Final Report
Fiscal Year 2009-2010

Report to the Legislature on the Agency’s Implementation of the Questionnaire for Situational Information (QSI) Assessment

October 1, 2009

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Executive Summary

The Agency for Persons with Disabilities (APD) works in partnership with local communities to support people with developmental disabilities in living, learning, and working in their communities. APD provides critical services and supports for its customers to reach their full potential. The Agency serves individuals with spina bifida, autism, cerebral palsy, Prader-Willi syndrome, and mental retardation.

The Agency developed an assessment instrument known as the Questionnaire for Situational Information (QSI) to gather information about the support needs of its customers. APD has had five (5) studies conducted on the QSI to determine its reliability and validity in meeting the needs of APD customers. Final reports have revealed that overall the QSI has met reliability and validity standards; that is, the QSI generally measures what it is intended to measure and does so consistently across time and across the assessors administering the assessment. These standards measure test-retest reliability, inter-interviewer reliability, and concurrent validity. Additionally, the findings support that the three (3) subscales within the QSI which measure a customer’s functional, physical, and behavioral status possess ample face and content validity; that is, they measure the types of things that are useful in planning supports. Further, the QSI uses many of the same criteria to assess its customers that are used by other similar validated instruments, such as the Supports Intensity Scale (SIS) and the Inventory for Client and Agency Planning (ICAP). For these and similar terms, see the Glossary beginning on page 25. A discussion of the SIS and ICAP begins on page 11.

The Agency assessed all customers receiving services through the Agency’s Medicaid Home and Community-Based Services waivers by June 30, 2009. As of September 17, 2009, 11,937 customers waiting to enroll in a Medicaid waiver have also been assessed, comprising 62.9% of the total of 18,977 customers waiting for waiver services. The Agency will continue to conduct QSI assessments for customers who are waiting for waiver services.

The Agency is committed to ongoing improvement of the QSI so it meets both the needs of the Agency and its customers. Accordingly, the Agency has conducted two (2) follow-up studies with the goal of enhancing the QSI.

In the Fiscal Year 2008-09 General Appropriations Act (GAA), the Legislature appropriated to the Agency additional non-recurring funds (Specific Appropriation 278, $3,135,802) to expedite the completion of assessments for all customers receiving services through the Home and Community-Based Services waivers using the QSI. This funding was in addition to the yearly recurring funds of $4,583,612 and resulted in a total of $7,719,414 available for Fiscal Year 2008-2009. For Fiscal Year 2008-09, the total expenditures for QSI assessments from this appropriation were $6,113,755. The budget in recurring funds for QSI assessments for Fiscal Year 2009-2010 is $4,364,181. As of September 3, 2009, the Agency had expended $459,585 of this amount. APD did not receive any nonrecurring funds for Fiscal Year 2009-2010.
At present, the Agency is using the QSI assessment results primarily to provide input to a customer’s support planning process. The results of the QSI assessment offer a comprehensive view based on a systematic analysis of a customer’s needs and challenges. The QSI assessment results can indicate where additional supports would be useful for the customer to live, work, and participate in his or her community. A second potential use of the QSI assessments is as one of many factors used to determine a customer’s individual budget for services. Examples of other potential considerations in calculating a customer’s individual budget may be the customer’s age and living situation. APD is conducting research and analysis on an individual budget system to submit a plan to the Legislature in accordance with proviso in the Fiscal Year 2009-2010 General Appropriations Act for consideration for future implementation.
Introduction

The Agency for Persons with Disabilities (APD) provides services to individuals with developmental disabilities in accordance with the eligibility requirements established in Chapter 393, Florida Statutes. To provide appropriate services, APD uses a comprehensive assessment process to identify a customer’s service needs. The results of the comprehensive assessment process are used to develop a plan of care, or cost plan, that lists the services required by the customer, as well as the community, state, and personal resources that will be used.

Subsection 393.0661(1), F.S., requires the Agency to use “appropriate assessment strategies.” The Agency has developed an assessment instrument called the Questionnaire for Situational Information (QSI) for use as part of the Agency’s comprehensive assessment process. The Agency began administering the QSI to its customers in January 2008. All of the Agency’s customers enrolled in one of the Home and Community-Based Services waivers and 62.9% of its customers on the wait list for waiver services have been assessed using the QSI as of September 17, 2009.

Subsection 393.0661(1) (a), F.S., also requires APD to use an assessment instrument that is reliable and valid. APD contracted with the Center for Inclusive Communities at the University of South Florida to perform five (5) studies to evaluate the QSI’s reliability and validity. Final reports have revealed that the QSI has met reliability and validity standards; that is, overall the QSI measures what it is intended to measure and does so consistently across time and across the assessors administering the assessment. These standards measure test-retest reliability, inter-interviewer reliability, and concurrent validity. Additionally, the findings support that the three (3) subscales within the QSI which measure a customer’s functional, physical, and behavioral status possess ample face and content validity; that is, they measure the types of things that are useful in planning supports. Further, the QSI uses many of the same criteria to assess its customers that other similar validated instruments use, such as the Supports Intensity Scale (SIS) and the Inventory for Client and Agency Planning (ICAP).

The Agency is committed to ongoing improvement of the QSI so it meets both the needs of the Agency and its customers. Accordingly, the Agency has conducted two (2) follow-up studies with the goal of enhancing the instrument.

