

PROGRAM EVALUATION IN CHILD WELFARE --
APPROACHES IN PROGRAM MONITORING

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PROGRAM EVALUATION IN CHILD WELFARE --

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by

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LITERATURE REVIEW

PART 1

NATURE OF MANAGEMENT INFORMATION SYSTEMS

Information systems are used for the orderly collection, storage, and retrieval of data. They differ from more traditional recording methods in that the emphasis is on data use, rather than data storage in order to meet the requirements of standards or laws. Instead of the occasional use of data when required for isolated instances, there is an established procedure for its use on an ongoing basis. (Miller and Willer, 1977, p. 199). These systems may or may not be computerized but the addition of computer technology expands the system's capabilities to include data analysis while also increasing its speed and its capacity for handling data. Management information systems (M.I.S.), as the name implies, are meant to assist administrators in the performance of their tasks. The distinguishing feature is essentially the emphasis on management usefulness with concomitant effects on such items as the unit of analysis (eg. aggregate vs. individuals) and the type of output required (Miller and Willer, 1977, p. 207).

The conceptual background of M.I.S. can be found in general systems theory. This theory defines a system as " ... an orderly grouping of separate but interdependent components for the purpose of attaining some predetermined objective" (Mockler, 1968, p. 29). An organization is both a sub-system of the larger economic/social system that constitutes its environment and a complete system in itself composed of functionally integrated subsystems. By focusing on interrelationships, systems theory emphasizes

the importance of the information flow to the decision-making or management process. The M.I.S. provides a formalized structure for the creation and exchange of information in the pursuit of organizational goals. Establishing this structure requires the following: (1) The information needs of the agency must be identified. (2) The appropriate data must be selected from the range of possibilities. (3) The data selected has to be classified in a manner that provides easy access. This step is particularly important as classified data loses all value apart from the category in which it is placed. (4) The system must specify procedures for the recording and collection of data. These procedures should be simple but at the same time they should insure the reliability of the data. (5) The collected data must be summarized in a way that makes it useable. This is essentially how data becomes information. (6) Finally, after the data has been summarized, it must be communicated to the users (Nichols, 1969, p. 72-78).

HISTORICAL PERSPECTIVE

Computer technology was first used extensively by business and government in the 1950's with the automation of certain routine and repetitive tasks such as payroll and billing. Management information systems were the next step in the development of an information technology that was seeking to meet the needs of organizations that were increasingly large and complex. By 1968 most of the related activity was concentrated at this level with some work also in the area of 'information-decision systems', i.e. systems such as cost-benefit analysis that not only provided information, but actually assisted in the decision making process (Dickson, 1968, p. 80-81, 86). Since 1968 advances have made both comput-

er and information technology more accessible, less expensive, and less hazardous. These changes put management information systems within the reach of organizations other than large government departments and business conglomerates. Since 1970, they have increasingly become a feature of social service agencies, including child welfare agencies.

In examining the literature for the motivation behind the acceptance of M.I.S. by social service agencies, one word frequently repeated is 'accountability' (Hoshino and MacDonald, 1974, p. 10). Technically, accountability has been a constant feature of social service agencies: they are responsible to funders and, particularly in the case of child welfare agencies, to governments who provide the mandate under which they operate. In actuality, social workers were not accustomed to explaining resource expenditures in terms of results. Any accounting was done in terms of inputs, eg., number of interviews and home visits, caseloads, number of foster care placements, etc. This situation could be partly explained by the lack of definitive knowledge as to what constitutes good service. In non-profit organizations there is no alarm system such as loss of profits to stimulate change. 'Social Edsels', even when recognized, could go unattended (Weissman, 1973, p. 3).

Events during the 1960's and the 1970's were to alter the situation as described above. During the 1960's North Americans were increasingly sensitized to the serious social problems that persisted in spite of a thriving economy. More and more funding, particularly government funding, became available for both traditional and innovative social programs. With the funding went demands for increased accountability. Supporters and detractors of social programs each demanded results. In an overwhelming number of cases these results were disappointing. Possible explanations

varied widely but the political reality that emerged was a tightening of public expenditures. To obtain funding for new programs, and even to maintain present funding, social service agencies are now expected to establish their value in terms of output (Hopps, 1975, p. 155; Goodfriend, 1978, p. 3 and 4; Mayer, 1975, p. 379). In summary, the agencies had two separate but related needs: (1) to provide funders with the information they demanded re the agency's effectiveness, and (2) to improve the overall agency effectiveness in order to assist the agency in bargaining with funders.

RELEVANCY OF M.I.S. TO SOCIAL SERVICE AGENCIES

Evaluation. The provision of information regarding effectiveness requires an ability to evaluate programs. Often referred to as evaluative research or program evaluation, it may be carried out by a variety of methods but it is always outcome oriented with an emphasis on the immediate utility of results (Hopps, 1975, p. 158). M.I.S. is often viewed as a way of creating an evaluation process (Volland, 1977, p. 282; Hoshino, 1975, p. 10). By looking at the ingredients of program evaluation the applicability of M.I.S. becomes apparent:

'Certain conditions have to be met in order to evaluate a program. There has to be clarity as to objectives; the target population; the treatment methods to be used, the effectiveness of the effort; and the efficiency with which the work has been done ... '
(Mayer, 1975, p. 385).

The clarification of goals or objectives is so basic that it is often overlooked. In fact, most organizational and program goals are much too diffused for the purpose of evaluation (Weiss, 1975, p. 16; Shyne, 1976, p. 6). When they do exist, formal goals often conflict with one another and with informal goals. M.I.S. will not solve this problem, but if pro-

perly implemented, it will identify the need for its solution. In order to carry out the first step in the implementation of the system (i.e. identifying the information needs of the agency) there must be a more concrete understanding of what the agency is trying to accomplish. M.I.S. contributes more directly to the second condition for program evaluation; it can create a very detailed profile of the population being served (Reid, 1975, p. 241). Again this knowledge is very basic but still difficult to obtain with any specificity in large agencies that lack an information system. M.I.S. can also be used very effectively to identify the services or treatment being offered to the target population (Reid, 1975, p. 241). Effectiveness is perhaps the most crucial aspect of evaluation and the most difficult. Unfortunately child welfare agencies like other social service agencies, rely heavily on informal staff assessment in this area (Shyne, 1976, p. 11). The needed alternative is the establishment of simple, objective measures to compare actual results to intended outcomes. Such measures are generally lacking in the field of social work and considerable support is given to the idea of using "proxy or indirect indicators" (Banerjee, 1979, p. 230). M.I.S. records many such indicators (eg. return of child to family, formalized adoption) that can be used when real goal attainment scaling is too difficult or too expensive for an agency. In looking at efficiency, an agency goes one step beyond effectiveness for it must determine not only if goals are being achieved, but if they are being achieved in a way that gets the optimum value for the resources expended. The first step here is to determine the cost of present agency operations. David W. Young (1973) describes one situation at the Edwin Gould Services for Children in New York City where information technology was successfully used not only to determine program costs but also the cost of care for each individual child served by the agency.

When used in conjunction with modern management techniques such as PPBS (Planning Programming Budgeting Systems) and Zero-Based Budgeting, M.I.S. can also answer questions about alternative programs or project future costs. (Hopps, 1975, p. 162). Not every information system has the ability to examine agency effectiveness and efficiency but the technology to do so exists as does the intention of utilizing the systems for these purposes (Hoshino, 1975, p. 11).

Effective Management. Earlier, two agency needs were identified: to establish accountability and to improve overall agency effectiveness. In discussing the relevance of M.I.S. to the former, its relevance to the latter becomes more apparent. Evaluation is part of a management cycle of goal setting, planning directed at objectives pursuant to the goals, program implementation, evaluation according to predetermined criteria, and feedback where evaluation results are utilized in future planning and programming. This cycle is discussed in various forms in much of the literature on modern management. Its logic is reminiscent of Management by Objectives (M.B.O.) although it does not necessarily reflect M.B.O. as a managerial technique. M.B.O. and M.I.S. are often linked in the literature with the view that the introduction of one facilitated the development of the other (Banerjee, 1979, p. 231; Volland, 1976, p. 279; Carrol and Tosi, 1973, p. 107). Whether or not an agency consciously adopts an M.B.O. perspective, it will automatically do so if it uses its management information system productively (eg. by selecting data consistent with objectives and by using information obtaining through the system in resource allocation). The overall result will be the rationalization of the decision making process which is the essence of management.

Knowledge Building. This could not be considered a primary motiva-

tor in the adoption of M.I.S. by social service agencies but it certainly stimulated the interest of some social workers. Labianca and Cubelli (1976-77) see information systems as an important vehicle in the building of social work knowledge. It is compatible with the social work orientation towards individual cases while creating information for the formulation of propositions and generalizations about social behavior and social work practice. Reid (1975) also recognizes the systems value in this area: ' ... it can hardly be denied that information systems can often enable users to achieve the practical equivalent of products yielded by conventional research undertakings' (p. 242-243). He goes on to describe some of the benefits of M.I.S. over traditional research which include the use of full data sets rather than samples and the ability to conduct studies under normal operating conditions rather than under fabricated or exceptional circumstances.

Efficiency. There is a fourth and more prosaic reason for social service agencies' interest in M.I.S. The system can perform basic, routine chores that can become an overwhelming burden in larger agencies. These chores are not within the capacity of clerical computer systems. An example would be the preparation of reports to funding and planning bodies (Richey, 1977, p. 260). These reports are often complex and their format may be subject to frequent change. Without an information system they can absorb a tremendous number of 'man hours'.

