

Comprehensive systems that seek to coordinate a broad array of support services have increasingly been surfacing as an avenue for providing public services to children. Although proponents of such efforts have argued that more integrated approaches promise to be more efficient than fragmented systems of service delivery, little empirical evidence exists to support such claims. A major hurdle in making judgments about efficiency involves assessing the costs of the approach. This article develops, applies, and appraises a framework designed to guide local policy makers as they consider the types, amounts, and distribution of costs associated with comprehensive support systems for children.

THE COST OF WORKING TOGETHER ***A Framework for Estimating the Costs of*** ***Comprehensive Support Systems for*** ***Children***

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More and more, institutions that provide services to children are feeling pressure to address the multiple needs of their constituents. Although a variety of children's services have typically been provided through a broad set of public and private organizations at the federal, state, and local levels, a more recent movement to integrate services for children has gained momentum across the nation (First, Curcio, & Young, 1994). Alder and Gardner (1994, p. 2) argued that this organizational reform is "based on the assumption that one cannot isolate a child's biological, psychological, and social needs and assign different organizations to meet each category of need." Instead, more holistic approaches that recognize the natural links between multiple types of children's services are needed,

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particularly for children from at-risk or disadvantaged environments (Comer, 1980, 1985, 1988; Garvin & Young, 1994).

Comprehensive community-based support systems reflect an effort to expand current levels of service integration. These initiatives are broad-based networks with a mission to coordinate a wide array of community services to support children. It is important to recognize that there is no single model or specification of comprehensive community-based systemic reform; the configuration of the model is dependent on the circumstances, values, and perspectives of the community in which it is developed and implemented. The boundary or scope of the initiative is determined by the comprehensiveness of the model. Fully comprehensive models envelop the community's education, health, recreation, safety, and other services.¹ Some of the provisions included in the model may already exist in the community (e.g., public schools, recreational programs, police forces) and are simply linked with the comprehensive support system. Others may be newly developed interventions that are introduced through the model (e.g., after-school programs, summer camps, community safety programs).

As this approach to children's services has evolved, efforts have been made to document its characteristics (see Alder & Gardner, 1994; Kagan, Goffin, Golub, & Pritchard, 1995), and a compendium of selected initiatives that approximate the approach has been developed (Hayes, Lipoff, & Danegger, 1995). However, little attention has been given to estimating the potential costs associated with various models. Several explanations may account for the absence of cost information. First, comprehensive community-based support systems are supported by a plethora of community resources, to which it is difficult to ascribe precise value. Second, the lack of a single model representing the approach makes it difficult to assess its costs. Third, community diversity in the value and availability of the resources required for the model can limit the generalizability of the analyses that are conducted. Finally, the overlap between the existing service delivery system and the new support system, particularly for more comprehensive models that not only provide new services but also coordinate a variety of existing community organizations (e.g., schools, health clinics, police force, and recreational centers), complicates efforts to estimate costs.

Despite these difficulties, it is clear that gaining a better sense of the costs associated with the approach is an important step in adopting and implementing new policies to support the delivery of children's services. O'Toole (1997) argued that networks can be expected to grow in number and importance, and the development of new models for budgeting and

financing such entities is an important topic for research. This article begins to provide the theoretical reformulation called for by O'Toole by providing an analytic framework for estimating the costs of networked service structures that addresses the four concerns noted above. More specifically, the article develops a template to guide local policy makers through a systematic consideration of the resources necessary to operate such models in their own communities. The template is designed to provide an array of information on the types, amounts, and distribution of costs associated with various models of comprehensive community-based support systems.

The next section of the article highlights the importance of assessing the costs of comprehensive community-based support systems. The section that follows argues for an approach that is sensitive to variability across implementation sites. The article then shifts to describe components of a cost template developed to guide local policy makers as they consider the resources necessary to support the model and illustrates an application of the template to one model of comprehensive community-based support systems. The article concludes with an appraisal of the template as a tool for estimating costs of networked service delivery structures.

THE CALL FOR A COST ANALYSIS: ASSESSING EFFICIENCY

Proponents of comprehensive community-based support systems argue that this approach has the potential to be more efficient than the relatively fragmented structure that has dominated the delivery of children's services. Greater efficiency is achieved by decreasing cost per unit of effectiveness (e.g., increasing effectiveness while maintaining cost, reducing cost while maintaining levels of effectiveness, or changing both so that positive changes in effectiveness outweigh any increases in cost). Greater efficiency is arguably associated with comprehensive community-based support systems. On the effectiveness side, the emphasis on the development of the whole person has the potential to result in larger and more sustained effects (Garvin & Young, 1994). On the cost side, comprehensive community-based support systems can be expected to reduce cost by minimizing duplication of effort (Garvin & Young, 1994), providing services under fewer administrative units, and allowing model designs to vary according to community circumstances, resulting in less waste (Ramirez, Webb, & Guthrie, 1991).

Although these arguments for increased effectiveness and decreased cost are conceptually convincing, no empirical evidence currently exists to support them. One way to begin to fill this void is to lay out how such appraisals might be made. This article focuses exclusively on the cost side of the equation. The cost of a particular model is a function of the opportunity costs of all resources devoted to the intervention, including monetary resources that have an impact on the budget as well as in-kind resources that translate into costs often shouldered by others in the community (e.g., the time of volunteers).² Whereas policy decisions involving the efficiency of alternative interventions must include data on both cost and effectiveness, assessing cost is a first step in the full economic analysis that provides information on efficiency. Furthermore, cost analysis alone yields important information for policy makers on program feasibility and resource planning.

