/training/profession

From the following list, individuals self-select or are assigned to the one category that best reflects the major discipline, training, or occupation for which they have been trained or hired.

Psychiatrist

Other physician

Psychologist

Social worker

Clinical mental health counselor[2]

Substance abuse counselor

Other mental health professional

Mental health worker with less than a bachelor's degree

Registered nurse

Licensed practical or vocational nurse

Vocational rehabilitation counselor

Schoolteacher

Activity therapist (e.g., art, music, dance, recreational, or occupational therapist) Public, hospital, or business management/administration

Speech therapist

Dietician

Pharmacist or assistant

Dentist or dental assistant

Other physical health professional or assistant

Medical records administrator or technician

Other worker (support, maintenance, administration)

***Comment*: This is a means of classifying the organization's human resources into categories that are at least historically meaningful. Data on this item will most frequently be used in developing distribution profiles or ratios that are felt to reflect on staff or program quality. Categorization by discipline or training, as its chief advantage, is readily understood by most workers in mental health settings and, therefore, it tends to produce reliable data. It then becomes easier to assign numbers to these categories (e.g., FTEs, numbers of people) that are useful in comparisons. A further use of these data might be to determine if functions or performance are correlated in any consistent way with professional groups or training backgrounds.**

10. Highest degree/education level as of date of report

Less than high school diploma or GED High school diploma or GED

Some education beyond high school but no degree

Associate degree

Bachelor's degree

Master's degree

Doctorate (e.g., M.D., Ph.D., Sc.D., J.D., Ed.D., D.O.)

***Comment*: This item is used primarily as an index of staff quality. Immediate supervisors might also find it useful for developing extracurricular training tracks and perhaps some in-service training. For example, many professions in mental health have annual continuing education requirements, which the organization could help to satisfy. It may also prove useful in understanding salary scales and job functions.**

11. Country of highest degree

Name

***Comment*: Although this item may be used in conjunction with languages other than English, its primary value is as a recruitment index. Human resources or particular parts of the workforce composed of individuals who have been trained outside the United States can signal recruitment difficulties due to endemic personnel shortages or poor salary scale competitiveness. They may be correlated also with characteristics of the treatment population. When linked with other data through the event component, variations in service patterns or types of patients engaged may also be observed.**

12. License/certification

Licensed to practice in this profession:

in this State yes/no

in another State yes/no

in another country yes/no

If a physician,

board certified in specialty yes/no

Not applicable

***Comment*: For disciplines and professions that commonly license or certify their members, this item serves as an index of staff quality. It is attractive because it relies on an external authority and implies both objectivity and uniformity in its determination. Inclusion or this category is in recognition of an emerging specialty profession. Training programs are established and accredited that matriculate clinical mental health counselors as a unique professional group. Increasing numbers or them are being identified in the specialty mental health sector.**

13. Employment/affiliation status with this organization

Salaried, payroll employee

- Full time (for definitional purposes, an employee scheduled for 35 hours per week or more)

- Part time (less than 35 hours per week)

Paid under contractual arrangement

Student, trainee, resident, intern

Volunteer

Attending (those with explicit privileges or credentials to admit patients to the organization for care and to provide service to them under the auspice of the organization, but who have a non-contractual, non-salaried relationship with the organization)

***Comment*: Organizations have many ways of ensuring that there are sufficient numbers of persons to provide services to patients and to sustain the organization itself. Employment is the most obvious. However, many of the human resources on which a report is critical may fall in some other affiliation category. It is important to know the spectrum of mechanisms by which the organization maintains its cadre of human resources, the numbers of people under each, and whether these affiliations systematically vary by professions or functions. It is also important to be able to analyze how productivity, service patterns, and costs may be affected by these configurations.**

14. Hours typically scheduled each week within this organization (Include any normally scheduled overtime)

A 2-digit whole number

***Comment*: This is necessary information if one is to develop capacity measures regarding amount of total time available. In addition, since the definition of full-time or FTE differs (35, 37.5, and 40 hours are all documented definitions), knowing total hours and numbers of individuals allows for any of these definitions to be used.**

15. Primary job function

The individual is assigned to the category that best describes the major function(15) the agency expects that person to perform on a day-to-day basis. Only one category is assigned unless the person is officially assigned to functions that cover more than one of the categories listed (e.g., administration and direct care).

Direct or adjunctive patient/client care

Consultation, education, or prevention

Administration/management

Other job function (all other job functions in organization not covered above)

***Comment*: Knowing the basic function(s) the individual is expected to perform within the organization facilitates the correct linkage of the human resources data with either client or event information. That is, it is most appropriate to examine direct services productivity for those who have that function, and it would be inappropriate to link patient type to persons whose function was solely administrative. In addition, especially among some of the major clinical professions, the person's functions may not always be inferred from their training, e.g., a social worker who is exclusively a manager. Without knowing job function, attributions of productivity or analyses of**

type of patient served by various human resource subgroups would be difficult to interpret.

16. Experience

Prior to current employment or affiliation with this organization, total number of years worked in mental health

A 2-digit whole number should be sufficient; if 6 months or less, round down to zero; if more than 6 months, round up.

***Comment*: Staff experience is an index of quality. Al-though each work environment presents unique challenges, those who work in a mental health organization must not only understand special features of program operation, but must also face special issues of sensitivity and stress related to their exposure of some of the clientele. The amount of time the staff, individually or collectively, have worked in mental health environments reflects on their ability to perform in these settings. As with previous items on tenure, this item may also reveal systematic variations with regard to type of clientele engaged, productivity, or service patterns.**

17. Languages other than English

Spanish

Sign

Other

***Comment*: The skills of organization staff to communicate with patients who are not able to use conventional spoken English can be an important asset to identify. Such skills are expected to be available in certain specialized mental health programs and in certain geographic locales. Thus, they serve as a program-quality index. In addition, ability to use a language other than English may help to account for unique caseload or performance patterns of the staff.**

18. Private practice maintained

An indication of whether the individual maintains a private practice in this profession.

Yes

No

Not applicable

***Comment*: This item is sometimes interpreted as an indicator of staff quality, i.e., that professional interest and ability is sufficient to enable the individual to sustain a private practice. Utilization-review uses might examine whether those with a private practice exhibit similar service patterns (length of service, referral on discharge, etc.) to those who do not maintain a private practice, assuming some comparability in the patients served. It could also be linked with affiliation status, especially for part-time and contract staff. Finally, if other indexes suggest that salary scales in the organization need attention, maintenance of a private practice relative to the person's salary could be examined.**

19. University/college affiliation

An indication of whether the individual has an appointment or other affiliation with a university or college to do teaching or research at that institution.

Yes

No

Not applicable

***Comment*: This item is used primarily as a staff-quality index. In addition, there may be some relation between staff involvement in academic situations and the clientele of the organization. Referrals of unique classes of patients, clientele of a particular age group or presenting problem, or other service patterns maybe influenced by the affiliation.**

20. Participation in job-related or career-development training

Since the previous reporting period or since the most recent affiliation date with the organization, an indication of whether the individual has participated in any of the following types of training intended to improve job performance, acquire additional skills, or satisfy a continuing education expectation:

- In-service training, i.e., sponsored by the organization, usually onsite and during work hours

- Extracurricular, i.e., sponsored by another organization, usually offsite, and release time from work may or may not be granted

- None

***Comment*: From the point of view of the staff person, receiving the opportunity and support for training to update or improve job skills maybe a key element in job satisfaction and longevity with an organization. Organizations and their clientele are not static. Participation in such training opportunities can result in increased productivity, improved ability to deal with patient groups that have presented dilemmas to the staff or the organization, or other positive outcomes. Some caution should be exercised, however, in the interpretation of the data, because all staff groups may not have equal need or be equally interested in training. Unless a link to performance can be justified, managers should not compel training merely in order to have high counts on this item. Programmed or self-instruction may fall under either training category.**

21. Income from the organization

Actual or estimated income range for annual salary/reimbursement received from this organization, including overtime and bonuses, and excluding fringe benefits:

No income

$ 1-4,999

5,000-9,999

10,000-14,999

15,000-19,999

20,000-24,999

25,000-29,999

30,000-34,999

35,000-39,999

40,000-44,999

45,000-49,999

50,000-54,999

55,000-59,999

60,000-64,999

65,000-69,999

70,000-74,999

75,000-79,999

80,000-84,999

85,000 or more

***Comment*: As noted in the introduction, the human resources of the organization are its biggest cost factor. Being able to attach an approximate salary figure to professional groups or analyze the proportion of salary going into direct-service functions versus other functions provides a manager with clear evidence of where the organization's financial resources are being invested. Hence, salary has high face validity as a measure of resource consumption and shares a logical relationship with expectations about productivity. Also, as has been suggested for many of the previous items, salary scales may be critical in understanding staff turnover or quality.**

22. Fringe benefits value

As a percentage of the person's salary from the organization, the fringe benefits (contributions to retirement funds, health insurance, or life insurance payments, education benefits, participation in profit sharing, shares of stock, etc.) represent:

Not applicable/no fringe benefits

Less than 1 percent to 10 percent*

11 to 15 percent

16 to 20 percent

21 to 25 percent

26 to 30 percent

31 percent or more of gross salary

***A rounding convention should be assumed such that less than 0.5 is rounded down and equal to or greater than 0.5 percent is rounded up to the next whole number.**

***Comment*: In some employment situations, fringe benefit packages are standard for all employees. In others, variations in these packages are ways of recruiting or retaining valued occupational groups. They may be used as negotiation points by individuals in these groups as well. Consequently, either for fuller understanding of personnel costs or to be able to analyze differential patterns of performance or organizational longevity, it is essential to have some estimate of the fringe benefits a person receives.**

23. Separation date

If applicable, for the current reporting period, the month during which the relationship/affiliation between the individual and the organization terminated:

Month

Not applicable

***Comment*: This item is collected for persons who reported human resources data for a previous period or who joined or left the organization during the current reporting period. An exit date is as valuable for management analysis as an affiliation date. This permits a determination of actual longevity by individuals who have left the organization for whatever reason - retirement, termination for cause, end of training period, etc. Turnover among some staff groups may be markedly different than others and suggest to managers that additional probing is justified. Such turnover may mark a program with poor leadership, clientele that the staff are not adequately prepared to deal with, or noncompetitive salary. Turnover could even be an acceptable pattern (e.g., turnover among volunteers). Organizations may wish to consider expansion of this item to collect reasons for separation. The separation date is also needed if one is to develop a picture of a human resource cohort for a given time period. This is most apparent in event analysis when it may be necessary to have a count and an identifier for every person who was on board at the time a particular event analysis or productivity ratio is being calculated. If there is a mismatch between the amount of activity and the number of staff responsible for that activity, some of the analyses and interpretations will be spurious.**

Other Recommended Data Item

One additional item is suggested for inclusion in a local decision support system data base. The item is judged to have less widespread utility, and consequently, is not included in the minimum set.

Year of degree

A 2-digit code for year in which highest degree was granted.

***Comment*: The item can serve as a factor in profiles of staff quality, but can easily be displaced by**

information on continuing education or other training by the individual since the degree was granted. The year of degree helps to explain training patterns among more recently degreed individuals.

Coverage

The suggested definition of human resources intentionally covers the fullest interpretation of those who provide services in mental health organizations. The minimum set applies to all those who work in these settings. It is recommended that human resources data be collected annually. This is in recognition of turnover among the staff rather than the dynamism of the minimum data items themselves. Many of the items recommended will be located in a personnel file, which the organization maintains on each individual. This is usually initiated when employment/ affiliation begins. It contains substantial additional data, such as home address, party to contact in an emergency, religious affiliation, vacation leave arrangements, name of insurance plan, etc. Data in personnel files may not always be automated. For efficiency in the reporting of these data, and to avoid burdening staff with additional paperwork, automation of the more stable MHSIP data items should be considered. In such cases, staff would be required to supply a very limited number of items, such as private practice, their interpretation of their job function, or the updating of items that have changed since the last reporting period. The reporting burden on staff for this component would be minimal. Data would primarily be derived through data processing, involving personnel records, payroll, and any information on training that had been automated. If the items have not been automated for convenient retrieval, all staff would need to complete some sort of survey questionnaire during a determined period of lime. Such a time period would he selected with the data collection under the event component in mind so there would be a high degree of correspondence between the staff in the two components. It is recommended that the organization make efforts to automate this information both to move toward computer retrieval of that data and to facilitate the event analysis capability.

Summary

The minimum data set for human resources:

1. Organization identifier

2. Staff/record identifier

3. Date of report

4. Date of birth

5. Sex

6. Race

7. Hispanic origin

8. Date of employment/affiliation

9. Discipline/training/profession

10. Highest degree/education as of date of report

11. Country of highest degree

12. License/certification

13. Employment/affiliation status with this organization

14. Hours typically scheduled each week within this organization

15. Primary job function

16. Experience

17. Languages other than English

18. Private practice maintained

19. University/college affiliation

20. Participation in job-related or career-development training

21. Income from the organization

22. Fringe benefits value

23. Separation date

Chapter 8

Financial Data

Need for Financial Data and Data Standards

When a manager of a mental health organization thinks about the management of resources, it is probable that money is the first resource that comes to mind. One of the most profound changes that has occurred in local mental health organizations since the 1970s has been the increased attention that managers give to their revenues and expenditures. Deficit spending and bailouts by the State mental health agency were once almost axiomatic in mental health organizations, especially those with a public, not-for-profit orientation that had high proportions of disadvantaged clientele. Most mental health agencies are currently under increasing pressure to provide and support quality services to the mentally ill and, at the same time, demonstrate solvency and fiscal accountability. For the latter, managers increasingly must monitor and contain the escalating costs of mental health services and conscientiously pursue reimbursement for these services. This change has resulted in increased attention to financial data and a keen interest in comparability of financial data. For the most part, financial data in the mental health field have not been recorded and reported in a manner that facilitates comparing information across organizations or for aggregating financial information on organizations to describe systems of care. This has been unfortunate. Many mental health managers, both at the organization and auxiliary level, who have engaged in assessing a variety of methods for financing the treatment of mentally ill persons would find comparable information a valuable way to explore alternatives. Because so little effort has been undertaken to set standards in the mental health field for documenting and reporting financial data, the MHSIP Advisory Group charged a

task force to develop a recommended minimum data set in this area. Previously, financial data had been limited to gross reporting of revenues and expenditures at an organization level within the organization data component. This chapter is based on the recommendations of that task force.(16) It attempts to integrate the recommendations into the performance model so that the question of at what cost can he addressed.

Nature of the Component

For the most part, recommended data elements for a financial data component have been drawn from two universally accepted summary financial statements: the statement of financial position and the income statement. Information from both of these financial reports is necessary for management of fiscal resources within an organization. The uses of these data are discussed in a subsequent section. Such information is also frequently requested by auxiliary levels such as State mental health agencies or corporate sponsors, that have administrative and/or funding authority and responsibility for organizations.

Statement of Financial Position

The balance sheet or statement of financial position -the accounting title preferred by this report - is a valuable piece of financial information typically produced on an annual basis. It includes three classes of information: assets, liabilities, and residual equity.

***Assets* are things of value that are owned and held by an organization. They are commonly divided into:**

current assets - cash and other assets that can be converted into cash within a year; and

non-current assets - those that are expected to help provide services and help generate revenue for periods longer than a year.

Both types of assets can be further subdivided into several categories, usually on their order of liquidity (the relative ease of turning these assets into cash). These further categories are reflected in the minimum data set.

***Liabilities*, in an accounting sense, can be thought of as debts. They are commonly divided into:**

current liabilities - debts that require payment within a year, which include such items as wages payable, accounts payable, and interest payable; and

non-current liabilities - obligations to be paid beyond a year, which include such things as mortgages and notes payable.

***Residual equity* is the residual claim on the assets of the organization by the community or the owners. Residual equity is the excess of assets over liabilities. It is commonly called the fund balance for not-for-profit organizations, and the owner's equity or stockholder's equity for for-profit organizations. Since residual equity is a derived variable, it is not included as a data element for reporting purposes.**

Income Statement

The income statement is another major source of financial data. It depicts the financial activity of the organization for a period of time, usually 12 months, by means of its revenues and support

and its expenses. As a general principle, a modified accrual basis of accounting is recommended for reporting revenues and expenses. A brief discussion of accrual vs. cash accounting is presented below.

Revenue and support **are funds that increase assets or decrease liabilities. Revenue refers to funds earned. Support represents funds appropriated, granted, and/or allocated to the organization. They are commonly divided into:**

operating revenue and support - income related to the delivery of mental health services, such as payments from clients or third parties; and

non-operating revenue and support - income not related to the delivery of mental health services, such as gifts, bequests, or capital gains.

Several categories of revenue and support are identified in the minimum data set. Of major significance is the recognition that revenue and support should either be tracked or allocated by program element.(17) This is necessary in order to understand the cost structures of the organization.

Expense **represents the other major section of the income statement. Expenses are a measure of the resources used by an organization. They can be subdivided into:**

operating expenses-those associated with the delivery of mental health services, such as salaries and wages, supplies and inventory, utilities, and contracts for services; and

non-operating expenses-expenses not associated with the provision of services. These are difficult to classify because of the many types of arrangements established by organizations. One instance that occurs with some frequency is the establishment of a separate research enterprise that receives supportive funding from the organization and uses the organization's archival data base rather than doing de novo treatment research on mentally ill clientele.

As with revenue and support, resource use by program element should be tracked or allocated so that the cost structure of the organization can be understood.

Accrual vs. Cash Basis for Accounting

Fundamental to the preparation of financial statements in the distinction between the cash and the accrual methods of accounting. The cash basis of accounting is similar to what many people use for their personal checking accounts: Revenues are recognized when received, and expenses are recognized when they are paid. Thus, it focuses on the flows of the organization's funds. The cash basis of accounting has the major advantage of simplicity. Revenues are recognized only when cash is received from clients or others, while expenses are recognized only when the provider decides to pay them.

The simplicity of the cash method of accounting leads to several disadvantages:

1. It fails to match revenues and expenses and, therefore, may portray an inaccurate picture of how well the organization is using its assets to generate revenues.

2. It can result in wide swings in reported unit cost from period to period.

3. It raises serious reliability questions concerning comparisons of unit cost.

4. It does not recognize liabilities owed to others.

5. It leaves the financial statements open to questions of manipulation by management because the results of the cash basis of accounting are dependent only upon when cash changes hands, not when goods and services are actually exchanged or resources are actually used.

The accrual basis of accounting attempts to overcome these deficiencies by recognizing revenues when earned, liabilities when incurred, and expenses when assets are used or consumed. Thus, as opposed to the cash basis which focuses on the flow of funds, the accrual basis of accounting focuses on the flow of resources. It matches revenues and expenses; tends to narrow wide swings in unit costs that are not due to resource utilization; recognizes liabilities; and bypasses some of the management discretion available under the cash basis of accounting. The contrast between cost and accrual approaches is presented in exhibit 5. The accounting profession has recognized the clear superiority of the accrual method of accounting for judging the financial condition of mental health organizations and for making meaningful comparisons among them. To the extent that local organizations or auxiliary levels have the flexibility to implement accrual accounting principles, the MHSIP encourages this as a standard practice.

Exhibit 5. Comparison of the cash and accrual bases of accounting

	Revenues are recognized	Expenses are recognized
Cash basis	When cash is received	When cash is paid
Accrual basis	When revenues are earned (service delivered)	When assets are used (benefits received)

Uses of Financial Data

The specific questions for which financial data are relevant can be grouped into two major sets - those related to the financial condition of a mental health organization and those related to program management. As has been stated previously, the first set of concerns for the manager is strictly financial. It involves the solvency and financial security of the organization. The second set of concerns involves performance in a broader context, but financial data, primarily as costs, figure quite prominently.

Financial Condition

The financial condition of an organization can be deter-mined by examining its two major financial statements: statement of financial position and the income statement. By comparing the relationship of an organization's assets to how those assets are financed, the financial position of an organization can be determined. This information is extremely important in a changing, increasingly competitive environment in which it is important for mental health providers to maintain or expand their capacity to provide services, while finding less governmental and contributed monies available for such purposes. The balance sheet presents a year-end snapshot of the organization's assets and financing over time, and consequently provides considerable insight into both the ability of the organization to provide services and the state of its financing. It further allows a manager to make a judgment about the organization's continued ability to meet its obligations. Whereas the balance sheet provides a cumulative snapshot of the organization at

a point in time, the income statement summarizes the ability of the organization to generate revenues and support over the last year in relation to its expenses. The income statement is probably the most commonly used financial record in mental health, for it is quite analogous to the budget. It reflects both the revenues and expenses of the organization. These data are crucial to the manager because they contrast questions concerning the stability, sources, and amounts of revenues with the amounts and types of resources being used to sustain the organization. These data are needed to measure program efficiency, develop and monitor budgets, set rates, plan and control operations, analyze trends, and make comparisons with similar program elements and organizations.

***Liquidity or short-term survival*. The ability of an organization to meet its current obligations, i.e., pay its staff, creditors, and lenders on schedule, is the most visible sign of financial condition. Accountants term this liquidity, and poor performance in this area is one of the first signs of impending financial problems. A judgment of liquidity can be made by comparing the relationship of current assets to current liabilities, available from the statement of financial position.**

***Leverage or how the organization is financed*. Questions in this area have to do with the organization's relative use of borrowing to sustain its operation, i.e., amounts of debt and non-debt financing. Non-debt financing has traditionally been a major source of funds for community-based mental health organizations. It refers to their reliance on appropriations, grants, governmental guaranties, etc., to provide the revenues for operation. As traditional public and private sources of financing stabilize or contract, many mental health organizations, especially those wishing to remain not-for-profit, have only one other major source of financing debt. Thus, it is important for decisionmakers to be able to answer questions concerning trends in the relative use of debt and non-debt financing. Other questions relating to debt are: How burdened with debt is the organization? How able is the organization to obtain more debt? Information concerning the nature and scope of financing is available from an analysis of the balance sheet. However, other relevant information is available from the income statement through an analysis of revenues.**

***Profitability of the organization*. although many mental health organizations are not thought of in terms of profitability, a manager should be concerned with contrasts between revenue amounts and sources against expenses. The issue of residual equity is also pertinent. The basic concern is the ability of the organization to generate sufficient revenues to cover its costs. Thus, questions in this area might examine**

the composition of the organization's expenses (labor vs. non-labor, contractual vs. in-house, etc.);

the match between revenues and expenses; and

the charges for services and the amounts received for those services.

Sorensen et al. (NIMH 1983a) recommend the use of a break-even analysis as a management tool in this area and use the term over recovery rather than profitability.

***Revenue generating activities*. Also relevant to determining the financial condition of a mental health organization are questions about how well the organization is using its assets to generate revenues. In general, this category focuses on such questions as:**

For every dollar in assets, how many dollars in revenue were generated?

For every dollar of revenue generated, how many dollars were collected?

To the extent that the fee for a specific service assumes an increasingly important role in how organizations finance themselves, answers to these questions will become increasingly crucial to decisionmakers.

***Revenue and expense mix*. Mix refers to the variety of sources from which revenue comes or to which expenses go. An analysis of revenue mix can help answer questions concerning the source and relative amounts of revenues earned by the mental health organization. A change from a previous period, the degree of stability in the amounts of revenues from various sources, and the degree of the organization's dependence on specific sources are important questions for decisionmakers to answer. Similarly, the nature of expenses and their shifting composition are relevant as well.**

Program Management Questions Using Financial Data: The Cost Per Unit of Service

A second broad set of questions relates to program management. These questions relate primarily to understanding, controlling, or modifying the cost of providing services so that different impacts are observed. So that decisions are not exclusively driven by cost considerations, sensible program management typically requires the linkage of financial data with each, patient, and human resources information (Newman and Sorensen 1985). From a management perspective, the determination of the cost of providing services in the various clinical programs operated by the organization is of prime importance. It is fundamental to t. e measurement and comparison of program performance. As chapter 6 discusses, program costs are associated with a product that consists of a variety of discrete activities. This product is labeled the unit of service, and it is recognized that units of service vary by the program element responsible. The organization usually bills in terms of these units. Therefore, when financial data are associated with program performance it results in cost per unit of service. Cost per unit of service is computed by dividing total operating expenses for each program element by the total units of service provided by the program element. Unit of service data are derived from the event component. If a manager finds cost results that are too high or too low relative to another program, to past performance, or to regional data, the availability of event data could be critical. Activity data and the linkage provided by the event component permit the manager to pursue analyses that may provide insights about whether the cost variations are attributable to different types of clients, to the fact that the units of service are composed of different activities, to staffing differences, or to some interaction of these factors.

Financial Ratios and Indicators

Analysis of financial data is enhanced significantly by supplementing the dollar amounts by ratios and percentages. Ratios are expressions of relationships between two numbers. In order to compute meaningful ratios there must be inherent relationships between the two numbers. While these analyses focus attention on these relationships and aid interpretation, full under-standing usually requires further investigation of the data. Rarely does one ratio give sufficient information by which to judge the financial condition and performance of a program element or organization. Groups of ratios, on the other hand, enable managers to make reasonable and informed judgments. Managers who are not familiar with the use of these ratios as indicators may need experience and guidance from their financial officers regarding the interpretation of such comparisons.

Traditional financial ratios are categorized into four types: liquidity ratios, leverage ratios, activity ratios, and profitability ratios. Illustrations of some of these ratios are presented below.

Additional ratios relate financial data to other MHSIP data elements. Using these ratios, comparisons can be made within an organization's single-year financial statement, over time to detect trends and to project future positions, and with other organizations.

Liquidity ratios are derived solely from the balance sheet and allow the manager to judge the organization's ability to meet short-term obligations.

Current ratio = Current assets/Current liabilities

Quick ratio = Cash + Marketable securities + Net accounts receivable/Current liabilities

Absolute liquidity ratio = Cash + Marketable securities/Current liabilities

***Leverage ratios*, also derived from the balance sheet, are long-term indicators of the organization's ability to meet its financial obligations.**

Debt to residual equity ratio = Non-current liabilities/Residual equity

Debt to asset ratio = Total liabilities/Total assets

Equity financing ratio = Total residual equity/Total assets

***Activity ratios*, or turnover ratios, are indicators of how well assets are managed. They show relationships between information from the income statement and the balance sheet, primarily between revenues and assets.**

Net accounts receivable ratio = Net accounts receivable/Current assets

Total asset turnover ratio = Total operating revenue/Total assets

Current asset turnover ratio = Total operating revenue/Current assets

***Profitability ratios*, or earnings ratios, are indicators of the amount of profit an organization earns in a given period of time. They are derived from both balance sheet information and the income statement.**

Operating margin = Operating revenue - Operating expense/Operating revenue

Return on total assets ratio = Total revenues - Total expenses/Total assets

Operating contribution ratio = Operating revenue/Total revenue

Operating return on equity ratio = Total operating revenue - Total operating expense/Residual equity

Operating expense coverage ratio = Operating revenue/Operating expense

***Revenue and expense composition ratios* provide revenue mix indicators, expense mix indicators, billings and collections indicators, and productivity indicators. They require data from the income statement as well as from other MHSIP components. They can be calculated either for the organization as a whole or for program elements.**

Revenue produced per clinical FTE = 1st & 3rd party amounts received/Clinical FTEs

Revenue to Expense ratio = 1st & 3rd party amounts received/Total operating expenses

Direct labor expense ratio = Direct labor/Total operating expenses

Subcontract expense ratio = Contracts with other organizations/Total operating expense

Labor overhead expense ratio = Total employee labor + Total contract labor - Direct labor/ Total operating expense

Program element expense ratio = Total expenses (by program element)/Total operating expense (by program element)

Program cost ratios **provide estimates of cost of clinical care by program elements. They require data from the expense portion of the income statement and performance data obtained from the other data components.**

Program element unit cost = Total operating expenses (by program element)/Units of service (by program element)

Program element direct labor cost per unit of service = Direct labor expense (by program element)/Units of service (by program element)

Cost per client = Total operating expenses (by program element)/Number of clients served (by program element)

Average direct labor cost per client = Direct labor expense (by program element)/Number of clients served (by program element)

Cost per clinical FTE = Direct labor expense/Number of clinical FTE

Minimum Data Set

The following items constitute the minimum data content for the financial component of a provider-level decision support system. Each item is named, followed by either its minimum recommended categories or a brief explanation of its content. Basically, these items are needed to prepare the statement of financial position and the income statement. It is recognized that not every organization will have experience with some of the categories under each item. Therefore, "not applicable" as a possible category should be understood. As noted in chapter 4, categories can be elaborated by the service provider depending on local needs. However, elaborations should always be designed to be collapsible into the minimum categories. This facilitates comparison of data with another organization or the reporting of comparable data to an auxiliary level. Comment sections follow the recommended categories. The comments are intended to explain the item further, discuss the importance or potential use of the data, or note advisable rules of interpretation.

1. Organization identifier

The 8-digit NIMH master facility number is recommended as the identifier.

***Comment*: Mental health organizations that are not aware of their NIMH-assigned facility code can obtain it from the Survey and Reports Branch of NIMH. If NIMH does not list the organization already, an identifier can be generated on request. Because the first two numbers in the NIMH code string always identify the State in which the organization is located, it may be possible to drop these from the string for routine local operations and to develop a procedure to add them automatically when preparing the data for external reporting purposes.**
As financial data are maintained at the local level, it may not be necessary to have the organization identifier actually be a physical part of the data set. It is more important to be able to append this when reporting externally for statistical, billing, or other purposes.

2. Current assets

Cash and marketable securities, i.e., cash - funds on hand and in the organizations bank account; marketable securities - holdings of short-term notes, stocks, and bonds held for their return and which can be readily sold

Accounts receivable, i.e., amounts owed to the organization

Allowance for doubtful accounts (bad debts), i.e., an estimate of the amount of accounts receivables that will not be collected(18)

Other current assets, i.e., current assets other than cash and accounts receivable that are to be converted into cash within a year, e.g., inventories and prepaid items such as rent and insurance

Total current assets

***Comment*: Assets figure prominently in the balance sheet of the organization. They are listed above in their order of liquidity, i.e., the ease with which they convert into cash. Specific asset categories or total current assets are used in the calculation of several liquidity and activity ratios.**

3. Non-current assets

Furniture and equipment, i.e., tangible assets other than buildings and land owned by the organization and used in the course of business, depreciated over time

Buildings, i.e., those being purchased or already owned by the organization and used in the course of business, depreciated over time

Land, i.e., land such as building sites, used in the course of business and which is being purchased or owned by the organization, not depreciated

Other non-current assets, i.e., all non-current assets other than land, buildings, furniture, and equipment used in the course of business, such as long-term investments, franchises, and other intangible assets

Total non-current assets

***Comment*: The non-current assets are long term in nature and provide a major portion of the capacity of the organization to deliver services. Although they help generate cash, they are not expected to be converted into cash within a year. They figure prominently on the balance sheet.**

4. Total assets

The total of all current and non-current assets as a dollar value

***Comment*: This item is crucial in conveying a snapshot of the organization's financial vigor. It is used in conjunction with other minimum data set items, viz, liabilities, to calculate residual equity.**

5. Current liabilities

A dollar value for the debts that require payment within a year

***Comment*: Current liabilities include wages payable, accounts payable, interest payable, etc., and represent the short-term obligations that the must meet. They figure prominently on the balance sheet and are used in the calculation of liquidity ratios.**

6. Non-current liabilities

A dollar value for the long-term obligations to be paid beyond a year

***Comment*: Non-current liabilities include mortgages, bonds payable, notes payable, etc. They are used on the balance sheet and to contrast the amount of long-term obligations to the residual equity of the organization.**

7. Total liabilities

The total of current and non-current liabilities as a dollar value

***Comment*: This item is crucial in conveying a snapshot of the organization's financial vigor. It is used in conjunction with other minimum data set items, viz, assets, to calculate residual equity.**

8. Operating revenue and support: First- and third-party revenue by program element

Patient/client revenue, i.e., the amount of revenue earned from the delivery of services paid by the client or a responsible party other than third party payers

Insurance revenue (including CHAMPUS), i.e., revenue paid by an insurance carrier for services delivered to patients

Medicare revenue

Medicaid revenue (Federal and State)

Total first- and third-party revenue by program element

***Comment*: A dollar figure for each of the categories should be provided for each program element operated by the organization.[(19)] Organizations that collect first-and third-party payments that revert to the State general fund (usually State-operated organizations) should report these payments in the appropriate categories; however, the amounts reported should be bracketed and not reflected in the total revenue and support (see item 10). First- and third-party revenues figure prominently in the production of the organization's income statement. They provide the**

manager with information about the extent to which each program element is pursuing the acquisition of revenue through such sources. When linked with data about the volume of activity, numbers of patients, and numbers of staff attributed to these program elements, a variety of ratios related to revenue and program cost can be produced. These indexes are especially of value when used comparatively, contrasting similar program elements within the organization or elsewhere. Shortfall, recovery, and cost profiles can be generated and alert a manager to the potential need for administrative intervention or call attention to exemplary models that should be further investigated.

9. Operating revenue and support: All other sources

State

State mental health agency support, i.e., Stale funds allocated to the organization, including State appropriations and dollar amounts billable under State contracts, grants, or other purchase-of-service agreements as well as in-kind match dollars. Included also are State dollars allocated to local authorities, but excluded are ADM (Alcohol, Drug Abuse, and Mental Health) Block Grant funds and other pass through funds.

Other State agency support, i.e., State funds allocated to the organization, including grants, contracts, or other purchase-of-service agreements with Stale agencies other than the SMHA. Direct appropriations from the State legislature to the organization are included in this revenue category, but pass through funds from other State agencies are excluded.

Federal

ADM Block Grant support, i.e., monies allocated to the organization that originate from the Federal ADM Block Grant to the SMHA.

Other Federal support, i.e., funds from all other Federal sources not included in ADM Block Grants, Medicare, or Medicaid matching grants. These revenues might include community support program grants, Federal portions of Social Service Block Grant (Title XX), Vocational Rehabilitation, Special Education (P.L.89-313), and Education for the Handicapped (P.L.94-142), among other Federal grants.

Municipality, county, and other local support, i.e., funds generated by local jurisdictions, including payment Is from city, municipality, township, county, city-county governments, and district-regional authorities. These are largely local tax dollars. Exclude funds allocated by State government to local government.

Other operating revenue and support, i.e., all other income obtained from direct-service provision to clients that are not included above, e.g., contributions from the United Fund, and the Mental Health Association, in addition to receipts from contracts with business for employee assistance programs, preferred provider organizations (PPOs), HMO contracts, etc.

***Comment*: A dollar figure for each of the categories should be provided for the organization as a whole. Most organizations do not track the above revenue and support areas by program elements. Such sources typically provide payments to the organization rather than payments earmarked for program elements. Allocation methods within the organization can assign portions of such income to the program elements, however. The sum of the values in items 7 and 8 yields a subtotal for operating revenue and support for the organization. Some of these data can be backed up with program-element-specific revenues; others are for the total organization.**

10. Non-operating revenue and support

A dollar amount for the income the organization receives that is not related to the delivery of mental health services

***Comment*: Examples of non-operating revenue and sup-port are income from investments such as interest, business income, capital gains, gifts and contributions of cash or liquid assets, bequests and charitable contributions, and research support. This item may show wide variations by reporting periods due to the nature of this revenue. Such sources figure into the organization's income statement no matter what their total value.**

11. Total revenue and support

The sum of operating and non-operating revenue and support as a dollar value.

***Comment*: This constitutes one of the proverbial "bottom lines" for an organization. It summarizes the dollars collected by the organization for the period of concern. In conjunction with expenses, it is a manager's snapshot of the income position of the organization. Although this is a derived variable, i.e., constituted of other minimum items, it is included in recognition that some settings, in the process of improving their accounting systems, may be able to provide an accurate figure for this item, but not yet be able to generate each of the constituent items. This is especially true for revenue by program element.**

12. In-kind contribution and volunteers (value)

The estimated dollar value of benefits received by an organization where no funds are exchanged

***Comment*: Examples of in-kind value are the fair market value minus actual rent for a building or value of staff assigned to the organization by other entities who are on the payroll of those entities. Accepted accounting practices support the assignment of a dollar value for this item. Programs vary substantially in the degree to which in-kind contributions and volunteers play a role. Interpretation of program costs and costs per units of service is made difficult without knowledge of the value of this source. While some indication of the role of volunteers is obtained from the human resources component, it is still necessary to assign a dollar value to this resource in order to include it in the derivation of cost estimates.**

13. Expenses by program element

Direct labor, i.e., the amount earned by employees and contract labor that can be directly related to the operation of the program element. This includes the portion of all staff salaries and fringe benefits associated with the program and any portion of administrative, support, and contract staff time directly assigned to the program element. General support service expenses are not included.

Other operating expense, i.e., includes all direct and indirect operating expenses except direct labor. These expenses are distributed among the program elements according to allocation methods currently employed by the organization. Depreciation expenses allocated to pro-gram elements and general administrative and support staff expenses are included here.

Total operating expense, i.e., the sum of direct labor and other operating expenses.

***Comment*: For each program element operated by the organization, a dollar amount for each expense category is calculated. As with certain revenues, expenses attributable to program elements should be accounted for separately. Data from this item document the expense mix within program elements, showing the absolute and relative amounts attributable to each of the listed categories. Expense data by program element are probably of greatest value in producing the cost per unit of service. They are also of value in calculating several of the financial ratios presented earlier. When linked with revenue data, the manager is able to examine differential revenue and expense composition by program elements within the organization. Comparable data from other settings extend this capability. Management use of program expense data can be greatly facilitated when event data are also available. Such data allow the organization to parcel staff time (i.e., direct labor) to program elements in a relatively precise manner. Event data also permit direct labor costs to be analyzed by the different types of activities in which staff spent their time. This can be especially valuable when the manager is attempting to make modifications in the performance of a program element, by providing relatively specific targets for management action. In addition, the time of general support and administrative staff can be allocated to program elements based on their event reporting.**

14. Organization-level expenses

Total non-operating expense, i.e., all expenses incurred by the organization that do not result from the provision of mental health services

Total expenses, i.e., the sum of all expenses incurred by the organization

***Comment*: Non-operating expenses are similar in concept to non-operating revenue and support. Such expenses result as a consequence of generating non-operating revenue and support or may be experienced by an organization as a result of other activities that are not mental health services. Examples are operating a computer service bureau or supporting a research component, as well as management fees associated with a non-service real estate investment. Because the expenses are not associated with mental health services, they should not be allocated back to program elements, since this would distort the calculation of unit-of-service costs. Total expenses at the organization level is a derived item, obtained from a summary of total program element expenses from item 13 and organization-level total non-operating expenses. It represents one of the most significant of all the financial items from a manager's perspective, especially when compared with the organization's revenue and support figures. In addition, when these expense categories are compared with data from similar organizations, they reveal to a manager how the organization's expense composition compares. Expenses that appear to be much different from similar organizations may indicate to a manager where the organization is doing better than others, or where economizing efforts might be directed.**

15. Other expenses at the organization level

Total depreciation expenses

Total employee labor operating expense, i.e., all employee salaries and fringe benefits related to mental health services provision

Total contract labor operating expense, i.e., amounts earned by individuals who contract to provide services for the organization

Contracts with other organizations for mental health services

***Comment*: Depreciation is an accounting method used to allocate the cost of a tangible fixed asset over the period of its useful life. The amount reported in this category should represent the benefit received from the use of non-current assets, except land. It is assumed that depreciation expenses have been regarded as expenses included within the categories of total operating expenses by program element and total non-operating expenses for the organization. This item identifies all depreciation expenses under one heading, irrespective of where they have previously been accounted. Generally accepted accounting principles should be followed in computing depreciation. Contracts with other organizations for mental health services refer to expenditures for contracts with other organizations to provide mental health services to the organization's clientele. Such arrangements occur when the organization itself does not offer the service, or perhaps, when it is at capacity and must supplement its services via a contract mechanism. The four categories focus on expense categories for the organization as a whole that are individually and collectively valuable as management information. Each category aids a manager in understanding a major expense for the organization, in either absolute or relative amounts. For example, depreciation can have a major effect on the organization's income statement even though it is a non-cash item; the relative size of the depreciation expense or variations over time are an index to the amount of tangible assets and buildings or their age. This item also provides data for the organization level that are not obtained from items 13 and 14. Worth special note is the distinction between employee and contract labor operating expenses. These are not entirely derivable from the expense information by program element. Under item 13, direct labor included both employee and contract labor expense. For the organization, it is important to be able to differentiate the amounts the organization is spending on employees versus contracts. These expense categories allow for a variety of ratios to be calculated on profitability and expense composition. Finally, a manager can compare these expense categories with data from similar organizations and see how the organization's expense composition compares. Emphasis on employee labor versus service contracts, the size of depreciation expenses, and amounts spent on service contracts contrasted with other organizations may indicate to a manager where the organization is doing better than others, or where economizing efforts might be directed.**

Coverage

Like clinical data, financial data are constantly being processed by the organization. Usually these data are in the form of billing, accounts receivable, purchasing inventory, payroll, etc. Because the flow of this data is so routine, the issue for a manager is how often financial data are summarized and examined. A related issue is which managers are authorized to have access to financial data, but that will not be addressed here. At minimum, financial data need to be aggregated annually into the types of reports and financial statements recommended above. This provides a retrospective look at the financial soundness of the organization and its program elements. However, if a manager's orientation is toward more vigilance about the performance of the program, a position the MHSIP endorses, annual examination is insufficient. Sorensen et al. (NIMH 1983a) recommend that monthly examination of at least some financial data is appropriate. Basically, this takes the form of comparing the budget and projected monthly service volumes to actual performance. This seems a sound recommendation. It provides recent information to a manager and allows for timely corrective intervention. More ambitious examination of financial ratios, especially the linkage of cost to production, does not seem to require monthly examination. In keeping with a suggestion in chapter 6 that event reports be collected for all staff at least once each quarter, organization managers may wish to target examination of a broad range of financial reports and indicators to that schedule.