SYSTEM RELATED PROBLEMS

Computerizations. Examining what a management information system has to offer social service agencies can create a very one-sided view. It is generally accepted that there are few benefits without costs and

that significant plans generally find significant opponents. This is certainly true in the case of M.I.S. There are several factors relevant to the nature of the system itself which should be considered. Certainly the general mystique surrounding computers has to be one of them. Although computers have been part of our society for several years, they appear to be poorly understood by the majority of people who consequently feel threatened by this unknown quantity. Computer technicians give assurances that a computer is only a tool; a machine that is nothing but "a box of electronic circuits" without human instructions (Reid, 1975, p. 230). The fear remains that these machines can take over or get out of control. Tomeski (1975) identifies some very fundamental reasons behind this fallacy. Because computers are an inanimate device, people must adjust to them rather than vice versa. While publicity lauds the power and indispensability of computers, the machines are making people feel powerless, for example, by substituting numbers for names, by producing output often unintelligible to the layman, and by their very insensitivity to human characteristics. Within the work environment computer operations can pose a real threat to employee motivation at all levels of the organization if due consideration is not given to the human factor. Clerical workers can find the computer taking over interesting tasks and leaving them with the dull repetitive ones. Professionals can become dissatisfied if the work pace (eg. for recording) is set by the computer's needs and if they feel they must tailor work patterns to suit the computer.

Job Security. Another aspect of the 'people problem' with computers is the fear that develops around job security. The scenario that first comes to mind in this case would be the clerical worker who finds the computer doing his or her job faster and with more accuracy. However, professional people and management staff often perceive an equally serious

threat to their jobs. This can arise from fears of not being able to cope with the new system. Unsure of the extent of change that will be required and of the amount of learning that is necessary, many employees cannot accurately assess the situation (Trute, 1979, p. 4). The 'big brother' issue is another aspect of the same problem. Employees worry about how information from the system will portray them to their peers and to management. Not only ineffective employees have this concern; an extremely capable worker may be aware of areas of unproductivity that may be blamed on the individual although they are due to the system (Fein, 1975, p. 23 and 24).

Management Orientation. A third factor that may generate problems in the introduction of an information system is the discrepancy between those who benefit from the system directly and those who must perform the essential, and usually undesirable, task of data collection through the completion of forms. This discrepancy is due to the management orientation of M.I.S.; benefits to other levels of the organization are indirect. The danger is that employees will not give sufficient attention to providing accurate and comprehensive data. If this occurs, the system may be undermined to the point of becoming useless. To avoid this problem, it is necessary to share the benefits of change with everyone affected by that change (Holmes, 1970, p. 172). There are two ways of achieving this. The system can be used to simplify or eliminate undesirable pieces of work. The literature indicates that this approach has been used in social service agencies by relieving workers of tasks such as report writing that detracted from their service tasks (Boyd, Hylton, Price, 1978, p. 5). A second method is to assure data collectors, be they clerical workers or social workers, that the cost to them is warranted by the

system's benefits. This can only be done by involving them in the system's development and by providing feedback regarding data output and how it is being used (Fanshel, 1976, p. 18). Herzberg's belief, that job satisfaction is linked primarily to motivators such as responsibility and recognition, would indicate that the second method would be the most effective (Herzberg, 1968, p. 56 and 57).

It should be obvious at this point that the main obstacle to overcome in the introduction of an M.I.S. are not technical. Conclusions from one research study identify the nature and extent of the real difficulty:

"To obtain the technical benefits of M.I.S., it is often necessary to solve problems stemming from people. Reactions to the installation of M.I.S. may range from lack of enthusiasm to sabotage ... It is interesting that operating management, the group that should enjoy most of the benefits, goes further than any other group in its resistance to M.I.S. ... Noteworthy is the fact that the study shows that even top management tends to resist M.I.S. This clearly indicates that systems people and computer technicians have to cope not only with the formidable technical barriers, but also with people's attitudes related to computerized management information systems" (Dickson and Simmons, 1974 p.).

SYSTEM CONCERNS IN A SOCIAL SERVICE AGENCY

It is necessary to consider not only the nature of a major change, but also the setting in which it occurs. There are several characteristics of social service agencies, and of the social work profession, that have demonstrated relevance to the change process surrounding the implementation and development of computerized information systems.

Confidentiality. Certainly the issue of preserving confidentiality in the client-worker relationship falls into this category. The literature is replete with references to this issue and, indeed, numerous articles

deal exclusively with it (Kelley and Weston, 1974, p. 15-19; Noble, 1971, p. 35-41; Boyd, Hilton, Price, 1978, p. 8). Confidentiality basically expresses a commitment to privacy, i.e. to " ... the right of the individual to control the amount of information he divulges about himself." (Trute et al, 1979a, p. 2). The social work profession made this commitment for ethical reasons and for the practical reason that effective therapy is dependent on client trust (Noble, 1971, p. 37). With regard to this issue of privacy it is possible to identify six recurrent themes in discussions of computerized information systems:

1. Invasion of privacy is not a new problem created by computer technology. The computer is neutral, like any other tool, and responsibility for its abuse rests with individuals and organizations. Dishonesty and disregard for individual rights are the underlying problems (Noble, 1971, p. 37).
2. Computers have created new means for the violation of privacy and for violations on an incredible scale. (Trute et al, 1979a, p. 1).
3. The issue is a complex one. Computers have made possible the provision of public services on a scale that otherwise would be administratively impossible. These services are paid for by public funds and the crux occurs when privacy must be balanced against the public right to know how tax money is being spent (Kelley and Weston, 1974, p. 15).
4. Social workers and other professionals cannot rely on the legal system to protect the individual for in this case technology has outrun the law (Kelley and Weston, 1974, p. 49).
5. Not all systems pose an unwarranted threat to privacy. The

biggest threat arises when identifying information is associated with records in data banks (Kelley and Weston, 1974, p. 16). In Management systems, where the emphasis is on aggregates and not individuals, there is little risk provided '... the right people use the right data for the right purposes'. This means that data must have adequate security against use by unauthorized persons that it must be collected only when necessary and then accurately, and that authorized persons must have data use restricted to warranted and authorized purposes" (Trute et al, 1979, p. 5-7).

These five points are indicative of a very complex issue confronting workers. Reservations about a system that threatens their control over highly sensitive information are to be expected.

Depersonalization. A second aspect of the social work profession that differentiates the introduction of M.I.S. in social service agencies from its introduction in business organizations, is the humanistic perspective. The individual as the primary concern of society is a basic social work value (Bartlett, 1970, p. 221). General resistance to the dehumanizing potential of the computer has already been described; how much greater will it be in agencies that have made a definite commitment to humanism (Goodfriend, 1979, p. 7). Rubin (1976, p. 441), in describing the implementation of M.I.S. in a child welfare agency, reports that both board and staff people expressed concern that the agency was becoming too impersonal, that it would lose its capacity to accommodate the system to the individual. White (1973) also feels the systems must become more people-oriented. Abels (1972), on the other hand, felt that any resistance to using the computer in such a sensitive area as the provision of human services, would be overcome by the benefits of the computer, eg. its objectivity. Certainly an argument could be made that, by insuring better

service to clients, computerized information systems are indeed humanistic. For example, the systems can guard against the 'drift' of children in care (Fanshel, 1976, p. 15 and 17). Such client tracking can insure that the individual does not get lost in the system.

Autonomy. Worker attitudes towards autonomy constitute the third relevant factor. Autonomy, or the right to function independently, is generally considered a professional attribute. Perhaps because of the shaky status of social work as a profession (Bartlett, 1970, p. 16 and 17), workers are sensitive to the potential threat of a M.I.S. to their autonomy. According to Trute, et al, (1979b, p. 5) ... Professional and supervisory staff frequently reacted negatively to the introduction of a M.I.S. because they saw it as an occurrence which would rob them of control over their jobs and their subordinates ...'. Catherwood (1974, p. 60) reports the acceptance of an activity monitoring form by workers only after they were assured that doctors and lawyers filled them out, too. An unfortunate result of this type of attitude is the rejection of the need for evaluation and an acceptance of formulas for competency such as 'I have a degree' or 'I'm a professional' (Cogan, 1973, p. 78). It is important, however, to recognize that workers do have grounds for concern. Management information systems can become an elaborate control mechanism for white collar workers if abused. Catherwood (1974, p. 59 and 60) points out how one system can pinpoint malingering by identifying the activities of individual workers and the amount of time spent on each. This is in spite of his earlier reassurances in the same article that data collection was not intended as a surveillance tool and could not be used as such ' ... except by the most ill-willed supervisor'. Such close monitoring is only one small step away from directing the actual inter-

vention strategy used by a worker.

Attitudes Towards Research and Evaluation. The social work orientation to research, particularly evaluative research, is a fourth characteristic of the profession to impact on the introduction of information systems. General indifference to the research component in social work is part of the problem. It is another aspect of the humanism described earlier that social workers are unwilling to abandon the practitioners role or to acknowledge the value of its alternatives. Goodfriend (1979, p. 2) refers to social work administrators who are, in reality, only misplaced and frustrated caseworkers. Just as this narrow focus is detrimental to management effectiveness it is also detrimental to social work research and evaluation. If workers remain uninterested and uninvolved, then the vacuum will be filled by persons outside the profession. Goodfriend (1979, p. 147) also states that this should be avoided for two reasons when implementing an M.I.S.: social work knowledge is required to identify the salient service issues and social work clinical skills are needed to operationalize the program. Even if this need is met, workers' attitudes toward research and evaluation still present a motivation problem for system implementors. It is another aspect of the basic problem of insuring that the system is beneficial to everyone on whom the system is dependent. In this situation, however, worker perception of benefits is more relevant than the reality, and prior experience may have biased these perceptions to the detriment of the system. Workers often perceive the research conducted through M.I.S. as being of benefit only to its implementors, with little value or relevance to the problems they deal with every day (Taber, 1974, p. 19; Trute, 1979b, p. 6). In dealing with this negative or suspicious atti-

tude towards research it is important to acknowledge its basis in fact: most goals are too diffuse to evaluate, most results are negative, and most results are never used for decision-making (Weiss, 1975, p. 16-20). A M.I.S. will continue to be judged according to this type of knowledge until it establishes its own credibility.

