



**Minnesota Community Mental Health Center  
Management Information Systems and  
National Data Standards**

*" . . . a primary stimulus to providing better systems to care for the mentally ill is decision making by managers to make informed and rational changes. Data describing the operation of their organizations are a critical input to these decision makers. 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."*

From "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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**MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT**

The Department of Human Services would like to acknowledge the cooperation and participation in this study by the following community mental health centers. The Department appreciates the time and effort put forth and recognizes the expertise these centers continue to contribute to the Minnesota Mental Health Statistics Improvement Project.

Blue Earth County Human Services  
Central Minnesota Mental Health Center  
Dakota County Mental Health Center  
Five County Mental Health Center  
Hiawatha Valley Mental Health Center  
Human Development Center  
Human Services, Inc.  
Lakeland Mental Health Center  
South Central Human Relations Center  
Southwestern Mental Health Center  
St. Olaf Hospital Mental Health Center  
West Central Community Services Center  
Western Human Development Center

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## Introduction

The Minnesota Mental Health Statistics Improvement Project (MMHSIP) is funded by a Federal grant over three years beginning in October, 1989. Its purpose is to improve the capability of data, information, and decision support systems within Minnesota's mental health care system -- on the State level, county level, and provider level. While the grant addresses all levels within Minnesota's mental health system, Figure 1 summarizes the goal and objectives of the MMHSIP for community mental health centers (CMHCs).

During its first year, MMHSIP studied the information requirements and data systems of CMHCs in Minnesota. The study was coordinated by grantee staff with voluntary participation of thirteen community mental health centers. This document discusses the findings of the study and their relevance to management information systems (MISs) in Minnesota's community mental health centers.

This report does not present the detailed findings at each CMHC but, instead, a summary of those findings. It is hoped this summary, in conjunction with the discussion of management information systems presented in this report, will encourage further participation among CMHCs in efforts to improve mental health statistics in Minnesota.

The concept of a *Management Information System* (MIS) is central to this report. An MIS is the timely collection of accurate data and compilation of this data into meaningful information in the form of managerial reports<sup>1</sup>. Information systems and computers are different things. While computers are usually employed within an information system to increase productivity and efficiency, they are not requisite to an MIS.

**GOAL:** To provide more effective mental health care by incorporating national data standards, in the form of integrated data models, in the data systems of participating CMHCs, thereby improving the capability of the systems to support the management information, policy making, decision support, program evaluation, and research requirement of the centers.

**OBJECTIVES:**

- \* Identify information requirements of CMHCs.
- \* Identify national data standards useful to CMHCs.
- \* Implement useful national data standards in 3-6 CMHC data systems as prototypes.
- \* Demonstrate the benefits of national data standards at prototype sites.

Figure 1

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<sup>1</sup> Managerial Reports, Information Reports, and Statistical Summaries are used interchangeably.

The value of an MIS depends on several factors. The data it collects must be accurate. The manner in which it stores and retrieves data must be reliable. The information it produces must meet the needs of management. Going one step further, the MIS must benefit the organization and its clients. And, this can only be accomplished when management puts data-based information to use.

A distinction should also be made between an MIS and a "data system." In this report, a data system is a set of data collection, data storage, and reporting functions, usually computerized, that support any or all organizational functions, including production of management information, client tracking, invoicing, accounting, medical records, etc. The MIS is that part of the data system that serves the management function.

The information produced by an MIS does not replace the manager. It cannot make managerial decisions. Instead, the information provides support for decisions management must make. Managerial reports can provide the manager with both a current snapshot of events and a history of those events. Armed with this information, the manager can plan, acquire, allocate, organize, direct, evaluate, and control with more certainty of outcome.

## Role of the Community Mental Health Center

*" . . . it should continually be kept in mind as one looks at the performance of a program or a group of programs, that these are not islands that are isolated from the rest of the service system."*

*James W. Thompson, M.D., M.P.H.*

For non- acute care psychiatric hospital services, Minnesota employs a State supervised / county administered human services system. While policies, minimum standards of service, and accountability criteria for publicly funded services are determined at the State level, each county determines the mode of service implementation. For provision of outpatient and community support services to adults with mental illness and children with emotional disturbances, the counties rely predominately upon community mental health centers (CMHCs).

Figure 2 depicts the relationship between the State government and CMHCs in Minnesota. The Department of Human Services' Mental Health Division works closely with the Legislature to provide statewide planning, resource development, standard setting, consultation, and quality assurance for a full array of mental health services for both adults and children. The Mental Health Division then implements the Legislature's public policy and funds for mental health care. Most of these funds are then distributed to the counties that, after adding local funds, contract with CMHCs to provide needed services. In addition to local funds raised by the counties and the state funds distributed through the counties, CMHCs also receive funds directly from the state for MA/GAMC reimbursed services. Thus, while public policy and funding is generated by state government, local government and CMHCs link local service needs to these policies and funding streams.

Therefore, CMHCs occupy a key position in the Minnesota model for mental health care. The CMHC both assures accessibility to mental health care and provides expertise in treating mental illness. In addition, counties oftentimes turn to the CMHC for help in local planning to determine the best procedures for serving persons experiencing mental illness.

Because the CMHC is a primary vehicle for delivering professional mental health care, effective and efficient management of the CMHC is vital -- any increase in effectiveness at the CMHC level is immediately realized by its clients. Improving either the effectiveness or the efficiency of a CMHC yields a high return when measured as improved mental health care. Thus, the importance of having complete, accurate, pertinent, and timely

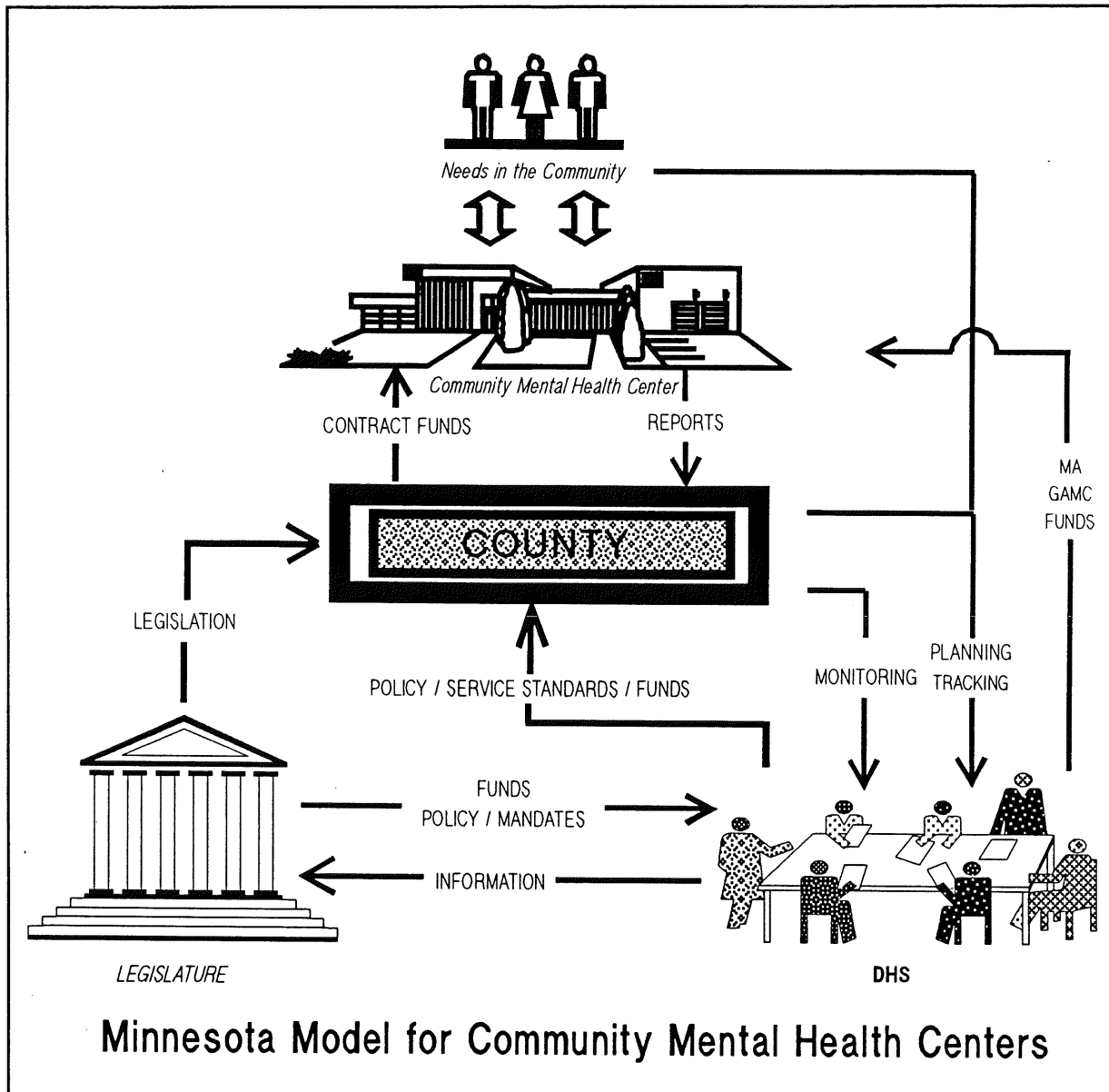


Figure 2

information available cannot be overemphasized. Such information supports management policy; assists in operations; improves planning, evaluation, and control; and affects the mental health care provided residents of the State. A Management Information System capable of supplying this kind of information is, therefore, an important asset.

