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ABSTRACT

The monitoring process and the role of monitoring in mental health center decision making are discussed in relation to information systems. Monitoring requires an information system based on the center's annual plan for programs and budgets. This system must contain at least minimal data on client movement, services, staff activity, and costs. The monitoring process includes planning, monitoring, and assessment. Three areas discussed in this paper are the monitoring process, information systems and monitoring and using information systems. Issues addressed include organizational readiness, information system adequacy, integration of system elements, feedback, and the data processing mode (manual versus automated). Specific suggestions and practical examples are included. The final section links information system reports with management in order to assist managers by providing data about program goals, fluctuations in demands for services, and staff productivity. Summary reports aid program and budget planning and program evaluation. (Author/MLT)

USE OF INFORMATION SYSTEMS FOR MONITORING MENTAL HEALTH PROGRAMS

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FOREWORD

The Southern Regional Education Board was awarded a grant (Mental Health Training Grant No. 1-T15-MH14703) in late 1976 from the State Manpower and Development Branch of the National Institute of Mental Health. The Project was to develop publications and conduct workshops to assist mental health centers in improving their management practices and their program activities through the use of practical program evaluation. A series of publications and workshops is being developed through the combined efforts of the Board's staff and task force participants. Topic areas include:

- The Administrative Uses of Program Evaluation
- Use of Information Systems for Monitoring Mental Health Programs
- Linking Needs Assessment to Program Planning and Management
- Quality Assurance in Mental Health Centers
- Client Outcome Evaluation in Mental Health Centers
- Improving Staff Productivity in Mental Health Centers

The selection of these topics was based on the preferences expressed in a survey of mental health centers and clinics in the 14 states served by the Southern Regional Education Board.

The Use of Information Systems for Monitoring Mental Health Programs describes the monitoring process to examine the relationship of information systems to monitoring and to discuss the role of monitoring in decision making in mental health centers. This publication is based on the recommendations of people in mental health centers and state mental health agencies. We thank all of them for their willingness to share their knowledge and experiences with us. We assume responsibility for the content of this report, including any misunderstandings resulting from the translation of ideas.

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INTRODUCTION

An information system yields data that are the basic building blocks for many clinical and managerial functions in a mental health center. In many cases, mental health agencies have installed information systems to meet the recordkeeping and reporting requirements of funding and accrediting agencies, but have not developed the full potential of these data systems for managing programs through systematic monitoring. The information system, if appropriately designed and used, is the means for collecting and compiling data, while monitoring is the process used by managers to assure that the program is meeting its goals.

The purpose of this publication is to describe the monitoring process, to examine the relationship of information systems to monitoring, and to discuss the role of monitoring in decision making in mental health centers.

WHAT IS MONITORING?

Monitoring is the process of comparing activities, and the use of resources with the established plans, priorities, and objectives which have been set for a program. The purpose of monitoring is to identify what is happening to clients and how resources are being used compared to plans. If divergence is noted, corrective action is taken.

Monitoring is essential to the survival of a mental health center. In its simplest, most rudimentary form, it may be little more than good housekeeping, where data reports play a minor role. But data from information systems can be used to monitor and control center operations and enhance the efficiency and effectiveness of the management process.

There are three areas of information needs for internal management:

1) Clinical management and quality assurance: data which assist in the supervision and review of clinical interventions and provide feedback to clinicians;

2) Program goals: data about progress toward what the program is expected to accomplish;

3) Resource control: data about the agency's staff facilities and financial resources.

There are different sources for these three kinds of information. This publication focuses on data that can be included in information systems and used for monitoring.