Another way to assess the efficiency of comprehensive community-based support systems is to study the degree to which implemented models draw on existing community resources. Most communities provide certain programs and services to their members. The "standard provision of services" for children and families generally includes immunization programs, early child care, health services, recreational programs, public safety services, and housing assistance, as well as formal public education. Comprehensive community-based support systems are likely to include a number of these services that may already be provided in the community through other delivery systems. Although the resources associated with these services are included in estimates of the total cost of the model, a marginal cost analysis considers only those opportunity costs associated with resources that are incremental or in addition to the standard provision of services.³ In other words, a marginal cost analysis does not recount the costs associated with resources already provided under the existing system of service delivery. Rather, the focus is on the net difference in cost between the old and new uses of a particular resource. Consequently, the relation between old and new services has implications for the marginal cost of the model. Consider several possibilities.

First, suppose the new services included in the model of comprehensive community-based support systems are provided alongside whatever is currently offered in the community. Because these new services are additions to the standard provision of services, the marginal cost of the resources supporting these components of the model is simply equal to the sum of their opportunity costs. To the degree that similar services are provided in both support systems, this condition may introduce inefficiencies resulting from the duplication of services.

Second, suppose an existing service or program in the community is linked with the new comprehensive initiative, for example, a comprehensive community-based support system that requires some type of youth recreational program. Suppose further that a particular community implementing this model has an active youth soccer program. Program designers and community leaders might determine that the existing soccer program can simply be linked to the overall initiative as the youth recreational component of the model. In this case, the marginal cost of the recreational program is equal to zero as long as no additional resources are required to support the soccer program.⁴

Finally, a third possibility exists in which programs included in the standard provision of services are discontinued and replaced by new service components in the comprehensive community-based support system. In this case, resources from the old program can be reallocated to strengthen the new support system component. The marginal opportunity cost of these resources is equal to the difference in cost between the old and new programs. Thus, when a preexisting program is replaced by a new service component in a comprehensive support system, the degree to which existing resources can be reallocated to support new services has implications for the marginal societal cost of the model. By providing information on both total and marginal cost, the template presented in this article has the potential to alert policy makers of opportunities to realize more efficient use of community resources.

CONDUCTING A FLEXIBLE COMMUNITY-BASED COST ANALYSIS

The cost of a particular model is influenced by two factors that tend to vary across communities. First, the specification of the model is dependent on the circumstances, values, and perspectives of the community in which it is developed and implemented. Second, the cost of a particular specification of the model is dependent on the value and availability of productive resources in the community. These two sources of variability require a method for analyzing cost that is sensitive to site-based circumstances.

VARIABILITY IN THE SPECIFICATION OF THE MODEL

Figure 1 illustrates how various service components can be combined or configured to form a model of integrated (or networked) services for

children and their families (Kagan et al., 1995, p. 19). Six different service domains are included in the figure: early childhood care and education, health, welfare, elementary and secondary education, justice, and employment. Each of these domains is composed of a number of individual service components, which are shown in the figure only for the early childhood care and education service domain. These components are typically offered individually in the traditional service delivery system, and they operate as the building blocks of an integrated approach. The components are configured in complex ways to form the various service domains, and together these domains constitute the integrated program.

Two lessons follow from Figure 1. First, the numerous service components imply that a wide variety of specifications of comprehensive community-based support systems is possible. Based on the needs and preferences of the community, any set of service components can be integrated to form the initiative. These decisions have direct implications for the cost of the approach. Second, the integration of components within and across service domains can result in a complex configuration of services that is quite different from a system in which similar services are delivered individually. O'Toole (1997) recognized the need to emphasize and study the network as a whole rather than the individual actors or organizations. This fundamental difference in approach can have direct implications for cost analysis. Consider the following example. A particular community identifies a set of service domains and several alternatives within each. In this example, the service domains are education and health, and three alternative programs are identified for each: E1, E2, and E3 for education; and H1, H2, and H3 for health. To decide on the most preferable alternative, a separate cost-benefit analysis is conducted within each service domain. For this example, assume that the most preferable alternatives in terms of cost-benefit ratios are E1 and H1 for education and health, respectively.

Next, consider a more integrated service delivery environment. It does not follow from the individual cost analyses described above that simply combining E1 and H1 will result in the most cost-beneficial option. Rather, the complex interactions that are likely to occur between components in a comprehensive support system may lead to very different results. For instance, H1 may cost little when combined with E2 but may be extremely costly if combined with E1. Consequently, the analysis must consider the various configurations of services rather than the individual service components.

