CHAPTER 8

Designing Effective Programs

CHAPTER OVERVIEW

The purpose of this chapter is to explain:

- *The rationale for breaking down programs into elements*
- *The need for a precise definition for each element*
- *The logic model and the ways in which it provides a framework for program design*
- *How the program hypothesis and program objectives fit together with the elements of program design*

The following topics are covered in this chapter:

- *The Significance of Program Design*
- *Program Design and Diversity*
- *Defining the Elements of a Program*
  - *Inputs*
  - *Throughputs*
  - *Outputs*
  - *Outcomes*
- *Specifying the Program Hypothesis*
- *Summary*
- *Case Example*
- *Review Questions*

THE SIGNIFICANCE OF PROGRAM DESIGN

Program design refers to identifying and defining the elements that go into the delivery of a service. It is at this point that the program planner gets highly specific about what types of clients with what types of problems or needs will receive precisely what types of services, in what volume, and with what expected result. To put it into perspective, it is important to understand a bit about the history and development of the provision of social services to clients.

For many years, the whole notion of program design was somewhat taken for granted in planning programs. For the vast majority of human service programs, program design involved simply hiring caseworkers, assigning clients, and instructing the workers to provide whatever type of casework services were called for, depending on the program. Most decisions about services were left to the discretion of the caseworker. Although this approach is simple in its design and allows maximum flexibility for practitioners, it fails to deal with critical questions of relevance of services provided, accountability, and measurement of effectiveness, and fails to take advantage of research knowledge and best practices. Let us explore these issues by contrasting two programs for elderly, isolated seniors.

Program Design Illustration

Program A

Program A has five caseworkers, each of whom carries 30 cases. Caseworkers decide how often to meet with clients. When they meet, they attempt to determine needs and to find resources in the community to meet those needs. After each session, caseworkers write narrative recordings of case activity in the case record. When a client completes Program A, a caseworker writes a narrative explanation of why the client is no longer in the program and describes the client's progress and status as of the point of termination.

Program B

Program B is structured differently. Program B has an intake and screening worker, two case managers, a meal coordinator, a transportation coordinator, and a socialization and recreation specialist. Program B staff identify at-risk seniors in the community, transport them to the Senior Center, screen and assess to determine unmet needs using scaled instruments, and build a case plan designed to meet unmet needs to the greatest extent possible, including (at a minimum) a daily noon meal and transportation to and from the Center.

On completion of Program B, a case manager administers a posttest on nutrition, social isolation, and general mobility and secures agreement from the client to participate in a 6-month follow-up

evaluation. In Program B's case records, case managers record test scores, itemize barriers, and code the special units from which each client receives services. The case manager then enters all data into the computer. Aggregated data reveal monthly patterns of participation and improvement on the part of clients.

What differences do these designs make? The answer to that question depends on the intent of the program and whether measurement of effectiveness is an issue. Program A clearly provides for a stronger and more comprehensive relationship between caseworker and client. Program B, however, is clearly superior when effectiveness and accountability are the issues. Program B's design is based on a hypothesis that the major barriers to full participation for isolated elderly include transportation and socialization and recreation opportunities, including congregate meals. Regular analysis of the data will enable Program B's staff to discover whether this hypothesis is correct and to make adjustments as needed to make the program more effective.

The major differences between these programs are differences of precision, specificity, and detail. Program A caseworkers may also discover that socialization, recreation, and congregate meals are important factors in success for isolated elderly, but each caseworker would have to make this discovery independently and decide to act on it. For Program B, the *problem analysis* produced the findings, and the *goals and objectives* established the direction. Let us examine how planners, using effectiveness-based, program-planning principles, move from goals and objectives to program design.

PROGRAM DESIGN AND DIVERSITY

There is now a wealth of research and scholarly literature that documents the need for specialized interventions based on ethnicity, gender, socioeconomic status, sexual orientation and other variables. To cite just one example out of thousands of texts, *Readings in Multicultural Practice* (Gamst, Der-Karabetian, & Dana, 2008) includes readings on Hispanic clients; African Americans; Native Americans; Asian Americans; older adults; gender issues; lesbian, gay, and bisexual people; the poor; and the disabled. A one-size-fits-all approach to program design is clearly no longer viable in many types of services. Few if any current population-based studies make claims to be comprehensive or exhaustive, but all at least present beginning concepts and constructs, some of which can be incorporated into program design.

Calley (2011) identifies six factors that have strongly influenced this movement toward special population–sensitive program design:

1. *The number of professional associations specifically committed to both broad and specific aspects of multiculturalism.* As examples, she cites four divisions of the American Counseling Association and five divisions of the American Psychological

Association, each focused on a special population. In addition, a number of professional organizations include expectations for cultural competence in their codes of ethics.

2. *The amount of scholarship dedicated to cultural competence.* As examples, she cites the *Journal of Multicultural Counseling and Development* and the *Journal of Lesbian, Gay, Bisexual, and Transgendered Issues*, among others.
3. *Cultural competence as a core part of academic preparation in mental health disciplines.* As examples she cites a number of accreditation standards.
4. *The promulgation of national standards of cultural competence by the federal government.* As an example she cites the National Standards on Culturally and Linguistically Appropriate Standards (CLAS) of the U.S. Department of Health and Human Services, Office of Minority Health.
5. *The inclusion of cultural competency-specific accreditation standards for mental health and human service programs.* As an example she cites a Council on Accreditation standard requiring that assessments be made in a strengths-based culturally responsive manner.
6. *The requirement of addressing cultural competence in proposals for funding new program development.* As an example she cites requirements of the Administration on Aging for technical assistance for national minority aging organizations (pp. 106–115).

Practitioners are sure to be influenced by one or more of these factors. More importantly, these factors reflect significant changes in the way professionals are approaching program design in the interest of providing more relevant and more effective services.

DEFINING THE ELEMENTS OF A PROGRAM

Bringing precision and understanding to a phenomenon involves breaking it down into some basic elements. The logic model gives us a framework for examining and defining program elements in each of its five phases, as follows:

- Inputs: resources (staff, funding, etc.) and raw materials (clients or consumers)
- Process: activities that use inputs to achieve objectives with raw materials
- Outputs: measurements of services provided and completion of all services prescribed
- Outcomes: demonstrated benefits to those receiving service
- Impact: measurable changes occurring in organizations, communities, or systems as a result of services

Each of these elements will need to be defined in a quantitative way that will allow them to be entered into a computer program. The program should be designed following the

principle of "enter each item only once—use in combinations as many times as needed to measure performance and effectiveness."

Inputs

Inputs to a program include five elements representing an agency's resources and raw materials: (1) clients or consumers, (2) staff, (3) material resources, (4) facilities, and (5) equipment. Clients represent the raw materials in a human service system; the other four elements represent the resources that will be used to perform the activities needed to convert the clients from persons with problems and needs to persons who have been able to resolve problems and meet needs.

Each element needs to be further defined, and we provide examples of how they might be defined in Table 8.1. As each element is defined, it is important to remember that at

Table 8.1 Variables Related to Program Inputs

Variable	Example	Purpose	Types of Questions to Be Considered
Client-Related Variables			
Eligibility	Age, residence, income	To ensure that those served are eligible for the program	How can we be sure that all clients served are eligible for the program?
Demographic or descriptive variables	Race, gender, income, education, employment, census tract	To record elements that may later prove helpful in describing population served, to ensure that the targeted population is being served, and to identify those client characteristics that seem to be associated with success or failure in the program	What demographic variables seem to make a difference in the types of problems experienced? What characteristics are associated with success in dealing with problems and issues faced by clients?
Social history factors	Family of origin, mental health history, violence, and history—variables considered to be relevant to the program and service	To identify factors that may later be useful in evaluating the types of clients for whom the program is effective or not effective	What social history variables are associated with problems and coping abilities?
Client problem and strength profile	Parenting skills, money management skills, alcohol or drug abuse	To identify areas of concern that will become the focus of intervention; variables can be scaled to reveal not only problems but also strengths	What profile of problems and strengths are most highly associated with successful outcomes for clients?

