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AUTHOR Portny, Stanley E.
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ABSTRACT

State vocational rehabilitation agencies need a system for effectively and efficiently collecting, processing, and reporting program information. Design of such a system begins with a thorough understanding of the nature of the information needs and the particular applications for which the information will be used. Information needs may be divided into two categories: those arising from the requirements of external audiences that influence the program and those emanating from the internal demands of planning, management, control, and operation. When designing a state vocational rehabilitation agency management information system, each of five system operations should be addressed: data collection and preparation, data entry, data storage and retrieval, central processing, and report preparation. Some common issues and concerns for state agency information systems include the use of only a portion of the data routinely collected for agency planning, management, or operations; the maintenance by field staff of data routinely recorded in a centralized data base; the creation of reports that are not designed by identifying the particular need they are to fulfill and contain unnecessary information; and the marginal attempts to highlight and interpret significant information in a report. (Attachments describe efforts in Virginia and Illinois to use existing program data to analyze agency performance through a case load analysis system.) (YLB)

A CONCEPTUAL APPROACH TO THE DESIGN OF MANAGEMENT INFORMATION SYSTEMS FOR STATE VOCATIONAL REHABILITATION AGENCIES

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Prepared by:

Stanley E. Portny and Associates, Inc.
669 South Washington Street
Alexandria, Virginia 22314
(703) 549-3121

Under Contract with:

Berkeley Planning Associates
3200 Adeline Street
Berkeley, California 94703
(415) 652-0999

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ABSTRACT

A CONCEPTUAL APPROACH TO THE DESIGN OF MANAGEMENT INFORMATION SYSTEMS FOR STATE VOCATIONAL REHABILITATION AGENCIES.
Report by Stanley E. Portny, Stanley E. Portny and Associates, Inc., June 1982, 24 pp.

This paper establishes a conceptual framework for assisting state vocational rehabilitation agencies to effectively collect, process, and report program information, and to utilize this information to carry out their diverse roles and responsibilities. The report discusses the need for information to meet the needs of the external audiences which influence the program, as well as the need for information to meet internal planning, management control, and operation requirements. After describing the overall structure of a state VR agency management information system, the report describes an approach to the design of an MIS and describes common issues and concerns for most state agency information systems. Attachments describe efforts in several states to use existing program data to analyze agency performance through a "Caseload Analysis System."

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I. INTRODUCTION

The Vocational Rehabilitation (VR) program is a state-federal partnership established to assist disabled individuals to prepare for and engage in gainful employment. The Rehabilitation Services Administration, the federal program agency, coordinates the disbursement of federal VR funds to state agencies; develops general program policies, regulations and guidelines; and provides evaluation, technical assistance, and training support. State VR agencies are responsible for refining and interpreting program policies, developing operating procedures, allocating and managing the disbursement of federal and state program funds, providing or coordinating the provision of services to clients and monitoring a variety of special grant and project activities designed to support the program.

To accomplish its ultimate goal of effectively providing rehabilitation services to eligible disabled people, the state VR agency must successfully perform a diversity of roles in a complex program environment. On the one hand, it must negotiate and collaborate with RSA, the state legislature, the governor's office, and other federal and state programs which provide similar services to the VR target population. Additionally, it must at all times work closely with disabled people themselves to ensure that the program is being responsive to the special needs of the target population. On the other hand, it must develop and operate an effective organizational structure for planning and coordinating the actual delivery of services to its clients.

Successful performance of these numerous activities requires that substantial amounts of program information be provided to selected audiences. Design of a system for effectively and efficiently collecting, processing, and reporting this information begins with a thorough understanding of the nature of these needs and the particular applications for which the information will be used.

II. STATE VR AGENCY INFORMATION NEEDS

State VR agency information needs may be divided into two categories: 1) those arising from the requirements of external audiences that in some way exert power over or influence the program; and 2) those emanating from the internal demands of planning, management control, and operation.

A. EXTERNAL REQUIREMENTS

Information for external audiences is most frequently required to confirm program compliance with established policies and guidelines, to justify budget requests and legislative initiatives and to demonstrate program accountability. Additionally, the agency may have to respond to requests for information from other programs and the general population which describes program purpose, the target population, services provided, and program performance. The task of the agency is to respond to these information needs by making optimal use of data already available and, thereby, to minimize the need for special data collection and/or analysis activities.

B. INTERNAL REQUIREMENTS

1. Planning, Management Control, and Transactions in the State VR Agency

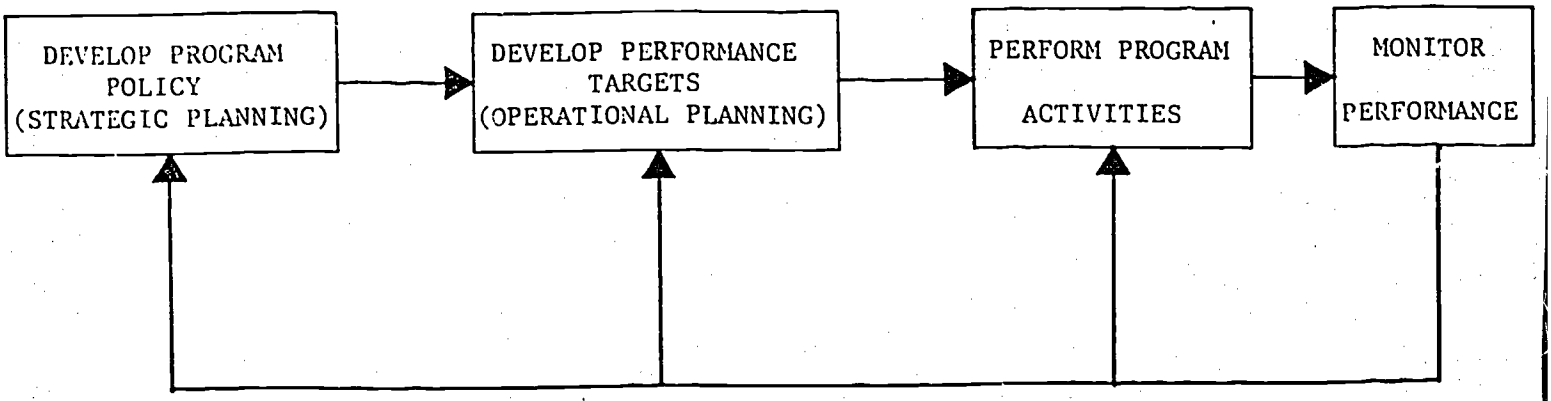
Internally, program information is required to facilitate the following organizational activities:

- planning -- the establishment of program policy (i.e., mission, goals, objectives, and operating procedures) and the development of performance targets;
- management control -- the direction and coordination of activities and resources to achieve specific results; and
- events or transactions -- the actual provision of services, transfer of resources, and other related activities.

