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APPLIED BEHAVIORAL SCIENCE
FOR HEALTH ADMINISTRATORS*

Noel M. Tichy** and Richard Beckhard***
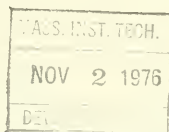
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The core problem of the executive manager in a complex organization, is to make the best choices around whom to bring together, in which organizations, to make what happen, in whose interpretation of the public interest. (Harlan, Cleveland. The Future Executive. New York: Harper and Row, 1972.)

Managers of health institutions are caught up on the crest of a major wave of change which will extend through the next decade. Drucker's (1973) challenge to service institutions rings especially true for health delivery systems. He states that:

What service institutions need is not be more businesslike. They need to be subjected to performance tests... Few service institutions today suffer from having too few administrators; most of them are over-administered and suffer from a surplus of procedures; organization charts and management techniques. What now has to be learned is to manage service institutions for performance. This may well be the biggest and most important management task in this century (p. 166).

The applied behavioral sciences provide some of the conceptual and action tools for helping administrators manage this complexity. The more complex organizations become the more relevant are the concepts and techniques discussed in this chapter. Health organizations represent one of the most complex organizational forms. This is primarily due to the nature of the mission which has a life and death component, the complexity of managing multiple professional and non-professional groups and environmental pressures which must be

balanced and managed.

The behavioral sciences consist of knowledge embraced in the core disciplines of sociology, psychology, social psychology and anthropology. The applied behavioral science is the technology of systematically employing the principles derived from the behavioral sciences to organizational and community settings. The sub-disciplines (each represented as chapters in this volume) of organization theory, organizational psychology and medical sociology provide the bridge between the disciplines and the applied behavioral sciences.

Applied behavioral science is to the behavioral science disciplines as medical science is to the biological and physical sciences. It is not a specific discipline, but an amalgamation of applied principles focusing on people in organizational and group settings, organizational characteristics, organizational processes, managerial style, managerial processes and the management of change.

Our purpose in this chapter is to provide a map of the applied behavioral science field as it relates to the work of health administrators. We will then discuss some of the problems faced by health administrators for which there are implications from the applied behavioral sciences. This is followed by a discussion of the "state of the art" both in terms of current knowledge and current technologies. We will review the normative positions which guide applied behavioral scientists in working with organizations by stating the characteristics of an "effective" organization. From this we will discuss the management of change processes.

MARRYING BEHAVIORAL SCIENCE APPLICATIONS
TO HEALTH MANAGEMENT PROBLEMS

In any one day, a health administrator is likely to find him/ herself juggling a variety of problems. During the day, the focus of action might move from dealing with a set of interface problems caused by conflicting external demands from interest groups and regulatory or funding sources to doing career counseling with a subordinate. In addition, it would not be unusual to find the health manager attempting to put out "fires" within the organization created by conflict between units or between nurses, physicians and unit managers. Finally, in the midst of juggling current problems, the manager is supposed to be thinking about the future, developing and monitoring some sort of strategic plan for the organization.

The health administrator's juggling of problems is reflected in the list of key administrative concerns developed by the AUPHA. commission which was to guide the development of the chapters in this volume. The applied behavioral sciences have proved most relevant to those areas and problems listed below in capital letters.

KEY ADMINISTRATIVE FUNCTIONS/PROBLEM AREAS

MANAGING/COPING WITH/EFFECTING ORGANIZATIONAL CHANGE/GROWTH/ INNOVATION

Assessing health care needs, planning and setting priorities for health services

Developing an information base for and participating in decision-making

Moderating costs/assuring efficient operations

Assuring organizational public accountability

DEVELOPING EFFECTIVE INTERPROFESSIONAL COMMUNICATIONS/WORKING RELATIONSHIPS

MANAGING PERSONNEL-RELATED ACTIVITIES/LABOR RELATIONS

Creating an ethical environment with concern for patient, employee, and community health

EXERCISING LEADERSHIP FOR CHANGE LEADING TO ACCESSIBLE, COORDINATED, QUALITY HEALTH CARE

Keeping up with and impacting on legislation and public policy

INTERFACING/COORDINATING WITH ORTHER PUBLIC AND PRIVATE HEALTH CARE INTERESTS/ORGANIZATIONS

Promoting and maintaining positive public relations and citizen/ community involvement

CONTINUING PERSONAL GROWTH AND DEVELOPMENT TO IMPORVE MANAGEMENT ABILITY

The six areas identified in the above list for which there are relevant behavioral science application stimulated the development of a more detailed list which provides a forum for discussion in this chapter. The list identifies managerial problems faced in health organizations for which there are existing behavioral science application. The problems are:

1. Understanding and Specifying the Mission of the Organization: In times of relative environmental stability and surplus resources, it is possible for organizations to function quite effectively with nebulous and shifting goals and priorities such as is often the case in health organizations with teaching, research and service interests. As the pressure mounts, so does the need for a clear statement of organizational mission to guide the organization in strategic decisions. The health admistrator will be called upon to guide the organization in establishing its core mission.

2. Understanding and Mapping Enviornmental Pressures on the Organization: Planning will take place within an increasingly turbulent and complex environment. Health organizations will therefore need to develop managerial competence in identifying and predicting environmental pressures.

3. Managing Organizational Planning Processes: In order to meet Drucker's challenge for performance oriented organizations within the context of increasing complexity and increasing cost cutting pressures, health organizations will have to develo more sophisticated planning processes which can realistically engage the relevant interest groups.

4. Setting Strategies and Operational Objectives: Having a
   clear mission does not insure that the organization will
   be subjected to performance tests. This requires the de-
   velopment of a strategic plan with operational objectives
   at multiple levels of the organization.

5. Organizational Designs to Cope with Changing Tasks: Or-
   ganizational structure and design comprise on of the basic
   tools of management for carrying out its strategic plan.
   The health administratorneeds to be equipped with an array
   of organizational design models enabling him/her to cope
   with multiple and changing organizational tasks.

6. Managing Consensual Decision Making: Unlike industrial
   organizations, health organizations have multiple bases of
   authority, therefore, clear lines of decision making author-
   ity are blurred, making it imperative that health adminis-
   trators understand and be able to utilize consensual decision
   making approaches.

7. Managing Multiple Tasks: Not only are health organizations
   divided into different functional areas, such as ambulatory
   care, internal medicine, pediatrics, surgery, with varying
   mixtures of service, teaching and research commitments they
   also include individuals who divide themselves between tasks
   and wear multiple hats during any one day, e.g. teacher
   research clinician. The management of multiple tasks and
   multiple task organization members requires special managerial
   skills.

8. Coping with inter-Unit and Inter-Organizational Conflict:
   The role of health admistrator includes being coordinator
   and integrator dealing with the constant pressure of organ-
   izational conflicts which require explicit attention and
   management.

9. Managing and Motivating Multiple Professionals: The outmoded
   "one best way" approach to motivating performance is even
   less applicable in health organizations where motivation and
   control not only vary due to individuals having differences
   but due as well to differences between professional groups.

10. Managing Change in the Organization: A variety of change
    processes require managing:
    - changes in structure
    - changes in the way work gets done
    - changes in the reward systems
    - changes in interactions with the environment
    - changes in staff and management relationships
    - changes in union and staff relationships
    - changes in the utilization of teams
    - changes in the management structure

For each of the above problem areas, there exist applied be-
havioral science principles and methodologies to guide the health
administrator. Some of these will be discussed in more detail fol-
lowing an overview of the field.

STATE OF THE ART

The applied behavioral science has its roots in a broad base
of theory, research and practice spanning over 40 years and several
disciplines. One of the main roots, however, grew out of the work
of Kurt Lewin and followers during and after World War II. Lewin,
a social psychologist, was bery much involved in research on group
dynamics and leadership. His strong commitment to social change led
him to do a great deal of what he termed "action research" --
systematic research conducted in applied settings designed to lead
to change in the setting. By the late 1940's, a field called ap-
plied behavioral science emerged, primarily focused on group, in-
terpersonal and individual functioning. In 1947, the National Train-
ing Laboratories was created. It was a training and research
institute aimed at applying Lewin's theories and developing the
group learning approach which Lewin had been working with. This
became the "laboratory method" or "T-group" training approach and
has led to other forms of "awareness" training.

In the mid 1950's, applied behavioral science practice was very
much oriented toward group dynamics applications (Bradford, Gibb,
and Benne, 1964). In the late 1950's, application efforts tended to
move in two directions. One focus was an increased emphasis on in-
terpersonal, personal and humanistic psychology. The other focus
was on organizations as systems, the change process, and work and

structural change. Our discussion will be primarily on the second
of these, which we feel will be the most useful for the health ad-
ministrator.

An Organizational Model

To help organize our thinking about systems, we will briefly
look at some aspects of organizations. In the behavioral sciences,
there are many different approaches to diagnosing and understanding
organizations (Scott in his chapter in this volume reviews the major
orientations). For the purpose of this paper, we have selected a
simple model of an organization to guide our discussion. This model
is based on a view of an organization as: (See Figure 1)

> ... social structures created by individuals to allow the
> collaborative pursuit of specified goals. Although the
> specific goals pursued may be highly diverse ... all organi-
> zations confront certain common problems or tasks. All must
> define (and redefine) objectives; all must induce participants
> to contribute services; all must control and coordinate contri-
> butions; resources must be garnered from the environment and
> products or services dispensed; participants must be selected
> and trained and replaced; and some sort of working accomoda-
> tion achieved with the neighbors. (Scott, 1976).

The model is consistent with the model presented by Lawler and
Nadler (1976) in their chapter on Organizational Psychology in this
volume. The model is a systems model which underscores the impor-
tance of conceiving of an organization as dynamic and in constant
interaction with its environment -- taking in inputs and transform-
ing them into outputs, which are exported to the external environment.

One of our assumptions is that organizations operate in an en-
vironment which provides opportunities as well as constraints. The
problem for the manager is the choice among these constraints and
opportunities. The criteria for the choice are developed from the
perceptions of key organizational actors who often have a negotiated
consensus as to the organization's purpose, its raison d'etre, its

FIGURE I

ORGANIZATIONAL MODEL
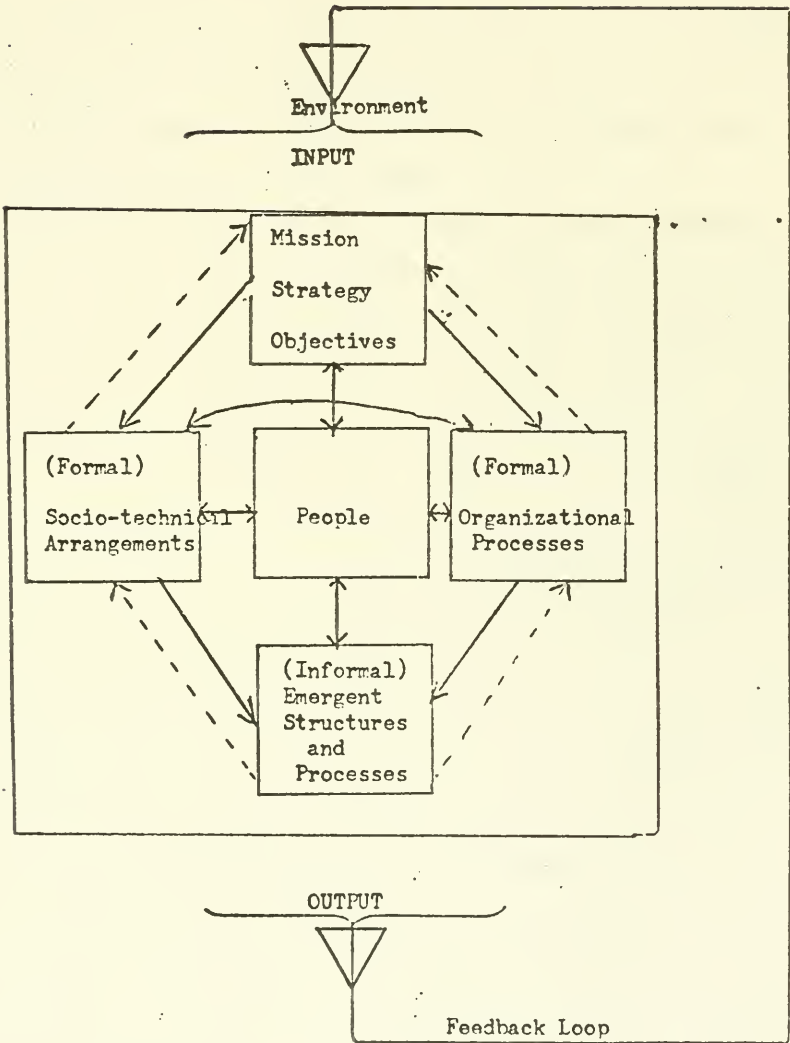
----- = weak link
———— = strong link

mission (Cyert and March, 1963). For example, there are important managerial and organizational consequences for academic medical centers based on management's definition of the core mission. Two cases are presented in Section II of this chapter of medical centers which defined their core mission differently. In one case, it was to do bio-medical research, while in the other, to provide training for practitioner oriented physicians.

The administrator in complex organization must make choices among apparently equal priorities in order to develop criteria for an organizational strategy. Strategy is the process of setting goals and objectives in the context of the organizations's mission. The goals and objectives provide a set of targets and controls necessary in order to achieve the mission. Every organization has a mission, strategy, and objectives. They may not be clear, people may behave in ways that are inconsistent with them, but they exist nonetheless.

Accomplishing an organization's mission and implementing its strategy requires the use of technology, a social structure, and a set of organizational processes. The component labeled socio-technical arrangements refers to the technology by which the work of the organization is carried out and the related social structure necessary to operate the technology. By technology, we mean the machines, equipment and most importantly, the process whereby raw materials (either human, symbolic or material) are transformed into desirable goods or services, such as being cured or better "health". By social structure, we are referring to the arrangements of people in the organization, e.g. authority relations, work interdependencies, communication linkages, etc.

Technology limits and constrains the way in which the organization gets structured but should not totally determine the struc-

tures. People's needs are the other component of how work is done. Different structures result in different social psychological consequences on workers and clients. In industry throughout the world, traditional means of production are being re-examined in terms of human motivation and replaced by new work designs (Cherns, 1975). In health settings such new work design programs are also beginning to take place. A notable example is now under way at a major metropolitan hospital as part of the University of Michigan's Quality of Working Life Program (Nadler, 1975).

As Figure 1 implies, the particular socio-technical arrangements flow in part from the mission, strategy and objectives of the organization, but is also influenced by the other components. The core issue is how best to organize work so as to optimize human and technological effectiveness. For example, the hospital administrator is concerned with how best to organize the work on a ward. This entails re-examining the work to look at alternatives for organizing nurses, physicians, non-medical personnel who interact with the technology of patient care on the ward.

In addition to socio-technical arrangements the organization needs a set of mechanisms which enable the socio-technical system to perform its work, these are called organizational processes. These include communication processes, control processes, problem solving and decision making processes and conflict management processes.