(Continued)

Table 8.1 (Continued)

Variable	Example	Purpose	Types of Questions to Be Considered
Staff-Related Variables			
Demographic or descriptive variables	Gender, ethnicity, education, experience	To identify staff variables that might later be useful in determining what types of workers seem to be most effective with what types of clients or problems	Are any particular staff demographic variables associated with higher levels of success in working with particular types of clients?
Accreditation or licensing	Licenses, certificates, degrees	To collect data that will be readily available when called for by accrediting or licensing bodies	Do all staff meet requirements listed in their job descriptions?
Physical Resources			
Material resources	Food, clothing, toys, or cash provided directly to clients	To collect data that will be helpful in defining what resources seem to affect client change or improvement	What resources help improve quality of life? What resources make no difference?
Facilities	Residences used to house clients; office facilities used for client treatment	To collect data that may help to understand whether a facility, such as a particular type of residential treatment setting, affects client improvement when compared to other treatment settings	Does proximity to community resources make a difference in achieving client objectives? Do children fare better in foster homes or group homes?
Equipment	Vehicles, computers, medical or other equipment used in direct client service	To collect data about equipment used by or in direct service to clients that may affect the helping process; data would not be collected on equipment used by staff, only on equipment used directly with and by clients	Do vouchers for public transportation contribute to clients' ability to work and to access community resources?

some point we will need to collect data on that element for use in monitoring, performance measurement, and evaluation. For this reason, it is useful to define each of the above elements in terms that will be useful for analytical and reporting purposes. For example, what breakdown of such factors as age, ethnicity, or income will be useful later on when it is

necessary to analyze the population served? The important thing to remember is that for each client or case that is entered, these factors will vary, and it is these differences that become the focus of our evaluation and research. Is a client's ethnicity, age, gender, marital status, number of children or other factor related to the types of problems experienced? Are staff with more experience or advanced degrees more effective in helping clients resolve their problems? These are the types of inquiries that will be possible when data elements are precisely defined. Table 8.1 may be used as a guide in defining elements specific to a program and understanding how each element may vary. Not all elements listed in Table 8.1 will be used in every program.

The relationship of program elements to phases of the logic model is illustrated in graphic form at the end of each section. Figure 8.1 depicts the elements associated with program inputs.

Throughputs

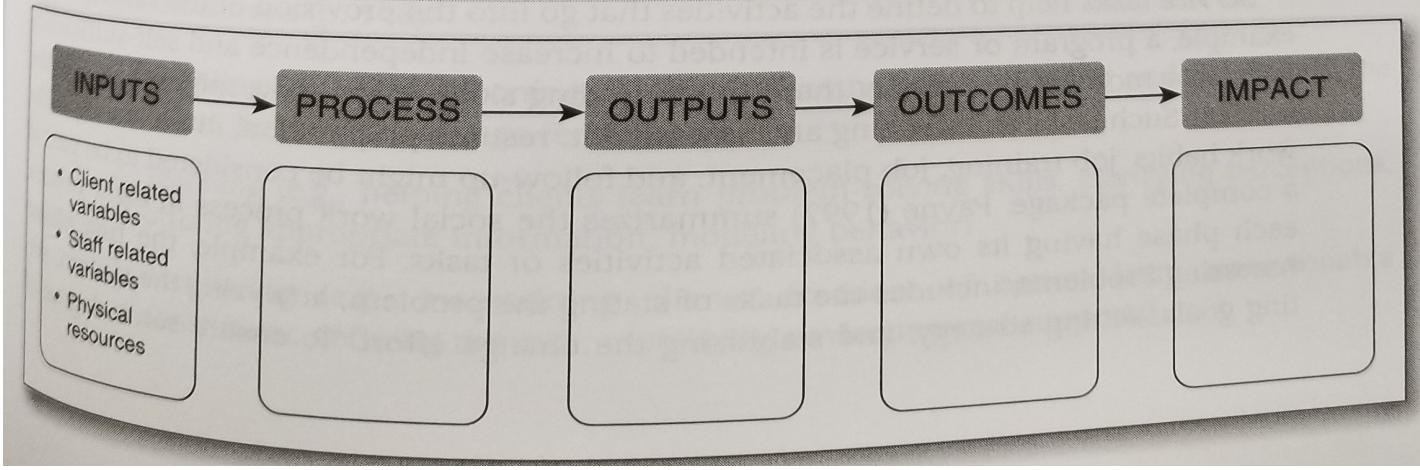
Throughputs refer to the procedures that will be implemented to carry out the program. It is during the service provision process that resources, including staff, material resources, facilities, and equipment, are used to help clients so that they may complete the service process (output) and, it is hoped, resolve their problems (outcome).

Throughputs in social service programs usually involve such treatment, rehabilitation, or support methods as counseling, job training, provision of day care, residential treatment, shelter, dispensing of food baskets, and provision of information and referral. To bring some degree of uniformity to the process and to incorporate the possibility of measurement, it is necessary to identify and define data elements that make up throughputs. These elements include *service definition*, *service tasks*, and *method of intervention*.

Service Definition

The *service definition* is usually a simple one- or two-sentence definition of services to be provided. Its function is to narrow down the service from something that might cover a whole range of client problems and needs to something that is focused on a specific aspect of client problems and needs. For example, the broad category "drug treatment"

Figure 8.1 Logic Model as Applied to Program Inputs



can include the following: detoxification; inpatient or outpatient medical treatment; individual, group, or family counseling; job training and placement; and follow-up supportive services. Simply using "drug treatment program" as a service definition does not sufficiently narrow its scope in a way that informs relevant parties what the program is intended to accomplish. A definition such as "This program or service is intended to provide outpatient detoxification to cocaine addicts ages 18 and older" helps those who need to know who the program is designed to serve and what services will be provided.

A comprehensive listing of service definitions was developed by the United Way of America (1976) in a volume titled *UWASIS II: A Taxonomy of Social Goals and Human Service Programs*, in which more than 230 services are labeled and defined. Even though this volume was published 40 years ago, it is still available online and can be used to guide the program planner toward crafting specific service definitions to ensure accurate description of the service. An example from the UWASIS directory is the definition of pre-job guidance: "Pre-job guidance is a program designed to help individuals who need to learn the basic tools of obtaining employment to suit their particular skills and talents" (p. 208). Another listing of service definitions is the *Arizona SFY 2010 Dictionary and Taxonomy of Human Services* (Arizona Department of Economic Security, 2010). A number of examples help clarify ways in which service definitions can be written:

- Adoption placement is defined as the selection of a family and placement and supervision of a child until the adoption is finalized
- Shelter services is defined as the provision of temporary care in a safe environment available on a 24-hour basis.
- Case management is defined as a process in which an individual who is determined to be in need of and eligible for services works with a professional staff person to identify needs, plan for services, obtain services, collect data on the service process, monitor and evaluate services, terminate the process, and follow up as needed

Service definitions should be written by experienced staff who are familiar with the service and should be distributed widely for review and comment before being finalized.

Service Tasks

Service tasks help to define the activities that go into the provision of the service. If, for example, a program or service is intended to increase independence and self-sufficiency for single mothers by training them in job-finding skills, what tasks might make up the service? Such tasks as screening and assessment, resume preparation, interviewing skills, work habits, job training, job placement, and follow-up might be considered to be part of a complete package. Payne (1997) summarizes the social work process in eight phases, each phase having its own associated activities or tasks. For example, the first phase, Assessing Problems, includes the tasks of stating the problem, analyzing the system, setting goals, setting strategy, and stabilizing the change effort. To ensure some degree of

comparability in what clients receive, it is important that some thought be given to identifying and defining service tasks. In most cases, service tasks tend to follow a chronological order of services to a client.

Flowcharting Service Tasks

One technique that can be helpful in conceptualizing and documenting the service delivery process is flowcharting. This technique illustrates each task, each decision to be made, each form to be completed, and what must be accomplished before proceeding to the next step. Making service delivery flowcharts available to all staff and supervisors involved in providing services can not only guide the practitioner but also help ensure uniform practices from worker to worker.

Figure 8.2 illustrates a client flow through the Safe Haven Shelter.

Specifying tasks in this way and bringing increasing degrees of precision to their definition helps to introduce at least some degree of uniformity to what helping professionals provide and can serve a function similar to that of protocols in medicine, child protection, and other disciplines. A protocol for a particular service can be developed by beginning with the flowchart of client services. A narrative chart can then be added to accompany the flowchart. A narrative chart will include an explanation of what activities are to be carried out at each step in the process and what documentation is necessary.