## Current Status of Management Information Systems in Minnesota's Community Mental Health Centers

*"We are entering into a computing-intensive micro millenium, and mental health clinics and services will never be the same again."*

*C. Evans, M.S.*

### *DATA AND INFORMATION FLOW IN CMHCs*

Data, information, and decisionmaking are the central nervous system of modern organizations. These three interrelated but distinct parts of the system, however, are often confused. Data are individual facts, numbers, descriptors, measurements, et cetera, referring to or describing a specific object, idea, event, or condition. While data are basic elements of information; they are unassembled, unprocessed, and frequently unrelated. Data are limited to describing only one small part of a larger complex situation.

Information is produced when data are assembled, processed, and related in a meaningful way. An example would be assembling data (each client that met with a therapist, the DSM for each of these clients, when the sessions occurred, the outcome of the treatment) into information relating how many bipolar depression clients the center helped during the past quarter.

CMHC managers make decisions based upon available information. After a decision is made, further information is needed to evaluate the appropriateness of the decision. Thus, information needs and decisions become interdependent. Information, especially good information, does not simply pop into existence on the decisionmaker's desk whenever needed, however. It is thoughtfully produced in another part of the organization and flows along designed pathways until it reaches its destination.

Information flows from one location to another whether the CMHC has a MIS or not. By installing a *formal* MIS, the CMHC assures a regular flow of information that is both useful, accurate, and timely for making decisions.

Figure 3 contains a diagram of the flow of services information in a typical community mental health center. Because much of the activity in a CMHC is client-oriented, the therapist plays a central role in both gathering data and forwarding information. Initially, a new client will meet with support staff to complete intake forms. The data supplied by the client on these forms is collectively given to the therapist. The therapist then combines this



intake data with other data he/she collects to assemble information about the client. On an on-going basis, the client meets with the therapist(s) to discuss concerns, problems, direction, and progress. These sessions provide the therapist with even more data to be processed into meaningful information. However, without a formal MIS, information about clients and their sessions may never reach the managers responsible for making decisions directly affecting the availability of therapists' services and indirectly affecting outcomes of the clients' sessions.

Non-client oriented information exists within the organization as well. Human resources, or personnel, obtains and stores data on employees. This includes such data as earnings, education, and licensure. Again, without a formal MIS, information on the characteristics of staff may not accurately reach management -- especially information regarding who is treating whom.

The accounting department maintains data as well. Much of this numerical data, when viewed collectively by management, provides

information on how well the organization is performing financially. By integrating accounting data into the formal MIS, the information produced can provide management with costs associated with the services clients receive and with the staff providing them. Thus, our earlier example (bipolar depression clients the center helped during the past quarter) could also include information relating the costs, by therapist, for treating patients with this disorder.

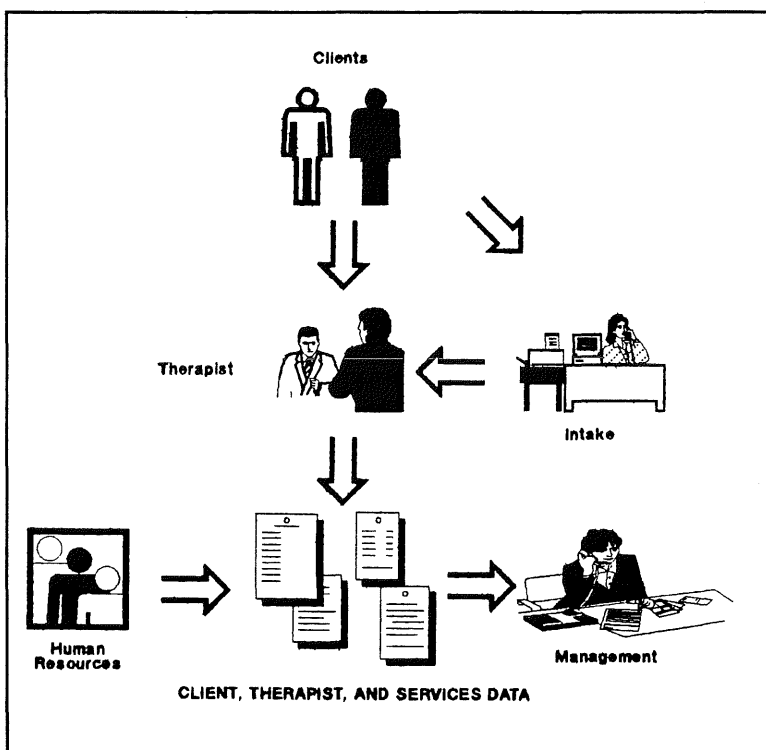


Figure 3

*ELECTRONIC DATA SYSTEMS*

Minnesota has twenty-seven community mental health centers. Thirteen of these centers are participating in the Minnesota Mental Health Statistics Improvement Project. During 1990 project staff visited seven of the participating centers to collect information about their data systems. Of the seven centers visited, no two have the same hardware or same software, and all vary in the types of data collected and the extent they process these data into information. As a result, the information provided as support to management varies among these seven centers.

The degree of computerization among participating CMHCs is also varied: from using a personal computer for occasional word processing to having multiple terminals on-line with a powerful mainframe and in-house programming staff.

Of the thirteen participants in the project, one CMHC has a mainframe computer system. Ten participants are operating minicomputer systems with multiple, on-line terminals and the remaining two participants are operating microcomputer systems. Of these latter two, one is not using their micro-system for maintaining mental health data and the other is preparing to change to a minicomputer system.

Figure 4 shows the relationship of computer system to type of software for all thirteen participants. 'Packaged' indicates a pre-existing software package that may have been customized for the specific center.

'Subcontracted' indicates the center hired a programmer to write software unique to that center's operation. 'Own staff' also signifies unique software was written for the center, but in this case by an employee.

'Not applicable' means the center is not presently using a computer for MIS purposes.

SOFTWARE	MAINFRAME	MINI	MICRO
Packaged		2	1
Subcontracted		6	
Own Staff	1	1	
N/A	1		1

Figure 4

Recent advances in the technology of microcomputers has made the upper bracket of today's micro comparable in power and ability to some of the older minicomputers currently being used. Thus, some CMHCs may be considering upgrading their hardware from an older mini to a newer, upper bracket microcomputer. However, two problems arise. First, software prepared for a minicomputer cannot readily be transported to a microcomputer system. If a center were to purchase a microcomputer (even if more powerful than their

existing minicomputer), software the staff is accustomed to using would have to be replaced or rewritten. This is expensive from both a programming and a retraining perspective.

Second, a center wanting to upgrade their present minicomputer system would find it needs a more powerful system than today's sophisticated microcomputers. That is, the fact their present, though older, minicomputer system is becoming inadequate implies the small gain available with a sophisticated microcomputer would still be insufficient for the center's actual needs.

For the above two reasons, it does not appear feasible for a center with an older minicomputer to 'upgrade' to a state of the art, micro-based system. Rather, if CMHC managers deem their present minicomputer system inadequate, they will need to consider a newer, more powerful minicomputer. Also, the center may want to ensure that the replacement hardware will run their existing software. Then, rather than writing an entire software program, the center may consider only programming additional updates to the current software.

#### *PRESENT USES OF ELECTRONIC DATA SYSTEMS*

Typically, the first reason for installing a computer-based data system in a community mental health center is for billing purposes. Once billables are handled efficiently on the computer, the center progresses to a relatively complete accounting package. When accounting is installed and running on the computer, the typical CMHC then begins to consider using the computer for statistical purposes as well. The final stage of development is addition of a complete, integrated Management Information System.

There are tangible reasons for this progression. The direct costs of the computer system can be compared to the direct impact it will have on cash flow -- billings. Then, the management of finances -- accounting -- becomes a consideration. The hardware has already been purchased and the cost for adding accounting is relatively small. It is after financial control has become routine that the organization can begin to look for additional uses of their computer. These uses are less tangible -- such as generation of statistical information to support management decisionmaking -- but equally important to the future and success of the organization.

Figure 5 shows the number of participants in MMHSIP using their computers at each of five stages of development. A majority of the CMHCs, twelve of thirteen, are using a

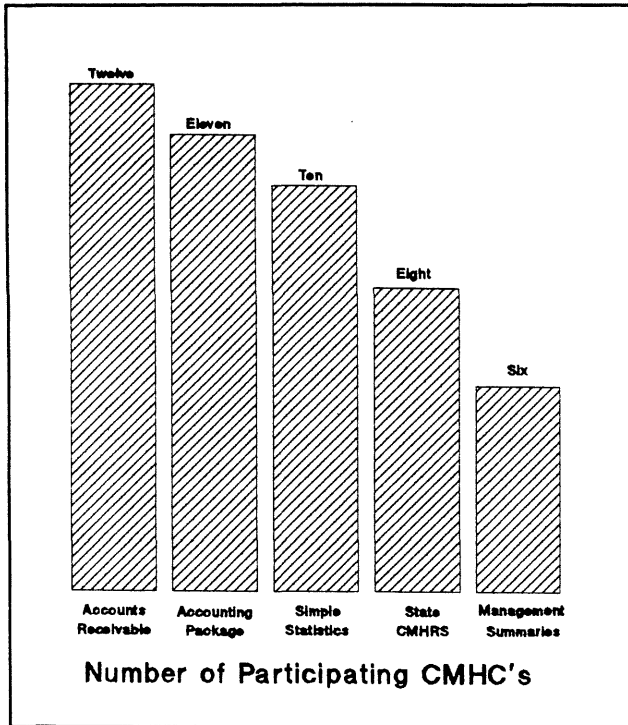


Figure 5

computer for billing. Nearly as many have computerized their accounting functions. However, only six of the thirteen participants are routinely generating a variety of summary statistics for use by management.

Mention should be made, however, that while only six participants regularly generate a sophisticated variety of management reports, many of the other participants have reached the stage where the decision has been made to advance computerization to include MIS. These centers have discovered the capability of their data systems to produce management information, and must now apply their resources towards this end.

