

Analysis of Virginia's Levels System Utilizing the Supports Intensity Scale®

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Abstract

The Virginia Developmental Disabilities Waivers' regulations¹ currently require that, "At least every three years for those individuals who are 16 years of age and older and every two years for those individuals who are ages birth through 15 years of age, or when the individual's support needs change significantly (such as a loss of abilities that is expected to last longer than 30 days), the support coordinator/case manager, with the assistance of the individual and other appropriate parties who have knowledge of the individual's circumstances and needs for support, shall request an updated SIS® assessment." The Department of Behavioral Health and Developmental Services (DBHDS) sought to determine whether there would be stability in the Supports Intensity Scale® (SIS®)-related levels of support if the wording of the regulation were changed from "at least every three years" to "at least every four years." The purpose of this analysis is to inform a Virginia Medicaid policy decision regarding continuing the 3-year SIS-A® administration period for adults, or whether to allow a 4-year period. Results support a new standard assessment period of 4 years. Results also support the existing early re-assessment period in response to indications of significant and sustained changes in the individual. We attribute this to an actual average increase in support needs for those individuals. This substantiates the need for continuing the DBHDS re-assessment policy.

¹ 12VAC30-120-515, F.2.b.

Background and Method

The American Association on Intellectual and Developmental Disabilities (AAIDD) substantiated the “shelf life” of the SIS[®] as being one to three years in a letter² responding to the Virginia Department of Medical Assistance Services (DMAS). The reference is the period for the data studied in the most recent SIS[®] research. It was stated, “There was no basis to recommend that a longer timeframe would ...not yield different results.” AAIDD recommends, “Jurisdictions who choose a long timeframe should have data to justify their decision.” The following analyses purport to do just that. In addition, AAIDD provided DBHDS a preview of an article³, which reports data (2015 Thompson, et. al.) concerning the stability of the SIS[®]. DBHDS reviewed that article from the perspective of potential age cohorts of the population where stability of the SIS[®] may be shorter than for other subgroupings. DBHDS has not at this time analyzed the data as to the ages of those individuals who had an early SIS[®].

In Virginia, the SIS[®] is used for person-centered planning and as a component in the development of supports levels. Virginia uses a seven-level support system that is labelled as level 1, 2, 3, 4, 5, 6, or 7. The system is not exactly ordinal in nature, as intended. Evidence of this is that most persons who were initially a level 2 but experienced an increase in need moved to level 4 as their new level not level 3. For simplicity to the reader, the apparent difference in levels is used as the main statistic here rather than introducing a new statistical variable. It should be noted that the supports levels in Virginia are set by the Virginia scoring algorithm - a proprietary formula. The levels scores are stored in the Virginia Waiver Management System (WaMS).

² Letter dated Feb. 16, 2018, AAIDD to DMAS

³ Shogren, K. A., Thompson, J. R., Shaw, L. A., Grandfield, E. M., & Hagiwara, M. (in press). Detecting changes in support needs over time.

Virginia uses an Annual Medical and Behavior Summary (also known previously as the Annual Risk Assessment), along with monthly phone calls or face-to-face visits for individuals who have been identified to have higher needs or increased risks, quarterly reviews, and annual supports planning meetings to address specific changes in support needs during the interim between SIS[®] administration events.

This study was asked to aggregate results into three groups: >0 to 3 years, >3 to 3.5 years and >3.5 years. To better separate the modes found, the study groups were modified to:

Group 1: >0 to 2.75 years

Group 2: >2.75 to 3.25 years

Group 3: >3.25 years.

To separate the two types of SIS[®] (re-assessment requests and standard period) would require a more detailed analysis, since this data is not included in WaMS.

The WaMS data was queried on March 13, 2018 for all SIS[®] assessments scored to date. There were 31,449 completed SIS[®] records in WaMS as of this date. Of those, there were 5,028 persons with multiple SIS[®] results. The data was further filtered, as the focus of this analysis was for individuals 16 years of age and over. The usual cut-off for administration of a child SIS[®] is 16.

The time frame between SIS[®] assessment periods extends from weeks to beyond 7 years. The data was visualized and reviewed for trends. Next, a formal t-test was applied across the groups. Then the data was further filtered to only interviews conducted with AAIDD qualified interviewers. This was analyzed to confirm the results.

Results

Of the 31,449 SIS[®] records in WaMS as of this date, there are 5,028 persons with multiple SIS[®] results. Of those, 4,607 were at least 16 years of age at the SIS[®] interview.