Identification and listing of tasks may be a bit tedious in the beginning, but tasks serve to bring a clearer focus to the question of who does what with clients, for what purpose, and under what conditions. Tasks not only address the accountability question but also permit ongoing evaluation of effectiveness. If a particular approach is effective, the treatment can be repeated. If it is not, problem areas can be pinpointed by identifying their locations on the flowchart, and the treatment can be modified as needed. An illustration of a narrative chart is included in Table 8.2.

Method of Intervention

The third element of throughput is the method of intervention. Defining the method of intervention requires that program planners specify in advance the ways the service may be delivered. For example, meals for the elderly can be provided in a congregate setting or can be delivered to the elderly person's home. Job training can be carried out in a classroom setting or on the job. Counseling can be offered to individuals, in groups, or in families. Payne (1997) describes three roles for social workers when the aim is helping people make transitions (p. 148):

1. Enabling (e.g., strengthening the client's motivation, validating and supporting the client, helping to manage feelings)
2. Teaching (e.g., helping clients learn problem-solving skills, clarifying perceptions, offering appropriate information, modeling behavior)
3. Facilitating (e.g., maintaining clients' freedom of action from unreasonable constraints, defining the task, mobilizing environmental supports)

Figure 8.2 Flowchart of Client Processing

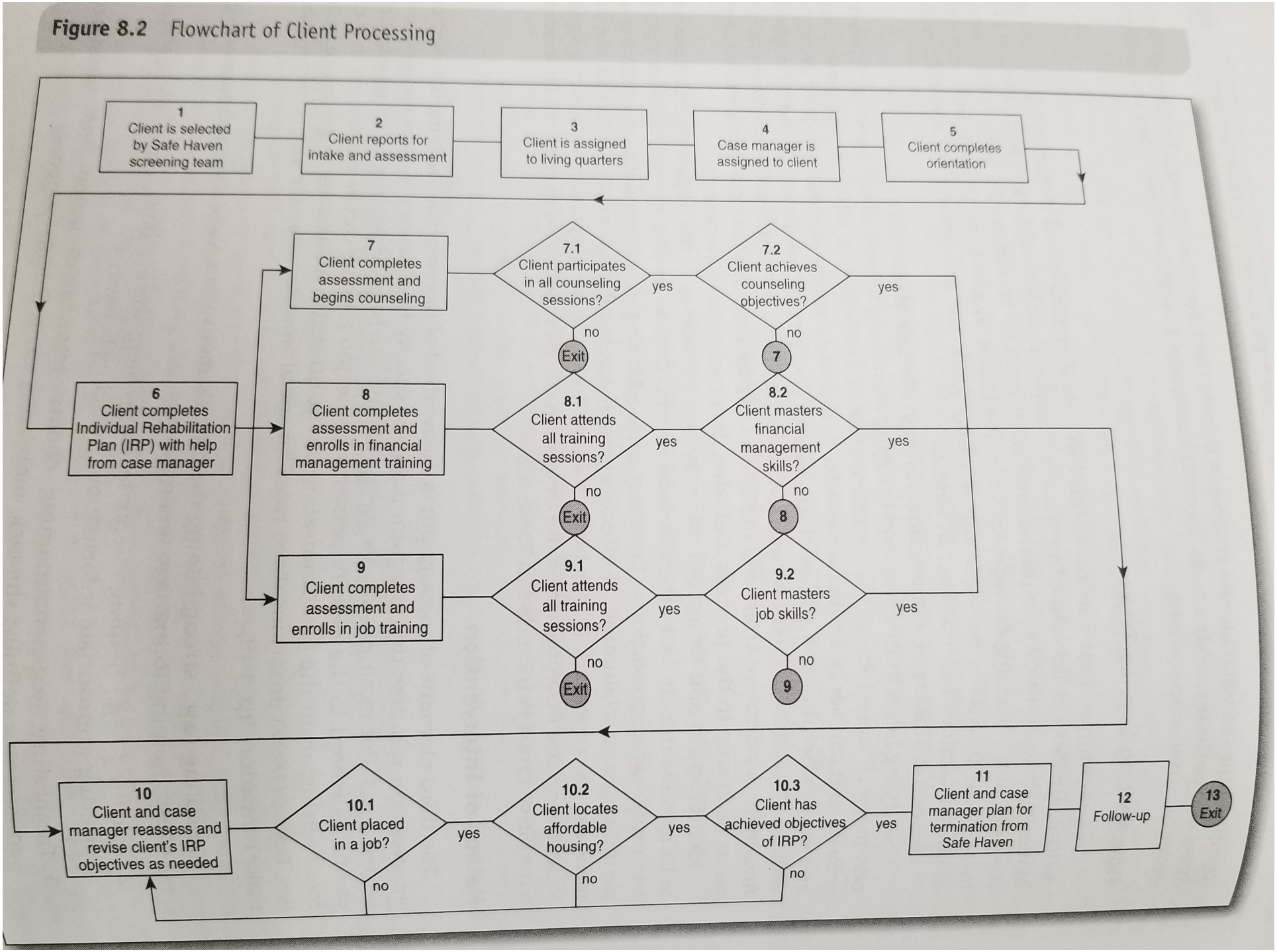


Table 8.2 Narrative Chart

Process Number	Title	Procedures	Documents
1	Client is selected by Safe Haven screening team	Appointment is made for client to meet with team; team determines eligibility and makes selection	Screening form
2	Client reports for intake and assessment	Client meets with intake worker to complete all intake forms and to complete an assessment	Intake form Social history Data entry forms Strengths and needs profile
3	Client is assigned to living quarters	Client is assigned to a room and given a tour of the facility	Residential assignment form Resident responsibilities form
4	Case manager is assigned to client	Case manager meets with client	Data entry form Case notes
5	Client completes orientation	Client attends the next scheduled orientation session	Orientation log Pretest and posttest
6	Client completes Individual Rehabilitation Plan (IRP) with help from case manager	Case manager meets with client to assist in developing a plan to meet individual and program objectives	IRP form
7	Client completes assessment and begins counseling	Client meets with counselor to set up a schedule for individual and group counseling sessions; initial assessment is completed and counseling objectives are established	Data entry form Counseling plan Case notes
7.1	Client participates in all counseling sessions?	Counselor tracks attendance and evaluates quality of participation; failure to participate can lead to exit from the program	Attendance form Case notes
7.2	Client achieves counseling objectives?	As client continues, progress is evaluated against objectives in the counseling plan; work continues until objectives are achieved; reassessments are completed as needed	Attendance form Data entry form Case notes
8	Client completes assessment and enrolls in financial management training	Client completes assessment of financial management skills and enrolls in the next available class	Financial management skills assessment form Training enrollment form

(Continued

Table 8.2 (Continued)

Process Number	Title	Procedures	Documents
8.1	Client attends all training sessions?	Trainer tracks attendance and evaluates quality of participation; failure to attend or participate can lead to exit from the program	Attendance form Trainer evaluation form
8.2	Client masters financial management skills?	Mastery of skills is measured by testing; when client receives a passing grade on all units of the course, she receives a certificate of completion; reassessment is completed as needed	Record of progress and completion form
9	Client completes assessment and enrolls in job training	Client meets with job counselor to assess job skills; training referral is made; client meets with trainer	Job skills assessment form Training enrollment form
9.1	Client attends all training sessions?	Trainer tracks attendance and evaluates quality of participation; failure to attend or participate can lead to exit from the program	Attendance form Trainer evaluation form
9.2	Client masters job skills?	Mastery of skills is measured by testing; when client receives a passing grade on all units of the course, she receives a certificate of completion; reassessments are completed as needed	Record of progress and completion form
10	Client and case manager reassess and revise client's IRP objectives as needed	When all activities of the IRP have been completed, client and case manager assess achievement and begin to prepare for termination if client is determined to be ready	Individual Rehab Plan Case notes Data entry form
10.1	Client is placed in a job?	Client meets with job placement counselor to identify available job slots that fit with training; job opportunities are continually explored until a job is secured	Job placement referral form
10.2	Client locates affordable housing?	Client meets with housing placement counselor to identify available housing and continues until housing is secured	Housing placement referral form
10.3	Client has achieved objectives of IRP?	Client and case manager review objectives of IRP and assess level of success	IRP assessment form Strengths and needs profile Data entry form

Process Number	Title	Procedures	Documents
11	Client and case manager plan for termination from Safe Haven	Client and case manager assess client's readiness to function independently in the community and make plans for follow-up contacts as needed	Safe Haven termination form Data entry form Case notes
12	Follow-up	Case manager makes telephone contacts at the agreed-on times and otherwise follows up according to plan	Data entry form
13	Exit	Follow-up contacts end by mutual agreement	Case closure form Case notes Data entry form

Specification of these types of roles helps guide the worker through the helping process. The intent is to achieve at least some degree of uniformity in the service process experienced from one client to another rather than leaving decisions about interventions to individual judgment and choice. Since the method of treatment is based on an understanding of the problem and on the program hypothesis, it is important to identify best practices and specify a proven method of treatment or service delivery (e.g., behavior modification, cognitive therapy, crisis intervention) if such a method exists. As the federal government moves more toward focusing on and paying for performance over accountability, specifying methods of intervention may take on less importance than outcomes or results for funding purposes (Council on Financial Assistance Reform, 2014). However, for this same reason service tasks become even more important at the program level. It would be difficult to replicate a success if those providing the service didn't bring at least some level of precision to the helping process. Table 8.3 illustrates throughput elements.