Summary

The minimum data set for financial data:

1. Organization identifier

2. Current assets

3. Non-current assets

4. Total assets

5. Current liabilities

6. Non-current liabilities

7. Total liabilities

8. Operating revenue and support: first- and third-party revenue by program element

9. Operating revenue and support: all other sources

10. Non-operating revenue and support

11. Total revenue and support

12. In-kind contribution and volunteers (value)

13. Expenses by program element

14. Organization-level expenses

15. Other expenses at the organizational level

Chapter 9

Assessing Impact

The assessment of impact completes the model of management knowledge presented above, i.e., that managers need to know with what effect. Assuming that managers within the organization have ample information on the other components of this knowledge model, i.e., clientele, services, finances, and staff, it is quite logical for them to pose the question, So what? The position taken here is more explicit: Managers have a responsibility to assess. This emphasis derives from the belief that all the components of the knowledge model are essential and that the model is invalid if efforts are not made in each area. The model sets up the logic for a feedback loop in which the factors that contribute to some effect as well as the effect are examined. A manager makes a decision based on the assumption that certain consequences are more desirable than other consequences. It seems both realistic and prudent to determine something about those consequences. In turn, the consequences of action provide the subsequent basis for future action. One way this is done, as is described below, is to spell out certain performance expectations and to use the decision support system as a way of gauging whether the expectations have been met. Throughout the preceding discussions, this knowledge model has been essential to the selection of data content and to the way in which those data relate. As chapter 1 emphasizes, to manage a resource and to be responsible for taking action with that resource means that managers are attentive to the risks associated with the range of possible actions. They seek information that

helps them select the action that generally best limits their risks. In that process, the manager develops hypotheses or expectations about the consequences of each action, sometimes very explicitly stated as a measurable objective and sometimes intuited or tacit. This leads to a subsequent interest by managers in assessing what impacts their actions had. They might ask:

Are the consequences what I had expected?

Did the action result in more or less than what I had expected?

Is the result in the right direction?

What are the unintended consequences?

Should I try another approach before I make a final decision?

Do I really understand what produced the effect and whether it is attributable to the management action?

Can we repeat this result or tailor it in a more precise manner?

It is felt that managers are continuously making assessments about their actions, in both small, informal ways and in apparent and public ways. When decision support system data are used, it is strongly recommended that the assessment be relatively formal and public. Such assessments are usually labeled program evaluation and typically have a conspicuous data focus. However, whether the evaluation is formal or informal, the decision support system may be of particular value to managers because of the reliability, objectivity, and richness of the information it contains. Unlike the knowledge areas that have already been addressed, there is one conspicuous difference between the assessment area and the others. Assessment is usually not associated with a unique data base or set of information content within a decision support system. Impact assessments are better conceived as a management use of existing data components. This is even true in organizations that may not yet have integration capabilities across various information areas. When information areas function in a stand-alone manner, managers often find that answers to the types of assessment questions posed later in this chapter can be addressed with data from independent components. However, it is also likely that such environments will have a more frequent need for ad hoc data collection that allows them to answer specifically framed evaluation questions than will organizations that have an integrated decision support system. Finally, one additional factor needs reemphasis. Data, as chapter 1 indicates, are only one of the inputs that managers use in decision making. While examining data fits the rational-person model most managers wish to project (Weiss 1988), managers also include anecdote, past personal experiences, constituent pressures, social desirability, and many other nonempirical factors in both decision making and in assessing impact. Data have their advantages, but it should be recognized throughout an organization that assessment results are actually a blend of both the empirical and nonempirical. In this assessment context, the decision support system should be seen in a supporting role, not a determining one.

Why Should Managers Assess?

Assessment has its payoff for managers in many ways. Most significantly, assessment rounds out the knowledge paradigm of the basic information managers need to know. Assessment closes a knowledge loop that otherwise remains opened. A few of the types of feedback that assessment provides are the following:

It alerts the manager to resources, actions, and processes that are not going as expected. This often provides an early warning that enables the manager to exert corrective action, such as aborting the initiative or inserting a missing control. Without this feedback, there is the likelihood of time and resources being wasted and for the manager to end up in a situation that is unflattering. If corrective action can not be taken in time, early warning provides the manager with an opportunity to marshal defenses or explore other employment options.

Assessment reinforces decisions about actions and resources. It conveys to the manager that a decision was appropriate because the result was as expected, or possibly better than expected. If the decision is part of a larger management course of action, assessments that reinforce decision making will also facilitate subsequent actions. Managers who have confidence in the success of their actions and programs are more credible in advocating for their programs.

Finally, assessment helps the manager reorient. The results of an assessment may be so different than expected that they encourage the manager to think in new ways about actions and resources. As above, if a decision is a part of a larger management course of action, assessment results can be critical in deciding whether to revisit basic assumptions or reconceptualize a plan. There are also successful management styles based on implementing periodic reorientations regardless of the feedback from assessments. Many employees have difficulty understanding why things should be modified when they are going well, while the manager may feel this is a way of keeping the organization dynamic and, possibly, of making it even more successful.

What Should Be Assessed?

Impact Assessment

It is possible to isolate specific kinds of assessments and judgments that managers make. These relate to the resources for which managers are responsible, the actions they take with the resources, and the impacts of those actions. As noted in chapter 1, assessments that relate to whether a manager's actions have been implemented can be labeled as compliance assessments. They will not be dealt with in this monograph. When the manager directs the use of a resource, it is usually with the expectation that there will be an observable effect for it - a product delivered, a service provided, etc. Assessments made about the use of resources can be labeled impact assessments. The generic types(20) of impact assessments can be described as:

1. Adequacy - evaluations concerning whether the resources are sufficient or of the right kind. While each of the questions posed below may stem from many causes, these types of questions could suggest that resources are not adequate or that the actions taken with them (acquisition, distribution, monitoring, or accountability) are not adequate. Only the first example is elaborated, but the examples generally are meant to reflect an evaluation pertinent to one of the four resource areas noted, i.e., clients, staff, money, and property.

a. Why did the waiting list for the past quarter exceed X-number of days?

- There is an inadequate supply of staff to meet demand (acquisition).

- There is oversupply of the type of patient served (acquisition).

- There is incorrect distribution of staff to clinical areas within the organization (distribution).

- There is inadequate utilization-review monitoring; staff are seeing patients for inappropriately

long episodes of care (monitoring).

- Staff are providing no activity reports on their workloads and patients (accountability).

- The waiting length for the preceding quarter was also excessive, and the manager and staff were given both orders and resources to correct the situation (acquisition, distribution, accountability).

b. Why were 25 percent of our appointments canceled?

c. After a period of belt-tightening, why are we financing a larger deficit this fiscal year than last?

d. Why do none of our patients come from geographic area Y?

e. Why did our photocopying volume jump 20 percent when we removed the "key counter" system?

2. Equity - evaluations about the fairness, reasonableness, or equality of the resources. As above, causes for the following could be complex, but questions that raise concerns about equity might be:

a. Why are minority patients represented in our caseload at less than one-half their rates in the general population we serve?

b. Why were we allocated $X less than a similar program serving the other half of the city?

c. Why are clinical staff in program Y required to account for 100 percent of their time, while clinical staff in program X participate in sample reporting one week each quarter?

3. Efficiency - evaluations of the volume of output or the productivity achieved, given the resources provided. Examples of concerns associated with assessments of efficiency might be

a. Clinical staff can demonstrate that no greater than 30 percent of each time period is spent providing billable services.

b. Examination of a paper trail shows that incoming patients interact with 7 to 9 staff members before seeing a clinician.

c. In submitting the request for supply purchases, single requests are not permitted. A staff member must request a minimum of three different items in order to make a purchase.

d. The organization maintains two sets of accounting ledgers, each tailored to the auditing requirements of different funding agencies.

4. Effectiveness - assessments of whether results of the desired degree and direction were achieved through use of the resources. Outcomes that might evoke these judgments of effectiveness could be

a. Program Y shows that 30 percent of its patients regress during treatment and require intervention with more intensive types of care.

b. One month after training on completion of the staff daily activity log, 80 percent of the daily

entries are returned for corrections or reissuing data.

c. Official M has just sent one of the family's adolescents out of our jurisdiction for services that we provide.

d. Despite use being posted immediately against inventory in the pharmacy system, critical shortages occurred on 11 of the last 31 days.

e. Despite evacuation drills and the granting of a life-safety certificate, six of the residents in one of our group homes died in a fire this year.

Effectiveness as Clinical Outcomes

Of all the assessments a manager or organization attempts, the most fundamental and difficult questions relate to the outcome of service. For example,

Did a particular treatment have a greater effect than another?

Were clients with one diagnosis helped more than those with another?

Did staff from one discipline achieve better results with psychotherapy than those from another discipline?

Specific answers to some of these questions may be beyond the scope of a routine data system, but this is the kind of information wanted about mental health services. System planners must be cognizant of these kinds of questions and go as far as possible within the limits of present knowledge, technique, and available resources to provide answers to them.
It is necessary to urge some caution, however, about what these answers on clinical effectiveness tell an organization's management. As long as the concern about clinical effectiveness remains on a general level and the program is attempting to determine if treatment is associated with improvements in client's functioning, it is felt the decision support system may be of use. General change in a measure such as a functioning assessment in the client data set (NIMH 1986a) or in such other measures as recidivism, eviction from a placement, problems with the police, etc., can be associated with clinical variables, services, and human resources data. For example, the system may be able to provide data that contrast severely mentally ill clients in a residential program that offers both protective oversight and a case manager with similar clients in intensive outpatient care featuring a combination of drug and talk therapy. The decision support system may be able to demonstrate a number of differences between these two groups:

The residential patients have greater success accessing entitlement program benefits than the outpatient group;

The residential group is less likely to require enrollment in other program elements during a given time period than are the outpatients;

Assessments of the patient's abilities to function in social, work-like, and independent situations show that the residential group has higher scores (more desirable functioning) at the end of a time period than does the outpatient group;

The cost of the residential program per patient served is higher than the cost per patient in the outpatient program;

The residential patients are more frequently enrolled in a vocational rehabilitation program than are the outpatients.

Based on these patterns, the manager may conclude that the residential program is superior to the outpatient program. This could lead to programmatic changes. However, two potential problems in a local organization's examination of its treatment effectiveness data will be relatively recondite to many users of these data. If they are not understood, they easily invalidate efforts to use this type of data. The first problem enters when cause-and-effect relationships are assumed, i.e., when management begins to make assumptions that it knows what produced a result, and bases major decisions on these assumptions. The use of one therapeutic approach over another, the decision to close down a program, or the move to terminate an employee based on clinical effectiveness ratings are types of instances in which management should have great certainty in its decision. Such decisions convey that causes are known and that the results are fairly controllable, i.e., that they can be repeated and modified. If such decisions are based on evidence from an organization's decision support system, it is highly probable that the effectiveness data are insufficient to support a confident attribution of cause. The system can show relatively detailed associations and, at best, support multivariate statistical techniques. While the latter inspire greater confidence about possible cause, they are not unambiguous. For that matter, it is rare that a local program alone would be able to afford the type of effort that is needed to establish cause-effect linkages about treatments, staff, and client improvement. The effort requires considerable methodological expertise and scientific monitoring that is usually associated with formal research. Such studies may be best supported at the auxiliary levels. The second potential problem relates to the ability to generalize the results. There is a high likelihood that either the management or the evaluator will be tempted to extend the findings to other times, patients, settings, or treatments that are not identical to those that characterized the situation analyzed by the decision support system. Most typically, this would emerge as a claim by the organization about the effectiveness of its treatments. In research, the quality of the methodology permits judgments to be made about how robust such extrapolations of the findings are (Campbell and Stanley 1%3). In analysis of decision support system data, details on the methodology, especially the details that aid in assessing the generalizability of the findings, are usually not of the quality or quantity that support generalizing the findings. This fact is not only pertinent to extending the findings to other locales, but also is of significance within the organization as well. In the example above, one critical question is whether the patients assigned to the two types of treatments were similar. If the residential program received more malleable patients than the outpatient program, their greater success would have little to do with treatment, and instead would be attributable to patient differences. These types of discussions are fundamental in research design, especially in the social sciences. Before the organization misuses effectiveness data, it should carefully consider both the claims and the internal changes it is willing to make on the basis of these data. More positively, decision support systems can be designed for local organizations to support demonstrations that client improvement 15 associated with certain treatment approaches; that certain staff appear to do better than others; etc. Management may be quite willing to make decisions on the basis of this information. But even the best analysis of a decision support system will not unequivocally demonstrate that a treatment or staff caused the improvement, nor that the effectiveness pattern can be generalized. That is, it will not help management to understand sufficiently the dynamics that produce the improvement such that clinical outcomes can be predicted, repeated, tailored, and improved. Therefore, two cautions are advised. The primary caution involves the certainty that a program or staff produced an observed clinical effect. Even in controlled research studies, such claims are made with many caveats. Because of the significance of clinical effectiveness data, in this one area of management use, it seems best for the decision support system to be used primarily for descriptive purposes. The second caution follows from this use. Since clinical outcome data at the local level are best conceived of as descriptive, management action should not be based

exclusively on these data. If clinical outcomes tit patterns from evaluations of personnel and financial data, or from administrative or clinical processes within the organization, managers have a firmer basis on which to make decisions. However, if the clinical effectiveness data are not considered within this more complete context, management action should proceed more cautiously. Also, depending on the significance of the decision (i.e., having major impact on personnel, organizational structure, or finances), it would seem prudent to check the scientific literature. This check would indicate whether any research reports similar patterns, and would provide an added degree of confidence or caution.

How Does the Decision Support System Aid Assessment?

An integrated decision support system has the potential of producing a volume of data that can range from fascinating and useful to trivial and confusing. When used for assessments, it seems especially important to have relatively focused questions prior to querying the decision support system so that reports and analyses are pertinent. The concept of performance indicators has had relatively widespread acceptance in mental health program management and seems valuable here. A performance indicator is a numerical reflection of what has been achieved by using one or more of the resources available to the program. If a particular numerical goal was agreed to at some point prior to measurement, this is often referred to as performance contracting. Performance contracting usually carries with it the notion that deviating from the agreed-upon performance has a consequence. While the consequence can be a reward if the goal is exceeded, more often, the concern is the failure to meet the numerical goal. The consequence becomes a warning, an audit, a denial of funds, or some intervention that otherwise would not have occurred. The application of these consequences on the basis of performance indicators is often referred to as performance management.
The consequence of management action represented as a piece of datum is hardly a new concept. It follows that the concept of performance indicators is also not new. What makes the concept appealing is the relatively recent efforts to develop a specifiable set of indicators and to represent them as relatively simple ratios (NIMH 1981a; Minnehan 1982; NIMH 1984b). Such an approach was employed in the chapter on financial data, in which a number of ratio-type indicators were presented. For use in assessment, performance indicators derived from the decision support system carry with them several attractions, including the following:

An a priori operational definition of those performance areas that management regards as significant enough to demand its attention.

A specification of the factors that will be examined as contributing to that performance. In a ratio or percentage indicator, this would be represented as the numerator and denominator.

An opportunity to negotiate the level of performance (the impact) to be achieved for a period of effort and, thus, a clearer understanding of what an assessment decision shall be.

As noted above, assessment by a manager is a rather constant process and is not always a formal, public occurrence. However, when assessment is placed within the framework of a decision support system, performance indicators offer considerable promise to managers. They reduce uncertainty by outlining what will be examined, they help to structure the querying process, and they make efficient use of the decision support system.

Summary

Assessment is a management action that draws on data from the previously documented components of a decision support system. Unlike these other components, it is not desirable to

identify a unique set of data items/ content associated with assessment. The manager is not only assumed to be interested in assessment, but is obligated to assess. Assessment closes a feedback loop by helping the manager remain vigilant about potential problems, by having courses of action reinforced, or by stimulating him or her to rethink actions or assumptions.
Managers assess whether their actions have been complied with and whether their resources have had impacts. The types of impact assessments they make can be characterized as assessments of adequacy, equity, efficiency, and effectiveness. While questions associated with effectiveness of clinical treatments are frequently posed, caution is urged about the extent to which the decision support system is able to address them. Such systems are capable of demonstrating associations between patterns of care and patterns of outcome, but at the local level, they cannot provide unequivocal answers that the patterns of care have caused the patterns of outcome. Thus, managers need additional data on other patterns of performance to support decisions stimulated by clinical effectiveness results. A useful approach to assessment involving the decision support system is the use of performance indicators. These are numerical representations of performance, often in the form or ratios or percentages. Their advantage is in specifying beforehand what assessment areas will be examined and in making efficient use of the large volume of data that resides in the decision support system.

Chapter 10

Issues in the Transition to an Integrated

Decision Support System

The general position of this monograph is the promotion of integrated decision support systems at the local level for the valuable role they can play in management. While no data base has been discovered that documents the extent to which local programs have such capabilities, it is recognized that an agency's move in the direction of an integrated system will not be an effortless evolution.

In this chapter, the two factors that might adversely affect the development of an integrated system within a local setting will be discussed. One cluster of issues involves the attitudinal and interpersonal; the other cluster is primarily technical. The issues may be primarily of benefit to the organization staff who are given responsibility to move the organization toward integration. Some of the issues are raised merely as cautions. Local factors vary too much to permit guidance about the most effective means of dealing with them. For other issues, it is possible to advise.

The audience this chapter intends to advise is disparate. On the one hand, it is assumed that an organization in transition toward an integrated system is likely to assign primary responsibility for the project to someone on the staff. This individual is often labeled the system manager. Thus, some of the advice is directed to the system manager, and it concerns strategies and cautions about the implementation process. On the other hand, management is ultimately accountable for the presence or absence of an integrated system. Therefore, other aspects of the advice are directed toward management and are intended to identify areas in which its action or support will be needed. Since the audience is not homogeneous, the transition issues presented for consideration may cross between these orientations.

Attitudinal Issues

Staff Attitudes

As the event data chapter makes apparent, staff reporting is viewed as critical. No other efficient and feasible means of obtaining the essential information to link independent information system components was evident to the Revision Task Force. For an organization that does not require staff to complete some type of time and activity report, one of the most serious challenges will be educating staff about the value of contributing such data and overcoming their resistance.

The clinical and administrative staff in a mental health organizations will have a number of basic questions that someone should be prepared to address. Any increase in paperwork or reporting for clinical staff evokes concerns about the erosion of time available for patient care. Clinical staff, as well as those with administrative duties, will want to know how proposed changes will affect their workloads; how changes will improve the operation of the organization; how they will improve care to the mentally ill; and, fundamentally, how changes will affect them personally - if they will be of benefit to them, will assist their documentation or performance routines, will affect their pay or their assessment, etc. Staff may not typically express these concerns in a positive way. More often they may be expressed as fears and hostilities, and management should be prepared for such expression. Any project approach by management or a system manager that does not consider these basic questions and how they can be addressed should probably undergo a reconsidered time frame. Materials or positions on these issues can be critical in dealing constructively with staff.

It is hoped that every organization that plans a major change in procedure has managers who are sensitive to how best to introduce these changes into the operation of the organization. Usually the culture of each setting permits the gradual introduction of change, by allowing for the accretion of smaller bits of information by staff during planning and prior to the formal announcement of the change. Thus, the disruptiveness of any single change is desirably softened. However, these mechanisms usually operate informally or unevenly. Not everyone will have access to the same background bits, not everyone will interpret them similarly, and the innovation will not be gradual for everyone.

Therefore, two approaches should be considered by management as ways of constructively enlisting staff understanding and support in the move toward an integrated decision support system. They may be used in either a complementary or a substitute fashion.

The first is to foster a wide sense of investment in the process. A possible means of accomplishing this is the use of teams or task forces given specific topical charges, a reasonable time to accomplish their work, and official sanction to engage in this behavior. The assignment must not be a hollow one. In addition to it~ strategic value, staff input will invariably improve the design and operation of the decision support system.

Other means of partitioning responsibility and soliciting input are possible and should be explored. The intent is to produce among the staff a broad sense of ownership and control over the process and, consequently, the product. When implementation time arrives, the staff will generally be informed and ready. If management is not genuine in its use of a task force (or other) approach, it readily becomes apparent to staff- their recommendations are ignored or they are asked to perform against the odds. Implementation would not proceed smoothly in the latter case.

Additionally, management may wish to consider continuing the use of such an approach past the input stage. Having developed some investment in the effort, such teams might also continue in an advisory and oversight role, helping to ensure quality, troubleshooting, and serving as a source of further innovations.

A second approach involves internal training or orientation sessions. Often, if an agency purchases a system component, such as an accounting package, pharmacy module, patient care system, etc., from a vendor, there is little opportunity for use of task forces for employee input. Prior to its implementation, and less often, prior to its acquisition, organizations will give affected staff a chance to learn the basics of the innovation, to practice, to ask questions, to work with a trainer familiar with the product, etc. The curriculum outline for such sessions is too related to the substance of the innovation to be specified here. However, the quality of this experience is directly correlated with the staff's comfort, acceptance, and performance vis-a-vis the innovation.

Under either a team or a training approach, one specific mechanism deserves mention for dealing with the emotional side of a major system innovation. ~t should be acknowledged that fears and hostilities may be voiced by staff. The system manager must first be able to sort issues that are pertinent to the system from other expressions of negativity. For system-relevant objections there are two workable approaches. The first of these is logical argument, in which facts and reason are offered to counterbalance the fears or hostilities. In the face of strong emotion, however, an approach based on logic may have limited impact. The second alternative is usually persuasive to virtually all parties. It involves recognition of the fear or suspicion of some aspect of the system and builds in a specific safeguard that addresses it. Safeguards may involve procedures, time frames, uses of information, and sunset provisions, i.e., scheduled termination of a feature unless specifically voted otherwise.

For example, staff of a program element may fear that a productivity quota placed on them will be unrealistic and fail to recognize the difficulty of the clinical population with which they work. Therefore, a safeguard may be built in for this program element in which their productivity data are phased in. For the first 6 months, the data may be made available only to that program element, along with comparable data for other parts of the organization. For the next 6~months, the data are shared with management outside the program element, but not used in any formal way. During this period, the program element staff will be responsible for negotiating productivity measures which accommodate their clinical concerns and which must be reviewed by staff outside the program element for equity to others.

It should be noted that both the team and training approaches are recommended as subsequent to a management decision that an integrated system is worth pursuing. Extensive and democratic staff input into that decision cannot be uniformly recommended. However, because staff reporting of their activities is so implicit to development of integration capabilities within an organization, constructive involvement of staff in the transition to an integrated system should be given a high priority. If this area has not been given prior attention by the system manager, and management is sincere in its desire to have the innovation work, the implementation schedule should be reconsidered until this issue and a plan for action have been thought through.

Management Attitudes

For the transition issues of this chapter, it is assumed that the organization has some information system capability, perhaps as independent components, and that managers within the organization r~y on this capability to various degrees. The attitudes of managers to data and to the systems that provide them are of exceptional importance if the organization is to make a successful transition to an integrated system.

Some aspects of a manager's role are dictated by the general culture. Fundamental to the operation of many American institutions is the role requirement that managers consider

feedback, scientific results, and program evaluation findings in deciding on actions. This fits not only the democratic expectations that pervade our attitudes, but it also reinforces the rational person model which most managers wish to project (Weiss 1988). However, as the monograph has emphasized several times, empirical inputs are only one of a variety of inputs that managers consider in making a decision.

Thus, Hagedorn's assertion that . . ." only about 10 to 30 percent [of managers] can readily accept a new data-based performance monitoring system and can facilitate its development significantly" (NIMH 1984b, p.61) is not surprising, even if the percentage is lower than might be desirable. He further points out that management styles profoundly affect not only the ways in which data are used, but also the type of system a manager can tolerate.

He is most descriptive in regard to a s~e he labels the "kinesthetic manager." Such managers rely strongly on their intuitions and feelings rather than empirical input.

When data are used, most often it is for monitoring after trouble has developed, primarily to help avoid further problems. Kinesthetic managers resist decision support or information Systems that might suggest their approach should be more proactive. The system they will accept essentially remains one that is personal and anecdotal and consists of a management team selected for their adeptness at arriving at conclusions based on interpersonal information-gathering.

The kinesthetic manager and Hagedorn's estimate of the percent of data-oriented managers exemplify an important generic issue. The majority of managers pose problems at least as significant as those posed by staff in the move toward an integrated system. It can be assumed that it would be uncharacteristic for a manager to admit the extent to which he or she is an obstacle, either active or passive, to innovations within the organization. Consequently, the attitudes of management toward an integrated decision support system are essential to understand. System managers should be appropriately attuned to the extent to which management attitudes and styles can affect the transition.

For environments in which local managers are assessed as hostile to integrated systems, there seems little hope. Such management would not stimulate or tolerate the internal development of integrated decision support ~stems. However, if forced by the issue of remaining competitive, or if mandated by a funding requirement, accreditation issue, or a policy directive from the auxiliary level to develop integration capabilities, such management may modify its attitude to resigned acceptance.

In local environments where managers are not assessed as hostile, but are not among the 10 to 30 percent of the data-oriented, a variety of approaches might be tried. They are adapted from Weiss (1988). First, most managers have staff on whom they rely for advice and input. Identifying these staff, assuming the manager may not always have the time to review input details fully, may offer adaptive strategies by those with implementation responsibility. Working with these staff, either providing them with data or descriptive information about the benefits and necessities of an integrated system, may have the desired effect of influencing them so that they, in turn, can pass on the information in a way the manager might more readily accept.

Second, there is something to be said for making data output and program assessments a visible and public aspect of operation of a mental health organization. If results are treated as though they are confidential, or if they are not generally made known to appropriate parties within the organization, they are easier to dismiss through suppression or inaction. Also, if results are distributed only rarely, there is uncertainty about how to use them. The more available data are to staff, the more data will be used throughout the organization. Staff will begin to refer to a

finding or a report, and become more active in requesting outputs. The natural evolution of their questions may well move in the direction of requiring an integrated system to address the questions adequately. In a sense, the staff educate management in the importance of data and system integration. In turn, these attitudes and behaviors are increasingly exhibited by management.

Ancillary to this point is that results should be timely. The support of a staff and management who have been convinced of the value of integrated decision support systems can be lost if they receive results too late to help them with a decision. The issue of timeliness is quite significant when an incremental approach, discussed below, has been adopted. The system manager must take care that expectations for results do not outpace the implementation schedule.

Third, there are only certain professions that place a value on patiently examining great volumes of data. Most of these professions-engineers, accountants, researchers - are not overrepresented within the decisionmaking structure of a mental health organization. Thus, the concept of performance indicators is especially worth considering. As noted in the previous chapter, a discrete set of indicators can be valuable for two reasons:

It usually represents a statement of what performance and action management is concerned about, or regards as worthy of examination.

Rather than large volumes of empirical printouts, a set of indicators provides the manager with a reasonable and digestible number of monitoring aids.

In short, a well-designed set of performance indicators shows off the capabilities of an integrated system to the advantage of both the system and the system manager.

To summarize, managers within the organization can be as significant a source of concern as staff when it comes to the transition to an integrated decision support system. Although this remains primarily an area of caution, at least a few approaches can be considered by those within the organization to try to prevent a negative situation. When managers are actively hostile to the concept, it appears that some external influence is the only means of overcoming their opposition.

Technical Issues

Incremental Implementation

Given the number of attitudinal and technical issues that attend the transition to integrated systems, strong consideration should be given to incrementally implementing the system. An incremental approach would be compatible with the issues of staff and management attitude accommodation just discussed.

Under an incremental approach, the process of implementation would be parceled by components of the system or by tasks, and a priority and time sequence would be assigned to each. The approach is commonly used in project planning. Popular computer software is available that helps the user make decisions about these sequences and priorities and helps the user monitor progress. In real situations, the approach is quite fluid, requiring readjustment, new priorities, revisions of tasks, etc. Most fluid of all are the proposed completion dates.

Management and staff can be valuable in setting the priorities. However, in the absence of their input, individuals responsible for implementation have often targeted a system component that is

especially critical to a key user audience. For example, if the organization is having cash-flow problems, a high priority might be given to the billing activity. It would be possible to show managers that third parties and patients are being billed more promptly, that the backlog of bills is dwindling, that additional revenue sources have been explored, and that staff comply with the paperwork requirements of the billing procedures. These early, positive experiences help to build credibility for the persons managing the project and encourage managers to conclude that they have made the right decision.

Since local interests vary widely, it is not possible to recommend one set of priorities for the transition to an integrated decision support system. While the initial steps may be deceptively easy, especially for organizations that have successful histories of using independent components, without careful project management, the transition can become overwhelming. Those responsible for the transition must always keep in mind that the business of the organization is to provide services to the mentally ill. Consequently, no single activity should ever be imposed that would make that business secondary. Prior to the introduction of any task that represents a major departure from procedure, or affects a large number of people, it is highly recommended that small-scale pilot demonstrations be tried, along with less formal feedback solicited from peers, supervisors, and the affected staff.

Data Issues

Volume. The amount of data potentially represented by an integrated decision support system and its impact on the computer resources of the organization is probably one of the issues that is first tackled. This is only an error if the issues already mentioned are permanently neglected, or their consideration long postponed.

In the design guidelines proposed, it is the event component that carries the burden of both providing useful data and permitting the linkage of the independent components. Thus, for organizations with some degree of information system capability in place, it is their encounter with event reporting that creates added data processing demands. Under the event component, the options recommended for an organization are intended to provide useful data, while minimizing the data collection burden for staff and the organization. This is perhaps most in evidence under the inpatient, residential, and partial day programs, for which it is recommended that sampling be considered as a viable way of obtaining sufficient information to address basic management issues.

Nevertheless, no matter how elegant the sample design or the methodology for the collection of the data from staff, event data represents

a substantial increase in the volume of raw data that must be dealt with;

a growth in the number of forms handled and the number of tallies or key strokes by staff to convert the data into some form for processing;

an increase in the amount of time that data collection, manipulation, and report preparation will take;

challenges to the storage capabilities and the speed of the organization's computer; and

increases in administrative or overhead costs.

Given this set of concerns, it is evident that neither the system manager nor management can afford to be simplistic. Some attention must be given to the adequacy of current staff and equipment to deal with the additional processing requirements. However, it must also be strongly emphasized that if the issues identified earlier are dealt with actively, much can be accomplished to prepare the entire organization for the arrival of actual data collection and data processing. Management and staff will have at least a nonhostile outlook. Pilot testing, it is hoped, will work out ambiguities and bugs. Timely feedback of useful results serves as a reinforcer.

If previously cited issues are not dealt with actively, it is this area of data volume, burden, and cost that will receive all the scrutiny. The latter become convenient excuses for why movement in the direction of data system integration is an organizational error. The true reasons may be the failure to have a defensible plan, or to prepare for the attitudinal resistance of key personnel groups.

Software and hardware. The issue of data volume may confront the organization with the need to upgrade its computer hardware resources. While the costs of relatively powerful automation have come down dramatically, affordability should not be an excuse for poor acquisition planning. Organizational growth, vendor support, equipment reliability, software availability, and similar factors must be carefully factored into a hardware purchase.

For many organizations, the acquisition of hardware and software coincide with the purchase of a system from a vendor. As other literature carefully documents, there is a methodical approach available (NIMH 1980a). It emphasizes how important it is for the organization to have a clear concept of the system it is trying to buy. In many instances the auxiliary level has assumed some responsibility, either in providing guidance to local providers or in developing specifications and sample procurement solicitations. In several instances, the auxiliary level may actually be the source for both hardware and software.

Organizations should be extremely attentive to the concept of integration in acquiring the software, being sure it is an operational feature and not just a claim. It is much easier to describe relational data bases and data base management software than to achieve integration man operational environment. Mental health organizations must be especially vigilant. The billing practices, the nature of the staff involved in direct and adjunctive services, the complex nature of care that constitutes mental health services, and the reporting requirements that these settings must meet are far more complicated than in traditional health settings.

Popular software packages, sometimes called off-the shelf software, may provide the organization with an endless series of technical challenges, as it tries to mirror its complex structure and procedures and achieve integration by using an amalgam of off-the-shelf products. Software retooled from general hospital settings or primary-care clinics should demonstrate recognition of organizational complexity to a mental health organization. Scenarios and acceptance tests put to such systems show if cosmetic changes only have been made.

Software developed uniquely for mental health settings must undergo similar tests.

Summary

For organizations making the transition from a system of independent information components to an integrated decision support system, a number of issues should be considered. Primarily, these issues involve attitudes and technical approaches. Some effort must be devoted to the consideration of both staff and management attitudes toward the integrated system and to ways of dealing with negativity and enlisting support. In addition, having a clear plan within the

organization for how the transition will proceed is desirable. The plan serves not only to reassure staff and management, but provides an opportunity to anticipate each procedural issue, ensures that resources are adequate, and prepares affected staff. No single issue can be unequivocally assigned the highest priority. However, it can be anticipated that the issue of data volume, burdensome.-ness, and cost will be singled out as a public obstacle if the attitudinal issues have not been engaged.

********NOTE: SECTION III MISSING FROM PAGE 101 TO 116*******

For example, NIMH used it throughout the 1960s and 1970s to monitor trends in the mental health service delivery system of the United States.

Precisely which data component (s) an auxiliary level entity will request is not predictable. The entity's reasons for needing information determine which con-tent will be of interest. For example, an

auxiliary
level whose mission is to represent a clinical profession or one mandated by legislation to serve emotionally disturbed children and youth will gravitate toward the human resources and patient components, respectively. Other entities may have a long-range plan for the phase-in of an integrated decision support system that begins with the submission of single, nonintegratable data bases. What components they select to cover and in what sequence may depend on their past history, current needs, resources, or other factors.

Some argument can be made that the organization data component or some representation of it must form the cornerstone of any system at the auxiliary level. The fundamental nature of the component derives from two facts. First, it identifies the potential set of places that might contribute data to the information system of the auxiliary level entity. This is the universe of concern for a particular entity. Second, organization data are needed to make full use of other data components. For example, data on total number of patients served or the range of costs per unit of service have value as stand-alone information. They have little meaning, however, if the auxiliary level can not document what providers were represented by these data. In addition, interpreting or explaining variations in the data, such as a unit-of-service cost difference of $15 vs. $75, is improved with knowledge of the types of programs and organizations that contributed these data.

Whether one data component or multiple components, the auxiliary level entity must work through a set of decisions. These include

foremost, the uses it will make of the data provided;

who shall report, i.e., which organizations, staff, patients, etc. constitute its universe of concern;

what data items are to be provided to the auxiliary level entity;

the frequency of reporting and the period to be reported on; and

the processes for reporting, i.e., whether by telephone interview, transmission of a magnetic tape, completing a questionnaire, on-site inspection, computer disk, etc.

The merits of an independent components approach are its simplicity of design, clarity of expectations regarding uses of data by the auxiliary level, and the relative economy of reporting. The major liability of the approach is the stand-alone nature of the resulting data. The auxiliary level cannot do a lot more with the data than generate descriptive reports showing volumes, relative standing, or trends over time. Such performance indicators are useful and may lead to hypotheses or expectations about why these relative differences or trends exist. However, the only hypotheses that can be tested are those that exclusively involve data from one of the independent components. It is difficult or impossible to test hypotheses that invoke multiple components without de novo or supplementary data.

Auxiliary level entities that do not have management responsibilities vis-a-vis local organizations may find this approach viable. Auxiliary level entities that exercise management oversight may find the data available from an independent components approach less than satisfactory - independent components limit the ability to analyze and to ferret out what actions lead to what consequences. However, it is probably also true that an auxiliary level entity cannot move toward an integrated decision support system until it has had some experience with a system based on independent components.

Model II: Reports Containing Integrated Data

A distinct advance over independent components is possible if the auxiliary level entity works with organizations that understand the concept of an integrated decision support systems or have such a system. The auxiliary level entity can benefit from this capacity without developing or maintaining an integrated system itself. The hallmark of a system based on reports containing integrated data is a designated set of reports at the auxiliary level containing data that have been linked by the providing organizations in conformity to predesignated standards and formats.

A system maintained by the auxiliary level based on reports containing integrated data is represented in figure 6. In this example, the entity has specified two reports from the organizations. Each contains a unique linkage of data across two or more of the MHSIP data components, viz,

for a designated reporting period, a categorization of staff disciplines linked to the total hours those staff spent in the four event types defined in chapter 6, and

a specification of FTEs by profession in each program element along with the expenses of that program element.

This example suggests that the entity will be analyzing the differential productivity and expenses associated with staff professions, either across the entire system or by comparing organizations.

This model assumes that the integrated data can be aggregated across the reporting organizations. For example, using the integrated report on hours by event type by professional category, the auxiliary entity is able to sum across all the reporting sites to provide a grand total of hours or average hours for each of these groups. This enables the

entity to develop fuller reports of a whole system, organization subsets, or program elements.

Precisely which data components an auxiliary level entity will

request
be linked for reporting is not predictable. Many combinations involving only two of the data components can be defended logically and will have relatively immediate payoff as management information. The rich variety of integration possibilities involving the data components is shown in exhibit 6. While the exhibit exhausts all the possible combinations for integration, in practice, some would be nonsensical. The management information value of some combinations is questionable and the effort necessary to attain some of the combinations would be debatable. The fourcomponent combinations particularly provoke questions in the latter area since it would take relatively minor additional effort to add the fifth component in most instances.

While conceptually possible, this model appears to have very limited implementation. It may be quite viable for some auxiliary level entities and deserves wider consideration. It has been used primarily in special interest surveys requesting that specific linked data be reported. For example, in the human resources survey sponsored byWICHE cited in chapter 7, staff were asked to report not only their demographics and employment data, but also some limited data on the numbers and types of patients they had served and the types of services they had provided for a sample period.

For the auxiliary level to operate successfully with receipt of integrated reports, the following conditions must exist.

The auxiliary level entity must have a clear and explicit statement of the questions it wants to address and great confidence in the stability of the questions and the extent to which its linked reports will address those questions.

More significantly, the entity and the reporting organizations must have a clear understanding of precisely what linkages are to be performed to supply appropriate data and must have standard procedures for performing them.

It is strongly preferred, but not required, that an integrated decision support system exist within each of the organizations that provide linked reports.

These conditions are not trivial, and each has implications for the viability of this model.

Closure on the questions to which an auxiliary level entity must respond, either for its own management needs or to satisfy some other constituency or entity, may prove elusive. The longer the period for which these data are expected to be viable, the more tentative this task. Mental health is as dynamic as most other health and human service pursuits. New issues are emerging continuously, new spins are being placed on old questions, and answers to questions have a way of leading to more questions. If the auxiliary level entity is able to obtain linked reports that are both frequent and responsive, then the timeliness and specificity of the data may rarely be at issue. Under these conditions, such a decision support system model may work well. If the entity must rely on the linked reports for a long period, e.g., a year or more, the value and credibility of the data may diminish with time.