Most importantly, organizations have people who operate within the socio-technical arrangements and operate the organizational processes. People vary in terms of their motivation, their interpersonal styles, and their skills. These differences have managerial and organization design implications. For example, the hospital administrator needs to determine how to have consistent and equit-

able incentive and control systems while at the same time allowing for vast individual differences.

The above discussion of socio-technical arrangements and organizational processes implies that these arrangements are somehow totally formally prescribed and rationally planned. As has been recognized for years (Sayles, 1958) this is not so, systems have extensive informal structures and processes which emerge as a result of human interaction in the organization. Figure 1 focuses on both the formal prescribed arrangements and processes and the informal or emergent ones (Tichy, 1976). These emerge because individuals tend to: 1) formulate, reformulate and interpret the mission, 2) understand, abide by and or change the prescribed socio-technical arrangements and organizational processes, 3) use, abuse and alter the technology, 4) and differentially respond to changing environmental conditions, as a result a new set of unplanned and often unanticipated structures and social patterns of work emerge in the organization. These new forms of structures and processes perforce affect the course of decision-making, problem solving, leadership, power distribution etc.

These unplanned structures and processes are needed to get the work done; this is especially true in health organizations which are so complex that blueprints or plans can never be developed for all contingencies. They emerge to get the work done. They are potentially double edged. They may either facilitate or hinder the accomplishment of an organization's mission. For example, coalitions of nurses and physicians may form which either work toward helping

the organization be more effective or toward helping conflicting
special self-interests, as is often the case with inter-professional
power struggles.

In addition to the dimensions of our model as outlined in Fig-
ure 1, we will focus on organizational change processes. That is,
how to manage alterations in the components of the model.

Selected Behavioral Science Research
Output and Related Applied Behavioral Science Technologies

Behavioral and social science research is not without serious
problems and limitations. First, because of the relative youth, of
many of these disciplines and the difficulty and complexity of re-
search in fields such as sociology, social psychology and anthropo-
logy, there is a lack of grand integrating theories of behavior.
Rather there are a number of descriptive theories dealing with a
variety of aspects of behavior. This has contributed to fragmented
knowledge. Keeping this limitation in mind, we will highlight some
of what is currently known from research as it relates to the use of
the applied behavioral sciences in health care administration. The
categories of our organization model are used to organize the re-
search. Examples of applied behavioral science techniques will be
presented in each category. In addition to categories of our mo-
del we present research and techniques in the area of teams and
patient care. Table 1 summarizes this material. A few specific
aspects from Table 1 are discussed in more detail below.

Organizations and Environments: As indicated in Table 1,
there are a number of sub-categories under this heading. The first
area, characteristics of environments, includes recent theory and

research which indicates that there is an important relationship between environmental uncertainty and organizational design (Lawrence and Lorsch, 1965; Starbuck, 1976). Organizations attempting to function effectively in fact changing complex environments require more highly differentiated and flexible (more organic) structures to perform effectively. A multidimensional approach to classifying organizational environments has been developed by Shortell (1976).

Another sub-category of importance to the ABS is interfacing with other organizations. The trend is for health institutions, government agencies, private third party payers to become more interdependently linked, thus requiring greater interorganizational planning and coordination. Research by Levine and White, 1961; and Aiken et. al., 1975 sheds light on the dynamics of such relationships.

Public accountability is a relatively new pressure on health administration. As Etzioni (1975) indicates, the concept is ambiguous and leads to dysfunctional organizational responses in many cases. An interesting and relevant health care case of a rather successful approach to this issue is found in the case study of one neighborhood health center, The Dr. Martin Luther King Health Center in the Bronx of New York (Tichy, 1976).

There is a growing body of behavioral science literature on the development and use of social indicators, for example, measures taken on the general population to indicate job and life satisfaction. Such indicators can be utilized to provide help in assessing needs and for guiding the health planning process (Bauer, 1966; and Austin, 1971).

In order to help managers and organizations deal with the issues and concerns identified above, a number of ABS technologies are identified in Table 1. The open systems planning model which is described in detail in the case portion of this chapter provides one such technique for mapping environmental forces.

An approach for facilitating more effective interorganizational interfacing is "organization set analysis" which includes procedures for: (Evan, 1966).

1. Identifying the significant other organizations with which an organization interacts.
2. Diagnosing the frequency and quality of the interorganizational linkages identified in step 1.
3. Developing plans for altering interorganizational linkages so as to foster more effective organizational performance.

Finally, there are a set of techniques such as the Delphi technique using interactive questionnaires and feedback from a panel of "experts" to involve outside input into the organization's strategic information system.

Mission, Strategy and Objectives: As stated in our brief model discussion, the mission is the organization's "reason for being". The strategy defines the constraints and the plan for carrying out the mission within a particular environment and includes specific measurable objectives.

The behavioral science literature does not use the term organizational "core missions". The distinction made by the management literature between core mission and objectives is generally combined under the heading or "organizational goals" which are defined as desired future states of affairs (Etzioni, 1975). Organizational goals can serve the following functions:

1. Focus energy and act as guidelines for what should be.
2. Provide a source of legitimacy for people's activities and decisions.
3. Serve as standards for how well individuals, sub-units and the total organization are performing.
4. Provide insight into the true character of the organization (Etzioni, 1975).

Table 1

Behavioral Science Research And
Applications Relevant to Health Administration

Focus	Examples of Behavioral Science Research	Examples of Applied Behavioral Science Intervention
nizations and ronment		
aracter- tics of vironments	-Impact of environment on organi- zational structure and function- ing (Emery & Trist, 1965;Lawrence & Lorsch, 1965; Shortell, 1976)	-Contingency organization design -Open systems planning
terfacing	-Interorganization relationships (Levine & White, 1961; Aiken et al, 1975)	-Organization set analysis -Macro-system interlocking
blic counta- lity	-Accountability in health adminis- tration (Etzioni, 1975)	-Delphi method -Confrontation meetings -Third party conflict intervention
sessing eds -- alth anning	-Social indicators (Bauer, 1966; Austin, 1971)	-Social Accounting -Surveys
ssion ratezy jectives	-Integration of individual and organization goals (Barrett, 1970) -Organizational goals and goal setting (Perrow, 1961; Etzioni, 1975)	-MBO (management by objectives) -Strategic Planning -- Confron- tation meeting
cio- chnical rangements	-Impact of technology on organi- zation design (Woodward, 1965, Hickson, 1969) -Structural design of organiza- tions (Shortell, 1976; Perrow, 1973)	-Contingency design -Socio-technical system design
nizational ocesses		
ntrol ructure	-Control structures for regula- ting organization performance (Etzioni, 1975; Lawler, 1975) -Dysfunctions of control struc- tures (Blau, 1955)	-Data Feedback -Decision centers
anagement stems	-Managerial functions (Mintz- berg, 1973) -Information Systems (Arygris, 1971) -Planning systems (Braybrooke & Lindblom, 1963)	-Management Development -Network analysis
Communication	-Communication networks (Bavelas, 1950; Roberts,	
ecision- aking	-Strategic planning and decision- making (Pettigrew, 1973; Mintz- berg, 1976)	-Responsibility charting
Conflict	-Interpersonal and intergroup conflict (Deutsch, 1973)	-Intergroup confrontation -Third party piece making

People

Leadership	-Leadership functions: monitoring, forecasting, taking direct action, heading oft problems, exploiting opportunities (McGrath, 1962) -Contingency leadership (Fiedler, 1971; Vroom and Yeldon, 1973)	-Managerial Grid -Contingency style training
Interdisciplinary Collaboration	-Integration of roles in task groups (Kahn et al, 1964) -Socialization research on professionals	-Interdisciplinary training -Role conflict interventions for work settings -- Role Negotiations
Work motivation and productivity	-Relationship between varying worker needs and job design as related to satisfaction and productivity (Hackman & Lawler, 1971)	-Job enrichment -flexible hours
Career Planning	-Research on career paths and development (Hall & Schneider, 1973; Schein, 1971)	-Career assessment and planning workshops -Life planning workshops
Emergent "Informal" Structure	-Research on informal groups & networks in organizations (Tichy, 1976)	-Emergent network design and management principles

Teams

Structure	-Communication networks (Bavelas, 1950) -Task type (Shaw, 1964; Hackman & Morris, 1976	-Designing autonomous work groups
Process	-Group use of discretionary stimuli to affect members in organizations (Hackman, 1975) -The functioning of group behavioral norms (Jackson, 1966) -Individual versus group performance (Large and Soloman, 1955)	-T-groups -Team Development -Process Consultation -Third party interpersonal peacemaking

Patient Care

Managing their own care	-Research on psycho-social causes of illness (Massett, 1970; Mechanic, 1972) -Research on human motivation (Murray, 1938; McClelland, 1965; Alderfer, 1972) -Attitude and behavior change (Kelman, 1975) -Learning theory and research (Keller, 1969; Skinner, 1953)	-Healer patient relationship training -Client centered therapy -Sensitivity training and self-help groups -Social Marketing -Behavior modification-instrumented instructional material
Patient consumer advocacy	-Conflict Resolution (Deutsch, 1973)	-Conflict resolution interventions
Family as basic unit for health care	-Family structure and dynamics (Goode, 1964; Bott, 1971)	-Family therapy -Network therapy -Marriage enrichment programs

Perrow (1970) provides a comprehensive categorization scheme of organizational goals which provides more goal distinctions than we are making in our discussion.

Although goals provide such opportunities as listed above, the reality is that organizational goal formulation is not a totally rational process. It is often characterized by highly political activities (Cyert and March, 1963; Tushman, 1976) and as a result, an important set of organizational issues are: who determines the goals, how clear are they to organizational members, how have they changed over time, and do they really guide the work of the organization (Thompson, 1967; Scott, 1962). One applied behavioral science technique appropriate for dealing with some these issues is the "goal confrontation" technique in which organization members engage in a series of structured activities to contront and resolve goal differences (Beckhard, 1969).

Closely related to the organization's mission is strategic decision making and planning. Strategic decisions and strategy formulation refer to those decisions which have important total organization importance in terms of allocation of resources and/or precedents set. The literature provides many normative models and techniques for strategic decision-making, such as cost benefit analysis, strategy planning models of the firm etc. but as Mintzberg (1976) recently points out little empirical evidence that these models accurately describe the process. Mintzberg's (1976) recent research on strategic decision-making indicates that the process is immensely complex and involves a mixture of rational and political dynamics which require new managerial techniques. An applied behavioral science response to this set of issues is dealt with through open systems planning.

Socio-Technical Arrangements: As Scott's (1976) chapter in this volume indicates, there is a vast and ever expanding literature on socio-technical aspects of organizations. Rather than reiterate aspects already covered in Scott's excellent survey of the field, we will focus in on those aspects most relevant to the applied behavioral sciences.

Implicit in our organizational model and the way in which we approach the socio-technical component of organizations is a view consistent with the recent "contingency" theories of organizational design. These "theories" are based on the realization that organizational effectiveness is largely a function of matching organization structure, leadership style, planning and control systems to the demands of the organization's environment and task or technology (Galbraith, 1971). This is why the emphasis on socio-technical arrangements in our model. An important example of contingency thinking is related to technology and structure.

Perrow proposes (1970) that as tehcnology varies in terms of the number of exceptions from pre-determined standards and the difficulty of problem search when exceptions occur, so does the type of people best able to perform successfully and the type of structure most supportive of the work. There should therefore be a "fit" between technology, structure and people (those who do the work). An illustration of this matching is to fit technologies requiring few exceptions and having analyzable search procedures, such as routine medical laboratory test and screening with a structure which is more mechanistic or bureaucratic and with people who are less interested in receiving achievement and fulfillment on the job but more interested in money. In contrast, more fluid and organic structures and individuals desiring achievement and fulfillment on the job are more

consistent with technologies requiring many exeptions occur such as found in basic research departments, and found in the jobs of most health administrators.

An excellent review of the literature on environment, technology and structure was done by Shortell (1976). Shortell's work develops a new scheme for classifying organizations dependent on combinations of organizational dimensions.

The applied behavioral science techniques associated with the socio-technical category fall into three categories: 1) overall organization design, 2) unit design and 3) job design.

The overall organization design approach is guided by an "information processing" model of organizations which attempts to design or redesign organizations according to the information needs of task and the interdependence of tasks with each other (Galbraith, 1971). The approach involves:

1. In designing the tasks of a sub-unit (a) assessing the degree of environmental uncertainty and (b) the complexity of the technology each of which contribute to variations in amount of information needed to accomplish the task.

2. Matching simple, mechanistic structure to stable environment and simple technology, and a complex organic structure to an unstable environment and complex technology.

3. Determining the degree of interdependence with other units and developing appropriate integrating mechanisms (the more interdependence, the more elaborate the integrating mechanisms). (Tushman and Nadler, 1975).

The second level of ABS techniques is focused on unit design. The applied behavioral sciences since the 1940's work of Eric Trist

and Ken Banforth of the Tavistock Institute, have designed and imple-
mented autonomous work groups as a socio-technical approach to unit
design. These groups are largely self-managed, generally rotate
jobs and often have "enriched" jobs. The growing importance of
alternative forms of work is attested to by the recent NATO confer-
ence are included in Peter Warr (ed.) Personal Goals and Work Design,
(1976).

The final set of applied behavioral science techniques are those
related to the re-design of individual jobs. Recent theories of
motivation have shown the important impact the design of jobs can
have on performance and satisfaction. Recent job enrichment work
indicates that tasks need to be designed to optimize: 1) worker
feelings of personal responsibility for a meaningful portion of
work; 2) providing outcomes which are intrinsically meaningful and
otherwise experienced as worthwhile by individuals and 3) providing
feedback about what is accomplished. (Lawler and Hackman, 1975).
All too little work in this has been done in the health field which
has many jobs, especially those of non-professionals calling for
job re-design.

Organizational Processes: Behavioral science research focuses
attention on the following issues relative to each of the processes.

Communication: Small group research has indicated that in-
formation networks are important determinants of both problem
solving effectiveness and member satisfaction. The key contingency
is task characteristics with simple routine problems being more
efficiently solved with centralized networks and more complex pro-

blems requiring more open structures (Leavitt, 1951). At the organization level research on formal organizational networks, including Management Information Systems indicate that the key problems for management entail developing communication procedures which minimize distortion, provide more timely information and seeing that the organization has sufficient openness to facilitate upward and downward communication (Porter and Roberts, 1976).

Control -- Organizations require control structures for regulating organizational performance (Etzioni, 1975; Lawler, 1975). Unfortunately, all too often control systems foster dysfunctional organizational behavior and are known for encouraging numbers game playing (Blau, 1955). Some of the characteristics identified by research in this area of successful organizational control systems are 1) establishing controls with participation of those being controlled by them; 2) making control measurements explicit and realistic; 3) identifying proper people for monitoring performance; and 4) establishing procedures and responsibility for who and how performance is compared to standards; and 5) determining by whom and how corrective action is taken when performance does not match standards.

Problem-Solving and Decsion-Making -- A recent review of the research on problem-solving in organizations (Maccrimmon and Taylor, 1976) presents a contingency theory for managerial strategies to deal with problems based on the degree of problem uncertainty, the amount of problem complexity and the level of conflict among problem-solvers. For each type of problem, strategies ranging from computer modeling to Delphi methods are discussed. The implications for the ABS of other research by Pettigrew (1971) and Mintzberg (1976) is that it is essential to facilitate organizations to locate decision

making at appropriate organizational levels where the best sources of data reside, involve those affected by the decision; and develop mechanisms for managing the political conflict surrounding many organizational decisions.