The diagram in Figure 8.3 illustrates the next phase of the logic model associated with program process or throughputs.

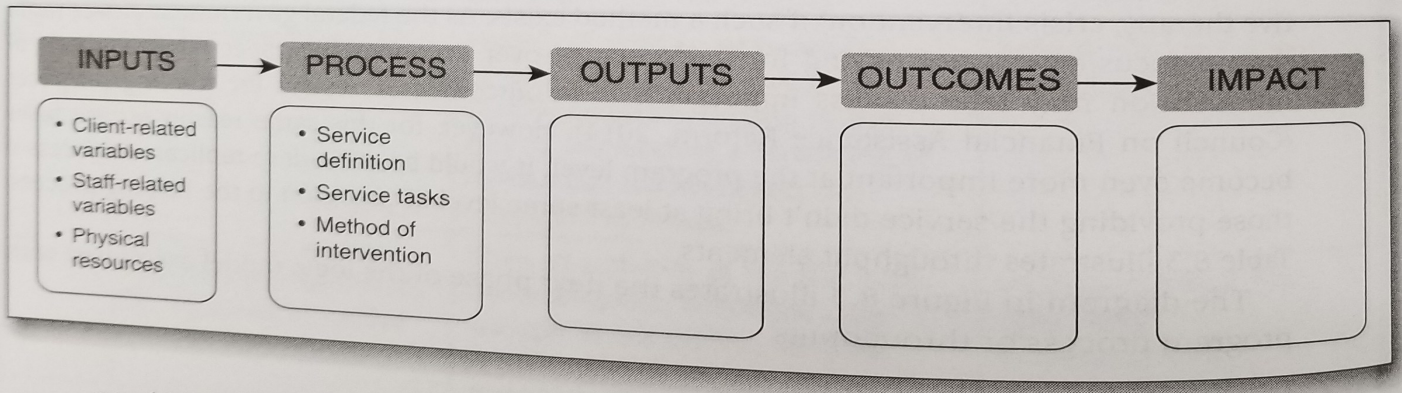
Outputs

The United Way of America (1996) defines outputs as the direct products of program activities and provides as examples the number of classes taught, the number of counseling sessions conducted, or hours of service delivered. Brody (2005) adds that outputs measure the volume of work accomplished. The purpose of measuring output is to determine (a) *how much* of an available service a client actually received and (b) whether the client *completed treatment* or received the full complement of services as specified in the program design. The "how much" question is answered by defining *units of service*, and the answer is referred to as an *intermediate output*. The "service completion" question is answered by defining what we mean by completion, and the answer is referred to as a *final output*. For example, if a training program consists of 10 sessions, one unit of service

Table 8.3 Throughput Elements

Element	Examples	Purpose
Service definition	This program is intended to provide counseling to women who have been victims of domestic violence to enable them to increase self-esteem and self-confidence, and to reduce social anxiety	To provide a formal definition as a basis for common understanding and agreement about the services to be provided
Service tasks	Screening and assessment Developing a treatment plan Validating and supporting the client Teaching problem-solving skills Others	To ensure some degree of uniformity in services received by similar clients with similar problems; to tie services to what has been learned from research on this population and problem
Method of intervention	Client will participate in weekly individual counseling sessions and weekly group sessions	To ensure uniformity in the way counseling services are provided for the same types of clients in the same program

Figure 8.3 Logic Model as Applied to Program Throughputs



would be one session. Calculating intermediate outputs would require taking attendance and recording how many sessions each trainee actually completed. The purpose of this type of tracking is to learn whether those who drop out or are inconsistent in their attendance achieve the same results as those who are regular in their attendance.

Final output in this example refers to successful completion of the course, however that is defined. Participants are divided into "completers" and "dropouts." This means that there will need to be a formal definition of completion. How many sessions can a person miss and still be considered a completer? Aggregated final output is the rate of completion (a percentage) for all the trainees in a given class. Isolating the group of completers allows program planners to determine whether the training made a difference in achieving the outcome projected in the program hypothesis and the outcome objectives. If dropouts and completers are equally successful in achieving training objectives, then the training cannot

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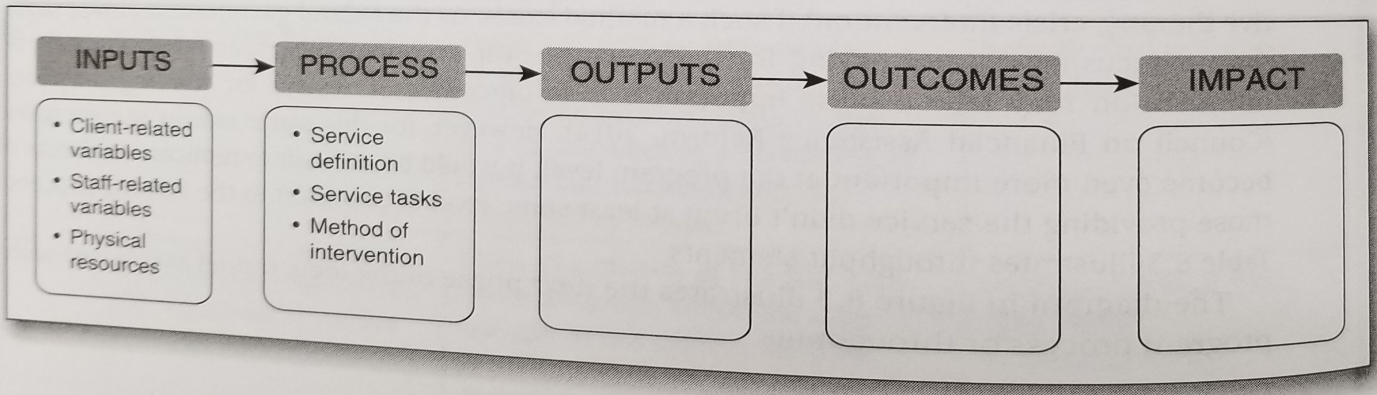

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be said to have made a difference. Training courses are among the easier outputs to define, because there is usually a specified beginning and ending point. Completion of counseling, therapy, long-term care, and many others are more challenging when it comes to specifying final outputs, and they usually require some discussion and reaching a consensus before they can be considered formal definitions.

A third dimension of output—quality of service provided—has also emerged in current discussions of output measures. Quality performance measures are discussed later in this chapter.

Units of Service

Units of service can be measured in three different ways: (1) as episodes or contact units, (2) as material units, or (3) as time units (Martin & Kettner, 2010). An *episode* or *contact* unit is defined as one contact between a worker and a client. It is used when the recording of client contact information is important but when the actual duration (time) of the contact is not considered important. Information and referral services often use a contact unit, simply counting the number of requests for information they receive. Some mentor programs might also use number of contacts as their unit of service.

A *material* unit of service is a tangible resource provided to a client and can include such items as a meal, a food basket, a trip, an article of clothing, cash, or a prescription. Material units are generally considered to be the least precise of the three types of units of service because variation may or may not exist between individual units. For example, the number and types of items in two food baskets or two boxes of clothing can vary widely, but each basket or box is still counted as one unit of service. However, with other types of material units such as cash or a trip (measured in miles) the units are precise and comparable.