If reasonable closure on the questions can be achieved, the next achievement must be consensus about the linkage of the data. This involves resolution in several discrete areas.

1. Agreement on the definition or content of each data item must be ensured.

The data content provided earlier in the report and later in this section should prove invaluable in this step. Use of nominal definitions (see chapter 2) is discouraged because of the ease of

misinterpretation. Generally, operational definitions or specifications should be in evidence. Jn addition to the content considerations, specific technical and project management provisions should he clarified early in this process. These would cover such aspects as the period covered by the data, program elements or organizations included, due dates, responsibilities for data editing, types of assurances that can be provided about data quality, and type of feedback or reports the auxiliary level will provide.

2. The auxiliary level entity should develop concrete specifications for linking the data.

This has a triple payoff. First, it forces those at the auxiliary level to think clearly about the reporting and uses of the data. The data from local organizations often have legal, financial, or other consequences for the mental health organization. Therefore, specifications for data reporting issued by auxiliary entities should not be vague and general. The onus is on the auxiliary level entity. Some entities may elect to distribute a form, data format, table shell, or matrix to be used in preparing the report. Others may provide the reporting organizations with a paper or magnetic copy of computer programming code to perform the linkage. Step by step written instructions, with definitions, is another possibility. Vagneness in any aspect impedes compliance by the reporting organizations and may leave the auxiliary entity frustrated with the resulting data, e.g., data that are non-comparable or fail on some other basis that the entity thought had been made clear.

Second, the specifications clarify procedures and reduce ambiguity for the reporting organizations. Data bases that are as rich and complex as the integrated decision support systems recommended in the previous section provide innumerable pathways for the integration of data. It is an empirical question whether laissez-faire operation of this variety of pathways would each produce the same result. However, as a practical consideration, data reporting has an economic consequence to the organization. The clearer the report to be produced, the more efficient the organization can be, either in obeying the precise specifications or in creative ways of achieving the result at lower cost.

Third, assuming the two previous payoffs have been achieved and that the reports contain data of acceptable quality, the resulting reports will satisfy a number of expectations. This is true for any of the models presented in this chapter. The auxiliary entity will find the data useful and will be able to aggregate data across organizations easily. These totals are good portrayals of system performance. The resulting reports will permit reliable comparisons to be developed so that similar programs can compare performance. As noted in chapter 1, such comparisons are crucial in understanding and managing performance. Finally, the experience for most parties will be reinforcing so that future iterations are aided.

3. The auxiliary level must work out specific technical arrangements with each reporting organization.

A variety of possible arrangements for the transmission of the report may be open to the reporting organizations. Those with well-developed computer capacities may be able to send a disk or tape or transmit the report over telephone lines. Organizations with less capability may send a paper copy of the report. In either case, it is apparent why the clarity of specifications noted above is significant.

The final condition for the viability of this model is desirable, but not essential, viz, that an integrated decision support system exist within each of the organizations that provides linked reports. A fully integrated system at the provider level may not be necessary for two reasons. First, nothing in this model mandates that the auxiliary entity request a set of reports that cross-cuts or exploits all of the data components. Some entities may find integrated data drawing on just two of the components satisfactory, e.g., integrated cost and service data can be quite powerful as management information. Some entities have the authority to set policies requiring the development of integrated systems

within ~he organizations. In this case, the time lines and component sequences may be specified so that integration capacities are built at the organization level and simultaneously capitalized on by the auxiliary entity.

Second, with full integration capacity in place at the provider level, the preparation of linked reports is certainly expedited. However, if the auxiliary entity has provided clear specifications for the linkage and if there is sufficient time, a mental health organization could also cooperate by de novo data collection. This would entail the ad hoc use of special reporting forms or data retrieval for a sample period. For this reason, figure 6 explicitly shows one set of organizations that do not possess an integrated decision support system and provides the data by obtaining them through an ad hoc collection effort.

The MHSIP recommendation remains that each mental health organization move toward an integrated decision support system. Many auxiliary level entities are in a position to work with or otherwise encourage organizations to develop such capacities. Where appropriate, the MHSIP recommends that the auxiliary level en-courage the development of this capacity. As the capacities are being developed, this model allows these organizations to continue to participate in the data system of the auxiliary level entity.

Exhibit 6. The universe of possible integrations involving the five MHSIP data components for submission to an

auxiliary level decision support system based on reports containing integrated data

Potential MHSIP Integration possibilities with other components

data components in the auxiliary level system	Organization Patient/client Event Human resources Finances
Organization (O)	Single component system (OxP/CxHRxF)
	(P/CxO) Single component

Patient/client (P/C)	system
Event (E)	(ExO) (ExP/C) Single component system
Human resources (HR)	(HrxO) (HrxP/C) (HRxE) (HrxOxP/C) (HrxP/CxE) Single component (HrxOxE) system (HrxOxP/CxE)
Finances (F)	(FxO) (FxP/C) (FxE) (FxHR) Single component (FxOxP/C) (FxP/CxE) (FxExHR) system (FxOxE) (FxP/CxHR) (FxOxHR) (FxOxP/CxE) (FxP/CxExHR) (FxOxP/CxHR) (FxOxHRxE)

The merits of a system based on reports containing integrated data are realized in two areas. First, the auxiliary level does not have to develop and maintain the data base from which integrated data are derived. This can be an advantage to entities that are not convinced that they need their own data system, to those who wish an initial introduction to the value of integrated data, and to those who are in transition from an independent component model to one emphasizing data integration. In addition, given that some entities are responsible for hundreds of organizations, system size can represent a major consideration. Maintaining data bases covering that number of organizations poses substantial technical challenges and costs.

Second, to function successfully, such systems need specificity and clarity about data items, linkages, responsibilities, uses, and other areas mentioned above. The goal of clarity has its own rewards in the rational model fundamental to the MHSIP. However, it may also have its down side if the pursuit of specificity unduly infringes on creativity or professional respect for the local level. If issues around data reporting lead the auxiliary level entity into a position of autocracy, its fundamental relationship

with its organizations could be significantly damaged in many arenas. Overall, clarity is a system feature that will be more positive than negative, however.

The major liability of the approach is the inability to manipulate the data into reports other than the ones requested. Thus, if a new policy must be analyzed, a crisis occurs that demands data, or an accusation is made that could be deflected with data, the canned reports may have limited use. Related to this is the issue of timeliness. The longer the period for which the data are expected to be viable, the less satisfactory this system model. However, the auxiliary level must also consider the reporting burden that would be created by continual demands on its organizations for new reports.

In conclusion, a system model based on reports containing integrated data gives the entity some of the benefits of an integrated decision support system without the maintenance or computer difficulties. The model may be of most interest to auxiliary levels that do not have intensive management responsibilities involving patient care or organizations and to those in transition to an integrated system. Since the integrated data as reported by providers must satisfy the information needs of the entity, nianagement analysis of the data is confined to the linked data as provided. To be satisfactory, an auxiliary level entity must conceptualize and communicate its data needs clearly, have a degree of certainty about the reports it is requesting, and ensure that it has an effective relationship with the data providers. If these conditions are met, this model will go a considerable way in aiding the entity in the discharge of its responsibilities.

Model III: Integratable Data Bases

Under the third model, the auxiliary level entity has the capabihty of constructing and operating its own data system because it receives data bases corresponding to the MHSIP data components from the organizations in its universe. The data bases are transmitted

as nonintegı data, but have been construct so that the entity is able to process and integrate them, e.g., they may be accompai by a cross-walk key explainin how codes may be

matched across the data bases. The data bases may be transmitted as computer tapes, may be on-line to the entity's computer system, or may arrive in batches as original data forms.

Figure 7 illustrates this model, with organizations sending computer tapes to the auxiliary level. In the figure, determine their ability to comply with these contract provisions. It is even common for performance indicators to be agreed to; if the data provided by organizations do not comply with the indicator, the auxiliary level has the authority to intervene or investigate.

Mutual understanding of the data specifications will result in more efficient data submission, processing, and integration. For example, if the content of each data base is not understood a priori by the auxiliary level entity, organizations must supply documentation that permits the processing and integration of each data base. An organization may submit a data code book, explaining the file structure of the data base, identifying each data field, and documenting the meaning of valid code entries. If codes or identifiers differ across an organization's data bases, a cross-walk table must be provided explaining how the codes can be matched. If the auxiliary level has provided specificity in the form of a tape format, all organizations may be required to abide by the same coding conventions. Compliance to this format may obviate the need for additional documentation.

3. Finally, there must be agreement on data quality. For an auxiliary level entity to operate a decision support system in which it has confidence, it must have assurances about the quality of the data going into the system. Some tests of quality can be performed by the entity as it receives an organization's data bases. These involve the use of edit programs that check the acceptability of the data codes, conduct range checks (e.g., that a service date occurs within a specified reporting period), and perform relational edits in which one data field is compared to another (e.g., suicide attempt with involuntary commitment). If the entity conducts an edit, the organization must know which errors will be regarded as fatal (i.e., the data base would be rejected), percentage of error that will be allowed, and responsibility and time lines for corrections.

Other aspects of data quality are the responsibility of the organizations providing the data bases. Assuming that the organizations need accurate data themselves, or depend on the reports the auxiliary entity provides as a result of their data base submission, it is in their best interest to maintain quality. Some degree of error and accidental omission must be tolerated, especially in large, busy systems. However, it is also worthwhile to extend the concept of periodic financial audits to the other data bases as well. These statistical audits can be done within an organization or at the behest of the auxiliary level. They are extremely useful in pointing out where error occurs and provide an opportunity for management intervention in the form of additional procedures or clarifications of responsibility.

With these requirements met, an auxiliary level entity should find that the receipt and processing of MHSHP data bases provide it with sufficient input to construct its own decision support system. The merits of such an approach are in two areas. The most apparent is that the approach creates the potential for the auxiliary level entity to construct and maintain a decision support system that is extremely flexible in addressing its own data needs as well as those of others, e.g., legislatures, consumers, and other entities. The second advantage derives primarily from the control the auxiliary level entity is able to exercise in processing the data. In the previous models, the entity either could not integrate the data or was dependent on canned reports. Under Model III, the receipt of actual data bases results in the following flexibilities for the auxiliary level:

Freedom to consider many different system configurations to achieve integration.

The use of many different computer set ups and software packages for processing and analysis.

Flexibility in setting priorities for the analyses it will generate.

The potential to create a smaller data base that is either representative of its universe or focuses on a particular management or research problem. This results in a capability referred to as rapid prototyping in which particular program designs, feedback reports, or management hypotheses regarding potential effects can be tested quickly and usually on a small scale (NIMH 1987a).

The potential to assess and monitor continuity of care via linkage of data on patients across organization data bases.

The list of advantages could be continued. Such flexibility and control over the data should permit the entity to discharge its responsibilities more thoroughly and in a more timely manner than either of the previous models.

The disadvantage of the model derives primarily from the possibility that organizations will not be encouraged or permitted to develop their own capacities to integrate their data. This organization dependency on the auxiliary level to integrate data and provide management reports contradicts the MHSIP recommendation that each mental health organization develop an integrated decision support system. Without this capacity, organization managers might develop a degree of psychological distance from their data and a diminished sense of responsibility for actions based on data. Managers as well as organization staff may feel that they are collecting data only for the auxiliary level and that the data are meaningful primarily to the people at that level. If this does occur, responsibility to monitor and manage organizations' performance shifts from the managers within those organizations to the auxiliary level. The entity may "get its way," but without the development of these local capacities, the vigilance the entity must exercise is constant and demanding. Any disruption at the entity level - a budget cut, computer problems, loss of personnel- travels with undiminished impact throughout the mental health system.

The disadvantage, however, seems relatively simple to correct. If organizations have collected the data capable of sustaining an integrated system, they have made a major accomplishment. With the addition of some data processing capability and applications software, local capacities could be developed. The auxiliary level entity may be in a position to assist the organization in both those areas. The consequence is the enhanced appeal of Model III.

In summary, a system based on the entity's receipt of integratable data bases from its organizations provides the basis for a fully integrated decision support system at the auxiliary level. For such a system to be viable, data content must be uniform and comparable across the organizations transmitting data, and the entity must have a clear understanding of the uses of the data, clarity about the content of each data base, and confidence in the quality of the data. The flexibility in the entity's analyses of the resulting data base makes this model an attractive candidate. If the auxiliary level entity accepts that some of its organizations may not develop their own data system integration capabilities and accepts the responsibilities inherent in that situation, the model is one avenue to a fully integrated decision support system at the auxiliary level.

Model IV: Files Containing Integrated Data

Under the fourth model, the auxiliary level entity has the capability of constructing and operating its own data sys'em. The capability occurs because the entity receives files containing data that have been integrated across one or more of the MHSIP data components from the organizations in its universe. The difference between this model and Model III is that the data transmitted to the auxiliary level entity are integrated into logically related files by the organization rather than the auxiliary level entity.

Although the data components can be integrated into files in many ways, for conceptual clarity, it is easiest to think of at least three files being constructed. These three files produce a complete representation of the organization's decision support system. The transmission of these files is shown in figure 8.

Patient's x services. The file that first comes to mind involves the patients and the services they received. Constructing this file for an organization is discussed in chapter 6. To each patient statistical record, the organization would add the minimum data about the direct and adjunctive events the patient had received for a designated period. Recall that this includes date, duration, staff member providing the event, and so forth.

Human resources x services. A second file would be constructed from all the organization's human resource statistical records. The identifiers in this file could be matched to the staff identifiers in the previous file. Also included in the human resources file would be an indication of the staff person's involvement in the event types not covered by the previous file, viz, consultation and administrative/support events. The period covered would match the period in the previous file.

Organization x financial data. The final file does not present much of an integration challenge. To the data contained in the organization component would be added the financial data, also matching the period for the previous files. This file is more a matter of reporting convenience. However, these data are essential for proper processing and analysis of the transmitted files.

The combination of the three files enables the auxiliary level to address the performance areas introduced in chapter 3: Who receives what from whom at what cost and with what effect. The organization file provides

a context
for interpretation and one possible way of organizing the data. The patient file addresses the "who receives what from whom" performance areas. The human resources file provides the essential details on staffing that elaborate the "from whom" analysis. The remaining events attached to the human resources file enable construction of a profile of 100 percent of the events in an organization for a reporting period. Finally, the financial data in the organization file convey not only the financial position of the organization, but provide crucial dollar amounts that can be attached to the other data. For example, the contrast between program element expenses and the productivity of the staff, the costs of providing services to subgroups of patients, or the linkage of revenue and expense figures to patient characteristics or analyses made possible with the transmitted financial data.

For the organization to construct these three files or to assemble some other version of a completely integrated data file, it must have an integrated decision support system. This is a significant difference from the three previous models. Thus, in figure 8, all the participating organizations are shown to possess fully integrated systems. The other assumptions and requirements of this model are identical to those of Model III:

Comparable content across organizations is assumed.

The auxiliary level entity has a clear understanding of its need for and uses of these integrated data files.

The content of the transmitted files must be clearly specified.

The quality of the transmitted files must be tested and assured.

An entity that receives these types of integrated files for each of the organizations with which it works is able to construct and operate a fully integrated decision support system. With full capability, the entity then has considerable latitude in using its decision support system. It can generate analyses unique to any single data component as well as produce any one of the reports shown in exhibit 6. These information reports can be used to discharge the entity's management responsibilities, provide feedback to organizations, analyze organization performance against agreed-on indicators, and answer queries from a host of data users at the organization level and many other levels (e.g., legislatures, consumers, the media, researchers).

Operationally, the transmission of files containing integrated data results in the same system capabilities for the auxiliary level entity as does Model III. However, this model has as its primary merit that it integrates the concepts of integrated decision support systems for both the organization and auxiliary levels. The previous models were shown to operate with organizations that did not necessarily possess their own data integration capabilities.

This chapter opened by acknowledging that not every auxiliary level entity needs to operate and maintain its own integrated decision support system. For many entities with substantial management responsibility for organizations, such systems are worth pursuing. Under Model IV, the auxiliary and organization level perspectives function in concert. Therefore, Model lV over-comes the disadvantage noted for Model III and is judged to have no major liabilities.

Summary

Auxiliary level entities must have information to carry out their responsibilities with respect to the organizations that comprise their mental health system. The more complex their responsibilities,

particularly when they include substantial decisionmaking, the more likely they are to require complex decision support systems. An entity may acquire the information needed through various models and approaches. Each carries with it special requirements, and each results in a set of advantages and disadvantages. Some of the models fail to reinforce the need for integrated decision support systems at the organization level. They may still be quite viable for the auxiliary level, however. From the perspective of the MHSIP, models are preferred that reinforce the integration capabilities at the local level but simultaneously provide the auxiliary level entity with the type of information system it needs to discharge its responsibilities.

Chapter 13

Organization Data at the Auxiliary Level

As noted in the preceding chapters, the MHSIP accepts an organizationally based definition of the mental health service system. Virtually every mental health organization that can be identified by the MHSIP functional definition in chapter 2 shares a relationship with an entity at an auxiliary level. The most evident auxiliary level entities are State mental health agencies, corporations that own or operate mental health organizations, and payers for mental health services. These chapters have also noted other types of auxiliary entities, their reasons for needing data from organizations, and various models by which an entity can obtain data from organizations to construct its own information system.

Some auxiliary level entities do not need broad-based data from their organizations. Their mission may lead them to focus on only particular types of data. In some cases, the organizational structure may actually be irrelevant to their information needs. However, the vast majority of auxiliary level entities have a fundamental need to know what mental health organizations make up their universe of concern. Usually, the number of organizations is necessary but not sufficient information. Additional information about those organizations is needed, either to group similar organizations or to report on a facet of organization performance.

In chapter 3, the performance of an organization is described in terms of a management knowledge model, viz, who receives what from whom with what effect and at what cost. For each area of the knowledge model, it is generally possible to describe a set of unique data content that permits management to analyze the significance and contribution of that area to overall performance. These data sets are presented in section II.

If all this information were also available at the auxiliary level, the entity could analyze individual organization performance as well as that for a service system. However, this contingency is affected by two considerations. First, if the entity is responsible for a large or complex mental health system, the need to analyze large data flies from individual organizations to achieve some aggregate picture of the system is an inefficient and costly way to handle data. Second, most auxiliary level entities need additional information about their organizations - who owns them, where they are located, or the name of the executive director. These data are not contained in any of the data sets proposed for the provider level.

In light of these considerations, an additional data component is proposed exclusively for the auxiliary level. Its items cover information about organizations that is not routinely entered into computerized data bases and items that represent aggregations from the data sets already proposed for the provider level.

Definition of an Organization

As explained in chapter 2, an organization has to meet five characteristics to be classified as a mental health organization.

1. Formal establishment by law, regulation, charter, license, or agreement.

2. An established organizational structure, including staff.

3. A primary goal for all or part of the organization of improving or maintaining the mental health of its clientele or seeking to prevent impairments to mental health from developing.

4. A clientele with psychiatric, psychological, or associated social adjustment impairments.

5. Provision of mental health services.

By having a functional, operational definition of a mental health organization, it becomes possible for an auxiliary level entity to prescribe the minimum set of characteristics a place must match to be considered in the universe. This is extremely significant because affiliation with the auxiliary level entity is not a sufficient criterion for inclusion in the universe. Some entities have responsibilities for multiple programs. For example, many State agencies are umbrella agencies covering welfare, medical assistance, physical handicaps, substance abuse, and other types of human services. Not all of the organizations affiliated with the entity are mental health organizations. The characteristics listed above provide the basis for inclusion.

Some entities may set additional requirements such as the setting must be owned or operated by a particular corporate chain, receive funds from a State mental health agency, or operate a certain type of program element. These additional characteristics are included in the data set and help to differentiate and categorize mental health organizations.

Uses of Organization Data

Determining the Appropriateness of Comparisons

As is discussed in chapter 1, for a manager to make full use of information from a decision support system, a comparison must be made. At times, this information is compared to a management hypothesis, i.e., a manager's privately held or publicly stated expectation about some empirical characteristics of performance information such as its direction or size. At other times, the comparison is to the organization's past performance. In these situations, the issue of whether the information provided to the manager is appropriate to the comparison being made does not arise. This is true both for provider and auxiliary level managers.

However, when a manager compares the performance of one organization with that of others, there must be a degree of certainty that the comparisons are appropriate. In large or complex mental health systems, the auxiliary level must be especially attuned to how data from its organizations can

be clustered and compared. Managers at that level must have either a way to select organizations for comparison or confidence that the pertinent data are valid for comparisons. Consequently, one of the first uses of the organization data set is to provide a substantial amount of the information for determining whether performance comparisons across specified organizations are appropriate.

For example, an auxiliary level manager may be interested in comparing organizations on performance data that are aggregated in the organization data set and backed up by details in one of the other data components, i.e., patient, event, staff, or financial data sets. It is essential for the manager to identify what organizations will be compared. The organization component makes this possible. It helps the manager identify which organizations are within the universe of concern by such factors as whether they are appropriately associated with the auxiliary level, whether they offer a particular service, where they are located, if they are of the right size, and other variables that affect the validity of the comparison.

Other information that an auxiliary level manager may need is contained in neither the organization data set nor the other data sets applicable to auxiliary level entities. This information is labeled contextual information and often is not entered into the computerized information systems at either the organization or the auxiliary level. Examples of contextual information are

population variables, e.g., geographic distributions of the population, proportion of elderly, the size and concentrations of minority groups, poverty areas, areas with atypical employment statistics, epidemiologic data, results of need assessments;

laws and regulations, e.g., exclusions and waivers under Medicaid, due process concerning commitment, responsibilities for disabilities other than mental illness;

the service environment, i.e., organizations not affiliated with the auxiliary level entity that offer services that compete with or complement the services of the organizations that are affiliated with the entity.

Depending on the comparison, contextual information may be a critical complement to information from a decision support system. This monograph does not address how an auxiliary level entity accesses contextual information.

The Composition and Performance of the Mental Health System

Once organization data about the mental health system of a given auxiliary level entity are transmitted to the entity, a principal use of the data is to catalog the size, distribution, makeup, and aggregate performance of the system (NIMH 1986b, 1986c, 1988). These constitute absolutely basic information needs for the managers of many auxiliary level entities. If these managers do not recognize the inherent value of having this information, it will quickly be driven home as soon as they are required to set the context for other performance information on the system. For example, a request for additional funds must occur in a context of the number of organizations to receive some portion of the money, their current levels of revenue and expense, or some performance information that reveals they do not waste their current resources.

Data for a point in time. An inventory of organizational data is usually presented as a set of descriptive data. Some data relate to organization characteristics, such as ownership, affiliation with a hospital, type of programs offered, or number of beds (NIMH 1986c). These are usually presented as absolute numbers or percentages. Other data summarize selected features of performance at the organization level. These often draw on the data components presented in the remainder of this

section and are aggregates such as volume counts of patients, visits, staff FTEs, sources and amounts of revenues, or types and amounts of expenses.

Such data can be used by managers in the action areas noted in chapter 1, i.e., acquisition, distribution, monitoring, accounting, and evaluating. Examples of these behaviors are:

Acquisition and distribution: Planning for the growth, retrenchment, or reconfiguration of a service system, especially in terms of missing or over concentrated services in the system.

Monitoring, accounting, and acquiring: Justifying or advocating for additional resources, either funds or staff, and especially when comparable data highlight discrepancies or inequities.

Accounting and evaluating: Summarizing the performance of the mental health system by the volume statistics shown for services, accessibility of programs as shown by the characteristics of patients served by the organizations, and matches between revenues reported and other budgetary information at the auxiliary level.

Evaluating and distributing: Redeploying resources based on the identification of shortage or surplus areas within a system such as concentrations of organizations, shortages of staff professions in parts of the system.

It should be apparent that these sample uses uniformly assume that comparisons are being made with the data. The comparisons are based on relative standing within the mental health system itself or on comparisons with other mental health systems.

Trend data. When data on the mental health system are collected and contrasted over a period of time, the dynamics of the system become addressable. Such analyses are especially useful when data from other MHSIP components are linked so that more is known about the organization, its composition and performance than is contained in the organization data set alone. Shifts in the numbers and types of organizations, changes in the availability of program elements, staffing changes, case load variations, and financial changes can all be monitored and analyzed. Such analyses play a vital role in detecting the impacts of changes in legislation, technology, economics, and the incidence and prevalence of mental illnesses. They are crucial to developing a strategic management perspective for planning, operating, and evaluating mental health programs at the organization level as well as at such auxiliary levels as the State and Federal Government.

Trend data can also be examined for several different types of mental health systems. For example, one auxiliary level entity may be responsible for a system of organizations that is supported largely through public funds and serves an indigent and severely disabled group of patients. While looking at its data over time, shifts in staff FTEs, occupancy rates, or revenue in constant dollars might reveal directions that management wishes to investigate further.

One means of pursuing these results it to examine trend data from another system, either similar or different from one's own. An identical trend in another system may alert managers of an auxiliary level entity that larger forces may be at work or that a coordinated plan, crosscutting multiple systems, may be needed to alter the direction of a trend. A reverse pattern observed in another system confronts the manager with a need to understand these dynamics. Entropy may be affecting the system, stimulating a move from laissez-faire to proactive management; factors such as salary scales or local economy may be noncompetitive; publicity may have affected the performance of the systems, either favorable publicity for the advantaged system or adverse publicity for the disadvantaged system.

Whether the entity uses data for a single period or over time, an organization data component provides ready access to comparable and aggregated data on the performance of the organizations within a mental health system. These data can be used to describe as well as manage a system. To discharge the latter function, the MHSIP advocates that the auxiliary level add the data components presented in the remainder of this report. As data from these components become available, the concept of data integration applies at the auxiliary level.

The Integration of Organization Data With Other Data Components

As noted in previous chapters, many auxiliary level entities have management responsibilities parallel to those at the organization level, i.e., to acquire, distribute, account for, monitor, and evaluate the resources needed to sustain or expand the system. These responsibilities are especially likely in large or complex mental health systems.

Although the availability of organization data is of great value, the execution of management responsibilities can be greatly enhanced by data that address the management knowledge model. These types of data can be supplied by the organizations themselves if they have in place the data components described in section II. The auxiliary level entity must have parallel components and data sets; these are presented in the remaining chapters.

At the auxiliary level, it is assumed that any linkage of organization data with the other MHSIP data components is intended to further understanding of the performance of either the organization or program elements. Exhibit 6 in the preceding chapter lists the various types of reports involving organization data and the remaining data sets. At least 15 unique combinations are possible. If program elements are the focus, the number of combinations expands considerably. Because of the potentially high number of data combinations when integrated decision support systems are available at the auxiliary level, it is hoped that a manager's examination of integrated data is stimulated by a need to understand better the performance data reported in the organization data set. It is all too easy for unguided exploration through so many potential combinations to nibble away at management energies or distract attention from more important questions.

As an example of performance analysis in an integrated auxiliary level system, suppose a system level manager notes that some community-based organizations have much higher admission rates than other organizations of a comparable size and location. Several management hypotheses may be offered about the high admission rate organizations:

They deal with a less disabled patient population and consequently their clientele need professional assistance for shorter periods.

They have specialized service contracts with employers in their areas in which psychiatric care benefits are limited or audited by the employer.

They have utilization procedures in place that rigorously review appropriateness of continued treatment for patients based on presenting problems, treatment plans, and changes in severity of condition/level of functioning.

They are "dumping" patients that require intensive and long-term assistance and slanting their case load toward clientele that are more easily treated and less costly.

Staff composition is weighted toward contract employees who are picking up patients with third-party coverage in their private practices.

The unique insights of the manager, especially those derived from anecdote and observation, may suggest which of these hypotheses first deserves exploration. Nearly all of the scenarios can be explored by linking the data from the high admission rate organizations with their data from the patient, human resources, or financial data sets.

In this example, suppose the manager finds that the high admission rate organizations uniformly refer a higher percentage of patients to inpatient services than do other community-based organizations. If the auxiliary level entity also has responsibilities for these inpatient services, the manager may not wish to accept the situation. The issues of least restrictive treatment, shifting of clinical responsibility, and higher costs for inpatient care have implications for the full performance profile of the mental health system. Consequently, an intervention may be needed such as modification of a performance contract or a policy about the number of inpatient beds that a community-based program is authorized to use. In short, the use of integrated data at the auxiliary level has obvious parallels with how managers of organizations use integrated data. The differences are primarily in the breadth of the examined data.

Minimum Data Set

The following items constitute the minimum data content in the organization component for the decision support system of an auxiliary level entity. Each entity must decide whether its responsibilities are such that the data set is appropriate. Each item is named and the minimum recommended categories for that item or a brief explanation of item content is provided. As noted in chapter 4, categories can be elaborated by the auxiliary level depending on needs and responsibilities. However, elaborations should always be designed to be collapsible into the minimum categories. This facilitates subsequent comparison of data, especially with other auxiliary levels. Comment sections follow the recommended categories. The comments are intended to explain the item further, discuss the importance or potential use of the data, or note advisable rules of interpretation.

NOTE: Items 1- 17 apply to the full organization

1. Name and identifier of the mental health organization

The official name of the organization as established by its license, charter, certification, or incorporation.

The 8-digit NIMH master facility number is recommended as the identifier.

Comment: Identifying the universe of organizations to which a given auxiliary level entity relates is a fundamental purpose of this data set. The name, address, and identifier are the usual means by which organizations are identified at the auxiliary level. Different entities may have their own numerical identifiers, e.g., an employer identifier for the reporting of wage and tax data. Although such entity-specific identifiers have value, to facilitate the likely comparison of data or identification of organizations across mental health systems of different auxiliary levels, the NIMH facility number is recommended. This is also the organization identifier recommended in the minimum data set at the organization level. Auxiliary level entities that are not aware of the NIMH-assigned facility codes

can obtain them from the Survey and Reports Branch of NIMH.

2. Mailing address of the mental health organization

P.O. box number or street number and name, city or town, State, zip + 4 code

Comment: See comment for item 1. This address is generally for the main administrative site of the organization and may not coincide with the site(s) where mental health services are delivered. The latter information is in item 5.

3. Name of the director

Last name, first name, middle initial, degree

Comment: The director of the organization is generally the individual regarded as accountable for the performance of the organization. Having the person's name on file facilitates followp in the case of data editing and other subsequent contact that may be required.

4. Telephone number of the director

Area code, 7-digit number, extension Comment. See comment for item 3.

5. Location of directly operated service sites

The address of each site directly operated by the organization and an indication of its program elements. The address format shown in item 2 should be used for each service site.

Program elements operated at each site.

- Inpatient-24-hour care in a hospital setting.

- Residential - Overnight care in a residence that is also responsible for either an intensive treatment program or supervised living and other supportive mental health services.

- Partial day- Structured programs of treatment, activity, or other mental health services provided in clusters of 3 or more hours per day.

- Outpatient - Programs of mental health services provided to clients on an hourly basis, on an individual or group basis, and usually in a clinic setting. Services such as

screening, crisis intervention, and psychiatric treatment can be included.

- Case management - Programs characterized by individualized attention emphasizing some type of intervention or participation in the natural environment of the patient

involving one or more of the the following activities (Kanter 1989):

a. outreach, engagement, or assessment of the patient and subsequent planning for a range of services, entitlements, and assistance;

b. brokering, coordinating, or advocating for the range of services needed;

c. clinical intervention with the patient to assist adaptive functioning in the environment;

d. monitoring receipt of service and/or patient's response to services.

- Emergency-Programs that provide immediate and short-term services to patients ex periencing psychiatric emergency or crisis situations. This covers telephone counseling,

immediate services, and referral services.

Designation of principal site.

Comment: This item complements items 1 and 2 by providing the auxiliary level with a complete catalog of individual sites where organizations provide mental health services. The site identified under item 2 may be repeated here if program elements operate there. If the mental health organization does not have multiple sites, the option for a not-applicable category is understood. Also, see item 14 for further clarification of the sites covered by this item.

Knowledge of these sites helps the auxiliary level avoid duplicative data collection from sites that may be satellites. When linked with event data, the volumes of services associated with each site can be determined. Using the patient data set, the auxiliary level can analyze the market areas served by the program elements by determining the geographic areas where patients reside.

Program elements are defined in chapter 2 as clusters of major clinical program areas within mental health organizations that are relatively homogeneous with respect to one or more of the following:

the types of functions they perform

the staffing intensity or type needed to perform them

client/patient groups that would be assigned to or treated in the area

the types and relative amounts of resources needed

the outputs produced

Principal site should be defined by each organization based on administrative considerations or volume of care. Principal site may refer to the entire site or to selected program elements within a site. For example, one site may be predominantly inpatient (principal inpatient site) and operate a small supplementary partial day program and another site may be the principal site for the outpatient, case management, and partial day program elements of the organization. The designation of the principal site assists in the analysis of utilization statistics from the organization, especially program location in relation to patient use. It may also serve as a focal point for the collection and submission of statistics on the program element.

6. Type of ownership/control

For profit

- Individual

- Partnership or corporation

If part of a chain, identification of the chain headquarters

- State-local government

- State government

- County or city government

- District/regional authority Not-for-profit

- Religious organization

If part of a chain, identification of the chain headquarters

- Other not-for-profit

If part of a chain, identification of the chain headquarters

- Federal Government

Veterans Administration

- Other (detail should be maintained)

Comment: For a sizable number of auxiliary level entities, data on this item is self-evident. The entity may well be the owner or operator of the organization. For many other entities, the data are exceedingly crucial for interpreting the performance of particular organizations on such dimensions as their staffing composition, type of clientele, or revenue sources. In chapter 2, the idea of a taxonomy of organization types is introduced. This item remains one of the most useful for categorizing mental health organizations and for identifying which are comparable and which contrasting.

Mental health organizations, in parallel with primary health settings, have been subject to much dynamism during the 1980s in terms of ownership, corporate sponsors, vertical integration, and other organizational alignments. Growth of new vendors, consolidations, and increasing market segrnentation are important facets of a mental health system for an entity to track. This is true for auxiliary levels of complex systems as well as for auxiliary levels that know they are in competition with other mental health Systems for clients, staff, and revenue.

7. Relation to State mental health agency

Operated by

- State mental health agency

- State agency other than State mental health

- agency (detail should be maintained)

- Other than a State agency Receives funds

- Directly from State mental health agency, exclusive of Medicaid.

- Indirectly from State mental health agency through an intermediary (e.g., a county or

community mental health board).

- Directly or indirectly from a State agency other than State mental health agency, ex

clusive of Medicaid.

- Does not receive funds either directly or indirectly from any State agency, exclusive of

Medicaid.

Comment: Nationally, over 60 percent of the organizations in the NIMII universe of specialty mental health organizations have a relatively direct relationship with a State mental health agency. As with item 6, the information in this item is fundamental to the development of accurate categories of organizations so that comparisons are meaningful. In addition, interpretation of other data - such as type of patients served, staff salaries, revenue composition, etc. - may hinge on the relation of the organization to a State agency.

8. University or college aftiliation

Operated by a college or university

Offers professional services provided by a college or university

Provides placements for clinical trainees

Operates a clinical training program

Other affiliation with college or university (detail should be maintained)

None

Comment: Multiple categories could be checked by an organization. Affiliations of this type may have unique effects on such data as staffing levels and types, patients served, utilization volumes, and revenues and expenses.

9. Type of organization

Psychiatric hospital

Psychiatric unit of general hospital

Organization providing residential services

Outpatient mental health clinic

Mental health partial day organization

Multiservice mental health organization, i.e., an organization providing at least two types

of program elements but which is not primarily a hospital or a residential mental health

organization

Other mental health organization

Comment: Each organization would select the one category from the list that best characterizes its general type. If an organization is dominated by one program element, that should be given weight when it selects a category. Idiosyncratic naming conventions, program element clustering, unique licensing contingencies, and past history are only a few of the factors that make type of organization not entirely derivable from other data. As with items 6 through 8, information in this item is fundamental to the development of accurate categories of organizations so that comparisons are meaningful.

10. Total staff of organization

As of the end of the reporting year

- Total number of staff persons working in or assigned to each program element directly

operated by the organization.

- Total number of staff hours scheduled in a typical week in each program element directly

operated by the organization.

Alternate: If these totals cannot be supplied by program element, the two totals for the organization should be supplied.

Comment: Staff counts are to include those on the payroll of the organization, those under contract to provide services on site, students, trainees, and interns. Excluded from this count are volunteers and those with attending privileges. Included are the numbers and hours of administrative and other types of staff who work for the organization but are not assigned to program elements. Such positions are usually allocated to program elements when distributing costs.

It is possible to distribute staff time to program elements using data derived from the event component. This is especially advisable since organizations operating multiple program elements may shift staff across program elemen[s. Organizations that do not have an event component in place or those who cannot report staff data by program element may have to report their data using the alternate category, i.e., for the full organization. For many organizations, the numbers of staff and typical weekly hours could be obtained from a payroll office. If substantial numbers of organizations

report only for the organization as a whole, the auxiliary level may have to default to this level when analyzing the data systemwide.

By supplying both the total number of persons and the total numbers of hours typically scheduled, a calculation for full-time equivalents is derivable. The definitions for FTE vary by auxiliary level and sometimes for certain employment positions within organizations. Ranges of 35, 37.5, and 40 hours are all documented. Such variations present problems for interpretation and comparison of data across different systems. For comparison of staff data, the MHSIP recommendation is that FTEs be calculated using 40 hours per week as the definition of official time. That is, for each program element directly operated:

(Total number of staff) (Total number x of scheduled hours) = FTEs for program

40 element

These totals and the FTEs provide one way of categorizing organizations. Expectations for organizational performance are correlated with size, i.e., production capacities are directly related to size of staff. If utilization statistics do not match these expectations, e.g., sizable staff but low number of beds, visits, or patient days, the auxiliary level may wish to explore the relationship further.

11. Admissions

Total number of admissions of patients/clients to the organization during the reporting year.

Comment: An admission is associated with the idea of a registered patient (see patient/client data set item 2). The item is intended as a business volume indicator of the organization. Thus, it is not confined to first admissions or to the notion of unduplicated counts, i.e., the number of unique patients served during the period. The latter can be determined by analysis of data from the client/patient data set. During the reporting period, a patient may return to the organization for multiple episodes, with the patient's prior clinical record reopened and updated each time. Each discrete episode should be tallied as a separate admission.

Trial leave from an organization deserves mention. It is assumed patients on trial leave remain the clinical responsibility of the organization, i.e., their clinical records remain active for the leave period. Under this circumstance, patients who return to an organization after a trial leave are not counted as admissions. Policies established by the auxiliary level or the organizations may override this guidance. In addition, policies affecting other patient-status considerations, such as whether a court-ordered observation or assessment is an admission, determine the count of admissions. It is strongly recommended that such policies be uniform within the mental health system of a given auxiliary level entity.

12. DiscontInuations

Total number of patients discharged or otherwise leaving the rolls of the organization during the reporting year.

Comment: As with admissions, the item is intended as a business volume indicator of the organization. A discontinuation may occur because a treatment plan is completed, clinical responsibility for the patient is transferred to another organization, the patient terminated the

episode, or the patient died or through administrative closure of inactive cases. Many auxiliary levels have a policy that patients who escape or go AWOL from programs of intensive, custodial, or court-ordered care cannot be counted as discontinued, no matter the time interval since their departure. Such policies must be accommodated. At the same time, a patient who returns after an escape/AWOL should not be listed as an admission. In short, escapes and AWOLs should not be counted in these reports. The auxiliary level may wish to establish a separate data item for such cases.

13. Number on rolls of directly operated program elements

Total number of clients on the rolls or census of each program element directly operated by the organization at the end of the reporting year.

Comment: Although admissions and discontinuations provide types of measures of the organization's business volume for a reporting period, some information is also needed about the organization's existing responsibilities for patients. Knowing the numbers of clients who are counted as active at the end of the reporting period indicates something about the current case load of the program elements. The following considerations should be kept in mind.

Under the client/patient data set, the MHSIP recommends that patients not seen for at least 90 days be administratively discontinued. It is recommended that the auxiliary level require such a review prior to an organization's submission of its roll-count or census.

These are not always going to be unduplicated counts of patients. Especially for organizations operating several program elements (cf. the organization chart in figure 1), a patient may be active in multiple program elements. For example, a residential client may attend daily partial day sessions and twice monthly go for outpatient services. Such a patient would be counted in three program elements.

Staffing data by program element (item 10) can be combined with the roll/census data on program element for approximations of staff-to-client ratios. This measure is often used as a program quality index. Accreditation teams may examine such ratios, although no known empirical standards for the various program element types are known.