Reward Systems -- Research has clearly shown that what organizations want to reward is often not what they are rewarding. It is also clear that reward systems at all levels in the organization greatly affect behavior. The challenge to the applied behavioral sciences is to help organizations develop reward systems which reward behavior that enhances organizational objectives and also that recognize differences between groups and individuals regarding what is rewarding (Lawler, 1972). The expectancy model of motivation discussed by Lawler and Nadler (1976 in this volume) provides one powerful tool for the applied behavioral sciences.

Conflict Management -- The behavioral research on conflict has shown that it is an inevitable fact of personal, group and organizational life which needs to be appropriately diagnosed and managed in order to avoid its dysfunctional consequences and to enhance the potential of obtaining some of its benefits (Deutsch, 1973; Walton, 1969).

The organizational processes category includes the largest array of applied behavioral science techniques. As a result, we will only highlight two of those listed in Table 1.

Probably one of the most popular of management techniques for improving organizational accountability and control is management by objectives (MBO). It is often toted as a panacea for all organizational problems. As Huse (1975) recently points out, in practice it has fallen miserably short of meeting such expectations. Its beauty, however, is that it makes a great deal of simple intuitive

sense. The basic premise is that people should be evaluated for what they accomplish, not for how they do it and that if people participate in setting their own objectives, they will be more committed to them. MBO is a systematic procedure for joint boss/subordinate goal setting and follow-up evaluation. Where it works successfully a number of conditions appear to be necessary. Thus, the successful application of MBO occurs when: 1) the goals are truly set collaboratively, 2) there is relatively high trust; 3) communication is relatively open. MBO does not fix these problems and cannot work unless these other things are fixed, but when MBO works, it does improve control and communication.

Another applied behavioral science technique for improving organizational processes is called data feedback based on an action research model. It is a procedure whereby members of the organization participate in the design, collection and analysis of data about aspects of their functioning. The process is designed to stimulate open communication and confrontation around jointly defined problems. It aims to improve organizational communication and problem-solving (Bowers, 1973; Nadler, 1976).

PEOPLE: There are three areas of research which we consider in this area: 1) individual motivation; 2) interpersonal relationships and interdisciplinary style and 3) leadership.

The most central of these factors is individual motivation. The ABS is very much influenced by the recent research of behavioral scientists which indicates that earlier theories of motivation whether they be reinforcement theories, self-actualization theories (Maslow, 1954) or social man theories (Schein, 1970) are all too simplistic and are being supplanted by contingency theories such as represented in the Porter Lawler expectancy model presented by Lawler and Nadler

(1976) in their chapter in this volume. The contemporary view of motivation is that worker motivation is complex and that the relationship between worker needs and motivation, performance and satisfaction is contingent on a variety of factors including the individual's need structure, the characteristics of the job and the structure of the organization (Hackman, and Lawler, 1971).

In addition to important motivational variations between organizational members, there are significant interpersonal style differences which affect the ability of individuals to work collaboratively. This is especially relevant with regard to team and group work. Research indicates that interpersonal relationships are affected by both individual style and the organization structure. Very often what appears to be an interpersonal problem is really a fault of the socio-technical arrangement such as when a nurse concerned with patient comfort confronts the housekeeping staff for waking up a sleeping patient while mopping the floor. The interperosnal problem experienced by both individuals was probably due to the structure of the situation not to conflicting personal styles.

Finally, leadership style is part of the individual component of an organization. Traditionally, research was carried out in one of two camps. Those trying to identify the characteristics of a great leader and those trying to identify the characteristics of a good leadership role. More recent leadership research has taken a contingency point of view arguing that effective leadership is a combination of the individual leadership style and the particular demands of the situation. (Fiedler, 1971; Vroom and Yetton, 1973). The position taken by some is that leadership style of an individual remains quite constant and that you therefore have to match leaders to the "right" situation (Fiedler, 1971); while others argue that

leaders are able to modify their styles to fit the situation (Vroom and Yetton, 1973).

Some of the applied behavioral science techniques listed in Table 1 are focused primarily on changing individual attitudes and behavior. These range from training to improve organizational skill to interpersonal human relations training.

EMERGENT STRUCTURES AND PROCESSES: As stated earlier, all organizations have emergent (informal) structures and processes. The importance of these structures and processes has long been recognized but until recently have not been systematically studied. Recent research on organizational decision making (Pettigrew, 1971; Bucher, 1970) attests to the importance of emergent structures such as coalitions and cliques as they operate in complex organizations. The ABS are just beginning to address the issue of developing techniques for designing organizations that promote the emergence of informal structures (networks, coalitions and cliques) which are beneficial to both individual members and the performance of the organization (Tichy, 1976).

This area represents one of the leading edges of ABS technology in complex organizations. Only recently are techniques being developed. Hornstein and Tichy (1976) describe a set of techniques for managing emergent structures and processes including an organization design developed by Marvin Weisbord and Paul Lawrence which combines a matrix and a functional structure in a medical center. The structure fostered open and direct negotiation between departments and informal interest groups for the allocation of resources.

TEAMS IN ORGANIZATIONS: Since Wrold War II, largely through the work sparked by Lewin and his students (Cartwright and Zander, 1968), a growing body of group dynamics research has emerged which

can and is being applied in organizational settings including health care settings. The research can be divided into two broad categories, structure and process. Group and team structure research has focused on such issues as the effects of group size, communication structure and task type on group performance (Davis, 1969). The process research has focused on how the group deals with information, group norms, individual versus group performance, and decision-making (Kelley and Tibaut, 1968). The results of thirty years of research has led to a contingency view of team functions, that is, team performance depends on a mixture of situational variables including the characteristics of the task, the size of the groups, the group norms, the time available to accomplish the task, the type of decision-making process used and the characteristics of group members. The applied behavioral sciences have been activity involved in translating this research on groups and teams into action since the now famous 1946 (Bradford, Benne and Gibb, 1964) research project which led to the start of T-groups. The most comprehensive applied behavioral science work in this area has been carried out by Rubin et. al. (1975) who have developed a set of team development procedures for interdisciplinary health teams.

Change Processes: Research on the process of change both at a macro-societal level and an organizationa level is relevant to health administrators. At the macro level, change research focusing on the impact of changing structure versus individual behavior on organizational performance and the evaluation of the impact of various intervention technologies (Nadler et. al. 1975). Studies have also been conducted on the agents of planned change (including behavioral science and management consultants) comparing their theories and approaches (Tichy, 1973).

Patient: The final area of relevant behavioral science research is related to factors affecting patient care. There are three areas of research which are relevant. First, the behavioral science work in social psychology on attitudes and behavior change, learning theory and the relationship between psycho-social factors and illness provide the groundwork for a variety of applied behavioral science interventions which can be used to facilitate patients taking more control of their own health. Learning theory has led-to the development of various behavior modification problems for dealing with such psycho-social issues as phobias, smoking and over-eating.

Another area is patient/consumer advocacy. The work by Deutsch (1973) and others on conflict resolution provides relevant behavioral science material for constructively managing the interface between consumer needs and demands and the health delivery system response.

Finally, the extensive anthropological, sociological and psychological work on families provides a basis for understanding the impact of family structure and process on health. A variet of family interventions exist to aid in treating the family as the basis unit of health care and preventive medicine. (See Bott, 1971)

This brief overview of behavioral science research and related application was meant to provide examples of how knowledge is being developed and employed to imporve organizational effectiveness. Such a discussion of research and technology related to our model components provides a limited and incomplete view of now we propose the applied behavioral sciences can be most useful for health administration. Rather than dealing with each component separately,

Table 2

Levels of Organizational Functioning

Levels of Organizational Functioning	Related Managerial Skills
Steady State Operation	- Organizational Design (authority, decision-making, work process, rewards, communication staffing) - Planning, Organizing, Directing Controling and Coordinating - Management Information Systems - Cost/Benefit Analysis
Repair Operation	- Conflict management (interpersonal, intragroup, intergroup) - Unprogrammed, non-routine decision-making - Problem-solving methods (Force field, Delphi method, group vs. individual) - Contingency planning
Innovative Operation	- PERT and Critical Path Method for new programs - Management Innovations (MBO, Participatory Style) - Organizational Innovations (Job re-design, team building) - Program Innovations
Self-Renewal Operation	- Open Systems Planning - Organization Development - Organizational Diagnosis and Improvement Strategies - Data Feedback Systems

we advocate a more integrated total organization approach to using some of these techniques. Such an approach to applied behavioral science in organizational settings is generally referred to as organizational development (Beckhard, 1969; French and Bell, 1973; and Huse, 1975). The remainder of Section I of this chapter will focus on the organization development process.

CHARACTERISTICS OF A HEALTHY ORGANIZATION

In shifting our focus to an organization development orientation, we draw upon Mathew B. Miles' four level conceptualization of organizational functioning.[1] Managers have to be able to operate at all four levels. Table 2 looks at some of the managerial skills related to each level.

The first level is <u>steady state operation</u>, that is the on-going regular routines of the organization. The administrator spends a certain percentage of his/her time doing steady state operations, e.g. attending regular meetings, filling out reports, monitoring the budget. Alas, all organizations break down and require <u>repair operations</u>. The administrator spends a certain percentage of his/her time doing "crisis" management or putting out fires, e.g. conflict between departments, budget crises, union problems. Luckily most organizations also introduce new innovations into their systems. Therefore, the administrator spends time at level three operation, innovation, keeping up on new developments in the field or on how to manage more effectively and then works at implementing innovation, e.g. new computer system, a new MBO system. The final level

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1. Relating Miles' concepts to the applied behavioral sciences was first introduced to one of the authors by Dr. Kenneth Pollock.

of organizational functioning is what is called <u>self-renewal</u>; that is taking time out from levels 1, 2 and 3 and developing ways of doing levels 1, 2, and 3 better. It is analogous to preventive medicine for the organization. Self-renewal operation rarely occurs in many organizations because of the seeming paradox of having to take time away from the other three levels to be able to make those levels function better. The applied behavioral sciences provide techniques for improving organizational functioning at the first three levels but as an overall integrated approach to improving organizational health the applied behavioral sciences is most related to level four, <u>self-renewal operation</u>.

We propose that part of the administrator's role should be to engage in self-renewal operation and that not to, leads to what John Gardiner refers to as organizational "dry rot". Organization development is an approach to organization self-renewal.

We will briefly discuss the organization development process as applied to health organizations.

When talking about self-renewal and organizational effectiveness, it becomes necessary to define what is meant by an effective and healthy organization. Beckhard (1969) has developed a set of normative criteria for a healthy organization which are based on a set of assumption about individuals, groups and organizations. These are all presented below.

Criteria of a Healthy Organization

A. It tends to be _purposeful_ and _goal directed_. The leadership
    of the organization, the heads of functions and programs, indi-
    vidual units and people have, in addition to day to day inter-
    ests, some relatively explicit goals and directions toward which
    they are working.

B. _Form_ follows _function_. The organization chart, the ways work
    is organized and resources allocated, the location of decision
    points, are defined by the _work_ requirements, not by the author-
    ity or power requirements. Power is widely dispersed and dif-
    ferentiated from (official) authority.

C. Decision are made based on location(s) of information rather
    than roles in the hierarchy.

D. The reward system(s) are related to the work to be done -- atten-
    tion is paid to intrinsic as well as extrinsic rewards e.g. the
    lower paid pediatrician's work is no less _valued_ than the higher
    paid surgeon's work.

E. Communication is _relatively_ open. The norms or ground rules of
    this system _reward_ differences of opinion on ideas, solutions
    to problems, goals, etc., regardless of the authority relation-
    ship of "differers".

F. _Inappropriate_ competition is minimized; collaboration is re-
    warded where it is in the organization's best interests.

G. Conflict is _managed_ -- not suppressed or avaoided. The manage-
    ment of conflicts over ideas, work, etc., is seen as an essen-
    tial part of everyone's job.

H. The organization is seen as an _open system_, embedded in complex
    environment, the parts of which are constantly making _demands_.

The management of this complex of demands ia a major part of
the executive job.

I.   There is a conscious effort on the part of management to support
each individual's identity, integrity, and freedom. Work and
rewards are organized to maintain these.

J.   There is an "action research" mode of management. The organi-
zation sees itself as always "in process" -- needing to have
mechanisms for collecting information of the state of things
and consciously planning improvements. There are built in
"feedback mechanisms" (how are we doing?) at all levels.

These normative criteria are based on the following sets of
assumptions held by most applied behavioral scientists about indiv-
diauls, groups and organizations which Huse (1975, 00. 23-24) out-
lines:

Assumptions About Individuals

1.   Western peoples have needs for personal growth and development.
These needs are most likely to be satisfied in a supportive and
challenging environment.

2.   Most workers and underutilized and are capable of taking on more
responsibility for their own actions and of making a greater con-
tribution to organizational goals than is permitted in most
organizational environments. Therefore, the job design, man-
agerial assumptions, or other factors frequently "demotivate"
individuals in formal organizations.

Assumptions about People in Groups

1.   Groups are highly important to people, and most people satisfy
their needs within groups, especially the work group. The work

includes both peers and the supervisor and is highly influential on the individual within the group.

2.   Work groups, as such, are essentially neutral. Depending on its nature; the group can be either helpful or harmful to the organization.

3.   Work groups can greatly increase their effectiveness in attain-individual needs and organizationa requirements by working together collaboratively. In order for a group to increase its effectiveness, the formal leader cannot exercise all of the leadership functions at all times and in all circustances. Group members can become more effective in assisting one another.

Assumptions about People in Organizations

1.   Since the organization is a system, changes in one subsystem (social, technological, or managerial) will affect other subsystems.

2.   Most people have feelings and attitudes which affect their behavior, but the culture of the organization tends to suppress the expression of these feelings and attitudes. When feelings are suppressed, problem solving, job satisfaction, and personal growth are adversely affected.

3.   In most organizations, the level of interpersonal support, trust, and cooperation is much lower than is desirable and necessary.

4.   Although "win-lose" strategies can be appropriate in some situations, many "win-lose" situations are dysfunctional to both employees and the organization.

5.   Many "personality clashes" between individuals or groups are functions of organizational design rather than of the individuals involved.

6.   When feelings are seen as important data, additional avenues for improved leadership, communications, goal setting, intergroup collaboration, and job satisfaction are opened up.

7.   Shifting the emphasis of conflict resolution from "edicting" or "smoothing" to open discussion of ideas facilitates both personal growth and the accomplishment of organizational goals.

8.   Organizational structure and the design of jobs can be modified to more effectively meet the needs of the individual, the group, and the organization.

The Process of Organization Development

When one is thinking in large systems terms, Beckhard (1969) defines organization development as 1) planned, 2) system-wide, 3) top supported, 4) behavioral-science knowledge based effort to improve organizational health. In order to accomplish these objectives the following conditions generally need to exist:

1.   There is a planned program involving the whole system based on careful system diagnosis.

2.   The top of the organization is aware of and committed to the program and to the management.

3. It is related to the organization's mission (The ABS effort is not a program to improve effectiveness in the abstract. Rather, it is an effort to improve effectiveness aimed specifically at creating organization conditions that

will improve the organization's ability to achieve its mission goals).