These activities are regularly performed on an ongoing basis; the cyclical nature of the interrelationships among them is illustrated in Figure 1.

Figure 1

Activities Conducted in the Operation of a State VR Agency



Strategic planning entails the formulation of program policy, in response to the need for program services, program capacities, and external resource and environmental constraints; operational planning consists of translating the program goals and objectives into measurable performance targets. Management control is accomplished through the comparative assessment of program performance with the performance targets. Program events and transactions are conducted in accordance with established guidelines, operating procedures, and accepted principles of good practice.

A substantial amount of information on program operations, as well as on the external environment, is required to support these organizational activities. Information used to facilitate program events and transactions, which, in general, entail decisions of a highly structured nature that are made in accordance with specified sets of rules, must be accurate, well-defined, and in prespecified formats. On the other hand, the information requirements for planning, which consists of decisions that depend more upon judgment and analysis of particular situations, are for flexible access to a data file and the performance of analyses which cannot be totally specified up front. Information requirements for management control tend to lie somewhere between these two extremes. A table which depicts salient characteristics of the information required for planning, management control, and operations is presented in Figure 2.

Four types of data are collected and used in the state VR agency:

- transaction data,
- system descriptors,
- performance targets, and
- environmental characteristics.

Transaction data either serve as a basis upon which operational decisions are made and resulting actions taken, or describe program actions which will be or have been taken. Examples include the type and cost of services authorized for a client and the data on which a client begins or ends a particular service. System descriptors include characteristics of the service delivery programs, resources used, or clients served.

Performance targets are measurable objectives which are to be achieved in a specified time period. Targets are most frequently established for system descriptors, such as the number and characteristics of clients to be

Figure 2

Characteristics of Information Requirements by Organizational Activity

CHARACTERISTICS OF INFORMATION	MANAGEMENT		
	TRANSACTIONS	CONTROL	PLANNING
Source	Largely internal		Largely external
Scope	Well defined, narrow		Very broad
Level of aggregation	Detailed		Highly aggregated
Time horizon	Historical		Future
Currency	Highly current		Quite old
Required accuracy	High		Low
Frequency of use	Very frequent		Infrequent

served, and for aggregated transaction data, such as the amount of program funds to be expended or the average amount of time to be spent in the program. Environmental characteristics include descriptions of entities and situations external to the state VR agency which impact upon or are of importance to program operations. Examples include descriptions of other programs which offer services similar to those provided by the agency, unemployment and other job market statistics, and the projected federal VR budget for the next fiscal year.

Typically, transaction data, selected system descriptors, and selected environmental characteristics are required to support program events and transactions. Management control entails the comparison of program performance, as represented by aggregated transaction data and system descriptors, with established performance targets. Planning involves the use of all four types of data.

2. State VR Agency Operational Subsystems

Typically, the state VR agency is comprised of the following operational subsystems:

- client services,
- indirect services and support,
- funds,
- vendors and faciltities, and
- personnel.

Client services include the assessment of program eligibility, the development and administration of service delivery programs for each client and the helping of clients to obtain and maintain gainful employment. Indirect services include projects to improve service delivery capability, as well as to reduce physical and attitudinal barriers to disabled people in the community.

Management of funds entails arranging for or actually performing the disbursement of program dollars for goods and services obtained. Management of vendors and facilities includes arranging for and procuring the goods and services prescribed for clients in their individualized rehabilitation program. Administration of state agency personnel encompasses their recruitment, assignment, and support.

Individual administrative structures and/or organizational units are established to conduct these activities and to manage these program resources. However, successful operation of one subsystem depends upon close coordination with one or more of the others.

Key interrelationships among these five operational subsystems are depicted in Figure 3. As illustrated, agency personnel receive salaries and use program funds to purchase goods and services from vendors and facilities, in order to assist clients to obtain and maintain gainful employment and to reduce their dependency upon society. In addition, program personnel work to develop new service delivery capacity, as well as to reduce environmental barriers to disabled people in the community.

Program funds actually flow to personnel (to pay their salaries) and to vendors and facilities (to pay for services and equipment obtained). The numbers and types of agency staff maintained depend upon the amount of program funds available for services, as well as the number of clients to be served and the types and extent of services to be provided. On the other hand, the number of clients that can be served and the types of services which may be authorized and provided depend upon the amount of funds available, the number and types of vendors and facilities available, and the numbers and capabilities of available staff.

3. Information Requirements for Planning, Management Control, and Operation of Individual Agency Subsystems

In the normal operation of the state VR agency, planning, management control, and the conduct of the daily transactions occur in each of the five subsystems noted. The particular objectives of these activities are presented in Figure 4.