A *time* unit can be expressed in minutes, hours, days, weeks, or months, depending on the information needs of individual human service programs. Minutes might be used to measure the length of a phone call. An hour is often the unit used for a counseling session. Days might be used to measure the length of a stay in a homeless shelter. Weeks or months could be used for residential care. A time unit is the most precise of the three types of units of service because it is expressed in standardized increments. When time is used as a unit of service, it is important to state whether the time refers only to direct client contact time or whether support activity time (e.g., completing paperwork, attending client staffings) is also included. Ultimately, units of service are used for a number of purposes, including a determination of cost per unit of service, so decisions about defining units of service should be made with a good deal of care and attention to their purpose.

The ways in which units of service may be used become evident when we calculate how many units a program can provide in a year. Let us assume that there are five counselors and that each one can see 20 clients per week at 48 weeks per year (allowing for 2 weeks for vacation and 10 paid holidays for each counselor in a year). Each counselor, then, has a capacity to provide 48 × 20, or 960 units of counseling per year. The entire program, with five counselors, can provide 4,800 units per year (960 units per worker × 5 workers). (In a later chapter we will discuss how a unit cost is calculated.) In the same manner for any given program, examination of resources provides a basis for calculating the number of units to be provided in a given year.

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Units of service can be measured in three different ways: (1) as episodes or contact units, (2) as material units, or (3) as time units (Martin & Kettner, 2010). An *episode* or *contact* unit is defined as one contact between a worker and a client. It is used when the recording of client contact information is important but when the actual duration (time) of the contact is not considered important. Information and referral services often use a contact unit, simply counting the number of requests for information they receive. Some mentor programs might also use number of contacts as their unit of service.

A *material* unit of service is a tangible resource provided to a client and can include such items as a meal, a food basket, a trip, an article of clothing, cash, or a prescription. Material units are generally considered to be the least precise of the three types of units of service because variation may or may not exist between individual units. For example, the number and types of items in two food baskets or two boxes of clothing can vary widely, but each basket or box is still counted as one unit of service. However, with other types of material units such as cash or a trip (measured in miles) the units are precise and comparable.

A *time* unit can be expressed in minutes, hours, days, weeks, or months, depending on the information needs of individual human service programs. Minutes might be used to measure the length of a phone call. An hour is often the unit used for a counseling session. Days might be used to measure the length of a stay in a homeless shelter. Weeks or months could be used for residential care. A time unit is the most precise of the three types of units of service because it is expressed in standardized increments. When time is used as a unit of service, it is important to state whether the time refers only to direct client contact time or whether support activity time (e.g., completing paperwork, attending client staffings) is also included. Ultimately, units of service are used for a number of purposes, including a determination of cost per unit of service, so decisions about defining units of service should be made with a good deal of care and attention to their purpose.

The ways in which units of service may be used become evident when we calculate how many units a program can provide in a year. Let us assume that there are five counselors and that each one can see 20 clients per week at 48 weeks per year (allowing for 2 weeks for vacation and 10 paid holidays for each counselor in a year). Each counselor, then, has a capacity to provide 48×20, or 960 units of counseling per year. The entire program, with five counselors, can provide 4,800 units per year (960 units per worker $\times$ 5 workers). (In a later chapter we will discuss how a unit cost is calculated.) In the same manner for any given program, examination of resources provides a basis for calculating the number of units to be provided in a given year.

finished with a service? Service completion is defined at the time the program is designed. For some services, final output is easily and clearly defined; for others, it is problematic. In most training programs, for example (or even in a university setting, for that matter), a number of training sessions or class sessions are required for successful completion of the course. One intermediate output unit might be attendance at one class, and a final output might be defined as one client's completing all the requirements of an automobile mechanics training course. A prenatal care program might consist of at least six monthly prenatal visits with a physician, and successful completion of a detoxification program might be defined as completion of a 60-day stay in an inpatient detox unit. Table 8.5 provides examples of intermediate and final outputs.

For some services, final outputs can be difficult to define. In ongoing services such as day care or long-term residential care for the elderly, it is not useful to define final outputs in terms of exit or completion of a program because these programs are not designed to move clients in and out at a steady and predictable pace. Clients in these types of long-term programs may remain for many years, and effective monitoring and evaluation cannot occur if measurements are taken only after an extended period of years. Effective monitoring and evaluation requires much more frequent examination.

In these types of instances, the program designers should define the final output in terms of completion of a fixed-term treatment plan. For example, one might define a final output as "completion of an individual care plan" for day care or "completion of the prescribed service plan for a 3-month period" in the case of long-term residential care for the elderly. Here we are dealing with the equivalent of achieving *milestones* as required in *individual education plans*.

Building milestones into long-term service designs permits measures to be taken at certain selected points to determine whether the treatment plan is having the desired effects. Its purpose is to ensure that the full service mix, as intended by the designers of the program, has been received by a client.

Defining output prior to implementation of a program also enables evaluators to distinguish between someone who completes the program and someone who drops out. These two groups need to be evaluated separately, but if output is defined simply as an exit from

Table 8.5 Output as an Element of Service Design

Element	Examples	Purpose
Intermediate output	One unit equals attendance at one family counseling session (episode unit)	To measure the volume or quantity of service provided to each consumer, using a uniform definition for all participants
Final output	One unit equals completion of 12 family counseling sessions with no absences	To ensure agreement among program personnel and clients as to what constitutes full participation and to ensure that, in evaluating outcomes, distinctions are made between completers and dropouts

the program, it is impossible to distinguish completers from dropouts for evaluation purposes. Table 8.6 illustrates calculation of intermediate and final outputs.

Quality

As units of service have become more clearly conceptualized and defined, there has been a tendency by some funding sources to base contracts and reimbursement plans on the number of intermediate output units actually delivered (e.g., the number of counseling hours provided). This emphasis has, in turn, led to a concern about what is often referred to as "bean counting"—an exclusive focus on quantity to the exclusion of quality.

It is easy to see how this emphasis can come about. If an agency is reimbursed and rewarded for the number of interviews its staff conducts, a program manager for the agency may be tempted to cut down on the time of an interview and squeeze in 10 or 12 interviews per worker per day, regardless of the quality of those interviews. On the other hand, if an agency is held responsible for meeting certain standards of quality in its services, and is reimbursed on the basis of both efficiency (the number of units) and quality (meeting the standards), then the agency must find a way to balance both of these factors.

Table 8.6 Calculating Output Units

Type of Unit	Design Elements Needed to Calculate	How to Calculate a Program's Capacity to Provide Units for the Entire Program for 1 Year	Example
Intermediate output	1. Staff time with a client for 1 week 2. Service type	1. Calculate how many units one staff member can provide in 1 week 2. Multiply by 52 weeks 3. Multiply the result of No. 2 by the number of FTE staff	25 hours of counseling × 52 = 1,300 hours × 2.5 FTE staff = 3,250 hours
Final output	1. Definition of a service completion 2. Number of intermediate output units needed for one client to meet the requirements specified in the definition	1. Calculate the number of intermediate output units needed for one client to complete the service as defined 2. Calculate how many of those blocks of time (e.g., 10 training sessions) can be provided in 1 year by one counselor or trainer 3. Multiply the result of No. 2 by the number of FTE staff available for this function	1. 10 training sessions of 2 hours each 2. One trainer can provide 5 sessions per week or 260 per year 3. 0.5 FTE staff available for training = 130 training sessions per year or 13 complete training courses

Note: FTE = full-time equivalent.

This is the principle behind measuring quality. It should be pointed out that measurement of quality is not a typical component of contract expectations. However, when concerns are raised at the agency level about a particular dimension of service quality, these measurements can be handy tools to use.

Quality, unlike quantity (units of service), tends to be somewhat elusive and is defined differently depending on one's perspective. In business and industry, customers have tended to be the final arbiters of what constitutes quality (Crosby, 1980, 1985; Deming, 1986; Juran, 1988, 1989). In human services, customer (client) perspectives are important but are not the sole criterion for determination of quality. Other perspectives, including those of administrators, professionals, board members, and funding sources, may also have important input to offer in determining what constitutes quality. If quality dimensions are to be a part of the program design, it is necessary that they be defined, that quality data be collected, and that service quality be monitored and evaluated on a regular basis.

Quality is frequently addressed through the use of standards. A standard is a specification accepted by recognized authorities that is regularly and widely used and has a recognized and permanent status (Kettner & Martin, 1987). For many of the elements of program design, standards will be imposed by outside sources. For example, wherever licensing, certification, or accreditation is a concern, standards must be identified and incorporated as a part of the program. If food is served, standards will be imposed by the health department. If medical services and facilities are a part of the program, the Joint Commission on Accreditation of Healthcare Organizations will impose standards.