#### DATA COLLECTED AND THE DEGREE OF INTEGRATION

Data needed for managerial reports can be classified into four types: Human Resources, Client, Service Events, and Financial data. However, it is the *interdependency* of clients, staff, services, and costs influencing the performance of a community mental health center. Therefore, in addition to which data are being collected by CMHCs, the extent these data are integrated within the MIS was also reviewed during the MMHSIP site visits.

Data collected on clients is relatively consistent across community mental health centers in Minnesota. Twenty-three common items of client data are collected by over seventy percent of the sites visited<sup>2</sup>. Each site collects additional data items, but these vary across the centers. Eighteen of the twenty-three common items are integrated by eighty-three

<sup>2</sup> Client I.D., Status, Latest Admission Date, Date of Discontinuance, Program Activity, Gender, Date of Birth, Race, Hispanic, Marital Status, Geographic Local, Admitting Problem, Admitting Diagnosis, Subpopulation, Eligibility for Aid, Referral Source, Prior Services, Residential Arrangement, Payment Source, Discontinuation Status, Therapist, Case Manager, Last Update.

percent (or more) of the sites with computer-based MISs. (See Appendix A for a listing of the NIMHs recommended client data elements.)

A service event is characterized as a transaction between a staff member and a client. This may be a face to face activity, a significant action by a staff member on behalf of a client, or an activity by staff to facilitate services for a client. Of the ten service event data the NIMH defines as the minimum dataset for events (see Appendix B), eight are collected by all the centers visited. More importantly, six of these eight fields<sup>3</sup> are integrated by five of the six sites with computer-based MISs.

Of the three non-financial data types collected, human resources is least integrated. For the seven site visits, only staff name and identification number are consistently integrated. While the majority of the visited CMHCs also collected license status, starting date, and profession; only two centers could access these additional data via computer and incorporate them into their management reports. For a complete listing of the human resource data elements the NIMH recommends integrating into the MIS, see Appendix C.

Since most computer systems in the CMHCs were initially installed for billables and quickly adapted to handle accounting functions, the MMHSIP elected not to attempt installation of accounting data standards but, rather, to incorporate existing accounting data into an improved Management Information System. Standardization of accounting data, due to the variety of accounting systems and the variety of services offered by the various community mental health centers, cannot be addressed by the project.

### *MANAGEMENT REPORTS*

The main product of a Management Information System is a set of statistical summaries frequently called managerial reports. It is towards this end data are collected and integrated.

The sophistication of the statistical summaries can often be traced to whether the MIS is an independent system or an integrated system. The difference between summaries from an integrated MIS and summaries of independent systems is the relationship between data types within the same report. Independent systems can provide separate listings of occurrences (frequency counts) for isolated data items -- such as cost category, therapist,

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<sup>3</sup> Date, Staff Member Reporting, Program, Other Clients Involved, Type of Event, and Duration.

client type -- but cannot substantially relate multiple data items to one another, as in cost per unit type.

Another example of a non-integrated system is program or service utilization. This type of system can list each service offered by the center and the units of service utilized. Or, for a particular program, units of service provided by each therapist could be shown. An integrated MIS could present the same information, but also cross-tabulate each program's services with: a) therapists grouped by training, expertise, age, gender, profession, or licensure; b) clients according to age, geographic region, gender, race, living arrangements, social settings, education, DSM, admitting problems, or treatments received; and c) referral or payment source. For example, an integrated system summarizing units of service for each program, by therapist and their training, for each referring source, including the amounts billed and staff costs encountered during last quarter is much more information than a simple frequency listing of units of service the center provided.

Minnesota CMHCs vary in both the capability to generate statistical summaries and in how they use these summaries. Figure 6 illustrates the distribution of MIS

statistical summaries regularly generated by the centers participating in the MMHSIP. The first block represents two MIS systems relying on manual generation of management statistics. The second block depicts three centers having computer-based systems with independent, rather than integrated, data bases. The third block represents two centers having some integration of their databases but with limited capability. The fourth block represents the centers having MISs integrated between clients, events, and human resources. These six are separated into two groups, however.

Three of these centers regularly generate six or more integrated reports for management's use. However, three of these six centers capable of generating integrated statistical

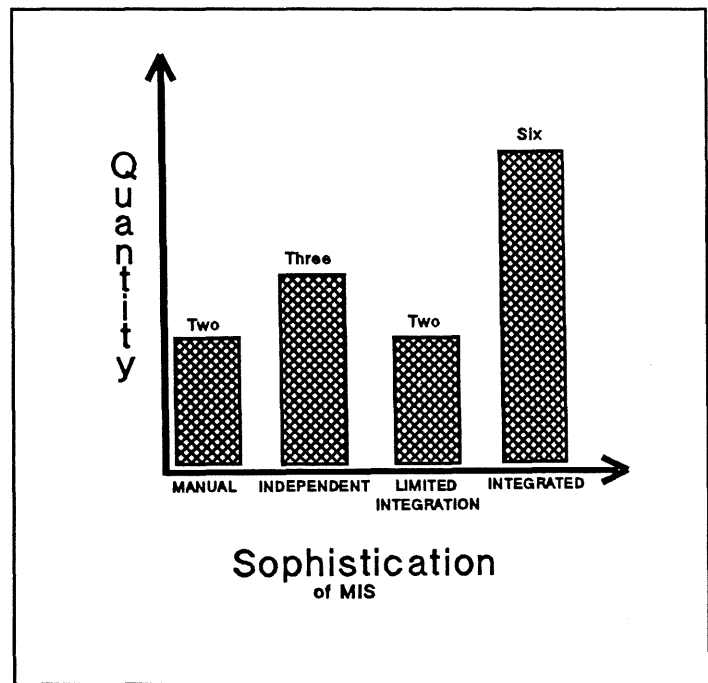


Figure 6

summaries, are doing so on a minimal basis (less than four integrated, management reports regularly generated and reviewed).

Of the seven site-visited CMHCs, six had computer-based MIS systems. The balance of this section refers to these six computer-based systems.

All six centers generate an Appointment Summary. This statistical summary is primarily a listing, by therapist, of their appointments. Its use is usually limited to the therapists, but in some centers it is reviewed by management as well.

The next most popular statistical summary (generated by five of the six centers) shows time and effort in the direct and indirect categories. This provides information on staff members and how they spent their workweek. Occasionally the report is generated showing the hours by program type -- a listing, by therapist, with number of hours devoted to each program. However, more frequently the report shows the number of hours each therapist devoted to direct (billable) versus indirect (non-billable) tasks. Two of the centers include with this information the dollar amounts billed by each therapist during the report period.

Complementing the time and effort report is a summary of units of service. This summary, usually broken down by therapist, lists the types of programs and number of clients or hours of services provided by the center.

Two-thirds of the visited centers generate a summary of clients. Age, race, program enrollment, county of financial responsibility, residence, payment source, and gender are the most commonly reported statistics in these client summaries.

In addition to the above, each center generates summaries unique to that center. Some of these unique reports are: Log of Phone Activity (by gender, age, and type of call), Services Provided (by facility, by department), Client Eligibility, and Appointment No-Shows. However, only half of the site-visited, computer-based centers can easily generate a Client Profile listing all services (including staff, date, location, and type) a given client has received during a specified time frame.

Not only are the types of statistical summaries generated of interest to MMHSIP, but the specific indicators used to interpret these summaries are also important. For the wide array of decisions managers must make, an almost equally wide array of performance indicators exists. For example, while number of clients currently enrolled is useful information, knowing the history of enrollments and discontinuances adds to the base of knowledge needed to understand the current status of enrollment.

Common to all centers is reliance upon three indicators for statistical summaries: number of sessions per time period, number of clients per time period, and hours of service

per time period. Noticeably missing, or very infrequently used, are the following: mean time enrolled, number of new enrollments, mean time between appointments, number of cases discontinued, proportion of clients types, inactive clients, proportionate distribution of diagnoses, change in GAF (Global Assessment of Functioning Scale) and percent of available time. Adding these dimensions to a manager's available information would enhance the base of knowledge needed to understand and direct the center's business.



## Information Requirements of Community Mental Health Centers

*"Managers of mental health programs at all levels have come to recognize the importance of complete, accurate, and timely information."*

*Cecil R Wurster, NIMH*

### *THE MINNESOTA CMHC INFORMATION REQUIREMENTS SCALE*

The MMHSIP developed the *Minnesota CMHC Information Requirements Scale* (MCIR scale) to identify the types of information most useful to Minnesota CMHCs and the extent that information is available. When known, these additional information requirements would inform the project about the extent of systems improvement needed and the precise data content that must be added.

A search of the literature led to development of a list of possible information categories a CMHC might find useful for decisionmaking. This search included literature on CMHCs, on MISs, and on management theory.

Next, directed interviews were held with business managers and executive directors of six community mental health centers. This was done to further refine the information categories and confirm their relevancy. MMHSIP staff then developed a final listing of relevant categories from which a measurement instrument could be designed. The purpose of this instrument was to quantify the level of need among centers for each category, or type, of information.

The MCIR scale contains twenty-eight (28) categories of information. These are shown in Figure 7 in the form of management questions, or queries. Each query addresses an independent category of information and is scaled by the respondent on two dimensions: 1) its current *availability*, and 2) its *usefulness* for managing a CMHC. Two four-point scales are used with each query -- one to measure availability and the other to measure usefulness.

The MCIR scale was mailed to the thirteen community mental health centers participating in the MMHSIP project. Eight centers responded with completed scales. These eight represent over thirty percent of the total number of CMHCs in Minnesota.

The MMHSIP determined it would focus on those queries with high usefulness and low availability -- the area where improvement is most needed.