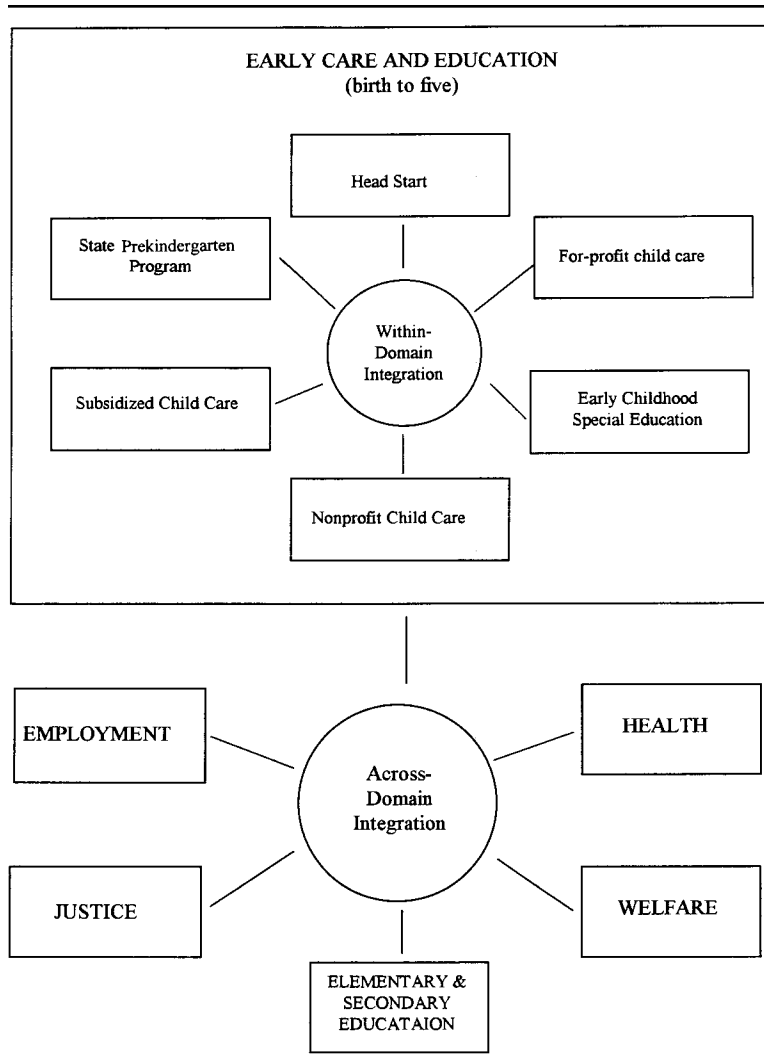


Figure 1: Human Service Domains
 SOURCE: Kagan, Goffin, Golub, and Pritchard (1995).

One potential outcome resulting from such complex configurations of services in a comprehensive community-based support system is increased efficiency. The integration of services can provide an environment in which the costs of various resources can be absorbed into the overall cost of the model. For instance, a comprehensive community-based

support system may involve legal advocacy services and housing assistance. Suppose both require full-time clerical assistance but neither consumes all of the secretary's work time. Presumably, this secretary could cover both services at little or no additional marginal cost.⁵ The efficiencies that can be realized as service components are configured in complex support systems and require new, more comprehensive approaches to cost analysis.

VARIABILITY IN COMMUNITY RESOURCES

Even in cases where identically configured support systems are implemented across several communities, the costs of the systems can be expected to vary according to the value and availability of productive community resources. The following section describes how the analytic method presented in this article is sensitive to site-level circumstances and thereby has the potential to inform policy decisions across implementation sites.

First, because models of comprehensive community-based support systems require numerous difficult-to-value resources, the method used here relies on standard units of measurement to quantify the types of cost being estimated. Cost analyses often convert all costs (and sometimes effects as well, in the case of cost-benefit analysis) to a dollar metric. By allowing the use of standard units to quantify the amount of resources needed to support the model, the method used here builds in the flexibility local decision makers require to assign more accurate site-based estimates of the values of the various resources.

Second, the method used here fosters a broad understanding of the distribution of the cost burden across various individuals and organizations in the community. Comprehensive community-based support systems involve costs not only to the public treasury but also to a variety of players in the educational, medical, and other program areas including parents, community volunteers, local businesses, and universities. The template emphasizes these categorical distinctions, recognizing that communities are likely to vary in terms of the availability and productivity of different types of resources.

Finally, because communities are likely to vary in terms of what productive resources are available to support the components of the new comprehensive support system, the method used here requires the listing of all of the resources devoted to the model and leaves flexibility to the local decision maker to determine what costs count as marginal. The marginal cost of the model is likely to decrease to the extent that the existing

resources in the community can be reallocated to support the resource requirements of the model.

Rather than deriving a single bottom-line cost estimate, this method unpacks cost to provide local policy makers with a full array of estimates on the amount, value, sources, and distribution of the resources supporting the model. Local policy makers are granted the latitude to include the resources needed to support the specific configuration of the model being implemented, identify which costs are marginal, and assign values to these resources under the circumstances of their own communities. Without accurate and comprehensive data on cost, policy makers could be ill-equipped to judge whether the community has the appropriate levels of various types of resources to support the program.⁶

CONSTRUCTION OF THE COST TEMPLATE

This section presents an analytical device that provides a systematic approach for assessing cost while remaining sensitive to the variability concerns described above. More specifically, the cost template is designed to provide a framework for local policy makers to assess the total and marginal societal cost of comprehensive community-based support systems. The information generated in the template is site specific and is not necessarily transferable across communities.⁷ The topics described below represent the various columns of information included in the template and are motivated by a series of questions intended to guide local policy makers to unpack the costs of the resources required to support the model.

