Resource Allocation and the Supports Intensity Scale™: Four Papers on Issues and Approaches

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WhitePaper

Editors' Note

The contributors to the AAIDD White Papers on the Supports Intensity Scale™ (SIS™) were sought out by the editors because of their demonstrated successful implementation of SIS, the quality of their application, and the fidelity of their work to the conceptual and application model of SIS. It is important to realize that each implementation example reflects the initial phases of a long-term process of using and evaluating the efficiency, effectiveness, and impact of SIS. Thus, the approaches to resource allocation presented in this White Paper should be considered as current efforts, best practices, and benchmarks for evaluating future implementation efforts based on the judgment of the editors.

There is no intent on the part of the editors to suggest that the resource allocation issues and examples presented here are the only ones that SIS users are grappling with; nor should they be considered as program standards. Knowledge is cumulative, and our primary intent is to share with the reader the current status of the multiple uses of SIS, including its use as one piece of information in resource allocation. It is our hope that the examples in the AAIDD SIS White Papers will serve as the basis for our increased understanding of how multiple entities can use SIS for the assessment of individual support needs and that we may use this information for multiple purposes, including individual support plans, staffing patterns, resource allocation, monitoring, and evaluating personal outcomes.

Introduction

One of the most complex issues faced by all stakeholders within the intellectual disabilities/developmental disabilities system is resource allocation. As the Supports Intensity Scale (SIS) was being developed, this issue became prominent and was addressed initially by SIS authors through a series of statistical analyses and cautions found in the 2004 *Supports Intensity Scale Users Manual* (Thompson et al., 2004, chapter 5, pp. 89–98).

One of most vigorous applications of SIS since its publication has been the use of SIS-related data as one component in resource allocation models and decisions. This White Paper updates the reader on both the rationale and critical issues involved in resource allocation decisions and the potential components to either agency or systems-level funding models. The five contributions to the White Paper come from individuals who have worked diligently in this area and are very familiar with the conceptual, operational, and political issues involved in developing resource/funding models and formulas. The White Paper begins with a discussion by Jon Fortune and the late Gary Smith of the importance of understanding the rationale and ethical issues involved in resource allocation. That discussion is followed by an explanation by Don Severance and Ed Campbell of what is a funding formula, including the identification of variables that are typically cost drivers. Three actual examples (Washington, Arudin in the Netherlands, and Louisiana) are then provided to show how state- and agency-level programs are currently using SIS-related data as one or more components of a resource allocation model.

The Supports Intensity Scale and Resource Allocation

by Gary Smith and Jon Fortune

There is growing interest in tying public funding for community services and supports for people with intellectual and developmental disabilities to assessment results. This interest stems from several factors, including achieving greater equity in funding among individuals, making the most efficient use of limited public dollars, promoting flexibility in the selection of services, and, most recently, affording individuals and families the opportunity to directly manage a prospectively determined individual budget.

That funding should be based on and scaled to individual support needs is straightforward. All other things being equal, people who have greater support needs require more resources to live successfully in the community than others with lower support needs. The challenge, of course, lies in determining exactly how to link support needs to the funding of community services.

This section of the White Paper discusses a framework for funding community services and supports and for funding applications based in part on the Supports Intensity Scale (SIS).

Framework for Funding Community Services and Supports

The community services funding system is the outgrowth of many historical factors. As a general matter, in most states with whom we are familiar, funding and payments for services usually are broadly related to individual support needs. However, often the relationship is not very clear-cut. Frequently, different amounts of funding are associated with people who have similar support needs. These differences have arisen due to different approaches for determining payments by type of service, historical events (e.g., decisions to offer enhanced funding for people who transitioned to the community from institutions), service model selection, and others.

Shifting to funding approaches where individual support needs play a larger, more decisive role involves decreasing the weight that "system factors" carry in the funding equation. System factors can include historical differences in payments to providers of the same type of service, inappropriate differentials in payments for similar services (e.g., higher payments for group home services versus supports for people who live in a home of their own), and distortions in service authorization policies and practices. The less these system factors impact the costs of services, the more weight will be given to the individual's support needs in the funding equation.

The emerging framework for funding community services has the following elements:

- Funding should be allocated at the individual level, not the program or service level. Allocating funding at the person level enhances the capability to develop individualized support strategies, contributes to portability, and promotes individual choice.

- Managing funding at the person level hinges on developing funding methods that are service independent. The goal is to determine an amount of funding that

attaches to the person and thereby is not contingent on the person's being slotted into a particular type of service.

- Clearly, support needs must be factored into the amount of funding that is assigned to a person. If funding does not reflect support needs, then it will be impossible to achieve critical goals for individuals.

- At the same time, other factors also affect resource consumption, including but not limited to the amount of unpaid support that is available to a person. These additional factors must be recognized.

- Payments to organizations that furnish specific types of services should also take into account differences in individual support needs as well as provider costs.

This funding framework goes hand-in-glove with de-emphasizing categorical approaches to service delivery to stress person-centered, individualized models of supporting people with disabilities.

Funding Applications

In considering the role that SIS might play in funding, it is important to recognize that there are two basic types of funding applications:

1. **Prospective budget**. One potential application of SIS lies in determining and assigning a prospective budget amount to an individual that represents an upper limit on the total amount of funding that may be authorized to purchase goods and services on the person's behalf. The prospective budget application supports person-centered planning and, increasingly, is closely identified with self-direction of services where individuals and families directly manage an individual budget. The goal in designing a prospective budget application is to ensure that people with similar support needs and similar circumstances have similar *global* budget amounts. SIS in tandem with additional information can support the development of methods to determine individual budgets.

2. **Service payments**. The second application of SIS lies in determining provider payments for the delivery of particular types of services. Here the goal is to ensure that payments to providers that furnish the same type of service are standardized, taking into account differences in the support needs of the people served by the provider. In other words, payments to service agencies should take into account differences in the support needs of people.

Each of these applications has a different purpose. However, in the end they must work in tandem.

