



# *Dane County Department of Human Services*

## *Building Bridges Yearly Measures*

December 2021

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## Background

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### About the Program

Building Bridges is a short-term, 90-day mental health stabilization program that is a joint effort between Dane County and area school districts. The program is administered by Catholic Charities, Inc. Diocese of Madison (Catholic Charities). Catholic Charities works in collaboration with Dane County school districts to provide mental health services to the schools' children. The program provides 90-day wrap around support through intensive case management and access to behavioral health resources. When necessary, services are extended to 120 days. Children in 4K through 8<sup>th</sup> grade from participating school districts are eligible for the program.

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The goal of the Building Bridges program is to enhance student emotional health and school success as well as strengthen families' connections to the school and community.

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Building Bridges began during the 2014-2015 academic year as a pilot project with the Sun Prairie school district, Verona school district, and the elementary schools that feed into the Madison East High School attendance area. Later, it expanded to the LaFollette, Memorial, and West High School attendance areas. It has also been active in school districts beyond the City of Madison including: DeForest, Middleton-Cross Plains, Mount Horeb, Monona Grove, Oregon, Stoughton, Waunakee, and Wisconsin Heights.

Funding for Building Bridges primarily comes from General Purpose Revenue (GPR) provided by Dane County Department of Human Services and is nearly matched by each participating school district. The funding is passed along to Catholic Charities, which employs Building Bridges staff.

Building Bridges staff function as a team, with one Clinical Coordinator and one Service Coordinator for each school district.

### Program Need

According to an October 2014 press release from the County Executive's Office, Building Bridges "... grew out of a visit Dane County Executive Joe Parisi had with Dane County's Joining Forces for Families staff, when he asked what were the greatest needs frontline workers in challenged areas were seeing. Surveying school administrators, they had the same reaction: address mental health needs in schools and provide proactive support systems that are best for students."<sup>1</sup> Around this time, the Centers for Disease Control and Prevention (CDC) released the *Children's Mental Health Report* which states, "Mental health is important to overall health. Mental disorders are chronic health conditions that can continue through the lifespan. Without early diagnosis and treatment, children with mental disorders

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<sup>1</sup> Melanie Conklin and Rachel Strauch-Nelson, "School Superintendents, County Exec Announce the Start-up of School-Based Mental Health Teams," *County Executive's Office*, October 16, 2014, <https://exec.countyofdane.com/PressDetail/9123>.

can have problems at home, in school, and in forming friendships. This can also interfere with their healthy development, and these problems can continue into adulthood.”<sup>2</sup>

Children’s mental health continues to be an issue. The CDC cites the following statistics about children’s mental health:<sup>3</sup>

- 9.4% of children age 2-17 years (approximately 6.1 million) have received an ADHD diagnosis
- 7.4% of children age 3-17 years (approximately 4.5 million) have a diagnosed behavior problem
- 7.1% of children age 3-17 years (approximately 4.4 million) have diagnosed anxiety
- 3.2% of children age 3-17 years (approximately 1.9 million) have diagnosed depression
- 1 in 6 U.S. children age 2-8 years (17.4%) had a diagnosed mental, behavioral, or developmental disorder

The *2021 Dane County Youth Assessment: 7<sup>th</sup>-8<sup>th</sup> Grade Report – All Schools Combined* illustrates the prevalence of mental health issues in Dane County’s youth.<sup>4</sup>

In the past 30 days...

- 41% of 7<sup>th</sup> and 8<sup>th</sup> graders “always” or “often” became easily annoyed or irritable
- 36% “always” or “often” felt nervous, anxious or on edge
- 34% feel they “always” or “often” worried too much about different things
- 13% to 14% each report
  - Other students picked on me
  - Other students made fun of me
  - Other students called me names

During the past 12 months...

- 23% of 7<sup>th</sup> and 8<sup>th</sup> graders felt so sad or hopeless almost every day for at least two weeks in a row that they stopped doing some usual activities
- 19% had thought seriously about killing themselves
- 4% attempted to kill themselves
- 5% “frequently” or “occasionally” engaged in self-harm (doing something to hurt yourself on purpose, without wanting to die, such as cutting or bruising yourself)

The report also cites that 14% of 7<sup>th</sup> and 8<sup>th</sup> graders are receiving professional mental health services.

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<sup>2</sup> “Children’s Mental Health Report.”

<sup>3</sup> “Children’s Mental Health – Data & Statistics,” Centers for Disease Control, March 22, 2021, <https://www.cdc.gov/childrensmentalhealth/data.html>.

<sup>4</sup> Dane County Youth Commission.

# The Data

## Timeline and Contextual Considerations

Data included in this report cover three academic years (2018-2019, 2019-2020, and 2020-2021). Because the world is constantly changing and the impossibility of controlling for all external variables, readers must be aware of significant changes that could influence the data year-over-year.