THE MINNESOTA  
CMHC INFORMATION REQUIREMENTS SCALE  
QUERIES

1. From where/whom are clients referred?
2. Why do clients come to your center, rather than go to other providers?
3. What types of clients are being treated at your center?
4. Which staff treat which types of clients?
5. How much treatment do clients receive?
6. How efficiently are clients being treated?
7. What are the patterns of staff turnover?
8. Who pays for the treatments, and in what proportions?
9. Why are services to clients discontinued?
10. To where are clients referred?
11. How efficient and productive are staff?
12. How do staff use their time?
13. What is the client load for each therapist?
14. Are enrollments increasing or decreasing?
15. What is the proportion of direct to indirect services?
16. How much are various services being used?
17. Was the last community awareness effort successful?
18. Is the center addressing the catchment area's needs?
19. Is the center providing reasonably equal access to all types of people?
20. Which treatments are more effective?
21. What is the revenue contribution for each therapist?
22. What are the projected revenues/costs for next month?
23. What is the staff cost for different illnesses?
24. Do we meet state licensure requirements?
25. Are we providing quality services?
26. Are programs units receiving adequate resources?
27. Are any programs out of compliance with state law or regulation?
28. Do our clients have service needs we are not able to meet?

*MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT*

**Figure 7**

***FINDINGS: AVAILABILITY OF MANAGEMENT INFORMATION***

The results of the Minnesota CMHC Information Requirements scale indicate that, typically, two out of three community mental health centers find each category of information, answers to each query, difficult to obtain.

Staff information most frequently available in CMHCs includes: revenue contribution for each therapist, how staff time is utilized, case load, and productivity. In contrast, no

respondents are currently able to generate information on staff cost by differing types of client mental illness.

Client information includes: where clients come from and why, how many and which services they receive, and the status of the client in addition to the direction provided the client at discontinuance. None of

Availability of this Information

- o Presently not available
- o Available, but difficult/timely to generate
- o Easily generated but not being used
- o Regularly generated and used for decision making

**Availability Selections for Each Query**

the respondents regularly generate information on why clients choose their center rather than another provider, on whether clients have service needs the center is unable to meet, on why service is discontinued, or on where clients are referred. Only one center regularly generates information on how efficiently clients are being treated. However, half the respondents generate information regarding the types of clients being treated and how those clients are paying for their services.

Three queries address information relative the catchment area. Seven of the respondents indicate information on the success of community awareness efforts is not available. For information about whether the center is addressing the catchment area's needs, three report this information is not available and four find the information is available, but difficult to generate. The query for information indicating whether the center is providing equal access to all types of people received varied responses -- two regularly generate this information, two can easily generate this information but do not use it, one states the information is available but difficult to generate, and three of the centers find this information is not available.

All centers that completed the MCIR scale report they are able to generate information indicating how much treatment clients receive. However, seven indicate they are unable to generate information about which treatments are more effective, and only two regularly generate and use information on which staff treat which types of clients.

Government-related information queries include information for licensure and information on compliance with state law or regulation. While two of the centers responded they regularly generate information on meeting state licensure requirements, two others are unable to meet their compliance information needs.

Queries for operations information demonstrate the variance between centers. Six centers regularly produce information on enrollment trends. However, only one does so for the quality of services being provided. While seven find information on which treatments are

more effective not available, four of the responding centers regularly generate statistics on how much various services are being used.

Financial information is limited to two queries. Four respondents regularly generate projected revenues/costs for next month and three are unable to generate this information. In response to the query for whether program units are receiving adequate resources, three centers regularly generate this information, three find it available but difficult to generate, and two report this information is not available.

The overall scale was also reviewed for internal versus external patterns -- information on staff and operations versus information about clients, the catchment area, et cetera. For availability of information, however, no pattern was evident.

### *FINDINGS: USEFULNESS OF MANAGEMENT INFORMATION*

While availability of information is important, it is necessary to review which information is useful for decisionmaking before determining how well information needs are being fulfilled.

Of the twenty-eight information queries in the MCIR scale, only two received any indication they would not be used if available. One respondent indicated knowing which treatments are more effective would not be useful to management. Also, one reported staff cost for different illnesses would not be used.

For eight of the ten queries for information about staff, all indicated the information is either important and useful or occasionally would be useful. One of the respondents felt information on patterns of staff turnover is interesting, but mostly out of curiosity. Four indicated information on staff cost for different illnesses would either not be used or used mostly out of curiosity. Which staff treat which types of clients, quantity of treatment staff provides, efficiency of treatment, staff productivity, time utilization, case loads, direct versus indirect hours, and revenue contribution by staff member were considered to either be occasionally useful or important and useful for decisionmaking by all of the centers.

#### Usefulness of this Information

- o Would not be used
- o Interesting, but mostly out of curiosity
- o Occasionally would be useful
- o Important and useful for decision making

#### **Usefulness Selections for Each Query**

Client information queries deemed useful or important by all centers completing the scale include: client referral sources, types of clients being treated, treatment clients receive, efficiency of treatment received, and do clients have unmet service needs. Seven of the respondents reported reasons why services are discontinued would be either occasionally useful or important and useful for decisionmaking. Six respondents felt knowing why clients come to their center rather than go to other providers, and where clients are referred, would be either occasionally useful or important and useful.

Knowing the success of community awareness efforts, knowing whether the center is addressing the catchment area's needs, and knowing if the center provides reasonably equal access to all types of people, were useful to all centers that completed the scale.

The information queries relative treatment process were deemed occasionally useful or important and useful by a minimum of seven of the respondents. However, one indicated knowing which treatments are more effective would not be used. Also, one center reported only curiosity about why services to clients are discontinued.

For government-related queries, all the respondents agreed information indicating compliance with state law or regulation is important and useful for decision making. Also, seven respondents felt knowing whether the center met state licensure requirements is either occasionally useful or important and useful.

Seven of the MCIR respondents felt knowing whether program units are receiving adequate resources to be important and useful for decision making. And, all wanted to project next month's revenues and costs.

### *SUMMARY OF THE RESULTS*

Interpreting results of the Minnesota CMHC Information Requirements scale involves addressing the relative difference between information availability and usefulness. Information queries that are easily generated but would not be used, are not attractive targets for system improvement. Conversely, difficult to generate information which is important and useful for decisionmaking is where MMHSIP should focus its efforts. Figure 9 shows how availability and usefulness ratings of information requirements come together to define the area of MMHSIP activity. This is the area of shaded cells.

The area of focus can be divided into two categories of information requirements: Category I and Category II. Where there is a maximum difference between usefulness and

availability, the queries fall into Category I. Category II addresses those queries with a less dramatic difference.

Figure 8

	Not Used	A Curiosity	Occasionally Useful	Is Important and Useful
Not Available			II	I
Difficult to Generate				II
Easily Generated				
Generate Regularly				

*Category I:*

Responses from five of the centers put two queries into this category. They are:

Which treatments are more effective?

Do clients have service needs we are not able to meet?

Three of the centers put four additional queries into this category:

Was the last community awareness effort successful?

Is the center addressing the catchment area's needs?

What are the projected revenues/costs for next month?

What is the staff cost for different illnesses?

Two centers would also add the following queries to Category I.

Why do clients come to your center rather than go to other providers?

How efficiently are clients being treated?

Why are services to clients discontinued?

To where are clients referred?

How much are various services being used?

Is the center providing reasonably equal access to all types of people?

What is the revenue contribution for each therapist?

Are we providing quality services?

Are any programs out of compliance with state law or regulation?

*Category II:*

Five centers put one query into this category.

What are the patterns of staff turnover?

Four centers would add these queries to Category II:

Why do clients come to your center rather than go to other providers?

What types of clients are being treated at your center?

Which staff treat which types of clients?

How much treatment do clients receive?

How efficiently are clients being treated?

Are we providing quality services?

Are any programs out of compliance with state law?

Three center's responses also place the following queries in Category II.

From where/whom are clients referred?

Who pays for the treatments, and in what proportions?

Was the last community awareness effort successful?

What is the staff cost for different illnesses?

Are program units receiving adequate resources?

Do our clients have service needs we are not able to meet?

## Meeting CMHC Information Requirements

*" . . . [a data-based system] is a set of procedures for continually gathering and organizing information which will permit program managers to know whether they are moving toward goals as well as how they could improve the program. "*

*Homer J. Hagedorn, Ph.D.*

### *USING NATIONAL DATA STANDARDS*

The Minnesota Mental Health Statistics Improvement Project recognizes CMHC managers are interested in making improvements in their programs and want to do so by making rational changes based on good, data-based information about the operation of their programs. It is understood these improvements are targeted primarily toward realizing the goals of better service to clients and organization survival. Therefore, mental health center managers must remain cognizant of a variety of performance areas.

Improvements are brought about by managerial actions. These actions can be taken in any of the five resource domains of the human services model: *who* received *what* from *whom* at what *cost* and with what *effect*.

Because of the interacting nature of the resource domains, an integrated approach to the information system's design is preferred. For example, a change in staff (whom) can alter the effect or cost of service. A change in treatment methodology (what) can likewise impact costs and effects. A change in clients (who) could lead to change in treatments (what). And so on.

An integrated information system design allows reporting statistical information across the different domains, rather than exclusively *within* each domain. An example of this would be a report showing the types of services received by children during the previous quarter from each staff member. The alternative to the integrated system -- the independent system - - fails to readily examine relationships among the *who*, *what*, *whom*, *cost*, and *effect*. Instead, it is able to address only clients, or only events, et cetera, without reporting on their interaction -- such as *who* received *what* events from *whom*.