To apprise the Legislature of the Agency’s implementation of the QSI and the evaluation of its validity and reliability, proviso language in the Fiscal Year 2008-09 General Appropriations Act requires the Agency to:

provide information on the assessment process, the demonstrated reliability and validity of the assessment tool, the scoring of the assessments, the number of assessments conducted, the plans for using the data collected through the assessments, and the cost of the assessments. A report is required to be submitted to the chair of the Senate Fiscal Policy
and Calendar Committee and the chair of the House Policy and Budget Council by October 1, 2009.

This is the third and final status report to be submitted by the Agency; the first was submitted October 1, 2008, and the second on March 6, 2009, to provide information on an interim basis. This report provides updated information about the QSI assessment process, follow-up research to studies to establish the reliability and validity of the QSI, the scoring of the QSI assessments, the number of QSI assessments conducted to date, and the cost of the QSI assessments.
The QSI Instrument and the Assessment Process

The QSI instrument assesses the support needs of each customer served by the Agency. The individual results, along with a variety of specialty assessments, are then used as a part of a comprehensive support planning process. In addition to the QSI results, the support plan and cost plan are based upon specialty needs assessments (such as physical therapy, occupational therapy, and behavior analysis assessments), and the preferences, interests, talents, attributes, and needs of the customer. Additionally, this support planning process includes a prior service authorization review, and input from a team of people who are involved in the customer’s life, including trained and certified waiver support coordinators.

The data from the QSI provides key information regarding the customer’s needs and helps the customer, his or her family or guardian, and the customer’s waiver support coordinator to identify the type of supervision, residential living arrangements, training, specialized therapy, or other services that may be needed. Such services may be provided through a variety of sources including community resources, individual and family resources (natural supports), the Medicaid State Plan, other federal and state agencies, and the Home and Community-Based Services waiver.

The QSI Instrument

The QSI collects information about a customer that describes his or her life situation for the purpose of planning supports. The QSI has six (6) major sections. The following three (3) sections are not scored:

- General Information - contains basic demographic information such as age, address, and primary and secondary diagnosis.
- Life Change and Adjustment - contains information on the customer’s life changes that have occurred over the last 12 months, e.g., a move from one living situation to another or a caregiver health issue.
- Community Inclusion - contains information on the customer’s support needs in order to live, work, and participate in his or her community.

The following three (3) sections are scored and comprise the three (3) subscales of the QSI:

- Functional Status - contains information on the customer’s support needs during typical daily activities due to physical challenges such as with sight, hearing, communication, and ambulation.
- Behavioral Status - contains information on the customer’s mental health and behavioral situation.
- Physical Status - contains information on the customer’s health and physical concerns, including medical conditions that he or she experiences and medications taken on either a routine or emergency basis.
The responses to the questions contained in the QSI provide a comprehensive view of important dimensions of the customer’s abilities and needs. Using a standardized instrument ensures that all critical information is compiled and available for consideration during the support planning process. These questions are scored on a numerical basis, generating scores for each of three (3) scored parts (functional, behavioral and physical status areas) as well as an overall score indicating a level of need.

**QSI Administration Process**

The Agency has determined a specific process for gathering information to respond to the questions contained in the QSI instrument. As further described below, QSI administrators are trained in this process to ensure its consistent application.

The process includes interviews with respondents and document reviews. For instance, the QSI administrator interviews the customer with a developmental disability, the customer’s guardian (if appropriate), and members of the customer’s family (if invited by the customer or guardian). The QSI is administered using plain language the customer, guardian, and his or her family can understand. Caregivers, service providers, and health care personnel may also speak with and provide information to the QSI administrator. The QSI administrator reviews the customer’s records maintained by the waiver support coordinator, recent assessments, progress notes from medical records, school records, previous support plans, and relevant information from other collateral sources.

APD has determined that an average of four (4) assessments per week can be conducted by each QSI administrator. This reflects the time required for record reviews; appointment scheduling; travel; interviewing the customer, family, and others (which typically takes 2-3 hours per interview), filling out and completing the QSI instrument using a web-based system; and any follow-up activities that are needed to finalize the QSI assessment results.

**Frequency of Administration**

APD intends to re-administer the QSI to each customer every three (3) years, in accordance with the standard established by professionals practicing in the field of developmental disabilities. However, the QSI will be re-administered more frequently if a customer experiences a major life-changing event. A few examples of the many such events that might require the QSI to be re-administered are a move from one residential setting to another, changes in caregivers, a behavior or health change that requires new medications or monitoring, aging out of a level of services (e.g., school), or major improvements in a customer’s cognitive or physical condition. This re-administration of the QSI enables the Agency to determine whether a customer requires a change in the nature or level of supports given his or her new situation.

**QSI Administrators**

The QSI is administered exclusively by Agency employees who have been certified as QSI administrators. Each QSI administrator must have participated in and passed a rigorous three-day training program that includes case studies, practice and demonstrated competency with the web-based QSI assessment instrument system, and obtaining a
passing score on an exam featuring a case study. Training is provided by Agency staff members who have met specific standards for competency in QSI administration and training.

Additionally, QSI administrators must be re-certified within one (1) year of their original certification and must be re-certified every two (2) years thereafter. Recertification of the Agency’s assessors was completed September 17, 2009.