Increased Workload. The fifth characteristic actually pertains to social service agencies rather than the social work profession: these agencies tend to have limited resources and excessive caseloads. Workers burdened by excessive caseloads and massive paperwork requirements are bound to have difficulty appreciating the long range benefits of a M.I.S. This is exacerbated by the fact that initially '... every new system performs at one third the level promised and turns out to cause more work rather than to save work' (Taber, 1974, p. 11). This then can be the basic problem with computerized information systems: possible costs are immediately evident while most benefits are invariably behind schedule and are subject to many intervening variables.

PART 2

To understand the implementation and development stages of an information system, consideration must be given to systems already in operation. The literature describes only seven of these systems that are found in child welfare agencies and this small number makes it possible to review them all. To highlight the differences and similarities among the systems, discussion of the material will be organized under the following headings:

1. System Identification and Setting
2. Data Focus and Collection
3. System Application
4. Confidentiality
5. Personnel Related Problems
6. System Appraisal

CHILD WELFARE INFORMATION SERVICES (C.W.I.S.)

System Identification and Setting. The Child Welfare Information Services is unique in that it exists as a separate organization with its own Board of Directors and full time staff. The system is located in New York City and serves seventy-five agencies that provide foster care to nearly 30,000 children. In 1977 the system was modified and extended to include all children in care in upstate New York. The extension is called Child Care Review Service (C.C.R.S.) (Fanshel, 1976, p. 15; 1979, p. 81).

Data Focus and Collection. The system was designed to improve the management of foster care services and to provide information for programming and social policy analysis. It is oriented toward the child rather than the family or worker activity. Data is collected that provides for the following: profiles of children in care, reports on children entering or leaving care, and reports of parental contact with children who are in care. Analysis of status changes of children while in care, and of cost factors, will be the focus of further development (Fanshel, 1974, p. 16).

System Application. Reports are sent to all system members which give a broad system-wide view of foster care. Agency identifiable reports and client identifiable reports are sent only to the agency concerned (Goodfriend, 1979, p. 6). The information is utilized for management decision-making, including resource allocation for child tracking, and for establishing accountability (Goodfriend, 1979, p. 10).

Confidentiality. Confidentiality was recognized as an important element in the system, particularly as it relates to worker confidence (Fanshel, 1974 p. 18). However, the system does contain identifying information. The main protection for the client appears to be the restrictions placed on access to the data (Goodfriend, 1979, p. 6 and 7).

Personnel Related Problems. It was important to have the level of judgment required for data recording consistent with the abilities of staff of whom 85 percent did not have graduate degrees. Staff acceptance of the program was a more important concern, however. Specific mention is made of staff fears related to loss of control over cases, the dehumanizing of services, the breaches of confidentiality. The provision of early feedback and attempts to reduce paperwork were two attempts at

solving this problem (Fanshel, 1974, p. 18 and 44). Six full time system employees help insure the system's acceptance and effectiveness by user training programs, user conferences, and the provision of consultation services (Goodfriend, 1979, p. 8 and 9).

System Appraisal. C.W.I.S. is described as a " ... positive advance in the administration of social programs". Fanshel (1974, p. 15 and 44) even goes so far as to say that goal-oriented management in larger agencies is impossible without some similar system. He does offer a word of caution, however, when he points out that M.I.S. cannot compensate for poor management or insufficient resources.

SERVICE EVALUATION AND INFORMATION SYSTEM (SEVINS)

System Identification and Setting. SEVINS was devised by Child and Family Services of Connecticut. The agency provides a number of social services including adoption, foster care, counselling, day care, unmarried parent services, emergency psychiatric services to children, group homes, in-patient services for disturbed boys, advocacy and research. The system intended to provide information for lineworkers, middle-management, and administration. (Fein, 1974, p. 21).

Data Focus and Collection. The system is both client oriented and worker oriented. The application form collects demographic data and further data about the client's progress through the system is collected on an ongoing basis. All worker activity is recorded on cards which specify the nature of the activity and the time required. Agency budget figures, accounts payable and payroll summaries are a third source of data as they are important for calculating service costs.

System Application. Three types of reports are produced; reports

on client management, reports on the use of time, and agency financial statements. The system has had direct impact on many aspects of agency operation: Recording became more rationalized. Caseload assignment became more realistic. Client contact again became the principle focus of service (Fein, 1974, p. 21 and 22). The accumulation of data has also made it possible to begin evaluation of ongoing agency programs. This evaluation includes cost-effectiveness data (Fein, 1974, p. 23).

Confidentiality. Two important points are made about confidentiality: (1) confidentiality can be guaranteed by the agency only when they alone deal with their data; (2) for the protection of clients, good intentions must be formalized. Despite these statements, no indication is given as to how the agency conformed to them (Fein, 1974, p. 23).

Personnel Related Problems. Fein (1974) states that some staff problems are inevitable. Staff dissatisfaction occurs when they perceive the administration as preventing them from really participating in the decision-making process. Administration can only encourage and allow as much participation as possible. Compiling reports for caseworkers, focusing on programs rather than on individuals, and giving assurances that data is being used, are other ways of optimizing staff support. The author does take the position, however, that incompetent staff, and staff who refuse to adapt to changes, should not be protected.

System Appraisal. The general evaluation of the system suggests that it is a valuable tool but the implementation problems were not minimized by the author. According to Fein (1974) "... everything that could go wrong did, especially in the supremely sensitive areas of broken promises and faulty communication" (p. 22). She also points out that the provision of information is only step one. Management response will deter-

mine effectiveness. A final point is that the system may answer questions management has not even asked and that management must be willing to cope with the revelation of new problems.

THE SOCIAL SERVICE INFORMATION SYSTEM (S.S.I.S.)

System Identification and Setting. The Social Service Information System was developed internally by a public agency, the East St. Louis Region of the Illinois Dept. of Children and Family Services. The East St. Louis Region covers seven counties in southwest Illinois, an area containing a population mix that is urban, rural, and suburban. Ninety-eight workers in three district offices provide protective services to children, foster and institutional care, adoption and licensing services, family counselling, services to unmarried parents, homemaker services, purchase of day care, and community services such as family life education (Donahue et al, 1974, p. 243 and 244).

Data Focus and Collection. The system focuses on clearly identifiable programs (i.e. services) and on the aggregate of activities (i.e. elements) that are directed towards the objectives of a program. Cost accounting is integrated into the system by distributing costs according to percentages established by direct service time allocated to it. Each worker records his daily activities on a day sheet. Each time unit (at least quarter hours) are designated for service and element. Clerical, administrative, and operating costs are assigned on a percentage basis.

System Application. The system, on a monthly basis, computes certain costs such as the cost of an entire service area or the average cost of a case. Tabulated information is used in compiling federal government reports for the purpose of reimbursement. It is also used to see how

workers spend their time. This information is useful in planning and budgeting for various services (Taber et al, 1975, p. 73).

Confidentiality. No reference to this issue was found in discussions of the S.S.I.S.

Personnel Related Problems. Donahue et al (1974) state that staff resistance was alleviated by their recognition that reporting elements is more relevant to service delivery than other methods of reporting. They also state that direct service workers are satisfied that reporting does not take an inordinate amount of worker time (Donahue et al, 1974, p. 255). Their statements appear to be either incorrect or premature. Taber et al (1975) refer to S.S.I.S. in a report, written over a year later, related to another state wide information system. Evidently workers complain frequently about S.S.I.S., particularly that it is used to spy on them (Taber et al, 1975, p. 73). The apparent contradiction would indicate that the 'people' element could have received more attention in the literature on this system.

System Appraisal. The system was still in the evaluation stage in 1974. The possibility of unanticipated problems in the future is acknowledged but the overall evaluation of the system was favourable (Donahue et al, 1974, p. 255).

CHILDATA

System Identification and Setting. The CHILDATA system was a joint project of a group of sixteen child care agencies in the Chicago area and the Research Staff of the Council for Community Services in Metropolitan Chicago. Jewish Children's Bureau was first a pilot agency and then a participating agency in the system (Rothschild, 1974, p. 50).

Data Focus and Collection. Information about clients, client families, problems, goals, and services, is available through this system. Caseworkers enter the relevant data on the Child's Basic Record Form at time of case opening. New data and data changes are fed into the computer and processed onto the relevant files.

System Application. The system compiles operating reports for individual agencies as well as reports about citywide data and comparisons among agencies. It prepared state reports and bills the state for foster care costs. The system does not include qualitative measures but it does include facts that give an assessment of quality such as the turnover rate for certain groups of clients (Rothschild and Berger, 1974, p. 56). The system has been satisfactorily used in conjunction with other methods to evaluate one agency's foster home service (Rothschild, 1974, p. 42 to 50).

Confidentiality. Apparently client identification material is collected by this system but several steps are taken to insure the confidentiality of this data: The password essential for data retrieval from the files is known only to terminal operators. Bonded messengers and registered mail is used to circulate information. Only the reporting agency is given reports with client identification. Community planning and research reports deal with aggregates and not individuals.

Personnel Related Problems. Apart from the fact that workers are unhappy with numbers, Rothschild and Berger tend to attribute staff resistance to the generic problems of change. Other problems are due to excessive demands for information and an inability to use computer print-outs. Training sessions, workshops, and a hardnosed attitude in determining data needs are the prescribed cure.