Supports Intensity Scale and Funding Applications

Section I of SIS measures the intensity of support that a person needs along several dimensions of everyday living. This part of SIS yields both a total index score and standard scores for each of the six life activity areas that compose Section I. Sections IIIa and IIIb of SIS provide additional dimension to SIS by assessing whether a person has extraordinary medical or behavioral support needs. *When employing SIS in a funding application, all three of these parts of SIS should be taken into account.* For example, some people have low support needs as measured by Section I but have extraordinary behavioral support needs that require extensive staffing. Basing funding

solely on the total index score would fail to take into account the other key medical and behavioral support needs that a person might have.

The experience so far in working with SIS reveals that current funding patterns usually track (albeit imperfectly) with the support needs measured by Section I and the extent of both medical and behavioral support needs. With respect to Section I, the standard scores for home living, community living, and health and safety seem to be better predictors of funding than the more global total index score. People with similar standard scores in these three areas typically exhibit similar resource consumption patterns. However, resource requirements also are affected by differences in medical and behavioral support needs.

The experience in working with SIS (whether in developing prospective budgets or service payments) is that SIS alone explains only about 30% of the difference in funding among individuals. The remaining variance can be attributed to "system factors," or factors that SIS itself does not measure. For example, resource needs are very much affected by the extent of unpaid support that is available to a person. Resource requirements usually differ substantially depending on whether a person lives with her or his family or is supported in another type of living arrangement. Similarly, some other types of factors (e.g., whether a person requires close supervision due to involvement in the criminal justice system) often override SIS results. *It is important to recognize that non-SIS factors such as these can have a significant impact on resource consumption.*

As a consequence, it is usually necessary to supplement SIS with other information about individuals in order to develop solid funding applications. For example, there may be regulatory factors in play that affect funding (e.g., requirements for overnight staffing in community residences). In some cases, taking into account these other factors may require augmenting the SIS instrument to capture the necessary information. In other cases, such information may already be captured in other data systems and can therefore be tied to SIS results. Statistical analysis can be performed to determine how much weight to give SIS and the other factors. The introduction of additional factors into a funding application generally yields a better funding application than solely relying on SIS itself. But the fit will not be perfect. "System factors" unrelated to the support needs of individuals likely will still be present.

Experience to date in using SIS in funding applications strongly suggests that SIS yields results that are at least comparable to those that are achieved when other assessment tools are employed. SIS results in combination with supplemental information supports the development of solid funding applications.

What Is Involved in Using SIS in Funding Applications

There are some basic considerations that apply when employing SIS in funding applications. The following are some of the more important considerations:

- **Integrity of SIS assessments**. It is extremely important that SIS assessment results themselves are trustworthy. It is very important that SIS has been administered properly so that the funding application can be built on a solid platform of data. If there are questions about how well assessments have been performed, the entire funding application will be thrown into doubt.

- **Capability to link SIS results to other information**. Funding applications always are based on current expenditure patterns. It is necessary to be able to link SIS results for individuals to their specific individual spending authorizations, their

historical expenditures, or both. If it is not possible to make these linkages, additional data collection activities may be necessary to garner the necessary expenditure data. Similarly, it will prove important to be able to link SIS results to other data systems that capture information about individuals. This additional information frequently can be tapped to build more satisfactory funding applications.

- **Sampling or not**? Funding applications may be developed employing a sample of individuals. So long as the sample is drawn properly, it can serve as a legitimate proxy for the entire population. Employing a sample offers the potential for accelerating the development of the funding application. At the same time, it is important to keep in mind that the funding application cannot be implemented until SIS has been administered across the entire population.

- **Design**. Before using SIS in a funding application, it is extremely important to engage in preliminary design, especially with respect to the role that SIS will play in the funding application. For example, when SIS results will serve as the basis for establishing payment rates, it is important to be clear about what part of the rate will incorporate support need factors and what part of the rate will be based on other provider cost information. In community residences, support needs principally affect the amount of direct support staff that is necessary. Other costs, however, are not directly affected by support needs. Alternatively, if SIS is to be used to generate prospective budget allocations, it is necessary to decide what types of services and supports will fall within the scope of the budget and which will not.

- **Time horizon**. Building a new funding application takes a considerable amount of time. It should not be rushed. Experience reveals that usually several iterations are necessary in designing a new application.

- **Testing and feedback**. The likely outcome of placing greater stress on individual support needs in funding applications will be to alter present funding patterns. Changing funding patterns has enormous implications. Therefore, it is important to simulate the results of the new funding application, secure information about how funding patterns will change, and obtain feedback about the real-world implications of the change. This feedback can prove invaluable in improving the funding application.

- **Outliers**. It is important to recognize that a funding application is unlikely to yield satisfactory results for all persons, especially individuals who have unique support needs. Consequently, provision needs to be made for departing from the basic funding model to address the needs of such persons.

- **Implementation strategy**. Finally, it is important to develop an implementation strategy. Again, a new funding application will affect how dollars are distributed in the service system. It may prove beneficial to phase in the new funding application. It also may be necessary to mitigate the near-term financial impact of the new funding application.

In conclusion, great care needs to be exercised in designing or revamping funding methods. At the end of the day, changes in funding have enormous implications. There is increasing experience in applying SIS results to the funding of community services. Experience thus far is that SIS in fact yields solid information about support needs that, in turn, can be employed in building funding applications.