4. It is a long term effort. Usually two or three years are required for any large organizational change to take effect and be maintained.

In order to carry out successful organization development effort, there are specific aspects of the change process which are critical. We have organized these under the headings of: diagnosing organizational health, planning improvement strategies, selecting intervention technologies, action plan and action, and evaluating applied behavioral science efforts.

It should be noted here that many organization development efforts involve the use of external behavioral science consultants who work with the organization in the planning and implementing phases. The role of the consultant is to work collaboratively with the organization rather than as an expert who directs the effort. Therefore, it should be kept in mind that the following discussion of the organization development process is one in which outside consultant help is generally required.

THE MANAGEMENT OF THE CHANGE PROCESS:

Self-Renewal Operation

All self-renewal operations involve organizational change. This section provides an overview of the phases of the change process.

Diagnosing Organizational Health

At the core of all organization development efforts is a careful diagnosis of current organizational conditions. As emphasized in earlier writings by Beckhard (1969), "The development of a strat-

egy for systematic improvement of an organization demands an examination of the present state of things."

In order to avoid the "little boy with a hammer problem"[1] an organization model such as the one we presented is used for diagnosis. The model provides the guidelines for selecting diagnostic information and for arranging the collected information into meaningful patterns. This forms the basis for evaluating dysfunctional aspects of social systems. The organization model functions much like the physicians' model of the human system. The physicians' model of the human system. The physician conducts tests, collects certain vital information on the human system, and evaluates and interprets this information based on his model. Once the diagnosis is made, the model guides the selection of the appropriate medical intervention. The organizational model is used in a similar fashion guiding the collection of information, its analysis, and the selection of an intervention strategy, which in turn is followed by selection of appropriate intervention techniques, an assessment of conditions for success, an evaluation and action plan.

The medical analogy must be made with great caution as the applied behavioral science approach to organizational health runs counter to many of the practices of traditional medical care. In traditional practice, the medical expert prescribes to the patient, whereas in the organization development approach the patient is actively involved in his/her own diagnosis and prescription. (Tichy, 1976)

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1. Kaplan (1964) in his discussion of scientists compares them to "little boys with hammers". He states that "if you give a little boy a hammer he will find that everything needs pounding." Likewise, if you give a manager an applied behavioral science technique he may find it improves everything.

Model Category /	Information Sought	Data Collection Method
Organization and Environment	What are the key environmental constraints? What demands or supports do they provide organization? How changing is the environment? How complicated are linkages to other organizations? Characteristics of work force? Patient population characteristics?	Open systems planning activities with management, interviews with key personnel and from organizations in key interlocking organizations. Records of workers. Health survey data and demographic data on area.
Mission and Objectives	Do they set goals? How is this done? Who participates in goal setting? Do they possess the necessary skills? Are they able to set long range and short range objectives? Are the objectives clear and measurable?	Observations, interviews, questionnaires all provide ways of assessing goal setting capability. Document provide a source of assessing explicit, formal statement of goals
Socio-Technical Arrangements	What are the primary tasks which need accomplishing? What is the work flow? How many exceptions come up in doing the task? When exceptions arise is the search process to deal with the analyzable or unalyzable?	Observations, interviews and questionnaires all provide sources for assessing socio-technical arrangements.
	Are roles defined adequately? What is the fit between people and roles? How well do roles coordinate with each other?	Information typically comes from interviews and observations. Also the role analysis technique for establishing roles and career planning provide data.
Organization Process — Decision-making and Problem-solving	Who makes decisions? Are they effective? Are all available resources utilized? Are additional skills needed? Are organization members satisfied with the problem-solving and decision-making processes?	Observation of problem-solving meetings at various levels of the organization a useful data collection procedure. Personal interviews also useful.
Conflict Management	Where does conflict exist? Who are the involved parties? How is it being managed? What are the system norms for dealing with conflict? Does the reward system promote conflict?	Interviews, third-party observations, and observation of group meetings are common methods for diagnosing procedures.
Communication	Is communication directed upward, downward, or both? Are communications filtered? Why? In what way? Do communications patterns "fit" the nature of the jobs to be accomplished? What is place of written versus verbal communication?	Observations in meetings, interviews and questionnaires and discussions with groups. Use of sociometric methods to analyze data.
Emergent Structure and Process	What are the communication, influence and friendship relationships?	Sociometric interviews and questionnaires. Observations.
Individuals and Groups	Do individuals perform according to organization expectations? Do people possess appropriate knowledge, skills and ability? What career development opportunities exist for individuals?	Personal interviews, diagnostic meetings with work teams. Problems identified by personnel department. Production figures. Self assessment growing out of career planning activities.
	What is the quality of interpersonal relationships? Are they cooperative or competitive? Are groups effective?	Separate interviews followed by meeting with parties involved. Checking their perceptions of each other through confrontation situations. Observation. Team diagnostic meetings.
Output	Relative success or failure in various stages of service history. Performance reputation and record.	Interviews with key personnel. Annual reports. Financial records and performance data. Interviews with key informants in the community.
	Individual satisfaction and behavior.	Survey questionnaires and interviews. Data on turnover, absenteeism and lateness.

Table 3 shows how one would proceed to diagnose a system using our organizational model. For each of the components of the model, examples of information being sought and methods for obtaining the information are presented. Note, that not all organization development efforts start with a total system diagnosis, often a sub-system, such as a department efforts start with a total system diagnosis, often a sub-system, such as a department is the starting point. In either case, however, the first step is systematic diagnosis using a diagnostic model.

The diagnosis is conducted in a collaborative action research mode, that is, the manager possibly with the help of an organization development consultant actively collaborates with organization members in the collection and analysis of information for action planning.

Action research describes the process which provides the underpinning for the ABS self-renewal process presented in Table 2. French and Bell (1973) define action research as:

> the process of systematically collecting research data about an ongoing system relative to some objective, goal or need of the system; feeding this data back to the system based on the data and on hypotheses and evaluating the results of actions by collecting more data. (p. 84-85)

The long term objective of organization development efforts is to create the conditions and skills for the organization to continually engage in the self-renewal action research process to enhance organizational effectiveness. Therefore, the stages in Figure 2 are steps in a problem solving process which must be continually reaccomplished (Schein, 1970; Weick, 1969). The implementation of the diagnostic phase involves meeting with key organization members:

1) to determine the system to be diagnosed, i.e. total organization, management team, department; 2) to agree on the model for diagnosis, such as, our model; 3) to agree on how data is to be collected, by whom and when; and 4) how data will be used to develop a change strategy.

Data Collection Procedures. There are five basic procedures for collecting diagnostic information each with advantages and dis-advantages. Table 4 summarizes the five approaches including some of their advantages, disadvantages and sources for further reading. The choice of diagnostic procedures is guided by an assessment of the trade-offs involved in any given situation. However, it is generally desirable to use multiple diagnostic techniques (Levinson, 1972). Examples of diagnostic data collection approaches include:

1. A hospital administrator and his department heads decide to conduct a hospital wide survey of the 1500 staff members using a structured questionnaire the results of which are to be fed back to work groups throughout the hospital in order for them to problem-sove ways for improvement.

2. An ambulatory care unit decides to have a consultant inverview each member, observe them at work and hold a one day feedback session in order to begin developing a strategy for improving the effectiveness of the unit.

3. The director of a neighborhood health center decides to have the five members of top management meet with 25 middle managers in a one day diagnostic confrontation meeting

Procedure	Advantage	Disadvantage	Further Reading
estionnaire Survey	-data from large num-ber of people -standardization for measuring change over time -relatively inexpen-sive -quick	-measures attitudes not behavior -questionable validity -requires honesty on part of respondents	Price, Handbook of Organization Measureme
servation	- rich behavioral data - deep understanding of an organization's culture - build relationships with members of the organization	- takes a great deal of time - sampling bias (may get biased view of system because everything can't be observed - subjective, therefore measurement of change over time difficult - requires a great deal of trust to get accepted to make observations	Strauss, Field Methods
terviews	- combines some ad-vantages of questionnaire with a chance to observe some member behavior and establish rela-tionships with organizations	- limited data on actual organiza-tional behavior - time consuming - sampling problems in large systems	Cook et al, Research Methods in Social
rkshops-iagnostic Meetings	- mobilizes organiza-tional groups to take action - quick - makes data real for everyone involved - reinforces the "action research" process	- requires high committment to take action - may lead to superficial, biased diagnosis	Beckhard, Organizatio Development
cuments and ecords	- often readily available - provides good unobtrusive measures - provides data over time - inexpensive data source	- limited number of relevant diagnos-tic areas recorded in documents and records	Webb et al, Unobtrusiv Measures

at which a consultant aides in identifying issues which

a) top management alone needs to work on, b) top management in

collaboration with middle management alone can work on. The

day ends with action planning for next steps.

Interpretation of Data. Once the information has been collected

the organization model provides the framework for its interpretation.

The basic underlying approach to interpretation of complex systems

is what Nadler and Tushman (1976) describe as the fit hypothesis:

> Other things being equal, the greater the total degree
> of consistency or fit between the various components, the
> more effective will be organizational behavior at multiple
> levels. Effective organizational behavior is defined
> as behavior which leads to higher levels of goal attain-
> ment, utilization of resources, and adaptation.

In addition to "fit" between the components of the organization

model, is the fit between current organizational conditions and the

criteria of a healthy organization listed previously.

The actual format for interpretation varies depending on the

situation but follows a general set of guidelines. These are:

1. Recognition of diagnosis as an intervention -- purpose

of organizational diagnosis is not limited to providing a

systematic understanding of current systems conditions but

equally important it is a collaborative process for energizing

system members to want to work on jointly "felt needs". The

orderly collection of data and its public feedback to system

members results in mobilizing and releasing energies for change.

2. Opportunity for thorough processing of diagnostic data --

it is important for organization members to feel "ownership"

of the diagnostic data, therefore, meetings need to be held

with organization members in which the data and its implica-

tions can be openly discussed and explored.

Table **5**

el Category	Examples of Change Strategies (Levers for change)	Examples of Change Techniques (Technology)
	- change the environment - anticipate environmental changes - alter characteristics of input	- inter-organizational linkages - coalition building - organizational set analysis - open systems planning* - strategic planning
ormation Process ion & Objectives	- clarify - change - build on-going mechanism for re-examining and changing	- Goal confrontation meeting - Multi-level planning
technical Arrangements - Prescribed - Emergent	- Technical change (work flow) - Social structure change - Explicitly examine emergent networks and change through new prescribed arrangements	- Contingency theories of organization design, e.g. differentiation and integration* - Autonomous work groups - job enrichment - Role analysis technique - Sociometric Network analysis
zational Processes - Communication	- Change the flow - Change the content - Change the quality level of distortion	- Re-design communication networks - Data-feedback*
- Control	- Establish collaboratively designed control system - Clarify standards and corrective action mechanisms	- Management by Objectives* System - Management information system
- Problem-Solving and decision-making	- Develop routine and non-routine procedures - Alter decision-making structure levels, patterns of involvement	- Data feedback-survey feedback* - Responsibility Analysis
- Reward System	- deal with individual differences - relate to organizational objectives	- Scanlan plan
- Conflict Management	- alter socio-technical arrangements - develop inter-group mechanism for handling - develop interpersonal for handling conflict	- integrating mechanisms - organizational mirroring - confrontation meeting - Role negotiation - third party consultation*
dual-Group Component - Individual style	- alter selection and placement of individuals - train individuals - develop individuals for future	- Life planning - career development* - assessment center - different selection criteria - leadership training - education: technical skills - sensitivity training - coaching and counseling
- Interpersonal	- Increased interaction and communication	- sensitivity training
- Group culture	- change the norms and values about work and how to behave in work settings	- Team Building* - Process Consultation*

* These techniques presented in more detail in Table 6.

3. Identification of areas for organizational improvement
-- using the fit hypothesis and the ABS model the organiza-
tion members often in collaboration with consultant help,
identify organizational areas needing improvement. If possible,
priorities are established regarding what needs to be improved
first.

The next phase in the organization development effort is strategy
formulation.

Planning Improvement Strategies

Once the diagnostic activities have resulted in identifying
areas for improvement, the next step is to begin deciding on what
to do in order to improve the current state of affairs. The tend-
ency of most administrators is to jump quickly to solutions. This
often results in immediately selecting an improvement technique
without having worked out an improvement strategy. For example, if
the problem is identified as conflict between nurses and the house
staff, jumping right to an intervention technique such as sensitiv-
ity training intervention assumes that the appropriate strategy is
to alter individual and interpersonal style, when if fact the real
cause of the problem may be embedded in the socio-technical arrange-
ments therefore requiring an altogether different intervention. It
is important to distinguish between intervention strategy which en-
tails identifying the underlying change mechanisms, and the inter-
vention technology which is the specific set of procedures for
carrying out the strategy. (See Table 5 for examples of strategy
and technology)

Strategy formulation entails the use of the organizational
model to help in identifying levers for change and improvement.

These levers emerge from an understanding of what happens when different categories of the model are altered. For example, it is necessary to know what happens when the socio-technical arrangements are changed, how will change affect dicision-making and communication and vice versa. Strategy formulation is based on the dynamic systems view of organization which assumes that change in any one component in the model will ultimately lead to first and second order changes elsewhere in the system.

As outlined in previous writing on strategy formulation, Beckhard (1969) indicates that the final determination of a change strategy is arrived at through a complex sorting out of issues and tradeoffs. The following issues need to be taken into account.

A. What is the change problem? Attitudes? Behaviors? Structural changes? Process changes? What are the interrelationships and the priorities?

B. What is the appropriate subsystem involved in the problem? Which individuals, groups, or units are involved and affected? This may or may not be related to the organizational chart.

C. What is the willingness and capability of the system to change? What are the competencies and environmental constraints? Is the person or persons that want to bring about change in the right location? What is his influence potential?

D. When a consultant is used, what are the motives and resources of the change agent? To what degree is he an advocate or a methodological consultant? What is the desired change from the consultant's point of view? What resources does he have and/or not have for the problem?

E.   What are the intermediate change goals and strategies? What should be done in the short run? In the long run? If, for example, it seems appropriate to start with team building or goal setting, where should it start? What is an intermediate strategy, e.g., starting with the top team? What other approaches should be considered?

F.   What are the initial entry points? What leverage does the change agent have within the system? What is the readiness of the system to change? What accessibility is there to the change manager? What is the linkage to the system? What approaches can balance the three (readiness, accessibility and linkage) to provide an optimum effect?

Table 5 provides specific examples of strategies and how they relate to the model categories. Often multiple strategies are used in the same ABS effort, therefore, Table 5 can be misconstrued as an oversimplification. An example of how diagnosis can lead to strategy formulation is:

> The diagnosis indicated that individuals in the laboratory were frustrated because of the boring repetitive nature of their work, each being limited to narrow highly specialized tasks resulting in high absenteeism and turnover. The problem was diagnosed as an individual/task incongruent fit. Two alternative strategies are to: 1) change the selection and training procedures to find people with lower needs for interesting work; or 2) to alter the task providing more variety and complexity. Once the preferred strategy is selected then the specific change technology can be determined, examples of which are found in Table 6.