To illustrate how the template is operationalized, the presentation draws on data from one comprehensive community-based support system as an example.⁸ Sunshine City Children's Services (SCCS)⁹ is a private nonprofit agency that provides a variety of services to families in a low-income, multiethnic urban neighborhood. Although primary emphasis is on counseling, the services provided by SCCS have been developed in response to the needs in the community. This community-based support system was founded and is currently run by two individuals who are trained as clinical social workers and live on the premises. Much administrative assistance is provided by a local child care agency serving as a parent organization. Although autonomous in decisions about staffing, budgeting, and program development, SCCS operates as a satellite of this larger organization in terms of administrative functions. Table 1 presents the application of the cost template to SCCS.

Housing												
Short-term loans	Revolving fund	1	20,000	1	0	5% interest		1,000	1,000			
Networking	Personnel	1	20,000	1	1	0	0	0				
Emergency												
Thrift shop	Personnel	1	20,000	1	1	0	0	0				
Food program	Merchandise							7,500	2,500	5,000	expires 2005	
Advocacy clinic	Food							5,000		5,000	expires 2005	
	Lawyers	2	50,000	1	0	100,000	0	100,000		100,000		
Employment												
Private Industry	Director	1	40,000	1	0	40,000	1	0				
Council programs	Case workers	5	20,000	1	5	0	0	0				
	Counselors	2	40,000	1	2	0	0	0				
	Clerical	1	20,000	1	0	20,000	1	0				
	Liaison	1	20,000	1	0	20,000	0	20,000	20,000			
School programs												
Tutoring services	Reading specialists	3	40,000	1	0	120,000	2	40,000	40,000			
Recreational programs	Peer tutors		2	20,000	1	0	40,000	0	40,000	40,000		
Evening programs	Instructors	2	20,000	1	0	40,000	2	0				
Parent workshops	Parents	1,040 hrs	10/hr	1	0	10,400	0	10,400		10,400		
Performing arts												
Youth programs												
Summer day camp	Director	2	5,000	1	0	10,000	2	0				
Teen camps	Counselors	2	40,000	1	2	0	0	0				
	Camp staff	5	2,000	1	0	10,000	5	0				
	Camp facilities	2	2,000	1	0	4,000	2	0				
Total						3,639,640		2,049,140	1,804,000	71,620	157,920	15,600

NOTE: Absorb = resources that are specified for several components of the model but can be shared. Reallocate = resources from other programs that can be shifted to support the costs of the new mode. Sub = the feasibility/cost of substituting one resource for another. Time = issues related to the cost curve over time. For full definitions of all items, see the Construction of the Cost Template section in text.

SERVICES AND INGREDIENTS

What Resources Are Needed to Support the Model?

The first step of the analysis involves identifying the components of and services included in the support system and the ingredients required for those components and services. The first column, Components and Services, prompts a listing of specific support system components. The second column, Ingredients, requests a list of the resources to be devoted to the operation of the model. The ingredients method requires the specification of all the inputs that are intended to contribute to the desired outcomes (Levin, 1983). This specification includes donated and volunteered resources along with resource requirements that will translate into expenditures. It includes all types of personnel as well as nonpersonnel resources such as facilities, equipment, and materials. The list of ingredients is highly dependent on the specification of the model in column 1, and together they guide the remainder of the template entries.

The first three categories in column 1—infrastructure, space and materials, and leadership—are expected to apply to every model of comprehensive community-based support systems. The infrastructure for SCCS is, by and large, supported by a local child care agency that serves as the parent organization for the support system. This organization assumes responsibilities such as administration, accounting, billing, purchasing, and disbursement of funds and devotes 12% of its operating budget of \$2.6 million to these functions. In terms of space and materials, SCCS occupies a building in the community for general services, a storefront for emergency services, and a separate office of employment services. Also included in this section are the equipment and materials required to operate the support system. In the category of leadership, three key leaders—two from SCCS and a third from the parent organization—play central roles overseeing the support system and its various service components. They are listed individually in the Ingredients column because without these particular individuals, it is not clear that this network would exist. In addition, SCCS has an advisory board composed of community members and agency leaders that provides advice and assistance with policy directions and access to funding sources.

The remaining categories in the first column specify additional service domains. As indicated, SCCS includes a number of support programs. First and foremost are counseling services, which include workshops,

group activities, therapy sessions for parents and youth of all ages, and support groups. Staff members who support these activities include full-time and part-time professionals (primarily social workers and counselors) and volunteers (including community members and graduate students from local colleges and universities).

SCCS provides housing assistance in the form of short-term loans for security deposits and networking efforts to locate reasonable and affordable housing for families having a difficult time doing so themselves. The support system offers several emergency assistance programs including a thrift shop, an emergency food program, and an advocacy clinic to help community members with crises such as public assistance, Medicaid problems, and landlord-tenant disputes. Both the housing and emergency services require personnel such as case workers and lawyers. Furthermore, these emergency services require commodities for the thrift shop and food program.

On the employment front, SCCS operates a program previously offered by the Private Industry Council (PIC) to foster employment readiness and general job training. The resources required for this program include a director, case workers, counselors, clerical staff workers, and a liaison between the program and the business community.

In addition, a number of programs are available for youth in the community. SCCS offers several school programs including tutoring services, recreational programs, evening programs, parent workshops, and performing arts events. These activities can be expected to require the time of a reading specialist, peer tutors, instructors, and parents. Several nonschool youth programs provided by SCCS include summer day camp and teen camps. These services are sponsored by community businesses and require the time and effort of a summer camp director, counselors, and summer camp staff workers, as well as camp facilities.