What Is a Funding Formula?

by Donald D. Severance and Edward M. Campbell

There are many different possible methods to pay for services and supports for people with disabilities. However, consumer-directed community supports require the calculation of an individual budget amount. Therefore, the following discussion limits itself to methods of generating individual budget amounts. Moseley et al. (2002) categorize these methods with a "standardized" vs. "developmental" dichotomy. The Centers for Medicaid and Medicare Services (CMS) label these methods "prospective" and "retrospective," respectively. Moseley et al. propose four criteria to be used in establishing individual budgeting strategies:

1. **Logical**. The system must make sense to the people who use it

2. **Transparent**. Decisions are based upon methodologies that are easily understood;

3. **Equitable**. People using the system believe it gives them the same opportunity to receive assistance as anyone else

4. **Accurate**. Results of the funding methodology provide resources that are sufficient to meet the person's needs

It should be noted, however, that these qualities can sometimes be at cross-ends. Equitability can require complex methods, which in turn compromise transparency and ease of understanding. In addition, the philosophical basis of the funding agency can influence the factors considered in the development of the formulas for the individual budget amount. The variables to be considered include those related to individuals' abilities; other resources they bring to services (e.g., natural supports, financial resources); and factors related to where the person lives and works, factors related to the providers from which they desire services, or both. With the development of such a reimbursement system, states or other funding entities can meet the expectations of CMS to have an equitable means of providing funding as well as promoting factors consistent with the philosophical trends in the field.

Developmental or Retrospective Methods

Developmental or retrospective methods wait until the person-centered planning process is complete and then an individual budget is calculated that is sufficient to purchase the planned supports. These funding schemes are usually developed by people with a background in accounting. These methods might have fixed hourly or unit rates determined through fiscal analysis, but the hours or units are negotiated as part of the planning process. The unit rates are usually derived from extensive research into local economic conditions, salaries, and so on.

These accounting-based methods are good for assuring that an individual budget amount is adequate to meet a given person's needs. However, they do not work well in assuring that the total resources available are necessarily distributed in an equitable or fair manner. Most states have difficulty in garnering adequate resources to fund supports for all who need them, as frequently evidenced by rather extensive waiting lists. Although many developmental systems are based on very intensive accounting studies, those methods typically use very crude measures of individual characteristics

or support intensity needed. It is therefore quite difficult to assure that resources are allocated in an equitable fashion.

Standardized or Prospective Methods

These methods rely on the collection of data relating to the costs incurred by each individual. Data are also collected on those measures that are assumed to determine cost. Examples include geographic/economic factors, an individual's personal characteristics, support needs, residential and daytime settings, and supports received. Statistical analyses are then used to identify those measures that are most highly related to costs, and formulas are produced that describe those relationships. Those formulas are then used to generate individual budget amounts for all program participants. Therefore, the planning team for each individual knows in advance the amount of money that will be available to purchase supports.

These methods are grounded on the assumption that a state's current system to allocate resources is at least partially based on a rational plan to distribute those resources based on individual need. Statistical techniques are used to distill the rational component of current funding policy and identify those measures of individual characteristics or support needs that at least partially account for the distribution of existing resources. This generates a funding model, or formula, that can be used to generate future payment amounts.

It should be noted that the resulting model is based on the current service/support system structure and current funding practices and hence will tend to be somewhat resistant to changes in those structures and practices. However, to the extent that the structure or practices need changing, the model can be modified to accommodate those changes. This statistical-based approach is good for assuring that resources are distributed fairly or equitably based on a wide array of individual measures. However, adequacy of funding for an individual who receives supports is limited to the overall adequacy of a state's funding.

A Satisfactory Approach Needs to Address Many Factors

Regardless of which of the two methods is used, a satisfactory approach to resource allocation needs to address many factors. For example, thought could be given to combining the two approaches listed above: Statistical (multiple regression) studies could be used to see what measures explain variation in units of support (e.g., hours, etc.) and then to develop formulas to authorize those support units. Those units could then be reimbursed based on a payment schedule that is based on an accounting study of local economic factors such as prevailing wages. Additional factors that should be incorporated in future funding paradigms might include measures of individual characteristics, support needs intensity, intensity of supports currently received by paid staff or natural supports, living and daytime current and desired environments, quality measures such as process standards or outcome effectiveness measures (e.g., changes in individual characteristics, quality of life (QOL) measures, consumer/family satisfaction measures, and measures of inclusion), and economic factors such as local cost of living, local per capita income, local unemployment, local prevailing wages, and overall cost efficiency. In addition, matters that need to be considered in the development of a funding formula include issues of the cost of data collection and maintenance of the database as well as questions of the reliability and validity of the data collected. A system should also be developed to monitor funding over

time to ensure that changes to the funding methodology are considered as the service delivery system evolves. If changing from a relatively subjective funding system to a more objective system, the reallocation of resources will mean that those persons who were best able to negotiate the more subjective system will likely lose funding under a more objective process. These are often the more vocal advocates, whereas those who were historically relatively underfunded are generally less vocal. Therefore, the political resistance to changing to such a system can be formidable.

As persons affected by the funding methodology become more astute, there will be pressure to overestimate the support needs of individuals because this will increase their available funding. Therefore, mechanisms need to be in place to ensure the accuracy of the assessments collected. This may include the use of persons to perform reliability checks, longitudinal analysis of trends in scores, or other types of statistical or direct monitoring of the data gathering process.

If the funding formula is developed using multiple regression procedures, it always needs to be remembered that the results are based on a correlational, not causal, relationship. Therefore, while factors may be found as significant predictors of funding, it cannot be concluded that those factors cause the variance in funding.

Table 1 shows an example of a funding formula. Please note that this is merely an example of the general form that a funding model might take. It is for illustrative purposes only. For such a model to be applied in a given state or a large county or city, it should be derived from analyses of that state's own data. Values of individual measures are entered into the boxes in column C. Those values are then multiplied by the parameter estimates in column b, and the result is entered in column D. Column D is then summed, producing an individual budget amount at the bottom of column D.