Selecting Intervention Technologies

Each technique for organizational improvement only works well under a limited set of conditions. For example, job enrichment may

Table 6 *

Modern OD Techniques

OD Technique	Definition	Focus	Basic Assumptions	Goals	Advantages	Disadvantages
1. Differentiation and integration	A diagnostic approach which gathers information about the interdepartmental and intergroup differences of orientation with respect to time, interpersonal relations, goals, and structure. It also identifies the integrative mechanisms for dealing with those differences in order to achieve collaboration within the total organization.	Each group, department, or unit is studied in terms of its needs and methods of meeting those needs in order to best accomplish its task. Intergroup interfaces and methods of dealing with differences are also of major interest.	Different areas of assignment within an organization need to be structured differently in order to best accomplish their purposes. Integrative mechanisms must be designed to bridge the differences and provide effective collaboration.	Identify differentiation needs, integrative mechanisms, and methods of conflict resolution. Redesign to better fit the environmental demands upon the various groups.	Helps in identifying possible intergroup problems. Very effective as a diagnostic tool. Focuses on task, structure, goals, etc., rather than personality dimensions. Useful in identifying environmental demands. Takes into account system interdependencies Adaptable in a consistent manner to local conditions and problems. Written diagnosis is usually provided.	Extensive complex diagnosis is necessary Minimum focus on individual problems Depends heavily on other techniques for implementation of change. Relatively less used presently than other more common approaches.
2. Life planning — career development	A process for identifying personal strengths and successes in order to establish a base for accomplishing personal, career, and organizational goals.	Personal development and increased contribution to organizational goals. Career opportunities. More creative use of individual and organizational resources.	Identifying strengths and providing relevant training does lead to a more productive use of individual resources. The organization exists for the benefit of all members. Individual fulfillment brings increased organizational effectiveness and optimizes use of member skills Individual and organizational goals can complement each other.	Improve individual resources. Match tasks with individual strengths and resources and desires. Increase personal growth and fulfillment. Harmonize organizational and individual goals	Career conflicts faced and resolved. Especially useful in mergers, rapid growth, acquisitions, etc. Actualization of potential of all members. Clarification of roles and expectations Identification of personal goals and organizational goals. Team-building device for an already cohesive group. Happy, dedicated, contributing, self-actualizing employees.	May not survive change in top management. Dissatisfaction if work styles cannot be altered Possible incongruency between reality and what one would like work to be Conflicts between individuals' career goals Requires great amount of flexibility on the part of management
3. Management by objectives	A process whereby the superior and the subordinate members of an enterprise jointly analyze their assignments in terms of reason for existence and contribution to the mission of the organization. Mutually they identify expected results and establish measures as guides for evaluation of performance. A special effort is made to focus on the desired results, not on the methods of achieving the results	Primarily "end results," hence on "task." Key to success is when groups and individuals mesh goals and efforts to succeed in the "situation." It can apply to any manager or individual no matter what level of function and to any organization, regardless of size	Organization and/or individuals have, or can be given, elements of "planning" and "control" as well as the function of "doing." Reasonable and normal control over activities and results is desirable Theory Y beliefs about people, if maximum potential of MBO as an OD strategy is to be achieved	Improved performance of organization and individuals. Coordination of resources. Increased ownership in decisions and goals Improved measurement of results Clarification of responsibilities and goals	Focuses on measurable results Contains in its processes the traditionally recognized management structure. Gives participant responsibility for decision making Does not limit methods — only end results.	Results focus tends to obscure process and climate issues The tendency to "simulate" shared decision making when in reality the decisions are unilateral Diverse misconceptions about what MBO is or is not

	Definition	Focus / Target	Underlying Model / Assumptions	Goal	When Useful	Limitations / Requirements
	sion" and analyzing all relevant varieties without as well as within the organization.	The organizational processes that need to be modified in order to best adapt to environmental demands.	...to be / Organizations can to a great degree control their internal and external operations and environment / The complex organization is a set of interdependent parts which together make up a whole because each contributes something and receives something from the whole, which in turn is interdependent with some larger environment. / Understanding organizations involves much more than understanding goals and the arrangements that are developed for their accomplishment. / Organizations are affected by what comes into them in the form of input, by what transpires inside the organization, and by the nature of the environmental acceptance of the organization and its output.	Make explicit the demands from other systems / Look at present organizational response to demands / Redesign of system to be more active in meeting its environment and accomplishing its mission / Directly specifying those elements important for organizational analysis / Survival of the system.	...ers, new top management, etc. / Useful when things seem too good / Useful when ability to perform is impaired by other outside groups / Useful when a group is just forming or coming into existence / Useful at regular intervals of approximately 5 years / Especially useful for organizations with "service" type technologies. / Useful when organization receives undue criticism. / Useful to unite total organization to accomplish its mission. / When well done, it resolves some of the organization's most difficult problems. / Establishes a representative "core group."	...which entails some risk of negative outcome / Typically requires much effort in follow-through. / Requires careful planning, management, and commitment. / Usually requires a fairly high time commitment especially on the part of top management. / Relatively new and undeveloped at present.
5. Process consultation	PC is a set of activities on the part of the consultant which help the client to perceive, understand, and act upon process events which occur in the client's environment. This process consultant seeks to give the clients "insight" into what is going on around them, within them, and between them and other people. The events to be observed and learned from are primarily the various human actions which occur in the normal flow of work, in the conduct of meetings, and in formal or informal encounters between members of the organization. Of particular relevance are the client's own actions and their impact on other people.	All interpersonal processes within the organization. All (or at least primary) relationships and procedures	The process model starts with the assumption that the organization knows how to solve its own problems or knows how to get help in solving them, but that it often does not know how to use its own resources effectively either in initial problem solution or in implementation of solutions. The process model further assumes that inadequate use of internal resources or ineffective implementation results from process problems, i.e., that people fail to communicate effectively with each other, or develop mistrust, or engage in destructive competition, or punish those who they mean to reward and vice versa, or fail to give feedback, and so on.	The goal of the process consultant is to help the organization to solve its own problems by making it aware of organizational processes and of the consequences of these processes and the organization to learn from self-diagnosis and self intervention. The ultimate concern of the process consultant is the organization's capacity to do for itself what he or she has done for it. Where the standard consultant is more concerned about passing on knowledge, the process consultant is concerned about passing on skills and values.	Goes hand in hand with team and interpersonal relations training. Conducted on the job in the normal work setting. Effective solution of interpersonal, individual, and intergroup problems. Intended to build the needed skill in the participants to carry on, with little external contact. Participants assume full responsibility for change efforts. Change tends to be relatively permanent. Organic in nature. Contributes toward effective solutions in any and all areas involving human beings.	Does not afford the intensive involvement offered by various forms of interpersonal relations training or team building. Takes into account only the process issues. Requires sustained involvement over a 2- or 3-year period.
6. Survey-feedback-action planning	A process of gathering data usually by interview, observation, or questionnaire about important organizational or group concerns. The data are summarized and fed back to the group members and used as impetus for discussion of needed changes. Plans for action are then made and in most cases a resurvey is taken to provide a comparative measure of change before and after discussion.	Getting information flowing within the system. Work groups and their work-related concerns. Relevant issues as defined by consultant or client. Organizational climate and/or management	Data alone will provide an impetus for discussion and solution of problems. Decision makers will accept the implications of scientifically valid data. Data-gathering methods have no disagreeable significant intervention impact upon the organization	Providing the necessary accurate information for proper decision making to those responsible for decisions. Increasing the participation of a greater number of resource people in management decisions	Can be adapted to any area of interest or issue relevant to organization members. Can be organization-wide or used only by those groups most interested. Provides for easy measurement and comparison of before and after any chosen intervention. Validated, reliable questionnaires already available for use in several areas of concern. May be an effective way of changing hard data indicators as well as less objective measures.	Often requires computer for analysis of data. Ownership of data is often difficult to achieve. Requires extensive preparation for feedback sessions in order to ensure effectiveness. Time lag between data collection and feedback minimizes effectiveness.

Technique	Definition	Focus	Basic Assumptions	Goals	Advantages	Disadvantages
Team and Interpersonal relations	A method of learning and planning for change in which the participants are helped to diagnose and experience their own behavior, culture, and relationships. Skill exercises, simulations, theoretical discussions, and real work analysis and planning are done in a specially designed environment.	Interpersonal and group skills. Group expectations and goals. Intensive problem solving. Expression of feelings—emotional behavior.	The amount of work carried out by workers is determined not by their physical capacities but by their social capacities, noneconomic rewards are most important in the motivation and satisfaction of workers, who react to their work situations as groups and not as individuals, the leader is not necessarily the person appointed to be in charge, informal leaders can develop who have more power, the effective supervisor is "employee-centered" and "job-centered", that is, he or she regards his or her job as dealing with human beings as well as with the work, communication and participation in decision making are some of the most significant rewards which can be offered to obtain the commitment of the individuals.	Increased trust, openness, and team work. Joint planning and commitment to action. Improved work climate. Improved individual and group interaction and communication skills.	Cultural and environmental change. Improved conflict resolution skills. Improved data flow within organizations. Especially useful for individual growth and interpersonal skill development. Useful in establishing effective working teams. Provides opportunity for interpersonal feedback analysis of interpersonal processes. Provide opportunity for examination of the social impact and consequences of one's behavior. Builds democratic and participative norms.	Payoffs sometimes individually rather than organizationally oriented. Possible tendencies toward extremism on the part of some participants. Relatively high emotional demands required. Often seen as subjective rather than objective in terms of measurable results. Possible misuse as "therapy" for unstable or unproductive members in the organization.
Third-party consultation	A process of diagnosing recurrent conflict between persons or groups, then on the basis of our understanding of the dynamics of interpersonal conflict episodes, performing a number of strategic functions which facilitate a constructive confrontation of the conflict.	"Interpersonal conflict in organizational settings," such as differences between fellow members of a governing committee, heads of interrelated departments, a manager and his or her boss. Interpersonal conflict is defined broadly to include both (1) interpersonal disagreement over substantive issues, such as differences over organizational structures, policies, and practices, and (2) interpersonal antagonisms, that is, the more personal and emotional differences which arise between interdependent human beings.	The innumerable interdependencies inherent in organizations make interpersonal conflicts inevitable. Even if it were thought to be desirable, it would not be possible to create organizations free from interpersonal conflicts. The amount of emotional energy necessary to confront a conflict and resolve it is often less in the long run than the amount of energy necessary to suppress it. Indirect conflicts, have the longest life expectancy and have the most costs that cannot be charged back against the original conflict.	To develop the interpersonal skills and to create an open confrontive organizational climate conducive to effective conflict resolution. To develop capacities within or available to organizations that make it possible to resolve more of the interpersonal conflicts and lessen the costs of those which cannot readily be resolved. To increase the authenticity of the relationships and the personal integrity experienced in the relationships.	Useful on the job in the "real" work setting. Provides resolution of problems so that energies can be used for productive purposes rather than to protect or defend. Provides a balance of power for the disadvantaged. Provides a third ("objective") view of otherwise polarized issues. Provides for the "referee" function in interpersonal conflict issues. Can provide a constructive amount of anxiety, i.e., a certain pressure is sometimes necessary for resolution or confrontation of problems.	Deals with only one of many development areas. Requires a highly skilled consultant. If they are not well managed, confrontations can further polarize the individuals, increase the costs of the conflict, or discourage the principals from further efforts. As in all areas of possible high return, the risks can also be high if the proper precautions are not taken.

not work well in a situation in which there is a high degree of
worker-management mistrust, or technical rearrangement may not be a
successful intervention if no one has a "felt need" for change.
Based on behavioral science experience and research, the consultant
and organization members need to ascentain the conditions necessary
for a particular technique to work. Some of the important condi-
tions to consider are:

1. The extent to which a supportive external environment is
    required (legislation, government, community).

2. The extent to which there is a need for substantial agree-
    ment between individual and organization goals.

3. The extent to which the organization has highly trained
    and qualified staff.

4. The extent to which it is important for the system to be
    open enough for members to bewilling to discuss problems.

5. The extent to which a moderate level of dissatisfaction is
    needed to energize people to work on improvement.

6. The extent to which the consultant needs to have access to
    various kinds of information in the system.

7. The amount of trust required between staff and the con-
    sultant working with them.

Once agreement is reached on what the necessary conditions are for
the successful use of a technique, the current state of the system
along these dimensions needs to be assessed. If it is found that
the conditions don't exist then the technique should not be tried
and either a new one selected or the strategy reformulated.

An example of some of the pitfalls of not assessing conditions
necessary for success can be found in the following case of a small

community hospital. The management group made up of four members was constantly involved in a series of very messy and dysfunctional conflicts, costing the hospital a great deal of money and problems at multiple levels. A consultant was called in to try and help the situation. The consultant identified the causes of the conflict as poorly defined and conflicting organizational goals resulting in different administrators pulling in different directions. The consultant decided that the strategy for correcting the situation was to involve the top management team in clarifying organizational goals. As a result, the consultant initiated a collaborative goal setting meeting with the four managers. The meeting was a dismal failure. The four shifted to bitter complaints about each other and finally ended with the group deciding to discontinue the services of the consultant whom they felt had made matters worse.

Had the consultant and the management group considered the conditions necessary for a successful collaborative goal setting meeting the outcome might have been different. Such a meeting requires a moderate degree of trust between consultant and members, a willingness on the part of participants to deal openly and honestly with each other and an ability to cope with conflict. None of these conditions was present, in fact in the above case, the consultant was seen as the pawn of the director and two of the department heads were not on speaking terms.

Even though the consultants diagnosis was correct and the strategy for dealing with it consistent with the diagnosis, the absense of certain necessary conditions should have shifted the focus to deal more openly and honestly with each other and manage their conflict, the collaborative goal setting meeting has a chance to succeed.

ACTION PLAN AND ACTION: TRANSITION TO
NEW ORGANIZATIONAL STATE

The diagnosis, strategy formulation and technique selection must all be incorporated into a plan of action. The success or failure of an action plan is contingent on a critical assessment of such factors as: 1) who should participate in different activities, 2) who should be kept informed about different activities, 3) who is able to be responsible for following through, 4) what is the time table and, 5) what special resources are needed to carry out an activity.

The transition to a new organizational state can occur in a variety of way. Often it requires the use of temporary management and organization systems (Beckhard, 1976). That is, the task of management and organizational resources. The temporary system in the form of a task force is one of the most useful transition vehicles. Membership on the task force should be guided by concerns for 1) including needed skills and expertise and 2) including representation from those to be most directly affected by the change as well as insuring sufficient legitimacy and power to accomplish its mission. Several of the cases in Section II demonstrate the use of transition systems to manage the change.

EVALUATING APPLIED BEHAVIORAL SCIENCE EFFORTS:
MONITORING THE CHANGE PROCESS

The action research mode of operation discussed in the diagnosis phase is again relevant to this stage of an organization development effort. The long term objective of such an effort is to create the conditions for constant self-renewal. This means that there is a

need for on-going evaluation and feedback on results. Although almost everyone agrees with this idea, only a few organizations actively attempt to evaluate success. There is little learning from mistakes, nor is there any clearcut confirmation of success.