VALUING THE RESOURCES

The next task is to quantify the amount and value of each ingredient required for the model. This calculation can be tricky, especially when there are no explicit market values associated with the ingredients listed. The next five columns guide the analyst through the process of calculating an annual societal cost of the resources supporting the model. Each is described below, followed by their application to SCCS.

How Much of Each Resource Is Required?

The first column in this section, Amount, requests specification of the amount of each ingredient listed in the previous column. Recall that the resource amounts should be left in the most natural and descriptive units possible. For instance, personnel resources should be recorded in terms of the number of positions needed, whereas the time required of part-time volunteers might best be recorded in terms of hours per year. The only restrictions are that the resources are specified on an annual basis (e.g., hours per year instead of hours per week).

What Is the Unit Value of Each Ingredient?

The next column, Unit Value, requests a dollar value for the ingredients listed. The figure entered should represent the value of the next best use of the resource required. The market value of the resources should be entered if available. In the case of personnel, this entry should include annual salary as well as fringe benefits, bonuses, and other add-ons. If a market value is not available, an approximation or "shadow price" for the market value can be substituted. The figure entered in this column must correspond with the units specified in the Amount column. For instance, if hours per year is the unit used in the Amount column, then the appropriate hourly wage should be entered in the Unit Value column. Likewise, if the number of positions is entered in the Amount column, then the annual salary for that type of position should be entered in the Unit Value column. Recall that the value of these resources can be expected to vary across communities. Consequently, this column is an outlet for community-specific data on resource cost.

What Is the Expected Life Span of Each Resource?

The next column, Period, requests information on the recurrence of the cost. Some resources are required year after year, such as salaries and benefits for personnel. Other resources such as equipment may be used for a number of years and should not simply be added into the annual cost estimate each year. The data in this column indicate the number of years over which various resources can be used. The number of years representing the expected life of the resource should be entered, with recurring annual costs designated as 1.

To What Degree Can the Resource Be Absorbed Among Service Components?

The column titled Absorb requests information on the degree to which the same ingredient (e.g., a staff member) can be used across multiple service components. An adjustment must be made in cases when a single ingredient is specified in several service domains of the model but in reality is shared across domains (e.g., clerical support, building facilities). Such resource sharing reflects efficiencies resulting from absorption in comprehensive community-based support systems. One method to adjust for absorption is to prorate the resource (e.g., time of the staff member) according to how much is spent on each component. This adjustment involves entering in the cell the amount *not* required thanks to absorption. However, when such detailed information is not available, an alternative option is to simply count the resource a single time. For instance, if a single secretary is shared across three service components, a 1 should be entered in the absorption cell for two of those components so that this position is counted in the model only once. Again, units of measurement in this column must correspond with those used in the Amount column.

What Is the Total Annual Societal Cost of the Resources?

The final column in this section, Total Cost, presents a dollar figure representing the total annual societal cost of each ingredient. This information should be calculated using the entries in the previous four columns. In most cases, the appropriate formula is

$$\text{Total Cost} = [(\text{Amount} - \text{Absorb}) \times (\text{Unit Value})] / \text{Period}.$$

The figures in this column can then be summed to derive a total annual societal cost estimate of the resources required to support the model.

In the analysis of SCCS, the value of administrative services of the parent organization is estimated at \$312,000. Turning to space, materials, and equipment required for the model, the literature documents a recurring annual rent of \$28,000 for the SCCS building. In addition, annual rents of the emergency services storefront and the employment office are estimated at \$12,000 each (\$1,000 per month). The equipment category includes a number of purchases that are not required each year, such as computers, printers, and copy and fax machines. These items are estimated at a total of \$20,000, but this figure is annualized over 10 years so

that the per year cost entered in the Total Cost column is \$2,000. In contrast, materials include an array of office supplies that are purchased annually. These items are estimated at \$1,000 per year.

The leadership category is a difficult but necessary one to include in the analysis. Three key leaders play central roles in the ongoing operation of the model. Two of these positions are full-time positions at a market value of \$40,000 per year; the third is part-time at \$20,000 per year.¹⁰ In addition, the advisory board requires the time of 10 community members and 3 agency leaders to meet for 2 hours each week. These advisory board figures yield an Amount estimate for community members of 1,040 hours per year (10 individuals \times 2 hours/week \times 52 weeks/year) and for agency heads of 312 hours per year (3 individuals \times 2 hours/week \times 52 weeks/year). In the community where this network is operating, the average value of the time of community members is estimated at \$10 per hour; the corresponding figure for agency heads is \$20 per hour. These figures are entered in the Unit Value column.

SCCS employs a staff of 43 full-time and 49 part-time individuals. These staff members presumably span many of the other program services in SCCS, but they are specified under the counseling category because counseling is the most dominant and intensive service of the model. Salaries and benefits of full-time staff members are estimated at \$40,000 per year; the corresponding figure for part-time staff members is \$20,000 per year. The amount of time required of volunteers in the counseling program is specified in hours per year. Assuming that volunteers are needed for 80 hours per week, their time translates into 4,160 hours per year. The value of their time is estimated at \$10 per hour, translating to a total cost of \$41,600 per year.