THE MONITORING PROCESS

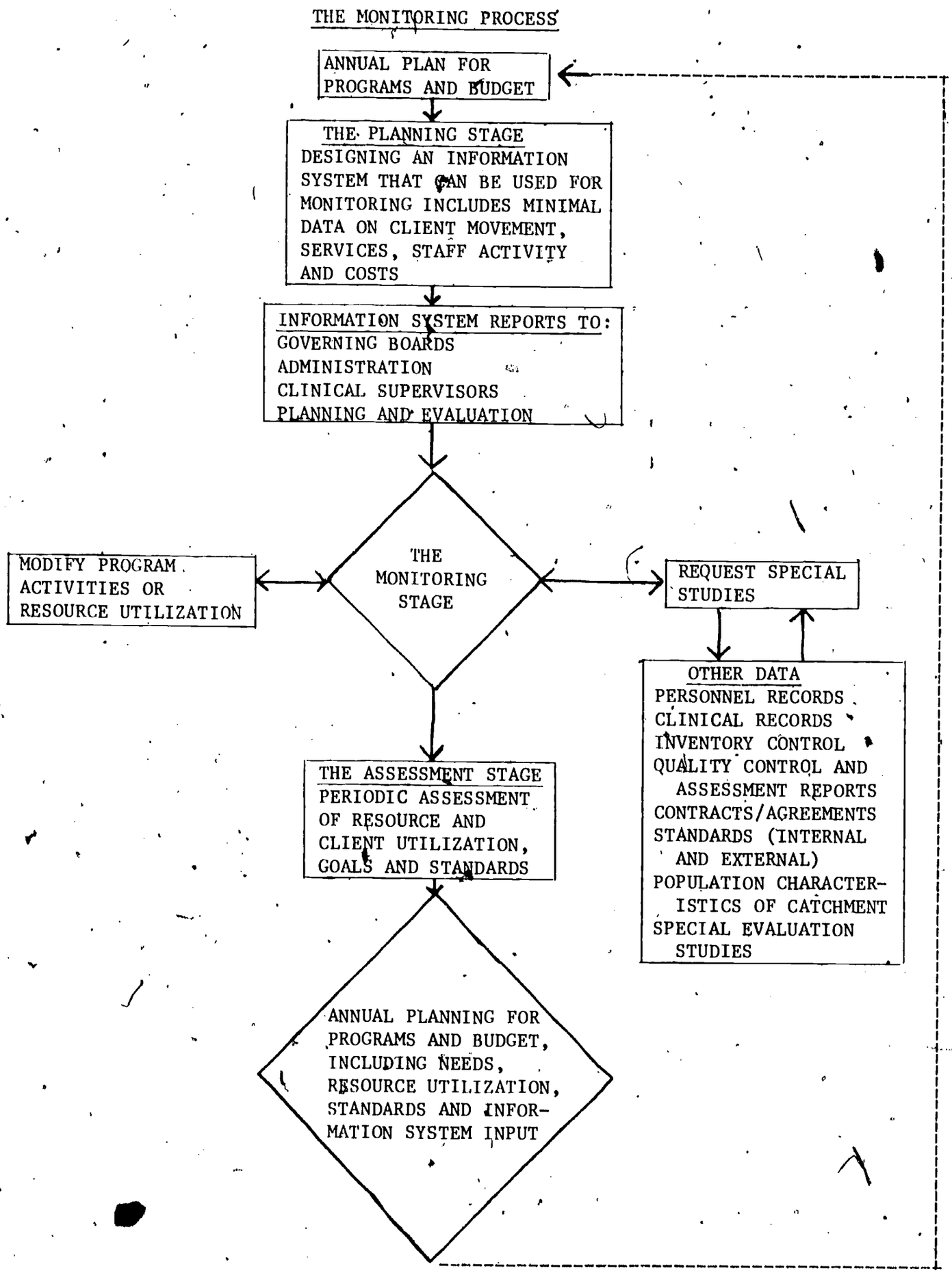
As shown in the following chart, the monitoring process has three stages: planning, monitoring and assessment. An adequate information system based on the center's annual plan for programs and budgets is needed for routine monitoring and annual assessment.

Planning Stage

In the planning stage the key indicators needed for monitoring are identified and included in the data to be collected by the information system. The center's annual plan for programs and budget serves as the basis for selecting the data items about activities and resources to be monitored by managers. There are several kinds of indicators, each based on different aspects of the annual plan. Three possible kinds of indicators are:

- o Indicators about resources
- o Indicators about program goals
- o Indicators about compliance with standards

The most basic form of monitoring focuses on the control of a center's resources -- staff, expenditures, facilities, and supplies. Managers need information that calls immediate attention to any gross deviations from expectations. Indicators are selected that will assist the manager in identifying the use of key resources in relation to the resources allocated. (e.g., costs, staff time and activity).