Information required to support the conduct of transactions in each of the subsystems may be discerned directly from the description of the activity being performed. Client services transactions typically require descriptive data and professional assessments on the client, as well as a working knowledge of rehabilitation techniques and available resources. Coordination and utilization of funds, vendors and facilities, and personnel requires descriptive data on the planned action, procedural guidelines describing the constraints applying to such a transaction, and possibly approvals allowing

Figure 3

Interrelationships Among Major Subsystems in State VR Agency Operations

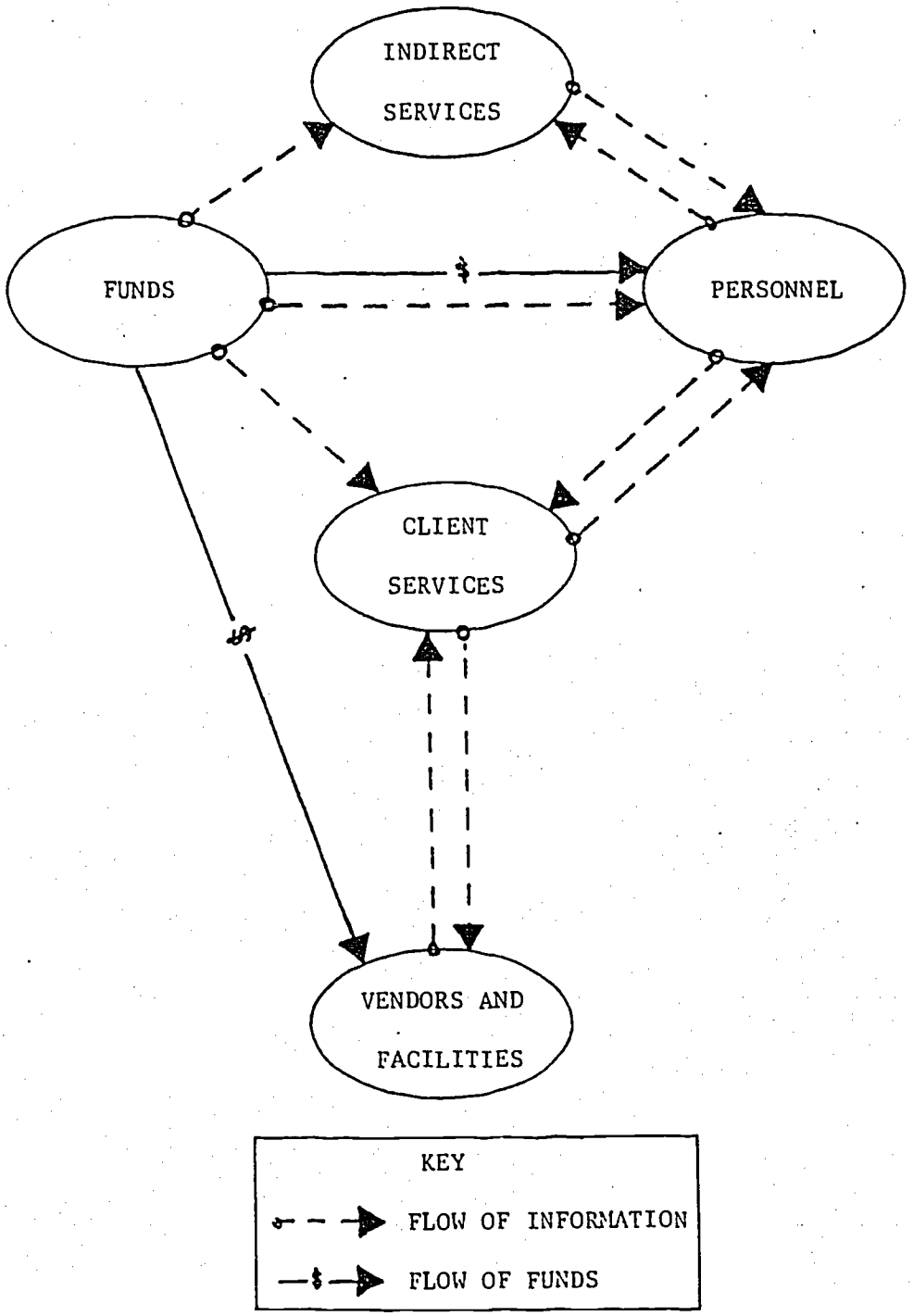


Figure 4

Objectives of Planning, Management Control, and Transactions in the Individual State VR Agency Subsystems

SUBSYSTEM	PLANNING	MANAGEMENT CONTROL	TRANSACTIONS
CLIENT SERVICES	• To assess the size and service needs of the target population • To develop improved methods for serving the target population within projected resource constraints • To develop a service delivery plan.	• To insure prescribed services are provided effectively, efficiently and in a timely manner in compliance with Federal and State requirements (Caseload Management) • To monitor client progress in response to the services provided (Caseload Management) • To insure agencywide service delivery goals and objectives are met (Program Management)	• To determine client eligibility • To develop a service plan (IWRP) • To provide or arrange for the provision of prescribed services • To help the client to obtain and maintain gainful employment
INDIRECT SERVICES	• To determine components of the service delivery system where increased capability is required • To identify attitudinal and physical barriers to the disabled population in the community • To select projects to be undertaken by the agency.	• To insure that projects are performed within established time schedules and achieve the results promised.	• To perform the tasks and activities detailed in all projects which fall under this category.

CONTINUED

Figure 4 (continued)

SUBSYSTEM	PLANNING	MANAGEMENT CONTROL	TRANSACTIONS
FUNDS	• To project the expected sizes of future Federal and State VR program budgets • To estimate the cost of providing particular services to specific types of clients • To identify alternative sources of funds or similar benefits • To develop a program budget.	• To insure that annual expenditures closely approximate but do not exceed available Federal and State program funds • To insure that all resources in addition to VR program dollars are used to the maximum extent possible.	• To authorize the obligation of funds for a particular good or service • To authorize payment of a voucher or invoice • To prepare a check for payment (sometimes).
VENDORS AND FACILITIES	• To estimate the projected need for vendors and facilities of different goods and services • To develop a plan for insuring the availability of appropriately qualified vendors and facilities.	• To insure that goods and services are provided by vendors and facilities in a cost effective and timely manner.	• To select a vendor or facility to provide a particular good or service • To arrange for the good or service to be provided • To certify that the good or service has been provided.
PERSONNEL	• To estimate the projected need for State agency staff in the future • To identify sources from which staff will be recruited, when necessary • To develop a plan for recruiting required staff.	• To insure that authorized positions are filled with appropriately qualified staff • To insure that staff are adequately performing the jobs for which they are responsible.	• To hire State agency staff • To assign staff to appropriate organizational units • To provide required training to staff.

the transaction to be made. The information to facilitate indirect service activities depends entirely on the particular project or initiative being conducted.

The objectives of state VR agency planning and management control are more generalized, however, and the information required to support them is not derived as easily. In Figure 5, a table is presented which indicates information which would help to address the particular objectives for each agency subsystem as noted in Figure 4.