The costs of the personnel resources required for the remainder of the service components of SCCS are specified in a similar fashion. Estimates of the necessary amounts of various types of personnel are entered in the appropriate cells and are followed by the unit values of these resources. Several ingredients warrant individual consideration. In particular, further analysis is required to estimate the value of merchandise and food for the emergency programs.

Next, to determine the total cost of SCCS, adjustments for the resources absorbed into the model must be made. Because the full staff is specified in the counseling service domain, many of the additional hired professional resources are assumed to be absorbed into the model, as indicated in the Absorb column. More specifically, the counseling personnel

listed in the categories of housing, emergency services, employment programs, and youth programs can be absorbed into the 92 staff members counted in the counseling category and thus need not be counted again. The numbers entered in the Absorb column indicate this resource sharing across program components. The total annual cost of each ingredient is calculated in the Total Cost column. Adjusting for absorption yields a total societal cost of more than \$3.6 million. This figure is likely to be higher than expected because no adjustments have been made for reallocation of resources or the distribution of cost; only part of this \$3.6 million represents cost to the public treasury (reflected in the support system budget). Consequently, although the estimation of the total societal cost is a useful first step, proceeding with the analysis to reach a more comprehensive array of information about the cost of the model is potentially more instructive to local policy makers.

ADJUSTING FOR MARGINAL COST

To What Degree Can Resources in the Community Be Reallocated to Support the Model?

To the degree that resources used in the existing service delivery structure can be reallocated to support the network's activities, the marginal cost decreases. The issue of reallocation of existing resources is the focus of the Reallocate column. This column presents the quantity of the required resource that can be reallocated from another source to support the comprehensive community-based support system. This figure can be entered either in fiscal units or in standard units of measurement (consistent with the units used in the Amount and Absorb columns).

The analysis of SCCS assumes that in the particular community in which this model is operating, many of the personnel resources required for the counseling, employment, school, and youth programs can be supported by reallocating existing resources in the community. For instance, more than half of the counselors are reallocated from previous assignments. In addition, existing school staff professionals can presumably assume the responsibilities of the instructors and two of the three reading specialists required of the model's school program. Existing youth camps are linked with the coordinated system resulting in a marginal cost of zero for this program component.

What Is the Total Societal Marginal Cost of Resources Devoted to the Model?

The Marg Cost column presents the marginal cost of the resources supporting the model. If the data entered in the Marginal Cost columns are presented in "natural units," this figure is

$$\text{Marginal Cost} = [(\text{Amount} - \text{Absorb} - \text{Reallocate}) \times \text{Unit Value}] / \text{Period}.$$

If the information in the Marginal Cost columns is in fiscal units, the formula is

$$\text{Marg Cost} = (\text{Total Cost} - \text{Reallocate}).$$

The total annual marginal cost estimate of SCCS equals approximately \$2 million.

DISTRIBUTION OF COST

How Is the Cost Burden Distributed Across Different Constituencies?

The costs of comprehensive support systems are shouldered by a variety of individuals and organizations. For instance, the cost burden of a model may be shared by parents, community volunteers, regional businesses, and local universities or community colleges as well as by the contribution of the public treasury.¹¹ The next set of columns in the template provide a framework for assessing how the costs are distributed across different constituencies. These columns should specify the amount of a particular resource that the various constituencies are expected to shoulder. Specified in fiscal units, the entries across a row in this section should sum to equal the figure in the Marg Cost column of that same row. The fiscal amounts entered do not necessarily imply that dollars actually change hands. In many cases (e.g., volunteers and parents), it is time rather than money that is devoted to the program.

In the case of SCCS, the public treasury supports the infrastructure and the salaries of the central leaders and most full- and part-time staff members. Parents and other volunteers share the responsibility of serving on the advisory board. In addition, the lawyers for the advocacy clinic are volunteers supported by the firms (businesses) that employ them. Local businesses also donate the storefront, office space, thrift shop merchandise,

and food, and provide half of the volunteer time (listed under the counseling category). When the costs of all resources that are provided by sources other than the treasury are subtracted from the annual marginal cost estimate (\$2 million), the resulting figure representing the cost to the public treasury is approximately \$1.8 million. This figure reflects the budgetary demands of the comprehensive community-based support system.

This descriptive information on the distribution of cost can provide local policy makers with insight into what type of support the initiative requires from different actors in the community. When that support is not available, two options exist: (a) substitution of another source for that which is not available in the community or (b) omission of that particular component of the model. These considerations are the subject of the next column in the template.

What Is the Cost of Substituting Resources Into the Model?

The Sub column recognizes diversity across communities in the availability of different types of resources necessary for the model. The focus is on issues related to the cost and feasibility of substituting one type of resource for another in the model. For instance, consider two initiatives that require parent inputs. The first requires that parents assist in the day care center lunch room once each month to help defray the costs of hired personnel. The second requires that parents attend a monthly instructional session that helps them develop effective parenting skills. Suppose that parents are not available for the activities required of either model. In the first model, a variety of substitutes could presumably be arranged, either through other volunteers or through expenditures from the treasury, to hire the necessary help, with little impact on the model design. The second case, however, has the potential to present a more serious problem. It is unlikely that a substitute could fulfill the role of the parent in the required classes. The remaining issue concerns what it would cost the public treasury to gain parent attendance. If the cost is prohibitively high, the model (or at least this particular aspect of it) may be in jeopardy because no other substitute is feasible.