System Appraisal. The CHILDATA system is enthusiastically described as an agency problem solver that has not reached the ultimate goal (i.e. to provide hard data for community planning and operations) only because the necessary funding was not available. According to Rothschild (1974) ' ... With the technical and planning problems almost resolved, I feel we have entered the 20th century for the first time' (p. 53).

CHILD RECORD SYSTEM (C.R.S.)

System Identification and Setting. The Edwin Gould Services for Children is a voluntary child care agency in New York City that provides foster care, institutional care, adoption services and aftercare to about 500 children and their families. The agency developed two complimentary computer based systems: the Child Record System and a Professional Activity System (Young, 1973, p. 300).

Data Focus and Collection. At the time of case opening the Child Record System data collection begins. The caseworker completes an Intake Form, a Natural Parents Form and Foster Parents Form. After transfer from Intake an Undercare form is completed by the assigned worker. Updates of objective information are done by clerical staff. More subjective information must be updated quarterly by the caseworker (Young, 1974, p. 106 and 107). Activity worksheets for the Professional Activity Report are submitted monthly by workers. The nature, number, and duration of client contact is recorded. For the purpose of case costing additional information is collected from the accounts payable division of the agency.

System Application. The Child Record System can produce a complete picture of what is happening to children within the agency on an individual basis, as client groups or whole population. The inputs recorded by

the Professional Activity System are used to compile a Casework Report and Team Report. These reports can be utilized by all levels within the agency. The C.R.S. alone considered useful in evaluation and in establishing agency accountability. In conjunction with the activity monitoring system it can determine costs on a per case basis allowing for cost-effectiveness evaluation.

Confidentiality. Confidentiality is not referred to in either of the articles dealing with this system. There is also no indication of what measures were taken to preserve the clients' right to confidentiality.

Personnel Related Problems. It is not evident in the articles if the system experienced any personnel related problems. There were, however, several indications that there was recognition of the need to involve staff in system related decisions, to provide them, with regular feedback, and to make the maintenance and recording demands as light as possible. Besides information about their own caseloads, caseworkers have access to all information supplied to supervisors and program directors. They participated in many decisions concerning the nature and scope of the system. The C.R.S. is used to help caseworkers prepare city and state reports. Caseworkers training began in the design phase and had been continuing four years later.

System Appraisal. Young (1974) evaluates the system as being a useful tool to staff at all levels of the child care agency. He sees C.R.S. as a flexible system that can be modified to meet agency demands and eventually it will be part of a full scale planning, reporting, and evaluation system (Young, 1974, p. 10).

SEATTLE CHILDREN'S HOME, COMPUTERIZED INFORMATION SYSTEM

System Identification and Setting. In 1975 the Seattle Children's Home operationalized the first form of its management information system. This agency is a voluntary, medium-sized centre offering services to emotionally disturbed children and their families. Services included a citywide day treatment program and a countrywide residential program for children and adolescents (Richey, 1977, p. 259).

Data Focus and Collection. Data is collected by five, single sheet forms. The Intake Form collects the demographic and status data and a list of problems presented at Intake. The Intake Assessment Form records a primary and secondary psychiatric diagnosis including the level of impairment. This is balanced by a statement on client commitment and client strengths. The Termination Form is essentially a follow-up of material collected by the Intake Assessment Form and it is used for evaluation and management decisions. The Staff Activity Form records agency input by recording the nature of the client contact and its duration. Case management time is also recorded. The Problem Catalog Form is submitted at intake, periodically during treatment, at termination, and possibly for evaluation of aftercase.

System Application. Reports will be generated annually for external and internal use, quarterly for Staff Activity Reports, and as needed for other management needs. It is hoped that staff will be active in using the system in analyzing service related variables on an ongoing basis, for example, by correlating client progress with time spent on various staff activities. The usefulness of the system in certain areas is still to be realized. According to Richey ' ... the potential for evaluation of programs and treatment modes is present, but realization of this poten-

tial will, of course, depend on the agency's ability to ask the pertinent questions' (p. 269).

Confidentiality. Confidentiality was a specified objective for this system. The principle method for meeting this objective was to keep the identification of any client or staff member exclusively within the agency. According to Goodfriend (1979) consideration was given to developing a system with other agencies but the problems this raised for confidentiality could not be resolved to the agency's satisfaction (p.15).

Personnel Related Problems. Strong administrative support and staff that were used to accounting for their time were two factors that probably minimized some problems in this area. On the other hand, staff were operating in the throes of a major program change and they had to deal with two major changes, i.e. reporting and programming at the same time. Richey indicates there were real problems: staff vary in ability to use the system and there was discontent caused by the time required for form completion by social workers. Richey hopes that as more useful information becomes evident, and as workers can use the system to answer their own question, then resistance will be considerably lessened.

System Appraisal. The evaluation of this system is favourable but cautious. The system is still being modified and its usefulness is still to be demonstrated. It does appear capable of meeting most of the agency's objectives apart from the reasonable demand on staff time. Richey also makes the important point that the system is within reach of the resources of most child care agencies.

FAMILY AND CHILDREN'S SERVICES OF VICTORIA, BRITISH COLUMBIA,
COMPUTERIZED INFORMATION SYSTEM

System Identification and Setting. This system is the only Canadian one in the list of seven. Family and Children's Service of Victoria, B.C. now has 150 staff members, 68 of whom are professional social workers. They provide services to about 1700 families every month and are responsible for 700 children in care. Their range of child welfare and counselling services encompasses all those specified by the provincial statute for child protection and child care. The system grew from a program of caseload weighing developed within the Provincial Government Social Welfare Department and adopted by the agency 10 years earlier (Wright, 1972, p. 183 and 188).

Data Forms and Collection. The worker is required to complete a service report when a case is opened, closed, reclassified or transferred. Aside from the coded identification of worker and case, the form for this report requires only simple checkmarks. The reporting system deals only with cases open in the month. Activity is then appraised according to a caseload-weighting scale (the norm for which is predetermined) and the turnover rate.

System Application. Through the use of a turnover rate administration has an alarm system for individual caseloads or sections where the service pattern shows or becomes erratic. Caseloads can be assigned more evenly and future staff needs can be more accurately assessed. The system is also of value in rationalizing budget requests for increased staff as the funding body, (i.e. the provincial government) accepts the caseload-weighting system. Changing trends in service demands can also be monitored.

Confidentiality. The system apparently records identifying information as monthly reports for the agency include case lists by name and number. The agency has no computer of its own so the data is being fed into a I.B.M. Data Processing Centre. The relevant article contains no mention of the confidentiality issue and there are no indications of any special measures to protect the client.

Personnel Related Problems. There is no mention of any staff problems related to the computer system. Evidently one of the original purposes of computerizing the system was to relieve workers of responsibility for monthly reports. The recording sheet is designed for completion in a minimal amount of time.

System Appraisal. In this case a system already in use and considered functional was computerized. The computerization has expanded the system's usefulness by making data more easily accessible and by allowing its use by staff at all levels. The system's picture of the agency is considered accurate and, in this case, an aid in effective planning. The author cautions that the system is only a tool and that its use will be determined by staff at all levels.

LITERATURE ANALYSIS

The paucity of available material is the most critical limitation of the literature on information systems in child welfare agencies. A review of the major social work journals from 1970 revealed only ten articles on seven child care agencies that implemented the systems. Related articles on specific issues are available but it is primarily through experience with the systems and the analysis of that experience that an understanding of information systems will be achieved and their

value assessed. It does not suffice to say that the area is a new one and that more documentation will become available. The peak year appears to have been 1974 when four articles were printed. In the last three years only two articles were published, two of these about one system, C.W.I.S. of New York (Fanshel, 1977, 1979).

The seven articles that deal specifically with the implementation of systems are similar in many respects. Basically they describe the motivation for the system's introduction to the agency, the particular design of the system including the format for data collection forms and reports, and an assessment of the overall costs and benefits to the agency. At the time of writing most of the systems were newly operational and were still developing and changing (Rothschild and Berger, 1974, p. 56; Richey, 1977, p. 269; Donahue et al, 1974, p. 255). Follow up articles that substantiated earlier statements about what M.I.S. could do for the agency were very necessary for this reason. For three of the systems (i.e. C.W.I.S., CHILDATA, and C.R.S.) there was one article respectively devoted to a specific example of system utilization. They contained valuable information, particularly for the reader interested in the use of M.I.S. for evaluation and for improved service delivery. Unfortunately only one of the three was written within the last five years (Rothschild, 1974; Fanshel, 1979; Young, 1973).

If there is an argument for looking beyond the implementation phase there is also one for looking at that particular phase more carefully. Some important points, such as the human factor in system implementation, appear to have been considered only superficially. It is an unfortunate fact that the impact of the human factors is seldom dealt with in any of the literature on computerized information systems. This has been attributed to the business origins of the system (Trute et al, 1979b, p. 1).

In child welfare agencies, where the impact of the social work profession is expected to be strong, it seems inconsistent to find the same deficiency that is evidenced in organizations devoted to the profit motive - but this is the case. Only one of the articles being considered (Wright, 1972) neglects the issue entirely but the others tend to refer to it using generalities. For example, worker training and worker education are often cited as ways of overcoming worker resistance to information systems. A serious reader, intent on learning how to facilitate system implementation, may well ask the following questions: What kind of education and training? How is it done and by whom? What resource demands will it put on an agency? What kind of results have been realized in other agencies? Taber et al (1975) in their report on one training program indicate that the answers to any of these questions cannot be taken for granted.

Another aspect of the same problem is the failure to discuss the nature of staff reaction to the system. It is not enough to know that workers are unhappy or concerned about certain aspects of the system. How are these feelings manifested and what impact do they have on the agency aside from the impact on the system itself? This question should not only be restricted to caseworkers although the child welfare literature appears to focus on them as the only source of resistance to the system. This is contradictory to findings in other areas where the resistance has been found at all agency levels and is highest among middle-management.