14.Number on rolls of contracted program elements

The total number of the organization's clients on the rolls of each contracted program element at the end of the reporting year.

Comment: In an effort to meet the clinical needs of their clientele, many mental health organizations contract for services the organization does not provide directly. For organizations with such an arrangement, it is useful to know the numbers of their patients who are being served by these contracts. These arrangements might significantly affect their reported financial data and their case load statistics. Although clinical responsibility is not surrendered by the primary organization - e.g., a reporting arrangement provides the organization with information on each client in the contracted program element - some auxiliary level entities may choose to remove the numbers of clients being served under contract from the active case load numbers of the reporting organization.

15. Total revenue and suppont

Operating revenue and support: first- and third-party revenue

Includes client fee payments, insurance payments, Medicare, Medicaid

Operating revenue and support: all other sources Includes grants, matches, allocations, appropriations, purchase-of-service agreements, service contracts, etc., from State, Federal, municipal, and other sources

Nonoperating revenue and support

Includes revenue and support not related to the delivery of mental health services such as gifts, capital gains, interest, research grants, etc.

Total revenue and support

Comment: The total revenue and support received by a mental health organization is essential in categorizing organizations. As a size indicator, it can be usefully contrasted with other size and capacity measures in the data set such as staff FTEs (revenue per FTE) and utilization statistics (operating revenue per admission). Comparisons across organizations may reveal outliers that the auxiliary level chooses to investigate further, especially if the data imply the organization may be at risk. When compared with total expenses, revenue and support provide an entity with some indication of the financial health of the organization. Under either set of uses, the additional detail contained in the item summarizes for the auxiliary level the variety of revenue and support sources used by the organization.

16. Total expenses

Total employee labor operating expense, i.e., salary and fringe benefits

Total contract labor operating expense, i.e., amounts paid to individuals to provide services to the organization under contract

Contracts with other organizations to provide clinical services

Other operating expense, i.e, maintenance, supplies, rents, bad-debt expenses, etc.

Other nonoperating expense, i.e., expenses that are incurred not as a result of providing services, such as research, staff development, etc.

Depreciation

Total expenses

Comment: The total expenses of a mental health organization are essential in categorizing organizations. As a size indicator, expenses can be usefully contrasted with other size and capacity measures in the data set such as itaff FTEs (operating expense per FTE) and utilization statistics (operating expense per admission or discontinuation). Systemwide comparisons oforganizations on such measures may be quite useful to the auxiliary level. When compared with total revenue and support, expenses provide an entity with some indication of the financial health of the organization. Under either set of uses, the additional detail contained in the item summarizes for the auxiliary level the absolute and relative size of the expense categories of the organization.

Using these details, an auxiliary level can develop a variety of summary expenses for its mental health system and partition the expenses in useful ways. For example:

Employee labor expenses can be contrasted with the costs of contract labor or the cost of contracted program elements.

Labor expenses can be divided by utilization data (such as an average daily census) to obtain average labor cost to provide care to patients.

Noncash expenses associated with depreciation and nonoperating expenses can be separated from expenses associated with the delivery of mental health services so that the latter is a more direct reflection of service expenses.

17. Basis for reporting year

Date of the end of the year for which data are reported.

Comment: By providing the end date, it is assumed that the reported data apply to the 365-day period prior to and including the reported date. If such an assumption is unsafe, the date for the beginning of the reporting year should also be included. These dates should be the same for all data in all service sites and program elements of an organization. They should correspond to the organization's fiscal year. A given auxiliary level entity may wish to establish identical dates for all of the organizations with which it is involved. This facilitates comparisons within the system as well as permits organization data to be related to data in the other data components.

NOTE: Items 18 and 19 apply to inpatient and residential program elements directly operated by the mental health organization.

18. Number of beds set up and staffed at the end of the reporting year

Number of beds

Comment. The number of beds set up and staffed should be reported separately for inpatient and residential program elements. Note that the licensed capacity of the program elements is not the focus of the item. The information in this item is a fundamental reflection of capacity, aids in categorizing the program elements by size, and is used to calculate occupancy rates when linked with item 13. Burda (1989) reported that excess capacity, i.e., low occupancy rates, is an endemic characteristic of inpatient settings that have closed and those identified as at risk.

19. Number of patient days provided during the reporting year

Number of patient days

Comment: The number of patient days should be reported separately for inpatient and residential program elements. Either the actual number of days should be reported or an estimate based on the average daily census times 365 days. This information reflects the business volume of the program elements. It can be linked with other data in the organization data set, e.g., staff FTEs by program element for a staff-to-patient-days ratio, or with data from other components, e.g.,events associated

with a patient day or financial data to calculate the average cost per patient day.

NOTE: Items 20 and 21 apply to partial day program elements directly operated by the mental health organization.

20. Number of hours of operation scheduled per week

Number, rounded to nearest whole hour, usually scheduled each week

Comment: This information is a capacity measure reflecting the potential hours of care available in the partial day program elements. Because of the nature of partial day sessions, its primary use is as a denominator for deriving the average number of partial day client hours (refer to item 21) provided per week. That number can then be linked with staff FTEs and numbers of partial day clients on the rolls to obtain estimates of staff productivity and the average hours of service partial day clients receive during a week. Data from the event component provide a more refined profile of the services provided during a session and the type of staff involved.

21. Number of client hours of service provided during the year

Total number of client hours of service provided

Comment: This count of hours is from a patient perspective -- the amount of time service is actually provided to a client in attendance at a partial day session. Programs are frequently more accustomed to reporting the number of hours of service from a staff perspective. It is strongly assumed that event data, periodically or routinely collected, aid in this patient-based calculation. This may involve both direct and adjunctive care. A default interpretation is possible if it is assumed that patients participating in a partial day program are receiving service for the full time they are in attendance. A 5-hour session involving 10 patients would be tallied as 50 client hours.

The linkage of this information with capacity is commented on in item 20. Linkages with financial data also provide gross measures of average hourly cost of partial day program elements. More accurate measures of cost per unit of service require the linkage of staffing, event, and financial data. The auxiliary level entity may wish to establish procedures for the latter. This is covered in chapter 17.

NOTE: Items 22 and 23 apply to outpatient program elements directly operated by the mental health organization.

22. Number of staft hours In the outpatient program element during the year

Total number of staff hours attributed to the outpatient program element for the year.

Comment: Organizations operating multiple outpatient program elements may consolidate their data.

It is assumed that an auxiliary level entity rarely has a need or responsibility to manage individual outpatient program elements within an organization. If this occurs, separate program element reports may be supplied.

For organizations that report their FrEs by program element (item 10), this measure can be derived from that item, i.e., number of staff x hours scheduled in a typical week x 52 weeks. In keeping with item 10, the hours should cover all assigned and aliocated staff hours in the program element. That is, specifically included are any hours that have been allocated to the outpatient element from other components of the organization such as a portion of the time of clinical records or accounting office staff. As with items 18 and 20, this information is a capacity index conveying the ability of the outpatient program to deliver services.

23. Number of client hours provided In outpatient direct and adjunctive care during the year

Total number of hours of service received by clients as direct or adjunctive care.

Comment: The definitions for direct and adjunctive care are given under the event component. The count of hours is from a client perspective. However, this includes services with clients as well as those on behaff of clients, even when the client is not present. Two examples help to clarify.

An hour of time arranging a residential placement for a patient who was not present while the arrangements were being made should be tallied as 1 client hour.

One hour of group therapy to eight clients should be tallied as 8 client hours.

This measure is a basic tally of the clinical business volume of the program element. It can be combined with other items to derive useful management indicators for the auxiliary level. For example, client hours can be divided by staff hours for an approximate index of percentage of time in direct and adjunctive care. The event component provides the more valid measure of this index since staff hours from item 22 include the time of allocated staff who would not provide direct or adjunctive care.

NOTE: Items 24 and 25 apply to case management program elements directly operated by the mental health organization.

24. Number of staft hours In case management program element during the year

Total number of staff hours attributed to the case management program element for the year.

Comment: As under item 22, this should cover all assigned and allocated staff hours in the program element, regardless of type of activity. Refer to the comment under item 22 for the uses of this information.

25. Number of client hour: provided in case management direct and adjunctive care during the year

Total number of hours of service received by clients as direct or adjunctive care.

Comment: Refer to the comment under item 23.

Coverage

Coverage at the service provider level primarily deals with the frequency with which data are coliected by the organization. For each of the data components at that level, the coverage sections are based on the general assumption that the full organization is involved in this process. At the auxiliary level, it is important to recognize that coverage embraces two dimensions and that the emphasis actually shifts away from the dimension of frequency. The two dimensions are

Frequency - how often the auxiliary level requires organizations to report data for a given component or how often the auxiliary level updates those data, and

Extensiveness - how many of the organizations report the component; synonymous with this concept are organizational representation, system penetration, or the notion of response rate. Most often, when coverage is discussed for the auxiliary level, it is in reference to the auxiliary level's degree of success in receiving the data component from all of its mental health organizations. This concept is discussed again in chapter 18.

A given auxiliary level entity needs to decide how extensively to cover the mental health organizations with which it has a relationship. Generally, it should be assumed that if a given organization is to report the organization data set, the entire data set is reported. Nonapplicable as a response is understood. However, the auxiliary level must decide whether all or only a subset of the organizations are asked to report. This decision is driven by the auxiliary level's responsibilities. These responsibilities can be distinguished as management or description.

Management

For the auxiliary level, management responsibility can be defined in terms of the management knowledge model described in chapter 3. Specifically, the auxiliary level entity may be responsible for knowing and determining (i.e., setting policy for) who receives what from whom at what cost and with what effect within the organizations that make up that entity's mental health system. Entities that have such management responsibility over their organizations are best able to discharge their responsibility if they have data on 100 percent of the organizations that make up their mental health system. Many of the uses of organization data presented throughout this chapter assume that the entity has management responsibility. With coverage of the full system, comparisons across similar settings can be made. The data then serve as indicators (see chapter 9), alerting managers to organizations that report data considerably different from their peers and suggesting the need for additional investigation.

With management responsibilities, the data need to be relatively fresh. This is based on the assumption that management action is most effective if it is prompt, timely, and reflects the current situation. The MHSIP recommends that the organization data set be collected at least annually under this circumstance. Some auxiliary levels may wish to partition the organization data set into items that are relatively stable, e.g., name, address, type of organization, and those that are more dynamic, e.g., admissions and discontinuations. More dynamic items may be collected or updated more frequently.

Description

Another set of auxiliary level entities may have the responsibility for describing their mental health

systems. That is, they may be information brokers, providing data about the mental health organizations with which they have a relationship. They may provide the information to the media, data users, or other organizations within the system; use the information to advocate for their organizations; or transmit the data to another auxiliary level. Although some of these informationbrokering functions necessitate that the entity have organization component data on 100 percent of the organizations in a given system, not every entity will need such coverage. Many entities may find that data on a representative sample of organizations are adequate for their needs. The MHSIP recommends that entities with descriptive responsibilities obtain the organization component data annually, whether on 100 percent of the organizations or a subset.

The selection of this representative set of organizations is usually done by sampling. A full discussion of sampling methods is beyond the scope of this monograph (see Cochran 1977; Williams 1978). Expert guidance and careful thought are recommended. Focusing only on the organization data component, the most basic decision concerns whether the auxiliary level pursues a simple random sample or a more complex stratified sample.

In a simple random sample, it is assumed that one organization is much like the next. Therefore, picking the sample at random permits the auxiliary level to describe the full system and generalize to all organizations, whether in the sample or not. There are two basic considerations to work through. First, the sample must be drawn from a knowledge of the full system. Thus, at some stage the auxiliary level must have a 100-percent enumeration of its universe of organizations, containing at least the basic identification items from the organization data set. Second, the sample must be large enough for the generalization to be relatively accurate. In sampling design, the accuracy of an estimate is determined by the standard error. The sample size depends on the size of the standard error one is willing to tolerate. Usually, if the auxiliary level wants its estimates to be relatively accurate, a relatively large sample of organizations is required to keep the standard error within acceptable ranges.

However, for many auxiliary levels, a simple random sample will not be satisfactory. The set of organizations they deal with may be quite varied, e.g., hospitals, outpatient clinics, residential places. The sample must be capable of providing estimates for the full system as well as for the subsets of organizations that constitute the system. By the time the auxiliary level identifies a random sample size that is sufficient to allow it to generalize to this variety ofsettings, it maybe approaching 100-percent coverage.

An alternative approach is to use a stratified sample. This, too, requires that the auxiliary level begin with a relatively complete knowledge of the system. Not only is 100-percent coverage of identification items required, but additional items from the data set as well. In a stratified sample, the intent is to cluster similar organizations into groups - strata - such that all the organizations in that stratum are relatively homogeneous. This reduces the standard error in the overall sample, i.e., improves the accuracy of the estimate, and enhances the ability to describe subsets of organizations without overly large sample sizes.

Stratified sampling deserves consideration, but by no means should it be taken on casually by an auxiliary level. The designs for stratified samples are complex. A few of the considerations that must be confronted are offered here.

1. What subsets of organizations, i.e., strata, is the sample intended to describe? By type, affiliation, staffing composition, funding sources, size, etc.?

2. What data items operationally define and differentiate these strata? Are the organizations within each of the identified groupings relatively homogeneous, i.e., are they similar to one another on the

items that define the stratum? Can a representative sample be identified for each stratum that permits accurate estimates for the entire set of organizations constituting that stratum?

3. How stable is the set of organizations identified for the sample? Can they be used as a panel, i.e., a subset of organizations that accurately represents the universe of organizations and that provides data over an extended period of time? If a panel is selected, it must be reexamined periodically. Mental health organizations close, new ones open, interorganizational affiliations change, expansion and contraction of offered services occur, and all these have an effect on whether the panel continues to be representative. If a panel is used over time, there must also be a mechanism for sampling new organizations that were not represented when the panel of organizations was originally selected.

4. What is the quality of the data on which the selection of a sample is based? The selection of a sample maybe flawed if large numbers of items are missing, if there has been little quality control, or if imputed values have been assigned to organizations. The consequences of questionable data quality can become even more significant if this panel is used to obtain data for the other MHSIP components, an approach discussed later in this chapter.

5. Will the organizations participate in the sample voluntarily or must the entity offer an inducement for participating? Providing the entity with the full organization data set is another cost to the organizations. They may be unwilling to absorb an expense that is not equitably shared by other organizations in the mental health system.

Although these considerations are somewhat daunting, the advantage of sampling is economy. The entity has to process less data and therefore should be able to obtain its information faster. Less data also implies lower cost for operation, equipment, and personnel. Such panels of organizations are possible and are used in national statistics, specifically, the National Hospital Discharge Survey (NCHS 1989). The use of sampling for obtaining the mental health organization data set needs to be explored at a variety of auxiliary levels.

Sampling as a Basis for Constructing Integrated Decision Support Systems at the Auxiliary Level

The preceding discussion focuses on the use of sampling only as a basis for obtaining organization data at the auxiliary level. The MHSIP advocates that auxiliary levels also consider the appropriateness of an integrated decision support system to meet their own management and data needs. Three models are presented in chapter 12 that provide the auxiliary level either with integrated data or integratable data. Integrated data can come in the form of reports containing integrated data - Model II - or data files that have been integrated - Model IV. Integratable data are provided in the form of data bases that can be linked - Model III. Chapter 18 makes explicit the additional criterion of compatibility of the data across organizations. If the data are compatible, the auxiliary level can merge all of them into an integrated decision support system. If the data are not compatible, construction of such a data base at the auxiliary level is impeded.

An especially important consideration under Models II, III, and IV is the option for the auxiliary level to use sampling to obtain the data in the five MHSIP components. This consideration deserves discussion at this point since the decision to sample for the organization componentcan have profound conse quences for the complexity and feasibility of the sampling design for the remaining MHSIP components.

When the additional components are considered, the options for the auxiliary level involve two

dimensions, which are summarized in exhibit 7. The first dimension covers the

Exhibit 7. Dimensions that characterize the integrated decision support system of an auxiliary level entity as based on 100-percent coverage of its universe or on a sampling design

Basis for collecting the other four MHSIP components		
Type of coverage for the MHSIP organization data component	100-percent reporting for 100 percent of the time	100-percent reporting for a time sample
100-percent coverage	1	2
Subset of organizations	3	4

organization data component and can be divided into whether the auxiliary level obtains the component from 100 percent of its organizations or from a subset of the total universe. If a subset of organizations has been selected, it is assumed that the sampling considerations presented in this chapter have been accommodated. If such an assumption is correct, the resulting data permit the auxiliary level to generalize to its full universe.

The second dimension covers the other four MHSIP data components. The basic distinction here is whether the auxiliarylevel uses some type of time sample, obtaining the data for a component less than 100 percent of the time, or collects the component 100 percent of the time. When this dimension is crossed with the organization dimension, it results in the concept of coverage for the remaining MHSIP components containing both the frequency and extensiveness aspects noted earlier. Exhibit 7 shows four general designs that are possible based on these considerations. In the MHSIP, each of the designs is viable and can lead to an integrated decision support system for the auxiliary level. However, some of the designs are quite complex and can only be endorsed if careful effort has gone into their construction. The possibilities are discussed briefly.

Cell 1: Full coverage on all components

The most ambitious possibility for the auxiliary level entails 100-percent coverage of the universe of organizations and collection of the other components on a 100-percent basis. This approach requires no sampling design. Its requirements are grounded in the mechanics of data submission. The approach may be most adaptable in small mental health systems where the volume of data would not

overwhelm the auxiliary level and where management responsibilities require this level of detail.

Cell 2: Full coverage of the organization component and sampling the other components

One possibility is for the auxiliary level to obtain the organization component data from 100 percent of its organizations and to use sampling designs to obtain data for the four other components. Several variations in the design are possible, but only one is depicted in exhibit 7. Specifically, the auxiliary level may negotiate a particular time period for which all the organizations report 100 percent of the data in the four components, i.e., all the patients served or on the rolls, all the staff on board for that time, all the events recorded, and ali the financial data applicable to that period. In the exhibit, this is labeled as "100 percent reporting for a sample of time. Another variation might have the organizations reporting a sample of their data throughout the year, e.g., a 10-percent sample for patient, staff, and event data with financial data submitted every month. And a final variation would be a sample of data submitted for a sample of time, e.g., for the negotiated sampling period, the organization provides data on every nth patient, submitting the patient data, the events received, the staff involved, and the financial data associated with the events. These variations are recognized, but not elaborated further.

With 100-percent coverage of the organization component, the auxiliary level has complete enumeration of its universe, as well as basic performance data on the facilihes. It then has an excellent basis for developing sampling designs for the other components.

Stratification of facilities would have a solid basis. Organizations could be readily identified that are representative within their strata.

Sampling designs appropriate to each stratum could be developed, e.g., small organizations might report on every patient for a sample week while large organizations might report on every nth patient for a week.

There would be a sound basis for weighting the sampled data so that accurate and reliable estimates for the full universe could be generated.

Such an approach has one additional requirement. Any sampling of the other components should take into consideration the possibility of seasonal variations. This can be accommodated by sampling for several time periods from any one organization, e.g., event data sampled during each quarter of the year, or by staggering the sampling across organizations, e.g., 25 percent of the organizations participate during any given sampling quarter. Given the potential volume of data represented by some of the MHSIP components, it may be attractive for the auxiliary level to receive these data on a sample basis, yet not be handicapped in its ability to generalize to the full universe.

Cells 3 and 4: Use of a panel of organizations to obtain component data

The remaining possibilities for the auxiliary level are far more complex in their implications for sampling design. In either cell 3 or 4 in exhibit 7, the design assumption made by the auxiliary level is that a subset of organizations can be identified and that all the component data supplied by this subset are representative of the full universe. Although such an assumption is reasonable, the sampling design that follows must be quite sophisticated.

This is especially true of cell 4, in which a sample of organizations provides a sample of their data. The variations possible were noted under the discussion for cell 2. The design for a panel of organizations providing time samples of data in the four components can be extremely complex.

Professional expertise in the design is essential, but details on the designs are not within the scope of this text. Several considerations regarding sampling designs for cells 3 or 4 are offered.

The first issue is that of representativeness. The selection of a panel of organizations is a confined and doable task when it is focused on the organization component. One is seeking a sample that permits generalization of the resulting organization data to the full universe. However, as additional requirements are put on this panel, the selection of organizations and the sample design grow more complex.

The sample panel must not only permit generalization of the organization data, but there must also be assurances that their data on the remaining components are representative of each respective universe. This requires that the auxiliary level have a good understanding of the other components from these organizations. For example, if an organization is in the panel to represent psychiatric forensic settings in the system, it would be helpful for the auxiliary level to know if the setting serves both sexes. If it were for females only, it may still be of use in generalizing to the types of data in the organrzation component, but not be the best organization to include in a panel that is intended to describe the universe of patients. On the other hand, the auxiliary level would not want to deliberately ignore such a setting in its sample. This would result in underestimating the role of the setting within a stratum of forensic settings and in the total universe. Such circumstances may mean the auxiliary level must revisit the initial panel and design, possibly selecting different organizations to meet the new design requirement.

Therefore, the complexity arises in the number of variables that must be kept in mind. The panel must simultaneously enable generalization to the universe for all the MHSIP components. As each data component is considered in the total sample design, the complexity of the task is apparent. An alternate is for the auxiliary level to decide explicitly that one data component is more critical than the others. This component may then drive the sample design. The representativeness of the other components is taken on faith rather than actively considered.

Under either set of circumstances, the auxiliary level must design its procedures to achieve integration of the sampled data. For example, if separate sample designs for patient and event components were to proceed without confronting the integration of these data, the auxiliary level could end up with a sample of patients that cannot be linked to its sample of events. Therefore, one of the basic management questions - who receives what - could not be addressed.

Correlated with this is a consideration regarding the timing of the decision. Specifically, a decision to use sampling for integrated data must be made early in the design of an auxiliary level decision support system. Decisions about the design of the sample for one component interact with decisions about the approach for others. If the auxiliary level does not consider these interactions from the start, and implements the data components in a sequence - a situation that is quite common - it may prove impossible to retrofit a subsequent sampling design. For example, the auxiliary level may have a system in place that identifies a panel of organizations from which it receives the following: the organization component data, a sample of patients for a 1-week period, and the events for those patients for the same time period. If the human resources component is then implemented, the sample design just described puts parameters on the component. It makes no sense for the auxiliary level to collect human resources data from the panel that do not match the sample of clients and events.

Finally, the auxiliary level must have assurances that the quality of the sampling that occurs within each organization in the panel is acceptable. Sloppiness, missing data, guesses, and imputations during the actual data collection/submission can sabotage the most elegant and sophisticated design.

Sampling offers many economies. However, if the resulting data are to be an accurate representation of the full universe or if decisions are to be based on sampled data, it behooves auxiliary level managers to have every assurance that their approach is defensible and credible. Quality is the best insurance. Just as in basic research, ample conceptual and methodological work is needed up front - to understand the interpretive

limitations imposed by sampled data and to assess and reexamine the sampling procedures.

Summary

For auxiliary level entities, a fundamental information need is data about the organizations with which they are involved. Although some auxiliary levels may be more oriented to data in the other four MHSIP data sets, knowing something about the organizations from which the data come is basic to almost all entities. The organization minimum data set for the auxiliary level is:

Items 1 through 17 apply to the full organization

1. Name and identifier of the mental health organization

2. Mailing address of the mental health organization

3. Name of the director

4. Telephone number of the director

5. Location of directly operated service sites

6. Type of ownership/control

7. Relation to State mental health agency

8. University or college affiliation

9. Type of organization

10. Total staff of organization

11. Admissions

12. Discontinuations

13. Number on rolls of directly operated program elements

14. Number on rolls of contracted program elements

15. Total revenue and support

16. Total expenses

17. Basis for reporting year

Items 18 through 25 apply to the identified program elements

For inpatient and residential program elements

For partial day program elements

18. Number of beds set up and staffed at the end of the reporting year

19. Number of patient days provided during the reporting year

20. Number of hours of operation scheduled per week

21. Number of client hours of service provided during the year

For outpatient program elements

22. Number of staff hours in the outpatient program element during the year

23. Number of client hours provided in outpatient direct and adjunctive care during the year

For case management program elements

24. Number of staff hours in case management program element during the year

25. Number of client hours provided in case manage ment direct and adjunctive care during the year

Chapter 14

Patient/Client Data at the Auxiliary Level

For many auxiliary level entities, when a patient/client is registered in one of the organizations to which the entity relates, the auxiliary level also shares responsibility for that client. This implies that the auxiliary level not only has a keen interest in having access to patient information, but may also have a legal entitlement. For other auxiliary level entities, an interest in patient information derives from management needs such as monitoring citizens' accessibility to mental health care or setting general system policies on payment, patient rights, clinical record content, or utilization review. Some auxiliary levels are interested in general descriptive data on those who receive treatment within their systems. For all these needs, a data component dealing with patient/client data at the auxiliary level is a necessity.

The organization data component is unique to the auxiliary level. The patient/client component has a

counterpart at the organization level, as do all the other data components discussed in this section. In fact, the auxiliary level depends on the organization level having each respective component implemented. Virtually all the material in chapter 5 is pertinent here and serves as companion text to this chapter. Some differences in use and responsibility for clients necessitate the addition of the auxiliary level perspective to the materials.

Uses of Patient/Client Data

Just as at the organization level, the patient/client data component helps the auxiliary entity know who is being cared for in its mental health system. Questions about the patient population are among the most persistent requests put to the auxiliary level. Legislators, courts, the public, boards of directors, government agencies, researchers, investors, and many others want information from auxiliary level entities on the types of patient/ clients who receive services. The questions vary in specificity, and there should be no expectation that the data in the auxiliary level's decision support system will be sufficient to answer all of them.

Some questions are confined to data items in this component, and others assume the linkage of patient data with other components. In keeping with the models in chapter 12, the patient/client component may be integrated with other data components by either the auxiliary level or the local provider prior to transmitting data to the auxiliary level. This ability to integrate data can be critical for complex managerial analyses. A few such instances are noted below.

The areas in which auxiliary levels receive inquiries for patient information are relatively parallel to those presented for the organization level in chapter 5. An important difference for the auxiliary level emerges for those entities responsible for managing a system of services. They are interested in patient data not just in a specific organization's context, but in more global or systemic contexts. Such interests are reflected in their use of patient data to assess equity of patient treatment, accessibility to service, and the continuity of the treatment provided to patients.

Comparisons Between Patient Groups and the General Population

The notion of equality of treatment for all citizens is among the most fundamental values of American society. This is reflected in the analysis of virtually all health data by the access that various groups have to services. Most often this is done by comparing patient demographic characteristics with those of the general population. The definition of the latter may vary by type of auxiliary level.

For those with a defined geographic area of responsibility, e.g., a county or State, the general population can be readily identified. For those with a more diffuse market area, e.g., a corporation owning psychiatric facilities indifferent parts of the country, it maybe more difficult. Some auxiliary level entities have targeted a specific market segment, e.g., Spanish-speaking clientele only; they may not accept the premise that their case loads should be compared to the general population.

However, if public funds have played a major role in funding treatment within a given mental health system, the matter of equity of access by all citizens is a critical concern. Such questions may relate to the geographic areas from which patients come, their race or ethnic makeup, income ranges, age distributions, etc. In general, answers to these questions depend on comparmg patient data with U.S. Census data. The requirement that the data items reported by each organization be compatible with items collected for the census is therefore appropriate.

Comparisons Between Patient

Subgroups and the Total Patient Group:

Accessibility and Resource Consumption

Comparisons of subgroups to the larger patient population may be based on counts-such as rates, proportions, or actual numbers-or on examination of differential treatment experienced by these subgroups. An example of the former is whether divorced individuals are more likely to be represented in the case loads of mental health organizations than single or married persons. An example of the latter is whether minority clients are more likely to receive group therapy than nonminority clientele.

These questions bear on equality of access to services, epidemiologic concerns about greater need for service by some subgroups, organization/system goals that may emphasize some subgroups over others, or a need to understand patterns of performance (e.g., staffing or cost differences) in a mental health system. Frequently, questions relating to subgroups of patients derive from an assumption that not all subgroups need to use the same amounts and kinds of services. The concept of typologies of clients is mentioned often in chapter 5. It is important for organizations and auxiliary levels to investigate these typologies. They provide managers with the ability to analyze, explain, and control system performance by describing who is using services; whether the use is differential, and, if so, whether the differential use is appropriate; and whether subgroups might present particular chances for success or risks of failure in different treatment settings.

One of the clearest indications of the assumption of differential service use is the concept of diagnosis-related groups (DRGs). Targeted clusters of diagnoses were suggested by the Health Care Financing Administration for determining prospectively how much hospitals would be paid for a treatment episode for someone who was diagnosed in one of these groups. Some groups were expected to be more difficult to treat or require longer treatment to achieve stabilization prior to discharge and, therefore, were accorded higher payments. DRGs for mental illnesses were proposed, with differential payments based on each group, but proved to be insufficiently predictive of length of stay (Jeneks et al. 1987). In the area of long-stay patients, the concept of resource utilization groups (RUGs) has been introduced to try to capture these differential patterns more accurately (HCFA 1984).

The concept survives in many auxiliary level entities as capitation. Under capitation, "providers of care receive payment on a 'per-person' basis,... agree[ing] to deliver a predetermined set of services, as needed, for a specified time period to the person covered by the payment" (Christianson 1987, p.7). These payment arrangements are sometimes for classes of patients, such as children or the severely mentally ill, or for individual patients. They are analogous to prospective payment in that organizations may be able to provide the required service for less than the amount of payment but face the risk that the patient may have service requirements that exceed the payment. The auxiliary level managing a capitation system usually receives data on the patients covered, including patient characteristics and service received, and probably also examines the financial data from the participating organizations.

Auxiliary level entities that have a managed care orientation undoubtedly make extensive use of patient data to develop typologies. These entities may be responsible for rationing or authorizing an amount of care or a particular service. Simple clinical labels for psychiatric cases, at least based on the research around DRGs, do not result in much predictive ability for the amount of service used. Better actuarial bases for identifying psychiatric patient groups may depend on both the type of information in the patient/client component and information on the events or treatments provided to them (Dawes et al. 1989).

Issues of Continuity of Care

Continuity of care issues, i.e., providing patients with treatment that is least restrictive, appropriate in intensity to the patient's needs, and uninterrupted as the patient evolves through different types of programs, are of increasing concern to many auxiliary level entities. Occasionally, auxiliary levels may institute policies on the desirability of continuity of care and monitor compliance with those policies via "client tracking" (Hogan 1987), i.e., following a client's movement across a set of organizations to see whether necessary linkages occur. The intent is to assure that as a patient moves through a mental health system, uninterrupted and appropriate service contact is made.

To foster and monitor continuity of care, it is necessary to have a uniform method of identifying clients within a system as well as a method for linking the information on particular clients. The sharing of patient name seems ideal in such instances; it allows the pertinent organizations to know if the linkage was made with the client or if the person is enrolled elsewhere. If law or regulation prohibits the sharing of patient names, a reasonable match can be made using some agreed upon identification algorithm that approximates a unique identifier. The MHSIP recommends such an algorithm.

For instance, the auxiliary level may monitor system compliance with continuity of care by matching a listing of algorithms for discharged or transferred patients for one period with admissions for a similar period. Thus, patient algorithm XYZ123 may show as a discharge from one setting and 1 week later show as an admission to another. This may be sufficient to satisfy tlie auxiliary level, especially if the algorithm has been developed to be reasonably unique and confidential. If patient algorithm XYZ123 does not appear on the admission list of any other organization and the entity has other patient information to indicate that continuity of care was important for the patient, e.g., the client was severely mentally ill, an exception flag may alert the discharging organization. This puts detection responsibility with the auxiliary level entity but returns the continuity of care linkage responsibility to the treatment setting.

Another aspect of continuity of care concerns the patient labeled a recidivist - one who returns to particular service points in the system irrespective of a treatment plan. Many entities are concerned about identifying these heavy users of service because of cost and clinical factors. In some instances, these clients are well known to the receiving organization. If not, a unique algorithm helps the auxiliary level monitor the appearance of these clients within their systems. While some percentage of returns is expected in any system and for any organization, a high percentage of recidivists conveys valuable management information. It may be that organizations are discharging patients "too soon," i.e., the patients are not ready for the next level of care, or that the agencies to which the patient was referred are not performing adequately and patients are regressing, as well as other interpretations. In short, the occurrence of a disproportionate number of recidivist clients can be a signal of disruption in continuity of care, suggesting to the manager that intervention or investigation is necessary.

Minimum Data Set

The following items constitute the minimum data content for the patient/client component of the decision support system of an auxiliary level entity. The full data set is assumed to be applicable to most entities that need to describe, account for, or monitor the treatment received by clients in their system. Each item is named, followed by either its minimum recommended categories or a brief explanation of its content. As noted in chapter 4, categories can be elaborated by the auxiliary level depending on needs and responsibilities. However, elaborations should always be designed to be

collapsible into the minimum categories. This facilitates comparison of data, especially with other auxiliary levels. Comment sections follow the recommended categories. The comments are intended to explain the item further, discuss the importance or potential use of the data, or note advisable rules of interpretation. The commentary provided in chapter 5 is also relevant here.

Many auxiliary level entities are also responsible for patients whose principal diagnosis is alcohol or drug related. Efforts have been made to ensure that the MHSIP data set is compatible with the data sets promulgated by the National Institutes on Drug Abuse (NIDA) and on Alcohol Abuse and Alcoholism (NIAAA). The details of the data sets of these Institutes should be given priority when a patient is to be reported to their data systems. The auxiliary level may also wish to use them generally for patients with alcohol- or drug-related diagnoses so that comparisons with MDA/NIAAA data are possible. If appropriate, it is recommended that the auxiliary level entity check for the latest version of these data sets.

1. OrganizatIon identifier

The 8-digit NIMH master facility code is recommended as the identifier.

Comment: The submission of patient/client data to an auxiliary level must always he associated with an organization that is providing treatment to the patient. This identifier should be identical across all the MHSIP data components, allowing the information in the various data components to be associated. This is especially important if the auxiliary level receives those data as separate files or at different times.

2. Client status

Nonregistered - an individual who may or may not be identifiable by actual name or code name or number, who does not have a clinical record, but has received service from the organization

Registered - an individual identifiable by actual name, code name, or unique identifier, who has a case record (medical record or clinical chart), and has received services from the organization

Comment: Indicating the client's status allows the auxiliary level to identify the volumes of service associated with both types of patients. In addition, a different level of completeness and detail is associated with the patient record, depending on client status. Edit procedures may have to be more lenient for non-registered patients.

3. Unique patient/client identifier

No minimum specifications

Comment: The MHSIP recommends that each auxiliary level entity establish a uniform procedure for the generation or nature of the unique identifier submitted. All organizations would abide by this procedure. This recommendation is consistent with guidance provided to the organization level in chapter 5. The orgaliization may be free to operate a different identification system internally, but would be able to comply with the specifications of the auxiliary level procedure when submitting data.

The intent of the identifier is to enable those auxiliary levels with such a responsibility to identify, either with certainty or with a high likelihood, a given patient in different organizations within its mental health system. This permits the auxiliary level to engage in continuity of care analyses,

generate unduplicated counts of patients, and tap many of the integration features of the data components.

The operation of a unique patient identifier within a mental health system may also require consideration of patient consent to release data. Such releases are corn-mon, especially with respect to payment sources. However, if the patient's data are being released to the auxiliary level for statistical, monitoring, or research purposes, the auxiliary level may need to provide each organization with a release consent form or a set of procedures that can be adopted.

4. Date of most recent admission to organization

Month, day, year

Comment: This date is important for tracking the initiation of service for the current episode of care as wcli as for calculating other measures used in figuring service contact and intensity.

5. Date of dlscontlnuatlon/dlschavge/dnth

Month, day, year

Comment: The termination or last date of service is important for calculating the measures associated with service contact and intensity. In the patient/client cornponent for the organization level, it was suggested that patients who have no program contact for 90 days should be administratively discontinued. It is iccommended that the auxiliary level reinforce this guideline.

6. Program element activity

Since the most recent date of admission to the organization, the program elements in which the patient has been/is active and the dates of the last service provided in each program element, as appropriate.

Inpatient Month, day, year

Residential Month, day, year

Partial day Month, day, year

Outpatient Month, day, year

Case management Month, day, year

Emergency Month, day, year

Comment: A simple count of the applicable program elements in which the patient has been active during an episode of care provides a brief measure of service intensity, aids in understanding the costs associated with the episode, and facilitates a typology of clients that may have bearing on seriousness or severity of the problem.

7. Sex

Male, female

Comment: A patient's sex is important in the epidemiology of mental illness, especially as it covaries with diagnostic clusters. In addition, as a demographic variable related to population characteristics, it reflects the differential use of and access to mental health services by males and females. When linked with other data in the MHSIP data sets, it is relevant to issues of equity.

8. Date of blrlh

Month, day, year

Comment: A patient's age is important in the epidemiology of mental illness and is associated with particular diagnostic clusters. As a demographic variable, it can be compared with the characteristics of the general population served to assess accessibility or unintended exclusion of age groups. When linked with other data in the MHSIP data sets, it is relevant to issues of appropriateness and equity of treatment.

9. Race[(21)]

American Indian/Alaskan Native-a person having origins in any of the original peoples of North America and who maintains cultural identification through tribal affiliation or community recognition.

Asian or Pacific Islander - a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes, for example, China, India, Japan, Korea, tile Philip-pine Islands, and Samoa.

Black/African American-a person having origins in any of the black racial groups of Mrica.

White - a person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

Other - a default category for use when the patient does not meet any of the above classifications above or whose origin group, be-cause of area custom, is regarded as a racial class distinct from the above categories. Appropriate details should be maintained.

Comment: See next item.

10. Hispanic origin

Hispanic origin - A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish origin or descent, regard-less of race.

Mexican/Mexican American

Puerto Rican

Cuban

Other Hispanic

Not of Hispanic origin

Comment: Items on the race and ethnicity of the clientele are important for epidemiologic reasons and for comparisons with the population characteristics for the area served or with other programs and organizations. Issues of accessibility, appropriateness of service, and equity can be examined.

11. Current marital status

Never married

Now married

Separated

Divorced

Widowed

Comment: These categories are compatible with the U.S. Census. The item is of value in comparing case load characteristics to the population characteristics of the area served or to other programs. In addition, marital status has implications for prognosis (e.g., potential availability of a support system) as well as figuring significantly in the epidemiology of mental illness.

12. Veteran status

Not a veteran

Yes, has served on active duty

Comment: Veteran status may be associated with particular diagnostic clusters or presenting problems and may also point to the need to check on patient history in other mental health service systems.

13. Legal status

Voluntary-a person who voluntarily seeks admission

Involuntary civil - a person committed for a non-criminal proceeding, whether for purposes of examination and observation or for treatment, either by a physician's certificate, a court proceeding, or by police or associated agencies

Involuntary criminal - a person committed pursuant to one of the following:

- charges and/or convictions pending

- determination of competency to stand trial

- found "not guilty by reason of insanity" or "guilty but insane

- determination of sexual psychopathy and related legal categories

- transfered from correctional institutions

Comment: This item is of profound importance in understanding variations in differential length of episode/contact with an organization or in the types of services a patient may receive. In addition, it helps to characterize important variations in patient mix across mental health organizations, explaining referral patterns, staffing variations, and cost differences.

14. Coded area of residence prior to admission to organization

Zip code and county code No fixed address

Comment: If the address of the client's residence is recorded in the original clinical record in sufficient detail, it can be recoded into virtually any geocoding scheme the auxiliary level may promulgate. Analyzing the areas from which patients are derived allows the auxiliary level to develop concepts of market areas, match use with estimates of need, and consider the appropriateness of resource distribution.

15. Current coded area of residence

Zip code and county code No fixed address

Comment: See comment for item 14. Patient residence may change during an episode of care. This information permits the auxiliary level to determine if current clients aggregate in particular areas, whether such aggregations are desirable, and how current area of residence matches with the location of services, and permits adjustments to be made to estimates of need by geographic area.

16. Presenting problem(s) at time of admission

Each applicable category should be indicated.