THE MONITORING PROCESS
ANNUAL PLAN FOR PROGRAMS AND BUDGET
THE PLANNING STAGE
DESIGNING AN INFORMATION SYSTEM THAT CAN BE USED FOR MONITORING INCLUDES MINIMAL DATA ON CLIENT MOVEMENT, SERVICES, STAFF ACTIVITY AND COSTS
INFORMATION SYSTEM REPORTS TO:
GOVERNING BOARDS
ADMINISTRATION
CLINICAL SUPERVISORS
PLANNING AND EVALUATION
THE MONITORING STAGE
MODIFY PROGRAM ACTIVITIES OR RESOURCE UTILIZATION
REQUEST SPECIAL STUDIES
OTHER DATA
PERSONNEL RECORDS
CLINICAL RECORDS
INVENTORY CONTROL
QUALITY CONTROL AND ASSESSMENT REPORTS
CONTRACTS/AGREEMENTS
STANDARDS (INTERNAL AND EXTERNAL)
POPULATION CHARACTERISTICS OF CATCHMENT
SPECIAL EVALUATION STUDIES
THE ASSESSMENT STAGE
PERIODIC ASSESSMENT OF RESOURCE AND CLIENT UTILIZATION, GOALS AND STANDARDS
ANNUAL PLANNING FOR PROGRAMS AND BUDGET, INCLUDING NEEDS, RESOURCE UTILIZATION, STANDARDS AND INFORMATION SYSTEM INPUT

The second kind of monitoring is used to assess the attainment of program goals. The criteria are the goal statements developed in the center's annual plan for services. Goals describe the desired results in clients or changes in the community's mental health which the organization seeks to bring about.

There are five basic criteria for goal statements: 1) set a deadline for the activity; 2) name the target group; 3) state the desired outcome; 4) set the conditions or restrictions under which the desired outcome may be expected to occur; and 5) specify the minimum criteria for measuring the results desired as evidence that the goals were reached.[4]

The indicators selected for monitoring goals are measures of results identified in the annual plan. Not all goals can or should be monitored on a continuous basis. In many cases, a semiannual or annual assessment of results is adequate. Usually, only those identified as priorities require frequent monitoring by the program's administrator or evaluator. The indicators selected for monitoring may consist of "hard" numbers, such as hours of billable services per week or the number of clients served, or "soft" data, such as turnover rates of personnel or client responses to follow-up questionnaires that will indicate consumer satisfaction.[5]

Finally, standards can be used as criteria for monitoring the quality of the center's services. Standards (a state or condition accepted as minimal or exemplary, appearing in law, regulation or policy) have been developed by state, federal, and national accrediting agencies in response to the requirements of third party payment programs (e.g., Titles XVIII and XIX under the

Social Security Act and private insurers) and legislation regarding cost containment and quality assurance (e.g., Professional Standards Review Organizations (PL 92-603), the Community Mental Health Centers Act (PL 94-63), and Health Systems Agencies (PL 93-641).

- o Input standards describe the resources required to carry out programs. They include building standards, staffing standards, and equipment standards.
- o Process standards specify the procedures and kinds and amounts of therapy that are appropriate for given patient groups.
- o Outcome standards measure the results of care provided to patients. These standards would appear to be ideal from the perspective of evaluating the quality of patient care, but they are difficult to use because of the diverse nature of mental health problems and interventions.

The Monitoring Stage

In this stage, managers receive data reports on the indicators that are relevant to their particular area of responsibility. These reports, when compared to the expectations defined by the annual plan, call attention to apparent deviations. Monitoring is similar to reading the Dow-Jones averages -- it shows key trends but rarely provides all the information needed for final decision making. Thus, other inputs, such as special studies, direct observation, and personal communication, are used to put the deviations in proper context.

The frequency of reports for monitoring depends largely on management style and the size and geographic location of the center's services. Managers may request weekly reports on resource indicators but may need only quarterly or semiannual reports to measure progress toward program goals. The

administrator of a center with a number of satellite facilities will probably need reports more frequently than one whose services are all provided in a single location.

At times, the manager may request special reports when monitoring calls attention to a problem that requires more detailed information. The data for special reports may be drawn entirely from information system files or they may be developed by merging data from other sources with data accessed from the information system.

The Assessment Stage

Periodically, cumulative reports which summarize and analyze program activities and use of resources are compiled to assess outcomes or results of programs. These reports are used to 1) determine whether the expectations defined by program goals were met; 2) provide baseline information for planning future program activities and budgets; 3) yield data needed for evaluation studies; and 4) provide data for external reporting to funders, third party payers, affiliated agencies, community groups and others. After completing the third stage, the monitoring process begins again.