TABLE 1
Example of a Funding Formula

Variable	Column A	Column B Parameter Estimate	Column C Variable Value	Column D B x C
	Base Amount (Intercept)	-1790.33594	1	-1,790.34
Local Economic Measure				
	Per-Capita Income	0.01051	$22,000	231.20
SIS - Summary Scores				
	Section 1 Index	39.46952	80	3,157.56
	Section 3A Total	62.93982	2	125.88
	Section 3B Total	183.09720	8	1,464.78
Other Measures				
	Age	-3.76168	57	-214.42
	Dx: Autism?	295.11821	0	0.00
	Dx: Mental Illness (Psychosis)?	141.54549	1	141.55
Environments				
	Residential Arrangements			
	Lives with Family?	-289.39317	0	0.00
	*Foster Care**	*0.00000*	*0*	*0.00*
	*Supported Living**	*0.00000*	*0*	*0.00*
	Semi-Independent Unit w. Staff?	528.96519	0	0.00
	Group Residence?	1075.33145	1	1,075.33
	State Institution?	5587.20481	0	0.00
	Daytime Programs			
	Day Activity Center?	64.94696	1	64.95
	*Work Activity Center?**	*0.00000*	*0*	*0.00*
	*Sheltered Workshop?**	*0.00000*	*0*	*0.00*
	Supported Employment?	-133.60095	1	-133.60
Services/Supports Provided				
	Adult Residential?	658.21978	1	658.22
	Child Residential?	845.04368	0	0.00
	Adult Daytime Services?	652.70797	1	652.71
	Child Daytime Services?	1105.38319	0	0.00
Funding	State Funding?	-325.22713	0	0.00
	Predicted Monthly Reimbursement Rate			**$5,433.82**

* Measures not selected by the regression process.

"?" denotes a binary (yes/no) measure

Washington's Residential Resource Allocation Model

by Lisa Weber and John Stern

Background and Rationale

Washington State's Division of Developmental Disabilities (DDD) contracts with and manages a number of residential programs, including supported living and group homes. The supported living program provides residential services to clients living in their own homes in the community. The homes are owned, rented, or leased by the clients or their legal representatives. Supported living offers instruction and support that may vary from a few hours per month to 24 hours of one-on-one support per day. Clients pay for their own rent, food, utilities, and personal expenses. DDD contracts with agencies for residential services provided to clients at the contracted rate. DDD contracts with about 100 agencies, which support about 3,300 clients. The group homes program includes community-based residential facilities that range in size from 4 to 11 residents. DDD contracts with group homes for board and room costs, 24-hour staff supervision, and instruction and support. Clients participate in their cost of care. DDD contracts with 35 Group Homes providers, which support about 330 clients.

Historically, rates for both programs included two primary components: (1) administrative, including board and room for group homes, and (2) direct care staff. The administrative rate was negotiated and depended upon when the agency began to provide services. The direct care rate varied geographically and was determined by negotiating the number of direct care hours per day needed by the client multiplied by a benchmark.

After two legislative performance audits, DDD was directed to develop an assessment process that is consistently applied to all clients across the state. DDD was also directed to make recommendations for the development of a standardized rate structure for its residential programs. In Washington State, the division and its stakeholders were satisfied with the historical rate-setting process. Concerns had to do more with the consistency with which the historical approach was applied rather than the inherent nature of the process. Therefore, to design the new assessment process for setting residential rates, we decided to statistically model clinical judgment, the basis for the historical negotiated approach, using standardized assessment responses.

The decision to use the Supports Intensity Scale (SIS) was influenced by four primary factors:

1. SIS was developed specifically to measure the support needs of people with developmental disabilities and therefore meets the CMS criteria.

2. SIS focuses on measuring the support needs of clients, which is consistent with the existing values and direction of the state's DDD service system.

3. SIS is validated and has acceptable interrater reliability.

4. AAIDD, the publisher of SIS, is willing to allow Washington State to integrate SIS into an existing software application.

SIS is currently being used as the support needs evaluation tool for all DDD adult clients. The medical and behavioral sections are also utilized with children. However, at the present time, only residential service rates are being set based primarily on responses to SIS. Rates for other services, such as family support, are based on portions of SIS in combination with additional items. SIS percentiles are used in Washington State to determine Home and Community Based Services (HCBS) Waiver level of care, but dollars are not allocated to waiver participants based on SIS percentiles; dollars are allocated service by service.

Approach

Stakeholder involvement. As a major step in the design process for developing a new residential rate model, a residential rate study stakeholder workgroup was formed with membership that included six residential provider leaders, DDD regional and central office staff, rates management staff, county representatives, and Arc or advocate representatives. This workgroup has met monthly for the past 2.5 years and helped develop and provide advice on all aspects of the rate-setting methodology. Residential providers and other nonstate representatives served as a link to gather input on key issues and to provide information to the broader stakeholder community. The committee has continued to meet to assist the process.

Assumptions. There are several components that affect a residential rate. Many of them are almost as influential as the individual's support need (for example, the environment in which a person lives, the supports provided by others, the refusal of some supports, the sharing of supports with roommates, agency administrative rates, etc.). In order to obtain the cleanest and most predictive statistically based rate possible, we established a common denominator: determine support hours as if the person lived alone and the residential provider would be providing all supports. The other components that influence the rate could then be considered and manually applied to the statistically predicted rate. Another assumption of Washington's rate-setting model was that the new process must be cost neutral. Therefore, the current standard of service provision was used as the "gold standard" for prediction. Total current cost for the test sample was one of the factors used to determine the adequacy of the statistically predicted model.

Study design. To develop a statistical model for setting residential rates, the new DDD assessment was administered to 271 persons receiving supported living services. Persons currently receiving service were selected because providers and division staff had a good understanding of these persons' current support needs, including those needs that were being met, overmet, or unmet. Clinical teams consisting of agency staff, DDD resource managers, and case managers (when available) met to clinically review and come to a consensus on an individual's support needs as if he or she were living in a single-person household with the residential agency providing all of his or her supports. The clinical teams were not given assessment responses so that their judgment would not be biased by the actual responses.

The determination of support needs by the clinical groups included both the frequency at which a person needs to receive support as well as the total number of hours of support. Additional information was gathered from the clinical team including the size of the household or cluster of households in which the person lived, the number of hours provided by others (such as natural supports or an employment or day program provider), and the number of support hours that needed to be exclusively devoted to this individual and could not reasonably be shared with roommates. DDD project

managers attended the first several meetings conducted by each resource manager to ensure that the data collection process was being consistently applied throughout all regions of the state. Data gathered through the two independent processes (assessment and clinical judgment) were analyzed to determine which combination of assessment responses would give the best statistical prediction of the outcome from the clinical review teams.