Marital/family problem

Social/interpersonal (other than family problem)

Problems coping with daily roles and activities (includes job, housework, daily grooming, financial management)

Medical/somatic

Depression or mood disorder

Attempt, threat, or danger of suicide

Alcohol

Drugs

Involvement with criminal justice system

Eating disorder

Thought disorder

Abuse/assault/rape victim

Runaway behavior

Comment: The list of presenting problems is representative of the vast majority of descriptors used by mental health organizations to label or categorize the reasons why patients enter for services. Many managers find these listings to be as valuable as diagnostic groupings in describing case loads. Consequently, they are a complement to diagnosis in developing typologies for the clients served.

17. Diagnosis-admission, most current or updated, and discharge

Coding should be derived from the current Diagnostic and Statistical Manual (DSM) of the American Psychiatric Association or the International Classification of Diseases (ICD).

If using DSM-III-R: Five digit code(s) for Axis I (clinical syndromes and V codes), Axis II (developmental disorders and personality disorders), and Axis III (physical disorders and conditions). For multiple diagnoses involving Axes I and II, the principal diagnosis should be noted. For multiple diagnoses within an axis, the diagnosis noted first is to be regarded as the one that is the focus of attention or treatment.

If using ICD-9-CM: Five digit code(s) for all diagnoses that apply, with the principal diagnosis (the one that is the focus of attention or treatment) listed first.

Comment: Diagnoses are among the most universally accepted descriptive categories for reporting patient statistics. The auxiliary level may prescribe the coding schema to be used by its organizations. It should be assumed that the diagnosis appropriate to the type of record or report is provided. Specifically, for a discontinued patient, the discharge diagnosis; for a recently admitted patient, the admission diagnosis; and for a census report, the most current or admission diagnosis.

The issue of concurrent disabilities among clients who are mentally ill, often labeled "dual diagnosis," is a critical one to many auxiliary levels. The identification of such patients is significant when developing client typologies and discerning whether patterns of service use differ as a consequence of the disabilities. The DSM multiaxial system obviates the need for additional, cumbersome coding to identify of patients with multiple disabilities. Of concern are such groups of the mentally ill who are also diagnosed with substance abuse problems, communication disorders, visual or hearing impairments, physical/medical problems, or developmental disability or mental retardation. If the ICD system is used, recording all diagnoses that apply similarly facilitates identification of the multiply disabled.

For patients who are coded under alcohol or drug abuse disorders, it is advised that the data recommendations promulgated by NIDAINIAAA be considered as an essential complement to the MHSIP data recommendations. Not only do these provide additional data of clinical relevance, but they will be of assistance in the case that specialized data reporting on these patients is required.

18. Severity of condition or level of functioning at admission

No minimum specifIcations

Comment: Although partially redundant with a recommendation below to collect DSM-III-R Axis V data, some indication of how dysfunctional the patient is or how incapacitated by the condition or symptoms is considered important information. The information may be a cornerstone for the

development of client typologies and may be especially significant in identifying the subgroup of patients who are severely mentally ill. A patient's severity or functioning level may be associated with the type of treatment assigned, type of professional who provides service, and the volumes and costs of semces.

The ad hoc Advisory Group to the MHSIP commissioned a feasibility study to determine if a specific approach to data collection in this area could be recommended for the minimum data set. It found that no one approach could be recommended, but it did find substantial, worthwhile effort in mental health programs devoted to the measurement of the concept (Pokorny 1986). Therefore, the MHSIP recommends that auxiliary levels investigate and adopt an approach to be used by its organizations for ascribing and reporting on severity or functioning for admitted patients. The MHSIP does not advise on the approach to be used.

The cautions offered in chapter 9 are pertinent here. Although the recommendation is for an admission assessment only, it is frequently assumed that a second assessment, at a later point, can be used evaluatively, viz, to measure treatment or program effectiveness. Inferences regarding the latter are among the most profound judginents made about mental health treatment. They should not be engaged in casually. Simple pre/post comparisons on a severity measure are insufficient evidence of a treatment's or a program's effectiveness. Changes in severity scores can be affected by many other factors, and it requires considerable sophistication in the design of the study to control for rival explanations.

Therefore, auxiliary levels considering the minimum under this item should adopt a measure of severity or functioning related to the patient's condition at admission. This provides useful data with which to describe the population served within the mental health system. Assigning a severity/functioning assessment at the time of discharge or administrative termination can also provide valuable descriptive data. The MHSIP remains wary about the use of these types of data in aggregate, especially to make claims about effectiveness.

19. Chronicity of mental illness

According to a documented operational or functional definition maintained by the organization, patients can be classified as chronically (severely and persistently) mentally ill.

Yes, the patient meets the definition.

No, the patient does not meet the definition.

Not applicable; the organization does not maintain an operational or functional definition.

Comment: It is strongly recommended that auxiliary level entities that are significantly involved with patients described as '~severely and persistently mentally ill" establish uniform criteria for the identification and counting of members of this population. The MHSIP has been able to identify no uniform national approach to the identification of the severely mentally ill that could be easily included in a listing of data standards. As this report is issued, a work group representing research, treatment, advocacy, and management issues relevant to this special clinical population is preparing a set of operational criteria that will better identify this group. The MHSIP is represented on this work group. One of the work group's concerns is that the criteria be useful and feasible for implementation at the service-provider level for inclusion in a decision support system. These criteria will be valuable in supplanting this item.

20. Eligibility determination

In reference to either the Supplemental Security

Income (SSI) or the Social Security Disability

Insurance (SSDI) programs of the Social Security

Administration, the patient should be typed as

one of the following:

- Eligible and receiving payments

- Eligible but not receiving payments

- Potentially eligible, i.e., the case has not yet been submitted for determination or is in the process of determination

- Determined to be ineligible, i.e., the case has been submitted and reviewed and a decision of ineligible was returned

- Not applicable

Comment: The degree to which a client is disabled by a mental illness is an important factor in the identification of the severely mentally ill. The more objective and uniform this determination of disability, the more valuable the information for reliable, valid classification of the severely mentally ill. The referenced programs of the Social Security Administration contain criteria and a determination review that include mental illnesses among the disabilities that qualify a person for payments from these programs. Thus, patients who have been reviewed under these programs can be more confidently included or excluded from the count of persons with chronic mental illnesses.

21. Source of referral (as arranged by one of the following):

Self

Family or friend

Police (except court or correction agency)

Court or correction agency

School system or education agency

Social service agency

Inpatient/residential organization (indicate the specific type)

- State or county psychiatric hospital

- General hospital inpatient psychiatric program

- Other inpatient psychiatric organization

- Alcohol treatment inpatient/residential organization

- Drug abuse treatment inpatient/residential organization

- Nursing home, extended care organization

- Community residential organization

- Other (detail should be maintained)

Other referral source (indicate the specific type)

- Multiservice mental health agency (includmg community mental health centers)

- Outpatient psychiatric service or clinic

- Private psychiatrist

- Other physician

- Other private mental health practitioner

- Partial day organization

- Shelter for the homeless/abused

- Alcohol treatment organization other than inpatient/residential

- Drug abuse treatment organization other than inpatient/residential

- Other (detail should be maintained)

Comment: This is valuable information to an auxiliary level's analysis of the mental health system. It is assumed that it is desirable and appropriate for patients to evolve through a mental health system and to be referred systematically from one location to another. The item facilitates the identification and assessment of the patterns of referral and facilitates identification of markets and networks of organizations. Clinically, source of referral is a variable of potential significance in developing a typology of clients and in understanding the course of the episode of care, differences in utilization patterns, or the patient's prognosis.

22. History of use of mental health services prior to most recent admission to the organization

Previous treatment by any mental health organization of any kind

No

Yes

If yes, previous treatment within the past year

No

Yes

If yes, previous treatment by this organization

No

Yes

If yes, program elements in which previous services were received (each applicable category should be completed)

Inpatient Yes/no/not applicable

Residential Yes/no/not applicable

Partial day Yes/no/not applicable

Outpatient Yes/no/not applicable

Case management Yes/no/not applicable

Emergency Yes/no/not applicable

Comment: The client's prior mental health treatment may serve as an important indicator of whether the patient has chronic mental ulness or may flag a patient who is a heavy user of services. The recency of the past episode(s) may also be of clinical value, but the time period may vary as a consequence of the disorder. A year is offered as the minimum period for checking on prior service, but the auxiliary level may find other time periods advisable.

23. Residential arrangement - admission, most current or updated, and discharge

The patient's usual residential situation or arrangement classified as follows:

- On the street or in a shelter for the homeless

- Private residence/household

- Other residential setting

- Jail or correctional facility

- Other institutional setting

Comment: It is assumed that the residential arrangement is related to the type of report or record. For discharged clients, the setting to which the patient is being released should be indicated. If the residential arrangement over time is to be reported, a management use needs to be articulated.

Availability of a support system is regarded as significant in both the etiology and prognosis for a mental illness. The residential arrangement provides a ready indicator for the potential for such a

support network. It also may be a prima facie indicator of the stability or stressfulness of the patient's residential arrangement, i.e., identifying environments that may aggravate a patient's risks, either contributing to the admission or jeopardizing the success of a discharge.

24. Living arrangement-admis9ion, most current or updated, and discharge

Lives alone

Lives with relatives

Lives with nonrelated persons

Comment: The patient's usual living arrangement should be classified according to one of these categories. It is assumed that living arrangement is related to the type of report or record. For discharged clients, the living arrangement to which the patient is being released should be indicated. In conjunction with item 23, an indication of the extent to which a social and support network is available to the patient can be derived.

25. Expected payment source

None, organization to absorb total cost

Personal resources (patient's or patient's family)

Commercial health insurance

Service contract (i.e., contract with an employee assistance program, health maintenance organization, public mental health authority, etc., to provide mental health services under a writ-ten agreement on a fee-for-service or lump-sum basis)

Medicare (Title XVIIII)

Medicaid (Title XIX)

Veterans Administration

CHAMPUS

Workers' Compensation

Other public sources

Comment: As part of the intake process, it is extremely common for prospective patients to be required to indicate how their bills will be paid. In many instances, and for many reasons, the source indicated early on is different from the source that actually pays. However, because of iterative billing, last-party-of-responsibility determinations, and the nature of reimbursement from many public programs, it can be quite difficult to indicate actual source of payment. Expected source of payment can be important information in describing clientele. It also serves as a type of marker to determine if treatment strategies, amount of treatment, or assignment to particular classes of staff

are correlated with expected payment source.

26. Discontinuation status

Transferred - responsibibty for the patient officially accepted by another organization and patient transferred to that organization

Administratively discontinued (no contact with organization for 90 days)

Patient/client died

Patient/client terminated services against advice

Patient/client lost to contact

Discharged - treatment completed; no referral

Discharged - additional services advised, no referral

Discharged - additional services advised, referral made

Not applicable (client still active)

Comment: Auxiliary level entities need to categorize the records on patients according to patient status variables as described. Some entities may promulgate additional details, such as permitting transfers only between specific program elements. As noted under the organization data component, patients who have eloped or are AWOL should not be included among the active records of an organization. This maybe the appropriate item for an auxiliary level to expand to capture such a patient status.

The auxiliary level may wish to establish policies governing data reporting on special patient status situations so that edits of the data do not result in unnecessary error reports. For example, under trial leave, two different organizations may both report the patient as active, setting up a potential data edit problem - for example, a hospital in one part of a State and a community-based program in another may both report the same patient as active. A contingency will be needed to accommodate or permit this type of simultaneous enrollment so that it is not flagged as an error, with one of the organizations being asked to provide a discharge date for an episode of treatment.

27. Referral upon dIscontInuation

No referral (self, family, friend took responsibility)

Inpatient/residential care (indicate specific type)

- State or county psychiatric hospital

- General hospital inpatient psychiatric program

- Other inpatient psychiatric organization

- Alcohol treatment residential organization

- Drug abuse treatment residential organization

- Nursing home/extended care organization

- Community residential organization

- Return to penal/correctional institution

- Other (detail should be maintained) Other referrals (indicate specific type)

- Multiservice mental health agency (including community mental health centers)

- Outpatient psychiatric service or clinic

- Private psychiatrist

- Other physician

- Other private mental health practitioner

- Partial day organization

- Returned to court for adjudication

- Alcohol treatment organization other than inpatient or residential

- Drug abuse treatment organization other than inpatient or residential

- School system or education agency

- Social service agency

- Other (detail should be maintained)

Comment: As with the source of referral item, knowing the organizations to which patients are referred is useful in analyzing a mental health system. These variables help the auxiliary level identify networks of organizations and market areas, and analyze whether certain patterns of referral are overused or result in higher rates of patient recidivism. With the development of client typologies, it becomes possible to add referral information to determine if particular patterns of referral are more appropriate to some patient groups than to others.

28. Date of report

Month, day, year

Comment: The report date allows for data to be aged and for other calculations using patient/client items such as date of birth, and date of last service.

Other Recommended Data Items

The following items are recommended for consideration by auxiliary level entities. They are not listed as minimum, however, because they are of less significance to decisionmaking or because of difficulties in specifying uniform categories. Like the items previously mentioned, basic categories have been specified for recording.

Diagnosis

Using DSM-III-R, Axes IV (severity of psycho-social stressors) and V (global assessment of functioning)

Comment: This not only provides diagnosis on all five of the DSM axes, but adds useful additional data. Especially of value at the auxiliary level may be the use of Axis V as a de facto measure of severity.

Duration of disability

For patients who are disabled by their psychiatric condition, an indication of the length of time for which the disability has existed.

A year or longer

Less than a year

Not applicable

Comment: This item is used widely as one of the considerations in identifying the severely mentally ill. It attempts to categorize whether the patient's psychiatric condition has disabled the patient for an appreciable period. Duration of disability figures importantly in the Social Security Administration's review under both the SSI and SSDI programs. It is not synonymous with the date for the onset of the patient's condition. Disability is usually interpreted from the perspective of the patient being able to participate in work or work-like situations or being able to discharge major role responsibilities.

Handicaps/impalrments (other than mental illness) at time of admission

Each applicable category should be indicated.

Developmental disability/mental retardation

Organically based problem in expressive communication

Blindness or severe visual impairment

Deafness or severe hearing loss

Nonambulation or major difficulties in ambulation

Moderate to severe medical problems

Comment: This item is offered because many mental health programs may lack the diagnostic expertise to use the three axes recommended for item 17 in the preceding data set. This would result in loss of information about the multiply disabled.

History of use of mental health services prior to most recent admission to the organization

If inpatient, number of admissions:

Within the past year

Ever

Comment: The additional categories round out the data provided under item 22. The recency and total numbers of inpatient episodes contributes to the profile of patients who may be especially problematic and whom the auxiliary level is interested in monitoring.

Education at time of admission

Never attended school

Special education

Preschool/kindergarten

Some elementary school (grades 1-7)

Completed elementary school (grade 8)

Some high school or vocational education (grades 9-11)

Completed high school or vocational education (grade 12 or high school equivalent)

Some college (less than 4 years)

Completed college (4 or more years)

Comment: For patients with special education, there may be an interest in obtaining additional information on the number of years in special education or the type of education provided. Educational level is frequently used in determination of socioeconomic level. The latter is strongly associated with epidemiologic patterns. Individuals with different education levels may show systematically different patterns of contact with the mental health system, use different points of access, or show preferences for certain types of program elements. The auxiliary level may not always fmd these patterns to be either clinically or financially acceptable. Education levels may also be associated with particular service configurations provided to patients that the auxiliary level may identify as potentially discriminatory or clinically questionable.

Employment[(22)]

Employed, including on vacation or sick leave

- Parttime

- Full time

Unemployed

- On layoff from job

- Looking for work and available to accept a job during the past 4 weeks

In the Armed Forces

Not in the labor force

- Homemaker

- Student

- Retired

- Resident/inmate of institution

- Other (e.g., volunteer worker, disabled)

Comment: Employment is correlated with socioeconomic level. The item may also play a role in understanding service patterns in areas marked by recent employment changes. It may also correlate with a number of other items such as severity of mental illness, eligibility determination, and expected payment source and thus contribute to the development of client typologies.

Annual gross income and number of dependents

Total annual gross household income, as well as the number of household members dependent on that income.

Comment: These data are critical in determining socioeconomic level and contribute to the development

of client typologies that are fundamental to analyzing equity, patterns of service use, and prognoses.

Income-principal source

Employment/wages

Public assistance

Other

Comment: See comment for previous item.

Coverage

It is recommended that, at the service provider level, the client/patient data be collected for 100 percent of the patients treated. The items are obtained as a part of routine clinical and administrative action involving patients. These processes obviate the issue of frequency of collection at the local level. Coverage at the auxiliary level involves two decisions: frequency of coverage -how often the auxiliary level collects the data - and whether the auxiliary receives data from all of its organizations or use some type of sampling design.

With regard to frequency, the MHSIP recommends that an annual basis is the mini'num period for an auxiliary level to collect and analyze data from this component. Many auxiliary levels may be receiving client data on a more regular basis, e.g., in real time or as a daily batch submission. In such instances, the analysis of such data or some other type of feedback may need to be more frequent than annual.

Another decision for the auxiliary level is whether each mental health organization is to submit data on 100 percent of the patients or whether the auxiliary level will receive data on some lesser portion. If the auxiliary level shares in the clinical responsibility for the patient, as it might in a managed care or State mental health environment, there are compelling reasons why data on 100 percent of the patients are needed. These entities will be unable to meet their legal and clinical responsibilities without the full data.

In instances of 100-percent coverage, a point of negotiation is the frequency with which each organization submits the patient/client data. Some entities require that copies of intake, service, or discharge forms be submitted routinely - daily, weekly, etc. Other entities have on-line connections with organizations so that data entered into the decision support system of the organization are simultaneously available to the auxiliary level. Finally, others accept regularly scheduled transmission of the data in machine readable form. All of these mechanisms are viable, and auxiliary level preferences and capabilities determine their use. As noted above, depending on the frequency of submission, the auxiliary level may wish to provide more frequent analysis or reports on these data.

Submission of data on 100 percent of the patients enables the auxiliary to construct a patient/client registry. This is valuable for management and for research. In a registry, each patient admitted for service to any organization in the auxiliary level's mental health system is logged in the registry, including dates and unique identifers for the patient and organization. Other data may also be included, e.g., diagnosis, program element, or service. Historical and longitudinal analyses can be done on such registries and continuity of care can be efficiently analyzed.

One of the primary uses made of such registries is identification of the heavy-user or recidivist patient who may require special intervention or tracking. In addition to clinical concerns, such patients can place extraordinary resource demands on the organizations and the auxiliary level. Their service patterns may constitute a de facto definition of the severely and persistently mentally ill. If the auxiliarv level places a high priority on this group or needs to monitor their service use, the registry may be used to shape the nature of event reporting. Specifically, detailed event data may be required for patients flagged by the registry as heavy users. However, for all other patients and events, a sample may be sufficient for management needs.

Some auxiliary level entities may decide that all their needs can be met with less than 100-percent reporting of patient data from organizations. A sample of admissions, those under care, and discharges may be sufficient. One type of sampling design that may prove workable for an auxiliary level is for 100 percent of the organizations to provide patient/client data on a sample of their patients - cell 2 in exhibit 7. The auxiliary level can set time parameters on the sample - declaring a particular period as the basis for the sample to be reported on. For that period, all patients or every nth patient admitted, on the rolls, or discharged is included.

Usually, program size and seasonal variations are the main factors to consider in the design of these samples. Another variation, noted in chapter 13, permits organizations to submit data throughout the year, with the sample design determining which patients are reported on.

One issue that both the organizations and the auxiliary level should consider under a sampling design is that of patient permission to release the data. It may be routine during intake for patients to consent to release of some of their data. This is often needed for payment purposes. However, when data on only certain patients are being forwarded, even in compliance with a sample design, it may be prudent to investigate whether special patient consent is needed, whether patients have the right to decline, or whether human subjects considerations may be in effect. If patients have the right to decline release of their data, this contingency needs to be included in the procedures of any applicable sample design.

With 100 percent of the organizations represented by a sample of their patient data, the auxiliary level is likely to be on safe ground for estimating the full patient population and also for providing smaller estimates, such as patient characteristics by particular program element types. The primary reason for this statement is that the concept of stratification of patients is not applicable. It is generally assumed that the sample of patients obtained for any one period is a reasonable representation of patients for any other similar period. Note that this statement applies to patient characteristics and not to any ut;lization staustics that may be inferred from the patient data component, e.g., number of admissions. Until the field is further along in the development of client typologies, it can generally be assumed that sampling of patients within an organization will reasonably and defensibly describe the characteristics of the full patient population. The only caveat is that the preceding sampling approach may limit the ability to describe rare diagnoses or other unusual patient characteristics that may be of interest to researchers or the media.

This approach to sampling of patient/client data has assumed the operation of the component only in relation to the organization component. For many auxiliary levels, the component is linked with data from the other MHSIP components. The discussion of sampling to achieve an integrated decision support system presented at the conclusion of chapter 13 should be reviewed. Although the potential designs are complex, under certain circumstances, sampling can help the auxiliary level achieve the goal of an integrated decision support system.

Sampling of client data has a major liability that must be acknowledged. The auxiliary level loses the ability to construct registries and longitudinal data bases that identify patients over time and in different parts of its system. Samples only enable descriptions of the system for points in time. If the auxiliary level has continuity of care responsibilities or is interested in analysis of recidivist patients, constructing a patient registry, or in identifying de facto service pathways that indicate successful or risky movements for patients, sampling is inadvisable.

Summary

The minimum data set for patient/client data:

1. Organization identifier

2. Client status

3. Unique patient/client identifier

4. Date of most recent admission to organization

5. Date of discontinuation/discharge/death

6. Program element activity

7. Sex

8. Date of birth

9. Race

10. Hispanic origin

11. Current marital status

12. Veteran status

13. Legal status

14. Coded area of residence prior to admission to organization

15. Current coded area of residence

16. Presenting problem(s) at time of admission

17. Diagnosis

18. Severity of condition or level of functioning at admission

19. Chronicity of mental illness

20. Eligibility determination

21. Source of referral

22. History of use of mental health services prior to most recent admission to the organization

23. Residential arrangement

24. Living arrangement

25. Expected payment source

26. Discontinuation status

27. Referral upon discontinuation

28. Date of report

Chapter 15

Event Data at the Auxiliary Level

The event data component at the auxiliary level serves the same function as at the organization level. Specifically, it provides managers with a description of the activities in which the organizations are engaged, and it serves as the mechanism by which all the data components from an organization are integrated. As indicated in chapter 12, some auxiliary level entities may not pursue an integrated decision support system. Therefore, their receipt and use of event data is not driven by an integration objective.

As an example, a payer for mental health service may need to receive data on each event for which payment is claimed. These data may be edited, stored, and analyzed. They serve a critical role as documentation for claims; money is dispensed on the basis of the data. However, the payer may make no further use of these data except for actuarial purposes; thus, the event data are not used to link detailed patient, staff, or financial data from an organization. It should be noted, in passing, that the data in this example would not be fully consistent with the MHSIP interpretation of an event. In the MHSIP, event data are supplied by all staff, not just clinicians. The payer in the example is processing only direct and adjunctive events for which payments are entitled.

Other auxiliary levels use event component data to link the other MHSIP data components, as well as for their stand-alone value. For these entities, a major decision involves their system design. The volume of data associated with the event component can quickly become monumental, even for small mental health systems. The auxiliary level needs to decide whether it wishes to receive these data on a 100-percent basis - a decision with implications for the other data components - or on a sample basis. The uses of such data, the content of the component, and the system design implications receive attention in this chapter. Familiarity with the material presented in chapter 6 is essential to the appreciation of the current chapter.

Uses of Event Data

Event Reports

At the organization level, a distinction is made between event reports and event analysis. A similar distinction can be made regarding the uses of event data at the auxiliary level. Event reports comprise tabulations, summary statistics, and even statistical analyses confined to the data items in the event component. The auxiliary level may receive these data as separate files (Model III) or as data that have been integrated with other MHSIP components (Models II and IV). If the event data have been integrated with other data, only under Model IV is it possible to reconfigure them into a new file containing just event data for event report preparation. Under Model II, event reports are limited to the marginals derivable from the submitted reports (see figure 6).

The general dimensions of event reports, noted in chapter 6, are also applicable at the auxiliary level, viz, type, volume, and location. In practice, these usually are not separated, i.e., the most useful event reports include all three. For example, the number (volume) of direct events (type) provided by

outpatient program elements (location) within the mental health system might be a common auxiliary level event report.

Type. The most fundamental dimension on which to distinguish event data is by the type of event. Events are typed according to the minimum categories in the data set, i.e., direct, adjunctive, consultative, and administrative; or according to a more elaborate scheme promulgated by the auxiliary level. Type reports summarize the kinds of activities that go on within organizations and within the system of which the auxiliary level is a part. Type reports may combine type of event with other items in the component such as date, duration, or presence of other staff. Type reports are most useful if they also contain statistics on the volume of such events, their location (e.g., by organization or program element), or both. A unit of service measure can be constructed from a knowledge of event type, its duration, and its location. In addition, event type examined over time provides a change profile for the mental health system - how activities are added or dropped in response to funding policies, management changes in local settings, the result of an audit, shifts in the type of patients admitted, or treatment philosophies.

Volume. Event reports focusing on volume present data on number of events, on amount of time for selected transactions, or as ratios contrasting the volumes of different events, e.g., hours of direct service vs. scheduled staff time available. Volume reports:

presume that components of organizations or the organizations themselves have been comparably grouped, especially if the volume reports are presented in units of service;

are usually judged against some standard such as past patterns, a regulation, a performance indicator, or volumes from similar programs; and

usually presume that type of event is an organization factor for the report.

A typical type-by-volume event report is the proportion of total time accounted for by each type of event.

With volume data added to type, event reports are quite useful, potentially identifying patterns of production needing management intervention, e.g., billable events accounting for less than 30 percent of total events reported~ or a number of outreach events below the goal set by a State in its plan for the public law on services to those with severe mental illness (PL 99-660). It may not be uniformly necessary for the auxiliary level to investigate or request an explanation for every production-deficit instance. Under the MHSIP recommendation for the provider level system, such a pattern would also be known at the organization level, and known earlier t~an at the auxiliary level. If reporting such patterns to the auxiliary level has placed an explanation burden on the organization managers in prior times, they may scrutinize data carefully and institute corrective action for patterns likely to provoke questions. Each auxiliary level entity has to determine what patterns of vigilance and intervention to exercise over organization event volume data. Generally, the more marked or persistent a reported volume difference, the stronger the need to investigate.

Location. At the auxiliary level, location event reports attribute activities to particular organizations, program elements, or physical sites. For example, an entity that has contracted with a mental health organization to provide services to its employees may have a contractual statement about the proportion of outpatient services that should be delivered at the work site rather than in the organization's setting. A location event report (combined with volume data) permits the entity to determine if the events are occurring in compliance with its expectation.

Location assignments are useful in examining differential distribution of events (by type, volume, or both) by organization and program element definitions. Some organizations may show atypical patterns of canceled events, unusually high proportions of administrative support events, or exemplary distribution of time by event type. The auxiliary level may decide to pursue any of these patterns. Finally, as with location reports at the organization level, location reports may assist the auxiliary level in detecting events in appropriate and inappropriate locations. An appropriate pattern might be for most services associated with case management to occur outside of the organization. If an inappropriate pattern is widespread, e.g., all the outpatient program elements in one region exhibiting a performance pattern more appropriate to a case management program element, it may suggest a misinterpretation of policy, a faulty communication network, the seasonal arrival of a wave of itinerant clients with severe mental illness, or some other cause that may need investigation. If such a pattern is isolated, it may not demand immediate investigation.

The event data component yields a considerable amount of data that is useful to management. This is useful in the description of what the programs produce or how their time is distributed and can be used by management to monitor and assess these programs. However, as has been noted throughout the report, management actions require more than description. Managers need to be able to explore patterns to understand potential causes and suggest options for producing different results. This requires an ability to analyze as well as describe.

Event Analysis

Event analysis refers to the generation of information reports based on the linkage of event component data with data from other MHSIP components or linkage of the components made possible by working through the event component. Event analyses are possible under Models II, III, and IV, but are restricted under Model II to the linkages that are submitted by the organizations. A reexamination of exhibit 6 in chapter 12 shows that most of the possible combinations of components depend on the event component, either as a distinct ingredient or as the mechanism for linkage (e.g., human resources by patient data).

Just as at the organization level, the event component at the auxiliary level is relatively lean. Its value, however, cannot be overemphasized. The event component makes it possible for a manager at the auxiliary level to address the knowledge paradigm presented in chapter 3: Who receives what from whom at what cost and with what effect. Addressing this question is an event analysis. Generally, it is assumed that the auxiliary level manager is not analyzing data at the same microlevel as managers within organizations. Auxiliary level event analyses are usually targeted to system-level questions and to discharging oversight responsibilities for the organizations within the system.

All the areas of the knowledge paradigm as well as selected components can be used in event analysis. Whether the full paradigm is used depends on whether the auxiliary level receives all the information components with established linkage pathways. As noted in chapter 12, not every auxiliary level has responsibilities in all these areas. Therefore, auxiliary levels may vary considerably in their ability to conduct event analyses, regardless of the model they employ for the receipt of data. Some of the more useful types of event analyses follow.

Services received by clients. Most analyses of data on the mentally ill proceed from an assumption about under-lying demographic or clinical dimensions that permit patient assignment into relatively homogeneous groups. Diagnosis, age, sex, and race are used most frequently. Clinical and demographic factors are usually considered sufficient to identify special target groups for which a mental health system has special concerns. For the most part, the items in the patient/client component are sufficient to identify these groups. Auxiliary level entities often monitor organizations on the access these target groups have to services, i.e., their representation in case load statistics.

With the addition of event data, two more possibilities occur. First, it is possible to analyze the services or specific activities these groups receive (or benefit from) by type, volume, and location. Sometimes, target groups are expected to show patterns of services identical to other groups. This expectation is usually related to questions of equity and accessibility, e.g., the patient's source of payment should not affect the amount of service provided nor the program element to which the patient is assigned. At other times, different patterns are expected, e.g., the case management program elements should show high proportions of patients with severe mental illness, or such patients should be receiving higher proportions of adjunctive service events than other client groups. The combination of event and patient data permits more rigorous analysis regarding access, equity, and appropriateness of service patterns for categories of patients.

Second, the addition of event data provides an opportunity to develop entirely new conceptualizations of target groups. This is an extension of the notion of client typologies mentioned elsewhere in this monograph. Data bases that provide not only patient descriptors, but also data on the treatment types and amounts received by patients, may reveal that the assumption of homogeneity within target groups identified by clinical and demographic labels is faulty. Different types and volumes of services are consumed by members within these special populations, patients' progress through a continuum of treatment is not uniform, and costs of treatment vary. Not all these patterns are attributable to inequity, differential access, or questions of appropriateness. The data undoubtedly create opportunities to apply both conceptual and empirical skills to identifying new target groups and special populations based on simultaneous consideration of patient data and treatment experience. One relatively new label for a clinical population - heavy users - resulted from linking patient and service data.

Patients/clients and workforce. Because of cultural background, language skills, patient's diagnosis, or staff preparation, it is often assumed that certain staff/patient combinations are better than others. Event analysis permits the auxiliary level to examine whether there are routine associations between staff categories and patient categories. This analysis may be done system-wide, as when the auxiliary level has a policy that treatment planning and delivery is done by a multidisciplinary team. At other times, only certain organizations may be examined because of:

past patterns, e.g., only social workers were treating the severely disabled;

unique client characteristics, e.g., analyzing staffing assignments in programs for children and adolescents; or

exemplary patterns the auxiliary level would like to see emulated within the system, e.g., equal access by all types of clientele to all the direct service staff.

Concerns have sometimes been expressed in mental health systems that the most extensively trained and expensive staff claim the most tractable and least disabled clientele for their case loads, leaving more severe cases to staff with lower cost and less training. Consequently, these event analyses may be some of the most valuable data examined by the auxiliary level. It is assumed that the entity is not making the day-to-day decisions about patient assignment within an organization and, therefore, is examining data on a fairly global level, i.e., client and workforce data as aggregate categories rather than analyses and determinations about which patient is assigned to which staff. Based on an aggregate event analysis of client-by-workforce associations, the auxiliary level may elect a variety of management actions, including

no action, i.e., satisfactory associations between patient and staff data are found throughout the system;

monitoring, e.g., the need to investigate further the patterns within selected organizations or see if the pattern continues on a subsequent reporting cycle;

distribution, e.g., a reprimand for a sustained unacceptable pattern; or

accounting, e.g., the introduction of a policy on patient assignment to which programs must demonstrate compliance.

Workforce and services provided. Similar to the preceding analysis of who the workforce is serving, the auxiliary level is often concerned about how the workforce within the system spends its time. Because of the intimate association between staff effort and program costs, the overall productivity by staff is a perennial concern for managers throughout a mental health system. Event analyses that display staff involvement in various types of events, usually by proportions of their work time, and by location can be extremely valuable in helping managers understand program cost and productivity differences. In addition, such analyses may be crucial in an auxiliary level decision to intervene through policy, resources, or additional investigation. These analyses may also be of use to specific managers within an auxiliary level entity such as a director of medical care or a human resources development specialist, e.g., stimulating actions in the areas of personnel super-vision, evaluation, and training.

Patients, services, and workforce interactions. Event analyses that combine the three components of patients, events, and human resources yield valuable information for auxiliary level managers. Many of the suggested explanations for patterns that emerge from two-way combinations can be investigated by the auxiliary level through this three-way combination. Practically, this means that an auxiliary entity possessing integratable data in these data areas does not have to request additional data from organizations, conduct site visits, or pursue other expensive and time-consuming routes for every exception it funds.

For example, if two sets of case management program elements show quite different rates of direct and adjunctive services, the auxiliary level may first examine patient characteristics. If patients are systematically different, with one program having more severely disabled patients, clients with unique prior care, or more clients with multiple disabilities, this may explain the different distribution of activities. If patient characteristics are identical, the auxiliary level may examine staffing characteristics how the two programs are staffed, type of activity by staff discipline or function - to determine if differences are attributable to staffing. If none of the auxiliary level's examinations yields any clues, an event analysis can be performed that sorts staff on a dimension such as discipline or function, examines the types of patients served by these staff, and identifies the types of services the staff are providing to those patients.

Such a combination may show that the differences are attributable to differing treatment philosophies touching on patients, staff, and services. In one of the programs, patients may benefit from intensive, mullidisciplinary treatment planning and case review. This program might arrange for the direct service to be provided to their patients by others, leaving them with higher rates of adjunctive service. In the other, patients may be assigned to individual case managers who are expected to develop a nurturing client/therapist relationship that equally emphasizes therapeutic intervention (direct service) and advocacy/linkage (adjunctive).

Of course, if the auxiliary level had data on the effect of treatment, this entire process would be obviated. The starting question would be, which program is more effective? If one pattern was demonstrated to be more effective, the auxiliary level would then move to additional analyses looking at patient characteristics, staffing differences, and treatments/units of service. The intent would be an analysis of the pattern so that it could be replicated elsewhere in the system.

Some cautions are appropriate to these analyses at the auxiliary level. Event analyses that involve more than two of the MHSIP components, including the organization component (or program elements) as one of the dimensions for analysis, can be a sizable mechanical undertaking. The result of such analyses may also present interpretation challenges, raising more questions, rather than satisfactorily explaining simpler patterns. Consequently, it seems advisable for an auxiliary level entity to use complex (i.e., more than two component) event analyses either to produce agreed on performance indicators or to attempt to pursue questions that emerge from simpler (i.e., two component) event analyses. In other words, the auxiliary level should avoid what has been described as "fishing expeditions" or "data dredging" in which linkage and analyses of the data proceed in an unguided fashion.

Using data to analyze a simple pattern was illustrated in the above example. A case of using the data to produce a performance indicator is illustrated by a performance contract for partial day program elements requiring that rehabilitative service events provided to formerly hospitalized patients constitute at least 50 percent of the total event hours reported by clinical staff. Such an indicator clearly requires the combination of patient, staff, and event information. Specifically, the following subgroups would need to be identified from the data:

Previously hospitalized patients vs. All patients

Rehabilitative direct service events vs. All direct, adjunctive, consultation, and

administration events

Events reported by clinical staff vs. Events reported by all staff

As a performance indicator, this could be expressed as:

Total clinical

Hrs Rehab Events(Prev Hosp Pats) ≥ hrs. available

2

A performance indicator specifies the pathways for examining the data and the expectation the auxiliary level has for the analysis. Without some a priori notion of what is being examined in these complex event analyses, they can produce management frustration rather than enlighten decision making.

Analyzing the Unit of Service

In chapter 6, it was pointed out that the event concept permits the unit of service to be better understood and analyzed. Units of service differ by the program elements that produced them and are usually thought of as measures of production, measures of capacity, or the meter for billing. Because it can mean these different things, an auxiliary level entity should develop a solid understanding of what constitutes units of service throughout its mental health system. For example, if unit of service in outpatient programs is being discussed solely as a measure of production, it is to the advantage of the organization to confine the definition to events involving patients and to exclude events that contribute to overhead, i.e., lower the production rate. On the other hand, if the unit of service is being considered in a billing context, all activities must be factored in to an organization's costs and

reflected in the units that are billable. That is, a billed unit of service must reflect both clinical and overhead activities.

In addition, units of service differ by program element, owing to the clinical activities conducted as well as unique operational features that contribute to administration and overhead. This is discussed in chapter 6 and the units associated with each program element are defined. The upshot of this variety is that unit of service at the auxiliary level is difficult to interpret or compare as either a metric of production or capacity of the mental health system without a more concrete basis for understanding its makeup.

Nonetheless, the concept is widely used by auxiliary level entities, especially to report their production data and to calculate efficiency ratios. The MHSIP does not recommend the collection of data in terms of units of service per se. Although unit of service measures are invaluable as management information, their aggregate nature can be a hindrance to decision makers because it tends to mask the type of detail that can be crucial to understanding performance differences. The event data component permits the generation and analysis of unit of service counts and many other production and cost measures by providing the details for the construction of these aggregated measures.

Some of the performance measures derivable from event reporting are presented in exhibit 8. In the exhibit, the types of data derivable from event reporting are listed. Taking various combinations of these discrete types of data, the auxiliary level is able to generate a variety of performance measures. The discrete inputs to construct a small sample of derived measures are shown in the exhibit. Recall from chapter 6, that a tally of units of service in the inpatient, residential, and partial-day program elements is derived from the patient attendance logs, i.e., it is measured by the number of persons who received a service on a given day. In outpatient, case management, and emergency program elements, the unit of service tally is derived from the staff log, i.e., the hours a direct care staff member devoted to direct or adjunctive care. In the following data set, this information is derived from the items on event type and duration.

One example in exhibit 8 is the construction of a special unit of service measure confined to the clinical effort directed to patients in all program elements. The data for direct and adjunctive events define clinical effort in this instance and the amount of time devoted to them would be tallied by program element. This provides a count of such service units, probably as hours. If a proportion measure is of interest, the tally constitutes the numerator and the denominator is derived from the total direct care hours scheduled in each program element for the time period for which the event data are tallied. The result is the proportion of total direct care time actually devoted to direct and adjunctive activity.

The flexibility created by event data enables managers to analyze and compare performance on a variety of measures. This is true at both the organization and auxiliary levels. Of particular value is the ability to construct units of service designed as measures of productivity, e.g., focusing primarily on the activities of direct care staff; and to analyze the cost structure of program elements and organizations by examining the contribution of clinical vs. administrative events. Such data help a manager understand agency effort, identify where some type of intervention might best be directed, analyze the organization's cost to provide service, and determine whether ostensibly similar units of service (e.g., patient days for two different inpatient programs) differ by the types of events that comprise them.

Minimum Data Set

The following items constitute the minimum data content for the event component of the decision support system of an auxiliary level entity. For entities that need event data, the full data set is assumed to be applicable. Each item is named, followed by either its minimum recommended categories or a brief explanation of its content. As noted in chapter 4, categories can be elaborated by the auxiliary level depending on needs and responsibilities. However, elaborations should always be designed to be collapsible into the minimum categories. This facilitates comparisons of data, especially with other auxiliary levels. Comment sections follow the recommended categories. The comments are intended to explain the item further, discuss the importance or potential use of the data, or note advisable rules of interpretation. The commentary provided in chapter 6 is relevant here.

1. Organization Identifier

The 8-digit NIMH master facility number is recommended as the identifier.