Generally the need appears to be for a more critical literature. All of the ten articles referred to earlier judged the systems to be a success. They apparently were written by individuals who served as system consultants or senior executives who actively supported the systems. There is a need for analysis of failures as well as successes although

an absence of documentation on the former is to be expected. At the very least the emphasis needs to be shifted from the benefits of the systems to the problems. The literature already substantiates claims that the systems can work. What is needed at present is less emphasis on 'selling' the systems, they can no longer be considered new and unknown, rather the need is for a 'how to' literature to help agencies establish systems and use them profitably.

THE SYSTEM

DESIGN AND INITIAL STAGES OF IMPLEMENTATION

In 1977 the Board of Directors at C.A.S., concerned with the quality of agency service and with maintaining the agency's independence, commissioned a study on the feasibility of a computerized program monitoring system for the agency. The researcher/consultant who conducted the study was a social worker pursuing post-graduate studies at the University of California, Berkeley. A second consultant from the University of Manitoba, who had designed a computerized information system for the Churchill Health Centre, was also involved at this point and continued to be involved on an ongoing basis. After a six week evaluation period that began in June, 1977, the consultants submitted to the Board a report recommending a three month trial period with four sample units within the agency. The Board agreed to proceed after the installation of a new director who has just been selected for the agency.

During the evaluation period the consultant had met with the management team and with linestaff from four units preselected as being representative of the agency as a whole. The meetings served a variety of purposes: (1) to educate staff about information systems, (2) to assess and deal with resistance to the system's implementation, (3) to establish the consultant's credibility, and (4) to conduct a systems analysis of the agency particularly to determine its information needs. By the time the recommendation to proceed was presented to the Board, it was accompanied by a statement of staff support. The consultant viewed this

enthusiasm with caution, with good reason for the evaluation period had also revealed many factors that could pose a threat to the system. There had been considerable resistance displayed towards the proposal for a system particularly towards the program monitoring component. Morale was generally very low and staff felt overburdened, generally maligned and without adequate supports. Consequent frustration was partly manifested by the low level of cooperation and communication among units. Experiences during later phases were to reveal even more underlying problems as deficiencies in agency procedures and policy were uncovered and exacerbated by the system.

The beginning of phase two was somewhat inauspicious as the new Executive-Director was presented, without forewarning, with a 'fact accompli' in the form of a consultant ready to begin the implementation of the new system. Fortunately she recognized the system's potential, gave it her support, and work proceeded. From November 13, 1977 to November 25, 1977 there was an orientation period. A form package, previously prepared, was reviewed and revised in meetings with staff. After staff became confident with using the forms the necessary equipment was rented, a key punch operator hired and the test period began. By the end of the test period on March 31, 1978 several problems had become apparent and phase three began with an evaluation of what had happened during the three preceding months. An alternate strategy emerged of which the two principle components were the abandoning of an attempt to monitor worker activity and the emphasizing of client tracking and client service needs. The latter was accomplished through additional forms and the computerization of the Child Care Instruction Sheet Form which was already required by the Provincial Government. At this time the agency

assumed responsibility for the data collection component of the system.

During the summer there was consultation with the computer programmer and management to insure that all preparations were completed for the changeover to the new system. Funding for a one year period to test the new strategy was obtained through a Winnipeg Foundation Grant. At this point the researcher/consultant terminated her involvement with the system in line with the original agreement between herself and the agency. As the services of a consultant were still very necessary this position was maintained by the local consultant from the University of Manitoba.

It is impossible to summarize the first three stages of the system's development without creating an oversimplified view of the process itself and the problems encountered. Goodfriend (1979) emphasizes that problems with staff resistance were encountered at every step and her clinical skills were constantly employed as the resistance was as evident among supervisory staff as among linestaff indicates that, at the time when phase four was due to commence, a stable infrastructure had failed to develop to support the system.

THE DATA BASE

On September 1, 1978, workers began using the new form package. It consisted of ten forms, all to be completed by linestaff. Since some idea of the data collection is basic to an understanding of the system, each form will be identified and briefly described:

1. Family Information Sheet (00). This is a two page form completed at time of Intake. It contains basic demographic information, information on client problems, worker and client problem

assessment, referral source, plus information on the types of service required and provided.

2. Family Review Summary (01). Completed 90 days after case opening, and every six months thereafter, this form monitors service demands and client progress.

3. Information Update Form (02). This form is used to add and change data for family and unmarried parent cases. It is completed as required.

4. Family and U.M. Closing Summary (03). This form is very similar to Form (01). It is completed at time of case closing for family and unmarried parent cases. It utilizes the same problem check list as Form (00) and Form (01) to assess client progress at the time of case closing. Service needs are also assessed.

5. Child Summary (04). This form is directed specifically at the child receiving service rather than at the family unit. The problem check list relates to more child centered problems. The form is completed when a file opens, 90 days after the child is admitted to care, every six months thereafter, and at time of case closing.

6. Planning for Permanent Ward (05). This form is completed 30 days after a Permanent Order is granted which makes the child a ward of C.A.S. It is also attached to the six month review form unless there has been no change. The form protects against the 'drift' of children in foster care as the worker must consider the consequences of bringing the child into care. It also insures the use of sound criteria in assessing a child's adoptability.

7. Adoptive Family Information Sheet (06). This form is completed by the adoption worker for all adoption applicants. It collects

social demographic data and records the receipt of relevant documents, as well as information about the kind of child desired and the reason for application.

8. Adoptive Family Update Forms (07). This form is similar to Form (02) but it is used only to update or add information relative to the adoptive family. It is completed on an as needed basis.

9. Child Care Instruction Sheet (08). This form was designed by the Provincial Government but its computerization by C.A.S. greatly expanded the system's capability to monitor the activities of the children in care. It is completed as needed to record all significant changes such as change in status, change in placement, the admission and discharge from foster care.

10. Non-Selective Adoption Information Sheet (09). In non-selective adoptions the legal parent or guardian selects the adoptive parents rather than the agency. In these cases this form rather than the Adoptive Family Information Sheet is completed. It collects demographic information and records case outcome.

An important part of the form package are the glossaries which help to standardize worker assessments. Each category in an assessment (eg. assessment categories numbered one to five for a particular problem) is clearly defined indicating the kind of conditions that would warrant its use. A worker assessing a problem as a "3" knows how the assessment will be interpreted. There are three glossaries in all:

1. Situational and Personnel Assessment Glossary. This includes definitions relative to the Family Information Sheet and the Review forms.

2. Child Summary Situational Assessment. These definitions are relative to the Child Summary form.
3. Code re: Barriers to Adoption or Planning for Permanent Ward Form. This glossary includes definitions of terms used in these forms.

SYSTEM OPERATIONS

The completed forms are sent to the key punch operator who is responsible for translating the data into a form that is acceptable to the computer. A set of instructions or 'code book' tells the operator how the data is to be transposed into numerical form and recorded for further processing. The agency utilizes an on-site terminal for this process. This terminal is connected to a computer at the University of Manitoba by regular telephone lines. Data is typed directly into the computer on the teletypewriter. The key punch operator can see what is entered as it is displayed on the video screen attached to the teletypewriter.

The computer accepts the data if the data passes the validity checks contained within the input software. The programs are actually a set of very precise instructions that is communicated to the computer using a very specialized language which it understands - in this case PL/1. Because the system was intended for use by agency staff without the ongoing assistance of a computer programmer, it was important that all programming be consistent with Statistical Package for the Social Sciences (Nie, Bent, and Hull, 1970). Known as SPSS, this is a 'canned' or standard program package sufficient for the needs of most agencies and social scientists. Easy to learn, it permits users to carry out many analytic operations and to produce standard reports.

The agency's data is automatically stored as it is entered into the computer via the terminal. However, the data remains readily accessible. For example, data on an individual case and client group for the entire client population can be requested using the on-site terminal. Provided all programming is completed, the requested data is available in minutes. It is produced as a 'hard copy' printout at the university or on the screen attached to the teletypewriter. Because the computer serves many users on a time-sharing basis, there may be a need for the user on particularly busy days, to wait in line for analysis even though the computer can accomodate several users at once. The time for the actual analysis, however, can be measured in seconds.

It is worthwhile to note the measures for data accuracy and data security that were already in effect at the beginning of phase four. With regards to the former the biggest control was the use of a special "prompting routine" which interacts with the key punch operator by asking questions in regard to items on the forms. This insures that the operator and the computer are fully synchronized in data entry and storage. In addition missing data can be identified by the computer and the computer will reject any details of information that are not within a range defined as reasonable. To insure the security of the data a password is required to access the agency's data-set. Identifying information is removed from forms to protect client confidentiality; for example, names are left out entirely and postal codes are entered instead of addresses. File numbers are entered for each case but the key that associates them with names remains in the agency and is subject to the traditional security precautions. Forms, after the data is entered into the computer, are returned to filing and treated as part of the regular client file.

SITUATION AT COMMENCEMENT OF PRACTICUM

My first contact with the agency in September, 1978, roughly coincided with the beginning of phase four. Although it was occasionally referred to as the test phase, the conditions at the time indicated that it was actually another step in implementation. Most of the 'soft-wave' (i.e. programming) for entering the forms into the computer remained to be done. Only Form (00) was actually being entered but this was not considered a major problem as the large number of these forms was keeping the key punch operator busy. Analysis, of course, would be impossible until the programming was complete and data on all active cases entered into the system. Workers were expected to enter the necessary forms, mainly F(00), F(02), and F(08), for new cases as they opened and to update cases already active at the rate of ten per month. Workers had been told that the review forms would not be required until the computer produced monthly "tickler" lists that would indicate when a form was due on a particular case.