These 4,607 SIS[®] pairs are charted in Figure 1. The dots appearing in Figure 1 are each pair of SIS[®] results for the same individual. The line in Figure 1 is a 64-point moving average of the SIS[®] results. Averaging is a tool used here as a filter to reveal long-term trends. The result is not sensitive to the choice of 64 points versus larger or smaller choices. Much smaller than 64 loses the filtering, while much greater than 64 converges on the grand average.

Figure 1 reveals a generally decreasing trend up to 3 years.⁴ So, the first question to be answered is: "What is the cause of this trend?"

Given that the standard period for adult SIS[®] administration is 3 years, and Virginia actually takes generally 3+ years, SIS[®] period <=3 years represents those SIS[®] re-administered by special request. These SIS[®] assessments are generally requested by the support team because the needs of the individual have increased. This agrees with Figure 1.

A single t-test assuming equal variance was applied to Groups 1 and 3. Group 2 is used as a statistical buffer since it contains both standard and by-request SIS[®] assessments. Group statistics are presented in Table 1. The statistics are calculated on an individual pair basis, not a 64-point average.

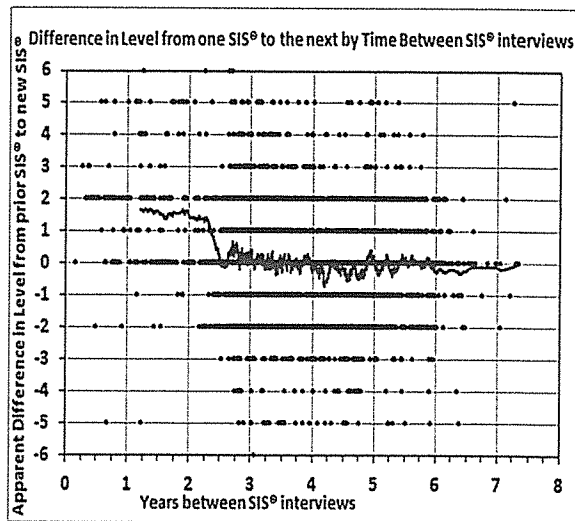


Figure 1. All Adult SIS[®] to SIS[®] Results.

Table 1. Group Statistics, all Adults.

Group	Count	Median Change in Level	Average Change in Level	StDev in Level	Significant?	P value
Group 1	519	0.0	+0.68	1.69	Yes - Requested-SIS [®]	1.64E-26***
Group 2	1,329	0.0	+0.16	1.31	Overlap of modes	n/a
Group 3	2,759	0.0	-0.08	1.42	Yes - Regular-SIS [®]	1.64E-26***
Overall	4,607	0.0	+0.08	1.44	Trend from Requested-SIS [®] to Regular-SIS [®]	n/a

*** P < 0.001 from a single t-test (assuming equal variance)

The P value < .001 corresponds to a two-sided > 99.9% confidence interval for the mean difference with the same degrees of freedom. It is concluded from Table 1 that there is a mean difference between Group 1 (0 to 2.75 years) and Group 3 (>3.25 years) as indicated by the P value < 0.001.

Group 1 demonstrates the flexibility of the administration process to allow for re-assessments due to a change in needs. For this group all were re-assessed earlier than 3 years, surpassing the regulation requirement. The standard deviation for this group was 1.69, the highest of all the groups analyzed.

Group 2 represents the time of overlap between Groups 1 and 3. The average change in

⁴ The exact time of this trend is masked by the time lag of the moving average.

level was +0.16 with a standard deviation of 1.31.

Group 3 represents the proposed 4-year interval period. It has a standard deviation of 1.42. It includes the 2,759 SIS® pairs whose period between SIS® assessments is greater than 3.25 years.

Figure 2 shows the histogram depiction of this data.

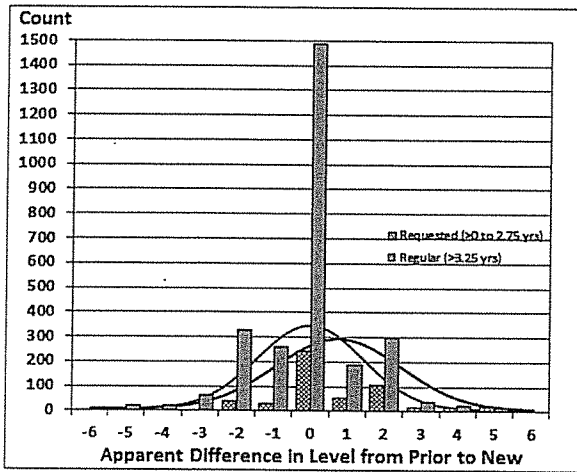


Figure 2. Probability Density, All Adult SIS®.