Comment: The submission of event data to an auxiliary level must always be associated with an organization that is responsible for that set of events. This identifier should be identical across all the MHSIP data components, allowing the information in the various data components to be associated. This is especially important if the auxiliary level receives data as separate files or at different times.

Exhibit 8. The use of data items from the event component to construct measures

of performance and productivity within a mental health system

Examples of measures or analyses derived from event reporting

Data elements	Staff effort Patient-specific effort Clinical Program Total Services Services Unit of Billed Analysis hours element hours received provided service unit of of hours (Patient (Organization(Clinical service billing perspective) perspective) productivity) units
Staff member(s)	x x x x x x
Patient(s)	x x x x
Time	x x x x x x x x
Place	x x x x x x
Type:	x x x x x x x

Direct	x x x x x x
Adjunctive	x x x
Consultation	x x
Administrative	

2. Date of event

Month, day, and year

Comment: Date of the event permits the information system to sort, assign, and operate properly with the other data in the event file. For the analysis of data by reporting periods, the sequencing of events in some types of analyses, and use in relational editing involving data in other components, especially client and workforce components, date is critical.

3. Staff member reporting

Unique identifier that can be used to associate the data in the human resources component or file with the staff member reporting.

Comment: This item provides the critical link to the data in the human resources file. See item 9 for participation of other staff members.

4. Program element identifier and attendance logs

Identification of program element under whose auspices the event occurred.

Recommended categories:

inpatient

Residential Partial day Outpatient

Case management Emergency

Not applicable, event did not occur under auspice of a clinical program element

A patient/resident attendance log must be provided for inpatient, residential, and partial day program elements for each day on which events are recorded.

Comment: Events, units of service, and costs may be unique by program element. Thus, it is important to be able to partition event data initially so that meaningful aggregations are possible later. Program element definitions were provided in chapter 13.

For inpatient, residential, and partial day program elements, a patient attendance log for each day of event reporting must also be submitted. This lists all patients by unique identifier (see next item) on the rolls/census of the program element for that day. If patients attend the partial day program for variable lengths of time, the hours in attendance must be included. The unit of service count for these program elements (i.e., days or sessions) is derived from these logs.

Organization components that do not have a clinical orientation must still be accounted for and their activities and resources distributed. For this reason, a not-applicable category allows events occurring in non-clinical program elements, e.g., security or office workers, to be defaulted. Subsequently, the organization itself or the auxiliary level may distribute these events and the time they represent to the clinical components according to established allocation rules.

5. Patient(s) Involved In the event

Unique identifier(s) that can be used to associate the data in the patient/client component or file with the patient(s) involved in the event.

Comment: This item provides the critical link to the data in the client component. Unique identifiers should be used in each of the following circumstances:

If the activity is with a patient or on behalf of a patient;

If more than one patient is involved, the unique identifiers of each patient should be recorded;

If the activity is not with or on behalf of a patient, but to an organization or association, then codes for these organizations or groups receiving services should be developed. This guideline includes the service organization itself as well as its program elements or components. Thus, administrative/support events should usually list the organization as the client.

If the patient has not been admitted to or registered with the organization and assigned a unique identifier, then the sex, approximate age, and presenting problem should be recorded.

The MHSIP recommends that each auxiliary level entity either establish a uniform procedure to be used by mental health organizations to generate the unique patient identifier at admission or prescribe the nature of the unique identifier that must be used for submitted data. All organizations would abide by this procedure. This recommendation is consistent with guidance provided to the organization level in chapter 5.

The intent of the identifier is to enable those auxiliary levels with such a responsibility to identify, either with certainty or with high probability, a given patient in different organizations within its mental health system. This permits the auxiliary level to develop case registries, engage in continuity of care analyses, generate unduplicated counts of patients, and tap many of the integration features of the data components.

6. Type of event

Events, transactions, and activities should be collapsible into the following recommended recording categories:

a. Direct service events - face-to-face as well as other contacts (usually telephone) with patients/clients, individually or in groups. Direct events are further categorized as one of the

following:

- Engagement and outreach events-activities usually directed to potential/nonregistered patients intended to establish trust and rapport, explain services and assistance available to the potential/nonregistered patient, and dispel likely or actual resistance on the part of the potential/nonregistered patient.

- Diagnosis and assessment events-activities intended to define or delineate the patient's diagnosis and problems. These activities are used to document the nature and status of the recipient's condition in terms of psychiatric, psychological, interpersonal, somatic, social, or situational factors. They serve as the basis for formulating a plan for subsequent activities or services.

- Diagnosis and assessment usually include transactions such as examination (somatic or neurologic), testing, interaction, observation, interview, and laboratory work.

- Treatment events - activities based on the patient's diagnosis or problem and intended to arrest, reverse, or alleviate the disorder or problem. Treatment events are most often provided in relation to a treatment plan and may be delivered to the recipient individually or in a group.

Treatment events include such transactions as the administration of prescribed medications, medication checking and monitoring, behavior modification, psychotherapies, somatic therapies other than medications (e.g., electroconvulsive therapy), stabilization of crisis reactions or symptoms, social therapy (increasing patient awareness of interpersonal environment), and therapeutic education (information sharing or development of recognition skills that help the patient sustain adaptive functioning).

Rehabilitation events - activities and services intended to train or retrain patients to function within the limits of their original or residual disability. Rehabilitation events are most often provided in relation to a treatment plan and may be delivered to the recipient individually or in a group.

Rehabilitation events include skill training in activities of daily living (e.g., personal grooming, eating) or instrumental activities of daily living (e.g., shopping, managing money, managing personal possessions, housework, simple meal preparation, use of public transportation); special education; vocational training; mobility restoration or improvement; and activities that assist the patient in participating in recreation or hobbies. Note: if the activity does not involve training in activities of dally living or instrumental activities of daily living, it is personal care and falls in the next group.

- Personal care events - life support activities and services provided to meet the client's needs for food, shelter, and safety. *(23)*

Personal care activities include assistance provided to the patient in the performance of activities of daily living; providing meals, shelter, or a bed; protective oversight; or transportation.

b. Adjunctive service events - activities on behalf of a patient/client who is not present.

The vast majority of the events in this category are related to case management. They involve staff assessment of a patient's need for other services, entitlements, or care that may not be within the authority of the organization to provide. Staff may then develop a plan for acquisition of these services, link the client with the service or otherwise refer them, advocate for the client to obtain them, and monitor the client's receipt and benefit from these services. In addition, adjunctive services

may include work related to the patient's record; clinical consultation within the organization about the patient's diagnosis, treatment, prognosis, or referral; and the collection of additional information on the client.

c. Consultation service events - activities for the benefit of another organization, association, or group.

The recipient of these activities and services must be from outside the organization. The activities are intended to impart knowledge about mental illness and mental health that aids in prevention, recognition of mental problems, appropriate referrals and linkages to treatment sources, and general improvement of understanding within the community of mental illness and its treatment. These services are often labeled consultation and education.

d. Administrative and support events-activities that benefit the organization and those that cannot be identified for a specific person or agency.

Meetings, training, research, supervision, travel, vacation, sick leave, reports preparation, down time, etc. usually fall in this category. It also serves as the default category for activities that do not fit in any of the above event categories.

Comment: Auxiliary level entities may establish more specific or detailed listings of events and prescribe them for use by the individual mental health organizations with which they work. This is encouraged. However, they should be collapsible into the listed categories to facilitate comparisons and reporting.

These categories capture generic activity clusters that can be used to describe and analyze service profiles for patients, staff, program elements, and organizations. They permit the production of both event reports and event analysis and contribute data needed in the fmancial component to calculate the cost per unit of service. The adjunctive event category may be particularly useful to State mental health agencies in meeting the reporting requirements under Public Law 99-660, regarding services to the chronically mentally ill.

As indicated in chapter 8, event reporting is applicable to both direct care and non-direct care staff. The relevance of these categories to non-direct care staff may be of special concern. If there is no management interest in knowing the composition of the time of these staff, there is little need for their actual participation in event reporting. The time of non-direct care staff assigned to only one unit may be defaulted to the administrative and support event category. For example, the staff of the payroll office may not participate in event reporting and 100 percent of their time would be defaulted to a nonclinical care component with the event type recorded as administration and support activities. If any of the non-direct care staff spread their time among several components, e.g., maintenance or secunty staff, at a minimum they need to report their hours in these components.

7. Scheduled event

Event was scheduled, i.e., the activity, patient, and staff involved in the event were known at least 24 hours in advance.

Event was unscheduled, i.e., the activity, patient, and staff involved in the event were not known at least 24 hours in advance.

Comment: This information may be useful at the auxiliary level primarily for exception reporting. For many mental health agencies, the bulk of their daily volume of activity consists of planned events, i.e., those that are known of; planned for, or scheduled in advance. Some volume of unscheduled activity is also to be expected. However, high incidence of the latter might suggest the need for closer management attention to treatment plans or might raise questions about the adequacy of care or the quality of the scheduling system. The following conditions are also significant:

Non-direct care staff such as administrative or maintenance staff may not always know the specific activities that will involve them. However, in the event types in item 6, they do know it will be administrative and support. Therefore, their time can usually be defaulted to scheduled events.

Direct-care staff may find unscheduled events in any of the event types.

In emergency program elements, unscheduled events may be the norm. That is, staff in these program elements may know that they are going to provide activities in advance, but usually the recipient is unknown. In emergency program elements with an inpatient focus, e.g., 72-hour crisis stabilization, events subsequent to the in-take assessment can probably be classified as scheduled.

8. Event duration

Actual time staff member was involved in the reported event in minutes and hours.

Event canceled by staff

Event canceled by organization

Patient failed to show

Comment: The duration of events is important data at the auxiliary level for constructing different measures of productivity and service volume. Event duration drives at least three different meters within an organization: staff time, amount of service received by patients, and billing. This is shown in exhibit 8. When multiple staff members are involved in an event, each participating staff receives credit for the amount of time devoted to that event. This may be different from the time credited to patients or the time used for billing. For example, the event duration of two staff members involved in 60 minutes of group therapy is 1 hour, although each staff receives credit for 1 hour of a direct treatment.

When multiple clients are involved in an event, each client is credited with receipt of that amount of service, i.e., eight patients participating in 60 minutes of group therapy each are recorded as having received 1 hour of direct treatment. Billing is usually correlated with the latter perspective, i.e., the amount of service received by the patient, but not always. In inpatient and residential settings particularly, some patients may receive different amounts (or intensities) of treatment during a given day, but the bill is typically the same for each patient, i.e., for one inpatient or residential day. In addition, there may be instances in which multiple patients are involved, but the bill is driven by the nature of the service and its length of time rather than the number of patients participating. This is especially applicable to consultation events, where a number of cases may be discussed during a 1-hour consultation, but the recipient of the consultation is only billed for 1 hour.

The remaining categories in this item are useful for understanding potential problems in organizational productivity or other exception reporting. When events are scheduled and the patient

fails to make the appointment, staff productivity measures can be affected. These no-shows may vary by particular types of clients, events, or staff and thus have clinical as well as administrative importance. Staffing cancellations that are above average need to be looked at more closely -this may be a flag that staff are not prepared for the type of clientele, that burn-out is possible, or that case loads are too high. In addition, the cancellation of events by the organization may serve as a valuable management index. Frequent cancellation of events by an organization or one of its components may be a sign of mismanagement, poor scheduling, or other problems in resources.

9. Presence of other staft members

No other staff members involved in the event

Other staff involved in the event, identifiers for each

Special flag for identifier of staff who was regarded as primarily responsible and accountable for the event, e.g., primary therapist, team leader

Comment: The identifiers provided should be identical to those used in the human resources data component, enabling the linkage of these event data with that component. The special flagged identifier should only be used if the staff identifier in item 3 does not identify the primary staff. Only other staff who shared in the performance of the event should be indicated. Staff who may also have been on duty or present physically, but not involved, should not be associated with the event. These data are needed for the correct preparation of billing information, for the correct tallying of events so that staff receive credit for their activities, and, in some program elements, for correctly deriving unit of service counts.

10. Location of event

Premises of the program element or the mental health organization

Other clinical setting

Patient's place of residence

Street or other public place

Other (detail should be maintained)

Comment: As payment authorities expand their definitions of where allowable services may be provided and mental health organizations expand their concepts of where they may provide services, it becomes important to attribute services to different locations. In addition, locations are expected to vary systematically according to program element and type of activity or service, e.g., case management program elements reporting their engagement and outreach events occurring primarily outside the premises of the organization. If consultation events constitute a high volume of business, the "other" category should certainly contain a breakout for "recipient's place of business."

Coverage

The event system is based on all staff members ofmental health organizations reporting their

activities. Thus, the number of staff expected to be covered is not at issue. A major challenge in developing an event system for the service provider level is to design a method for staff to do this reporting with the least possible burden. The vital currency in any mental health program is staff's time, and the goal should always be to maximize the productive use of staff time. Because of the potential impact of event reporting on organizations, the technology requirements, and the desire for comparable and consistent data to be provided to the auxiliary level, many auxiliary level entities may elect to be intensively involved in developing this component. This involvement may manifest itself in

Exhibit 9. Recommendations for the minimum recording of events by type of event, period, type of staff involved, and program element

Program elements

Type of staff	Outpatient Case management Emergency	Inpatient Residential Partial day
Direct care	Report: All activities*Time period:100 percent of time	Report: All activities* Time period: Sampling window of a defined period
All other	Report: All activities* assignment only; by hours, if necessary Time period: Sampling window of a defined period	Report: Program element Time period: Sampling window of a defined period

**** Activities to be reported include all activities and transactions which fall under the rubrics of direct service events, adjunctive service events, and consultation service events. These are defined in the minimum data set for this component. All other staff time not accounted for in these categories would he defaulted to administrative and support events.***

providing a standard form to be used by all staff to record their activity, developing software packages for processing and analysis, underwriting the cost of hardware to support event data collection, or prescribing procedures (e.g., time periods for data collection, sampling protocols) to be used at the provider level.

It would be ideal if event data were available on each staff member in every program element in every mental health organization for every activity performed for each working day. These data would inc]ude a code description of the activity, the identification of the pat ient or patients involved, and the identification of the place where it occurred. Automation would be needed to handle such volume. Such a system would enable detailed summaries to be prepared with basic data about staff and patients that outline service costs, individual staff productivity, and many other analytic tabulations.

This ideal system would require a substantial investment of staff time in recording and managing the system as well as a major investment in computer hardware and software. The recommended details of event reporting within a mental health organization are an attempt to provide as many of the values of this ideal event data system as p6ssible, while minimizing the investment of staff time in recording and the associated data processmg costs. Familiarity with the recommendations in chapter 6 is essential to understanding coverage of the event data component at the auxiliary level.

Frequency. Coverage of a data component at the auxiliary level involves both frequency and extensiveness. With regard to frequency, the MHSIP recommendations for the provider level are significant. Briefly, the frequency of event data collection within an organization varies by type of staff and by type of program element. These variations are summarized in exhibit 9, which is identical to the exhibit used in chapter 6. From this exhibit, it is apparent that the MHSIP does not expect the provider level to have the ideal event data system implemented. Sampling is regarded as entirely adequate for some of the staff and some of the program elements. This arrangement predicates coverage recommendations at the auxiliary level.

The auxiliary level has three basic options flowing from this exhibit. First, it may arrange for the data resulting from implementation of the recommendations in exhibit 9 to be transmitted to the auxiliary level as those data are collected. This option is a combination of cells 1 and 2 from the sampling design bases presented in exhibit 7. Cell 1 applies in some situations: 100 percent of the events for 100 percent of the direct-care staff in out-patient, case management, and emergency program elements could be transmitted to the auxiliary level, probably on a periodic batch basis. Cell 2 applies to the three remaining conditions of exhibit 9: the auxiliary level may arrange for the data resulting from each recommended sampling period (the MHSIP suggests that 1 week per quarter-year may be satisfactory) to be transmitted. Depending on the number of organizations and their sizes, this arrangement may present the auxiliary level with an extremely large data base. The need for such detail, the conventional uses to be made of the data, and the short- and long-term storage requirements should be carefully considered.

A second option is for the auxiliary level to obtain the data from the four conditions shown in exhibit 9 on a less frequent basis than under the first option, i.e., to take a representative slice in time. This is equivalent to cell 2 from exhibit 7. For example, the auxiliary level may determine that data representing any given quarter-year are sufficient to meet its needs. Thus, for a quarter-year, 100 percent of the events of direct-care staff in outpatient, case management, and emergency program elements would be reported, along with the sampled data from the remaining conditions of exhibit 9. This option results in a smaller data base, which may be an ad-vantage to some auxiliary entities. It may simultaneously result in gaps in full linkage across the MIISIP components. Specifically, staff who are not on board when the event sample is drawn and patients who are not registered at that time may be identified in the other MHSIP data components. However, because event data for them are not in the data base, the auxiliary level is unable to include them in any event analyses.

A third option would be for the auxiliary level to abandon the recommendations of the MHSIP and to establish its own procedures. Because of the nature of the recommendations in exhibit 9, such an

approach basically entails moving toward more intensive event reporting in the three cells in which sampling is recommended, or moving away from 100-percent reporting by the direct care staff in outpatient, case management, and emergency program elements. This is a viable option, but requires the auxiliary level to communicate to its mental health organizations that the system guidelines provided by the MHSIP for the operation of this data component at the local level are overridden by the auxiliary level.

Extensiveness. The other dimension of coverage involves the number of organizations that provide these data. If 100 percent of the organizations in the mental health system of an auxiliary level entity provide event data, any of the options for frequency may apply- full reporting for the year, reporting for a slice in time, or a unique auxiliary level design.

In previous chapters, the possibility of using a sample of organizations - a panel - as the basis for constructing an integrated decision support system is introduced. Again, referring to exhibit 7, if a subset of organizations provides all the MHSIP data components on a 100-percent basis - cell 3 from the exhibit - the auxiliary level may basically refer to the three options just noted to guide the collection of event data.

If cell 4 from exhibit 7 is being used, the situation is more complex. The decision by the auxiliary level to base an integrated decision support system entirely on sampling becomes increasingly challenging as sampling for each new data component is considered. Event data add many more complications. If the entity is constructing a system based on a panel of organizations and a sample of patients within that panel, it must consider whether to pursue an independent sample of events, only some of which can be associated with the sample of patients, or to pursue 100 percent of the events provided to the sample of patients. Conceptually, either approach may generate event data that can be considered representative of the treatments received by patients or the types of clinical activities provided within the mental health system of the auxiliary level entity.

However, neither alternative entirely satisfies the intention of the event data component in the MHSIP. This is true for two reasons. First, the auxiliary level must consider the consequence of certain direct-care staff being excluded from event data reporting because they are not involved with the events covered in the sample. This partially compromises the usefulness of the human resource data component in that there is no ability to describe the activities provided by the class of staff excluded in the event sample. Second, the auxiliary level must recall that events, as defined by the MHSIP, are not exclusively clinical. It is also the intention of the component to capture the events that help explain the cost structures of mental health organizations. Therefore, there must be a means of obtaining event data from non-direct care staff. Adjustments to Ihe sample design for event data under a panel approach must accommodate these situations.

Summary

The minimum data set for event data is:

1. Organization identifier

2. Date of event

3. Staff member reporting

4. Program element identifier

5. Patient(s) involved in the event

6. Type of event

7. Scheduled event

8. Event duration

9. Presence of other staff members

10. Location of event

Chapter 16

Human Resources Data at the Auxiliary Level

Managers at the auxiliary level need to be concerned about data on human resources for two important reasons: cost and quality. First, the costs of mental health services are basically driven by personnel expenses. Because treatment in much of mental health remains labor intensive, the expenses of the personnel needed to provide those services largely predict the costs within mental health organizations and within a mental health system. If auxiliary level managers are interested in understanding the costs within their systems, controlling these costs, and introducing efficiencies, attention to the human resource component and its interface with the financial and event components is essential.

Second, given the generic difficulty the mental health field has had in achieving wide acceptance of a means to describe its effectiveness (Meyer 1985), the staffing composition within a mental health system is often used as an index of the quality of that system. One aspect of this is the sheer number of various kinds of staff judged against the number of patients in the system. The ratio of staff to patients is used to judge the likelihood of a patient receiving adequate or individualized care in that system. In addition, factors such as the levels of training, experience, and certification among the staff are examined in aggregate as quality indicators. This fact has implications for auxiliary level managers in the areas of recruitment and retention efforts, pay scales, and the performance expectations applied to or negotiated with staff.

These two factors are strong motivators for auxiliary level managers' interest in human resources data. When integration capabilities are considered, the importance of the data is reinforced for a third reason: analysis of performance. The knowledge paradigm followed throughout this monograph emphasizes that an analysis of system or organization performance requires information on the staff who are responsible for the products (events). Without data on staff, a manager is limited in analysis. It may be known that some events are associated with positive patient progress. However, if it is not also known what type of staff are associated with those events, there can be little assurance that a manager would be able to replicate them at a similar cost and with a similar effect. Once management accepts that such actions are desirable, it follows that data on the human resources are an essential ingredient in decision making.

Workforce and staff are used here as synonyms for human resources. Human resources refers to the broadest complement of individuals engaged in conducting the business of a mental health system. It covers all individuals who, under the auspices of organizations within the system, provide service to the clientele, support the administrative structure that provides services, or support the organizations themselves. Included are those who are:

employed by a mental health organization, either full or part time, direct care or non-direct care;

volunteers;

placed with an organization through a formal arrangement such as a training program, internship, or residency;

providing services under a contractual or other administrative arrangement with an organization, e.g., interagency agreement or attending privileges, and who abide by the clinical and administrative rules of the organization as part of the arrangement.

Usually excluded from the definition of human resources are the staff of the auxiliary level itself.

Uses of Human Resources Data

The questions that auxiliary level managers have about the workforce are a combination of concerns sometimes confined to the human resources data component itself and at other times depending on linkage of the data with the other MHSIP components. The fundamental questions are discussed below.

The Composition of the Human Resources

The most basic questions managers have about the workforce relate to their numbers, distribution, demographics, training, and employment characteristics. These data are critical in addressing basic management responsibilities such as recruitment, demonstration of nondiscriminatory employment, standards compliance, and shortage areas. Some auxiliary level entities may also share affiliations with academic settings, e.g., a State mental health agency and the State university system. Data on the composition of the human resources may be used to leverage or justify specialized training programs in these academic settings, particularly when a shortage of certain professions can be demonstrated.

It is quite common for managers to regard statistics on workforce composition as peripheral until a factor external to the system, such as a court order or defense of a budgetary request, spotlights their importance. Prudent management practices would suggest relatively continuous examination of these statistics. Some of the specific features that should be examined follow.

Size of the mental health human resource pool is variously measured as numbers of people or as the full-time equivalents(24)

available. The latter is an attractive conversion of raw numbers because it smooths out certain anomalies that can be caused, for example, by a large number of part-time employees, use of service contracts to employ scarce clinical professionals, and part-time operation of some programs.

To relate these data to the clinical capacities of the mental health system, these numbers are often converted by using numbers of clients on the rolls of particular programs (staff to client ratios), civilian population figures (e.g., numbers or FTEs per 100,000 civilian population), or the assessed need within the service area for mental health care (e.g., numbers or FTEs per estimated level of need). Such results are frequently used as indicators of access to care. While no widely accepted, minimum staffing standards have been set for such figures, the data inevitably evoke public health concerns about how adequately patients and citizens are being served. An auxiliary entity with a ratio

of one social worker for every 100,000 citizens would surely be justified in concluding that it was not in a good position to ensure access by mentally ill citizens to social workers within its system. This conclusion could be further tested by comparison of their statistics with those of another system.

Managers also need to know composition by such characteristics as training, degree, job function, demographic makeup, or other category needed for management questions. These data can be tabulated by either number of persons or FTEs. Such data may be needed to recruit particular kinds of personnel; to compare the human resources configurations of different organizations; to complete a report to a legislative, judicial, or funding agency; to calculate ratios or indexes; or as background for additional querying.

In addition to knowing the size and makeup of the workforce, the auxiliary level may be interested in the distribution of individuals within the system. This is essential information in determining whether an area or program has an adequate supply of or access to personnel. Such information would be a prerequisite to corrective action by auxiliary level management. The data are also valuable in a compliance assessment situation where certain staff configurations or intensities are mandated for accreditation of a program type, when a system is under a court order to maintain certain staff-to-patient ratios, or where a staffing pattern is intuitively expected because of client characteristics or patterns of financial data reporting.

Data on the composition of the human resources of a mental health system are valuable for the auxiliary level manager. They assist in addressing a variety of questions about the nature of the mental health system, including accreditation variations, potential access to care, equal employment opportunity demonstration, workforce recruitment, and relative comparisons across organizations. In addition, composition data are crucial in understanding event analyses as described in the preceding chapter. They provide a context for evaluating, probing, and understanding data that may show a manager patterns of performance, client movement, and cost that cannot be accepted at face value.

The Quality of the Human Resources

Data on the human resources of a mental health system are often regarded as an index of the quality of that system. Quality of the human resources is not an easy dimension to assess, nor is it consistently judged. Some would assess on the basis of staff qualifications such as degrees, amount of training, years of experience in the field, or continuing education endeavors. Others feel these static measures are insufficient and look to job performance to judge quality-effectiveness with patients, workloads, personnel appraisals, upward mobility, etc.

The first cluster of quality indexes can be thought of as static measures. They derive largely from the human resources data component itself and include comparisons about professional attainment as measured by degree or advanced training, certification or licensure, number of years of experience in the field, and involvement in relevant outside activities (e.g., private practice or teaching). The second cluster of quality indexes can be labeled dynamic measures. They derive from event analyses and could include proportion of time in direct care, or case load analyzed by an algorithm for the difficulty of the client (e.g., chronic recidivistic patients, multiply disabled, low functioning level).

Other measures of human resource quality are contingent on the clientele being served. A frequent assumption is that there should be some relationship between the demographic or cultural composition of the patients being served and the workforce that serves them. Language would be an obvious instance of this. Similarly, one could expect to observe systematic variations within the workforce depending on the clinical characteristics of the case load. For example, an auxiliary level manager may expect to observe that the patients served by staff who report as case managers are typically classifiable as severely and persistently mentally ill. Failure to observe these associations

between staff and population characteristics implies the auxiliary level may need to institute some corrective intervention, better equipping staff to deal with the population, improving skills, or implementing a policy regarding the recruitment and deployment of staff within settings.

The importance of comparable data and the linkage of human resources data with event and patient data through event analyses should be especially apparent for deriving dynamic measures of quality. The comparable data may be from similar organizations or they may be population-based data that allow for the derivation of rates or comparisons of staff characteristics to these population characteristics. The auxiliary level may make even fuller use of the human resources component when it has the event analysis capability in its own information system. This allows the auxiliary level to link the data in the human resources file with performance data derived from the event data component. This leads to the next use of workforce data.

Productivity and Performance of the Human Resources

A frequent human resources question addressed to the auxiliary level concerns staff efficiency. For a mental health system, this is usually translated into an examination of data contrasting the amount of time direct care staff spend in direct and adjunctive services vs. time in administration and support. Linkage with other data components is the only mechanism by which questions in this area can be addressed. This linkage can be done on an ad hoc basis, periodically conducting a special staff survey of time distribution. However, the ability to integrate staff data and the event data component allows these data to be derived more efficiently and routinely. In addition, the analysis of productivity and performance can move into several other areas if such integration capabilities with the other MHSIP data components exist. For example:

If the concern is about the units of service delivered by the various professions, data from the event component are needed.

If concerns exist about staff costs relative to type of activity, data from both the event and financial components are necessary.

Data from the patient/client component are needed to know whether desirable variations are occurring in the clinical profiles of patients served by the different core professions.

The absence of uniform standards in the area of productivity makes interpretation somewhat subjective. There are two frequently used solutions. The first compiles comparable data on a system or over time and uses the data as de facto norms against which comparisons are made. Second, many auxiliary levels negotiate the levels of productivity and performance they expect from the staff of mental health organizations under a performance contract with the organization. The organization is then able to use this target as a monitoring tool. This can be especially helpful in exception reporting, alerting management to a shortfall or other pattern that suggests the need for investigation or intervention.

The linkage of workforce data with the other components also provides the auxiliary level with valuable information for analyzing training needs, anticipating staff burnout, and examining patterns for staff turnover, retention, and recruitment. Burnout is accepted almost as a job hazard among direct-care staff, and administrators at both the organization and auxiliary level are not immune. The consequences of burnout are poor staff performance and high rates of turnover. Although the latter is apparent from the human resources component alone, linkage of staff data with client and event information can help in analyzing problems and planning interventions. For example, some data that the auxiliary level may regard as flags would be decreases in the proportion of time in direct and adjunctive care, high rates of staff cancellations of appointments, or above

average use of sick leave. If linkage with the client data component exists, the auxiliary level can examine whether case load variables may be contributors, e.g., a change in clientele, such as an increase in workload or the numbers of patients who are extremely dysfunctional.

Longitudinal Perspectives on the Human Resources

A final use of human resources data comes by taking a longitudinal view of any one of the previous uses. For example, the auxiliary level might examine how composition of staff within the system has changed over a given period. This type of analysis may be done in response to a management initiative to reconfigure staff (e.g., change the distribution of staff away from inpatient settings and toward community-based care), foster growth of particular programs (e.g., increase the number of staff devoted to consultation with other agencies and their productivity over time), or decrease overhead (e.g., reverse a trend for administrative staff to grow in disproportion to direct-care staff). Such changes may also be examined across competing mental health systems, such as private and public sector systems (see Stuve et al. 1989). If not done frequently within a mental health system, when such analyses are conducted they can lead to some surprising insights about declines, rises, and turnovers by professions, FTE, or program areas (NIMH 1981).

Minimum Data Set

The following items constitute the minimum data content for the human resources component of the decision support system of an auxiliary level entity. Each item is named and the minimum recommended categories for that item or a brief explanation of item content is provided. As noted in chapter 4, categories can be elaborated by the auxiliary level depending on needs and responsibilities. However, elaborations should always be designed to be collapsible into the minimum categories. This facilitates comparison of data, especially with other auxiliary levels. Comment sections follow the recommended categories. The comments are intended to explain the item further, discuss the importance or potential use of the data, or note advisable rules of interpretation.

1. Organization identifier

The 8-digit NIMH master facility number is recommended as the identifier.

Comment: The submission of human resources data to an auxiliary level must always be associated with an organization with which the person is affiliated. This identifier should be identical across all the MHSIP data components, allowing the information in the various data components to be associated with that organization. This is especially important if the auxiliary level receives the data as separate files or at different times.

2. Staff/record identifier

No minimum specifications

Comment: The MHSIP recommends that each auxiliary level entity establish a uniform procedure for the unique identifier submitted. All organizations would abide by this procedure and employ the same procedure over time. This recommendation is consistent with guidance provided to the organization level in chapter 7. The intent of the identifier is to enable the auxiliary level to exploit many of the integration features inherent across the data components, as well as reliably associate the data with a particular individual over time, while affiliation with an organization continues. An auxiliary level is not expected to track staff as they move across organizations that are part of the mental health system of that auxiliary level. However, a uniform identifier within a system may be of

use in linking a person's job or training experiences over time and locations.

3. Date of report

Month, day, year

Comment: This is used as an anchoring point for aging the information provided, such as the number of years working or age of the person. It is also of value in linkage with the other components, especially for event analysis where knowledge of the human resources complement serves as a context for understanding production. Date of report also figures prominently in calculating ratios and indexes for particular time periods that depend of staffing data, e.g., proportion of time spent in direct service by professional groups.

4. Date of birth

Month, day, year

Comment: The distribution of ages among the human resources within a mental health system can be telling -the workforce may be aging or the distribution may suggest an infusion of fresh ideas or recent academic training experiences or that a spate of retirements could have significant impact. The auxiliary level could also contrast the age of the system's human resources with that of the population served.

5. Sex

Male, female

Comment: In addition to its use for analyzing and reporting on equal employment opportunity issues, the sex composition of the human resources can be compared to the sex composition of the client population and that of the population area served. Analysis of career opportunities and productivity by sex may yield challenges to the human resources managers of auxiliary level entities.

6. Race

American Indian/Alaskan Native-A person having origins in any of the original peoples of North America who maintains cultural identification through tribal affiliation or community recognition.

Asian or Pacific Islander-A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippine Islands, and Samoa.

Black/African American-A person having origins in any of the black racial groups of Africa.

White - A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

Other - A default category for use when the staff does not meet any of the above classification or whose origin group, because of area custom, is regarded as a racial class distinct from the above categories. Appropriate details should be maintained.

Comment: See next item.

7. Hispanic origin

Hispanic origin-A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish origin or descent, regardless of race.

Mexican/Mexican-American

Puerto Rican

Cuban

Other Hispanic

Not of Hispanic origin

Comment: Items on the race and ethnicity of the human resources are important for both administrative and clinical reasons. The value of equal employment access is quite fundamental in American society, implying that virtually every auxiliary level will, at least occasionally, be asked to report these data as a reflection of its employment policies and practices. Clinically, it is noted above that certain matches between direct-care workers and patients, such as race and ethnicity, are often considered a reflection of quality for a mental health system. Many managers consider these factors in recruitment, attempting to have a race and ethnicity mix among their human resources that is compatible with that of the community at large or the population under treatment.

8. Date of employment/affiliation

Most recent date when current employment or affiliation began with the reporting organization: month, year

Comment: The longevity and turnover of employees within a system is one reflection of amount of experience and, thus, is often used as an indicator of the quality of the staff. Longevity must also be interpreted within an overall employment context. Where job opportunities are numerous, longevity can be interpreted positively, e.g., to convey job satisfaction, competitive salaries, and career stability. In areas with high unemployment, longevity of staff may have less of a direct relationship with job satisfaction, salary scales, etc. Good management practices suggest that the manager remain concerned about staff morale and job satisfaction and not exploit their lack of opportunity for employment elsewhere.

It seems most desirable for the system to be able to demonstrate some balance between maintaining a cadre of employees who have long and stable employment histories and adding new members to the workforce. If most employees are relatively new, this may have implications for the auxiliary level, such as concerns about staff burnout, need for training or reminders about policies and procedures, or the auxiliary level's ability to rely on decision making savvy reputed to come with a corps of staff with "institutional memory." The costs of recruitment and the time for new staff to reach an optimum level of job proficiency mean that the overall performance data for the system, as well as its cost figures, may not compare favorably with a system where fewer staff are new.

In addition to the employment and job satisfaction picture, affiliation duration has other uses.

In conjunction with birth dates, managers can anticipate patterns of retirement within the system.

Length of affiliation may vary by type of profession, training, or job function.

Productivity and involvement in particular patterns of services may be related to the amount of time the person has been with the organization, For example, long-term employees may have relatively stable case loads, leading to consistent productivity patterns. Or new employees may have higher proportions of administrative time - receiving orientation, learning policies, benefiting from consultation with more senior staff, etc.

It may also have a bearing on inservice and extracurricular training. That is, most managers are concerned about keeping the skills of the workforce contemporary. High proportions of staff with long employment histories may raise concerns at the auxiliary level about the training opportunities provided for staff.

9. Discipline/training/profession

From the following list, individuals self-select or are assigned to the one category that best reflects the major discipline, training, or occupation for which they have been trained or hired.

Psychiatrist

Other physician

Psychologist

Social worker

Clinical mental health counselor *(25)*

Substance abuse counselor

Other mental health professional

Mental health worker with less than a bachelor's degree

Registered nurse

Licensed practical or vocational nurse

Vocational rehabilitation counselor

School teacher

Activity therapist (e.g., art, music, dance, recreational, or occupational therapist)

Public, hospital, or business management/ administration

Speech therapist

Dietician

Pharmacist or assistant

Dentist or dental assistant

Other physical health professional or assistant

Medical records administrator or technician

Other worker (support, maintenance, administration)

Comment: This list is meant to cover the wide variety of organizations to which a given auxiliary level may relate. Thus, all the training categories may not be applicable to every organization. The list is a means of classifying the human resources into categories that are at least historically meaningful. Data on this item most frequently are used in developing distribution profiles or ratios that are felt to reflect on staff or program quality. Categorization by discipline or training has as its chief advantage that it is readily understood by most workers in mental health settings and, therefore, it tends to produce reliable data. It then becomes easier to assign numbers to these categories (e.g., FTEs, numbers of people) that are useful in comparisons. A further use of these data might be to determine if functions or performance are correlated in any consistent way with professional group or training background.

10. Highest degree/education as of date of report

Less than high school diploma or GED

High school diploma or GED

Some education beyond high school but no degree

Associate degree

Bachelor's degree

Master's degree

Doctorate (e.g., M.D., Ph.D., Sc.D., J.D., Ed.D., D.O.)

Comment: This item is used primarily as an index of staff quality. It may also be useful to the auxiliary level for developing extracurricular training tracks or sponsoring inservice training. For example, many professions in mental health have annual continuing education requirements. Accreditation reviews of organizations may examine whether such training requirements have been met. The auxiliary level may stimulate this via a performance requirement, routinely sponsor a variety of training for various groups, or disseminate information to organizations about such events, e.g., summer institutes at a university. Data on staff training level may also prove useful in understanding salary scales and job functions.

Another use is as a relational edit check with training and discipline. Analysis including the item might examine whether it correlates with patient contact and in what capacity, e.g., adjunctive care, personal care, or supervision of direct care.

11. Country of highest degree

Name of same

Comment: Although this item may be used in conjunction with languages other than English, its primary value is as a recruitment index. Large numbers of staff or particular classes of the workforce consisting of individuals who have been trained outside the United States can be a signal of recruitment difficulties due to endemic personnel shortages or salary scale competitiveness. This item may be correlated also with characteristics of the treatment population. When linked with other data through the event component, variations in service patterns or types of patients engaged may also be observed.

12. License/certification

Licensed to practice in this profession:

in this State yes/no

in another State yes/no

in another country yes/no

If a physician,

board certified in specialty yes/no

Not applicable

Comment: For disciplines and professions that commonly license or certify their members, this item serves as an index of staff quality. It is attractive because it relies on an external authority and implies both objectivity and uniformity in its determination.

13. Employment/affiliation status with the organization

Salaried payroll employee

- Full time (for definitional purposes, an employee scheduled for 35 hours per week or more)

- Part time (less than 35 hours per week)

Paid under contractual arrangement

Student, trainee, resident, intern

Volunteer

Attending (those with explicit privileges or credentials to admit patients to the organization for care and provide service to them under the auspice of the organization, but who have a noncontractual, nonsalaried relationship with the organization)

Comment: Different auxiliary level entities may permit or observe a variety of arrangements by organizations to ensure that they have sufficient numbers of persons to provide services to patients

and to sustain the organizations themselves. Employment is the most obvious and frequent arrangement. However, many other affiliation arrangements are observed. It is important both to know the variety of mechanisms by which organizations maintain a cadre of human resources and to be able to tally the numbers of people under each. This conveys something about the reliability of staffing and the routine ability of the organizations to meet the needs of their clientele. It may also have an impact on the expenditure data provided by organizations, especially if they use volunteers, students, or contract labor a great deal.

14. Hours typically scheduled each week within the organization (include any normally scheduled overtime)

A 2-digit whole number

Comment: This is necessary information for the auxiliary level to develop capacity measures regarding amount of total time available. In addition, since the definition of full time differs (35, 37.5, and 40 hours are all documented definitions), knowing total hours and numbers of individuals allows any of these definitions to be used.

15. Primary job function

The individual is assigned to the category that best describes the major function(26) the agency expects that person to perform on a day-to-day basis. Only one category is assigned unless the person is officially assigned to functions that cover more than one of the categories listed (e.g., administration and direct care).

Direct or adjunctive patient/client care

Consultation, education, or prevention

Administration/management

Other job function (all other job functions in organization not covered above)

Comment: Being able to categorize staff according to the basic function(s) they are expected to perform within the organization facilitates the correct linkage of human resources data with either client or event information. It is most appropriate to examine direct services productivity for those who have that function, and it would be inappropriate to link patient-type served to persons whose function was solely administrative. In addition, especially among some of the major clinical professions, function may not always be inferred from training, e.g., a social worker may be exclusively a manager. Without knowing job function, attributions of productivity or analyses of type of patient served by various human resource subgroups would be difficult to interpret.

16. Experience

Prior to current employment or affiliation with the reporting organization, total number of years worked in mental health:

A 2-digit whole number (if 6 months or less, round down to zero; if more than 6 months, round up.)