Apart from administrative personnel, there appeared to be only two other people actively involved with the system. One of these was a senior clerical person who was supervising the key punch operator and trying to maintain the 'paper flow' required for data input. The second person was a supervisor who appeared to be the focal point for system concerns, particularly as they pertained to other supervisors and linestaff. The administrative input was primarily directed towards the monitoring of progress with the system and the communication of essential directives to staff.

The computer programmer for the system was doing agency related

work on only a part time basis. Because of heavy commitments in other areas he was not easily accessible to the agency. However, he did have experience with a similar computerized information system and this experience was expected to facilitate the programming for C.A.S.

THE PRACTICUM

The impetus for involvement with management information systems was an interest in program evaluation - evaluation oriented to the rationalization of the management process. These systems, as one way of introducing program evaluation into a social service agency, were considered an appropriate area for study. As evaluation itself is as much a skill as a field of knowledge, a practicum offered certain advantages over a thesis as a method of learning. The practicum was designated a 'research practicum' because the emphasis is on the careful, systematic investigation of the selected area rather than on the intervention strategy.

The practicum process included certain functions or tasks for which the student would be responsible. They were selected on the basis of two major criteria: their value to the student as a learning experience and their value to the agency. The principle format for the description of the practicum will be based on these functions or tasks.

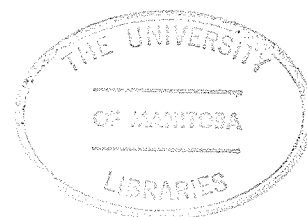
INITIAL PROPOSAL

The expectation in September was that data output would be available within several weeks, certainly no later than two or three months. With the excellent vision afforded by hindsight that expectation is now valued more for its sincerity than its accuracy. However, that expectation largely determined the nature of my practicum proposal which was directed at the utilization of the data. Working with staff at all levels in the agency I was able to help determine what information was needed, how it could be obtained, and how it could be understood and utilized. Since it

was essentially a management system, the overall goal was to optimize its value to the Executive-Director. It was recognized that to operate in this capacity required a good, basic knowledge of M.I.S., some familiarity with the agency and a thorough knowledge of the system's data base. Acquiring this knowledge was a process that took several weeks. One important point, however, was to be learned very quickly, that is, information systems are dynamic systems and the constant interaction with numerous variables introduces a strong element of unpredictability. To refer back to Fein (1975) " ... everything that could go wrong did" (p. 22). One consequence of this was a change in the focus of the practicum from system maintenance and utilization to system implementation and development.

INSTRUCTION MANUAL FOR THE COMPLETION OF FORMS

After a period of orientation to the agency and to management information systems, I began work on an instruction manual to be used by lineworkers in the completion of the computer forms. The manual was important to the agency for two reasons: (1) The longer the forms were in use the more questions arose in relation to them. The clerical person involved with the system was inundated with queries from workers about categories they did not understand and procedures for the forms that needed to be clarified. (2) There was a need for a standardized interpretation of the forms by staff. Discrepancies on completed forms indicated that many categories were subject to numerous interpretations, and consequently, the data they collected was useless. For the student, compiling the manual insured that there was familiarity with every item of data collected for the system.



In order to make the manual as useful as possible to lineworkers an attempt was made to identify exactly what was causing problems. Numerous contacts were made with linestaff, supervisors, the key punch operator and the clerical person mentioned previously. Their input was incorporated in a draft of the manual that was submitted to administration and then circulated for comment to all supervisors and members of the Program Monitoring Information System (P.M.I.S.) Committee who were working with the system. Only two people, both committee members, submitted any feedback on the first draft. Unfortunately this did not mean that the draft completely fulfilled its purpose. Questions continued to be raised by workers about items that originally had seemed self-explanatory to the student. For example: How is 'service' defined with regard to the category "Family Members Receiving Service"? Does "Referred to Other Agency" require check marks for all agencies involved with the client at time of Intake or only for referrals being made by Intake? Other questions revolved around the use of the forms: What amount of missing data would warrant the return of the form to workers? Can information be omitted from other types of recording if it is included on the computer forms? What procedures should be followed with the forms in situations such as the transfer of a protection case to an "Unmarried Mother" status?

Some of these questions could be answered by the student but it should be evident from the examples that some required administrative decisions about policies and procedures. In the latter case the student assumed responsibility for communicating the problem to the appropriate administrative person, along with a recommendation for its solution based on knowledge of the system and staff input.

These problems became evident over an extended period of time, necessitating frequent and ongoing revisions in the final draft. What had

appeared to be a straightforward task actually became quite complex. In its format the manual contained the following: "List of Contents" identifying what the manual contains and in what order, an "Introduction" containing a statement of the system's purpose and a description of the format for the manual, a "General Directions Sheet" explaining the assignment of file numbers and the use of the assessment glossaries, the "Form List" identifying the name and general purpose of each form, and the "Instructions for the Completion of Forms" in which the definitions and instructions are given separately for each form. There are two appendices. One contains the form package and glossaries; the other is presently incomplete but will be used to describe the use of forms in particular circumstances using case examples and/or policy statements. The second appendix could be expanded as issues arise.

P.M.I.S. COMMITTEE

In January I was invited by the Executive-Director to attend a management meeting at the agency. I had an opportunity to explain to supervisors and unit directors the purpose of my practicum and the need for the cooperation of linestaff and supervisors. During this meeting it was decided to form a committee, the function of which would be the generation of ideas about the system's development and utilization. Three supervisors volunteered to serve on the committee and three linestaff were nominated as well. The student would serve as coordinator for the committee.

The formation of the committee must be viewed as a positive event. It provided a structure for staff involvement with the system at a time when no other existed. However, it is important to note that the committee

was not primarily designed to serve as a communication line for staff concerns or to involve staff in the decision-making process of the system's development. The committee did fulfill some of the functions but they were secondary to the main tasks which were: (1) to make suggestions that would improve the quality of the system's manual of instructions, and (2) to recommend any changes in the system that would improve the quality of the data being collected.

The student met frequently with committee members both individually and as a group. They expressed a real concern for making the information system work but there also appeared to be some real skepticism about its optimum value. The general attitude of the committee, and staff in general could be stated as follows: "The system would be of real value - if it could work." Despite the skepticism the committee worked hard to achieve its goals. There were some persistent problems with scheduling meetings, getting full attendance and starting on time, but I feel a lot of this difficulty was due to the fact that committee members were extremely busy people who had to meet their committee responsibilities without any decrease in regular workload. It was inevitable that the day-to-day demands of their jobs would take precedent over a system that was yet to prove its worth.

In discussing system utilization the committee initially concentrated on how the system could be of benefit to supervisors and line-workers. Benefits to the latter proved to be the biggest problem. Systems are usually 'sold' as time-savers for linestaff but this certainly was not the case at C.A.S. The system had added to, not reduced, the recording responsibilities of staff. The computer forms were viewed as useful only to the computer while workers relied primarily on other forms of recording.

An integration of the recording procedures was suggested at one point but rejected on the grounds that the agency was already undergoing major change and more changes would be too upsetting to staff. It was reluctantly acknowledged that lineworkers would benefit from the information system only to the extent that management could use it to upgrade the service delivery or improve working conditions in the agency. Minimizing system demands on workers (eg. by producing monthly lists by computer to inform them when forms are due), and sharing information that would give workers a better knowledge of their caseloads, were seen as the two things likely to create a positive worker attitude to the system.

In identifying how the system could be of benefit to middle and upper management the most effective approach was to focus away from the system and concentrate on the kind of information the agency needed. Only later was the question asked about the system's capability to answer the question. This exercise was spread over several meetings with the student acting to stimulate and facilitate discussion and, occasionally, to point out possibilities the committee may have overlooked. The final product of this effort was a list of fifty-two questions that was presented to the agency administration as recommendations for the system's use. Some questions were identified as priority items.

The committee made a significant contribution to the manual of instructions as they were able to identify many of the problems workers and supervisors were experiencing with the forms. They could also judge when an instruction lacked clarity or was not comprehensive enough.

The third task, to examine ways of improving the quality of data collected, was a particular sensitive one for the committee. This was due in part to the fact that they knew there were some serious questions about

the quality of forms being filled out and that the direct responsibility for this rested with workers who must complete the forms and supervisors who must monitor them. There were some rather defensive explanations of the problem, particularly the number of items on the form being left blank. The forms were said to collect too much data, that some of the information they collected was inappropriate or unnecessary, that workers did not take the forms seriously because they did not think they would be used and that conversely, they worried about how some of the data would be used if the system was fully operationalized. The student did not deal directly with these explanations, rather the focus was shifted to what changes could be made to solve the problem.

When the question of excessive demands for information was raised, an interesting phenomena occurred. The committee, in effect, convinced itself that most of the data collected was valuable. Sometimes it was awkward or inconvenient to ask for information such as birthdates and cultural affiliation but these were things the agency needed to know. A couple of minor items were identified as useless but generally the exercise established the validity of the forms in the minds of the committee. Unfortunately there was no formal process for sharing this with other supervisors or linestaff.