Figure 5

Selected Information Requirements for Planning and Management Control of State VR Agency Organizational Subsystems

SUBSYSTEM	PLANNING	MANAGEMENT CONTROL
CLIENT SERVICES	• Definition of the target population to be served • Size and characteristics of the target population potentially available for services • Service needs of the target population which the State VR agency will attempt to address • Estimates of the number and characteristics of people who will apply for services • Estimates of the percentage of applicants that will be eligible to participate in the program • Effectiveness/accuracy of the eligibility determination process • Effectiveness of different services • Capacity of the program to accept and effectively serve new clients • Current and projected availability of required goods and services • Availability of other programs potentially able to provide same or similar services to VR target population • Proportion of clients successfully completing the program • Proportion of clients not successfully completing the program and the reasons therefore • Proportion of clients successfully closed that are placed in specified employment situations	Caseload Management • Amount of time client has been in the program • Amount of time client has been in current status • Total improvement client has shown to date since entering the program • Extent to which service currently being provided to client is achieving/has achieved its intended purpose • Characteristics of employment situation at closure • For clients placed in gainful employment, the success which they are having in their position Program Management • Number of client applications received • Number of applicants referred by different sources • Number and characteristics of clients determined eligible • Number and characteristics of clients determined ineligible • Relative frequencies of different reasons for ineligibility

CONTINUED

Figure 5 (continued)

SUBSYSTEM	PLANNING	MANAGEMENT CONTROL
	• Nature and magnitude of benefits realized by clients as a result of program participation • Political support or opposition to VR program in the State and nationally • Job market situation in the State	• Number and characteristics of clients served • Number and characteristics of clients successfully rehabilitated • Number and characteristics of clients not successfully rehabilitated • Relative frequencies of different reasons for unsuccessful rehabilitations • Number of clients in the various stages of the VR program • Average time spent by clients in the various stages of the VR program • Average gain or improvement in areas of critical life functioning realized by clients as a result of program participation • Extent to which clients retain over time the benefits realized through program participation • Types and number of units of services provided

CONTINUED

Figure 5 (continued)

SUBSYSTEM	PLANNING	MANAGEMENT CONTROL
INDIRECT SERVICES	• Projected status of legislative provisions and funding for special project activities • Prioritized list of service delivery system needs and potential projects with the community	• Time schedule and milestone chart for each project or activity • Periodic assessment of project progress
FUNDS	• Projected Federal and State program budgets for the next one to five years • Projected increases/decreases in the costs of services • Projected sources of similar benefits and the amount of funds potentially available • Projected changes in the average cost of serving a client, successfully rehabilitating a client • Existing future obligations for services • Cost-effectiveness of different service delivery alternatives	Caseload Management • Expenditures to date for each client • Percentage of total expenditures planned for each client which have been expended to date • Outstanding authorizations for each client • Amount of similar benefits planned and utilized for each client Program Management • Total amount of Federal, State and other funds available for the year • Expenditures to date in each of the identified budget categories • Total outstanding authorizations for goods and services • Total amount of similar benefits utilized • Average percentage of the cost of a case that is paid for with similar benefits

CONTINUED

Figure 5 (continued)

SUBSYSTEM	PLANNING	MANAGEMENT CONTROL
VENDORS AND FACILITIES	• Projected demand for individual goods and services • Current availability of needed goods and services • Projected increases/decreases in the number and/or capacity of vendors and facilities • Cost-effectiveness of different vendors and facilities	• Total number of clients currently being served by each facility available to serve clients • Total number of clients served year-to-date by each facility • Percent of all clients receiving a particular good or service that went to each of the vendors or facilities offering those goods or services • Number and percentage of clients served by each facility who successfully completed the program • Reasons for client dropout short of completing the program at each facility • For each facility, the average gain realized by clients as a result of services received • Average length of time required to successfully complete the program at a facility • Total amount of program funds expended for the year to date at each individual vendor and facility • Average cost of particular goods or services at each available vendor and facility
PERSONNEL	• Projected staff attrition rates • Potential sources of trained staff • Projections of qualifications which staff needed will have to possess • Current state personnel recruitment policy and procedures and expected changes • Estimates of the number of staff required to provide different levels of specified services • Amount of funds available for staff in-service training	• Number of existing vacancies in the agency • Average length of time to fill a vacancy • Average and distribution of performance ratings for agency staff • Staff turnover and attrition

III. STRUCTURE AND DESIGN OF A STATE VR AGENCY MANAGEMENT INFORMATION SYSTEM

A. ELEMENTS OF AN MIS

A Management Information System is an integrated, man/machine system for providing information to support planning, management, and operating functions in an organization. The information activities may be large-scale and complex or they may be few and simple; the system may be extensively documented or completely informal; and the system may utilize the most technologically advanced computer support or be completely manual. In any case, the MIS will include the following five operations:

- data collection and preparation,
- data entry,
- data storage and retrieval,
- central processing, and
- report preparation.

1. Data Collection and Preparation

Information is collected in the state VR agency by the following methods:

- regularly scheduled data submissions,
- ad hoc data submissions,
- special studies and investigations,
- developmental planning activities, and
- miscellaneous information-gathering.

All transaction data and most system descriptors are recorded on standardized input forms at specified times in the rehabilitation process. Ad hoc data submissions and special studies may be designed to elicit more information on particular system descriptors and aspects of program performance, while performance targets are developed through specialized planning analyses and activities. Information about the program environment and

other isolated topics of interest is obtained through specially designed data collection activities.

2. Data Entry

In noncomputerized information systems, entry of data may simply entail placing data collection forms or tally sheets which summarize the raw data in a notebook or a file drawer or sending them to a staff person responsible for their maintenance. In computerized systems, the data must be transferred from the raw data collection forms or tally sheets to a computerized data file. This process may be accomplished either by having the raw data forms and/or tally sheets routinely submitted to a central location (the same as for noncomputerized systems) and then entered into the computerized data file by one or more specially designated agency staff or by having data entered directly into the computer on remote terminals by staff responsible for its collection and/or preparation.

Most often, data entry will entail some combination of these various approaches.