The data standards promulgated by the Mental Health Statistics Improvement Program (MHSIP)<sup>4</sup> define an integrated data system to address the CMHCs information requirements. By collecting these data elements (see Appendices A, B, and C for a complete listing of the elements.) on a regular basis, statistical summaries may be generated to provide management with indicators of the organization's performance and position.

By including elementary cost data in each staff person's records and relevant

outcomes data in each client's record, only three basic data sets need to be established to achieve a fully functional, integrated system. These data sets are: client data, event data, and human resource data.

The client database addresses the *who* part of the human services model. In keeping with current CMHC practices for collecting data, client data are collected during intake and then periodically updated. Data on the client's status, eligibility,

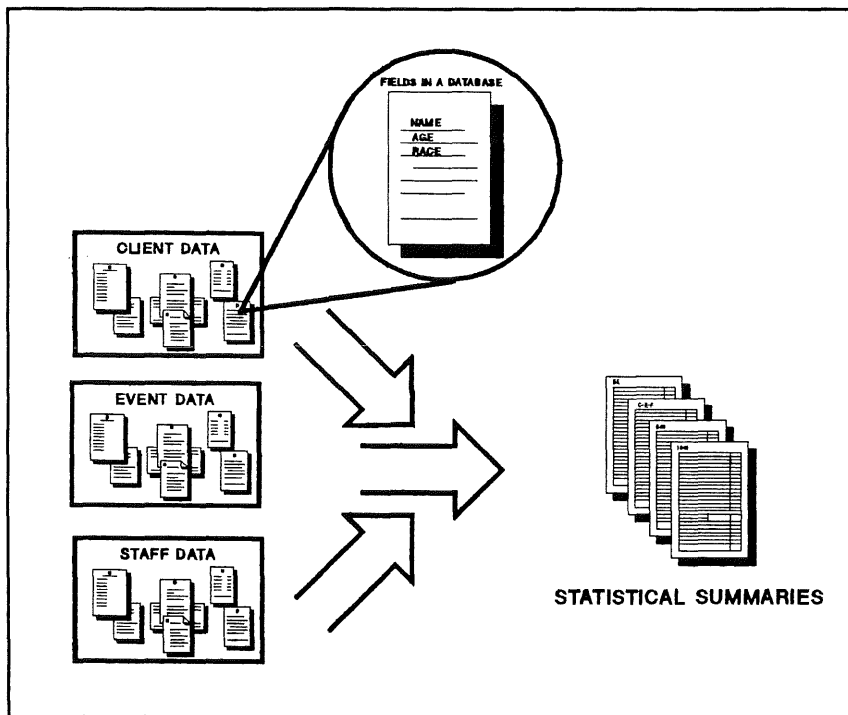


Figure 9

referral source, and history of prior services are recorded in addition to basic demographic data.

The event database is the mechanism that allows linkage between the clients and staff. It supplies data reflecting the activities and services -- addresses the *receives what* of the human services model. Event data are collected following each interaction of client and treatment providers. An interaction is characterized as one of three broad activities: A) transaction between a staff member and client, B) significant action by staff on behalf of a

<sup>4</sup> Data Standards for Mental Health Decision Support Systems, Series FN No. 10  
 U.S. Department of Health and Human Services; National Institute of Mental Health  
 Printed 1989

transaction between a staff member and client, B) significant action by staff on behalf of a client, and C) staff actions facilitating the provision of services to or on behalf of clients. The data collected includes date, program, client, staff member, type of event, duration, and location -- little more than that needed to generate a billing. This data is usually provided by the clinician or staff member involved following each occurrence of an event.

Human resource data are collected on each staff member when employment begins. This data can then be updated two to four times per year. The burden on staff for updating this data is minimal and likely contained in a personnel file.

### *STATE-RECOMMENDED MANAGEMENT REPORTS*

A crucial link between the MIS and management is the set of managerial reports (statistical summaries) that carry information from one to the other. Statistical summaries reduce the multitudinous data into a few basic numbers (indicators) management can grasp and apply to problems. They present information in a meaningful, understandable, and simple form. However, the indicators must be appropriate to the problem and the audience. Figure 10 contains a brief listing of some useful indicators developed by the MMHSIP.

Appointments
Number of Events
Number of Clients
Hours Service
New Admissions
Cases Discontinued
Change in GAF Scale
Open Cases
Direct Service Hours
Weeks Enrolled
Days Between Sessions
Billable Hours
Per Cent of Total Time

**Figure 10**

Selection of the indicator best communicating a picture of the situation being reported is important. Consider, for example, wanting information to infer staff under- or over-utilization (caseload). Many therapists, when their caseload becomes too great, have a tendency to continue working with all their clients. But, because of time constraints imposed by the increased caseload, are unable to schedule appointments for a given patient as frequently. When the client reserves time for the next appointment, a therapist with too high a caseload will not have an opening readily available. Thus, the client is forced to make their appointment later in the calendar.

Rather than using 'number of clients' as an indicator for utilization, perhaps average number of days between sessions would be a wiser selection. An example of this can be found on page 40 in Appendix D.

Appendix D contains examples of statistical summaries useful to a community mental health center. It is not intended to be an exhaustive selection of reports but, instead, to demonstrate the richness and variety of statistical summaries needed to effectively manage a CMHC. Included are both listings and cross-tabulated charts employing a variety of variables and a number of indicators.

Some summaries, such as the Client Profile, constitute a simple listing. An example of this summary can be found on page 36 in Appendix D. The client's name is printed at the top of the page, basic demographic and social data from the client's master record is printed next, followed by a listing of all services the center has provided, with dates and the staff members involved.

For many statistical summaries a cross-tabulation chart is the preferred means of presentation. One variable (database field) heads each column and another (often from a different database) is represented on each row. The cells at each of the intersections report the indicator (number clients, hours, sessions, et cetera.) management feels best portrays the information needed. For example, a summary providing information on how therapists have invested their time could have each column representing a staff member and each row representing a DSM IIR classification. If management's concern is information on revenue contribution, billable hours is a likely indicator. Such a statistical summary is presented in Appendix D on page 39.

Information can also be presented graphically. For changes over time, a graph presents information more effectively than a series of statistical summaries. An example of employing graphs to display trends would be utilizing a bar graph indicating new client enrollments for each of the past four quarters, as in Figure 11.

Occasionally a specialized statistical summary needs to be produced for a specific request. The Summary of Therapist Activity, listing the number of patients and billable hours by program type, would be such a report. This incorporates two indicators (number of clients and billable hours) into one report. An example of this dual-indicator summary is included in Appendix D (see page 42).

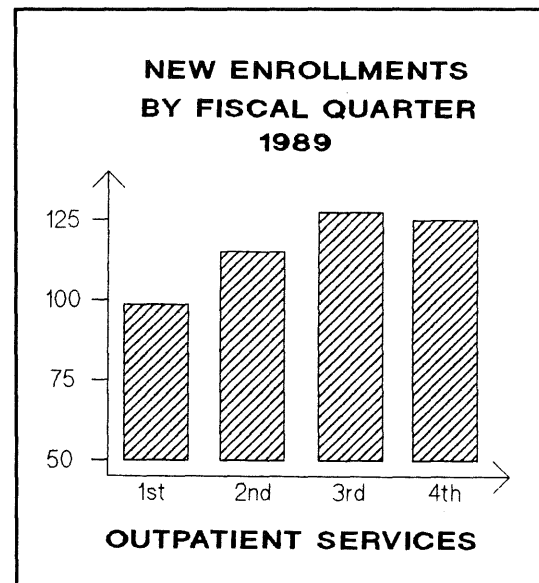


Figure 11

## Benefits of an Integrated MIS/DSS

*" . . . improvements occur mainly because decision-makers elect to make rational changes based on good, data-based information about the operation of their programs. "*

*Walter A. Leginski, Ph.D.*

A community mental health center benefits in two primary ways when it implements an efficient, adaptable, and effective management information and decision support system. One area is decisionmaking, in which risks can be reduced and effectiveness can be increased. The second area is that of competitive advantages gained through improved communications. These advantages increase the likelihood of acquiring new resources and of maintaining current resource levels and sources. Better programs also result from improved communications and constitute additional competitive advantages. Improved communication can occur both within the center and between the center and external agencies, including other service providers.

### *DECISION SUPPORT*

Decisionmaking defines the role of the CMHC manager. This is the individual whose performance rating and reputation hinge on the effectiveness and won-lost record of the decisions she or he produces. The risks involved in making decisions based on hunch and intuition, without reference to data-based information on key factors, are high. Even decisions based on political considerations and other nonquantifiable environmental factors can quickly turn against the manager when these factors change. Data, on the other hand, if skillfully collected and processed, provide a more solid foundation for decision and action. When those key decisions must be made, the type of integrated MIS/DSS discussed in this report can provide the manager with reliable data-based information .

Alternatives-testing is one type of decision support that can help the manager avoid bad decisions. With help from the MIS/DSS, the manager can gauge the likely results of alternative decisions beforehand, and select that option with the most favorable results. For example, when putting together an agency budget, the manager can ask the MIS/DSS to

Figure 12

show the levels of revenue and expenditure to expect under different staffing arrangements. This reduces the risk of producing a budget that cannot be supported by existing arrangements.



Improved decisionmaking can be approached both from internal and external perspectives. Internally, reduced risk means minimizing mistakes or the impact of mistakes. Reducing the number or the impact (size) of incorrect decisions increases managerial efficiency. Things get done quicker and better. This spins off into many other kinds of benefits, such as happier staff who feel spared from nonproductive managerial meddlings.