QSI administrators must have a minimum of a bachelor’s degree from a college or university and four (4) years of professional experience working with individuals with developmental disabilities. They must also possess sufficient skills to use a web-based assessment system.
Validity and Reliability of the QSI

Section 393.0661(1) (a), F.S., requires the Agency to use an assessment instrument that is reliable and valid.

APD has had five (5) studies conducted on the QSI to determine its reliability and validity in meeting the needs of APD customers. The Agency contracted with the Florida Center for Inclusive Communities (FCIC) at the University of South Florida to coordinate and conduct these studies of the QSI. Dr. Susan Havercamp served as the principal investigator. The FCIC subcontracted with the American Association on Intellectual and Developmental Disabilities (AAIDD) and the Human Services Research Institute (HSRI) for their assistance and support in this research. AAIDD is a professional membership organization, and HSRI is a consulting firm.

Final reports have revealed that overall the QSI has met reliability and validity standards; that is, the QSI generally measures what it is intended to measure and does so consistently across time and across the assessors administering the assessment. These standards measure test-retest reliability, inter-interviewer reliability, and concurrent validity. Additionally, the findings support that the three (3) subscales within the QSI which measure a customer's functional, physical, and behavioral status possess ample face and content validity; that is, they measure the types of things that are useful in planning supports. Further, the QSI uses many of the same criteria to assess its customers that are used by other similar validated instruments, such as the Supports Intensity Scale (SIS) and the Inventory for Client and Agency Planning (ICAP).

After initially establishing an instrument’s validity and reliability, developers then begin a continuing process of alternatively designing enhancements to an instrument to improve validity and reliability and then testing the extent to which the enhancements do in fact improve validity and reliability. The Agency is committed to ongoing improvement of the QSI so it meets the needs of both the Agency and its customers. Accordingly, the Agency has conducted two (2) follow-up studies with the goal of enhancing the QSI.

The results are discussed below.

Validity Studies

Validity determines whether an assessment instrument measures what it was intended to measure. For a needs assessment instrument, a validity study is conducted to determine if the instrument accurately determines the needs of the individual in the areas that it measures. For the QSI, this would be functional, behavioral, physical (health) status and the overall level of need. For example, one question to be answered might be “do the QSI’s questions regarding an individual’s medical circumstances accurately reflect his or her health needs”?

The QSI incorporates material from an assessment instrument previously developed by the Agency called the “Florida Status Tracking Survey” (FSTS), as well as new questions to make the assessment more comprehensive and updated. The Agency had conducted
studies to assess the validity of the FSTS. These studies established acceptable construct validity (the FSTS measured the concepts it intended to measure) and concurrent validity (the FSTS accurately predicted the similar value contained in another instrument) for the FSTS.

Recent studies assessed content, face, construct, and concurrent validity of the QSI. A description of the studies and the results obtained thus far follows.

a. Content, Face and Construct Validity

Content validity is the systematic examination of the needs assessed so that items or questions selected for inclusion in an instrument represent what is intended to be measured. In the case of the QSI, the items should measure functional status, behavioral status, and physical status.

Face validity, as part of construct validity, concerns whether the assessment seems to contain the questions that pertain to the needs of people with disabilities. Construct validity is the extent to which the test or instrument measures a desired theoretical construct or trait. For the QSI, this construct would be the need for assistance or support.

The University of South Florida subcontracted with HSRI for a group of ten (10) content experts to analyze content, face, and construct validity. This group included both self-advocates and professionals in the field of developmental disabilities. The content experts were provided with a packet containing the QSI, the training manual, a brief description of the instrument’s history along with a letter describing the purpose of the study, and instructions to complete the review.

Regarding content validity, the investigators concluded that “the items in each scale are representative of the topic areas. Reviewers, however, sometimes observed that the scales could be expanded to cover additional ground within a topic area [functional, behavioral, or physical status]. On balance, however, the reviewers indicate that the items within each scale amply cover essential aspects within each targeted area.”

Regarding face validity, the investigators stated that the QSI’s three (3) scales (functional, behavioral, and physical status) appear to measure what is intended: the items in each scale do refer to the topic area targeted.

The investigators stated that the study offers some support for the construct validity of the three (3) scales. First, the scales have both face and content validity, a requisite for having construct validity. Second, reviewers stated that the QSI’s scales compared favorably with those of similar widely-used needs assessment instruments like the Supports Intensity Scale (SIS) and the Inventory for Client and Agency Planning (ICAP).1 The investigators indicated

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1 The ICAP measures both adaptive and maladaptive behaviors and gathers additional information to determine the type and amount of special assistance that people with disabilities may need. The ICAP features two sections, one each measuring adaptive behavior and maladaptive behavior.
that “construct validity for any measure is developed over time as a preponderance of evidence builds to illustrate that the measure is aligned with a targeted hypothetical construct, such as ‘the need for assistance or support.’” They recommend that additional studies be done, for instance, to assess how well the QSI’s scales compare to other tools like the SIS and ICAP that measure similar constructs. (Note that the concurrent validity study performed by the principal investigator found correlations between the scales of the SIS and the QSI “within the moderate range of correlation indicating a substantial relationship.” Section b., below, discusses this study.)