Comment: This item may be used as a reflection of staff quality. It may also affect the auxiliary level's analysis and interpretation of performance data. Specifically, the amount of time the staff, individually or collectively, have worked in mental health environments is assumed to be positively correlated with their ability to perform in these settings. As with previous items on tenure, this item may also reveal systematic variations with regard to type of clientele engaged, productivity, or service patterns.

17. Languages other than English

Spanish

Sign

Other

Comment: In mental health systems that serve diverse patient groups, as many public systems do, it cannot be uniformly assumed that the patients will be able to communicate in conventional spoken English. The demographics of the area served by the system, as well as patient characteristics known from the patient/client data component, indicate the extent to which staff ability to communicate in other than English may be an important asset to identify. These communication skills are used as a reflection of staff quality and accessibility for patient groups. When such skills are expected to be available in certain specialized mental health programs and in certain geographic locales, they become especially important indications of quality. In addition, ability to use a language other than English may help to account for unique case load or performance patterns of the staff.

18. Private practice maintained

An indication of whether the individual maintains a private practice in this profession.

Yes/no/not applicable

group or presenting problem, or other service patterns may be influenced by the affiliation.

Comment: This item is sometimes interpreted as an indicator of staff quality, i.e., that professional interest and ability is sufficient to enable the individual to sustain a private practice. Although primarily applicable to clinical staff, the item should not be confined to them. Other staff (e.g., business office CPAs, electricians, dentists) may sustain remunerative practices outside of employment with an organization.

For the clinical staff, utilization review might examine whether those with a private practice exhibit similar service patterns (volume of patients served, length of treatment episode, types of services provided, referral on discharge, etc.) to those who do not maintain a private practice, assuming some comparability in the patients served. This item could also be linked with affiliation status, especially for part-time and contract staff. Finally, if other indexes suggest that salary scales within the system need attention, maintenance of a private practice relative to the person's salary could be examined.

19. University/college affiliation

An indication of whether the individual has an appointment or other affiliation with a university or college to do teaching or research at that institution.

Yes/no/not applicable

Comment: This item is used primarily as a staff quality index. In addition, there may be some relation between the degree of staff involvement in academic situations and the clientele of the organization. Referrals of unique classes of patients, clientele of a particular age

20. participation in job~related or career~development training

Since the previous reporting period or since the most recent affiliation date with the organization, participation in:

Inservice training, i.e., sponsored by the organization, usually on site and during work hours

Extracurricular, i.e., sponsored by another organization, usually off site, and release time from work may or may not be granted

None

Comment: The intention of the item is to collect information on whether the individual has participated in any training intended to improve job performance, acquire additional skills, or satisfy a continuing education expectation. From the point of view of staff, opportunity and support for training to update or improve job skills may be a key element in job satisfaction and staff longevity within the system. Participation in such training opportunities may result in increases in productivity, ability to deal with patient groups that previously presented a dilemma, or reflect in other positive ways. Some caution should be exercised, however, in the interpretation of the data since not all staff groups may be equally in need or equally interested in training. Unless a link to performance can be justified, managers should not compel training merely to have high counts on this item. Programmed or self-instruction may fall under either training category and should be included accordingly.

21. Income from the organization

Income range for annual salary/reimbursement received from the organization, including over-time and bonuses and excluding fringe benefits

No income

$ 1- 4,999

5,000- 9,999

10,000-14,999

15,000-19,999

20,000-24,999

25,000-29,999

30,000-34,999

35,000-39,999

40,000-44,999

45,000-49,999

50,000-54,999

55,000-59,999

60,000-64,999

65,000-69,999

70,000-74,999

75,000-79,999

80,000-84,999

85,000 or more

Comment: Human resources are the biggest cost factor for most auxiliary levels. Being able to attach an approximate salary figure to professional groups or analyze the proportion of salary going into direct service functions vs. other functions provides a manager with clear evidence of where the financial resources are being in-vested. Hence, salary has high face validity as a measure of resource consumption and shares a logical relationship with expectations about productivity. Also, as suggested for many of the previous items, salary scales may be critical in understanding staff turnover or quality.

22. Fringe benefits value

As a percentage of the person's gross salary from the organization, the fringe benefits represent:

Not applicable/no fringe benefits

Less than 1 percent to 10 percent*

11 to 15 percent

16 to 20 percent

21 to 25 percent

26 to 30 percent

31 percent or more of gross salary

****A rounding convention should be assumed such that less than 0.5 is rounded down and equal to or***

greater than 0.5 is rounded up to the next whole number.

Comment: Fringe benefits are made up of such items as contributions to retirement funds, health or life insurance payments, education benefits covered, participation in profit sharing, and shares of stock. In some mental health systems, fringe benefit packages are standard across all employees. In others, variations in these packages are ways of recruiting~ or retaining valued occupational groups. They may be used as negotiation points by individuals in these groups as well. Consequently, either for fuller understanding of personnel costs or to be able to analyze differential patterns of performance or longevity, it is essential to have some estimate of the fringe benefits a person receives.

23. separation date

If applicable, for the current reporting period, the month during which the relationship/affiliation between the individual and the organization terminated.

Month

Not applicable

Comment: This item would be collected for all persons on board, as well as those who joined and left an organization during the current reporting period. An exit date is as valuable for management analysis as an affiliation date. This permits a determination of actual longevity by individuals who leave for whatever reason - retirement, termination for cause, end of training period, etc. Since retirements represent a unique class of separations, evoking different management concerns than other types of separations, it may be appropriate to add a detail that flags retirement. Other details may also be appropriate if a human resources management use can be articulated.

Turnover among some staff groups may be markedly different than others and suggest to managers that additional probing is justified. It may mark a program with poor leadership, clientele the staff is not adequately prepared to deal with, or noncompetitive salaries, or it may even be an acceptable pattern (e.g., turnover among volunteers).

Separation date is also needed to develop a profile of a human resource cohort for a given time period. This is most apparent in event analysis when it may be necessary to have a count and an identifier for every person who is on board at the time of a particular event analysis or when a productivity ratio is being calculated. If there is a mismatch between the amount of activity and the number of staff responsible for that activity, some of the analyses and interpretations would be spurious.

Coverage

The MHSIP definition of human resources intentionally covers the broadest interpretation of those who provide services and support the provision of services in mental health organizations. It was recommended that the provider level apply the minimum set to all these individuals and that the data be collected annually. Coverage at the auxiliary level involves two decisions: frequency of coverage - how often will the auxiliary level collect the data and extensiveness - whether the auxiliary will receive data from all of its organizations or use some type of sampling design for the collection.

With regard to frequency, the MHSIP recommends that an annual basis is the minimum period for an auxiliary level to collect and analyze data from this component. Many auxiliary levels may be in positions where human resources data are being submitted on an intermittent basis, perhaps as a part of payroll data or a licensure process or at the time of the employee's annual review. Such a schedule is acceptable to the extent it does not reduce the capacity of the auxiliary level to create an integrated data base. This might occur if intermittent submission created a substantial mismatch in the time periods represented in the human resources file vs. the patient and event data files.

Another decision for the auxiliary level is whether sampling is to be used. If sampling is not used, each mental health organization is expected to submit data on 100 percent of its human resources. This approach is compatible with the recommendation made for the provider level in chapter 7, viz, data collection from 100 percent of the staff on an annual basis. When sampling is used, the auxiliary level receives data on some lesser portion of either organizations, numbers of staff, or both.

A lesser portion of the staff. One type of sampling design that may prove workable for an auxiliary level is for 100 percent of the organizations to provide human resources data on a sample of their workforce - cell 2 in exhibit 7. Such an approach would not contradict the recommendation for the provider level. It would mean that instead of data on all staff being shared with the auxiliary level, data on only a selected sample would be transmitted. This would require that the staff be stratified, i.e., assigned to groups that are relatively homogeneous, and a random sample of sufficient size selected from each stratum to permit generalization to the full stratum. Profession or training would be a possible starting point for stratification, but may not be adequate when the nondirect care staff are considered.

It is recommended that the auxiliary level design the sample and the procedures for the selection of staff data to be forwarded. Some oversight of the application of the procedures is also appropriate. If the procedures are left up to each organization, staff selected to be in the sample may use special pleading to exempt themselves and, thus, jeopardize the quality of the sample.

In concept, nothing is wrong with this approach. It is possible to generalize to each stratum and to the universe of staff based on a sample. The few liabilities of the design are worth noting, however. First, staff may not regard being selected into the sample as an honor. It may appear to place them under special scrutiny because only their data are being forwarded. Second the behavior of the staff who make up the sample may changeover time, making them no longer representative of the full cohort. These changes occur for reasons documented in psychological research as demand characteristics, and basically derive from guesses made by the respondent about what is considered desirable or appropriate behavior in the situation. Although these expectations may not affect the static items such as sex, race, or date of birth, staff may shift their behavior over time on such items as training, affiliation, and private practice. Lastly, using a stratified sample of staff may have implications for the design that the auxiliary level and the mental health organizations must use for sampling patient and event data. For integration to be possible at the auxiliary level, these samples should have a reasonable degree of overlap. This is feasible, but it does present a challenge requiring a sophisticated sampling design and conscientious execution of the procedures. The challenge may be beyond what au organization is willing to accept or the auxiliary level is able to manage.

A lesser portion of the organizations. If the auxiliary level has elected to use the panel approach described in chapter 13, in which a cohort of organizations is used over time to provide the data for the integrated decision support system, the MHSIP recommendation is that 100 percent of the staff of the panel organizations be covered by the human resources data component. The auxiliary level may then be able to generalize to the full complement of human resources within its mental health system. Of course, for this to be a valid generalization, the initial sampling design and selection of panel

participants must have considered staffing as one of the data domains that needs to be represented among the sampling criteria. That is, the staffing configurations and strata represented within the panel organizations must be reflective of the configurations and strata in the full universe. Clearly, the panel approach grows increasingly challenging as each additional data component is considered.

A sampling is used to obtain human resources data, one issue that both the organizations and the auxiliary level should consider is staff permission to release the data. It is probably appropriate to provide special safeguards to staff to ensure that the data are not released or used it any way that would identify them or cause individual sanction or benefit to them when the purpose of their data was to represent a broader group. The provision of such safeguards may increase the likelihood of release being granted. If staff have the right to decline release of their data, this contingency needs to be included in the procedures of any applicable sample design.

Summary

The minimum data set for human resources is:

1. Organization identifier

2. Staff/record identifier

3. Date of report

4. Date of birth

5. Sex

6. Race

7. Hispanic origin

8. Date of employment/affiliation

9. Discipline/training/profession

10. Highest degree/education as of date of report

11. Country of highest degree

12. License/certification

13. Employment/affiliation status with the organization

14. Hours typically scheduled each week within the organization

15. Primary job function

16. Experience

17. Languages other than English

18. Private practice maintained

19. University/college affiliation

20. Participation in job-related or career development training

21. Income from the organization

22. Fringe benefits value

23. Separation date

Chapter 17

Financial Data at the Auxiliary Level

Of the five MHSIP data components recommended for the auxiliary level, the two that are probably examined most intensively are the patient/client and financial components. For many managers of auxiliary level entities, these data characterize the sine qua non of the mental health system of which they are a part. Although this interest in patients and dollars is understandable, the full management model - who receives what from whom at what cost and with what effect-must be kept in mind. It is periodically acceptable for some data components and items to dominate interest. However, as has been emphasized throughout the monograph, it would be a dereliction of many managerial functions to ignore the other factors in the knowledge paradigm.

Nonetheless, at the auxiliary level, financial data are of abiding interest. They serve the same role as at the provider level. First, they quickly communicate the financial viability of organizations throughout the mental health system. Consequently, they reflect on the viability of the system itself. Second, in combination with other data, they reflect on how well organizations are using and managing their resources. Auxiliary levels, too, must concern themselves with providing quality services to their clientele while simultaneously considering the ability of the system to sustain itself, remain solvent, and stay in operation. Therefore, managers at the auxiliary level must concern themselves with the financial data submitted by the organizations within the system. Some may be in a sound position, managing their assets and liabilities well. Others may appear to be in poor financial condition, e.g., expenditures far exceeding revenues, and deserve some management intervention.

It is assumed that many auxiliary level entities have a degree of responsibility to oversee the financial soundness of the system. When questions about financial soundness arise, discharging this oversight may first be manifested as a query or exception report issued to the organization. If local level managers do not gain control in the time or fashion the auxiliary level regards as satisfactory, the ultimate actions may range from termination of the relationship to assumption of management of the organization by the auxiliary level.

Uses of Financial Data

Financial Viability

The preceding discussion emphasizes the importance of knowing the general solvency of a mental

health system For the organization level, a set of data items is recommended that reflects directly on solvency (see chapter 8), viz, those relating to the statement of financial position. However, these items are moved to the "other recommended" list at the auxiliary level. The rationale for this is worth noting.

Just as organizations may feel a need to shield the confidentiality of their patients and staff or protect them from adverse consequence by not divulging personal identifiers, so too may they feel that their financial position is sensitive. If such data were routinely placed in a data base governed by laws that mandated public access or one plagued by security problems, the statements of financial position by organizations could be used in ways other than the data system intended. The Revision Task Force judged that this one category of data may be regarded as proprietary or subject to misuse by a significant number of organizations, and that including it in the minimum data set for an auxiliary level could jeopardize the participation of these organizations in other aspects of MHSIP recommendations.

Therefore, the MHSIP recommendation is that if the auxiliary level must have balance sheet data, guidance is available in the other recommended data item list. For those levels that can function without balance sheet data, the minimum data set goes far in analyzing the financial health of an organization. Some indexes that reflect on financial viability are suggested in chapter 8.

Revenue and Expense Profiles

The minimum data items are those needed to prepare a universally accepted accounting summary statement: the annual income statement. Data that go into the income statement are used frequently at the organization level - primarily to compare the business volume generated for a period with the cost and income projections for that period as represented in a detailed, monthly budget. Thus, no major problems should arise in summarizing these data for a time period and forwarding them to an auxiliary level entity.

One of the chief uses of the data supplied by the financial component is to profile the amounts and varieties of revenues and expenses reported by organizations in the mental health system. Drawing from the income statement, these data cover revenues and support, i.e., funds that increase assets or decrease the financial obligations that the organization must meet, and expenses, i.e., the resources used by an organization, including those associated with the delivery of mental health services as well as those incurred by the organization that do not result from the provision of mental health services.

At the organization level, the MHSIP recommends that a modified accrual basis of accounting be used for reporting revenues and expenses. The auxiliary level may find some organizations unable to accommodate to this basis, owing to law, e.g., a State budget process mandating a cash basis; or convention, e.g., a special set of generally accepted accounting standards such as those promulgated by the American Hospital Association for hospital settings. Unless these organizations can be encouraged to recalculate some of their financial data into other categories, they may have difficulty reporting the minimum data items.

Financial viability inferred from revenue and expense. Most mental health organizations are not thought of in terms of profitability, i.e., the extent to which revenue and support exceed expense. However, managers of profit and nonprofit settings at both auxiliary and organizational levels do examine this comparison, including residual equity, the excess of assets over liabilities. The basic concern is the ability of an organization to generate sufficient revenues to cover its costs. Thus, questions in this area might examine:

the composition of the organization's expenses (labor vs. non-labor, contractual vs. in-house, etc.);

the match between revenues and expenses; and

the charges for services and the amounts received for those services.

Sorensen et al. (NIMH 198~) recommended the use of a break-even analysis as a management tool in this area and used the term over recovery rather than profitability. Whatever the label, the concept reflects a fundamental use of financial data.

Revenue generating activities. Also relevant to determining the financial condition of a mental health organization are questions on how well the organization is using its assets in generating revenues. In general, this category focuses on such questions as:

For every dollar in assets, how many dollars in revenue are generated?

For every dollar of revenue generated, how many dollars are collected?

In reality, the modal relationship between an organization and an auxiliary level entity is a funding relationship. Auxiliary levels are interested in the organizations' efforts and degree of success in attracting or capturing revenue. Increasingly, auxiliary level entities are resisting the historical role of covering deficits generated by organizations.

Revenue and expense mix. Mix refers to the variety of sources from which revenue comes and to which expenses go. An analysis of revenue mix can help answer questions concerning the source and relative amounts of revenues earned by mental health organizations. Examinations of mix are especially valuable when looked at over time. A change from a previous period, the degree of stability in the amounts of revenues from various sources, and the degree of dependence on specific sources are important facets of the data to be examined. The nature of expense mix and its shifting composition are relevant as well.

Accountability. The revenue and expense documentation supplied to the auxiliary level is sometimes thought of as evidence of accountability for monies received by mental health organizations. At best, this is superficial evidence. Unless the data on the income statement are accompanied by the statement of financial position, a valuable means of cross-checking the reasonableness of the income statement is missing. There would be stronger evidence for accountability if some degree of match between these two financial statements could be made. Evidence that the data have been independently verified would be additionally attractive. However, if event and human resources data components were also available, the auxiliary level would be in a better position to assess whether inferences about financial accountability could be made based on the reasonableness of the volume and type of events, the size and mix of staff, and the incomes reported.

Financial Data Related to Performance

Revenue and expense data are of great value to auxiliary level managers in understanding financial resources within the mental health system. However, most managers also want to know if these resources are efficiently used and how they relate to the productivity and performance patterns of the organizations. Integratability of financial data with other MHSIP components facilitates data use in this area. This follows concepts articulated for mental health data systems for several years (Newman and Sorensen 1985), but which were somewhat elusive at the auxiliary level. The current MHSIP recommendations help to remove some of the obstacles to pursuing that goal.

The ability to isolate some of the revenue and expense by program element permits many refinements in the manager's use of these data. This is not actually an integration of two data components as much as an accounting convention the MHSIP recommends be implemented at the organization level. Once applicable financial data are reported by program elements, the integration proceeds along lines indicated in previous chapters. Specifically, it is possible to attribute patient counts, volumes of service, and staff to these program elements via event analysis. These data can then be combined with financial data at that level.

Chapter 8 offers a valuable listing of financial ratios that can be used as performance indicators for organizations and program elements. Several relate to combinations of data from other data components examined in relation to a piece of financial data, e.g., the revenue generated per clinical FTE. The list of ratios and indicators is not repeated here, but reference to them by data users at the auxiliary level should be regarded as essential. Many of these are reproducible at the auxiliary level.

Perhaps the one relation of productivity data to financial data that most managers desire is the cost per unit of service. If comparable definitions and time periods across organizations are used in the submission of the data, this index can be calculated at the auxiliary level for a broad range of organizations and program elements. The event data component serves as the source of unit of service data. Exhibit 8 summarizes how unit of service counts are derivable from the event data elements. These counts can be tailored to the program elements. From the financial component, the total operating expenses (or other cost index, such as labor expense) for program elements is derived. From this, a unit of service cost can be calculated.

Program Total operating expenses

element = (by program element)

unit cost Units of service

(by program element)

The program element expenses usually reflect a portion of organization-level overhead that has been allocated back to each program element.

When data from a variety of program elements are available, comparisons can be made across program elements on this index. Auxiliary level managers may be tempted to use the most desirable pattern as a gold standard, i.e., a base standard against which programs are judged. Those with a low unit cost are attractive to managers because they suggest potential models for the entire system that could result in more efficient use of resources. Those with a high unit cost may appear to require some speedy intervention to get more output from the amount invested in the program.

The important point is that a cost per unit of service measure should not be used naively. The value of integrated decision support systems is that if the preceding patterns emerge, the manager is able to frame a set of questions that can be analyzed more thoroughly using the data base. Taking only the high unit cost, a program element should not be censured for inefficiency without first investigating the type of patients it serves, whether the services it provides are unique, and whether its staffing pattern is special for one of these reasons. The high unit cost maybe due to a patient population requiring highly specialized service from specially qualified staff. In addition, the organization data component should not be ignored. It may be that no other proximate or similar program element exists, implying that comparison may not really be appropriate.

Minimum Data Set

The following items constitute the minimum data content for the financial component of the decision support system of an auxiliary level entity. Each item is named and the minimum recommended categories for that item or a brief explanation of item content is provided. As noted in chapter 4, categories can be elaborated by the auxiliary level depending on needs and responsibilities. However, elaborations should always be designed (0 be collapsible into the minimum categories. This facilitates comparison of data, especially with other auxiliary levels. Comment sections follow the recommended categories. The comments are intended to explain the item further, discuss the importance or potential use of the data, or note advisable rules of interpretation.

1. Organization Identifier

The 8-digit NIMH master facility number is recommended as the identifier.

Comment: The submission of financial data to an auxiliary level must always be associated with an organization. This organization identifier should be identical across all the MHSIP data components, allowing the information in the various data components to be associated with that organization. This is especially important if the auxiliary level receives the data as separate files or at different times.

2. Operating revenue and support: First- and third-party revenue by program element

A dollar figure for each of the following should be provided for each program element operated by the organization.

Patient/client revenue, i.e., the amount of revenue earned from the delivery of services paid by the client or a responsible party other than third party payers

Insurance revenue (including CHAMPUS), i.e., revenue paid by an insurance carrier for services delivered to patients

Medicare revenue

Medicaid revenue (Federal and State)

Total first- and third-party revenue by program element

Comment: Operating revenue and support is income related to the delivery of mental health services usually as payments in such categories as those listed. Of equal significance is the recommendation that revenue and support either be tracked or allocated by program element. Although it is recommended that revenues and support as well as expenses be available by program element, the MHSIP does not prescribe a method for allocating expenses to each program element. It is recognized that reliability of the financial data is only possible with a rational, explainable method for assigning expenses to programs. Auxiliary level entities are in an ideal position to develop a consistent method of revenue or expense allocation and provide this to the organizations in the mental health system. Otherwise, they must rely on their mental health organizations to choose and apply responsibly a systematic method for cost allocation.

First- and third-party revenues figure prominently in the organization's income statement. They provide the manager with information about the extent to which each program element is pursuing the acquisition of revenue from a variety of sources and the amounts received. When linked with data about the volume of activity, numbers of patients, and numbers of staff attributed to these program elements, a variety of ratios related to revenue generation can be produced. These indexes are especially valuable when used comparatively, contrasting similar program elements within the mental health system. When compared to expense data, shortfall in revenue or the degree of over recovery of expense can alert a manager about either the potential need 'for administrative intervention or a model that should be further investigated.

3. Operating revenue and support: All other sources for the organization as a whole

A dollar figure for each of the following should be provided for the organization as a whole, i.e., these revenues are not expected to be reported by program element.

State

- State mental health agency (SMHA) support, i.e., State funds allocated to the organization, including State appropriations and dollar amounts billable under State contracts, grants, or other purchase-of-service agreements as well as in-kind match dollars. Included also are State dollars allocated to local authorities, but excluded are ADM Block Grant funds and other pass-through funds.

- Other State agency support, i.e., State funds, other than SMHA support, allocated to the organization, including grants, contracts, or other purchase-of-service agreements with State agencies other than the SMHA. Direct appropriations from the State legislature to the organization are included in this revenue category, but passthrough funds from other State agencies are excluded.

Federal

- ADM Block Grant support, i.e., monies allocated to the organization that originate from the Federal Alcohol, Drug Abuse, and Mental Health (ADM) Block Grant to the SMHA.

- Other Federal support, i.e., funds from any and all other Federal sources not included in ADM Block Grants, Medicare, or Medicaid match. These revenues might include Community Support Program grants, Federal portions of Social Service Block Grants (Title XX), and Vocational Rehabilitation, Special Education (P.L. 89-313), Education for the Handicapped (P.L. 94-142), and other Federal grants.

Municipality, county, and other local support, i.e., funds generated by local jurisdictions, including payments from city, municipality, township, county, city-county governments, and district regional authorities. These are largely local tax dollars. Excluded are funds allocated by State government to local government.

Other operating revenue and support, i.e., all other income obtained from direct service provision to clients that is not included above, e.g., contributions from United Fund, Mental Health Association, receipts from contracts with business for Employee Assistance Programs, Preferred Provider

Organizations (PPOs), and HMO contracts.

Comment: The listed revenues and support are typically paid to the organization rather than earmarked for program elements. See the preceding comment for applications of these data. The sum of the values in items 2 and 3 yields a subtotal for operating revenue and support for the organization.

4. Nonoperating revenue and support for the organization as a whole

Income not related to the delivery of mental health services. A dollar amount for the organization is indicated.

Comment: Nonoperating revenue and support can be income from investments such as interest or capital gains, business income, gifts and contributions of cash or liquid assets, bequests and charitable contributions, and research support. Some organizations label these as enterprise funds. This item may vary widely by reporting period because of the nature of this revenue. Such sources figure in the organization's income statement no matter what their total value.

5. Total revenue and support

The sum of operating and nonoperating revenue and support as a dollar value.

Comment: This is the total calculated from the subtotals of items 2 and 3, plus the value of item 4. Total revenue and support constitutes one of the proverbial "bottom lines" for an organization. In conjunction with expenses, it provides a snapshot for the auxiliary level of the income position of the organization. While this is a derived variable, i.e., constituted of other minimum items, it is included in recognition that some settings, in the process of improving their accounting systems, may be able to provide an accurate figure for this item, but not yet be able to generate each of the constituent items This is especially true for revenue by program element. The auxiliary level may include it in the minimum data set if many organizations cannot report revenue and support by program element. However, if these accounting capabilities are well developed within the mental health system, allowing the auxiliary level to derive this total from the constituent items, the auxiliary level may choose to eliminate it as a separate item.

6. In-kind contribution and volunteers (value) for the organization as 8 whole

The estimated dollar value of benefits received by an organization where no funds are exchanged.

Comment: Examples of these benefits are the fair market value minus actual rent for a building or the value of staff assigned to the organization by other entities who are on the payroll of the other organization. Accepted accounting practices support the assignment of a value for such items. Organizations vary substantially in the degree to which in-kind contributions and volunteers play a role in their performance. Interpretation of overall costs and cost per unit of service is difficult without knowledge of the value of this source. An indication of the role of volunteers at the program element level can be obtained from an event analysis combining the human resources and event data components. From such an analysis, it is possible to develop a better understanding of how the value of volunteers may be contributing to program element costs.

7. Expenses by program element

A dollar figure for each of the following should be provided for each program element operated by

the organization.

Direct labor, i.e., the amount earned by employees and contract labor that can be directly related to the operation of the program element. This includes the portion of all staff salaries and fringe benefits associated with the program and any portion of administrative, support, and contract staff time directly assigned to the program element. General support service expenses are not included.

Other operating expense, i.e., includes all direct and indirect operating expenses except direct labor. These expenses are distributed among the program elements according to allocation methods. Depreciation expenses allocated to program elements and general administrative and support staff expenses are included here.

Total operating expense, i.e., the sum of direct labor and other operating expenses by program element.

Comment: Expenses are a measure of the resources used by an organization. Operating expenses are associated with the delivery of mental health services. As with revenue and support, resource use by program element should be tracked or allocated so that the cost structure of the organization can be understood. At the program element level, operating expenses are primarily associated with salaries and wages, supplies and inventory, or contracts for services. However, they also include a component of overhead distributed to the program element.

Data from this item document the expense mix within program elements, showing the absolute and relative amounts attributable to each of the listed categories. Expense data by program element are probably of greatest value determining the cost per unit of service. They are also of value in calculating several of the financial ratios mentioned earlier.

Management use of program expense data can be greatly facilitated when event data are also available. Such data allow the organization to parcel staff time to program elements in a relatively precise manner so that the cost data associated with that amount of time can be quite accurate. Event data also permit direct labor costs to be analyzed by the different types of activities in which staff spend their time. This can be especially valuable when the manager is attempting to modify the performance of a program element. It provides relatively specific targets by profiling how direct labor expenses are composed of different proportions of activity, some of which also bring in revenue, others only adding to expense. In addition, the time of general support and administrative staff can be allocated to program elements based on their event reporting.

8. Organization level expenses

Total nonoperating expense, i.e., all expenses incurred by the organization that do not result from the provision of mental health services.

Total expenses, i.e., the sum of all expenses incurred by the organization.

Comment: Nonoperating expenses are similar in concept to nonoperating revenue and support. Such expenses are a consequence of generating nonoperating revenue and support or may be the result of activities an organization engages in that are not mental health services. These might be operating a computer service bureau, supporting a research component, management fees associated with a nonservice real estate investment, etc. Since the expenses are not associated with mental health

services, they should not be allocated to program elements, since this would distort the calculation of unit of service costs.

Total expenses at the organization level is a derived item, obtained from a summary of total program element expenses from item 7 and organization level total nonoperating expenses. It represents one of the most significant of all the financial items from a manager's perspective, especially when compared to the organization's revenue and support figures. When these expense categories are compared with data from similar organizations, expenses that appear to be much different may indicate to a manager that the outlying organizations deserve relatively immediate attention. This is especially true when the data are examined annually. Taking a "wait-and-see" approach could lead to an irremediable situation by the time the data are next examined.

9. Other expenses at the organization level

Total depreciation expenses

Total employee labor operating expense, i.e., all employee salaries and fringe benefits related to mental health services provision.

Total contract labor operating expense, i.e., amounts earned by individuals who contract to provide services for the organization.

Contracts with other organizations for mental health services, i.e., dollar amounts of contracts with other organizations to provide mental health services to the organization's clientele.

Comment: Depreciation is an accounting method used to allocate the cost of a tangible fixed asset over the period of its useful life. The amount reported in this category should represent the benefit received from the use of noncurrent assets, except land. It is assumed that depreciation expenses have been regarded as expenses included within the category of total operating expenses by program element (see comment under item 7) as well as any depreciation included within nonoperating expenses. This item identifies all depreciation expenses under one heading, irrespective of where they have previously been counted. Generally accepted accounting principles should be followed in computing depreciation.

The four expense categories for the organization as a whole are individually and collectively valuable as management information. Each category aids a manager in understanding a major expense for an organization, in either absolute or relative amounts. For example, depreciation can have a major effect on an organization's income statement even though it is a noncash item; the relative size of the depreciation expense or variations over time are an index to the amount of tangible assets and buildings or their age.

The four categories also provide financial data about the organization level that are not obtained from items 7 and 8. Worth special note is the distinction between employee and contract labor operating expenses. These are not entirely derivable from the expense information by program element. Under item 7, direct labor includes both employee and contract labor expense. For an organization, it is important to be able to differentiate the amounts the organization is spending on employees vs. contracts. These expense categories allow for a variety of ratios to be calculated on profitability and expense composition.

Finally, when these expense categories are compared across similar organizations, they reveal to the auxiliary level how the organizations' expense compositions compare. Emphasis on employee labor

vs. service contracts, the size of depreciation expenses, and amounts spent on service contracts with other organizations may indicate to a manager where an organization is doing better than others, or where economizing efforts might be directed.

Other Recommended Data Items

The following items are required to construct the balance sheet or statement of financial position. All these items are applicable at the organization level only. The reasons for including these items here are noted under the uses section of this chapter.

Current assets

Cash and marketable securities, i.e., cash is funds on hand and in the organization's bank account; marketable securities are holdings of short-term notes, stocks, and bonds held for their return, that can be readily sold.

Accounts receivable, i.e., amounts owed to the organization.

Allowance for doubtful accounts (bad debts), i.e., an estimate of the amount of accounts receivables that will not be collected.

Other current assets, i.e., current assets other than cash and accounts receivable that are to be converted into cash within a year, e.g., inventories and prepaid items such as rent and insurance.

Total current assets

Comment: Assets figure prominently in the balance sheet of the organization. They are listed in their order of liquidity, i.e., the ease of their conversion into cash.

Noncurrent 8ssets

Furniture and equipment, i.e., tangible assets other than buildings and land owned by the organization and used in the course of business; they should be depreciated over time.

Buildings, i.e., those being purchased or owned by the organization and used in the course of business; they should be depreciated over time.

Land, i.e., refers to land, such as building sites, used in the course of business, that is being purchased or owned by the organization; it should not be depreciated.

Other noncurrent assets, i.e., all noncurrent assets other than land, buildings, furniture, and equipment used in the course of business such as long-term investments and other intangible assets.

Total noncurrent assets

Comment: The noncurrent assets are long term in nature and provide a major portion of the capacity of the organization to deliver services. Although they help generate cash, they are not expected to be converted into cash within a year. They figure prominently on the balance sheet.

Total assets

The total of all current and noncurrent assets as a dollar value.

Comment: This item is crucial in conveying a snapshot of the organization's financial vigor. It is used in conjunction with the items on liabilities to calculate residual equity. Residual equity is the excess of assets over liabilities and represents the residual claim on the assets of the organization by the community or the owners.

Current liabilities

A dollar value for the debts that require payment within a year

Comment: Current liabilities include wages payable, accounts payable, and interest payable and represent the short-term obligations that the organization must meet.

Noncurrent liabilities

A dollar value for the long-term obligations to be paid beyond a year.

Comment: Noncurrent liabilities include mortgages, bonds payable, and notes payable. They are used on the balance sheet and in contrasting the amount of longterm obligations to the residual equity of the organization.

Total liabilities

The total of current and noncurrent liabilities as a dollar value.

Comment: This item is crucial in conveying a snapshot of the organization's financial vigor. It is used in conjunction with the items on assets to calculate residual equity.

Coverage

As with tile previous MHSlP data components at the auxiliary level, the topic of coverage must address both the frequency with which the data are collected and the number of organizations involved in reporting the data. The MHSIP recommendation is that financial data be collected annually. There is a temptation for the auxiliary level to request or to accept financial data more often than annually. As with clinical data, financial data are constantly being processed within mental health organizations, as bills, accounts receivable, inventory purchases, payroll, etc. Because the flow of these data is so routine, some auxiliary level entities may feel more frequent receipt is desirable.

However, more than any other data component, frequent financial data show too much variability and contain too much noise to be useful for management decisionmaking. Forecasters particularly have pointed out that raw accounting data are confounded by the simultaneous operation of the factors of trend (the fundamental pattern the auxiliary level really wants to know about), seasonality (volume affected by predictably busy and slack periods), calendar effects (uneven number of business days per period affecting volumes), naturally occurring cycles (e.g., 4-5 year business cycles), and error (McLaughlin 1988). It is only when these factors are examined over long periods that all of

their effects can be spotted and controlled for. For example, one of the most widely used adjustment models developed by the U.S. Bureau of the Census requires a minimum of 3 years of data and operates most satisfactorily with 30 years of data.

If the auxiliary level accepts financial data frequently, i.e., monthly or quarterly, and does not take responsibility for untangling at least some of these factors, it is extremely difficult for reasonable action to be taken. A calendar effect of 3-4 extra business days for 1 month can mistakenly suggest that revenue for the following month has fallen by 20 percent. These confounding effects are naturally smoothed out by the use of longer periods. This leads to the MHSIP recommendation that annual financial data is of most use to the auxiliary level.

The remaining coverage issue is the number of organizations that submil these data to the auxiliary level. Financial data evoke the concerns noted in the chapters on organization and patient/client data, viz, the issue of management vs. description functions of an auxiliary level entity. For entities with management responsibilities vis-a-vis the organizations, e.g., management of performance contracts established with each organization or the ownership/operation of the organization, it seems inescapable that data on 100 percent of these organizations are needed. These data enable the auxiliary level to carry out its management responsibilities, especially with respect to the monitoring, distribution, and assessment of the financial resources. In theory, it is possible to design a sampling procedure that would permit the auxiliary level to generalize to the organizations not in the sample. However, it is unlikely that a given entity would feel comfortable making either systemwide or organization-specific management decisions about finances based on a sample of organizations.

Other auxiliary level entities may be responsible prnnarily for describing what is transpiring within the mental health system. For auxiliary levels characterized by such a function, data from less than 100 percent of the organizations can be collected in such a fashion that relatively reliable and valid knowledge of the full system can be claimed. A sample may suffice.

Each of the previous data component chapters notes the applicability of sampling as a means of generalizing to the full universe. The options are identical for financial data and are not revisited. The special contingency in each chapter is always the use of a panel of organizations to obtain the sample data for generalization. If financial data are added to the design requirements of the original sample of organizations, the financial data they provide should enable the auxiliary level to meet its need to describe the nature of these data for its full universe. Since these data are reported annually, they do not present the great complexities of design that are true of selecting samples of clients, events, and staff. In brief, if a panel of organizations is used to provide any or all of the MHSIP data components to the auxiliary level, 100 percent of the panel should report their annual financial data.

Summary

The minimum data set for financial data is:

1. Organization identifier

2. Operating revenue and support: First and third party revenue by program element

3. Operating revenue and support: All other sources

4. Nonoperating revenue and support for the organization as a whole

5. Total revenue and support

6. In-kind contribution and volunteers (value)

7. Expenses by program element

8. Organization level expenses

9. Other expenses at the organization level

Chapter 18

Transition Toward an Integrated Decision Support System at the Auxiliary Level

The transition toward an integrated decision support system for a given auxiliary level entity presents an extraordinary set of challenges that requires political and technical skills, a vision of the ultimate the system, and acceptance of incremental successes as satisfactory measures of progress. The decision to evolve toward an integrated decision support system should not be made casually, nor in isolation. The number of parties potentially affected by the transition toward such a system, the resource demands, the potential power of the data from a fully integrated system, and the need for continuing commitment from top administration require at least discussions with representatives from the wide audience the system may affect. More intensive and continuing involvement is preferable. The input of these representatives must be considered and genuine efforts made to involve them as advisors and supporters during the long-term process.

Some of the guidance provided in chapter 10, describing transition issues within a provider organization, is applicable at the auxiliary level. That chapter should be reviewed. However, other demands are markedly different. This chapter presents a set of factors that are unique to an auxiliary level in a state of transition toward an integrated decision support system. These factors derive from the concepts of data sets, system design guidelines, and mental health systems presented in previous chapters. Factors relating to interpersonal and political influences, securing adequate resources, and the computer configurations and software needed for the system are also significant in a transition. However, they are beyond the scope of the monograph.

The First Requirement: A Vision of the Decision Support System

By systematically considering the factors that define integration in the decision support system of the auxiliary level, a given entity can target the type of system it aims to achieve. This target can be called a vision of the decision support system in that the entity's current position is unlikely to be isomorphic to its target position. Thus, it represents an end-state that the entity would like to achieve. The target selected depends on the nature of the auxiliary level entity's business, the degree of support anticipated from top administration within the entity, the level of information system development among the mental health organizations that constitute the system, and characteristics of the relationship between the auxiliary level and the mental health organizations. Other significant factors are the availability of resources represented by staff, money, and automation.

At least three factors associated with data sets and auxiliary-provider level relations must be

considered in a transition to an integrated decision support system. Various combinations of these factors characterize different degrees of integration in the auxiliary level information system. These factors are outlined and the relationships among them are presented in a model that is useful in developing a schematic for locating both the current information system and the ultimate situation the auxiliary level aims to achieve. The value of this schematic as a planning and transition tool is also discussed.

Integratability: Linkage of the Data Provided by an Organization

The first factor concerns the nature of the data provided by an individual mental health organization. The factor is influenced by both the degree to which each organization in the mental health system has incorporated the MHSIP recommendations and the auxiliary level decision about the model it will use for collecting data.

Specifically, integratability of the data provided by any given organization is contingent on three considerations:

1. The degree to which a given reporting organization has paralleled the MHSIP data set content in its information system. Practically, this concerns how many of the five data components the organization can provide to the auxiliary level and how well the reported data match the MHSIP content.

2. The degree to which the organization has achieved integration of its information system. This consideration encompasses the ability of the organization to use the event component to conduct event analyses and to reflect this capability in the data it submits to the auxiliary level.

3. The model chosen by the auxiliary level entity for the receipt of data from the organizations within its system. Integratability is the factor that most closely relates to the models presented in chapter 12. For integration of data components at the auxiliary level, the data provided by an organization must be submitted as either integrated information (Models II and IV) or integratable information (Model III). The model the auxiliary level selects as the basis for its information system conveys an obvious expectation for the degree of integratability in the data received from each organization.

The factor of integratability can be placed on a gradient that reflects the simultaneous operation of these three considerations. The first gradient position identifiable is labeled after Model I from chapter 12 - independent data components. In this situation, the data provided by an organization cannot be integrated for that organization. This may be due to missing data, such as missing a unique patient identifier associated with events; incompatible time periods being covered; or the format of the data, e.g., one as a hard copy aggregate report and one as a computer file. The independent components label may apply to all five MHSIP components, to a subset, or to one. Thus, when the label is used, it is desirable to identify the data components to which it applies.