Evaluation is clearly an underdeveloped area as it relates to organization development efforts (Friedlander, 1975).

Before focusing on how evaluation processes can be integrated into organization development efforts, it should be noted that in recent years, we are starting to see the emergence of more sophisticated methods of evaluation. Rubin Harris has developed a process for evaluating effectiveness of patient care; Beckhard and others have done an evaluation of the interventiosn into managing change at two nursing schools (Mass. General); at a number of community health centers, etc. Change measurement instruments are emerging and, although little has been done to date, it is possible to look systematically at the effects of organization development efforts. The University of Michigan Institute for Survey Research, Quality of Working Life Project is developing a package of new evaluation techniques (Nadler, 1975).

There are two basic types of evaluation. The first is on-going monitoring of key indicators while the second is a more in-depth evaluation of an effort to determine more conclusively whether it was successful and what the factors were which contributed to success or failure. Table 7 provides a framework for a more in depth focus. These two levels of evaluation are not inconsistent with each other and in fact should be mutually reinforcing. They do, however, require different resources.

On-going monitoring is best accomplished by organization members developing key indicators which they will monitor themselves at

Factor   Question

OUTCOME

Objectives   1. What were the intended outcomes of the
                            program and what were the actual outcomes?
                            It is necessary to determine why the
                            program was initiated and its impact on
                            "bottom line" outcomes such as produc-
                            tivity, turnover, absenteeism and satis-
                            faction.

CONTEXT

External Factors

Labor market and   2. How tight was the labor market and what
characteristics   were the characteristics of the avail-
of work force   able labor pool? Ascertain unemployment
                            level and characteristics of work force
                            when evaluating an organization improve-
                            ment program.

Social and   3. Were these changes occurring in society
political trends   affecting workers and the organization?
                            The success of a program may be affected
                            by how consistent it is with certain
                            societal trends.

Economy and   4. What was the general state of the economy
market   at the time of the improvement program?
                            Certain programs may only work in favor-
                            able economic conditions.

Environmental   5. How changing is the organization's imme-
stability   diate environment and is the organization
                            structure appropriately matched? A pro-
                            gram may be greatly affected by the de-
                            gree of congruence between an organiza-
                            tion's structure and degree of environ-
                            mental uncertainty which exists for the
                            organization.

Internal Factors

Product technology   6. What is the product of the organization
                            and the primary technology used to trans-
                            form imputs into outputs? Ascertain the
                            match between technology, structure and
                            type of people and whether the program
                            is congruent or attempts to make techno-
                            logy, structure and types of people
                            congruent.

Structure   7. Where on the mechanistic to organic
                            structure continuum is the organization?
                            The program should be consistent with the
                            organization's structure or explicitly
                            attend to changing it.

Size   8. How large is the organization and the
                            plant, or division within which the pro-
                            gram is taking place? Size affects com-
                            plexity of programs and the organiza-
                            tional resources available.

Organizational   9. What are the prevailing norms and values in
climate   the organization regarding involvement in
                            organizational improvement efforts? Pro-
                            grams require changed behavior thus changed
                            climate which requires program attention
                            to resistance.

Guiding Assumptions
and Model

Model

10. How explicit were the assumptions about organizations and change which guided the organization improvement program? Being explicit about assumptions increases the chance that all parties understand the program and that the assumptions are more carefully examined and tested.

11. How comprehensive and consistent with current organizational theory were the guiding assumptions and models? Success of a program can be influenced by internal logi as well as failure to incorporate what we know about organizations and improvement.

Program Phases

Initiation phase

12. What was the reason for starting the program and who was initially involved? Programs generally require a broadly shared "felt need" and involvement of affected people to succeed.

Entry and start-up phase

13. What were the initial activities at the start of the program and who was involved? The pitfall to avoid is premature implemen tation, moving into a program tends to inadequate diagnosis and resistance due to lack of understanding and support. Prescription without diagnosis leads to malpractice.

Diagnostic phase

14. What were their explicit diagnostic activities?

15. What aspects of the organization were diagnosed and how? Pitfalls include the "elephant problem," e.g., sending eight blind men out to touch organization and try to put pieces together, also the "expert" problem in which outsiders do fancy diagnosis which no one understands.

Strategy planning phase

16. How was the actual program planned and by whom? The two dimensions to assess are (1 how available resources (internal and external consultants) used, and (2) how the diagnostic model and data were used.

17. How explicit and detailed were the plans? Lack of planning leads to seat of the pant implementation of a program.

Implementation phase

18. What was actually done, how, when and by whom? Two pitfalls are incomplete, patchwork implementation and intervention inter ruptus, not carrying program through to completion.

Evaluation and corrective action phase

19. Was there explicit evaluation and monitoring of the program, and if so, what was measured and how? Political pressure ofte exists to over advocate programs setting u forces against evaluation. Evaluation measures should be directly related to intended program outcomes.

20. What was done with the evaluation; did it result in corrective action or modification of the program? No corrective action may occur due to lack of top level organi zation commitment and/or due to implementation letdown and regression when novelty wears off.

predetermined points in time. For example, employee attitudes toward new work flow arrangement might be monitored several times a year through an attitude survey as well as absenteeism, turnover and production figures. Similar data would be used in a more in depth analysis of this improvement effort but in addition a more comprehensive model for evaluation would be used. (For such a model, see Tichy, "Evaluating Organization Improvements" Organizational Dynamics, Summer, 1976) (See Table 7)

In addition to the on-going monitoring of key indicators and more in-depth evaluations, mechanisms are needed to sustain the self-renewal process.

The processes discussed in this section of the chapter require administrators as well as other organization members to engage in complex planned activities often requiring people to behave in new ways. thus necessitating dealing with individual and group resistance to change. In order to continue such new behaviors on an on-going systematic basis, there needs to be explicit management and organization commitment to the goals of improving organizational health.

The success of such efforts in health organizations is in a large part related to the quality of the management of the efforts and the commitment of the top management of the organization to invest. In order to do this, the administrator and the organization need to continually engage in the action research mode of management which entails regularly re-cycling through the organization development self-renewal process. Beckhard (1975) identified some feedback systems frequently used for monitoring and maintaining change:

1. Periodic team meetings to review where a team is and what its next goal priorities should be.

2. Organization sensing meetings -- the top of an organization meets, on a systematic planned basis, with a sample of employees from a variety of different organizational centers, in order to keep appraised of the state of the system.

3. Periodic intergroup meetings between interdependent units of an organization.

4. Renewal conferences. For example, one company has an annual planning meeting with its top management. Three weeks prior to that meeting, the same management group and their spouses go to a retreat for two or three days to take a look at where they are, where their personal and company priorities are, what are the new forces in the environment, what do they need to keep in mind in their upcoming planning, what has happened in the way they work and in their relationships that need review before the planning meeting.

5. Performance review on a systematic goal directed basis.

6. Periodic visits from outside consultants to keep the organization leaders thinking about the organization's renewal.

Conclusion to Section I

The first section of this chapter has presented an overview of the applied behavioral sciences as it relates to aspects of health administration. The major thrust has been to identify the process by which behavioral sciences can be used in complex organizations, thus, the emphasis on; having an organizational model, comprehensive diagnosis, strategy formulation, technique selection, action planning, and evaluation. This explicit focus on a comprehensive

problem-solving application of the behavioral sciences represents
our protest against the proliferation of panacea, all purpose behav-
ioral science techniques which contribute to the "little boy with
the hammer problem" among managers. Such techniques as MBO, trans-
actional analysis, sensitivity training, job enrichment have all
been misused in this way. It is our contention that all these tech-
niques have their place but are best employed within a broader
context of fostering on-going organizational health.

TABLE 8

CASE EXAMPLES

	Managerial Problem	Organizational Improvement strategy	technology
dical nter & B spital X	Understanding and Specifying the mission of the Organization	Organization mission	Open systems planning
ighbor- od alth nter	Managing & Motivating multiple health professionals	Socio-Technical arrangements	Matrix design
ality of re for use Staff	Coping with Inter-unit conflict	Organizational processes	Responsiblity charting
rsing hool Curric- um Change	Managing change in the organization	Organizational processes	- Transition organization - Trading activities
sidency tᵓtion		Changes in the structure	- structural alter- ations

THE USE OF BEHAVIORAL SCIENCE APPLICATIONS IN
HEALTH ADMINISTRATION

Section II of this chapter moves from an overview of the field to specific cases dealing with: 1) defining organizational missions, 2) designing an organization to manage multiple tasks and multiple professionls, 3) managing interface problems, 4) managing the change process and 5) team development. Each of the cases demonstrates the use of a particular applied behavioral science technology for carrying out an improvement strategy. For example, open systems planning, a specific technology for helping organizations articulate their mission and develop a strategic plan, is dealt with in two medical center cases.

The cases are summarized in Table $^\theta$ which relates the case to one of the managerial problems identified at the beginning of Section I. The table then goes on to identify the improvement strategy pursued the particular intervention technology used in the case. The section ends with an assessment of the future leading edge of the applied behavioral sciences.

In each case, we will define the problem, look briefly at the technology and its application to the problem: describe a case or two that illustrates the applications, and examine some implications for the training of administrators.

I. <u>Understanding and Specifying the Mission of the Organization:</u>
    <u>Open Systems Planning</u>

Most administrators in large organizations are used to planing their work against goals or objectives. When organizations

become more complex and the demands of the external environment more differentiated, administrators in complex organizations such as medical centers, hospitals and health schools are constantly faced with developing program and budget allocations from competing demands for resources. The criteria for allocation of these resources tend to be based either against organization objectives or personal priorities or tradition and past experience. The core mission of the organization was defined in Section I as its reason to be -- "the nature of the beast." Objectives and goals are the place or condition to which one aspires. There is a significant difference between reason to be (mission) and place you want to get to (goals). Yet much administrative planning allocates resources based on objectives or goals without being clear around mission priorities.

In simple organizations, and those with 'slack' resources, it is possible to have multiple 'core missions' because they can all be achieved. In health delivery and educational organizations when costs were lower, research funding higher, and a balance of need and service fairly clear, the issue of whether the core mission of a teaching hospital was to train physicians and other providers; or was to provide quality care to patients; or was to service community health needs, was not a major concern of administrators. Obviously, the mission was all of these. As long as one could keep the resources in some kind of balance, the problem could be managed.

With increased organizational complexity, and changes in funding practices -- escalating costs of health care and increasing community pressure; this issue is much more difficult for an administrator today. In fact, some part of the governance of the institution probably must make a conscious decision putting priorities against two different possible core missions.

The behavior of people in administrative or leadership positions is significantly _affected_ by their _concept_ of the mission of the institution. Therefore, if this is not clear, others in the organization get mixed signals.

The process of core mission development is for key people in an organization (or department or unit) to develop a consensus on a core mission statement. After examining the alternatives, and getting a first position around the core mission, it is then desirable to "map the environment." This process involves thinking through and identifying the various institutions, groups, value systems, etc. which are making demands on the administration of the institution or department. For example, in a hospital there might be community demands for more ambulatory care; there might be medical society demands for more access of community physicians; there might be demands in the medical school for more sophisticated equipment for specialty training. In a particular cepartment there might be demands for more efficiency in filling beds; a demand for limiting support staff.

Using this process, all of these competing demands are listed. They add up to what is called the _demand system_ (see attachment 1). This provides a way of looking at the core mission in the context of the _open system_ of the organization and its environment. It's sometimes necessary to modify or revise the core mission statement after an analysis of the demands.

We will give two different types of illustrations of applications of the core mission concept. The first is a pair of cases, although the two institutions involved have no awareness of the

activity engaged in by the other institution. The illustration is of an application of core mission planning by two academic medical schools.

Center A - Background: is a large, prestigious medical school and teaching hospital complex in the western half of the country. The school is well known for its scientific research and clinical excellence. The graduates represent a distinguished scientific and medical group including some Nobel Prize winners. The institution is also noted for the quality of its teaching in both undergraduate school and postgraduate residencies. It has a high number of specialties in which it has made significant contributions to biomedical research and to treatment. Practically all students specialize. It has not focused on training general practitioners. The institution is located in a community which is well served by private practice physicians.

As new legislation arose and new pressures appeared for training more primary care physicians in medical schools and teaching hospitals, the leadership of the school and hospitals examined their criteria for allocating resources. The facts were that research grants have been sharply reduced as in all medical institutions. There was an indication that, if medical schools were not going to prepare significant numbers of students for primary care practice, capitation funding of tuition might be cut off. There was tremendous social pressure for more community service. At the same time, there was a lot of pressure from the prestigious faculty not to destroy the "elegance" of the research and training of the institution.

A series of meetings between the university leadership, medical school leadership, the hospital leadership, etc. looked at these various demands. It was decided to conduct a core mission exercise to find out where the consensus was around the basic mission of that particular institution. After a number of meetings the consensus emerged. Briefly stated, it was: "We are basically scientific institution engaged in inquiry and application of new knowledge. So research and its application is our core mission. To support this core mission, we wish to train qualified specialists to carry out the applications of this research and clinical practice. We are not here to train doctors in the broad sense. Nor are we here primarily to service the community in which we are located. Therefore, we will focus on resource allocation on protecting our research primacy and the quality of our clinical teaching. We see as a natural by-product high quality care for those persons who go through our system as patients."

The leadership group knew that the consequences of this decision might mean that capitation would be withheld or challenged; they knew it might mean difficulties from the community. The executive management of the organization made a decision that these consequences would have to be accepted and managed.

Medical Center B. In another part of the country, medical center B was also known for its quality of care, its good research and clinical practice and its high quality health sciences teaching program. The medical school and teaching hospitals were part of the university complex but located some distance from the main campus in a primarily rural state. Significant numbers of medical school grad-

uates went into practice in the state, where there was a great need for practitioners and for more comprehensive preventive care as well as for more ambulatory centers because of the geographical distance between treatment centers and patients.

When research funding slowed down, and faculty recruitment became more difficult, and requirements for increased numbers of students were put on the institutions, the dean of the school, the hospital administrator and the university's leadership, as well as the key clinical and teaching heads, plus community representatives took a look at the core mission of the medical center.

From these deliverations came the position that "From the possible primary missions of research, teaching, and delivery of care to the community, we've determined that the delivery of care to the community is our primary reason to be. We see as part of that core mission, the training of medical practitioners to provide such care. We see as supportive, the need for a good clinical teaching program; in back of that good basic research, in order that the practitioners we train can provide the kind of service needed."

From that decision, they recognized that some of the faculty whose research allocation would now be cut would be disenchanted and perhaps leave. They also realized that their faculty recruitment problems would be more difficult. They also realized that probably, they would have to increase facilities for ambulatory care in order to carry out the primary mission.

In both these cases, the management of the institution, through the exercise of a core mission process, arrived at a definitive statement of priorities which then produced specific actions and rather significant consequences in both cases. Let us move on to the third case which is within an institution.