Among reviewers’ recommendations were that the QSI assessment’s language be more “people first” oriented, that the scaling and weighting of questions in determining scores be reviewed, and that the QSI include more questions regarding habilitative needs, given the QSI’s strong emphasis on adaptive daily living skills.

The scaling and weighting of questions in determining scores have been reviewed through a factor analysis and repeat item analysis by the principal investigator and are discussed below. Other recommendations are currently under review by the Agency. For instance, the Agency could revise the questions in the Community Inclusion section to address habilitative needs better. These questions are not currently considered in determining a customer’s level score but are useful in planning supports.

b. Concurrent Validity

Concurrent validity is a type of predictive validity and is often used to determine if two (2) similar needs assessments provide similar results in assessing needs. Concurrent validity is used to demonstrate where a test correlates well with a measure that has previously been validated. The two (2) measures may be for the same construct, or for different, but presumably related constructs. Our study examined the correlation of the QSI with the previously validated Supports Intensity Scale (SIS).

The SIS is a tool designed to measure the relative intensity of support that an individual with a developmental disability needs to participate fully in the community. The SIS consists of three (3) sections:

- A support needs scale,
- A section related to protection and advocacy, and
- A section assessing exceptional medical and behavioral support needs.

The SIS has been used as a needs assessment tool in several other states and provides a good comparison tool for validity. If the QSI correlates well with the SIS, this indicates that
the instruments measure similar constructs or characteristics and would have similar applications in planning supports for people with developmental disabilities.

This concurrent validity study was conducted through an examination of the analysis of variance (ANOVA) between the QSI and the SIS for a sample of 100 individuals. The University of South Florida contracted with the American Association on Intellectual and Developmental Disabilities, who completed 100 valid SIS interviews by October 2008.

The principal investigator examined the Pearson product moment correlations for the QSI functional scale, the QSI behavioral scale, the QSI physical scale, and the QSI total score with the corresponding scales and score of the SIS. This analysis compares how the change in one variable relates to the change in a corresponding variable, with a correlation of 1.0 indicating that given a change in one variable, the other variable changes by the same amount in the same direction. The investigator found that these correlations ranged from .59 to .66. Under widely accepted statistical standards, a correlation above .35 is desired. Since these correlations were all above the .35 threshold, they demonstrated concurrent validity and were within the moderate range of correlation indicating a substantial relationship.

Table 1. Pearson product moment correlations between the SIS and QSI

<table>
<thead>
<tr>
<th>SIS Functional</th>
<th>SIS Community</th>
<th>SIS Learning</th>
<th>SIS Employment</th>
<th>SIS Health Safety</th>
<th>SIS Social</th>
<th>SIS Section 1 Total</th>
<th>SIS Medical</th>
<th>SIS Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>QSI Functional</td>
<td>0.74</td>
<td>0.48</td>
<td>0.50</td>
<td>0.54</td>
<td>0.65</td>
<td>0.52</td>
<td>0.66</td>
<td>0.60</td>
</tr>
<tr>
<td>QSI Behavior</td>
<td>0.13</td>
<td>0.25</td>
<td>0.07</td>
<td>0.14</td>
<td>0.16</td>
<td>0.32</td>
<td>0.21</td>
<td>0.08</td>
</tr>
<tr>
<td>QSI Physical</td>
<td>0.52</td>
<td>0.26</td>
<td>0.28</td>
<td>0.36</td>
<td>0.53</td>
<td>0.37</td>
<td>0.46</td>
<td><strong>0.59</strong></td>
</tr>
<tr>
<td>QSI Total</td>
<td>0.61</td>
<td>0.45</td>
<td>0.38</td>
<td>0.46</td>
<td>0.59</td>
<td>0.55</td>
<td><strong>0.59</strong></td>
<td>0.54</td>
</tr>
</tbody>
</table>

Expected strong correlations appear in bold typeface and are shaded. Other correlations were not predicted to be strong and thus are not considered in determining concurrent validity.

Reliability Studies

For an assessment to be reliable it must first be found to be consistent in its measurement across time and across interviewers. Regarding the time element, the question to be answered is “are QSI assessment results the same when the QSI is administered to an individual at one point in time and then re-administered to the same individual at a later point in time, provided there has been no change in that individual’s situation”? In regard to the

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2 See Glossary on page 26 for definition.
interviewer element, the question to be answered is “does the assessment obtain sufficiently similar results when administered to the same individual by different interviewers”?

Three (3) reliability studies have been completed regarding the QSI: test-retest reliability, inter-interviewer reliability, and item analysis.

a. Test-Retest Reliability

Test-retest reliability is a process used to assess the consistency of a measure from one time to another. In this test, QSI assessments were administered twice by the same QSI administrator for the same individual within a 2-3 week time period. The resulting scores of the two (2) QSI assessments were compared and analyzed. A high agreement between the scores from the two (2) assessments indicates strong test-retest reliability.

The Agency conducted 136 assessments statewide specifically for this study. Eleven (11) assessments were eliminated from the study as they had missing or unusable data. Initial data was sent to the principal investigator on August 22, 2008, and requested updated data and descriptive data was forwarded to the principal investigator on September 22, 2008.