Another example of decision support. You are preparing next year's operations budget, and the board chair needs the number tomorrow. You need to find out fast what kind of staffing pattern resulted in last year's personnel costs, and from this project what costs under the new staffing pattern are likely to be in the upcoming year. You request a special report from MIS/DSS, in the form of a computer spreadsheet, that will show you last year's costs for each staff person, along with salary levels and time. The spreadsheet will also provide columns for adding the changes to staff, salaries, and time; and will compute the projected costs as soon as you enter the change information. Having an MIS/DSS that provides the historical information along with the means for inserting change information, and in the short amount of time typically available to decisionmakers, reduces both the risk of the projection being in error or, if in error, the probable size of the error.

MIS/DSS can improve decisionmaking capabilities in nonfinancial areas as well. An example of this would be using the system for evaluating staff utilization. The MIS/DSS contains data on staff responsibilities, scheduled and worked time, and qualifications, that can be quickly processed into information to inform decisions about future staffing needs, possible over- and under- utilization of existing staff, application of expertise, and revenue generation. The historical information makes changes to these staffing patterns more rational and more likely to be convincing and effective.

Reviewing staff performance and productivity information, provided by the MIS/DSS, places management in a better position to support its staff and recognize improvements in performance. Recognizing achievement by staff members is one tool to support job satisfaction. And, keeping productive employees content is a means to assure continued

meeting of the center's objectives. Without an adequate MIS/DSS management is often at a loss to determine which employees deserve special recognition.

MIS/DSS can also improve internal activity coordination by integrating different datasets. For example, by having both client data and event data in the system, feedback can be provided to the clinicians on such areas as service history, clinical status, socio-economic characteristics, and financial situation. If instead this information is scattered across various file cabinets, duplication of efforts among staff is more likely, unnecessary services may be provided, and considerable time could be lost to ineffective organization.

Spotting exceptional conditions that might lead to problems in the future is another way in which the MIS/DSS can assist the manager. With a formal MIS/DSS, integrated statistical summaries (management reports) can be made regularly available to managers who can use them to look for uncharacteristic patterns. The MIS/DSS itself can be programmed to do the looking, reducing the decisionmaker's job to reading the exceptions list on the report. This is a preventative or foresight function that keep things running smoothly for long periods of time, as opposed to fighting the fires of crisis day to day.

One important summary generated by a mental health care MIS/DSS would show the number of open cases for each therapist by length of time open (and DSM classification). While one may readily note caseloads from this summary, much more is communicated. The number of recent enrollments (cases open less than 90 days), would provide management with another tool for forecasting future revenue flow. That is, if enrollment during the past 90 days is significantly lower than for most quarters, management will be made aware, before the revenue stream is significantly affected, that this is happening. Efforts can then be made to protect the revenue stream before the situation becomes critical.

External to the organization, reduced risk / increased effectiveness of decisionmaking benefits the CMHCs clients. Information about where clients come from, types of clients responding to the community awareness programs, treatments provided clients, and the efficiency of those treatments improves decisionmaking and tends to lead toward better treatment programs, awareness campaigns, and responsiveness to needs within the catchment area. Without the MIS/DSS serving as a reality testor, decisions affecting the catchment area and the center's clients tend to be handled through speculation, conjecture, and traditional attitudes.

## *COMPETITIVE ADVANTAGES THROUGH COMMUNICATION*

Competitive advantages are gained by first providing better service, and then convincing others, especially sources of support, that you *are* providing better service.

Competitive advantages in the direct quest for resources can be obtained from the integrated MIS/DSS. Increasingly, funding agencies, consumers, governmental policymakers, and even prospective staff are looking for data-based evidence of program success. They are looking for "winners," and will no longer rely exclusively on good intentions and credentials. In this environment the CMHC competes with many single- and multi-service agencies for a limited amount of resources. CMHCs must learn to "speak the language" of the sources of support. This is becoming a language of data-based information and information technology. Information provided to these sources will be the kind of information they expect or it will not be "heard." Speed, through automation of the information producing process, will also be critical. These are the enhancements offered by the MIS/DSS, especially with the inclusion of national data standards.

Credibility and rapport with sources of support are the goal. Current persuasion theory suggests that success in raising funds is directly related to the presence of these conditions. Speaking the same data-based "language," like sharing the same cultural language, enhances credibility and rapport.

But the best arguments for support will come from hard evidence that the programs operated by the center are successful. Only a multi-faceted, integrated MIS/DSS, with data no less detailed than that provided by the national data standards, can provide this kind of information in an ongoing, systematic, reliable, and convincing way.

The benefits of improved communication extend beyond direct efforts to acquire resources, to areas like program development, program management and evaluation, planning, budgeting, and relationships with the governing board and with the public. All of these can provide more subtle competitive advantages than those discussed above. Not to be overlooked are the benefits to clients as programs steadily improve through better communications among those people and agencies involved in the development and delivery of services.

# Appendices



**Appendix A The Client Database Fields**

**Organization Identifier:**

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

**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.

**Unique client identifier:**

**Date of most recent admission to organization:**

Month, Day, Year

**Date of discontinuation/discharge/death:**

Patients who have had no program contact in 90 days should be administratively discontinued.

Month, Day, Year.

**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

**Gender:**

Male/Female

**Date of birth:**

Month, day, year

**Hispanic origin:**

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

*Not of Hispanic origin*

**Race:**

American Indian/Alaskan Native  
Asian or Pacific Islander  
Black/African American  
White  
Other

**Current marital status:**

Never married  
Now married  
Separated  
Divorced  
Widowed

**Appendix A The Client Database Fields**

**Veteran Status:**

Not a veteran  
Yes, has served on active duty

**Legal status:**

Voluntary  
Involuntary civil  
Involuntary criminal

**Coded area of residence at time of admission:**

**Current area of residence:**

**Presenting Problem(s) at admission:**

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

**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. 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.

**Severity of condition or level of functioning at admission:**

**Chronicity of mental illness:**

Classified as chronically (severely and persistently) mentally ill or not.

**Eligibility determination:**

References either the Supplemental Security Income (SSI) or Social Security Disability Insurance (SSDI) programs of the Social Security Administration.

**Expected payment source:**

None, organization to absorb total cost  
Personal resources (patient's or patient's family)  
Commercial health insurance  
Service contract  
Medicare (Title XVIII)  
Medicaid (Title XIX)  
Worker's compensation  
Other public sources

**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.

**Date of report:**

Month, day, year

**Appendix A The Client Database Fields**

**Residential arrangement - admission, most current or updated, and discharge:**

- The patient's usual residential situation or arrangement.
  - On the street or in a shelter for the homeless
  - Private residence/household
  - Other residential setting
  - Jail or correctional facility
  - Other institutional setting

**Living arrangement - admission, most current or updated, and discharge:**

- The patient's usual living arrangement.
  - Lives alone
  - Lives with relatives
  - Lives with nonrelated persons

**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 (include 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)

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

- Previous treatment by mental health organization of any kind?
    - Yes / No
    - If yes, previous treatment within the past year?
      - Yes / No
      - If yes, previous treatment by this organization?
        - Yes / No
        - 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 |

**Appendix A The Client Database Fields**

**Discontinuation status:**

- Transferred
- Administratively discontinued (no contact 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

**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
  - 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)

**Appendix B The Events Database Fields**

**Organization Identifier:**

The 8-digit NIMH master facility code is recommended.

**Date of event:**

Month, day, year

**Primary staff member involved:**

**Presence of other staff members:**

Other staff involved in the event

**Program element identifier and attendance logs:**

Inpatient  
Residential  
Partial day  
Outpatient  
Case management  
Emergency  
Not applicable - not under auspice of a clinical program element

**Other patient(s) involved in the event:**

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

**Type of event:**

*Direct-service events* - face-to-face as well as other contacts (usually telephone) with patients/clients or groups of clients.  
- *Engagement and outreach events* - activities usually directed to potential/nonregistered patients.  
- *Diagnosis and assessment events* - activities intended to define or delineate the patient's diagnosis and problems.  
- *Treatment events* - activities based on the patient's diagnosis or problem intended to arrest, reverse, or alleviate the disorder or problem.  
- *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.  
- *Personal care events* - life support activities and services provided to meet the client's needs for food, shelter, and safety.  
*Adjunctive service events* - activities on behalf of a patient/client who is not present.  
*Consultation service events* - activities that benefit another organization, association or group.  
*Administrative and support events* - activities for the benefit of the organization that cannot be assigned to a specific patient or agency.

**Scheduled event:**

Scheduled / Not scheduled

**Event duration:**

Actual time in minutes and hours  
Event canceled by staff  
Event canceled by organization  
Patient failed to show

**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)

Appendix C *The Human Resources Database Fields*

**Organization Identifier:**

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

**Staff/record identifier:**

Unique staff identifier.

**Date of report:**

Month, day, year

**Date of birth:**

Month, day, year

**Gender:**

Male/Female

**Race:**

American Indian/Alaskan Native  
Asian or Pacific Islander  
Black/African American  
White  
Other

**Hispanic origin:**

*Hispanic origin* - A person of Mexican, Puerto Rican, Cuban, Central American, South American, or other Spanish origin or descent, regardless of race:  
*Not of Hispanic origin*

**Date of employment/affiliation:**

month, year.