Model

Residential service levels. First, assessment responses were used to determine how frequently an individual needed support. A variety of statistical approaches were tested to make this determination, but statistical approaches were eventually abandoned. The small sample size did not provide enough information to identify clear and distinct classifications. Instead, items that logically seemed to distinguish how frequently an individual needed to be seen by a residential service provider were identified. For example, someone who needs daily support with tasks that most people do every day will need residential services on a daily basis; someone who does not need daily support on tasks that most people do every day but does need support on tasks most people do every few days will need residential services on a less than daily but more than weekly basis. This logical model was applied to the data, and it demonstrated a good fit. The categories of frequency at which an individual needed support became known as the Residential Service Levels. These are summarized in Table 2.

TABLE 2

The Residential Service Levels of Supports (WA)

Support need	Characteristics	Expected level of service*
Weekly or less (support level 1)	Client requires supervision, training, or physical assistance in areas that typically occur weekly or less often, such as shopping, paying bills, or medical appointments. Client is generally independent in support areas that typically occur daily or every couple of days.	Clients at this level receive support on a weekly basis or less frequently. During times when a client needs extra support, staff will be available more frequently.
Multiple times per week (support level 2)	Client can maintain health and safety for a full day or more at a time *and* needs supervision, training, or physical assistance with tasks that typically occur every few days, such as light housekeeping, menu planning, or guidance and support with relationships. Client is generally independent in support areas that must occur daily.	Clients at this level receive support about 2–4 times per week. Clients usually cannot go for a whole week without receiving support.
Intermittent daily—low (support level 3A)	Client can maintain health and safety for short periods of time (i.e., hours, but not days) *or* needs supervision, training, or physical assistance with activities that typically occur daily, such as bathing, dressing, or taking medications.	Clients at this level receive support daily. At level 3A, support may be needed for only a few hours or less per day.
Intermittent daily—moderate (support level 3B)	Client requires supervision, training, or physical assistance with multiple tasks that typically occur daily *or* requires frequent checks for health and safety or due to disruptions in routine activities.	Clients at this level receive support daily. At level 3B, support may be needed for half of the day or more. Checks during nighttime hours may be provided as needed.
Continuous day + intermittent night check (support level 4)	Client requires support with a large number of activities that typically occur daily *or* is able to maintain health and safety for very short periods of time (i.e., less than 2 hours, if at all) *and* requires occasional health and safety checks or support during overnight hours.	Clients at this level have support in their home, or very close by, around the clock. Support hours may be shared with neighboring households.
Continuous day + continuous night (support level 5)	Client is only able to maintain health and safety for very short periods of time (i.e., less than 2 hours, if at all) *or* requires support with a large number of activities that occur daily or almost every day *and* requires nighttime staff continuously within the home.	Clients at this level have support in their home around the clock.
Community protection (support level 6)	The client is participating in the Community Protection Program.	Clients at this level will receive intensive supervision per Community Protection Program policy.

* The amount of service hours received from a residential provider may vary based on who provides the supports (nonresidential staff or natural supports), whether some supports are shared, if the client is refusing services, or the intensity of a client's support needs at a particular point in time.

Base hours. Next, assessment responses were used to determine the number of support hours needed in various life areas presuming that the residential provider would deliver all of an individual's support hours and that none of these support hours would be shared with other clients. For some areas of support, such as community integration and in-home habilitation and personal assistance, a statistical regression approach provided the best prediction. For other areas, a constant value or a series of values provided an adequate prediction. In some instances, the best predictor varied based on the Residential Service Level; for example, the items that best predicted support time for community integration differed for those receiving around-the-clock support versus those who could be left unattended. The predicted number of hours of support became known as the Base Hours. This component of the model is summarized in Table 3.

TABLE 3
Base Hour Model (WA)

Areas of support		1	2	3A	3B	4	5	6
Sleep	Nighttime support	0	0	0	0 if **night support frequency** is less than daily; 56 if **night support frequency** is daily or hourly	56	56	56
Employ-ment/ school	Residential provider support	0	0	0	0	0	0	0
Community	Medical appointments	0.25 if **medical frequency** is < monthly; 1 if **medical frequency** is monthly; 2 if **medical frequency** is weekly or more frequently						
	Shopping	0.5 if **shopping frequency** is < monthly; 2 if **shopping frequency** is monthly or more frequently						
	Integration/ public services (IntPA)	Max(Min (Prediction B, 10), 0)	Max(Min (Prediction B, 10), 0)	Max(Min (Prediction B, 10), 0)	Max(Min (Prediction B, 10), 0)	Max(Min (Prediction C, 10), 0)	Max(Min (prediction C, 10), 0)	Max(Min (prediction C, 10), 0)
In home	Habilitation/ personal assistance	Max((6.87 – IntPA),0)	Max((8.27 – IntPA),0)	Max (85% of Prediction A, 8.27 – comm_ sum, 0)*	Max (97% of Prediction A, 27.75 – comm_sum, 0)	Max(Min (Prediction A, 168 – **Sum2**), 0	Max(Min (prediction A, 168 – **Sum2**), 0)	Max(Min (prediction A, 168 – **Sum2**), 0)
	Unstructured protection supervision	0	0	0	0	168 – **Sum**	168 – **Sum**	168 – **Sum**
Non-SIS†	**(Applied after EOS)**	0.56+2.77% of ISS hours	2.45+2.77% of ISS hours	2.66+2.77% of ISS hours	3.15+2.77% of ISS hours	5.25+2.77% of ISS hours	5.25+2.77% of ISS hours	6.16+2.77% of ISS hours

IntPA = predicted value for Integration/Public Services

Comm_sum = total hours for medical appointments, shopping, and integration/public services

Sum = total hours for nighttime support, employment/school, all community activities, and habilitation/ personal assistance

Sum2 = total hours for nighttime support, employment/school, and all community activities

* The multiplier on Prediction A is related to achieving cost neutrality. Over time this multiplier may be increased, decreased, or even removed.