The principal investigator examined test-retest reliability for two (2) groups: the total group of 125 valid assessments and a subsample of those who had not had major life changes during the interim between the two (2) administrations of the assessments, comprised by 111 persons. This subsample was examined since having a major life change could lead to legitimately different results in a second QSI administration.

The principal investigator reported that the test-retest reliability coefficients for both groups met or exceeded required thresholds (research standards) and were comparable to those reported for similar needs assessment instruments, including the Supports Intensity Scale (SIS), the Service Need Assessment Profile (SNAP), and the North Carolina Support Needs Assessment Profile (NC-SNAP). ³

As shown in Table 2, scores were highly stable over the interval of several weeks for both the total group and the “no life changes” subsample. Pearson product moment correlation coefficients ranged from .86 to .94 for the entire sample and from .88 to .94 for the no life change subsample. Suggested reliability should generally be .80 or above for psychometric instruments (Anastasi and Urbina in Haervcamp, 2009). As expected, test-retest correlations were greater for the subsample of individuals who did not experience a major life change during the interim between the two (2) administrations of the assessment.

³ The SNAP is an Australian instrument designed to measure the support hours needed by individuals with disabilities living in the community. The NC-SNAP is intended to assess an individual’s intensity of need for services.
Table 2. Pearson product moment correlations between QSI time 1 and time 2

<table>
<thead>
<tr>
<th></th>
<th>Total Sample N=125</th>
<th>No Life Changes N=111</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional</td>
<td>.94</td>
<td>.94</td>
</tr>
<tr>
<td>Behavioral</td>
<td>.87</td>
<td>.90</td>
</tr>
<tr>
<td>Physical</td>
<td>.90</td>
<td>.90</td>
</tr>
<tr>
<td>Level Estimate</td>
<td>.86</td>
<td>.88</td>
</tr>
<tr>
<td>(Overall)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. Inter-Interviewer Reliability

Inter-interviewer reliability is used to assess the degree to which different raters (the QSI administrators, in the case of the QSI) give consistent ratings of the same individual using the QSI assessment.

QSI administrators completed a sample of fifty (50) assessments for use in inter-interviewer reliability studies by July 25, 2008, and the Agency provided data to the principal investigator for analysis by October 1, 2008. Results are shown in Table 3. The accepted industry standard for coefficients for inter-interviewer reliability developed by Cicchetti and Sparrow (1981) are 0-.39, Poor; .4-.59, Fair; .60-.74, Good; and .75-1.00, Excellent. The total score inter-interviewer reliability correlation was .74 (sum of scores), and the scales showed correlations at .87 for functional status, .48 for behavioral status, and .78 for physical status. The reliability correlation for the estimated level (overall score) was .45. To improve the behavioral and estimated level reliability correlations, the principal investigator suggested that APD conduct a factor analysis and repeat item analysis to further analyze how the QSI is scaled and weighted to determine the overall estimated level and specific level scores. Therefore, APD has contracted for these studies, the results of which are discussed below.

Table 3: Pearson product moment correlations (Pearson’s r) between QSI time 1 and time 2 (n=50)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pearson’s r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional</td>
<td>.87</td>
</tr>
<tr>
<td>Behavioral</td>
<td>.48</td>
</tr>
<tr>
<td>Physical</td>
<td>.78</td>
</tr>
<tr>
<td>Total (Sum of scores)</td>
<td>.74</td>
</tr>
<tr>
<td>Estimated Level (Overall score)</td>
<td>.45</td>
</tr>
</tbody>
</table>
c. Item Analysis

Item analysis is used to show how items relate to each other and the scores to which they contribute. Internal consistency considers the contribution of a particular question or item to the overall score. In other words, how does an instrument’s validity improve given the addition of a particular question? Item agreement measures the extent to which various questions or items on an assessment agree; basically, whether some questions measure the same characteristics of an individual. Item discrimination determines whether a particular question contributes to the discrimination or determination of the overall score.

In September 2008, the principal investigator began a statistical analysis of the internal consistency, item analysis, and item discrimination of the QSI. For use in this process, Agency staff provided scores from a random sample of 500 assessments to the principal investigator on September 2, 2008.

The principal investigator examined the internal consistency of the QSI’s three (3) scales. Internal consistency is a measure of the similarity of elements of the items on the scale. The report revealed that the QSI functional status scale had an acceptable internal consistency coefficient. However, the other two (2) scales (behavioral and physical) had internal consistency coefficients below the accepted standard. The thirty-six (36) items of the QSI which contribute to the estimated level had an internal consistency coefficient that approached the minimum level (.84, compared to a desired threshold of .85).

The principal investigator discussed two possible reasons for these findings. One is that the physical and behavioral subscales may combine two different types of items: items which measure support needs and items describing individual characteristics. By measuring a concept in different ways, more variation is introduced into the measurement. Another possible reason for these findings is that items in a single scale might be measuring not a single concept but more than one concept. For example, the calculation of the score for the physical subscale includes some behavior-related items; possibly one or more of these items might not be related closely enough to physical health to merit inclusion in calculating the physical score.