INFORMATION SYSTEMS AND MONITORING

A mental health center must decide on the kinds of data that are to be collected by its information system on a continuous basis. Centers operating under the Community Mental Health Centers Act Amendment (PL 94-63) are given basic guidelines which state required information system capabilities: 1) a statistical component that can compute information on client characteristics, staff activities, and services provided; 2) an accounting component that compiles information on revenues and expenditures; and 3) a way to integrate data from these two components for fiscal management (cost-accounting, rate-setting, and budgeting). Many states have established similar requirements and have implemented statewide reporting systems. These requirements have often been the motivation for center managers to install or upgrade an information system.

This publication does not attempt to deal with the gamut of information system design, implementation, and use, since many publications have already done this. The reader is referred to the bibliography for some of these sources. Some of the basic principles in the design, implementation and use of an information system that make data most useful are presented here to define what is meant by the term "practical information system."

An information system is:

> A system for gathering information, accumulating data in an organized file and summarizing information in periodic reports responsive to special requests.[2]

The purpose of an information system is to document the activities and the use of resources so that timely, periodic reports are available to program and administrative personnel for monitoring, evaluating and planning within the center as well as reporting to external agencies. An information system is a support service within the organization and, as such, should be designed to be as simple and practical as possible.

WHAT MAKES AN INFORMATION SYSTEM USEFUL?

There are a number of characteristics that help answer this question.

Organizational Readiness

Chapman[2] identifies several major aspects of organizational climate which influence the success of a center in implementing and using an information system. The readiness of the organization to use an information system revolves around staff attitudes that are derived from strongly held values.

- o Accountability: Does the organization recognize the need of an information system as a management tool?
- o Resource Utilization: Is the organization willing to look at hard data to determine if the services being provided are effective in terms of meeting a center's objectives at a reasonable cost and to use these data to assist in allocating resources?
- o Cost: Does the organization perceive the cost of establishing and maintaining an information system to be justifiable in terms of its usefulness to the organization?
- o Patient Rights: Does the organization see confidentiality of patient data as a barrier in establishing an information system?
- o Threat to Status: Is the organization prepared to accept the reality that hard data may bring agency problems out into the open?

There are many pros and cons on these issues. These questions can be resolved if they are dealt with by the center administrator and staff together. None are insurmountable; all have to be seriously considered if the organization hopes to establish, maintain and use an information system.

The design of an information system actually begins with documentation of the functional structure of the agency which includes the goals and objectives, professional and administrative staffing patterns, financial and physical resources so that the data from the information system will describe the activities going on in the center in relation to its structure. Several approaches to defining the organizational structure of a center are used: 1) by categories of designated services (e.g., inpatient, outpatient); 2) by age groups (e.g., children, adults); 3) by type of disability (e.g., drug abuse, mental retardation); or 4) by a combination (e.g., age group and type of disability).[6]

User Orientation

Data reporting systems are too often designed more for external reporting purposes than for use by the center's internal management. There is no reason why information cannot be developed for use by both external and internal users. A center director cannot ignore requests for information from those who finance the center, but he should not design the information system to furnish only that information.[6]

An information system should collect a minimal amount of data on a continuous basis. The nature of this data can best be defined by the needs of the users of information by asking:

1) How are the data to be used?

2) What format and content will make reports most useful?

3) How often will reports be needed?

Users include supervisory personnel, program managers, administrative support personnel (planning, evaluation, fiscal, etc.), the center's administrator, the center's board, affiliated human services agencies, local government, state and federal funding agencies, health planning organizations, third party payers and citizen groups. Efforts should be made to avoid overestimating the minimal data needs for an information system.

Two kinds of reports may be requested by users: 1) regular, routine reporting at specific time intervals and 2) special requests for information. It is suggested that a schedule for routine reports be developed annually to define when reports are needed, the required form and content, and the users. A schedule enables the persons responsible for the information system to plan their work and to respond to unanticipated special requests for data in a more efficient, timely way rather than being faced with monthly shifts in reporting priorities.

Data requirements should be reviewed and adjusted annually to be compatible with changes in goals and objectives and the organizational structure. One helpful way of determining the kinds of reports and data that are needed is to maintain a register showing actual requests for data, whether the requests were filled and how long it took to fill them. If the requests for data could not be filled, the reasons should be stated (e.g., lack of appropriate data, lack of time). This register serves at least three purposes: 1) it documents data usage and frequency of use; 2) it identifies

unmet data needs and the frequency of requests for these data; and 3) it monitors the effectiveness of the system in serving the needs of the center. The information derived from such a register also suggests changes that should be made in the information system to make its operation more efficient and effective.