With this issue resolved a more genuine concern was revealed. The 'Frequency of Contact' category, found on some forms, was identified as a source of real anxiety for staff. This category was intended to be one measure of service demand by indicating the time demands on workers in certain types of cases. Workers checked the actual and intended frequency of face-to-face client contact. It is actually a very imprecise indicator as one check-mark may give the frequency for an entire six

month period and it is based solely on worker impressions. The committee felt, and computer readouts later confirmed their impression, that workers had already successfully undermined the category by either leaving it out entirely or by checking "as needed" in an inordinate number of cases. It continued, however, to be the symbol of the real concern - would administration use the system to evaluate individual workers and units. The student could not allay these fears with reassurances of administration's intentions as the anxiety ran very deep and was largely due to the uncertainty created by an agency engaged in major change. The committee constantly returned to this issue in meeting after a meeting. A serious attempt was made to design an alternate category that would measure that aspect of service without alienating staff. The final proposal, however, was to abandon the category entirely. Staff activity monitoring was the only accurate measure of worker input and this had already been abandoned during the earlier stages of system implementation as unfeasible. Omitting the category entirely would be seen by workers as a reassurance, a gesture of good will in relation to management's intended use of the system. This recommendation has not yet been acted on as the two assistant directors, who are both extensively involved with system, felt form changes should be postponed until the system is more stable. Certainly time and experience may be the only assurances that will really affect workers. If their fears do not materialize they will subside. If, on the other hand, the system is ever used to monitor people instead of programs, workers are unlikely to ever produce quality data.

SYSTEM SUPPORT AND EDUCATION

The committee was one medium used to perform a third role, that of system supporter and educator. The functioning of the committee was a learning experience for them. They became familiar with all the forms not just those related to their own units. They learned about the importance of the data, the current status of the system, and the complexity of the problems to be overcome. The committee members also gained some facility in reading and understanding computer readouts as they were presented with whatever output became available. (Two of the committee members were already familiar with S.P.S.S.) For some of the members the committee experience created a real commitment to the system. Members related examples of criticisms directed at the system that they were willing and able to confront because of their committee experience.

But the committee was not the only medium available for staff education. The work area assigned to me was open to a major traffic area for the agency. Workers and supervisors frequently stopped at my desk to express opinions and ask questions. These contacts (and there were many) followed a definite pattern. The initial question was directed at how the system was progressing. The factual reply to this question was accompanied by recognition that the system created a lot of work, and seemed to take a long time in its development. This was usually an effective cue for the worker or supervisor to express their own opinion of the system. A conscious effort was made on my part to respond credibly and positively to any questions or criticisms. "Do you really think it can work?" was certainly the most frequent remark. It reflected some genuine doubts about the system's operability but also a belief in its potential value to C.A.S. These dialogues revealed a surprising lack of knowledge about the system

and about who I was. There was frequent need to point out that I was a social work student not a student of computer science. It's difficult to say if this hurt or helped my credibility with regard to the system itself, but staff did seem more assured that I understood how the system affected them. Some fairly serious misconceptions were evident as to how an M.I.S. operates. There was the rather naive belief that once data went into a computer then you could just ask a question and get an answer. The intricacies of programming were overlooked as was the need to express questions in terms of variables and to specify the format for the answer. There also appeared to be an unrealistic expectation as to how quickly the system could progress. It was a relatively simple task to give information about system operation and to point out how the M.I.S. at this agency was really following a timetable not too different from other agencies. But this did not solve the overall problem of system education at C.A.S. There had been staff education at earlier stages and there are plans for future staff education and orientation with regard to the information system. However, failure to make it a steady ongoing process may have created weaknesses at this stage in the system's development. Negative impressions and misconceptions have arisen that may be hard to correct.

LIAISON AND COORDINATION

The supervisor performing the coordinating role for the information system left the agency shortly after the commencement of my practicum. The Assistant Directors assumed responsibility for the in-agency system concerns. This administrative input and support was essential but having the coordinating function at this level created certain weaknesses. There

were a number of day-to-day problems that needed to be brought to the attention of the appropriate person and followed up. It was neither appropriate nor efficient to have them dealt with at the administrative level. For example there were occasions when there was a need to contact the consultant and bring a problem to his attention, when it was difficult but essential to contact the programmer, when a worker or clerical person wanted to express a concern related to the forms, or when meetings had to be arranged and reports presented. These tasks became part of the student role. They were valuable because they expanded my knowledge of the agency and the system and they supported my position as someone who could contribute to the agency. There would have been some real advantages if, alternatively, these tasks had been performed by an agency person. The value of the experience would then have been retained by the agency.

As an individual with access to linestaff, supervisors, administration and the consultant the importance of communication to the system's development was very apparent. Besides the P.M.I.S. committee meetings, there were meetings that included the committee, the consultant, the two assistant directors, the key punch operator, a clerical person, and sometimes the computer programmer. There were also meetings attended only by the Executive-Director, the two Assistant Directors, the consultant and myself. These meetings were an effective structure for dealing with system concerns. However, communication between meetings was also essential, particularly as more delays were experienced with the system. If there were program problems in key punching a form, then the consultant and programmer had to be informed as soon as possible. The alternative was a delay in entering material into the computer. If there were problems

hindering the programming or the obtaining of output then agency needed to know the nature of delays and how they were being handled. If a supervisor spotted inconsistencies in output that might reflect errors in programming they had to be communicated to the consultant for further consideration and possible corrections. All of these situations occurred on more than one occasion. They were all a source of frustration for everyone concerned but certainly the frustration and problems would have been more severe if there had been total reliance on meetings for communication.

One of the coordinating tasks was to deal with requests for output. In one situation it was first necessary to determine the exact nature of the request. Because it was beyond the system's capabilities the reason for the rejection of the request had to be given along with alternate suggestions for the system's use by that unit. On other occasions it was necessary to spend time helping people determine exactly what information they needed. This task will become more important as the system produces more output and more requests for information are made.

DATA ANALYSIS

An important component of the practicum was assisting the consultant with data analysis. As noted earlier, the amount of computer output obtained was significantly lower than earlier expectations. Most of what was obtained served two purposes: (1) it checked on the adequacy of programming identifying problems that needed consideration, and (2) it provided the agency with samples of the system's capability which stimulated ideas for system use and served as a progress report on the system's development. Some interesting facts were uncovered but at the termination

of the practicum none had yet been utilized.

The technical requirements for performing data analysis were designed to be simple. With a fully operational system, most of the questions the agency was asking could be answered with a rudimentary knowledge of S.P.S.S. They basically required simple frequencies, cross-tabulation of certain variables, and the use of the 'select if' option to define the population. Through constant repetition the student did become familiar with their use. But the system could not have been considered fully operational during the course of this practicum and analysis was a more complex procedure of trial, error, correction or modification and trial again. Certain examples will be briefly discussed to demonstrate the complexity of the problems and how they were handled.

Example 1. In obtaining information on permanent wards simple frequencies were requested for every item on the Planning for Permanent Ward Form. The analysis of the second half of the form, which was dealing with "Barriers to Adoption", produced sound output. The analysis pertaining to the first half, i.e. "Likely Outcomes" for permanent wards, did not make sense. Selected cases were described as having several likely outcomes which contradicted each other. To detect the source of the error it was necessary to examine individual files, verify the nature of the discrepancy and determine how it occurred. In this case the problem originated several months earlier when the programming for the first half of the form was changed. A large number of forms had been entered according to the old programming format after the new programming came into effect. To correct the error all forms entered incorrectly had to be retrieved from filing and then re-entered correctly.

Example 2. Workers had been promised that every month the computer would produce for each worker a list of cases requiring review forms. For example, a case opened 90 days or more, would be identified as requiring a Family Review Summary. This apparently simple task posed several problems. It was necessary to identify all cases that open and eliminate all cases that closed. Programming for such a task is a different matter entirely. First, no one form contained both the case opening date and the case closing date. The system was not programmed to carry out analysis that required data from separate forms at the same time. One piece of analysis could list case openings and another case closings but it would be necessary to manually compare the lists in order to determine active cases. It was decided because of this difficulty that two extra pieces of programming were necessary; one piece to give the computer the potential to determine active cases and a second to allow the use of more than one form at a time. As an example of the latter, a population could be identified using one form (such as using a 'select if' to specify all cases opened in a certain month) and data from another form could be analyzed for that population only.

Deciding on the need for extra programming necessarily creates delays in the task at hand. Other possible alternatives had first to be examined before the decision was made and the value of the information to be gained had to be weighed against the additional cost. The delay no doubt caused additional problems. One agency person expressed the belief that linestaff were waiting for the system to make a mistake and the failure to produce the

'tickler' lists when promised was judged as evidence of its ineffectiveness. On the other hand, it is difficult to see how the problem could have been anticipated. The information required was on the forms and it was only the actual programming that revealed the problem.

Example 3. Because the original programmer was not readily available a new programmer was eventually hired. Every attempt was made to insure that the new programmer had access to all the previous programming and all significant facts related to the system. At one point the new programmer created a new "live file" which eliminated all forms entered with errors. The computer produces lists of the cases omitted and specifies the type of error responsible for the omission. In this case the number of errors was well beyond the range of possibility. The vast majority were identified as errors caused by entering the same form more than once. Some logical thinking led to the conclusion that the computer was accepting for each case only one entry of each form. In reality there could be numerous forms of one type for each case (for example, there could be four Child Care Instruction Sheets for a child as the form is used for several purposes). Discussion with the programmer revealed that he was unaware of this fact and had programmed the computer to accept only one of each form per case. Some programming changes corrected the error without requiring the re-entry of forms. Meanwhile, however, several pieces of analysis had been completed but had to be rejected as they had been done on the inaccurate live file.

None of the problems experienced with the data analysis were insurmountable but they all required time - time to expose the problem, time to determine the solution and time to put it into effect. Progress was steady but slow. Unfortunately a rather extensive knowledge of the system was required to appreciate the nature of the progress and there was no agency person who met the requirement. The agency's only criteria for progress was, sensibly enough, the production of useful output. This is certainly the only standard to determine the system's overall value but it was not a measure refined enough for the system's evaluation in its development stage. The agency was limited to the reassurances of the consultant and the student who were expected to be biased in favour of the system.