Although the substitution of resources has not been an issue for SCCS, this column provides an outlet for local policy makers to indicate whether a substitution is necessary given the distribution of the cost burden across constituencies. If so, two central questions must be addressed: Is resource substitution a feasible alternative, given the goals of the model? and What is the cost of substituting one resource for another?

COST CURVE OVER TIME

In some cases, it is important to consider how the costs of an initiative change over time. Policy makers in the early planning stages may be interested in the degree to which the costs of a long-term initiative may decrease as the program takes root in the community. Furthermore, those with programs under way may be wise to monitor the costs of the intervention over time to help guide decisions about the future development of the support system.

The costs of an initiative can be expected to change over time. For instance, programs are often associated with disproportionately high costs during the early stages of program implementation. This tendency certainly applies to models of comprehensive community-based support systems, given the breadth and depth of the organizational transformations required (Kadel & Routh, 1994). In addition to the profound (and costly) changes that must occur to fully implement comprehensive community-based models, high implementation costs may result from the duplication of services during the transition from one delivery system to another. As the new support system gradually begins to replace the old way of providing services, the marginal cost can be expected to decrease because of a decrease in the duplication of services (i.e., absorption of cost).

Once the major obstacles of implementing the initiative are overcome, costs can settle at a steady level to reflect the recurring operating costs of the support system. Still, it is reasonable to expect peaks and valleys in the cost curve over time due to the development of new service components or personnel issues. Consider the case of a new, exciting initiative that receives much support and enthusiasm as it gets off the ground. Volunteers are eager to be part of this high-profile community support system. However, as time marches on, the enthusiasm of the volunteers wanes and the cost of staffing the initiative grows. These issues are the focus of the final column in the template, *Time*. This column provides an opportunity to note temporal issues associated with various service components or particular resources. In the case of SCCS, the business support for the thrift shop and food programs expires in 2005. Decision makers need to be aware of this constraint as they budget and plan for the future.

APPRAISING THE TEMPLATE APPROACH

The cost template presented in this article provides a framework guiding local policy makers to unpack the costs associated with resources

needed to support various specifications of comprehensive community-based support systems. The contributions of the approach lie primarily in three general areas. First, the template developed in this article yields several important types of information to guide policy decisions. Most noteworthy, the sum of the figures in the Marg Cost column provides an estimate of the annual marginal cost of the resources required for the model in a particular community (based on resource values entered by a local policy maker). This estimate represents the cost of additional resources needed to implement and operate the support system relative to the community's standard provision of services. The template also provides information on the total societal cost (not adjusting for reallocation of existing resources) and the distribution of the cost burden across various individuals and organizations in the community.

Second, the template can help identify opportunities to improve the efficient operation of a particular model. For instance, the template has the potential to highlight opportunities for absorption and resource sharing across service components of the model. Furthermore, information in the template can guide local policy makers to redirect community resources to realize greater efficiency. If the total cost is approximately equal to the marginal cost, it is likely that the model is not supported by the reallocation of existing resources. To the degree that similar services are provided in both the new and old support systems, this could be an indication of inefficiency resulting from the duplication of services. Consequently, the template offers information not only on the cost of the model but also on how the initiative is operating in a particular community.

Third, the method developed in this article encourages a cooperative effort between central researchers and local policy makers. On one hand, researchers are assigned the responsibility of designing a template that corresponds with the reform in question. For instance, absorption and reallocation are particularly salient issues in the cost analysis of comprehensive community-based support systems and, therefore, are important components of the template designed for these initiatives. On the other hand, local policy makers have the responsibility of infusing site-specific data into the analysis. The emphasis on site-level data recognizes the considerable variability that can exist across sites in terms of the specification of the model and the availability and productivity of resources to support it. Such a cooperative effort between researchers and policy makers provides a systematic framework for analysis that is sensitive to site-based variability.

Finally, the approach invites more systematic coordinated cost analyses of reform initiatives to occur. Generating comprehensive information on the cost of reforms is growing more essential, particularly in the climate of fiscal constraint for public services. Although the specific template presented in this article may not be appropriate for all types of reform, the method used here—the development of a common template to be used across implementation sites—can be applied to various reform efforts. The information generated from such analyses has the potential to be helpful at both micro and macro levels of policy making.

Although the approach laid out in this article has much to offer, additional work remains to be done. This study represents an initial step in conceptually and critically thinking about costs of networked service structures. A number of issues warrant further attention. Most important, complementary approaches to assess marginal benefits of comprehensive community-based support systems must be developed. The work presented in this article assesses only the costs dimension. However, the adoption of a new initiative at the expense of others (e.g., the replacement of old programs in support of the new comprehensive support system) inevitably involves costs in terms of forgone benefits. Consequently, a full economic analysis must also consider the marginal benefits of the model. This additional information would facilitate the comparison of a particular model with other alternatives. Emphasis should be placed on data collection, with special attention given to issues on the benefit side (e.g., how to measure benefits and who is responsible for collecting and maintaining these data). Information on net benefits is essential and would contribute to more complete economic analysis. Consequently, completion of the cost template can be viewed as a prerequisite for further analyses that weigh the costs and outcomes of alternative models.