Hospital X - is a large teaching hospital. In the medical department, a group of residents and some faculty wanted to initiate a change in the care procedure for longer stay medical patients. The standard practice, as in most such hospitals was that, after the patient was admitted, an intern was assigned direct responsibility for that patient. Interns would therefore have four or five or six or more patients for whom they were the primary contact. These patients might be scattered at the far ends of long corridors because they were allocated as they came into the hospital. In each area of the hospital there were the normal compliment of nurses, nurse's aides, etc. assigned to a particular physical location or number of rooms or beds.

A group of residents who were interested in change and a couple of members of the medical staff who were interested in improving basic care, proposed an experiment. They would re-allocate the primary responsibility for coordination of the care of the patient to the nurses in the area; they would move all the beds of one intern's patients into the same physical area, so that he/she could handle coordination with the nurses in that area.

The director of the hospital who was very interested in increasing the quality of care approved the experiment. The chairman chief of medicine who was interested in improving educational opportunities for the house staff, thought it was worth a try -- purely as an experiment. The nurses on the ward were very excited at the possiblity. Most of the medical department staff were opposed to this 'disruption', being primarily concerned with their own education. The administrative staff of the hospital saw this as a confusing, unnecessary process and were actively against it.

In core mission terms, the <u>core</u> mission as perceived by the main actors was as follows: hospital director -- quality of care at reasonable cost; chief of medicine -- effective teaching of interns and residents; majority of house staff -- learning everything we can from our faculty; minority of house staff -- trying to improve care by changing the procedures; nursing group on the ward -- improving care through better utilization of deliverers; administrative staff -- maintaining a smooth running, efficient organization. Given those unstated and unshared descriptions of the core mission, what happened is not a surprise. It was the practice for interns to be rotated on a monthly basis. It was agreed to try this experiment for a month on one ward. Nurses and interns as well as some residents, who were most enthused about the opportunity, worked on the problem and trained themselves to handle the patient problems as well as the administrative problems. Approval was given by the chief of medicine and hospital director and a date was set for starting.

On the starting date, it was not possible to get any support people to move the 20 beds which were necessary for the experiment to occur, so the doctors -- residents and interns, moved the beds themselves. This caused panic in the administrative organization. The reception and intake people complained to the director and administrator that their system was ruined, the telephone operators complained bitterly.

The difficulties got so great that the hospital director had to be called in to mediate certain issues and to again personally support the experiment.

At the end of one month when the rotation changed, the incoming residents immediately went back to the old system. It was just too much aggravation for them. It got in the way of the teaching and learning process.

This experiment was doomed to failure because the core missions were 'different.' Given that condition, the "establishment" or traditions will usually prevail.

Implications for Users in Training

Graduates of health management schools will be moving into positions in which the decisions about resource allocation will be more complex and will be continuing. These type of decisions don't just get made at the director level but are not much a part of the middle management of the organization. Therefore it should be part of the available management tools for managers in health institutions to be able to engage in a mission identification process. They should also be able to differentiate a mission developing process from an objective or goal setting process. Planning which includes both of these will be a primary skill need in the future. It would also be desirable in the training of managers to expose them to the open systems planning process, which includes establishing the core mission; mapping the environment through the development of the demand system previously mentioned; defining a response system by recording present responses to the various demands; defining strategic priorities and desired states. This pre-planning process can help considerably in the development of strategic plans as well as priorities of objectives. We would suggest that this general concept area should be part of the curriculum in all management training.

ORGANIZATIONAL DESIGNS TO COPE WITH CHANGING TASKS AND MANAGING MULTIPLE PROFESSIONALS

Problem: As organizational tasks become more differentiated, making different demands on different parts of the organization, it is often necessary to re-think the way the organization is structured; whether it is structured in relation to the tasks to be performed. Historically, organization managers built their organizations on the basis of functional sub-organizations based on related technologics such as medicine, surgery, a business department a dieticians department, and so forth. People with like backgrounds and like tasks were put together.

As the organization becomes more comples, it is sometimes necessary to put together people from different technologies or disciplines who are organized around a mission in a program such as community medicine or primary care. In this situation, the organization structure may be defined as mission or program oriented.

In the kinds of institutions in which administrators are operating, you will often find multi-task professionals which sometimes requires a matrix organization, where a particular person is part ofmore than one "home room" -- reporting to more than one boss. He/she must decide how to allocate the job assignments, the rewards, etc. to the person who is 'matrixed.'

This is an increasingly common problem for administrators managing multi-task professionals. An obvious example and recurrent example is a doctor who is a staff of the hospital; has a private practice: and has a faculty appointment in the medical school.

We would like to discuss briefly a case where an organization re-design was necessary in order to get the form (structure of the organization) to fit the functions (tasks of the organization). The institution in question was a community health center serving a population of 45,000 people in an urban ghetto area. The center was a part of a large medical center and teaching hospital. The center was well funded from federal funds and had excellent physical facilities and a large staff. The organization structure consisted of a project or center director who was a department chief in the medical center; a medical director, a director of training, director of community advocacy, and administrator. Reporting to the medical director were chiefs of medicine, pediatrics, nursing. Reporting also to the medical director were team leaders from 8 delivery teams. All the health care was delivered to the community through interdisciplinary delivery teams composed of an internist, pediatrician, a nurse practitioner who coordinated the team and three family health workers -- paraprofessionals with special clinical training. Each team had a geographic location in which its total patient panel was situated. In addition, the center had a medical records department, medical administrators, etc.

The reporting system was functional. All the pediatricians reported to the chief pediatrician. The family health workers had no direct functional line but reported through their nurse coordinators.

With this structure, the work of the organization was pursued with some difficylty. There was poor communication and location of authority within the delivery teams because of the multiple reporting systems. There was poor use of support resources such as medical recores, because they reported into different lines

and had no way of influencing each other's work. There was diffi-
culty in the development of people, particularly the family health
workers, since they had no "home room" after they left their train-
ing 'nest' in which they were located for the first six months.
The coordination was very 'loose' at the top.

The technology of organization design and redesign is a task
based on approach which starts with looking at the work to be done
such as delivery of care, getting records of families, etc. -- the
best resource allocation to achieve it; and the best information flow
and reporting system to support the resource allocation. Without
detailing this case which is fully detailed in Beckhard's "Organi-
zational Issues in the Team Delivery of Health Care," the change
was as follows: Starting with the issue of the stated mission to
deliver health care to 45,000 people in that community -- the teams
were reorganized to reflect that mission. More sharing of informa-
tion on patient needs, community needs and care technology was built
into the team planning itself. Because of previous conflict between
the formal organization (nurse in charge) and the practical way of
working (doctors taking over), it was seen as necessary to have an
administrative direction that facilitated the delivery -- teams
getting the kinds of support they needed; and to provide linkage
between the teams and the rest of the organization. Team leaders
who were administrators, not MDs, were created. They had responsi-
bility for the effectiveness of the team. They could fire any team
members, including the doctors, from the team -- but not from the
center. They were the access point to the support systems such as
medical records and others. They reported directly to the Director
of Health Services. The former chiefs of the technologies or func-
tions -- pediatrics, nursing, etc., became the office of health

services. Their primary tasks changed from being decision makers on day to day operations (which were now assigned to the teams), to becoming program developers, quality controllers and educators. They were available as consultants to practitioners in their own and other disciplines; they produced and monitored quality standards of care; they developed protocols for providing treatments in that particular setting. For example, because of the availability of house visits through family health workers, monitoring of hypertension could be handled very differently than in a middle class private patient-physician situation.

The administrative support items such as medical records, which had reported to the administrator, were now brought into the health services area so that all the functions primarily concerned with care and patient contact were in the same "family."

Through this re-allocation and training the productivity of the center improved by several hundred percent with quality standards being maintained according to accepted quality measurements.

The Implications for Users

This case is an illustration of a situation where the organization and form appropriate to one set of tasks was moved to another set of tasks where it was less appropriate. The center was originally organized just like the hospital in which it was centered. In the hospital the chief of a service does the complicated procedures, and the juniors on the service do the less complicated ones. In a community health center, all the care is delivered by ' the people at the bottom of the professional ladder. The senior professionals supply support and provide guidance. (They also may serve as members of delivery teams). When the tasks differ, as they

did in this case, the structure needs to be different in order to get work done optimally.   It is recommended that in the curriculum of management training, there should be sessions on <u>organization design</u>. which deals with concepts of how to assign tasks based on the particular set of functions and their relationship to the environment; content issues around integration between parts of an organization, and how to design the structure to do that; issues around functional - program-matrix structures their utilization and consequences - issues around information systems.

COPING WITH INTER-UNIT CONFLICT - CONFLICT MANAGEMENT AND RESPONSIBILITY CHARTING

Much change and much tension in an organization occurs where functions or departments or areas of work intersect or interface. Ambiguity about who should make what decisions, who should report to whom, who has power, etc. are common issues that administrators face at all levels in a complex organization. Lacking other methodologies these things are usually resolved on the basis of who has the most power or the most status in the organization.

Almost any new development or major change in an organization produces an interface problem. For example if one changes a program which was entirely under the department of medicine, such as ambulatory care, to one in which part of it is under the control of a department of community medicine, an interface is created between two departments. The resources must be split; the people who used to be in the department of medicine full time are now in a situation where the new and the old departments are competing for the same resource. Somebody must make the decisions about "where Dr. Smith spends Friday."

A technology has been developed called responsibility charting for working such conflict issues. It makes the assumption that much of the dysfunctional human behavior that one sees in organizations and to which one ascribes the title 'personality conflict' is in fact, not a clash of personalities or characters, but is a clash of people caused by some organization malfunction or dysfunction.

A good place to start looking for the causes of such conflict is in the organizational allocation of responsibility or behavior. Typically and traditionally when there is a conflict around who does what to whom, attempts to resolve it take the form of trying to get the roles clearer. This is either done by writing clearer job descriptions or by mediation from higher levels -- the boss deciding what each role should be; or by some negotiation process between power centers. Responsibility charting has been designed to change the way this conflict is managed to a problem solving mode. The task - the work that must be done - defines the behavior of all people who are connected to that set of tasks or work.

The way the process works is that those involved come together around a particular issue or set of issues. They list those on one side of a grid or a chart, including the specific kinds of actions or decisions that need to be taken (see Figure 3). To use a simple example -- if we were talking about hiring a secretary, the types of actions that would be involved would include recruiting, early interviews, final screening, decision to hire, assignment of work, etc. On the other axis of the grid, one identifies the "actors" who might have something to do with that particular decision. Using the same illustration, one migh list the director, the immediate department head, the supervisor of the secretary, the personnel recruiter, the controller, the recruit, the other secretaries in the

Figure 3

RESPONSIBILITY CHART

CODE: R — Responsibility (Initiates)
A — Approval (Right to veto)
S — Support (Put resources against).
I — Inform (to be informed)

area, etc.

Having listed both the types of decisions and who'd involved
in the process, we assign a behavior to each actor. There are four
possible behaviors - 1) Responsibility, (this means has the respons-
ibility for seeing that action is taken) 2) approval - the right to
veto (This means that on the particular action involved, this role
has the right to veto and stop the action) 3) Support. (This means
that this role must provide support and resources (has no choice) on
the particular act. Resources might be information or people. 4)
Inform means (must be informed, but by implication does not have
veto power).

One important part of the technique is that only one R -
responsibility can be assigned to one act. So, if we go back to
our secretarial illustration, the R might be located in the immed-
iate supervisor or in the personnel department or in the recruiter.
Those involved would have to decide where the R is located. If the
participants themselves cannot decide then there are three choices.
a) - move the R up one level b) - move the decision of where the R
goes up one level and c) - break the problem out into parts. For
example, it might be that hiring an executive secretary would be
different than hiring a clerk typist.

Let us briefly illustrate two types of situations in which
this process was applied.

Who is Responsible for Quality of Care of House Staff in the Teach-
ing Hospital

Given current legislation on peer review and other quality
requirements, how would you allocate responsiblity for the quality
of care, provided by residents and other practitioners in the hos-
pital. Clearly the hospital administrator or director has some

responsibility and accountability; clearly the board is accountable in some ways; clearly the head of professional service has responsibility; clearly the head of the particular discipline has some responsibility; clearly chief residents have some responsiblity; clearly colleagues, such as nurses who work with the house staff have some responsibility. A number of hospitals are beginning to use the process of responsibility charting for breaking this problem down into its specific behaviors. They then can assign role behaviors to the various people who are concerned about the problem. This has been found a useful device for getting some sense of order, direction and action in a very complex problem.

The second case is in a medical school. The school changed its curriculum from all teaching being in disciplines such as medicine to the development of core programs by years. The faculty were all in general agreement on the change. Program directors were appointed who had responsibility for the various programs.

As the programs were developed, and it came time to select faculty and to plan courses, the issue arose as to who had authority to get a particular faculty member to teach a particular course on a particular day. Previously all faculty members had their 'home room' in some discipline area, such as medicine or pediatrics. Now they were required to teach in a program. What should be the role of the program chief who must provide this program; of the discipline chief, who "owns" the resource; of the person themselves, of the dean of the medical school.

The group spent over a year trying to resolve this set of dilemmas on a case by case basis. When they discovered the technique of responsibility charting, they spent a day and a half in one off site meeting, working through all kinds of behavioral

"crunches" that were caused by their organizational system. They were able to assign and allocate behaviors to all the "actors" in each of these situations. They were able to implement their program quickly and they had mechanisms for managing exceptions and conflicts.

Implications for Users and Training: The curriculum of management education should include analysis of interface management issues of the conflict resolution methods available and specifically how to allocate behaviors to different roles under different circumstances. Responsibility charting as a technique should probably be included in such education programs.

MANAGING CHANGE IN THE ORGANIZATION

Most health administrators today have to be simultaneously concerned with 1) managing day to day operations 2) managing planning for the future 3) managing interfaces with the outside environment 4) managing organization change. Frequently administrators see this fourth process - managing change - as a sub-part of one of the first three. There is a rapidly increasing body of knowledge and experience which indicates that managing change is a separate though frequently interdependent process, as we indicated in the four levels or organizational functioning in Section I. Managing change refers to the self-renewal operation.

In the management of organization change we suggest that a systematic planning and control process can make a significant difference in the effectiveness of the change. Some of the factors affecting changing strategy are whether the change is purely technical; whether it has social implications; whether it defies traditions and values, etc.

A few illustrations of the kinds of frequently recurring situations that require planned change management are: - introducing family practice department into a teaching hospital - introducing a primary care curriculum or rotation - enlarging or changing the ambulatory care system and facilities - working with a professional union such as a house staff union - combining professional and technical resources within different sub-units such as combining specialities in two different hospitals.

The areas of applied behavioral science which have high relevance to these kinds of problems include 1) the change process, resistance to change, analyzing the forces in a change situation 2) developing a change strategy 3) developing methods for managing the transition between the old state and the new state 4) developing a plan for getting commitment of key people to the change 5) planning and managing the stabilization or maintenance of the new state.

Following are two cases where a conscious change strategy was applied to manage a major change effort.

The Case of the Nursing School: A large undergraduate nursing school decided to change its curriculum from the traditional discipline-based subject areas to a programmatic curriculum based on type of care - primary, secondary, tertiary. The faculty agreed the change in concept and it was approved through the appropriate administrative bodies. The dean appointed some committees to pursue curriculum development. These committees were, ad hoc, reporting to her.