In most instances, it is necessary to identify and operationalize standards. In some instances, however, it will be necessary to develop them. When considering competence, for example, selecting credentials for casework or counseling staff is often a judgment call. Some drug treatment programs operate exclusively with ex-addicts, regardless of educational background. Some counseling programs insist on a staff member's having at least a master's degree and prefer a doctorate. Some positions require bilingual staff, and defining a qualification such as "bilingual" depends on pre-established standards for the ability to speak two languages. In many ways, standards serve as protection for clients or consumers in that they affect the services provided. Martin (1993) made an important contribution to the measurement of quality by identifying 14 generally recognized quality dimensions, as illustrated in Table 8.7.

If it is determined that one or more dimensions of quality need to be tracked, program planners (in conjunction with clients and other stakeholders as needed) can determine which of the quality dimensions listed in Table 8.7 are the most important for a given program. Quality dimensions to be used in the program must then be operationally defined. For example, the quality dimension of accessibility could be defined as the amount of time it takes clients to get from their residences to the agency. The quality dimension of responsiveness could be defined as ensuring that at least 75% of clients who come to the agency for services are seen within 20 minutes of their scheduled appointment times. The dimensions selected will depend on perceived problems.

Once the quality dimensions are selected and defined, they must be melded with units of service (intermediate outputs) and tracked. For example, in tracking responsiveness,

Table 8.7 Dimensions of Quality

Dimension	Definition	Example
Accessibility	The product or service is easy to access or acquire	Level of difficulty in getting to agency or scheduling appointments
Assurance	The staff are friendly, polite, considerate, and knowledgeable	Client appraisal of staff friendliness
Communication	Customers are kept informed, in language they can understand, about the product or service and any changes thereto	Level of client understanding of services needed
Competence	Staff members possess the requisite knowledge and skills to provide the product or service	Degrees held by staff; level of demonstrated knowledge of human behavior theories
Conformity	The product or service meets standards	Extent to which service meets established professional standards
Deficiency	Any quality characteristic not otherwise identified that adversely affects customer satisfaction	Level of worker familiarity with client's language or culture
Durability	The performance, result, or outcome does not dissipate quickly	Length of time abused person is able to remain away from abuser after training
Empathy	Staff members demonstrate an understanding of and provide individualized attention to customers	Client assessment of feelings that she or he was understood as an individual
Humaneness	The product or service is provided in a manner that protects the dignity and self-worth of the customer	Client assessment of feelings of being respected
Performance	The product or service does what it is supposed to do	Assessment of client change at the completion of service
Reliability	The ability to provide the product or service in a dependable and consistent manner with minimal variation over time or between customers	Extent to which clients see the same worker at every appointment; demonstration of service consistent with the treatment plan
Responsiveness	The timeliness of employees in providing products and services	Waiting time between arrival and meeting with counselor
Security	The product or service is provided in a safe setting and is free from risk or danger	Client's appraisal of feelings of comfort and safety
Tangibles	The physical appearance of facilities, equipment, personnel, and published materials	Client's appraisal of appearances

Source: Adapted from Martin, L. (1993). *Total quality management in human service organizations.* Newbury Park, CA: SAGE Publications, Inc. Reprinted with permission.

each time a client comes to the agency for services, it will be necessary to record whether that client was seen within 20 minutes of the scheduled appointment time. Or if the quality dimension of competency is used and defined in terms of having an MSW and 3 years of counseling experience, it will be necessary to record the number of client counseling sessions that met this standard and the number that did not.

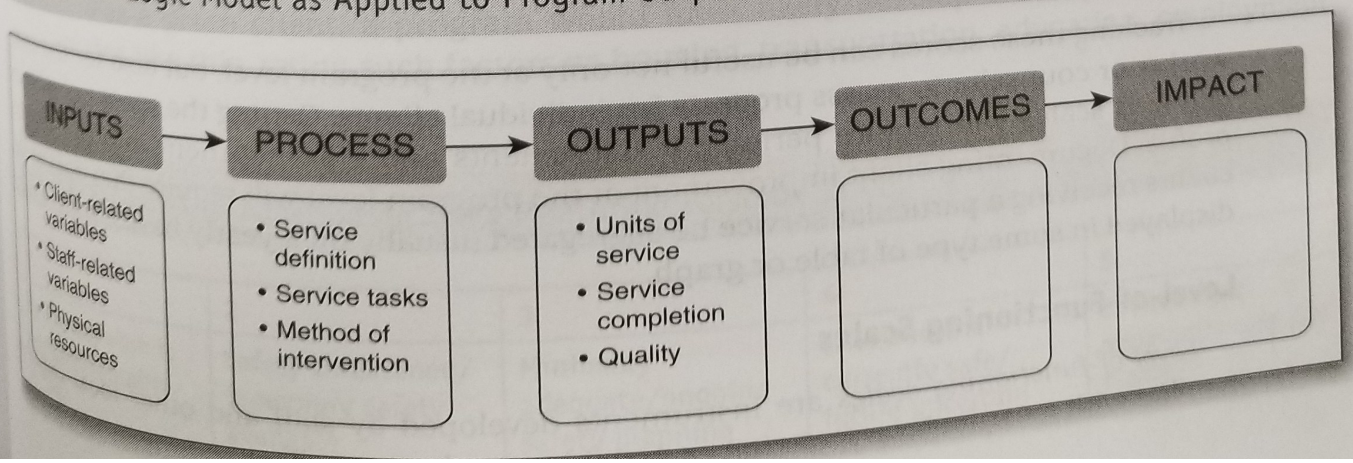
In measuring quality over the course of a year, two different sets of units will be recorded and tracked: (1) the number of units of a given service provided to clients and, (2) of those units provided, the number that met the pre-established quality standard. Following this format, any quality standard established in a field can be used in conjunction with units of service provided to determine the extent to which quality dimensions are being achieved in a program.

In instances in which quality dimensions are too difficult, time-consuming, or cumbersome to track, the client satisfaction approach may be used. When this option is selected, it is still necessary to select quality dimensions, but they are measured by translating them into questions to be asked of clients, for example, "Did your home-delivered meals arrive on time (within 20 minutes of scheduled delivery time)?" and "Do your home-delivered meals arrive hot?" The findings are then turned into percentages of clients who answer "yes" to determine whether the quality standard has been achieved. The diagram in Figure 8.4 illustrates the next phase of the logic model as applied to program outputs.

Outcomes

An *outcome* is defined as a measurable change in quality of life achieved by a client between entry into and exit from a program. Outcome measures can be placed into one of four categories: numerical counts, standardized measures, level-of-functioning scales, or client satisfaction (Kuechler, Velasquez, & White, 1988; Martin & Kettner, 2010). The questions that must be answered are: (1) Do clients improve as a result of services? (2) How do you define and measure improvement? The following sections discuss four approaches to measuring client improvement.

Figure 8.4 Logic Model as Applied to Program Outputs



Numerical Counts

Numerical counts are nominal measures related to client flow. They require yes or no answers to specific questions, such as the following: Was the client placed in a job on completion of training? Did the child return home following residential treatment? Was another crime committed by the juvenile subsequent to treatment? The answers are then converted into percentages to determine the extent to which the expected outcome was achieved. Numerical counts are relatively easy to define and interpret, and many programs already collect these data. This approach to measurement simply requires recording a client's status (e.g., unemployed) at the point of entry into the system and then recording it again at completion of service and, in some cases, following up to record it again at selected intervals after completion of service. Aggregating all findings within a specified period (usually a year) will establish a success rate derived from numerical counts.

Standardized Measures

Standardized measures are objective instruments that have been validated and are widely used by practitioners. Examples include the Minnesota Multiphasic Personality Inventory (MMPI) and standardized intelligence tests such as the Stanford-Binet. Several volumes have been devoted to standardized measures of quality-of-life factors. For example, Kane and Kane (1981) developed measures for the elderly, and Fischer and Corcoran (1994) developed measures for families and children. Martin and Kettner (2010) identified a variety of different perspectives from which standardized measures have been developed (see Table 8.8).