Adequacy

Data collected by an information system on a continuous basis should meet the minimal needs of the center. These data should be kept up to date and reported at regular intervals in readable form to personnel who use them.

An information system can be designed to provide information about any of the following items:

- o The quantity of services being provided
- o The current deployment of resources through the center
- o The current recipients or beneficiaries of services
- o Cost-accounting, rate-setting, budgeting and billing
- o The quality of services and overall programs[1]

When designing an information system, center staff should determine the minimal needs for continuous information. Evaluators can then design an information system that is within the financial capabilities of the center. Information systems vary from one center to another because of different perceived needs and uses of data, and resources available to support the information system. The costs of establishing and maintaining an adequate information system should not be regarded as only an additional expense for administrative support services. To quote Sorensen:

> Few organizations are fully aware of the costs of their current data collection and manipulation efforts, nor do they realize how many opportunities they miss to use their resources more efficiently or to augment their funds. Clinical and clerical staff spend an inordinate amount of time filling out forms that are added to the record-keeping process by a succession of emerging requirements. Secretaries and administrative assistants throughout the organization often try to maintain statistical summaries of sorts, at considerable expenditure of their time, to help their bosses respond to report demands that continue to arise. Then there are the many crash projects for pulling together current and past data in crises prompted by the demands of funding agencies. All these efforts constitute hidden costs of current operations that are seldom explicitly recognized or summarized as management information systems costs.[6]

All mental health centers need statistical and financial information for both external reporting and internal management purposes. Although these information components are different in their data inputs, and the responsibility for their operation is often assigned to separate organizational units within a center, they should be compatible with each other. The data units of the program component should include measures of activity that can be related to financial data for cost-finding, rate-setting and budgeting purposes.

The statistical component should include three interlocking subsystems focused on 1) client characteristics, 2) staff activity, and 3) services rendered. The three subsystems are tied together because all deal with the same process: "Which therapist is treating what client in what program with what technique for what duration with what consequence."[2] Furthermore, the actual data collection procedures frequently involve the use of the same input documents (e.g., service tickets, staff activity reports). The kinds of program data used by a center have a direct bearing on the information's usefulness for internal management. Some centers find that data describing activities (number of admissions, discharges, contacts) within designated

programs (e.g., outpatient, inpatient) are adequate. But most find it desirable to have information that provides more functional data about the types and results of services provided (e.g., kinds of services, providers, fees, locations, client outcomes).

Some of the data categories included in program statistics are:

Client Information

- o Client identification
- o Demographic characteristics
- o Residence
- o Payment status
- o Initial diagnosis or presenting problem
- o History of previous care
- o Treatment received
- o Condition at termination or discharge
- o Disposition on termination or discharge
- o Periodic assessment of psychological and/or social functioning

Service Information

- o Number of clients served by service units
- o Admissions and terminations
- o Client movement among services
- o Medications and other treatments
- o Length of stay
- o Indirect services

Staff Activity Information

- o Staff hours (individual and aggregated) in direct service by type of activity
- o Staff hours in indirect services by type of activity
- o Number of clients assigned to individual staff members
- o Staff hours in activity other than direct and indirect services (done routinely or periodically by sampling)

The financial component of an information system uses information on revenues and expenditures, payrolls, payments on other expenditures, cost-accounting, and rate-setting. While the statistical component requires the processing of data from numerous staff members to produce reports, the financial component involves relatively few inputs of data from selected staff members.

The financial component can include the following information:

- o Total center costs
- o Costs by service element
- o Cost per unit of service
- o Cost per episode of care
- o Costs of specific treatment modalities
- o Fees charged
- o Income by source of funds
- o Accounts receivable, aged accounts, bad debts

Integration

Integration is a basic issue for information systems. Reports from an information system assist managers in interpreting the relationships between

organizational resources and activities. Thus the elements of an information system "are interdependent, mutually interactive and are dynamic over time in the role of connecting a center's structure to its process."[6]

The influence of various elements upon each other suggests that the overall information system should be designed at a single point in time so that its elements are integrated and appropriate. For example, data collected regarding program statistics should be organized in a way that makes it possible to relate the information to financial records of individual service units. This makes it possible to assign costs to each organizational unit and establish a reasonably accurate relationship between the services provided and the cost of these services. Also, the design and collection procedures for input documents should minimize the number of forms that must be filled out. When at all possible, data inputs for the information system should be a by-product of other procedures (e.g., service tickets used for billings). It is not always necessary or desirable that all subsystems of an information system be implemented simultaneously. Provided there is an overall plan for an integrated information system, implementing each subsystem separately may reduce the disruption of staff and minimize the staff time needed to get each subsystem operating smoothly.