The principal investigator suggested two strategies for improving internal consistency. One is to conduct an exploratory factor analysis. This type of study examines interrelationships among the items or questions in the QSI instrument. The results would highlight the concepts the QSI is measuring. For instance, the Agency may find that the QSI’s measurement of physical or behavioral status is too broad and could be more narrowly defined. By measuring these concepts in more specific ways, the internal consistency would be improved. As will be discussed below, APD contracted for an exploratory factor analysis and found that more specific measurement of the constructs is possible and does improve internal consistency. A second strategy is to rewrite some questions to be more similar in their approach to measurement. This strategy would require more extensive readministration of the QSI and so is being considered for longer-term implementation.

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4 In fact, results of a subsequent study (a factor analysis) suggest that the questions comprising the physical subscale may be measuring as many as five factors, or narrower individual concepts, supporting this theory.
Ongoing Research to Improve the Instrument

Assessment instruments generally undergo a continual process of refinement. There are a variety of ways to improve an instrument, from changes in the way that assessors are trained or administer an instrument to revisions in the scoring formula to rewording of questions or additions or deletions of questions in calculating scores.

From its base of overall good validity and reliability, to seek to enhance aspects of the QSI’s inter-interviewer reliability and internal consistency, the Agency contracted for an exploratory factor analysis and a repeat item analysis as recommended by the principal investigator. These studies were completed June 30, 2009. The purpose was to summarize the interrelationships among scale items in a concise but accurate manner to better understand and measure the underlying construct (e.g., support needs). Through this analysis, the principal investigator posited that the QSI is comprised of not three (3) but nine (9) factors which she titled “Community Participation,” “Self-care,” “Behaviors,” “Valued Social Roles,” “Employment,” “Physical Health,” “Emergency Health Needs,” “Seizure Needs,” and “Sensory Problems.” (Note that the principal investigator included as part of this analysis some of the QSI questions that were not included in the three (3) scored subscales: questions in the “Community Inclusion,” “Fulfillment of Valued Adult Roles,” and “Employment Information” sections.) By classifying questions into the nine (9) factors in this proposed factor solution, every question seemed to contribute to the internal consistency of the QSI scale.

The internal consistency coefficient for the QSI under this proposed factor solution is .92, above the desired threshold. The internal consistency coefficient for the individual factors ranged from .18-.92.5

Additionally, under this proposed factor solution, the patterns of factor intercorrelations are generally consistent with current trends in services and supports for people with intellectual and developmental disabilities. For example, according to the principal investigator, “We see strong relationships between community participation, employment, and attaining valued social roles. We also see relationships between self-care, employment, physical health, seizure needs, and sensory problems.” However, she suggested that the Agency further examine a small number of the questions which did not appreciably contribute to the proposed subscales to which they had been assigned in the proposed factor solution.

Given these encouraging findings, the Agency intends to refine the QSI by contracting for further work on rescoring and rescaling the QSI. Among the questions this work would address is whether to distribute the QSI’s questions differently among the three subscales, create a different set of subscales with the QSI’s questions, exclude questions that do not appreciably contribute to a subscale from calculating subscale scores, or change the scoring system from its 1 to 5 range. APD expects that upon the completion of work developing a new scoring and scaling system, the existing assessments would be able to be used and would simply be rescoring using the newly-developed system. The Agency would then contract for additional studies to evaluate the validity and reliability of the revised QSI instrument.

5 As noted, the principal investigator included some items from the nonscored sections of the QSI. The .18 result was in regard what she termed the Employment factor which incorporates some of these items. There appear to be some data anomalies with one of the three items comprising this factor; when that question was deleted from the factor, the internal consistency coefficient rose to .85, at the desired threshold.
Number of Assessments Conducted

The Agency began administering QSI assessments in late January 2008. Assessments of all customers enrolled in waivers have been completed.

The Agency began conducting assessments in the following order:

1. Customers living in intensive behavioral facilities.
2. Customers selected as part of a statewide random sample for research purposes.
3. Customers with cost plans exceeding $120,000.
4. Customers newly enrolled on a waiver through crisis enrollment.
5. Customers living in residential habilitation licensed facilities.
6. Children in foster care who are on the wait list for services.
7. All remaining customers enrolled in all waivers.
8. All remaining customers on the wait list for waiver services.

As of September 17, 2009, 11,937 customers on the wait list for waiver services had completed QSI assessments. This comprises 62.9% of the 18,977 customers waiting for waiver services on that date. Table 4 below provides the number of QSI assessments completed as of September 17, 2009, by area/region.

Table 4: Customers assessed by area, as of September 17, 2009 (n=42,208)
QSI Assessment Scores

As discussed previously in this report, the QSI has three (3) scored parts and an overall score. Part one (Functional status), two (Behavioral status), and three (Physical status) are scored by indicating the level of support the customer requires in that area. The questions on functional status highlight a customer’s need for assistance during the normal course of a routine day, while the questions on behavioral status focus on any major behavioral issues that might require assistance and intervention. Finally, the questions on physical status address health and physical concerns, including medical conditions that a customer experiences and medications taken on a routine or emergency basis.

For each of the three (3) scored sections of the QSI, there may be up to six (6) possible levels of support that a customer may require. A score indicating an overall level of support for each section is calculated based on the responses to the individual questions in each section. The web-based QSI application calculates scores automatically. Once a score for each section is calculated, an overall estimated level of support can be determined. There are five (5) possible overall level scores for the QSI. These are:

*Level 1—Basic:* A customer receiving this score generally functions independently with some assistance but requires very few formal supports. Most needs can be met by the customer him- or herself through natural and generic supports.