The following is an illustration of a question from a Generalized Contentment Scale developed by Hudson (1982):

I feel that I am appreciated by others:

1 = rarely or none of the time

2 = a little of the time

3 = some of the time

4 = a good part of the time

5 = most or all of the time

Tracking these scores can be useful not only at the program level, but also for the caseworker or counselor to assess progress for individual clients. Getting the most out of standardized scales will require periodic reassessments and entering them into the client's profile. Documenting client improvement at the program level will require that data on all clients receiving a particular service be aggregated (usually on a yearly basis), with results displayed in some type of table or graph.

Level-of-Functioning Scales

Level-of-functioning scales are instruments developed by staff and other local experts familiar with a particular population and problem and are specific to a program or service.

Table 8.8 Focus of Standardized Measures

Focus	Example
Population	A scale for measuring a young child's need for social approval
Problem	A scale for measuring potential for child abuse in parents and prospective parents
Behavior	Scales rating preschool development on several dimensions
Attitude	A scale for measuring attitudes of parents toward child rearing
Intrapersonal	A measure of an individual's belief in ability to attain goals
Interpersonal	A scale for measuring family relationships
Development	A scale for measuring child development
Personality traits	A measure of whether an individual approaches or avoids social interaction
Achievement	A measure of student competence in areas important to career development
Knowledge	A scale for measuring a parent's knowledge of appropriate growth and behavior in children up to age 2
Aptitude	Measures for assessing verbal reasoning, spelling, and need for education or vocational guidance
Services	Measures for assessing child health and nutrition

Source: From Martin, L., & Kettner, P. (2010). *Measuring the performance of human service programs* (2nd ed.). Thousand Oaks, CA: SAGE Publications, Inc. Reprinted with permission.

They require that practitioners rate their clients on several aspects of functioning. For example, persons who are chronically mentally ill may be rated on such factors as self-care, decision-making ability, and interpersonal interaction. Persons with developmental disabilities may be rated on activities of daily living, functional communication, interaction skills, and other factors. For each scale, indicators are specified and clients are rated at intake, at intervals during their participation in the program, and at exit from a program on a multipoint scale ranging from low to high functioning on each item. Table 8.9 is an illustration of a level-of-functioning measure for the safety of a person at risk of domestic violence.

For a given client, a program would most likely develop a complete profile using scales like this, rating such factors as housing, transportation, education, employment,

Table 8.9 Level-of-Functioning Scale Measuring Personal Safety

1	2	3	4	5
Residence/work is not safe/lethality is high	Safety threatened/ temporary safety available	Minimally adequate/ongoing safety planning	Environment currently safe/ future uncertain	Environment apparently safe and stable

and others. Level of functioning scales have the advantage of being tailored to the unique characteristics of the agency's target population and likely will have greater buy-in by staff. However, they have the disadvantage of not being tested for validity and reliability.

To calculate outcomes for individual clients, the relevant scales would be completed at intake, at regular intervals, at exit, and at follow-up if feasible. The ratings on these scales would then present a profile of both strengths and potential problem areas to determine priorities for case management and for tracking of progress throughout the helping process. Program outcomes are determined by aggregating scores on each scale at client entry and exit (e.g., the mean of aggregated scores for safety for victims of domestic violence is 2.7 at entry and 3.9 at exit).

Client Satisfaction

The fourth measure is *client satisfaction*. Several studies have demonstrated a significant correlation between satisfaction and other, more tangible positive outcomes (Martin, 1988; Millar, Hatry, & Koss, 1977). Martin's research with services such as transportation and ambulance services has demonstrated that although it is possible to measure such factors as response time, arrival at destination time, cost per trip, and cost per mile, client satisfaction proves to be a much less costly and equally valid and reliable measure and therefore would be indicated for these services. This does not mean, however, that client satisfaction should be considered the preferred measure across the board.

In response to demands for program evaluation, many service providers have opted for client satisfaction because it appears to be the easiest information to collect. However, correlations between client satisfaction and improved quality of life have not been established in all services, and program planners need to be cautious about overuse and unrealistically high expectations for this measure.

Measuring client satisfaction requires the development of questions with responses ranging from "very satisfied" to "very dissatisfied" and options in between. The following is an example of a client satisfaction question:

How satisfied were you overall with the home meal delivery services you received in terms of promptness of delivery?

1 = very satisfied

2 = somewhat satisfied

3 = neither satisfied nor dissatisfied

4 = somewhat dissatisfied

5 = very dissatisfied

Calculating individual client satisfaction scores would require periodic assessments and recording findings. Case managers could then track individual clients in their caseloads to determine their perspectives, and overall program outcomes would require aggregating scores for the year.

Intermediate Outcomes and Final Outcomes

As with objectives and outputs, there are two types of outcomes: intermediate and final. *Intermediate outcomes* are those changes in quality of life for the client (such as improved skills or placement in a job) that can be measured at the point of completion of the services provided—that is, at the point of final output. *Final outcomes* are those changes in quality of life for the client (such as self-sufficiency or stabilization in a job and a career path) that are measured at a designated follow-up point. Table 8.10 illustrates outcomes as an element of service design.

Intermediate and final outcomes are interrelated. For example, to continue with the domestic violence example, in measuring intermediate outcomes (at the point of termination of services), we would want to know if a victim (1) was able to make all contacts with community resources necessary to live independently (e.g., housing, legal, transportation, child care), (2) was capable of taking steps necessary to ensure safety for herself and her children, (3) was trained to qualify for a job with a career path, and (4) was placed in a job for which she was trained. If all of these things happened, then we would assess after 1 year whether the final outcome of "no further incidents of violence perpetrated against the victim or her children" was achieved.

Intermediate outcomes can be documented by using any of the four measures: numerical counts, standardized measures, level-of-functioning scales, or client satisfaction instruments. Numerical counts would involve calculating percentages using outcome indicators (e.g., reduction in depression for a counseling program, reduction in recidivism for a program working with first-time juvenile offenders). With standardized measures or level-of-functioning scales, pre-assessments and post-assessments are required. The difference between the pre-scores and post-scores represents an indicator of intermediate outcome. These scores may indicate such factors as improvement in self-esteem, improvement in intra-family communication, or achievement of an acceptable level of performance in activities of daily living. Client satisfaction scores provide a one-time statement of a client's perception of the usefulness of the services provided. The percentage of positive responses is used as an indicator of an outcome, with high satisfaction indicating a positive outcome and low satisfaction indicating a negative outcome.

Table 8.10 Outcomes as Elements of Service Design

Element	Examples	Purpose
Intermediate outcome	Demonstrated ability to complete the steps taught in training to ensure protection from violence inflicted on self and children	To identify and define what a client should be able to do or should have accomplished at the point of termination from the program or episode of service
Final outcome	Demonstrated ability to remain free of any episodes of violence inflicted on self and children for at least 1 year following termination from treatment	To identify and define outcome expectations for a client after a specified period of post-service time has elapsed to determine whether there is carryover of results achieved in treatment

Likewise, in determining final outcomes, it is possible to use any of the four measures. Numerical counts or level-of-functioning scales, however, are the more likely candidates for final outcomes. This is because final outcome expectations are likely to be broader and more ambitious than intermediate outcome expectations and therefore need measures that are broader than a single standardized test or a client satisfaction score can provide. Final outcome measures typically focus on factors such as long-term stability in areas such as family relationships, employment, education, self-sufficiency, and other major life activities and achievements. Many of these domains have standardized numerical count indicators such as employment status, income adequate to meet daily needs, grade in school, and grade point average. These tend to be more useful measures of final outcome expectations. Table 8.11 illustrates how outcomes indicators are used to calculate outcome units.