It would be inaccurate to assume that there was no output at all during the course of the practicum because of problems with the system. One particular piece of analysis demonstrated how the computer system could be valuable in guarding against the drift of children in foster care without a good permanent plan. Using a 'select if' option on the Planning Ward Form a list was compiled of all children who were two years of age or younger, who had been permanent wards for over a year and who had no barriers to adoption. The computer identified six children in this category. The second stage in this analysis was to request simple frequencies for the Family Information Sheet and the Child Care Instruction Sheet for these six children only. Analysis of this sort can give the characteristics of the selected population (eg. age, length of time in care, cultural affiliation) as well as the case disposition. In this instance it was found that all the children had been adopted. Similar analysis could be done of other groups of children who did have barriers to adoption

of a particular severity and type.

Also to be regarded as progress with regard to data analysis was an opportunity to clarify situations where the information system cannot be used. A request was received from the Extended Care Unit where there was a special concern expressed for children who were placed in a particular agency receiving home. They needed to know the average length of stay and also the reason for the child being placed there in the first place. None of the data required for this piece of analysis was being collected by the form package. Placement and movement of children in care is monitored but this is done according to categories (eg. private group homes, own agency receiving home) not by particular facilities. There was also no record of why the children were placed in one particular facility rather than another. Any analysis at all of the children in the specified facility could only be done if every child concerned was separately pointed out to the computer using a 'select if' option. To key punch in this 'select if' would take an extended period of time because of the large number of children involved. In some situations the time required to do this may be warranted but this was not the case here as the essential information was not recorded.

Shortly before the termination of my practicum I worked with the system consultant to produce a series of analysis pieces. Essentially they were simple frequency distributions on forms (01), (02), (04), (05) and (08). The output contained several interesting facts; one example was the high positive correlation between the sex and age of children receiving service, another was the high concentration of clients in one specific area of the city that could not be classified as the core area. This output served as the basis of a final report which I presented to

the agency at the termination of the practicum. The sample data included in the report was selected because of anticipated staff interest and because it was a representative sample of the output that can be produced to date. The agency will decide how the report will be used but it was intended as a way of providing feedback to staff as to the system's progress within the last year.

ADMINISTRATIVE CONSIDERATIONS

At the time when my practicum was drawing to a close, the agency was deciding the future of the information system. The "test period" funded by the Winnipeg Foundation Grant would end in September, 1979. There were two important questions: Should the agency continue with the system? If the system is maintained, how will it be funded?

In answering the first question, the agency administration first considered system progress to date. Some technical things still needed to be done. It was intended that the computer would produce most statistical tables required by the Department of Health and Community Services. These basically require information from the Family Information Sheet and the Child Care Instruction Sheet but additional programming is still required to produce the tables. The programming for adoption forms also remains to be done but this can be done without a programmer as the agency system now has built a capability that allows the agency to add or change forms as required. The additional side programs referred to earlier, which simplify the identification of active cases and allow for analysis from more than one form at a time, must also be written. There may be some minor technical problems with individual forms but these have largely been resolved. Technically, at least, the information system is

almost "on its feet". There will always be a technical component to system use but the difference is that the services of a computer programmer will only be infrequently required. For example, one objective is to complete a number of simple computer subroutines to be used to produce regular reports. An agency person with a knowledge of S.P.S.S. and of the system, could write these sub-routines and compress them into a manual that would bring them within the capability of the agency's key punch operator.

With the resolution of the technical problems, system maintenance and system utilization will become the primary source of problems. At this point the agency structure is extremely important. Significant components of a sound structure are: (1) the presence of a clearly identifiable system coordinator with the time, interest and skill to monitor and promote the system, (2) a core of agency personnel who understand the system and want to use it, and (3) a good orientation and education program for staff. The first component was the strongest recommendation made by the consultant when the system's future came into question. Agency administration immediately recognized its validity and that, if they decided to continue, more resource expenditures were necessary to create a system-coordinator position. The second component is more difficult. There were a significant number of agency people involved with the system but the creation of a "core" requires a fairly stable environment. C.A.S., as an agency committed to change, has not had that element of stability. Staff changes, for whatever reason, create problems. For example, of the six P.M.I.S. Committee members, two have already left the agency and the third is soon to commence a year's leave of absence. This problem makes the third component even more significant. New staff must

be constantly oriented and involved with the system. During my practicum there was some education on the management level but overall this component had diminished. It would be the responsibility of the system coordinator to design, and implement a program to meet the need.

The executive was certainly faced with a difficult decision. The lack of output available for administrative decision-making immediately created doubts about the system's viability. The agency had already invested heavily in the system but that certainly was not sufficient reason to keep investing. Even if the system was technically perfect, there were other areas where it could fail - establishing a support structure, "cleaning-up" the data, and using system information for management decisions were all vulnerable areas. The Executive-Director particularly questioned the timing of the system's implementation. The agency could not halt major changes simply to accommodate the system and the changes were bound to have impact on the "sensitive areas" outlined above.

Ultimately the management's judgement that the system could work and the recognized potential value of the information to be gained appeared to be the deciding factors. C.A.S. has made a renewed commitment to the system. Extended funding will be sought and a half-time position of system-coordinator will be created.

SUMMARY AND CONCLUSIONS

This practicum covered a period from September, 1978 to July, 1979. From September to December the emphasis was on establishing agency contacts, familiarizing myself with management information systems and becoming acquainted with the data base of the system at C.A.S. From January to July, I performed a number of functions at the agency that were designed

to acquaint me with every aspect of the system's development and to assist the agency in coping with the system. Compiling a manual of instructions for the completion of computer forms, chairing the P.M.I.S. Committee, facilitating communication, identifying questions for data analysis and assisting in that analysis were all components of the practicum. They necessitated a fairly heavy time commitment that averaged two days a week from January to June.

At the time of my practicum the agency was engaged in major re-organization which involved staff changes at all levels, changes in the organizational structure, and a shift in both the focus and methodology of many services. Partly as a result of these changes, and partly because of unforeseen technical problems with the system, the M.I.S. did not develop as quickly as anticipated. Delays in obtaining computer output raised serious doubts about the system's viability and at one point the possibility of terminating the system received serious consideration.

The technical problems encountered were largely attributable to the necessity of hiring both a new key punch operator and a computer programmer. With each change some important information was lost producing time delays and errors. Some of the initial programming also had to be changed to allow for more efficient operation. A few problems appear to be due to oversights in the compiling of forms although it is difficult to determine if the problems could have been foreseen. Certainly very little useful information is omitted from the forms but some of it is not very accessible in terms of programming. To avoid this problem it would be necessary to consider simultaneously the exact question the agency wanted answered, the specific data it required for an answer and how that data could be most efficiently assessed.

With the technical problems largely overcome the maintenance and utilization of the information system will be foremost concerns. The negative attitude of many supervisors and lineworkers to the M.I.S. may be the biggest obstacle to overcome. The negativism has been evidenced by a variety of verbalized complaints (eg. the system is too complicated, too slow, too demanding of worker time), a number of easily interpretable non-verbal reactions to any mention of the system, and by the large amount of missing and questionable data that is being recorded. This negative attitude is not due to any laziness or lack of concern. It appears to be more of an emotional reaction on the part of staff than a deliberate response. Certainly an agency such as C.A.S. is a stressful environment at any time. In a time of major reorganization it can only be assumed that the stress is magnified and that staff would consequently feel there was "too much, too fast". Given these circumstances, it is doubtful that any other response was possible. But the high commitment required by a child welfare worker deserves and requires a supportive climate and this must be kept in mind in all matters related to the system. Orientation and education with regard to the system is necessary but staff must be more involved than that. My experience indicates that the staff and C.A.S. can contribute greatly to the utilization of the system and that, by doing so, their attitude will undergo a transition. I found this occurred in my work with the committee although the mandate in that case was only "to recommend" and not "to do". A second point in maintaining the supportive climate is that the system must never be used to monitor individuals unless this is done with the full support of staff. It is important to remember here that monitoring individual units is very similar to monitoring individual supervisors. Such information is poten-

tially explosive and there may be occasions when it is better not to act on information than to be required to live with the consequences. Considering the overall attitude towards the system it may be advisable to monitor first those programs which are the strongest and where the staff involved are the most confident. One or two positive experiences with the system should significantly ameliorate the present negative attitudes.

The future of the computerized information system at C.A.S. will be largely determined by progress made in the next year. Certainly the system has a more reasonable chance of realizing its considerable potential since the decision was made to have a half-time system coordinator position. Within a year the system should be fully operational. This would mean, in effect, that the quality of data would be greatly improved, the programming completed, routine reports produced as required, special studies designed and implemented, and procedures created for system audit and review. It will take longer than a year before the value of the system to the management process could be fully assessed.

There was no special evaluation procedure designed for this practicum. The two criteria for evaluation would be my ability to perform the assigned tasks to the satisfaction of the agency and of the system consultant (who also was my principle advisor), and my knowledge of information systems as demonstrated in this practicum report. I was in a position to receive constant feedback from both the consultant and the agency and the feedback was incorporated into the process of the practicum. This was certainly better suited to the nature of the practicum than a final evaluation.

I began my practicum with only the vaguest notion of computerized information systems. From my standpoint the practicum experience was a

unique opportunity to study the system at every level within the agency. The most technical aspects of the system will no doubt be lost if they are not put to frequent use, and no doubt they will change significantly over time. However, I feel I have a good grasp of the basic concepts underlying information systems as well as some valuable knowledge of program monitoring and evaluation. The executive of C.A.S. also provided me with an opportunity to be involved in the administrative process surrounding the system both as an observer and a participant who could express opinions, make suggestions and ask questions. The experience was valuable in what it revealed about the administrative process in a social service agency but more particularly it emphasized the political context of any significant change in such a setting. Any new system or program, no matter how desirable, must be evaluated within this context of conflicting goals and limited resources. Only then can intelligent choices be made about issues such as system implementation, development, and utilization.

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