*Level 2—Minimal:* A customer receiving this score requires some supports during the typical day, but staff can work with several individuals at a time. This customer can manage most of his or her medical issues with occasional reminders.

*Level 3—Moderate:* A customer receiving this score may need daily reminders for support but not require the assistance of one (1) staff member for extended durations.

*Level 4—Extensive:* A customer receiving this score might have a behavior plan since the customer may be a threat to him- or herself or others. Typically one (1) support staff member would be required to attend to the customer to assure health and safety. Such support staff members may need specialized training. A prescription from a physician or a therapist may be required as a part of the intervention.

*Level 5—Intensive:* This rating would reflect the need for frequent or perhaps constant assistance in the performance of any typical daily activity due to a customer’s intensive health and behavioral needs. Such behaviors may be harmful to the customer and to others. More than one (1) support staff member may be required to attend to a customer with intensive behavioral issues. Medical conditions may require frequent involvement of medical professionals, such as nurses, and specialized medical equipment and therapies.

The following chart depicts the distribution of scores for level 1 through level 5 from the 42,208 QSI assessments completed as of September 17, 2009.
Table 5: Number and percentage of assessments by QSI level, for customers assessed as of September 17, 2009 (n=42,208)

<table>
<thead>
<tr>
<th>Level</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>3,637</td>
<td>14%</td>
</tr>
<tr>
<td>Level 2</td>
<td>5,491</td>
<td>21%</td>
</tr>
<tr>
<td>Level 3</td>
<td>4,521</td>
<td>17%</td>
</tr>
<tr>
<td>Level 4</td>
<td>2,415</td>
<td>9%</td>
</tr>
<tr>
<td>Level 5</td>
<td>10,398</td>
<td>39%</td>
</tr>
</tbody>
</table>

Table 6: Primary diagnosis, for customers assessed as of September 17, 2009 (n=42,208)

<table>
<thead>
<tr>
<th>Primary Diagnosis</th>
<th>Number of Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Retardation</td>
<td>2,1201 (80%)</td>
</tr>
<tr>
<td>Cerebral Palsy</td>
<td>2,673 (10%)</td>
</tr>
<tr>
<td>Autism</td>
<td>1,977 (7%)</td>
</tr>
<tr>
<td>Spina Bifida</td>
<td>553 (2%)</td>
</tr>
<tr>
<td>Prader-Willi</td>
<td>58 (&lt;1%)</td>
</tr>
<tr>
<td>High Risk</td>
<td>19</td>
</tr>
</tbody>
</table>
Table 7: Distribution of scores by QSI level and primary diagnosis, for customers assessed as of September 17, 2009 (n=42,208)

<table>
<thead>
<tr>
<th>Primary Diagnosis</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Retardation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cerebral Palsy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autism</td>
<td>2,000</td>
<td>8,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spina Bifida</td>
<td>4,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prader-Willi</td>
<td>6,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Risk</td>
<td>8,000</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Number of Customers
Agency Use of the Data Collected by the QSI

At present, APD is using the QSI assessment results primarily to provide input into a customer’s support planning process. As previously discussed, a customer’s support plan is developed using information from a variety of sources, such as specialty assessments, and discussions with the customer and his or her guardian, family, friends, and other valued persons. The results of the QSI assessment offer a comprehensive view based on a systematic analysis of a customer’s needs and challenges. The customer’s responses to the specific questions in the QSI assessment may indicate where additional supports would be useful for the customer to live, work, and participate in his or her community.

A second potential use that is being considered by the Agency for data collected through the QSI assessments is as one of many inputs in determining a customer’s budget for services. Examples of other potential considerations in calculating an individual budget are a customer’s age and living situation. A few states, such as Georgia, Wyoming, and Minnesota, have implemented individual budget systems that use a statistically-based method—basically, an equation developed through regression analysis—to predict individual resource needs. Scores from assessments such as the QSI would contribute to the equation along with other predictor variables proven to affect a customer’s budget needs.

Potential benefits of this budgeting method include providing a rational and equitable basis for allocating the available resources among Agency customers. An individual budget process provides a sound projection of the cost of serving customers, including those on the wait list. An individual budget system can enhance customers’ ability to make choices about their supports and services (known as “consumer direction”) if customers are given flexibility to use allocated funds to best meet their needs within specifically designated categories such as a meaningful day activity, specialized therapies, and health and safety supports. Customers can adjust the services to best meet their needs without requesting increased funding. However, these systems do not guarantee full funding of individual needs and wants.

In proviso language in the Fiscal Year 2009-2010 General Appropriations Act, the Legislature required APD to submit a plan for implementing individual budgets:

From the funds in Specific Appropriation 243, the Agency in consultation with the Agency for Health Care Administration shall develop a plan to establish individual budgets for individuals enrolled in the home and community based services waivers. The plan shall provide for the following: an equitable distribution of available resources among individuals based on an assessment process that includes client characteristics and a valid formal assessment instrument; client choice of services and providers once the individual budget is determined; any formulas necessary to predict resource needs and establish individual budgets; a recommended role for providers and support coordinators during the assessment process to avoid any
potential conflicts of interest; a proposed schedule for implementation; and any suggested statutory revisions necessary to implement individual budgets. The Agency shall consider input from stakeholder groups, including self-advocates, family members, service providers, waiver support coordinators, and advocacy organizations in developing the plan. The plan shall be delivered to the Governor, the chair of the Senate Policy and Steering Committee on Ways and Means, and the chair of the House Full Appropriations.