† Non-SIS is intended to cover policy and program requirements not covered by items on SIS scale. The intent of the formula for the non-SIS component is a constant plus a percentage of hours *after* the EOS worksheet has been completed.

Economies of scale (EOS) worksheet. The Base Hours represent the average support time required in each life area for persons who responded to the assessment questions in a similar manner. However, averages do not necessarily present an accurate picture of the appropriate residential rate for a particular individual. The purpose of the EOS worksheet (see Table 4) is to make adjustments to the statistically predicted individual rate based on personal and environmental factors that may not have been adequately taken into account by the formulas that generate the Base Hour predictions.

TABLE 4
Economies of Scale Worksheet (WA)

RESIDENTIAL RATES CALCULATOR
Step 1: Economies of Scale

Need	Assmt Hrs/Wk	RM Adjust	Support By Others	Support Refused	Rec. Hrs/Wk	Indiv. Hrs	Addtl. Clients	Hrs/Wk
Night Sup.	56.00	0.00	0.00	0.00	56.00	0.00	6	8.00
Employ/ School	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00
Medical	2.00	-.05	0.00	0.00	1.50	1.50	0	1.50
Essntl. Shopping	2.00	0.00	0.00	0.00	2.00	0.00	1	1.00
Integra-tion/PS	8.03	1.97	0.00	0.00	10.00	0.00	1	5.00
Habilitation	54.75	0.00	0.00	0.00	54.75	27.75	6	27.29
Unsched. Prot. Sup.	45.22	0.00	-10.00	0.00	35.22	0.00	6	5.03
Non-SIS	9.90	0.00	0.00	0.00	9.90	0.00	0	6.57
Residential Level: 4		Proposed ISS Hrs/Week: 54.40		Proposed ISS Hrs/Day: 7.77		Current ISS Hrs/Day: 5.05		New ISS Hrs/Day: 7.77

State employees (resource managers) can make adjustments to the values generated by the algorithms in the RM Adjust column. Adjustments can be made when unusual or extraordinary circumstances occur that have not been captured by the assessment, such as excessive travel time requirements or extra time needed to implement particular goals on the service plan. The resource manager may also make adjustments if additional data are available to make more accurate predictions, such as detailed records from the client's medical appointments over the previous year. Family, employment providers, or other natural supports may also be providing some assistance to the individual, and this may reduce the amount of time the residential provider needs to spend with the client. When these situations occur, the resource manager can make an adjustment to the residential rate by subtracting hours in the

Support by Others column. Clients may also refuse supports. The assessment reflects actual support needs and this will be incorporated into the base rate, but the resource manager can make adjustments to the residential rate in the Support Refused column for services that won't be provided. The residential rate, after these three adjustments have been made, is displayed in the Recommended Hours per Week column.

Once the number of hours that the residential provider is going to offer are determined in the Recommended Hours per Week column, the resource manager and the residential agency discuss how many of these hours must be reserved specifically for this individual (Indiv. Hours) and how many support hours can be shared with others living in the household or cluster. For example, bathing tasks typically happen one-on-one with the provider, but a staff hour spent doing housekeeping would benefit all members of the household at the same time. The system assumes that all Recommended Hours that are not reserved as Individual Hours can be shared. The resource manager enters the number of persons with which the remaining service hours will be shared in the Additional Client column. The final column, Hours per Week, contains the residential rate after sharing of service hours has been taken into account.

Once the direct care service hours have been determined, the resource manager performs additional calculations to generate the administrative rate component. The sum of the calculated direct care hours multiplied by the benchmark plus the additional administrative rate components becomes the final rate that the residential provider will be paid to support the client.

Application

The new assessment process rolled out statewide on June 1, 2007. After a case manager completes the assessment, the resource manager is notified. When assessments for an entire household are complete, the resource manager schedules a meeting with the agency that provides residential support to complete the EOS Worksheet and other screens in the residential calculator that are used to determine the administrative portion of the rate.

Extensive training was provided to prepare case managers, resource managers, and residential service agencies for the new assessment process. This broad-scale preparatory effort was necessary to train all persons involved in the new residential rate-setting process on this complex task and also to generate buy-in and acceptance of the new process by both contracted residential agencies and state-employed staff.

Case managers received general training on performing assessments and SIS items. Those who perform assessments on clients who receive residential services will receive additional training on assessment items that are critical to the residential algorithms and about information that needs to be documented in the comments boxes on the assessment in order for the resource manager to make adjustments to the EOS Worksheet. Resource managers attended two days of training on completing the residential rates calculator. A *Resource Manager's Guidebook* was also developed to serve as a reference tool for resource managers who are in the field conducing residential rate-setting meetings. Resource managers are also working locally with their case managers to provide training on a case-specific basis regarding what needs to be documented in the assessment in order to provide justification for the resource manager to make manual adjustments to the calculated rate. Employees of residential agencies were invited to a series of three sessions over the course of the year prior to implementation. These sessions focused on an overview of the new assessment process, SIS assessment,

and the rate-setting meeting. Sessions were held in all six geographic areas of the state, and resource managers worked closely with providers to encourage at least one person from every agency to attend these sessions.

Evaluation of Application

The new residential rate-setting process in Washington State is showing excellent reliability and validity. To get a good prediction of residential rates, several items needed to be added to SIS. Locally added items that affect residential rate setting include questions about sleep patterns and details regarding seizures and how well controlled they are, frequency and amount of support needed to successfully apply any prescribed home treatments or therapies, and amount of protective supervision needed. Diabetes Management was added to the Medical Supports scale. The SIS behavioral scale was enhanced by adding questions about attention-seeking, uncooperative, agitated or overreactive, and obsessive or repetitive behaviors. Frequency, severity, and modifiability of the most prominent behavior are also documented.