Some mental health organizations maybe in the process of developing integrated decision support systems, rather than near the ultimate goal. They may be able to provide the auxiliary level with some data components that can be integrated. Others data components may still be missing or are submitted as independent components. This gradient position is labeled partially integratable. The minimum number of data components to which the label can apply is two; the maximum number is four. The fifth either is not reported or is reported as an independent component. Thus, when the label is used, it is desirable to identify the data components to which it applies.

When an organization is able to provide all five of the MHSIP data components to the auxiliary level and integration across all of them is possible, as shown in Models III and IV in chapter 12, the position is labeled fully integratable.(27) Although the MHSIP recommends that each provider level develop a fully integrated decision support system, it recognizes that many auxiliary level entities do not require fully integrated systems. That is, some auxiliary levels do not see data for all five MHSIP components as necessary. Their needs may be satisfactorily met with fewer data components. However, for conceptual and labeling clarity in this discussion, this situation would still be labeled partially integratable. The fully integrated label is reserved for the situation in which all five MHSIP data components are reported and are integratable.

Finally, to be able to understand and diagram all p05sible contingencies, the condition of no data being provided to the auxiliary level must be included. An organization may provide no data because it does not have the component(s) implemented, it is not required or requested to provide the data by the auxiliary level, or it chooses to withhold the data when neither of the two preceding conditions apply. Obviously, if no data are being forwarded to the auxiliary level, no integration can occur in that data content area. The situation of no data for at least some of the MHSIP components may be relatively common.

When a new organization comes into existence or when a new liaison between an organization and the auxiliary level is formed, the organization may not yet have the capacity to provide data to the auxiliary level.

An organization evolving toward its own internal integrated decision support system may not yet have a data component in place or maybe unable to generate a report from that component because of its inchoate status.

An organization may decide for policy reasons or past experience with the auxiliary level to provide no data in a particular component.

The auxiliary level may have no interest, history, or authority to collect a data component.

It should be recognized that the integratability dimension describes a gradient with positions that can exist simultaneously for an auxiliary level and a reporting organization. Regardless of the model the auxiliary level has selected for the input of data to its decision support system, at any given time in system implementation, an organization may fall at multiple locations on the gradient. For example, for a given set of data components the auxiliary level requests, an organization may be able to provide some of them only as independent modules, while the remainder are perhaps not submitted or submitted as partially integrated data. For an auxiliary entity that deals with multiple organizations, it may find them to be distributed all along the gradient. This issue leads to the next dimension that characterizes the degree of integration in the decision support system of an auxiliary level entity - the number of organizations that provide it with data.

Organizational Coverage: The Number of Organizations That Contribute Data

While the first factor covers the nature of the data provided by an individual organization, a second factor that must be considered simultaneously is the number of organizations that are represented in the decision support system of the auxiliary level. The potential universe under consideration for this factor includes all of the mental health organizations with which a given auxiliary level entity has a relationship. An obvious precondition to this factor is knowledge at the auxiliary level of the organizations that make up its system - a concept first introduced in chapter 2. The auxiliary-provider relationship spelled out in chapter 11 led to the defmition of the mental health system used

by the MHSIP.

The specific concern is: How well represented is this universe of organizations in the information system of the entity? Organizational coverage can be sald to vary from the minimum possibility of no organizations providing data to the maximum possibility of all mental health organizations participating. A continuum of organizational coverage can be described as containing three major clusters: full system coverage, full coverage of selected components of the system, and spotty coverage.

Full system coverage means that 100 percent of the organizations in the system of the auxiliary level entity contribute data. For a corporation operating a chain of residential programs for emotionally disturbed children, this might mean a relatively modest number of organizations. For a State mental health agency operating and funding a full spectrum of service settings, this might run to several hundred. For a payer for services, such as an insurance plan, the number of locations that defines the full system may run into the thousands, and the universe may not be easlly specified. Since well-executed sampling designs also permit statistically sound inferences to be made about the full system, this condition can also be met if the sample of organizations that contribute data permits the auxiliary level to generalize to the full universe. Issues around sampling are more thoroughly discussed in chapters 13-17.

Full coverage of a component of the system presumes that the auxiliary level has some concept of the structure of its mental health system. Inherent in this structure is the notion that similar groups of programs can be identified, partitioned, and subsequently labeled as a component of the mental health system. The MHSIP program element concept is one approach to the identification of mental health system components. Some of these components may be better at contributing data than others. For example, in many State mental health systems, the fact that the State usually owns and operates some psychiatric hospitals means greater control and leverage with these settings, often resulting in all of the hospitals contributing data to the State. This is an instance of 100-percent coverage of a component of the State's system.

The more complex the system of which the auxiliary level is a part, the more likely that the system must be described as consisting of several components. Full coverage of a system component applies only if all the organizations or program elements that define that component participate in data reporting. Full coverage may be realistic for only one cluster of organizations, with all remaining organizations falling into the next category, spotty coverage. If all the components participate, the system is more accurately described by the previous label - full system coverage.

This variability in coverage is common in complex mental health systems. For example, in a mental health system where 100 percent of the multiservice and inpatient programs provide data, but only a few of the programs making up the residential component provide data, the system can be described as having full coverage of two system components, and spotty coverage of the residential component. For this reason, when the label of full coverage of a system component is evoked, it is important to identify the mental health system components to which it applies. As with full system coverage, a system component can also be considered to be fully represented by a well-executed sampling design. This is especially compatible with the concept of stratified sampling.

The final coverage condition represents some degree of participation by organizations, but with no discernible pattern evident. Hence, this condition is referred to as spotty coverage. This situation is quite common when auxiliary level entities establish new working relationships with mental health organizations not previously in the system. For example, the Federal Government directly funded community mental health centers in the 1960s and 1970s. When these programs were consolidated under a block grant program that operated through State mental health agencies, State agencies had

to establish new working relationships with many of these centers. These relationships probably developed at different rates, and spotty coverage characterized the initial reporting of these centers to the State.

Spotty coverage may also characterize an auxiliary level that does not have uniform leverage with the reporting organizations. Such a situation can occur because the ability of the auxiliary level to exercise administrative control is limited or because the auxiliary level has a laissez faire approach in its relationships with mental health organizations. Sampling designs are not appropriately matched to a condition of spotty coverage. The mere fact that coverage is spotty or unsystematic means that actual contribution of data by organizations is not representative of any larger universe. Therefore, sampling designs cannot be developed, and the submitted data must be accepted as representative only of the reporting organizations.

Compatibility: Merging the Data Across Organizations

The previous factors considered the number of organizations providing data to the auxiliary level and the degree of integratability of the data provided by each organization. The final condition concerns whether the data provided by all the participating organizations can actually be merged into a data base. The MHSIP assumes that some version of an integrated data base is desirable for many auxiliary level entities. The ability to merge data from different organizations is critical to the construction of an integrated data base. This ability is made possible by compatibility in the data provided by these organizations.

The concept of compatibility is inherent in figures 7 and 8 in chapter 12; the possibility of multiple organizations providing data to the auxiliary level is implicit. However, for the auxiliary level to collapse all of these data into a system, there must be strong commonalities and consistencies in the data provided by each organization. To some extent, use of the minimum data set specifications and definitions by the local and auxiliary levels helps to ensure compatibility in the content of an auxiliary level's information system. However, compatibility of content alone will not guarantee that the auxiliary level is able to construct an integrated data base.

Compatible data means that the different data components submitted by different organizations present no technical impediments to merging these data into a common data base. Specifically:

the individual items of content are similar, if not identical, in their level of detail, definition, and format;

the timeframes that apply to the data correspond sufficiently to be regarded as covering the same period; and

the quality of the data provided meets uniform standards of acceptability in such areas as error rates, fixups, and deleted problematic records.

If these conditions are met, the data can be merged and compared.

From the MHSIP perspective, compatibility should be generally thought of as a factor that is either applicable or nonapplicable. In actual operation, the condition of data content presents situations in which there are degrees of compatibility, but they are difficult to characterize. For example, if all organizations are providing financial data, but some provide the data only for the organization as a whole, while others provide program-element specific data, the auxiliary level cannot merge them into a common program-element data base because of content and level of detail differences.

However, the data are compatible at the organization level and such a data base can be developed. This situation may come with liabilities, however.

The auxiliary level may be able to find some level of compatibility in the submitted data and to generate a number of systemwide reports, but the content of the reports will be dictated by the lowest common denominator. That is, the content of systemwide reports will be ordained by the least detailed report submitted by an organization. Following the financial data example, the auxiliary level could only produce system-wide reports reflecting financial data at the organizational level. There would be insufficient detail for production of systemwide reports at the program element level. Similarly, if some organizations were submitting aggregate data summaries rather than more detailed data files, this would limit auxiliary level production to aggregate systemwide reports rather than the more managerially useful reports based on integration of detailed data files.

The compatibility conditions affected by data quality timeframes and are not likely to be so equivocal, however. In the area of data quality, consider two organizations with similar clinical programs. Both may submit monthly tapes of patient-by-services data to the auxiliary level. But if 1-percent of the records of one organization routinely have coding errors and the other has a 40-percent rate, the auxiliary level is unlikely to merge their data into a common data base. Differences in the time periods covered by the submitted data also will preclude the auxiliary level from merging data into a common data base.

Compatibility problems connected with timeframes or data quality may limit the auxiliary level to reports either on discrete organizations or on small subsets of organizations whose data are compatible. The inability to generate meaningful systemwide comparison data may not only restrict the discharge of management responsibilities for some auxiliary levels, but this scenario presents increased risks of identification of individual organizations in published reports. Assurances of some degree of anonymity may be a fundamental principle for information system operation. Submitting organizations, their staff and patients, may find identification risks objectionable, jeopardizing their participation in reporting.

A Model to Describe the Degree of

Integration in the Decision Support

System of the Auxiliary Level

The factors of integratability, coverage, and compatibility were presented discretely. In actual operation, these factors intersect and interact. Specifically, an auxiliary level entity bases its decision support system on compatible data received from one or more organizations. The degree to which the entity can construct an integrated system is influenced by the integratability of the data these organizations provide.

The factors and their variants can be combined into a schematic that shows the intersections and relationships among all the conditions described above (figure 9). This has both conceptual and practical value. The intersection of integratability, coverage, and compatibility yield 18 identifiable cells, each of which contains a unique and possible combination of these factors. The possibility of the auxiliary level receiving no data is also included. It should be noted that this possibility intersects only with the factor of coverage, yielding three possibilities:

no data received from any organizations

no data received from organizations of one type

spotty instances where no data are provided

The issue of compatibility is applicable only if data are being provided. Therefore, compatibility and no data do not intersect.

This model permits the identification of the cells that can be regarded as reflecting some degree of integration in the decision support system of an auxiliary level entity. As each of the factors was presented, it was clear that some of the variants within them were necessary conditions for integration to occur.

For integratability, the conditions of no data or independent components preclude integration.

For coverage, a minimum of one organization must be involved.

For compatibility, the data across organizations must be compatible for integration to be achieved.

As a consequence of these necessary conditions, it is possible to identify those cells on figure 9 that meet these necessary conditions. These are shaded in the figure.

Uses of the Model - I: Setting a Goal and Direction

The first practical use of the model involves the six shaded cells. These identify various end-states for a decision support system. The auxiliary level entity is free to target any one of these as the ultimate it can achieve. Such a decision establishes a direction and goal for where the decision support system of the auxiliary level is to evolve.

Although any of the shaded cells provides the auxiliary level with at least some degree of integration, the concepts presented throughout the monograph imply that the MHSIP would place a higher premium on some of these cells. In particular, the shaded cells involving spotty coverage of mental health organizations should be regarded as a temporarily acceptable condition for an auxiliary level. These cells should be thought of simply as trial periods, primarily of benefit as an introduction to auxiliary level integration. The entity may gain some experience with the technology requirements, types of working relationships with providers that must be sustained, and kinds of reports derivable from integrated data bases.

This is a valuable and probably necessary experience for every auxiliary level entity. However, because coverage is spotty, the auxiliary level is extremely limited in the management actions it can take based on the data. The organizations are not representative of a universe and, therefore, the resulting data permit the auxiliary level to engage only in ad hoc actions. If the actions are confined to the reporting organizations, the auxiliary level is remiss in exercising its management responsibilities for the full mental health system. If the actions are extended to all organizations, they may be inappropriate to some organizations, their impacts cannot be monitored or assessed via resulting data, and the situation is generally frustrating and inefficient for auxiliary level managers. For these reasons, the recommended direction for an auxiliary level entity involves one of the four other shaded cells in figure 9.

Uses of the Model - II: Describing the Current System of the Auxiliary Level

Another use of the model is to identify transition stages through which the auxiliary level system must move. This requires that a starting point be identified, i.e., the current information system of the entity must be identified. The model in figure 9 can be applied to profile where the mental health organizations fall with respect to each of the cells. This makes it easier to visualize the disparity between the current situation and the ultimate system the entity wishes to develop.

For illustrative purposes, a fictitious mental health board is considered here. The example is kept artificially simple. In reality, this exercise can be quite complex, requiring a thorough knowledge of the mental health system of which the auxiliary level is a part, as well as an intimate knowledge of the data being reported to the auxiliary level and the data concepts and content of the MHSIP. The result, however, is a completed figure that can have practical use in assessing the current system and planning for subsequent action. A completed figure is not recommended as a communication device, since the complexity can be daunting.

The fictitious board is responsible for providing services to patients within its service area and does so through purchase-of-service contracts in a mental health system consisting of:

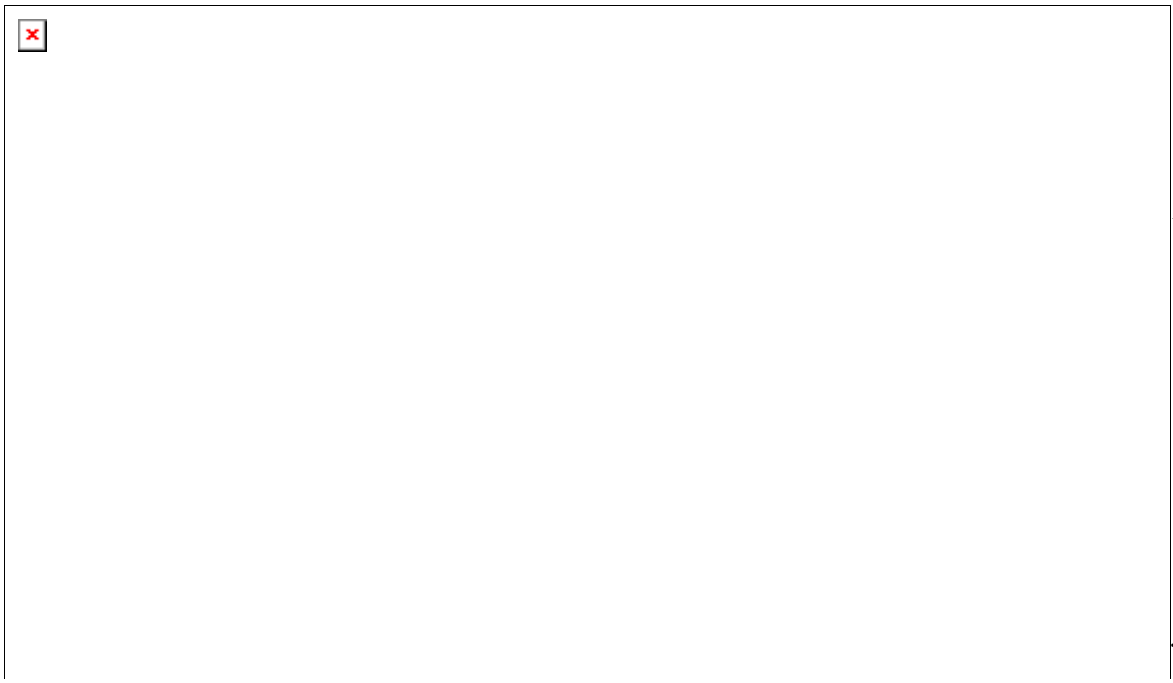
50 beds available in a regional, State psychiatric hospital

10 forensic beds available in a forensic psychiatric hospital in a neighboring State

3 multiservice mental health organizations offermg outpatient and partial day services

2 emergency service programs, one operated within the emergency ward of a local general hospital and the other by one of the multiservice mental health organizations

The board receives some data from most of these programs:



From the State hospital, it receives the MHSIP patient data component as welt as detailed MHSIP event data, submitted as part of its billing to the board.

From the forensic

psychiatric hospital, the board receives no data.

The board has full coverage from the multiservice organizations. However, two of them are in full compliance with the MHSIP recommendations for an integrated decision support system and provide all the components. The remaining organization submits alt of its data as independent components, in the form of detailed tabulations. This means compatabitity is achieved at the level of independent data components since the integrated data submitted by two of the organizations can be repackaged to match the independent components submitted by the third.

The two emergency programs differ in their reporting. The multiservice organization where the emergency program is based is the one that provides MHSIP data as independent components, including data on the emergency program. The program based in the general hospital emergency room provides only a monthly tally of the patients served and an identification number for the patient. This has implications for compatibility as well as integratability.

The situation can be mapped according to the schematic in figure 9. As an actual exercise executed by someone unfamiliar with the mental health system, considerable background investigation would be needed before the model could be applied. It is appropriate to begin by examining each organization separately. Some auxiliary levels will be content to remain at the organization level of analysis, able to cluster their organizations into system components on this basis. Others will find a program element structure to be more valuable for deriving the "all-programs-of-type-X" category of the coverage factor. Once the background work is done, it is possible to identify which variants of the integratability, coverage, and compatibility factors are operating. For the fictitious mental health board, the result is shown in figure 10.

One of the first things that should be evident from inspection of the figure is that even for a simple example, the description of the current information system of an auxiliary level is likely to be relatively complex when plotted on the model. This is especially true when the mental health system consists of several different components. If the board had been responsible for other types of organizations, each of these would need to be considered and added to the resulting schematic. For a State mental health agency, it could be anticipated that consideration of ownership, funding, and licensure would lead to a sizable display of organizations. To make the schematic useful, some parsimony is recommended in the amount of information displayed on it. One obvious economy is for the fully integratable condition. By definition, all five MHSIP data components are covered.

The simultaneous consideration of all three factors frequently means that the data for a single organization may require entries in multiple cells. This may be most true when organizations are evolving toward integrated decision support systems and do not have full mastery of each data component nor an ability to integrate across all data components. Organizations rarely proceed at a uniform pace, implying that there is likely to be considerable heterogeneity in their profiles during this evolution stage. In figure 10, one inpatient program reflects mastery and integration for two data components, while the others remain unreported. In real applications, the schematic may grow cumbersome if every unique situation is displayed. It may be more effective to show modal or typical patterns, especiaIIy since these probably dominate the concerns of the auxiliary level.

Uses of the Model - Ill: Points of Leverage for Moving the Information System

Fundamental to the MHSIP is the assumption that empirical data are invaluable to management in making Improvements in the system that provides treatment to those with mental illness. The better the data and the more they illuminate decisionmaking, the more they will facilitate these improvements. It follows that, if ways can be found to accelerate the development of quality decision support systems, there will be a corresponding improvement in the service delivery system. The model

and its application to auxiliary level circumstances may aid in the evolution of an integrated decision support system. The most significant ways in which this occurs follow.

Targeting organizations. The schematic permits the placement of various mental health organizations relative to an auxiliary entity's goal for its information system. This is indicated by the types of entries in or near the cell identified as the entity's target vs. entries falling relatively far from the entity's target. In figure 10, one cell on the figure is shaded to represent the target for the entity. Specifically, the entity has targeted a condition in which fully integratable and compatible data are submitted by each program element cluster, but compatability across the program elements is not desired. Several programs are at target. The remaining prograrns are relatively far from target. Thus, one result is the identification, and possible ranking, of organizations and program elements that need work.

Targeting factors. Because it is necessary to do some analysis and categorization prior to making entries for the schematic, the final result provides an aid in analyzing what factors need work. That is, the exercise of completing this model for a mental health system should make it easier to identify which of the three factors appears most problematic or causal for the current level of development in the decision support system. In figure 10, coverage does not emerge as the dorninant issue: only one of the 10 program elements is not participating. Of the two remaining factors, it would seem the integratability dimension is more deserving of attention. There are a relatively large number of data components for which no data are being reported and a relatively large number are reported as independent components. Thus, another benefit of the model is to aid identification of the factors most in need of work to evolve the system in a targeted direction.

Programs of technical assistance. Having located the various mental health organizations with respect to the auxiliary level's target and identified the factors that contribute to their placement relative to this goal, another benefit emerges. Those organizations at or near

target may be used as a source of technical assistance to others. The technical assistance could take several forms:

actual consultation provided by these organizations to help identify strategies that could be used by

*those far
from target;*

a structured program of visits to the at or near-target sites so that the far-from-target sites could see operations, hold interviews, examine reports, and receive inspiration from these sites;

development by the auxiliary level of case studies, transportable documentation of detailed features of an integrated decision support system, or dissemination of best-practices models.

Many auxiliary level entities that have worked with their local programs on information system implementation have ultimately concluded that it is more efficient for the auxiliary level to take responsibility for providing technical assistance. In many instances, this evolves into the purchase or development of software packages for use at the provider level and some underwriting of the providers' costs to acquire computer hardware. In any case, a program of technical assistance involving specific organizations and having a specific focus is a fmal benefit derivable from the completed model.

The Model Considered for Multiple

Auxiliary Levels and Mental Health

Systems

Although it is a fundamental assumption in the MHSIP, it remains a research question whether patients receive measurably different services in mental health organizations or systems when integrated decision support systems aid in proactive management. All the following material accepts the assumption, however. This implies that it is as valid to focus on the accelerated implementation of integrated decision support systems as to focus on clinically based questions. Both can be assumed to contribute to improved programs of treatment to those with mental illnesses.

Judgments of Relative Standing

Just as contemporary mental health organizations do not stand independent, auxiliary level entities are also aware of other entities and mental health systems. Patients and staff often move among these systems, and organizations sometimes move from one system to another, e.g., a freestanding clinic that largely related to a State mental health agency being purchased by a hospital corporation that emphasizes additional sources of patients and revenue. Some of these entities and systems interrelate with one another around funding, patient referrals, and accreditation; others tend to view themselves primarily as competitors (e.g., different insurance plans, corporations); and others regard similar entities as a reference group that helps to anchor data comparisons or serves as a source of ideas (e.g., State mental health agencies, funding boards, advocacy groups).

If a given auxiliary level entity examines results similar to figure 10 for each auxiliary level it regards as relevant, additional benefits emerge. Comparisons are an invaluable aid to interpretation. Knowing how one's auxiliary entity profile relates to others can be quite helpful either in reassuring the entity about the current level of development of its information system or motivating a change. If an entity found its profile on the model to reflect a lesser stage of development, aside from matters of pride, there may be clear performance implications. It may be more difficult to secure funding, either in the form of budget requests or loans; accreditations of organizations may be harder to achieve; the

entity and its organizations may have frequent difficulty in meeting their reporting requirements to other auxiliary levels; or auditors may be persistently present, causing some disruption in daily operating routines. If auxiliary level managers become complacent, allowing these performance liabilities to become endemic, it can be predicted that either the mental health system itself will atrophy or the managers will be replaced.

The more important issue is the consequence to patients: how do mental health systems compare in the quality, intensity, and appropriateness of services to patients when they possess an integrated decision sup-port system? At the patient's level of concern, whether integrated data Systems are in place maybe transparent, but it is assumed that the effect of such systems can be detected at the service level. If auxiliary and provider level managers use integrated systems, it should result in a better match between patient type and treatments provided. As sample hypotheses, in a mental health system with an integrated information system were contrasted to one without such integration:

Services will be better matched in type and intensity to the patient's clinical profile.

Fewer patients will be lost to contact.

Patients who need to evolve through a system of services that differ in degree of protective oversight will have fewer difficulties in establishing such linkages. The families of these patients will also benefit.

Until such systems research has been conducted, these remain just a few of the possible impact speculations.

Technical Assistance and Networking

Another benefit that can be derived from knowledge of the integrated system development in other auxiliary levels is that of technical assistance. This parallels one of the uses an auxiliary level might make of organizations witkin its system. Presuming that communications are reasonable between the relevant auxiliary level entities, one entity may seek assistance from another in terms of tips, strategies, copies of system specifications, documentation of requirements analyses, names of vendors, feedback on useful reports, and a host of other valuable exchanges ranging from formal to informal. These exchanges are particularly likely if there is a concept of networking among the relevant auxiliary levels. As indicated in chapter 1, the MHSIP has fostered networking primarily among State mental health agencies. However, the annual National Conference on Mental Health Statistics has increasingly been used to broaden the audience exposed to the concepts in the MHSIP. This has been particularly true for involving the mental health services research community.

Systematic Knowledge About the Causes and

Eftects of Transition Toward an Integrated

DecisIon Support System

A significant question remains: What factors facilitate the move toward an integrated decision support system at the auxiliary level? If the model in figure 9 were applied to a sizable number of

mental health systems, it would identify a cohort of auxiliary level entities and mental health systems that might provide a base from which to derive systematic knowledge about these factors. It is safe to predict that substantial variations would be observed across this cohort in the extent of integrated system development. Such heterogeneity presents the challenge of explaining these variations and trying to understand the independent variables that contribute to an entity's move from one cell to another. In this area, some of the literature in organizational sociology, especially as applied to human services and education (e.g., Scott and Black 1986) may be of use.

However, a prior assumption inherent in the model must first be dealt with. Specifically, is it possible to measure differences for each of the cells in the model? The application of the concepts in the model does not always result in auxiliary level profiles that can be neatly summarized. However, if the factors of integratability, coverage, and compatibility are operationally meaning-fill, then each cell of the model represents a unique combination of these factors. Therefore, each cell should be distinguishable from its neighbors and from all others. It remains a question for systematic research as to what constitutes the best set of dependent variables to document these differences. However, some articulation of such a set is required. Examples of such measures follow. They are based on professional judgment rather than research. It is not expected that any one measure will differ reliably from cell to cell, but rather the combination of measures would be detectable in a form that would yield a relatively unique profile for each cell. The areas in which auxiliary levels may differ, based on the level of integration in their information systems are

Clinical impacts within the mental health system

- differing degrees of success in linking patients with other service programs that meet the patients' needs for more or less restrictive services; the timeliness, appropriateness, and intensity of services provided to patients falling into groups with different needs; the degree to which patterns of preference or discrimination, based on such factors as payment source or demographics, can be found in the treatment or assignment of patients; and, if the auxiliary level has achieved some consensus regarding a uniform method of assessing effectiveness of treatment, the degree to which treatment outcomes differ.

Staffing - the number of staff committed by the auxiliary level entity to the design, improvement, and maintenance of the information system; the professional level of this staffjudged by years of experience in the field as well as training; the functions routinely carried out by the staff, including statistical auditing for data quality and customer relations to sustain data reporting by the mental health organizations; the degree of personnel stability among the professional/technical staff expected to manage the information system; and the degree of stability within the management level (e.g., administrator, chief executive officer, deputy director) that provides leadership continuity to the entity.

Behaviors vis-a-vis the decision support system

- use of results from the information system for monitoring or negotiating performance, e.g., performance contracting; the number and types of feedback reports provided to the organizations within the mental health system; the number of monitoring reports generated and actually used at the auxiliary level; whether reports are generated for proactive decisionmaking or in response to an internal crisis, external demand, or after decisionmaking for use as defense; the extent to which any staff representing the information system function are members of the decisionmaking team of the auxiliary level; the credibility of the decision support system as demonstrated by aceeptance of its data for legal, financial, or other reporting purposes; and the degree to which the information system is used for research.

Automation - degree of penetration of automation as represented by number and distribution of computers, relative access and control over mainframe processing, and the budget for data processing relative to total budget.

This list is preliminary and undoubtedly incomplete. Few of these dependent measures are straightforward, and many would require some type of scaling work to be used as dependent measures. A range of scaling techniques may be appropriate for this work, including nominal categories in some cases, perhaps ratio scaling in a small set of cases, and, most likely, ordinal scales that at least permit a ranking of conditions.

Assuming that it is possible to identify a set of dependent measures that result in profile differences for each of the cells in the model, it is then possible to begin speculating on a set of independent variables that accounts for transitions within the model. The set of independent variables applicable to understanding what facilitates movement toward an integrated decision support system need to be subdassified into at least three groups: the organization level, the auxiliary level, and environmental factors.

Organizalion variables. As other sections of the monograph discuss, one set of independent variables needs to consider the organization level. Such environments possess their own internal dynamics that often occur independent of any activities at the auxiliary level. A substantial amount of clinical, economic, and sociological literature demonstrates the viability and significance of the organizational level as a separate domain. As pertains to the model conveyed by figure 9, the types of intervening variables of greatest interest would be those that account for transition at the organization level toward an integrated decision support system. This issue is considered in chapter 10.

The organization level as a stimulus to the auxiliary level cannot be ignored. The very definition of the auxiliary level conveys that it is not always a controlling level. Hence, the stimulus to evolve toward integration may come from the providers, reflecting their need to have a central repository from which they can derive comparison data.

Auxiliary level variables. Of greater relevance to the model are the two other sets of variables. To an extent, the variables within the auxiliary level are introduced by the categorical dependent measures above. They imply that some factors may contribute to movement from cell to cell. Again, based on professional judgment and previous implementation histories within the MHSIP, a set of potential auxiliary level independent variables is offered.

Administrative endorsement - the degree of public support and commitment for such a system that is provided from the higher levels of management within the entity, including a willinguess to assign and commit resources

Staff factors - the level of professionalism within the staff involved in the transition and in the day-to-day operation of the information system at the auxiliary level

Prior history - the auxiliary level's prior experience with data receipt (including collecting, editing, and providing feedback reports) as well as the number of organizations that participate, the integratability of the data each provides, and the compatibility of the data across the organizations; in addition, the uses the auxiliary level has made of the resulting information, especially for mariagement decisionmaking

Auxiliary level function - as chapter 12 notes, not every auxiliary level entity requires an integrated

decision support system. The specific charge, mission, or responsibilities of the entity may be a fundamental factor accounting for movement in the direction of integration.

Environmental variables. The independent variables probably need to include factors that incorporate causes from the environment in which the auxiliary level entity functions. These environmental factors are ei~her associated with increased requirements for documentation or driven by a concern about improving the quality of service received by those with mental illness. A preliminary set of such variables is offered:

Funding - new or modified funding sources and their documentation requirements may be among the most powerful variables producing changes in information systems in mental health. Trends toward managed care and funds that move with patients rather than being allocated to facilities promise to challenge information systems increasingly. The MHSIP data components on patients and events, and the linkage of these data across settings, may become more crucial as these trends evolve.

Social and constituency movement - the activism of families and consumers in mental health service systems can figure prominently as these groups poignantly express their frustration at trying to deal with a fragmented system that cannot provide a continuum of mental health care.

Judicial action - court orders or other legal interventions to improve a mental health system and provide documentation of the progress

Legislation - actions by legislative groups that set up new requirements regarding patient care, accounting for funds, or use of human resources

Accreditation - the decade of the 90s promises heightened attention throughout health care on the issue of quality and effectiveness. Measurement of these concerns is increasingly emphasized by both groups that accredit health care organizations and other bodies whose recommendations are often used to set payment standards within the industry. Mental health services will be affected as this trend evolves from concepts to actual operations.

The MHSIP - the MHSIP standards for content and guidelines for a system design are increasingly looked to as new systems are planned at the auxiliary level and as vendors offer information system packages to this market. The monograph is intended to offer new challenges to both organization and auxiliary levels and thus may be among the environmental factors that effect transition.

Conclusion

Mental health systems exist to provide services to those with mental illness. Data Systems are critical in describing and monitoring these systems as well as for guiding and monitoring improvements in the services they provide. This section emphasizes several research questions about the nature of these decision support systems. Because of the hypothesized correlation between these systems and the treatments provided within the mental health system, attention to these questions is expected to have positive consequences, viz, inforniation leading to improvements in the abilities of these systems to serve their mentally ill clientele and to provide services at the time, location, and intensity needed to prevent deterioration in the mental health of their populations.

Whether the questions are addressed through systematic research or whether systems continue to

evolve through a series of natural experiments, the role of data within those systems remains constant. High quality, integrated data help managers make informed decisions about how best to apply the available resources. While many demands operate at the time of these decisions, the final judgment must be whether the data systems lead to improvements in patient care. The MHSIP is an effort to encourage the development of these decision support systems because of the belief that the information they yield has the power to produce these changes.

Summary

The concept of an integrated decision support system at the auxiliary level presents an entity with challenges of substantial proportions. In addition to the challenge of analyzing the current position of the entity's information system, it must decide upon a goal and direction if it wishes to pursue an integrated system. A set of factors is presented that assists a glven entity to analyze both of these concerns. These factors also help the auxiliary level target selected subsequent behaviors that are especially relevant to the organizations with which it relates. An additional set of considerations concerns auxiliary level entities themselves. Of significance is the p05sibility that the factors contributing to movement toward an integrated decision support system at that level can be identified. A preliminary listing of independent variables, i.e., those that influence this movement, and types of dependent measures that allow for differentiation of each identifiable stage are offered.

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1. For purposes of this document, leadership and management are differentiated. leadership seems a rarer commodity than management. Through their vision about desirable new directions, leaders are able to marshal and inspire others to move in the direction of this vision. It seems quite difficult to conceptualize management information or decision support Systems that foster this leadership role. However, when leaders become implementors concerned about translating their visions into actions, they also need to become managers. The text demonstrates why.

2. Planning is frequently identified as a management action. Since planning, whether strategic, long-range, or short-term, usually involves altering the distribution of current resources and/or the targeting of new resources, it can be viewed as the intersection of two other management actions. In addition, good planning would also seem to involve some degree of leadership, as noted in footnote 1. As a consequence of this kind of multiplicity, planning is not identified as a unique function in this approach. It is an amalgam of other actions.

3. Although this publication is out of print, recognition is given to the Southern Regional Education Board for supporting the original work, and especially to Mr. Len Meshak who demonstrated the value of these definitions to the field and developed a conceptual paradigm for their presentation, which was useful to the current report.

4. Later chapters will show that this would not be particularly meaningful because the units of measurement would differ by program element and would, consequently, not sum to a common

metric.

5. Since the focus has been narrowed to the clinical conduct of the mental health organization, the pmperty management area will not be dealt with. The '~here" in the paradigm refers to the physical setting in which the activity occurs. This might be a facility clinic, the street, the client's home, etc. Also of note is that this listing does not address program impact, which does not match a resource area. Instead, program impact o"erlaps with a management action, viz, assessment.

6. An alternative might be the design of unique Systems around each of the five management actions. While conceptually possible to design such Systems, in practice it would be quite difficult; no such approaches are known. The difficulty stems from the fundamental nature of management actions: They are both sequential and interactive. A manager can begin with an acquisition action, but quickly detect (monitor) that it is not going well (assess). Thus, under such an approach, the boundaries between these action SystemS are difficult to specify inways that would have real behavioral consequences.

7. The two terms are used interchangeably and without differentiation. Generally, it is recognized that patient is the more compatible term for those under inpatient or residential care; client then refers to those receiving seMces in other program elements. Other interpretations are possible and should be made in keeping with clinical orientations.

8. 2 For the service.provider level, an episode of care should be regarded as the period of contact bracketed by the date of admission organization and the date ot discharge, termination, or death of the patient. The episode of illness is not addressed by the MHSIP. That is, routine decision support systems are not expected to track the onset of symptoms, cycles of intensity of symptoms or dysfunctioning of the patient, or the subsidence or disappearance of the illness. Entries in the clinical record may make note of these characteristics of the illness episode, and they may be of substantial use in research. However, it is felt the decision support system data should be confined to information about the organization's contact and service to the patient during an episode of care.

9. 3 For hems 9, 10, 11, categories from the 1990 U.S. Census are used, so that the data are comparable with ligures available from the census

10. These categories can be mapped onto the categories proposed for the 1990 Census questions on working during the past week.

11. Activities to be recorded include all activities and transactions that fall under the rubrics of direct service events, adjunctive service events, and consultation service events. These are defined in the minimum data set for this component. All other unaccounted staff time in these categories would be defaulted to administrative and support events defined in the text.

12. The sequence of the items in this section approximates how they might be laid out on a staff log or activity ticket.

13. Organizations that provide only personal care services or particular types of personal care services to those with mental illnesses (such as room and board settings, overnight shelters for the homeless, or single resident occupancies) should be excluded, using the definition of a mental health organization provided in chapter 2.

14. FTEs are calculated by dividing the total labor hours by a figure felt to be representative of full-time employment. Total labor hours should consider the full human resources complement of the

organization or some explicitly defined portion of it. One convention is to use the total hours scheduled for a week. The definition of full time varies according to practice, contract, or law; it is strongly recommended that when calculating FTEs for comparison with other data derived through the MHSIP, 40 hours uniformly be used for the denominator. This will help to ensure that statistics are comparable when they are expressed as FTEs.

15. See chapter 6 for definitions of event types. These pro'de definitions of the listed functions.

16. The members of the MHSIP Financial Data Set Task Force were Ulla Albridge, Tennessee; Rand Baker, Oklahoma; Colette Croze, Illinois; TrevorHadley, Maryland; Douglas Kettle, Utah; Cecil R Wurster, NIMH; and William ZelIman, Universityof North Carolina. Considerable credit is owed to this group and the quality of their recommended data standards for financial data.

17. Although it is recommended that revenues and support, as well as expenses, be available by program element, a prescribed method for allocating revenues and expenses to each program element is not provided. It is recognized that reliability of the financial data is possible onlywhen there is a rational, explainable method for assigning revenues and expenses to programs. However, Ihe amount of effort required to mandate a single allocation methodology and to assure uniform reporting would be beyond current MHSIP capability. This does r'ot minimize either the importance or desirability of consistent revenue or expense allocation. It does suggest that, for the present, the men al health field must rely on agencies to choose and responsibly apply a systematic method for cost allocation.

18. The difference between accounts receivable less adjustment for doubtful accounts is the "net accounts receivable."

19. Where an organization's accounting system does not account for first- and third-party revenues by program element, it is recommended that a rational, explainable method be devised for this purpose and that the total of these revenues be allocated to program elements. A uniform method of allocation is not provided as a standard in the MHSIP at this time.

20. This nomenclature is nonstandardized. Virtually every evaluation text presents its own categorization of evaluation areas. The ones presented here can be renamed or compartmentalized both more finitely and more grossly. They have been chosen to accommodate the management model presented in chapter 1.

21. For items 9, 10, and 11, categories from the 1990 U.S. Census are used so that the data are comparable with figures available from the Census.

22. These categories can be mapped on to the categories (or the 1990) U.S. Census questions on working during the past week.

23. Organizations that provide only per'sonal care services or particular types of personal care services to those with mental illnesses (such as room and board settings, overnight shelters for the homeless, or single resident occupancies) should be excluded by the definition of a mental health organization provided in chapter 2.

24. FTEs are calculated by dividing the total labor hours by a figure felt to be representative of full-time employment The definition of full time varies according to practice, contract, or law. The MHSIP recommends that when calculating FTEs for comparison with other data derived through the MHSIP, 40 hours uniformly be used for the denominator. This will help to ensure that statistics

are comparable when they are expressed as FTEs.

FTEs are calculated by dividing the total labor hours by a figure felt to be representative of full-time employment The definition of full time varies according to practice, contract, or law. The MHSIP recommends that when calculating FTEs for comparison with other data derived through the MHSIP, 40 hours uniformly be used for the denominator. This will help to ensure that statistics are comparable when they are expressed as FTEs.

25. Inclusion or this category is in recognition of an emerging specialty profession. Training programs are established and accredited that matriculate clinical mental health counselors as a unique professional group. Increasing numbers of them are being identified in the specialty mental health sector.

26. See chapter 15 for definitions of these event types.

27. Model II also provides integrated data, but as reports containing specific combinations of two or more data components. The range of possible combinations is shown in exhibit 6 in chapter 12. All of the identified possibilities would have to be available at the auxiliary level for Model I! to meet the definition of fully integrated. Although this is an operational possibility, it was felt that the result is an unwieldy set of data. If the auxiliary entity deals with only a small number of organizations, a situation dealt with in the factor labeled coverage, this model may have its appeal. However, it is judged that Model II does not adequately meet the intent of the fully integrated condition at the auxiliary level because of the inherent inefficiency of manipulating the reported data.