In addition, further attention should be directed toward expanding the role of macro-level policy makers in estimating the costs of comprehensive community-based support systems. The approach presented in this article is focused on site-based analysis. However, the template could also be useful at more macro levels to inform micro-level decisions about the adoption of particular models of comprehensive community-based support systems and to provide aggregate information on the initiative across the nation. By constructing a typology to categorize communities in terms of the various approaches to collaborative support systems, the utility of the template could be extended along two additional dimensions. First, communities could locate themselves in this typology and draw on analyses conducted at more centralized levels to adopt the appropriate cost

estimate for their community circumstances. Furthermore, if the incidence of these various approaches could be estimated, a total societal cost could be calculated at an aggregate (rather than a community) level. These more macro-level applications of the template warrant additional consideration.

Finally, once the template has been fully developed, tested, and refined, attention should be devoted to making the tool more user friendly for those at the local levels. It is at this level that the richest information on support system cost is available; thus, efforts should be made to facilitate cost evaluations conducted at the local level. One option is to develop computer software capable of guiding the analyst throughout the various stages of the analysis, prompting for information and providing additional explanation of terms where necessary. Creation of a user-friendly tool to estimate costs can be expected to provide valuable information to members of local communities as they make decisions about the adoption, implementation, and continued development of comprehensive community-based support systems.

NOTES

1. To the degree that the support system is a fully comprehensive initiative, any analysis of the model is necessarily a community-level analysis.

2. The opportunity cost of a resource (e.g., money, time, or space) is the value of the next best use of that resource or the benefit forgone by using a resource in a particular way.

3. Throughout this article, *marginal* refers to the incremental or add-on cost resulting from the implementation of the model.

4. There may, however, be costs associated with coordinating the existing programs with the overall initiative.

5. Although comprehensive community-based support systems create conditions for resource sharing across program components, the degree to which communities realize these efficiencies is not clear. Furthermore, when absorption does occur, the resulting efficiencies are not necessarily realized immediately, particularly given the resources that may be required to train individuals who will be responsible for tasks across multiple components of the support system.

6. In cases where the resources necessary to support the model are either unavailable or unproductive, substitutions may be feasible. For instance, if volunteers are required but are not available in the community, individuals may be hired to fulfill the necessary duties. However, as will be discussed later, the process of substituting resources may have significant implications for the cost estimates constructed.

7. Although the approach is focused on community-based analysis, it also has the potential to inform policy at more aggregate levels. For instance, the first several columns of the template (Table 1) identify the components and resources of the model. To the degree that several communities share a similar specification of the model, this information can be

generalized across sites. Furthermore, the template is designed to provide information on the extent to which efficiencies are realized through absorption and reallocation of existing community resources. Insight into these issues has the potential to inform policy decisions at aggregate levels.

8. The data for this example were collected through document review and telephone interviews. Because no site visits were conducted, the information presented is at best an approximation of the actual costs of the network. Nonetheless, these data are adequate for illustrating the application of the cost template.

9. To honor confidentiality agreements, the true identity of the network is masked.

10. It could be argued that the model is dependent on these three particular individuals' making the market-value approach problematic in terms of leadership.

11. Manring (1998) showed that collaboration can have substantial costs to individual participants that are often not recognized but may undercut collaborative efforts.

REFERENCES

- Alder, L., & Gardner, S. (1994). *The politics of linking schools and social services*. Washington, DC: Falmer.
- Comer, J. P. (1980). *School power*. New York: Free Press.
- Comer, J. P. (1985). Empowering Black children's educational environment. In H. P. McAdoo & J. L. McAdoo (Eds.), *Black children: Social, educational, and parental environments*. Beverly Hills, CA: Sage.
- Comer, J. P. (1988). Educating poor minority children. *Scientific American*, 259(5), 42-48.
- First, P. F., Curcio, J. L., & Young, D. L. (1994). State full-service school initiatives: New notion of policy development. In L. Alder & S. Gardner (Eds.), *The politics of linking schools and social services* (pp. 63-74). Washington, DC: Falmer.
- Garvin, J. R., & Young, A. H. (1994). Resource issues: A case study from New Orleans. In L. Alder & S. Gardner (Eds.), *The politics of linking schools and social services* (pp. 93-106). Washington, DC: Falmer.
- Hayes, C., Lipoff, E., & Danegger, A. (1995). *Comprehensive service initiatives: A compendium of innovative programs* (Working paper for the Finance Project, Washington, DC). Unpublished manuscript.
- Kadel, S., & Routh, D. (1994). Implementing collaborative services: New challenges for practitioners and experts in reform. In L. Alder & S. Gardner (Eds.), *The politics of linking schools and social services* (pp. 121-134). Washington, DC: Falmer.
- Kagan, S. L., Goffin, S. G., Golub, S. A., & Pritchard, E. (1995). *Toward systemic reform: Service integration for young children and their families*. Falls Church, VA: National Center for Service Integration.
- Levin, H. M. (1983). *Cost-effectiveness: A primer*. London: Sage.
- Manring, N. J. (1998). Collaborative resource management: Organizational benefits and individual costs. *Administration & Society*, 30, 274-292.
- O'Toole, L. J. (1997). Treating networks seriously: Practical and research-based agendas in public administration. *Public Administration Review*, 57(1), 45-52.
- Ramirez, R., Webb, F. R., & Guthrie, J. W. (1991). Site-based management: Restructuring decision making for schools. In J. R. Bliss, W. A. Firestone, & C. E. Richards (Eds.),

Rethinking effective schools: Research and practice. Englewood Cliffs, NJ: Prentice Hall.

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