3. Data Storage and Retrieval

Information collected in the state VR agency is stored in one or more of the following locations:

- central computerized data file(s),
- centralized manual files in the state office,
- centralized manual files in the field offices, and/or
- manual files belonging to agency staff.

If the state has computerized some or all of its information system, most frequently the data base established has two principal components: 1) a statistical file, and 2) a fiscal file.

4. Central Processing

Processing of raw data collected and stored in the information system entails the tallying, combining, and analyzing of the numbers in order to describe performance clearly and concisely, to determine trends in program

performance and, where possible, to suggest reasons for observed behavior. In noncomputerized systems, processing is performed by hand, while processing in computerized systems is accomplished with specially developed programs and a wide array of existing software packages.

5. Report Preparation

Information can be prepared and presented in the following forms:

- transaction documents,
- preplanned reports,
- preplanned inquiry responses,
- ad hoc reports and inquiry responses, and
- man/machine dialogue.

Transaction documents include such items as service authorizations, vendor invoices, IWRPs, client case files, and so forth. The transaction document serves one of two purposes. Either it describes or confirms an action that has been or will be taken, or it can serve as a request for action or provide instructions for taking the action.

Preplanned reports are produced in accordance with an established format and are generated at regularly scheduled intervals. They either describe certain program conditions at the end of the time period in question or summarize activities and results which have occurred during that time period.

Preplanned inquiries are questions about performance which may be asked for which the computer software required to generate the answers has already been developed, but about which regularly scheduled reports are not routinely produced. Preplanned inquiries are addressed as they occur, in accordance with established reporting formats.

Ad hoc reports and inquiry responses are those information outputs which are produced in response to a particular request, in formats specifically designed for the situation at hand. Information to respond to such requests may be obtained from the data base already in existence, or new data may have to be especially collected.

Man/machine dialogue entails the direct use of a computerized model or analytic algorithm by a human to explore alternative situations which

might occur. Rather than producing descriptive analyses of past performance, this form of output reflects a projection of what would occur in the future, based upon certain underlying relationships which govern behavior and interaction of the system being examined and upon postulated assumptions regarding key characteristics of the future program environment.

The performance of those transactions which comprise the day-to-day operational activities in the agency typically requires access to transaction documents, certain preplanned reports, and, from time to time, selected preplanned inquiries. These documents describe the current status of the system, salient characteristics which might influence decisions regarding the type of actions which need to be taken and alternative resources available which may be used in the transaction or event.

To facilitate the management control process, information is required about planned performance, actual performance, and the variance from planned performance. This information is typically provided in preplanned reports and responses to preplanned inquiries and ad hoc reports and inquiries. The data base for management control consists of two major components: 1) description of transactions and relevant system parameters, and 2) the performance criteria or standards to be achieved.

Strategic planning entails the analysis of the likely impact upon the current program which changes in the current program environment will have, the potential impact of changes to the program if the environment remains the same, and combinations of both situations. To facilitate these analyses, information is required about the behavioral response patterns of the current program, the current program environment, and any changes to be considered in the nature of the current program or the operating environment.

B. AN APPROACH TO THE DESIGN OF A STATE VR AGENCY MIS

The quality of information produced in the state VR agency and the extent to which it is effectively used to support planning, management control, and day-to-day events and transactions is strongly influenced by the MIS structure and operating procedures. When designing the MIS, each of the five system elements discussed in the previous section should be addressed. A successful system requires smooth operation of all five elements: if one

is inappropriately designed or functioning improperly, it is sufficient to jeopardize the effectiveness of the entire system.

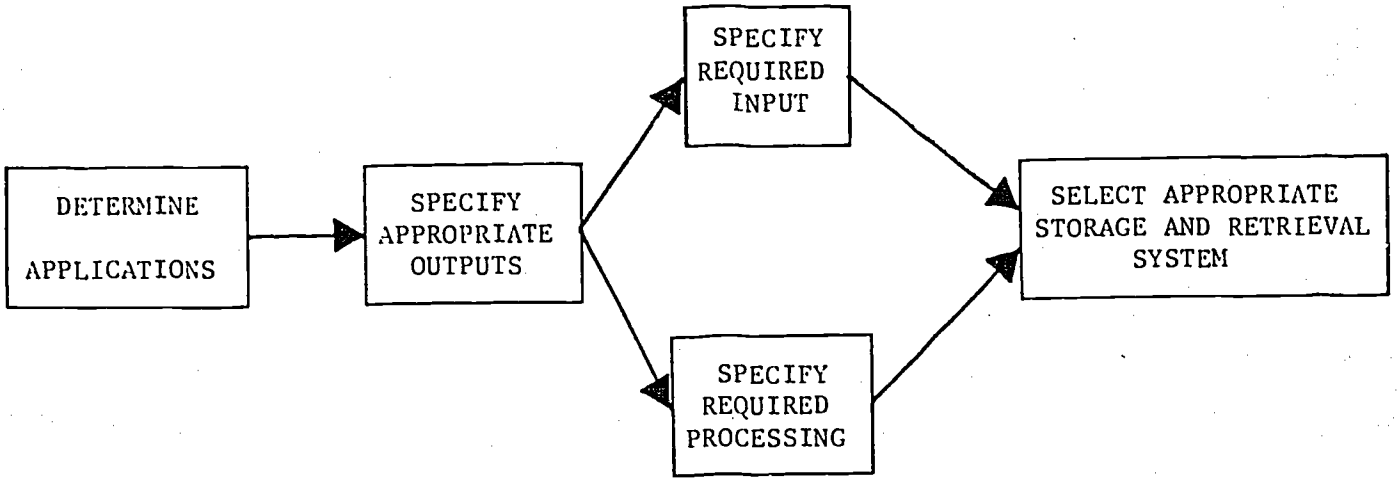
Frequently, the state agency MIS is the product of historical evolution and responses to agency procurement policies, staff capabilities, and other technical details, rather than a comprehensive systems design. The first step in the design or revision of a state VR agency MIS should be a thorough analysis of the agency's information needs; a framework for this analysis has been presented in Chapter II. Then, the individual components of the MIS should be designed to respond to these needs in the most effective and economical manner.