Because Washington State DDD contracts with residential providers and because all persons will need to be assessed before the total contract amount for an agency can be determined, assessed rates will not take effect until July 1, 2008. A shadow year process will be occurring during the first year of assessments whereby the assessed rate will be calculated, but the existing rate will remain unchanged. Data throughout the shadow year will be used to refine algorithms for enhanced predictability and to meet the expectation of cost neutrality. Ongoing evaluation and enhancement to the algorithms is expected to continue indefinitely.

The Arduin Benchmark

by Jos van Loon

Arduin is a Dutch organization providing services for people with intellectual disabilities. In Arduin, a shift took place about 8 years ago from facility-centered services to a quality of life and individualized supports approach in services and supports for persons with intellectual disabilities (Van Loon & Van Hove, 2001). Arduin implemented the four-component process to supports assessment, provision, and monitoring referenced in the *Supports Intensity Scale Users Manual* (Thompson et al., 2004) based on the person's identified desired life experiences and goals. They also interfaced this process with the assessment and evaluation of quality of life-related outcomes based on the eight core quality of life domains and indicators suggested by Schalock and Verdugo (2002) and validated in a number of cross-cultural studies (e.g., Schalock et al., 2005). As a part of that process, it was important to develop a formula to translate the scores on the Supports Intensity Scale (SIS) into an individual funding formula. As discussed on the following pages, it appears possible on the basis of SIS to redistribute the support budget of the total organization according to the scores obtained by individuals on SIS.

The method used to allocate resources based on SIS is a relatively simple one. Arduin, as all organizations in the Netherlands, gets paid for the number of clients it serves, and until recently the support needs of the person did not play a role. For 80 people with severe challenging behaviors, there is now an exception: an individualized bonus is available because of their extremely high level of needed support. These "bonuses" allowed Arduin staff to investigate how resource allocation could be based on SIS data. To allay anxieties about "resource allocation," the development of this "demonstration model approach to resource allocation" has been done within the context of a program that has been shown to deliver quality services (Van Loon, 2005; van der Wielen et al. 2003; LFB, 2006). The rationale for the model is that because the finances that are needed to give supports are considered enough to do what is done, one only needs a way to divide these finances in an objective way according to the needs of the individual clients—that is, to get an Arduin benchmark. With this money, an organization should be able to deliver supports to an individual according to his or her assessed support needs.

In the total amount of money Arduin has to support its clients, one can roughly distinguish fixed or stable costs and costs that are dependent on the support needs of the client (i.e., client-dependent costs). We took the total budget of the organization in one year as the point of departure. To determine the client-dependent costs, the stable costs were defined first. The stable costs, which are roughly the same for every client, include costs per place (independent of the person who takes this place), material costs, housing, transportation costs, and other overhead costs (such as indirect wage costs and costs of management and administration). These costs were totalled. The amount of money that is left is the budget Arduin has as its disposal to expend on the supports-dependent costs of all the clients. This supports-dependent budget was divided per client according to the scores on SIS. The following are the key components of the funding formula:

1. The formula starts with the score for SIS Section I: A through F. If the score on Medical Supports Needed (Section IIIa) is larger than 5, or at least one 2 is circled,

the score of Section I was increased. Therefore, the score on Medical Supports Needed was multiplied by a certain factor (in our example, we kept a factor of 1), and then this number was added to the score for SIS Section I.

2. The same was done with the score on Behavioral Supports Needed (Section IIIb), but only for the clients for whom Arduin does not get a bonus because of their severe challenging behavior.

3. The resulting total score of an individual client is then divided by the total score of the whole population and multiplied by the total supports-dependent budget.

4. Then the individual budget is divided according to the scores per part of Section I and, if applicable, the scores on Medical and/or Behavioral Supports Needed.

5. For those clients for whom Arduin gets the bonus because of their severe challenging behavior, step 2 is skipped and an additional amount is added from the total of these bonuses. Therefore, their individual score is divided by the total score for these clients on Behavioral Supports Needed and multiplied by the total budget of these bonuses.

What follows is a short example. Frank has a total score for Section I of 53. In Exceptional Medical Needs, he needs extensive support because of his epilepsy, so here a 2 is circled. He also needs some support in inhalation therapy, so in the total for Exceptional Medical Needs, he gets a score of 3. He has a 2 circled on Behavioral Support Needs because of the need for prevention of tantrums, and he needs some support in prevention of assaults or injuries to others, prevention of property destruction, prevention of self-injury, prevention of nonaggressive but inappropriate behavior, prevention of wandering, and maintenance of mental health treatments. In total, he has a score of 8 on Behavioral Support Needs. His total score in the formula for resource allocation is therefore 53 + 3 + 8 = 64. For him, Arduin does not get a bonus because of challenging behavior. His score of 64 is divided by the total of all scores of all clients at a fixed point in time—in this case, January 1, 2007, which was 19,995—and multiplied by the total supports-dependent budget (14.139.636 euro) to obtain a result of 45.258,15 euro. The calculated cost for his support over 2006 was 46878 euro. It is evident that the total amount based on the SIS formula is equal to the available budget, because this budget was reallocated.

To validate this formula, we took a sample of 11 houses with 1 to 5 clients. For 27 clients who get all their professional support from Arduin, and for whom we had a SIS score, we calculated the supports-dependent costs per person. We found a correlation of 0.585 (+ < 0.01) between these costs and the financial outcomes of the formula based on SIS. This means that 34% of the supports-dependent costs could be explained by the formula using SIS scores. An analysis of the data, however, showed that of these 29 clients, there were 5 with substantial higher or lower supports-dependent costs than indicated by the SIS formula. Two of these clients live in a house where there is constant supervision because of their fragile health situations. One client lives under supervision because she can be suicidal. The fourth client left the house where she used to live to move to more independent living, but she did so after the baseline data were obtained (January 1, 2007). Her actual need of support estimate is lower than what she obtained before and for which the support-dependent costs were calculated. For the fifth client, who has, according to SIS, a higher need of support than she had as of January 1, 2007, a new, more expensive support plan was made on the basis of the "bonus" that became available for her because of her extreme need of support.