If we examine the processes, at this point, there was a traditional model for managing the chage: set up a committee of people who are interested, and have them do the job. Give them space

and a reporting line. This method has produced an almost predict-
able result. In the first place these committees were composed of
members who reported to functional or discipline units and the chair-
man of these units had major control over the activities of the
members of the committees in terms of time available for work - in
terms of tasks - in terms of priorities. The stresses on the
committee members - who were mostly enthusiastic junior faculty -
were tremendous. Secondly, the implicit resistance of many tradi-
tional discipline heads could be mobilized and could keep any change
from being more than cosmetic. Third, conflict in the system was
considerably increased, particularly as the deadlines for new courses
approached.

A group of us at the Sloan School at MIT who were studying the
process of change in organizations under a Robert Wood Johnson grant,
offered to provide some analysis and a few interventions.

The analysis showed that the forces in the situation included
1) high resistance among some traditional faculty for losing control
of any major part of the curriculum. 2) Strong differences between
some tenured, discipline-oriented faculty, and some junior action-
orinted faculty. 3) The sense that no new unit or committee had any
real power or could have any real power. 4) A generally shared
feeling that the dean would have to control most of the change, if
it was to happen. 5) A wide split as to whether the change was to
be cosmetic or fundamental.

From this brief analysis (or at least described briefly) it
was decided that a first condition - given the resistance to change
that existed - would be some kind of "unfreezing" process, in which
the entire faculty could become aware of the organizational condi-
tions as well as the curriculum change situation. The target of

such an activitiy was to get real commitment on the part of the total faculty to the _fact_ of the change; and to build a management system for managing it; and to get the faculty to recognize that there were there were three states or conditions in the change process - the _old condition_, meaning the presently conducted curriculum; the _new condition_, when the curriculum would have changed from discipline-oriented to type of care-oriented; and the _transition_ period, when there would be some programsin both modes, and when people would be teaching in both programs and therefore conflicted around priorities. Another goal was to provide awareness that it was necessary to develop a management system for this transition state. It would not necessarily be the same as the management of the _new_ state. It would _definitely_ not be the same as the management of the old state.

Following this diagnosis, a one-day meeting of the entire faculty was convened by the Dean. Consultants presented some behavioral science concepts about the change process in organizations; issues in managing chages problems of creating strategies for changes. A case had been developed. The entire faculty were broken into two groups of six or seven people and given the case (which looked strangely like their own institution). They were given the 'situation' and asked to prepare an organization diagnosis and to prepare a consultation with the "dean" (an actor) on how best to manage the change.

In these sub-groups, which were composed of senior and junior faculty, and across disciplines, participants were required to come up with some solution. Representatives presented their recommendations to an actor dean (the real one was in attendance).

As a result of this exercise, it became clearly evident to all, that a transition management system was needed; that collaboration and cooperation from the disciplines was essential; that the planning of the new curriculum needed to be separated or differentiated from the teaching of the new curriculum; and that different types of decision making and informationexchange were appropriate in each of these situations.

As a result of this, the dean appointed three full-time coordinators - one for primary, one for secondary, and one for tertiary care. They were to be released from other responsibilities, and have full-time responsiblities for managing and developing the curriculum; and for jointly 'managing' the change process.

To link the present state, and to create a management team for this purpose, the curriculum coordinator for undergraduate curriculum, who was the number two person in the hierarchy, became the chairman of this coordinator's group. The group reported to the dean. This became the change management mechanism.

The coordinators then recruited faculty from the various disciplines in collaboration with the discipline chiefs, and developed planning teams. These teams each underwent a brief team development session, in order to get clear on their charter and their ways of work; their ways of managing the conflict of time between their regular or previous assignments and this new assignment. They worked for a period of time, linking back to the discipline groups, until the curricula were developed. They then worked with the discipline chiefs on recruiting and assigning faculty to teach the various courses and to assign evaluation units to maintain them. The curriculum coordinators retained their role as

program evaluators, and managers of program improvement, for a year after the new curriculum was introduced.

Another part of the diagnosis had indicated that, although there would be enthusiasm after the initial activity, and probably a maximum of cooperation during the early stages of the curriculum planning; that, as the situation came down to the wire and courses were about to be given, some of the old resistance from the disciplines would re-occur. Mechanisms were needed for continuing the dialogue between the parts of the system.

Based on a number of experience using education interventions as a strategy for facilitating change, the MIT group conducted a 6-session course in 'basics in management.' It was voluntary for all faculty; Credit could be received. A significant number of the faculty attended this program, which covered a number of issues such as interface management, decision making, communications, and goal setting, all on which were relevant to the situation at hand, and which provided a basis for the faculty to continually use their own organizational condition, as material for testing the principles and for learning how to function better in the change situation.

Changing the Residency Rotation: The X hospital had a department of medicine, which had a traditional rotation of residents which included the normal intern rotation, and a fair amount of specialization in the next two years of residency. The curriculum rotations were almost entirely managed in the hospital, with the exception of the usual emergency room rotations.

In the light of the increasing emphasis on training general practitioners, and as a result of a survey of graduates who were in general practice, the chief of medicine felt strongly that it would be necessary to modify the curriculum for residents to include an extended rotation in an ambulatory setting. The great majority of the residents in the hospital had chosen their residence there because of the specialties that were available, and at this point in their career were clearly not considering general practice as their major career. However, statistics had shown that significant numbers of their "older brothers" ended up within five years in general practice.

The chief decided that there would need to be a one-month rotation in an ambulatory setting in the first year of residency after internship; and that there would be a one-month rotation in the second year. In order for this to occur, and in order to maintain what was seen as essential time for other learning needs, the first year residents would have to give up the one month of free time which had been called individual study; and the second year residents would have to give up some part of their chief residency. The medical center had a social medicine department in medicine, which was composed of a small group of house staff whose focus of interest was on ambulatory care, and who had already developed a rotation system which had been in use for several years.

The chief of medicine knew, from his diagnosis that the attitudes around the change was as follows. The social medicine house staff were actively for the change since it meant reinforcement of their existing practice. 2) the faculty in social medicine were actively for the change, 3) some of the people conducting ambula-

tory care activities in the hospital complex were for the change.
Others were against having to take on additional teaching or precep-
torships. The majority of the faculty of medicine were quite against
the change since they saw it as a threat to their time for training
in specialities. The majority of the residents were actively against
the change, since they saw it as cutting into private time or their
own time and not being central to their learning needs.

Given this analysis, the chairman felt that a persuasion
strategy would not in any way achieve what had to be done. He felt
that organizationally he had to legitimize the primary care aspect
of the curriculum. His methods of doing this included 1) making
two faculty appointments on his staff in primary care, 2P appointing
a group of people from ambulatory delivery situations and from the
cheif residency group in social medicine to serve as preceptors
for these rotations, 3) revising his own personal program to include
one afternoon a week in an ambulatory care setting as a preceptor.
3) creating a change management mechanism composed of the chief
residents, two senior faculty, the primary care faculty, the direc-
tor of social medicine, and some representatives of the delivery
sites. This group, chaired by him, had the responsibility of devel-
oping specific curriculum around primary care for that setting;
building in an evaluation mechanism; and dealing with the change and
resistance to change issues among the house staff.

This latter process -- the management mechanism -- was only
initiated after the first rotation was conducted. It has been a
mild disaster in the sense that most of the residents had resisted
and resented the program. Before the second program was given for
new first-year residents, and a first program for the group that
were now second-year residents, further analysis was done; opinions

were collected, people were asked how to improve the program, and a large involvement process was undertaken. It had a significant effect on the second set of courses, and the process continues to be developed at this point.

In this case again the development of a specific strategy and a way of testing the strategy made this otherwise very distasteful change more palatable and certainly viable.

Implications for training of Administrators: Unquestionably the subject of change in large organizations should be included in administrator training. Issues around change dynamics, the change process, change strategies, evaluation of change, maintaining change, etc. should be included.

TEAM DEVELOPMENT

Team development is perhaps one of the most misunderstood and misused applications of behavioral sciences in the whole organization field. We'd like to provide a few, hopefully clarifying, definitions to start with.

1. The team as we will use it here, is a group of people who must have each other's resources in order for some particular set of tasks to be done. Thus an interdisciplinary delivery team is a team by definition of the task. A task force such as has been described in the last two cases, is a team in the sense that the job requires the various resources who are brought together. An organizational hierarchy such as a director and his assistants is not necessarily a team except around certain tasks. The hospital director or administrator has on the chart a number of functions reporting to him including let us say, medical services, nursing, dietitian, engineer, etc. These are not a team as regards day to day operations.

The very reason for creating different functional departments is so that the work can be done within those departments. However, on some issues affecting the entire hospital, that group must have all of the resources of the different disciplines or functions in order for the tasks to be accomplished. In such situations, they are functioning as a team.

'Groups' are any group op people engaged in any set of work or even ?¹·· tasks. Groups, as a class of social system, have dynamics processes, in order to improve them, in order that the tasks can be done more effectively. For example, if group members are spending a great deal of time worrying about who makes what decisions, that energy is not available for delivering care of doing whatever the task is. Contrary to much public opinion, the healthy or effective group spends little time discussing group dynamics and most of its time working on its tasks. The less effective group spends a great deal of time worrying about how its working; the power distribution, etc. and this takes time away from doing the work for which the group exists.

There is a fairly well developed technology which has been applied in hundreds of team settings for helping teams in organizations, concerned with the management or the delivery of health care, to work on improving their effectiveness in an efficient way. In the appendix of this paper we will include an example of some of the modules for team development which have been created and tested by Rubin, Plovnick and Fry at the Sloan School of Management under a Robert Wood Johnson Foundation grant. The point here is that the process of team development is only relevant when there is a strategy for the team owning its own development and seeing the improvement of its internal workings as being a significant aspect of

improving its effectiveness. For the reader who wishes to explore
further, two papers referred to in the bibliography "Factors
Affecting Team Effectiveness" by Rubin and Beckhard and "Team
Development" by Tichy.

Implications for Training Administrators: Unquestionably more and
more work in health delivery and health education institutions will
be done in teams (using the definition above). The applied behavioral
science contribution is to finds ways of making that work as effi-
cient and effective as possible. Conscious attention to process
factors affecting meetings; factors affecting openness of communi-
cation; factors affecting conflict management; factors affecting
role clarity, will significantly improve the effectiveness of the
team in whatever tasks it is doing. Any administrator of any organ-
ization today needs techniques; understanding of the dynamics of
groups: the characteristics of groups that affect effectiveness,
and awareness of the kinds of programs and activities which can be
undertaken by groups to increase their operational effectiveness.

THE FUTURE LEADING EDGE

Interest in applying behavioral science knowledge to the
management of health institutions has increased systematically in
the last few years. For example, of the 114 medical deans of medi-
cal schools in the United States, 104 have been through a one week
management course which they've had an exposure to behavioral and
management science technology and processes. Of these 114, 62 have
gone to follow up programs along with a sample of their department
heads, associate deans, hospital administrators and other officers

to work on their own organization problems, using behavioral and management science applications. Thirty of these schools have ongoing systematic programs of organization development. The first program of this kind for directors of teaching hospitals was completed last spring. The American College of Surgeons, the Association of Departments of Academic Medicine, Pathology, are conducting management programs. Clearly the administrator will be dealing with a different kind of colleague in the future than he/she has in the past. The types of behavioral science applications which seem to be moving more into the forefront would suggest that there will be continued work in the applications of open systems concepts - the organization and its environment. This is an increasingly central problem for administrators and they seem to have greater need for systematic knowledge to help them. At the same time, knowledge is being developed in this area.

There will be a continuing thrust in the area of structural organization - organization design. The concept of 'form follows function' rather than the traditional hierarchy seems to be becoming more a central issue. Planning, both strategic and tactical will certainly receive more attention in the years ahead as the complexity of organizations increase.

The management of system change will be, we believe, a central part of the skill requirements of administrators.

The improvement of the organization of work both quantitatively and qualitatively, will require the attention of administrators.

The development of more effective interpersonal competence and skills in working with groups, will be a continuing need and perhaps a growing one ine the near future.

Other trends include:

1. More interdisciplinary focus. Gradually the applied behavioral sciences are joining with other disciplines including political science and economics. There are only a handful of people involved in such discipline spanning efforts; yet it is clear that the need is there. (Emery and Trist, 1975)

2. Greater emphasis on contigency models of arrangement and organization:

    a) Not always good to have a participatory management style.

    b) Not always functional to push decision-making to lower levels.

    c) Bureaucratic organization can allow individuals to achieve sense of competence and growth if they are properly designed to fit their environment.

    d) Not always good to work toward groups in an organization sharing their viewpoints and reaching understanding.

    e) Team work many times less efficient and functional than individual effort.

3. Increased emphasis on evaluating "bottom line" effectiveness of ABS efforts for the organization. It is no longer must a "good" thing to do but hard nosed questions of organizational pay off are more prevalent.

4. Increased efforts to make ABS a legitimate function of
line managers. Less reliance on both external and internal
consultants except as providers of supportive assis-
tance to line managers.

It is clear that the traditional distancing between the health
professions and health management, and the behavioral sciences is
being reduced, and probably will be eliminated in the years ahead.
The increasing knowlege on both sides, of the need for each other's
resources and thepossible usefulness of this body of knowledge to
the practice of health administration should lead to further col-
laboration, further joint inquiry and further synergy.

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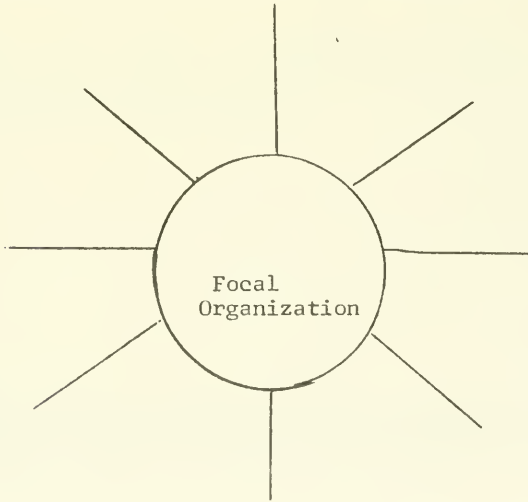
Steps in Open Systems Planning

Step 1
Identify the core mission of the organization. Ask the group
to specify what it is the organization is in existence for.
(specify below)

Core mission:_____

_____

_____

Step 2
Specify the key environmental domains affecting the
transformation process.

Focal
Organization

Step 3
    Specify the demands or pressures which each domain puts on
    the focal organization in behavioral terms.

    Example:
        -We the customers demand X and Y of the organization.

        -We the union demand X of the organization.

Step 4
    Define what responses the system makes now to those demands.

Step 5
    Project five years into the future. What is the relevant
    environment likely to be then? Specify the demands and
    pressures of each domain.

Step 6
    What responce mechanisms must be developed to effectively cope
    with the future demands and pressures.(this might include changing
    domains as well as internal mechanisms)

Step 7
    Assess what resources are needed to carry out step 6(time, money etc.)