Feedback

For an information system to be useful for management, there must be feedback in the form of regular, timely reports. Managerial staff in various service units need reports that will assist them in monitoring the progress of activities within their area of responsibility so that they are better able to make rational decisions about changes in operations that may be needed.

Periodic progress reports can also be helpful in providing feedback to governing boards and community groups so that they are more fully aware of the center's activities.

There are varied opinions about the need to provide regular feedback reports to all clinical staff within the center. One position holds that clinicians should not be held accountable unless management provides regular feedback to them about their activities. Such feedback encourages staff to submit prompt and complete reports into the data collection process. Another position argues that clinical staff should have access to the kinds of information that they need to enhance the effectiveness of their work. This does not necessarily mean that all clinical staff should have routine reports on service activities. It is questionable whether much of these data would be useful to them. There is general agreement that clinical staff, whether in supervisory positions or not, should be able to request information on aspects of service delivery that are relevant to their work with clients. The way in which a center administrator handles this issue will depend largely on the attitudes of the clinical staff toward feedback reports, their ability to use them constructively, and the capability of the information system to produce large numbers of reports.

It is suggested that all staff members, particularly clinical staff, be fully informed about the progress of planning, implementation and uses of any new information system and that they be encouraged to make suggestions about the overall process as well as to identify the kinds of reports that they will need to do their job better. At the time of implementation it will be

necessary to educate staff members in the procedures and uses of information system reports so that they are aware of the potential ways that information can be useful to them.

Manual versus Automated Data Processing

Many people equate the term, "information system" to "computer." However, an automated data system is not necessarily the solution to the data processing needs of a mental health center. All centers have some form of information system, although they may not realize it. The existing clinical and fiscal records may be incomplete, inadequate or cumbersome, but they can be improved and made useful without the benefit of a computer. Computers speed the processing and compiling of data, but the same data collection and data editing procedures are required regardless of how the data is processed. There are several options that will allow a center to meet its needs for data processing at a reasonable cost. The major issue when considering alternative approaches is whether the higher costs of an automated system will be offset by having a more efficient system of processing data. A cost-effectiveness study will determine the benefits of alternative approaches of processing data, considering development costs, operating expenses and long-range needs for data processing.[2] Major constraints that must be considered are the budget allocation for the information system, the size of the center's staff, and what the information system is expected to do. Some of the data processing options that are available to centers are:[3]

1) Manual systems in which all information is collected and processed by hand. This kind of system is appropriate for smaller centers with relatively

simple needs for data processing. The primary expense of this kind of system is the cost of clerical time. There are systems (e.g., McBee cards) that speed up the processing of data.

2) Machine-assisted manual systems enhance data processing through the use of key punch equipment, card-sorters, and desk calculators. Although the actual data collection process is not significantly improved, data access and compilation are made easier when this equipment is used.

3) Simple computers and accounting machines can further improve a manual system because they speed up the processing of information. Desk top mini-computers are now available that can be programmed to do comparative operations. Their uses are primarily limited by the imagination of the staff, not by their level of sophistication in computer programming.

4) Computer service bureaus process data for several organizations for a fee. To use these services, a center gathers and edits its own information in an agreed-upon form and then turns that information over to the service bureau for processing. Two types of services are available from computer service bureaus:

a) Batch processing consists of periodic submittals by the center of all the information it wants processed at a set time. The service bureau processes the information and returns it to the center along with output reports. This type of service is limited because special runs of information are not usually available and data processing is done only at set intervals.

b) On-line processing involves having within the center one or more computer terminals which are connected to the service bureau's computers. Under this system, a center can enter requests for data into the computer and responses come back immediately in the form of a printout or projection on a visual screen. The advantage of this system is the immediate access and feedback of information and the flexibility in the format of output

reports. But on-line processing is much more expensive than batch processing and probably is more sophisticated than is needed for most centers.