A flow chart of the sequence of steps to be followed in the design of an MIS is presented in Figure 6. As illustrated, particular applications should be identified in terms of generic organizational activity and the organizational subsystem involved. Then, both the substantive content and descriptive characteristics, such as currency, accuracy, detail, and so forth, of the data needed to support these activities should be specified. Based upon these requirements, data presentation formats and report preparation time schedules should be established. Both the input data specifications and the required processing capabilities should be derived from the output specifications. Finally, a storage system adequate to keep the data required and to facilitate the necessary analyses should be selected.

Now, many times the MIS design cannot, in fact, be carried out in the sequence illustrated in Figure 6. Data collection forms may have been designed for the agency years ago, a schedule of periodic reports may already exist, or the agency may be required to use an existing computer hardware system. However, the existence of constraints such as these should not cause all attempts at a logical approach to MIS design or revision to be abandoned. If the process diagrammed in Figure 6 is followed, it is frequently found that more can be done to design a responsive MIS, within the existing constraints, than was initially imagined.

Figure 6

Flow Chart of Steps in the Design of a State VR Agency MIS



SOME OBSERVATIONS REGARDING STATE VR AGENCY MANAGEMENT INFORMATION SYSTEMS TODAY

In response to RSA requirements and to the internal demands of program operations, all state VR agencies have developed systems for collecting and reporting selected program and fiscal data. While each system must collect a certain core group of data as specified by RSA, the data collection, storage, processing, and report generation activities have been developed in response to individual agency needs and capabilities.

Review of a broad sample of the existing state VR agency information systems suggests that most agencies currently collect substantial amounts of program and fiscal data. However, it appears that the effectiveness with which this information is used to support program operations is varied. Following are observations on typical issues and concerns which characterize most state VR agency information systems:

- Often, only a portion of data routinely collected is used in agency planning, management, or operations.
- Field staff frequently question the validity of data upon which computerized reports are based.
- Field staff often maintain manual files of client and fiscal data which they frequently use, despite the fact that the same data are recorded in a centralized data base and made available in computerized reports.
- A majority of computerized reports are prepared to facilitate routine management control, a small number are designed for use in day-to-day operations, and a few, if any, are specifically designed to assist in planning activities.
- In general, report content and formats are not designed by identifying the particular need which they are to fulfill and consulting with the intended users to determine the information required; therefore
  - -- reports tend to be cluttered with a substantial amount of unnecessary information, thereby making it difficult to extract the data of importance;

-- reports frequently are distributed to people for "information only" and are not really needed or used by these recipients in the performance of their jobs.

- Most frequently, there is little or no attempt to highlight and interpret significant information presented in a report.
- Relatively little capability exists to respond rapidly to particular information requests generated by agency managers and planners; as a result, little effort is made to use information interactively in the development of program plans and management approaches.
- Selected efforts have been undertaken to develop creative insight into agency performance through the use of specially designed analytical schemes. One such attempt, the Caseload Analysis System, which develops assessments of key aspects of agency service delivery, is described in Attachments A and B to this report.
- There exists in most state VR agencies the technological capability to develop substantially improved systems for preparing information to facilitate effective planning, control, and operations at all levels.

It is hoped that, through application of the concepts and approaches discussed in this paper, these and similar situations may be effectively resolved and state VR agency MIS's may be developed into streamlined tools to assist in the responsive provision of high-quality rehabilitation services.

ATTACHMENT A

DESIGN AND IMPLEMENTATION OF A CASELOAD ANALYSIS SYSTEM FOR THE VIRGINIA DEPARTMENT OF REHABILITATIVE SERVICES

Stanley E. Portny
Stanley E. Portny and Associates, Inc.

DESIGN AND IMPLEMENTATION OF A CASELOAD ANALYSIS SYSTEM FOR THE VIRGINIA DEPARTMENT OF REHABILITATIVE SERVICES

The Department of Rehabilitative Services has long been dedicated to providing rehabilitation services of the highest quality to eligible disabled people in Virginia. In its continuing effort to ensure the efficient and responsive delivery of services to clients, DRS has initiated a variety of activities aimed at increasing its ability to declare and achieve clear statements of program policy and uniform standards of service provision throughout the state.

A key initiative in this effort is the development of a system for assessing case service provision. To accomplish this task, DRS awarded a contract to Stanley E. Portny and Associates, Inc, to design and assist in the implementation of a Caseload Analysis System (CAS). Different aspects of this activity included developing a methodology for assessing key aspects of service provision, specifying data required for completing these assessments, preparing specifications for required computer programming, and preparing a User's Manual and training materials. In addition, SEPA provided technical assistance during the introduction of the CAS and with the evaluation of the reactions to its introduction. This project was initiated in 1980 and was completed by December 1981.

PURPOSE AND STRUCTURE OF THE CAS

The CAS is a structured approach for describing key aspects of the services provided to DRS clients. The purpose of the CAS is to help ensure that case services are provided in accordance with agency goals, objectives, and accepted agency standards of quality.

The CAS produces objective assessments of the extent to which casework is meeting established goals and criteria. This information is then fed back to service providers, to assist them in modifying their performance to conform with agency expectations; to agency managers, to help them to develop appropriate employee incentive systems and to assist them in the allocation of program resources; and to program policy makers.

The CAS entails three component operations. First, descriptive information regarding the case services provided during a particular time period is collected. Second, this information is assessed with respect to agency objectives to determine the relative adequacy of service provision activities. Third, the results of these analyses are condensed into succinct reports and distributed to agency administrators and service delivery personnel.

Information generated by the CAS can facilitate improved case service delivery in several ways. First, it presents a timely statement to staff of the adequacy of their service provision activities with respect to the DRS mission, goals, and objectives, and, thereby, suggests to them particular practices which they need to improve. Second, information from the CAS can be incorporated into staff appraisal and incentive systems, creating an added inducement for staff to perform in accordance with agency directives.

Additionally, CAS analyses can help to identify areas where clarification and explanation of agency policies and procedures are required, as well as possible needs and topics for staff training. Information from the CAS can serve as one of the bases for allocating existing program resources and for predicting future resource needs. It can also be used to describe agency performance and to substantiate requests for funding and legislative actions at the state and federal levels.