The above data includes non-endorsed interviewers from 2009 to March 17, 2014⁵. To confirm if the above analysis remains valid, the data was further filtered to only data from AAIDD endorsed interviewers. The data on or after March 17, 2014 consists of 3,656 SIS® interviews. Of those, 3,498 were at least 16 years of age at the SIS® interview and utilized the Adult SIS® or SIS-A®.

The analysis of the remaining 1,749 SIS® pairs is shown in Figure 3 and Table 2. Data is limited with none found beyond 3.89 years between SIS® interviews.

⁵ Virginia began to utilize AAIDD qualified interviewers on this date.

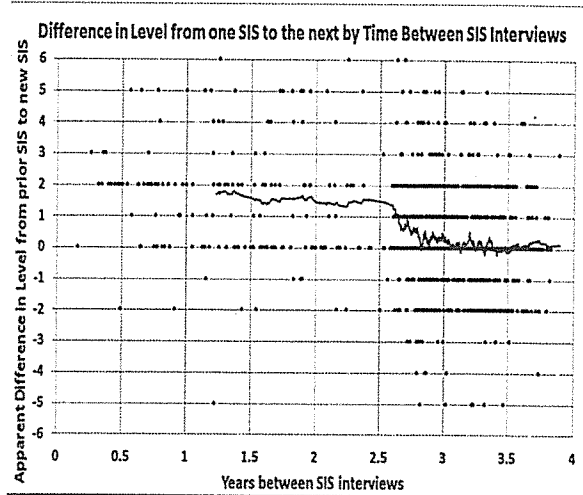


Figure 3. Adult Endorsed SIS® to SIS® Results.

Table 2. Group Statistics, Adult Endorsed.

Group	Count	Median Change in Level	Average Change in Level	StDev Change in Level	Significant?	P value
Group 1	334	0.5	+1.06	1.80	Yes - Requested-SIS ²	1.46E-21***
Group 2	865	0.0	+0.28	1.30	Overlap of modes	n/a
Group 3	550	0.0	+0.08	1.19	Yes - Regular-SIS ² . no data beyond 3.89yrs	1.46E-21***
Overall	1,749	0.0	+0.36	1.42	Trend from Requested-SIS ² to Regular-SIS ²	n/a

*** P < 0.001 from a single t-test (assuming equal variance)

Figure 3 shows the same trend as Figure 1. Table 2 shows the same statistical conclusion as Table 1. The conclusion remains that there is a mean difference between Group 1 (>0 to 2.75 years) and Group 3 (>3.25 years) as indicated by the P value < 0.001.

Summary

The analysis here, of 4,607 SIS® pairs over multiple SIS® assessment periods ranging from weeks to over 7 years, clearly supports:

1. A change in SIS® period from "completed at least every three years" to "completed at least every 4 years." This is supported by a change in mode during Group 2 (2.75 to 3.25 years), followed by a period of relative stability between SIS® assessments in Group 3.

2. The existing re-assessment process. This is supported by Group 1.

As stated earlier, AAIDD indicated that the SIS[®] is stable for at least 3 years based on an analysis⁶ of 82 individuals from another state over SIS[®] assessment periods ranging from 1.69 to 2.62 years. The AAIDD letter stated “there was no basis to recommend that a longer timeframe would ... necessarily yield different results.” The results of Virginia’s study, discussed above, reveal that there is data, based on a larger sample size, to confirm that results are stable over a period of time longer than 3 years.

Recommendations

In reviewing the upcoming article, in press, provided by AAIDD to assist with our review, we noted that the article specifically resonates in several areas with the experiences and observations of DBHDS. One is that clinical judgment has primarily informed the practice of reassessing every three years; the data reflects the stability of the SIS[®]; the age or life changes of the individual at different points in her or his life impacts the need for additional assessments; and the availability of resources for the overall DD population should balance use of funds for assessing with meeting needs.

As expected, the shared article continues to report stability of the SIS[®] for adults. But, the article further addresses three subgroupings by age in a past research article (Thompson, et al, 2015). That study touches on where stability may or may not be as consistent, such as ages 16 through 21. Because DBHDS has not yet analyzed the ages of Group 1, which received re-assessment early, DBHDS is adjusting its proposed policy change on the frequency of the

SIS[®] maximum period from one group to two groups for adults as follows:

Ages 16 through age 21: 3 year maximum period and earlier if indicated.

Age 22 through adulthood: 4-year maximum period and earlier if indicated.

This results in a two-year period between SIS[®] assessments for children; a three-year period for youth in transition; and a new four-year recommended period of time between SIS[®] administration for adults age 22 and older.

⁶ Shogren, K. A., Thompson, J. R., Shaw, L. A., Grandfield, E. M., & Hagiwara, M. (in press). Detecting changes in support needs over time.