**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

**Country of highest degree:**

Name

**Hours typically scheduled each week:**

A 2-digit whole number

**Employment/affiliation status with this organization:**

Salaried, payroll employee  
- Full time  
- Part time (less than 35 hours per week)  
Paid under contractual arrangement  
Student, trainee, resident, intern  
Volunteer  
Other

**Primary job function:**

Direct or adjunctive patient/client care  
Consultation, education, or prevention  
Administration/management  
Other



**Appendix D Statistical Summaries**

CLIENT PROFILE  
FOR  
(NAME OF CLIENT)

JANUARY 31, 1990

Enrolled: 10/14/89  
Program: Outpatient  
Present Problem: Depression  
Severity at Admission: 3  
DSM III: xxxxx  
Chronicity: 2  
Referral Source: Self  
Payment Source: Medical Assistance

Living Arrangement: Alone  
Residential Status: Apt.  
Marital Status: Single  
Age: 34 Gender: Male  
Race: White  
Discontinuation Date: N/A  
Discontinuation Status: N/A  
Discontinuation Referral: N/A

<u>DATE</u>	<u>PROGRAM</u>	<u>EVENT</u>	<u>TIME</u>	<u>LOCATION</u>	<u>STAFF</u>	<u>SPECIALTY</u>
10/14/89	N/A	ADMINISTRATION	30 MIN	ON PREMISE	M. JOHNSON	ADMIN
10/14/89	OUTPATIENT	ASSESSMENT	60 MIN	ON PREMISE	J. SANSON	L.C.P.
10/19/89	OUTPATIENT	DIAGNOSIS	30 MIN	DR. OFFICE	F. SCHWARTZ	M.D.
10/20/89	CASE MGMT	ADJUNCTIVE	15 MIN	ON PREMISE	J. SANSON	L.C.P.
10/21/89	OUTPATIENT	TREATMENT	60 MIN	ON PREMISE	J. SANSON	L.C.P.
10/29/89	OUTPATIENT	TREATMENT	60 MIN	ON PREMISE	J. SANSON	L.C.P.
11/03/89	OUTPATIENT	TREATMENT	60 MIN	ON PREMISE	J. SANSON	L.C.P.
11/08/89	CASE MGMT	ADJUNCTIVE	15 MIN	ON PREMISE	J. SANSON	L.C.P.
11/08/89	OUTPATIENT	GROUP SESSION	90 MIN	ON PREMISE	S. MAWHERS	PSYCHOLOGY
11/15/89	OUTPATIENT	GROUP SESSION	FAILED TO SHOW		S. MAWHERS	PSYCHOLOGY
11/22/89	OUTPATIENT	GROUP SESSION	FAILED TO SHOW		S. MAWHERS	PSYCHOLOGY
11/29/89	OUTPATIENT	GROUP SESSION	FAILED TO SHOW		S. MAWHERS	PSYCHOLOGY

This information provides a complete summary of the patient's utilization of services offered by the mental health center. Management can use this information to gain insight into a specific patient's treatment history. Also, by reviewing a number of patient profiles for a specific therapist management gains insight in their approach to treatment.

This summary would be useful for responding to financial intermediary inquiries regarding treatment, utilization, or questions on timing of events.

The primary therapist would use this information to review treatment and consider possible alternate treatment strategies.

A patient profile is also useful to the County Case Manager. With this information they can determine resources outside the mental health center which might be employed to complement services being received.

By comparing the services utilized by one patient to others similarly diagnosed, management is able to consider qualitative managerial issues, as well. The above example suggests (the patient attended one group session and has had no contact in the past 11 weeks) consideration be given to develop a follow-up procedure when patients consistently fail to show for appointments.

MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT



Appendix D Statistical Summaries

DIRECT HOURS  
BY  
PROGRAM AND CITY

JANUARY 1, 1990 THROUGH JANUARY 31, 1990

	<u>OUTPATIENT</u>	<u>DAY TREATMENT</u>	<u>CASE MANAGEMENT</u>	<u>EMERGENCY</u>	<u>TOTALS</u>
Leroy	78		8		86
Jamestown	116		19		135
Materville	8	123	9		140
Ofland	122		7		129
Porter		64	2		66
Lafayette	225	48	27		300
Stewart				2	2
Westport	115		15		130
TOTALS:	664	225	87	2	988

This information is used to discern the total number of direct (billable) hours, dependent upon program type, by residence. Management can, with this information, determine the source of clients, program utilization and staff utilization.

This information is also useful for demonstrating, to county commissioners for example, the needs of their community being served by the mental health center.

Tracking this information over time allows management to plan for changes in utilization of facilities and staff. Also, maintaining records of billable hours provides insight into changes in revenue.

By comparing direct hours provided to each community to the population base of each community, management may determine the center's effectiveness in communicating available services. The above example (with no outpatient hours for Porter) suggests, if Porter is reasonably populated, a community awareness plan should be developed and implemented.

MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT

Appendix D Statistical Summaries

PERCENT OF TOTAL HOURS  
BY  
ACTIVITY AND STAFF MEMBER

JANUARY 1, 1990 THROUGH JANUARY 30, 1990

	OUTPATIENT	CASE MGMT	DAY TREATMENT	EMERGENCY	OTHER
Anderson, June	45%	5%	41%		9%
Babcock, Ronald	78%	22%			
Donovan, Richard	49%	19%			32%
Emerson, Ruth		4%	72%		24%
Fairbank, Lyle		37%	52%		11%
Heverson, Linda		15%	60%		25%
Mande, Emily	80%	8%			12%
Schmidt, Gerry	37%				63%
Townsend, Melissa	62%	16%		3%	19%
	----	----	----	----	----
WEIGHTED AVERAGE:	44.7	15.1	19.3	.1	21.4
	=====	=====	=====	=====	=====

This information is useful to discern the way staff members are investing their time. The percent of each staff person's time is reported relative various income generating activities and other, non-income generating, activity. Management can, with this information, determine whether changes in policy or procedure may be needed.

This information is also useful to demonstrate the efficiency of a mental health center's staff when seeking grants or additional funding from outside sources.

By tracking this information over time, management may also determine changes in case-load for individual staff members. I.e, if a staff member's percent of time devoted to income generating activity dramatically decreases, it may be the result of fewer patients.

By comparing the percent time for "other" across the staff members, management is able to determine specific staff outside the norm. The above example suggests (one staff member reports 63% of their time is in non-income generating activity) there may be a misunderstanding of responsibility. Or, that staff member may be indirectly demonstrating dissatisfaction with the job. However, by having this information reported management is informed of the anomaly and can resolve the issue.

MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT

Appendix D Statistical Summaries

HOURS IN DIRECT-SERVICE EVENTS  
BY  
THERAPIST AND DSM CLASSIFICATION

JANUARY 1, 1990 THROUGH JANUARY 31, 1990

	GLENN JOHNSON (Child Psy)	PATI MASON (Psychology)	JANE SANSON (L.C.P.)	DENNIS WALTER (Psychiatry)
Mental Retardation	42.00			
Other Developmental	14.50			
Disruptive Behavior	27.00		11.25	
Eating Disorders		24.00		
TIC Disorder		10.00		
Other D/O of Child/Adol.		58.00		
Psychoactive Substance Use			38.00	41.00
Schizophrenia				29.00
Depressive Disorder		22.75	32.50	
Anxiety Disorder			18.00	
Somatoform Disorder				9.00
Personality Disorder	5.00			
	-----	-----	-----	-----
TOTALS:	88.50	114.75	99.75	79.00
	=====	=====	=====	=====
HOURS SCHEDULED:	(184)	(184)	(184)	(144)
% OF TIME IN DIRECT SERVICE:	48%	62%	54%	55%

This report shows the number of hours each therapist devotes to direct-services by DSM classification. Also, the last line of the report provides data relating the number of hours in direct-service to total hours scheduled. Management can, with this information, determine future staffing needs and possible over- or under- utilization of existing staff members.

This information is also useful to demonstrate available staff expertise and experience when seeking referrals from other agencies within the community. With concrete data representing available staff time and their area's of experience, credibility with referring agencies is increased.

By tracking this information over time, management may observe trends of mental health problems being treated by the mental health center. Also, by comparing these statistics to those generally considered to exist within the catchment area, management can determine its effectiveness in reaching subpopulations.

By comparing the hours devoted across the various DSM classifications by each therapist, management can determine the relationship of clients to the therapist's training. The above example suggests (when noticing the child psychologist is not devoting any time to "Other Disorders of Infant Children and Adolescents"), that incoming calls may be inadequately screened before being assigned to a primary therapist.

MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT

Appendix D Statistical Summaries

AVERAGE DAYS BETWEEN SESSIONS  
 BY  
 THERAPIST AND DSM CLASSIFICATION  
 JANUARY 1, 1990 THROUGH JUNE 30, 1990

	Mary Miller	Jim Smith	Ann Jones	Jane Mensta	Tom Wolfe	-MEAN-
Mental Retardation	5		7			5
Specific Developmental		9				9
Anxiety D/O - Child/Adol	6	8				7
Disruptive Behavior		12				12
Eating Disorders		14	6	7		9
Psychoactive Substance Use	7	10				8
Schizophrenia		7	5			6
Delusional Disorder		9	7	6		7
Bipolar Disorder			6	8		7
Depressive Disorder		12	5	7	6	8
Anxiety Disorder			7	6	8	7
Adjustment Disorder				5		5
Personality Disorder			8			8
MEAN:	6	11	6	7	7	7.35

This report informs management about the average number of days between sessions for clients of each therapist by DSM classification. With this information management can infer staff utilization and client load.

Most therapists, when their caseload becomes too great, have a tendency to continue working with all their clients but, because of time constraints imposed by the increased caseload, are unable to schedule appointments for a given patient as frequently. I.e., when the client reserves time for their next appointment, a therapist with too high a caseload will not have an opening readily available. Thus, the client is forced to make their appointment later in the calendar. By reviewing the number of days between appointments by DSM classification and comparing this to the norm for this classification, management can oftentimes discern whether a therapist has taken on too high a caseload.

By tracking this information over time, management may notice the change in days between appointments for a specific therapist. An increase in the number of days suggests the center should consider additional staff. If a client should be receiving therapy weekly and is only do so every ten days, the center loses revenue and the client may not be receiving adequate treatment.

MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT

Appendix D Statistical Summaries

NUMBER OF OPEN CASES  
BY  
LENGTH OF TIME OPEN AND STAFF MEMBER

JANUARY 31, 1990

	D A Y S O P E N					TOTALS
	0-90	91-180	181-270	271-360	OVER 360	
Glenn Johnson						
Mental Retardation	1		1	3	6	11
Disruptive Behavior	3	5	1			09
						20
						==
Pati Masons						
Eating Disorder	1	2	2	1		06
Depressive Disorder	2	4	3	2		11
Psychoactive Substance	9	3				04
						21
						==
Jane Sanson						
Schizophrenia					2	02
Depressive Disorder		2	3	2	1	08
Dissociative D/O			1	1	2	04
Anxiety Disorder	1	2	2			05
Personality D/O			1	1	1	03
	--	--	--	--	--	22
TOTALS:	9	18	14	10	12	==
	==	==	==	==	==	

This information is used to discern the total number of open cases, dependent upon how long they have been open, by therapist. In addition, the number of open cases is listed by DSM classification. With this information management can review staff utilization and project future staffing needs.

This information is also useful to demonstrate the extent the mental health center is involved with longer-term patients to third parties.

By tracking the information over time, management may observe changes in patient mix following community awareness programs. Also, by comparing the length of time patients have been enrolled by DSM classification, management can detect whether the center's treatment length for a given DSM falls outside the norm for that illness.

By reviewing the number of recent enrollments by disorder, management can forecast future revenue flow. The above example (only 9 new patients during the past quarter) suggests there may be a reduced cash flow -- especially if those enrollments are for illness not typically requiring lengthy treatment.

MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT

Appendix D Statistical Summaries

SUMMARY OF THERAPIST ACTIVITY  
BY  
HOURS AND PROGRAM ACTIVITY

JANUARY 1, 1990 THROUGH JANUARY 31, 1990

	<u>NUMBER</u> <u>CLIENTS</u>	<u>BILLABLE</u> <u>HOURS</u>	<u>%</u> <u>HOURS</u>	<u>NON-</u> <u>BILLABLE</u>	<u>%</u> <u>HOURS</u>	<u>TOTAL</u> <u>HOURS</u>	<u>% OF ALL</u> <u>ACTIVITIES</u>
Day Treatment	8	384	75%	129	25%	513	42%
Outpatient	96	412	67%	205	33%	617	50%
Case Management	101	18	20%	73	80%	91	7%
Emergency	5	2	25%	6	75%	8	1%
UNDUPL. TOTALS:	104	816		413		1229	100%
	====	====		====		====	====

This information is used to determine the billable versus non-billable hours of therapist time for each program. Also reported are the percent of billable versus non-billable hours (relative the total hours for a given program) and the number of patients. Management can, with this information, examine the income-generating ability of each program within the mental health center.

Also, comparing this summary to similar tables for each staff member provides a quantitative measurement of each staff member's contribution to revenues.

By tracking this information over time, management may observe the impact task expectations of staff has on cash flow. For example, if a major change in the number or complexity of forms to be completed were instituted, management would observe the impact on billable hours.

By comparing the per cent of billable hours in each category to generally accepted ratios, management may discern unusual or out of norm practices. The above example (with 80% of case management hours being non-billable) suggests there may be a misunderstanding by staff of billable, case management hours.

MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT

**Appendix D Statistical Summaries**

AVERAGE WEEKS ENROLLED BEFORE DISCONTINUANCE  
BY  
PROGRAM AND REFERRAL SOURCE

DISCONTINUANCES BETWEEN JANUARY 1, 1990 AND MARCH 31, 1990

	<u>OUTPATIENT</u>	<u>RESIDENTIAL</u>	<u>DAY TREATMENT</u>	<u>WEIGHTED AVERAGE</u>
Self	16	8	22	13.8
Family or Friend	19	12	10	16.7
Police Department	8			8.0
Court Agency	9			9.0
School System	22			22.0
Social Services	7		28	22.8
Inpatient Program	31			31.0
Shelters	13			13.0
Other	17			17.0
	-----	-----	-----	
WEIGHTED AVERAGES:	17	11	23	
	=====	=====	=====	

This information is used to determine the length of treatment required dependent upon the referring source and type of treatment. Management can, with this information, plan modification of the center's services as well as determine future staffing and funding needs.

This information is also useful for supporting the cost of treatment to referring organizations or financial intermediaries.

By tracking this information over time, management may also determine the effectiveness of alternate treatment strategies. For instance: Following implementation of a new treatment procedure a decrease in weeks required before discontinuance is likely to occur.

By comparing the number of weeks required across the various referral sources, management is able to determine which sources may be referring patients more- or less-difficult to treat. The above example suggests (when comparing 22 weeks treatment required for school system referrals) the schools may be reluctant to refer before serious problems develop.

MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT

Appendix D Statistical Summaries

ADMISSIONS  
BY  
AGE AND DSM CLASSIFICATION  
JANUARY 1, 1990 THROUGH MARCH 30, 1991

	<u>0 - 12</u>	<u>13 - 19</u>	<u>20 - 35</u>	<u>36 - 55</u>	<u>OVER 55</u>	<u>TOTALS</u>
Mental Retardation	2	4	1			7
Specific Developmental		2				2
Anxiety D/O - Child/Adol	4	2				6
Disruptive Behavior		7				7
Eating Disorders		1	3	1		5
Psychoactive Substance Use	1	5				6
Schizophrenia		3	8			11
Delusional Disorder		1	2	1		4
Bipolar Disorder			4	2		6
Depressive Disorder		4	6	2	1	13
Anxiety Disorder			2	5	2	9
Adjustment Disorder				2		2
Personality Disorder			2			2
TOTALS:	7	29	28	13	3	80
	===	===	===	===	===	===

This report informs management about number of admissions related to patients' age and the DSM classification. With this information management can review staff utilization, plan future staffing needs, and analyze the center's response to the catchment area's needs.

This information is also useful to external organizations interested in the community's utilization of the mental health center.

By tracking this information over time, management may determine the results of various community education efforts. This can be tracked, with the above information, either for disorder-specific programs or for reaching targeted age groups within the community. Following completion of a campaign to increase awareness amongst senior citizens of the health center's services, an increase in the number of "OVER 55" admissions is likely to occur.

By comparing the number of admissions across the DSM classifications, management is able to determine which classifications may be represented outside the norm for the catchment area. The above example suggests (with 14% of the admissions being schizophrenia) inpatient treatment centers may be releasing patients too soon or the mental health center may not be properly classifying its patients.

MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT



Appendix D Statistical Summaries

NUMBER OF SERVICE EVENTS  
BY  
TYPE OF EVENT AND PRESENTING PROBLEM AT ADMISSION  
JANUARY 1, 1990 THROUGH JANUARY 31, 1990

	<u>OUTREACH</u>	<u>ASSESSMENT</u>	<u>OUTPATIENT</u>	<u>ADJUNCTIVE</u>	<u>TOTALS</u>
Marital Problem		6	74		80
Family Problem		2	21		23
Social Problem	3			18	21
Coping Problem			9		9
Medical Problem			8		14
Depression		9	35	2	46
Alcohol / Drug		4	33		37
Eating Disorder					
Thought Disorder					
Abuse / Rape			14		14
Runaway					
Other					
	----	----	----	----	----
TOTALS:	3	21	194	20	238
	====	====	====	====	====

This information is used to determine the number of events occurring and the types of events, dependent upon the presenting problem at the time of admission. With this information management can determine necessary modifications in the facility and staffing to accommodate the center's patient-mix. Also, professional review of this information can provide feedback on the appropriateness of treatment settings for the presenting problems.

This information is also useful for demonstrating the types of problems the mental health center is treating. By having accurate data reflecting distribution of services sought, the center may seek new or alternate sources of funding to finance these services.

By tracking this information over time, management can determine relative changes in the center's case load. Also, by tracking selected categories management remains informed of potential trends influencing future cash flow.

By comparing the number of events across the various presenting problems, management is able to determine problems appearing outside the norm in light of past and current community awareness programs. The above example might suggest a recently implemented community awareness campaign for eating disorders was not effective (no events in an entire month).

MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT

Appendix D Statistical Summaries

CASES DISCONTINUED  
BY  
RACE AND REFERRAL AT DISCONTINUATION  
JANUARY 1, 1990 THROUGH MARCH 31, 1990

	<u>NATIVE AMERICAN</u>	<u>ASIAN</u>	<u>BLACK</u>	<u>WHITE</u>	<u>UNKNOWN</u>	<u>ALSO HISPANIC</u>	<u>UNDUPL TOTALS</u>
Discontinued - No Referral	1		2	14			17
Administrative		3		8			11
To Regional Treatment Ctr.				1			1
To Residential Treatment				2			2
To Nursing Home				1			1
To Physician				3			3
To Social Services			1	2		1	3
To Education Agency		2		8			10
To Court System				2			2
TOTALS:	1	5	3	41	0	1	50

This information shows how discontinuation is related to race and referral. (An administrative discontinuation is a case closed as a result of inactivity.) Management can, in addition to demonstrating equal access, use this information to determine additional services needed either by the mental health center or within the community at large.

This data is also useful for demonstrating the need to expand services offered or to justify discontinuing certain services.

By tracking this information over time, management may also determine the effectiveness of recently added services or treatment procedures. For instance, if the mental health center recently expanded its outpatient treatment program to embrace new procedures, a decrease in discontinuations to inpatient treatment facilities might occur.

By comparing the number of discontinuances across possible referral alternatives, management is able to determine the extent the mental health center is utilizing alternate facilities, services and treatments available within the community. The above example suggests (when 22% of the discontinuations are the result of patients dropping out of the program) that patients may be utilizing alternate resources without being referred or may be abandoning treatment, per se. Either reason is cause for further study.

MINNESOTA MENTAL HEALTH STATISTICS IMPROVEMENT PROJECT