There are two kinds of computer service bureaus potentially available to centers:

a) Public service bureaus are available through state or county agencies. Departments of Mental Health in some states now provide computer processing services. Often these services are available through county government, school boards, or local universities and colleges. Because these bureaus are subsidized and do not operate for profit, services are at a lower price than private service bureaus but there may be limitations on when and how data may be processed. In some cases, a group of centers jointly contract for data processing with a public service bureau or set up their own centralized data processing services.

b) Private service bureaus usually charge more than public service bureaus for essentially the same services. The issue of confidentiality of client information arises when a center is considering having data processed by a private service bureau and safeguards should be observed by the center to avoid this problem.

Centers should carefully examine the relative advantages and disadvantages of using computer service bureaus for their data processing. Centers may find that private service bureaus are extremely competent in processing billing and accounting information but limited in their ability and flexibility in processing program statistics. Public service bureaus may be quite satisfactory for statistical data processing but are unsatisfactory in billing. Bureaus offer centers a viable option for automated data processing at a reasonable cost. It is suggested that before contracting for their own data processing services centers seek advice from consultants who specialize in computer systems for human service agencies.

5) Systems which involve leasing or buying computers are feasible when a center is large enough to justify the costs. Leasing equipment requires a

smaller initial outlay of money than buying does and allows for replacement of old equipment with equipment having greater capabilities. In either case, the center should have staff members who are familiar with computer programming and data processing as well as access to outside consultants.

USING INFORMATION SYSTEM REPORTS

In a mental health center, the responsibility for services and the use of resources begins at the client level and progresses through layers of management to the policy-making level. Managers at the different levels of the mental health center are the potential users of information system data for monitoring and decision making in those areas of the center's operations for which they are responsible. (Managers in this context are persons who supervise other people or are responsible for a particular set of administrative functions in a mental health center.)

Routine summary information reports should be distributed to the center administrator, the director of clinical services and the supervisors of service units within the center for regular monitoring. This keeps the progress of clinical activities and uses of resources before the managers and provides readily available information for day-to-day decision making. Hagedorn, Beck, Neubert and Merlin[3] point out that the monitoring of routine reports makes the manager more aware of the performance characteristics of the service unit and improves the ability to make decisions. The authors also identify other beneficial side effects of continuous monitoring:

- It makes the supervisor more familiar and comfortable with quantitative aspects of the program instead of only the qualitative or clinical aspects.
- It establishes the credibility of the evaluation data base as a source of useful data about the program.

- It prepares program supervisors for a positive reception, and therefore increased likelihood of use of later special reports about the program in question.
- It develops "informational curiosity" in managers and supervisors, so that they increasingly take the initiative in asking for more information (or special studies) about their unit -- and this is an almost certain prognostic sign for utilization of that requested information when it becomes available.

While the administrator needs information in aggregate form about all the service units that make up the center, supervisors of individual service units require only reports that are relevant to their own areas of responsibility, but in many cases, they need more detailed information.

Information system reports used for monitoring vary considerably in format and content from one center to another because of the individual center's mandates, organizational structure, priorities, management styles and information system capability. It is therefore difficult to recommend particular types of reports for use in monitoring. Instead, some of the potential uses of monitoring reports are described and are presented in the functional areas of clinical management, administration, policy making, and evaluation and planning.

CLINICAL MANAGEMENT

Progress toward program goals can be monitored through information system reports. Clinical managers can use these reports to identify areas of clinical activity that require corrective action.

Patterns of the use of services can be monitored to identify fluctuations and trends in the demand for services that assist in the scheduling and allocation of staff time.

Staff productivity can also be monitored through information system reports to assure that there is an equitable distribution of work among clinical staff.

A simple information system can be used to select and list client cases for periodic quality assessments of clinical records.[4] (Clinical records provide more detailed accounts of actual practice.) A more sophisticated information system with detailed client data can provide information on individual cases to assist in the assessment of continuity of care and compliance to client care standards. Some centers record treatment outcomes directly into the information system. Aggregate data on treatment outcomes for particular client groups can then be drawn for monitoring purposes as well.

Often those responsible for the collection and editing of input data for information systems find that professional staff resist filling in forms because they feel that the data is used more for center management than to assist them in delivery services to the community. In fact they may feel that filling in forms takes time away from client services. Some suggestions for encouraging the reporting of data and the use of reports are:[3]

- Minimize the reliance on professional staff for data inputs by having clerical staff make most of the data entries.
- Reduce the overlap and redundancy of reporting by using multi-purpose forms (e.g., using billing tickets as inputs into the statistical information system as well as for billing and accounting).
- Provide feedback reports that translate data into usable, relevant information for clinical program management.