The Agency is in the process of developing this plan.
The Cost of the Assessments

APD received funding during the 2007 Special Session C (Bill 2-C, Specific Appropriation 124a, $2,291,806) for OPS staff to be hired, trained, and certified to conduct QSI assessments for all customers on the Agency’s Home and Community-Based Services waivers. Staff was funded beginning January 1, 2008. By the end of that month, the Agency began completing the QSI assessment for waiver enrollees living in licensed facilities (group homes). Expenditures for Fiscal Year 2007-2008 funds for assessments totaled $1,628,501.

In the Fiscal Year 2008-09 General Appropriations Act, the Legislature appropriated to the Agency additional non-recurring funds (Specific Appropriation 278, $3,135,802) to expedite the completion of assessments for all clients receiving services through the Home and Community-Based Services waivers using the QSI. This funding was in addition to the yearly recurring funds of $4,583,612 and resulted in a total of $7,719,414 available for Fiscal Year 2008-2009. For Fiscal Year 2008-09, total expenditures for QSI assessments were $6,113,755.

The budget in recurring funds for QSI assessments for Fiscal Year 2009-2010 is $4,364,181. As of September 3, 2009, the Agency had expended $459,585 of this amount. APD did not receive any nonrecurring funds for Fiscal Year 2009-2010.
Glossary

Area or Region—The name for the Agency’s local service district. The areas and region and the respective counties they comprise are:

- Area 1: Escambia, Okaloosa, Santa Rosa, and Walton
- Area 4: Baker, Clay, Duval, St. Johns, and Nassau
- Area 5: Brevard, Orange, Osceola, and Seminole
- Area 6: Charlotte, Collier, Glades, Hendry, and Lee
- Area 7: Palm Beach
- Area 8: Broward
- Area 9: Dade and Monroe
- Area 10: Flagler and Volusia
- Area 11: Hardee, Highlands, and Polk
- Area 12: Citrus, Hernando, Lake, Marion, and Sumter
- Area 13: Indian River, Martin, Okeechobee, and St. Lucie
- Area 14: Suncoast Region: De Soto, Hillsborough, Manatee, Pasco, Pinellas, and Sarasota

Note that there is no Area 5 or 6.

Concurrent validity—A type of predictive validity which is often used to determine if two (2) similar needs assessments provide similar results in assessing needs. Concurrent validity is used to demonstrate where a test correlates well with another test or other measure that has previously been validated. The two (2) tests or measures may be for the same construct, or for different, but presumably related constructs.

Content validity—The systematic examination of the needs assessed so that items selected for inclusion in an instrument represent what is intended to be measured.

Construct validity—The extent to which the test or instrument measures a desired theoretical construct or trait. For the QSI, this construct would be the need for assistance or support.

Face validity—A statistical concept evaluating whether an assessment instrument’s content is accepted as measuring the content intended to be measured.

Home and Community-Based Services (HCBS) Waiver—A program which offers supports and services to assist individuals with developmental disabilities to live in their community. A few examples of the 28 services that APD customers enrolled in one of the Agency’s HCBS waivers may be able to receive are adult day training, respite, and residential habilitation services. HCBS waiver services are funded with state and federal monies.

ICAP—Inventory for Client and Agency Planning. This assessment instrument measures both adaptive and maladaptive behaviors and gathers additional information to determine the type and amount of special assistance that people with disabilities may need.
Inter-interviewer reliability—A statistical concept used to assess the degree to which different raters (the QSI administrators, in the case of the QSI) give consistent ratings of the same individual using the assessment.

Item—A question included in an assessment instrument.

NC-SNAP—North Carolina Service Need Assessment Profile. This assessment instrument is intended to assess an individual’s intensity of need for services.

Pearson Product Moment Correlation—This analysis compares how the change in one variable relates to the change in a corresponding variable, with a correlation of 1.0 indicating that given a change in one variable, the other variable changes by the same amount in the same direction. The Pearson Product Moment Correlation is also known as Pearson’s r.

Reliability—A statistical concept involving evaluating an instrument’s consistency in its measurement across time and across interviewers.

SIS—Supports Intensity Scale. This assessment instrument is designed to measure the relative intensity of support that an individual with a developmental disability needs to participate fully in the community.

SNAP—Service Need Assessment Profile. The SNAP is an Australian instrument designed to measure the support hours needed by individuals with disabilities living in the community.

Subscale—A measure of a specific element of a construct. For example, the main construct measured by the QSI is an individual’s need for support. The subscales of the QSI measure specific elements of this need: need for functional support, physical support, and behavioral support.

Test-retest reliability—A process used to assess the consistency of a measure from one time to another.

Validity—A statistical concept involving evaluating whether an assessment instrument measures what it was intended to measure.

Wait list—The Agency’s record of customers who have expressed a desire to receive Medicaid Waiver services and have met initial eligibility standards.

Waiver Support Coordinator—A Medicaid waiver-enrolled provider who assists a customer with obtaining needed supports and services.