HIGHLIGHTS OF THE VIRGINIA CAS

Following are highlights of the assessment scheme used in the Virginia CAS:

- All cases closed in status 26 are examined.
- No new data collection requirements are introduced.
- Assessment of caseload management and service delivery is based upon the priority category, cost of purchased services, time in status and outcome, including wages at closure and/or employment status of each case.
- Performance is described with multiple measures, including a raw score and performance index for each individual factor and a composite index derived from a combination of the four individual indices.

- Performance assessments are determined for each case, and at the counselor, supervisor, regional, and state levels.
- Reports are distributed quarterly to counselors, supervisors, regional and central office staff.

KEYS FOR SUCCESS

While the CAS inherently had the potential to significantly improve agency administration of the service delivery program, certain key factors substantially increased its chances for success:

- The CAS was developed to respond to the interests and requirements of the Client Services Division, and had the vigorous support of top DRS administrators.
- The CAS incorporated reference performance criteria which related directly to the extent to which important agency service delivery objectives were met.
- These criteria also reflected the relative priorities associated with the achievement of the agency's various goals and objectives.
- Field staff were directly involved in the assessment of agency service delivery priorities.
- The CAS was designed to make maximum use of program data already being collected and to place no additional reporting burdens on the field staff.
- CAS reports were designed to present assessments in a clear and concise format.
- Procedures were designed for using the results of CAS assessments in other existing DRS management and evaluation systems and activities. In particular, the CAS was coordinated with policy planning and development, the DRS Management and Planning System (MAPS), program evaluation, case reviews, and the DRS Management Information System.

ANCILLARY BENEFITS

In addition to creating the capability for timely monitoring of vital aspects of service delivery activities, several additional benefits were realized as a result of the CAS development. First, attention was focused on specifying important agency goals and objectives in unambiguous and measurable terms. Though it was not claimed that the CAS criteria encompassed all DRS goals, they did constitute clear statements of agency priorities in several key areas. Second, the surveying of DRS field staff during the CAS development offered the opportunity to ascertain field staff perceptions of program and policy directives issued by the Central Office. This information provided valuable insight into the effectiveness of the current policy promulgation system. Third, field staff were made aware that program data which they had been collecting would, in fact, be used in a constructive way to assist them in providing high quality services to clients. Consequently, there was an increased motivation for collecting this data and for insuring its accuracy and validity.

Finally, it was anticipated that the CAS would serve as a vital link in the overall DRS communication system. For communication to be effective, the message must be stated in unambiguous terms and probes must be made to ensure that it had been received. The CAS would provide continuing information regarding the extent to which DRS policy statements had been received and acted upon and, thereby, inferences regarding the effectiveness of the communication process. Additionally, it offered field staff a vehicle for assessing the extent to which their efforts to respond to agency policy directives had been successful.

FUTURE WORK

A variety of areas have been explored for future expansion of the Virginia CAS. Among them are the following:

- inclusion of cases closed in statuses 28, 30, and 08;
- assessment of active cases;
- inclusion of nonemployment outcome measures;
- inclusion of intermediate outcomes; and
- inclusion of new agency priorities as they arise.

ATTACHMENT B

THE ILLINOIS DEPARTMENT OF REHABILITATION SERVICES
CASELOAD ANALYSIS SYSTEM

THE ILLINOIS DEPARTMENT OF REHABILITATION SERVICES
CASELOAD ANALYSIS SYSTEM

A. WHAT IS THE CASELOAD ANALYSIS SYSTEM?

The caseload analysis system (CAS) is a set of procedures for describing the nature and quality of services provided to DORS clients. The purpose of the CAS is to help ensure that case services are provided in accordance with agency goals, objectives, and accepted agency standards of quality.

B. HOW DOES THE CASELOAD ANALYSIS SYSTEM ACHIEVE ITS PURPOSE?

The CAS produces objective assessments of the extent to which casework is meeting established goals and criteria. This information can be used to identify performance which is particularly effective, as well as that which is problematic. Service delivery approaches contributing to the successful performance can be encouraged and shared. Practices which result in unacceptable results can be studied and improved.

Information generated by the CAS can be used to facilitate improved case service provision in several ways:

- It can present a timely statement to staff of the adequacy of their service provision activities and, thereby, suggest to them particular practices which they should continue or areas in which they need to improve.
- It can be incorporated into staff appraisal and incentive systems, thereby creating an added inducement for staff to perform in accordance with agency goals, objectives, and directives.
- It can help to identify areas where clarification and explanation of agency policies and procedures are required, as well as possible needs and topics for staff training.
- It can serve as one of the bases for the allocation of existing program resources and for the prediction of future resource needs.

- It can be used to describe agency performance and to substantiate requests for funding and legislative actions at the state and federal levels.

C. WHAT ACTIVITIES DOES THE CASELOAD ANALYSIS SYSTEM ENTAIL?

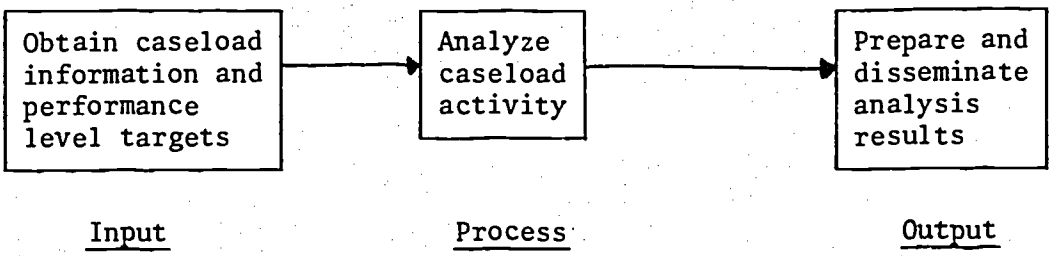
The CAS is comprised of three separate operations:

- input,
- processing, and
- output.

The input operation includes the gathering of all data required for the calculation of casework assessments. These data include statistics which describe each client served, the services provided, and the results of services, as well as performance levels against which casework will be assessed.

Processing entails the calculations of performance assessments based upon the input data. These calculations are performed with the aid of the Central Office computer system.