ADMINISTRATION

Administrators have several management responsibilities: 1) developing plans for programs and budgets; 2) organizing and managing programs; 3) controlling resources; and 4) providing information to center staff, the governing board and varied groups and agencies outside the center. The information system provides the data needed to carry out these responsibilities if they are continuously reported, and are analyzed and summarized to assist in decision making.

Usually the center administrator requires less detailed reports than supervisors. He/she may delegate responsibility for monitoring details of the reports to administrative support service staff (e.g., the evaluator, the business manager, an administrative assistant), expecting that these individuals will advise him/her on any significant discrepancies or trends that require attention. The important point is that someone must be responsible for monitoring reports, particularly those related to resource management, to identify deviations from plans that require action by the administrator.

Monitoring reports also may be used for reporting to other agencies, groups and individuals outside the center.

- Public information and education reports for the news media, local government, interest groups, affiliated human service agencies and individuals in the community often use data drawn from the monitoring reports.
- Regular reports on services, costs and clients made to local agencies that support the center are drawn directly from reports used in monitoring. Similarly, reports of this kind are required by federal and state funding agencies and sometimes by regional and local health planning agencies.
- Data from monitoring reports can be used in crisis situations when the center is under criticism for its management or fiscal

practices. However, adequate monitoring and decision making should correct such problems before they reach crisis dimensions.

- Information system data and reports are also useful for developing grant applications or requests for funds.

Policy Making

The major role of governing boards is setting policies and planning for the center's operations. Frequently it appears that board members' primary interest is in the fiscal operations of a center. However, their interest in meeting community needs can be encouraged by reports about the kinds of clients served and the types of service provided. Monthly or quarterly progress reports that show the patterns of use of services help in keeping board members informed, and are a kind of monitoring. These reports also enhance the board's participation and understanding of programmatic issues and problems facing the center.

Overall the purposes of providing regular reports to governing boards are to assist them in: 1) understanding center operations so that they can make better decisions on priorities and policy; 2) understanding and responding to anticipated political problems and legislative changes that affect programs and policies; and 3) answering questions about programs that are asked by the community.

Planning

Summary reports on the use of services by clients assist in projecting future demands for services. Some needs assessment approaches are based on these data (e.g., patterns of use, social indicators and rates under treatment). Reports about the uses of resources and cost summaries aid in the

assignment and allocation of staff, space, and equipment. They also assist in decisions about budgets, productivity goals, and fee schedules.

Evaluation Monitoring

The data reports yielded from the information system may be monitored directly by managers (e.g., clinical directors and supervisors, business managers). This, too, is a type of process evaluation. However, one person should be responsible for monitoring the center's overall operations in a systematic way to determine whether client movement, the use of staff, and costs are falling within a range that is congruent with the goals and allocation of resources. The evaluator may be assigned responsibility for this overall evaluation function, reporting significant exceptions to the center administrator for corrective action.

Occasionally a manager notes variations in the monitoring reports that require immediate action or further special study. The nature of special studies varies and may involve the compilation of available data or time-limited collection and analysis of new data that is not routinely kept in the information system. The evaluator is usually responsible for carrying out special studies which require sophisticated evaluation methods.

SUMMARY

An information system, if appropriately designed and used, is the means for collecting and compiling data, while monitoring is the process used by managers in mental health centers to assure that a program is meeting its goals. The monitoring process includes planning, monitoring, and assessment stages.

The planning stage involves linking the center's annual plan for programs and budgets to the minimal data on client movement, services rendered, staff activity and costs that are usually included in the statistical and cost components of an information system. These data are used by managers as key indicators to monitor program activities and the use of resources.

Several characteristics should be present if an information system is to be useful for internal management. The staff in the center should be willing to establish and maintain a workable system that is designed to meet the data needs of managers. The system should also be designed so that data from the cost and program statistics components can be integrated. Finally, the system should be able to produce timely reports to the users of information. There are a number of alternatives to processing information system data. Sophisticated computers are not necessarily the best solution to a center's needs.

Managers at different levels in the center need routine reports that are relevant to their own area of responsibility. These reports assist in monitoring and making decisions about program activities and the use of

resources. Information system reports can be used by clinical managers to monitor progress toward program goals, fluctuations in the demands for services, and staff productivity. Reports can also be used to select cases for quality assessments. Administrators use information system reports to monitor program operations and provide information to governing boards. Summary reports are used to plan for programs and budgets, and evaluate programs.

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