Table 8.11 Calculating Outcome Units

Type of Unit	Design Elements Needed to Calculate	How to Calculate Units	Example
Intermediate outcome unit	1. A definition of an intermediate outcome 2. The number of clients who enrolled in the program 3. The number of clients who achieve intermediate outcomes	1. Calculate the number of possible completions (final outputs) 2. Calculate the number that achieve the intermediate outcome, as defined 3. Divide the number of those who achieve the intermediate outcome by the total possible completions 4. The result is the success rate for intermediate outcomes	1. Intermediate outcome is defined as demonstrating an acceptable level of skill on completion of training 2. Total enrolled in the training program is 30 3. Of those 30, 26 demonstrated an acceptable level of skill on completion of the training program 4. The success rate for intermediate outcomes is 26 divided by 30, or 86.7%
Final outcome unit	1. A definition of a final outcome 2. The number of clients who achieve intermediate outcomes 3. The number of clients who achieve final outcomes	1. Calculate the number of clients who achieve intermediate outcomes 2. Calculate the number who achieve final outcomes 3. Divide the number who achieve final outcomes by the number who achieve intermediate outcomes 4. The result is the success rate for final outcomes	1. Final outcome is defined as being violence free for at least 1 year 2. There were 26 clients who demonstrated an acceptable level of skill on completion of the training program 3. Of those 26, 19 were free of any acts of violence against them or their children for 1 year 4. The success rate for final outcomes[a] is 19 divided by 26, or 73.1%

[a]It is also possible that various stakeholders, including funding sources, may want to know the success rate as calculated using the total number of enrollees in the program. In this case, that would be 19 successes divided by 30 enrollees, or 63.3%.

Table 8.12 An Illustration of How Intermediate and Final Outcomes Might Be Calculated

Estimated Number of Domestic Violence Victims in the Community Prior to Implementation of the DV Programs	Number Admitted Into DV Rehab Programs in the Community	Number and Percentage Achieving Successful Intermediate Outcomes (at termination from program)	Number and Percentage Demonstrating Maintenance of Successful Final Outcomes (at 1-year follow-up)
327	150	98 (65%)	53 (54%)

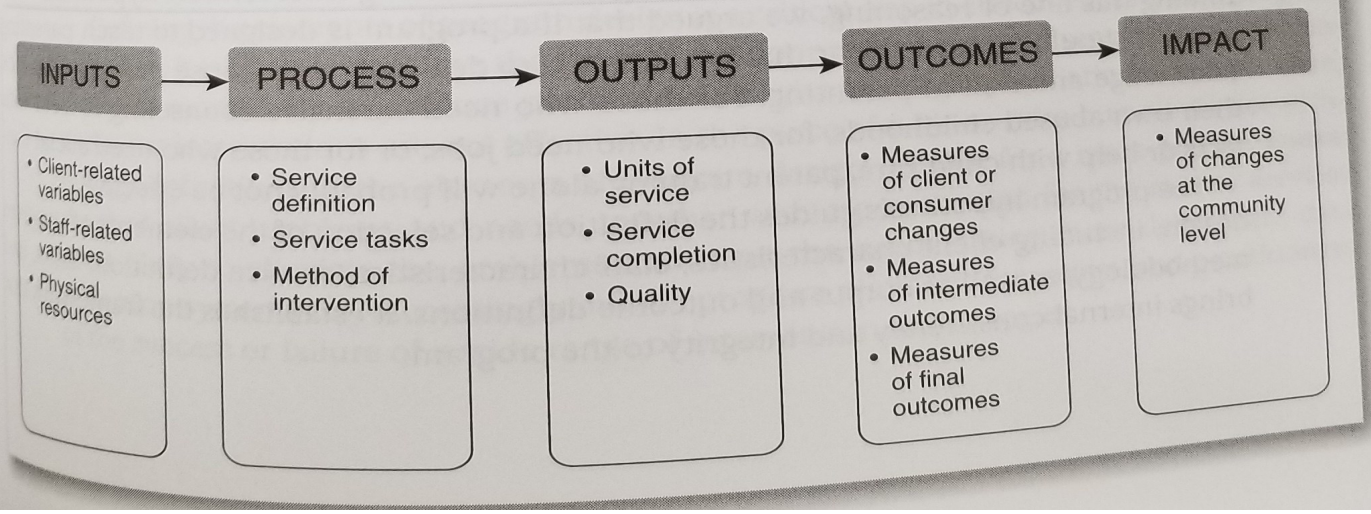
Calculating outcomes would require the use of some or all of the measures described in this chapter. Impact would be measured by returning to the number in the community who would fit the definition of the problem or need, as discussed in Chapter 5. Table 8.12 illustrates how intermediate and final outcomes might be calculated for a community after completion of the program and follow-up.

Intermediate and final outcomes can be calculated both at the program and the community levels. However, the measurement of impact tends to focus more on the outcomes achieved by multiple agencies and programs, because in most cases it is not reasonable to expect that one agency (e.g., Safe Haven) will have a significant impact on an entire community. However, if there is a multi-agency effort to reduce the problem community-wide, then impact program evaluation would be a useful tool. This topic is covered in Chapter 11.

The diagram in Figure 8.5 illustrates the logic model as applied to program outcomes and impact.

In summary, we have focused in this section on the input, throughput, output, and outcome components of a system. This framework is used to identify and define each element of program design.

Figure 8.5 Logic Model as Applied to Program Outcomes



- *Inputs* include client, staff, and physical resource elements.
- *Throughputs* include service delivery elements.
- *Outputs* include service completion elements.
  - *Intermediate outputs* are completions of units of service.
  - *Final outputs* are completions of the full complement of services prescribed.
- *Outcomes* include measures of life changes for clients.
  - *Intermediate outcomes* are changes at the point of completion of services.
  - *Final outcomes* are changes achieved or maintained as of a specified point in the follow-up process after services have been completed.

SPECIFYING THE PROGRAM HYPOTHESIS

Program hypothesis, as discussed in Chapters 6 and 7, is a term used to sum up the assumptions and expectations of a program. It is probably fair to say that every program has one, whether or not it is made explicit. Simply providing a service to deal with a problem implies hypothetical thinking (e.g., *if* we provide counseling to couples contemplating divorce, *then* we may be able to stabilize the relationship and prevent divorce).

For example, when a law or policy change mandates that welfare benefits be terminated after a set period of time and recipients be required to go to work, there is an implied hypothesis that terminating welfare benefits will act as a motivator to become employed that, in turn, will lead to self-sufficiency. When the law requires termination of parental rights under certain conditions of abuse and neglect, there is an implied hypothesis that the children affected will turn out to be physically and emotionally healthier if they are raised in an environment where they are free from abuse and neglect.

In Chapter 6, we introduced the example of a program hypothesis related to the problem of domestic violence. The purpose then was to lay the foundation for the development of goals and objectives. As part of that process, we reviewed the various theories of why people commit violent acts against others within a family or household (etiology). From that we developed a hypothesis of etiology and a working intervention hypothesis. Continuing this line of reasoning, we argued that if a program is designed to teach parenting skills, it should be made clear that the intent is to deal only with those parents who lack knowledge and skill in parenting. For those who need extensive counseling to deal with their own abused childhoods, for those who need jobs, or for those who need social contacts or help with child care, parent training alone will probably not be effective.

The program hypothesis guides the definition and selection of the elements of program design, including client characteristics, staff characteristics, service definition, tasks, and methodology, as well as output and outcome definitions. It establishes the framework that brings internal consistency and integrity to the program.

In sum, the following questions might be asked as they relate to each system component:

Inputs

- What types of clients (in terms of demographic, descriptive, or diagnostic characteristics) do we expect will benefit from this program, given our assumptions and our program hypothesis?
- What types of staff should be employed in this program to provide the expected services and serve the clientele we have defined? Is gender, ethnicity, or age a consideration? What degrees, certification, or experience should staff members have?
- What resources, facilities, or equipment will be needed to carry out the services and meet the needs of clients?

Throughputs

- What kinds of services, service tasks, and methods of intervention are most relevant to address the problems and work with the client population as defined in the program design?

Outputs

- Given program expectations, what mix of services represents a full complement of services, and what is the minimum volume or quantity of these services that could be expected to produce a measurable result?

Outcomes

- Given the program hypothesis, what outcomes can we expect to achieve, and, by implication, what outcomes do we not expect to achieve, given the limitations of the program?

This list is not intended to be exhaustive, but it illustrates the types of questions that, if answered in a manner consistent with the program hypothesis, will help to ensure program consistency and integrity. As program planners think through and define these elements, the fit between client need and service or program design should be greatly enhanced.

Defining the elements of program design is a critical step in effectiveness-based program planning. It is the step that lays the groundwork for practitioners to discover what interventions are most likely to produce positive results, given a target population and a problem, and what interventions are not effective. In the place of a hit-or-miss human service technology, definitions of the elements of program design provide for a more precise assessment of client problems and needs, together with a prescription for the mix of services most likely to alleviate the problems and meet the needs. Using these definitions, data collection systems can increasingly inform program planners, managers, and practitioners of the success or failure of a wide range of intervention technologies.