The output operation entails the preparation of reports detailing the results of the casework assessments and the dissemination of these reports to agency staff. A diagram illustrating the sequence of operations conducted in the CAS is presented below:



D. WHAT OUTPUTS ARE PRODUCED BY THE CASELOAD ANALYSIS SYSTEM?

Four reports will be produced by the CAS and distributed to DORS personnel:

- district report,
- area report,

- regional report, and
- state report.

The district report presents CAS assessments for cases within the district, as well as average statistics for the district, area, region, and state. The area report presents a summary of the assessments for all districts within the area; the regional report summarizes CAS results for all areas within the region; and the state report summarizes results for all regions within the state.

E. WHAT INFORMATION IS REQUIRED FOR THE CASELOAD ANALYSIS SYSTEM?

All data required for CAS assessments are currently being collected by DORS. Consequently, the data will be obtained from existing agency files, and no additional data reporting requirements will be introduced.

F. HOW IS CASEWORK ASSESSED IN THE CASELOAD ANALYSIS SYSTEM?

1. Which cases are assessed in the Caseload Analysis System?

All cases closed in status 26[1] during the time period being considered will be included in the CAS assessment. This includes cases closed in status 26 and then reopened in status 32 during the same time period.

2. Which characteristics of case service provision are considered in the Caseload Analysis System?

Four factors are considered in the assessment of case service provision:

- priority -- the relative emphasis placed on serving the target group in which the client is classified;
- cost -- the cost of purchased services in statuses 10-26;
- time -- the time which the client spends in statuses 10-26; and
- outcome -- the employment status of the client at closure.

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[1]All status codes used in this manual are equivalent to those defined in the Illinois Department of Rehabilitation Services Client Services Manual, pp. 12-19.

3. How are the relationships between factor values and index scores determined?

The index scores for priority and outcome which correspond to different priority groups and employment statuses, respectively, are determined annually based upon the opinions and judgments of DORS administrators. The relationships between index scores for cost and time and actual values of cost and time, respectively, are based upon agency program performance data for the last complete fiscal year.

4. How are factor indices used to develop assessments of case service provision?

Factor indices are interpreted in the following ways to yield a variety of measures of casework performance. For each case:

- each factor index score is considered individually, and
- a composite index is formulated from a weighted average of the individual factor scores.

For groups of cases:

- an average index score is calculated and considered for each factor,
- an average composite index is calculated,
- a total composite index is calculated, and
- an average total composite index is calculated.

G. HOW DOES THE CAS RELATE TO OTHER DORS MANAGEMENT AND DATA SYSTEMS?

The following activities in support of agency management are currently performed in DORS:

- quality assurance,
- evaluation, and
- policy planning and development.

In addition, the STARS system serves as the primary mechanism for collecting and processing program data, while the Case Services Management System details selected approaches for using available program data. The CAS has been designed to complement, support, and build upon these other systems and processes, rather than to duplicate or replace them.

1. Quality Assurance

Quality assurance activities entail the performance of detailed, periodic case reviews to assess compliance of casework with federal and state requirements, as well as the quality of services being provided. The CAS will generate information which can help to identify current or potential problems in service provision which can be examined more thoroughly through the conduct of appropriately designed case reviews.

2. Evaluation

Program evaluation entails the systematic observation of program activities, the comparative assessment of program performance with respect to established goals, objectives, and other service criteria, and the formulation of recommendations for improving program performance, if required. Information produced by the CAS can serve as partial indicators of the effectiveness or efficiency of selected aspects of program operations to be considered in the conduct of any program evaluation. Additionally, information generated by the CAS can help to identify particular program components which should be examined in more detail through the conduct of a special evaluation study.

3. Policy Planning and Development

The development of responsive program policy requires the collection and consideration of data which accurately describe program elements of vital importance. Information produced by the CAS and subsequent attempts to determine reasons for demonstrated behavior and ways to improve problems discovered can serve to identify issues for which modification or development of DORS program policies should be considered.

4. Statistical Tracking and Retrieval System

The STARS is the main vehicle for collecting information from case records throughout the state and for processing and creating required summaries of this information. The majority of the reports currently produced by STARS are descriptive summaries of caseload movement, activity, and status at the time of report preparation. They are designed to provide

information to the staff to facilitate the making of appropriate and timely decisions regarding service provision, as well as the appropriate monitoring of case progress.

All data required for operation of the CAS are obtained from the STARS. Further, while reports generated by STARS are designed to describe current case service provision activity, CAS reports serve to assess and evaluate casework.

5. Case Service Management System

The CSMS is a set of procedures to be followed in the provision of case services. Specific guidance and directions are provided for all levels of DORS staff regarding particular activities for which they are responsible and ways in which these activities should be performed. All caseload data required to support the CSMS are obtained from the STARS.

While the CSMS is a statement of the appropriate actions to follow, the CAS provides measures of the extent to which these actions have yielded the desired results. If problematic behavior is identified through the CAS, it is possible that the CSMS may detail procedures which might help to improve the situation.

H. WHAT CONTINUING ACTIVITIES RELATED TO THE CASELOAD ANALYSIS SYSTEM WILL BE CONDUCTED?

Two types of activities will be conducted on a continuing basis:

- updating of parameter values used to determine the factor index scores, and
- evaluation and improvement of the CAS assessment methodology.

The parameters used to define the relationships between values of priority, cost, time, and outcome and their respective index scores are determined from agency performance data and the judgments and opinions of DORS administrators. At the start of each fiscal year, performance statistics from the recently completed fiscal year are used to update the schemes for determining the cost and time factors. At the same time, a structured questionnaire will be used to solicit input from DORS administrators to update the index scores assigned for particular priority groups and employment

statuses. The results of these activities will be presented in a memorandum, together with required modifications to this User's Manual, which will be distributed to agency staff.

Each year, a review will be made of the extent to and manner in which CAS information was used, elements which might be added or deleted from the case service assessment scheme and any other benefits or problems which resulted from the operation of the CAS. Plans for modifying the CAS based upon the results of this review will be formulated, and required changes in CAS structure and/or operating procedures will be introduced at the start of the new fiscal year.