After excluding these 5 clients from the database, the correlation for the remaining 22 clients between the support-dependent costs and the financial outcomes of the formula based on SIS is a strong 0.885 with a significance at 0.01. This means that 78% of the supports-dependent costs can be explained by the formula on the basis of SIS scores. The formula used thus seems a valid way of calculating support-dependent costs. However, in deciding on a budget, one should also take into account the person's environment, because the need for constant supervision in the cases mentioned above resulted in extra costs that varied from 45% to 70%.

Individual Resource Allocation in Louisiana

by Jim LeVelle, PhD, and Scott Meche

In 2005, Louisiana selected the Supports Intensity Scale (SIS) to be used statewide for individual support planning and individual resource allocation (IRA). Stakeholders were highly supportive of SIS because it directly measured support needs across activities of living and was not a deficit-based instrument. There was also consensus that SIS could improve needs-based planning in the state and that its use in developing a system for IRA could lead to more opportunities for self-direction. With a fair resource allocation system, people with disabilities could direct their resources more flexibly and government entities could maintain the financial accountability expected by taxpayers.

Several methods for allocating resources were evaluated and, following the lead of states such as Wyoming, South Dakota, and others, Louisiana elected to use methods involving the statistical prediction of individual service costs (Campbell et al., 2005). In this approach, regression analyses are used to identify predictors of individual service costs among a large number of factors. These factors have included items and scores from an adaptive behavior assessment (the Inventory for Client and Agency Planning [ICAP]) and personal factors such as diagnosis, age, and geographic location. In Louisiana, the same basic procedures were used; however, SIS replaced ICAP, and some additional factors were considered in the regression analyses.

In preparing the way for resource allocation, Louisiana had a long road to travel. We were not accustomed to using a standard assessment process statewide and did not have data flowing into a single state database. Also, because other states were not currently applying the regression analysis models involving SIS, it was less clear which variables would best compliment SIS in predicting service costs. We decided to focus on answering four primary questions related to IRA before proceeding:

1. Are there support needs not included in SIS that could enhance prediction of service costs?

2. Are there personal characteristics or other factors that could enhance prediction of service costs?

3. Are we able to administer SIS reliably using support coordinators and, if so, what systems are necessary to maintain reliability statewide?

4. How can we collect and analyze the data efficiently?

A program committee was developed to address the first two questions. This committee studied SIS and conducted assessments with a few willing participants in the Baton Rouge area. They also reviewed studies conducted in other states that focused on determining predictors of service costs and reviewed individual assessments and plans to identify items that could be useful to planning and IRA. The following items concerning support needs and other personal factors were then compiled to form a homegrown compliment to SIS that would later be named LA PLUS. This tool addressed material support needs (e.g., power wheelchairs, augmentative communication devices), vision and hearing needs, communication assistance needs, protective

supervision needs, behavior needs (via a brief behavior intensity scale), the type and frequency of medical services needs, risk needs (via a brief risk assessment tool), sleep needs, and pain relief needs. Additionally, it included medical diagnoses, current medications, a cursory vocational assessment, a brief satisfaction questionnaire, and questions concerning current and preferred supports and living arrangements.

Our next step was to test the reliability of SIS and LA PLUS to determine if support coordinators could implement the tools with at least 80% reliability. Marc Tasse, PhD, an SIS author, assisted Louisiana by training key personnel who in turn trained a large group of support coordinators in conducting the assessments using SIS and LA PLUS. An independent expert in assessment was then employed to test the inter-rater reliability of the support coordinators. Using methods that allowed for 92 pairings of reliability across 46 assessors, this expert found that 43 of the 46 assessors met the criteria of 80% reliability or greater. Of those 43, the average interrater reliability was 86.2% for SIS and 90% for LA PLUS. Findings also led to some adjustments in SIS/LA PLUS training curricula and supported the need for on-site observations following training. The conclusion was that Louisiana could probably obtain and maintain reliable assessments statewide utilizing support coordinators if the initial training was comprehensive, on-site observations were conducted following training to ensure proper administration, and systems for randomly monitoring assessment results were in place.

At the time of this publication, about 3,500 SIS and LA PLUS assessments have been conducted across the state. However, in order to evaluate our ability to develop an IRA model using SIS and LA PLUS instruments, we restricted our study to the Baton Rouge area and included two developmental centers. The assessments were conducted across all developmental disability service types and settings and with all age groups. Restricting the geographic region and number of people involved in the assessments provided an opportunity to refine methods for assuring reliable assessment, to evaluate our skills in developing a workable model, and to develop methods for efficiently collecting and transferring data into our database. Important to this latter goal was the development of automated versions of SIS (with AAIDD permission) and LA PLUS. With these electronic tools, we could create a seamless system whereby electronic assessments could be completed, automatically scored, and uploaded for real-time review and entry into the state's database. Automatic summary reports and triggers relevant to planning were also created at this time.

In conclusion, Louisiana's IRA study involved the assessment of 700 people receiving waiver services, 300 people receiving services through small Immediate Care Facilities for the Mentally Retarded (ICFs/MR), and another 300 people receiving services in large developmental centers. From this sample, regression analyses were conducted and predictors were selected. Findings indicated that combined predictors could account for 82.3% of the variance in service costs. Although these results are highly encouraging, the sample did not include individuals from other regions of the state. For this reason, an additional 900 assessments will be added to the study from across all regions of Louisiana. These assessments will be used to refine the current IRA model, and completion is sometime in 2008. It is expected that refinements in the electronic assessment process will also be finalized by this time.

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Useful Web Sites

Information on the Supports Intensity Scale..www.siswebsite.org

Electronic *SIS Vantage* newsletter (Free sign-up)
....http://www.siswebsite.org/Newsletter/

SIS presentation..
...........................http://www.siswebsite.org/galleries/default-file/SISpresentation.pdf

**The American Association on Intellectual
and Developmental Disabilities**..http://www.aaidd.org

Electronic *AAIDD F.Y.I.* newsletter (Free sign-up)..................http://www.aaidd.org/FYI/

AAIDD online bookstore..http://bookstore.aaidd.org

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