The 2019-2020 and 2020-2021 academic years were significantly impacted by the global COVID-19 pandemic. School districts were forced to switch from in-person services to virtual services and each school district had their own reopening plan. Governmental orders impacting these academic years are listed in chronological order (see Table 1).<sup>5,6</sup>

**Table 1: Timeline of Wisconsin Governmental Orders Impacting Schools in Response to COVID-19**

2019-2020 academic year	March 12, 2020	Executive Order #72 declared a Health Emergency.
	March 13, 2020	Emergency Order #1 closed all public and private K12 schools in Wisconsin to in-person instruction starting March 18, 2020 until at least April 6, 2020. Instruction was provided virtually.
	April 16, 2020	Executive Order #28 kept all Wisconsin public and private K12 schools closed for instruction and extracurricular activities through the end of the 2019-2020 academic year.
	May 18, 2020	Madison and Dane County Public Health Order #2 through #4 required K12 public and private schools to remain closed for instruction and extracurricular activities. Instruction continued virtually.
2020-2021 academic year	June 15, 2020	Madison and Dane County Public Health Order #5 instructed public and private K12 schools could open for pupil instruction July 1, 2020 but had to (1) develop and implement a written hygiene policy and procedure, (2) develop and implement a written cleaning policy and procedure, (3) develop and implement a written protective measure policy and procedure, (4) develop and implement a written action plan for a COVID-19 outbreak at the school, and (5) document staff receipt, acknowledgement, or training on these policies.
	August 24, 2020	Madison and Dane County Public Health Order #9 allowed public and private school buildings and grounds to open for in-person instruction only for grades K through 2, and virtual options must be provided. Schools were given discretion to provide all virtual learning for grades K-12 if desired.
	September 2, 2020	Madison and Dane County Public Health Order #9 was amended to allow K12 schools to open for in-person instruction for students in any grade with a disability and/or Individualized Education Program (IEP).
	September 10, 2020	The Wisconsin Supreme Court entered a temporary injunction that allows K12 schools in Dane County to fully open for in-person instruction.
	December 16, 2020	Madison and Dane County Public Health Order #11 reflected that public and private K12 schools are open for in-person instruction but have to: (1) develop and implement a written hygiene policy and procedure, (2) develop and implement a written cleaning policy and procedure, (3) develop and implement a written protective measure policy and procedure, (4) implement PHMDC's <sup>7</sup> action plan for COVID-19 case(s) at the school, (5) document staff receipt, acknowledgement, or training on the policies, and (6) post PHMDC's Workplace requirements for employers and workers guidance document in a prominent location where all employees may access and view.

<sup>5</sup> "Executive Orders," evers.wi.gov, Accessed August 17, 2021, <https://evers.wi.gov/Pages/Newsroom/Executive-Orders.aspx>.

<sup>6</sup> "Current Order," Public Health Madison & Dane County, Accessed August 17, 2021, <https://publichealthmdc.com/coronavirus/current-order>

<sup>7</sup> PHMDC stands for Public Health Madison and Dane County

These orders significantly impacted K12 schools in Dane County. Public and private K12 schools shut down in-person instruction March of 2020 and finished out the 2019-2020 academic year virtually. The 2020-2021 academic year also began virtually. Schools could not re-open for all grades until September 2020 as a result of an intervention from the Wisconsin Supreme Court. Many schools did not re-open for students in all grades until the beginning of 2021 (see Table 2). Additionally, several of these re-openings were tiered – beginning with hybrid (about two days per week in-person) and going up to four or five days per week in addition to staggering which grades were eligible for in-person instruction. The dates below reflect when the last grade had the option to at least attend some days in-person (e.g., hybrid open to all K12). During the 2020-2021 academic year re-openings, parents had the option to have their children continue school virtually instead of attending in-person.

**Table 2: Timeline of Dane County School Re-openings (2020-2021 Academic Year)**

School District	Optional In-person Instruction Began for all K12 Students On
DeForest	<a href="#">February 22, 2021</a>
Madison Metropolitan School District (MMSD)	<a href="#">April 27, 2021</a>
Middleton-Cross Plains	<a href="#">April 19, 2021</a>
Monona Grove	<a href="#">March 15, 2021</a>
Mount Horeb	<i>Archive not found</i>
Oregon	<i>Archive not found</i>
Stoughton	<a href="#">February 8, 2021</a>
Sun Prairie	<a href="#">February 22, 2021</a>
Verona	<a href="#">February 9, 2021</a>
Waunakee	<a href="#">January 26, 2021</a>
Wisconsin Heights	<a href="#">February 16, 2021</a>

These ongoing changes not only impacted schooling, but the administration of the Building Bridges program. Trish Grant, Building Bridges Program Manager, explained in a 3Q '20 update,

“In mid-March 2020 when COVID-19 arrived and schools were abruptly closed, Building Bridges services pivoted to virtual while our staff worked from home and clients received services while they were home. During the summer break [between 2019/2020 and 2020/2021 academic years], Catholic Charities leadership consulted closely with Dane County Human Services and City of Madison Public Health to determine the safety of providing services in person at the start of the new school year. Ultimately, it was decided to continue providing services virtually at least through quarter 1 of the school year (late October).”

For extenuating circumstances, there were mechanisms in place that let clients meet with Building Bridges staff in-person while maintaining everyone’s safety. This arrangement continued through early April 2021 according to the 2Q '21 update. At that time,

“Building Bridges staff began to provide in-person services to students, school staff and guardians if the unique case circumstances required it and permitted it. Building Bridges staff

were required to follow a safety protocol for any in-person client meetings to ensure health and safety for staff and clients. For clients who preferred virtual services, our staff continued to use HIPPA compliant Zoom account and DocuSign.”

### Established Measures for Building Bridges

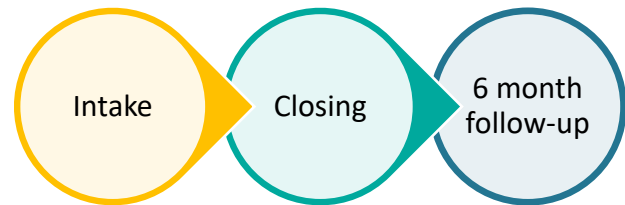
In 2017, the Building Bridges program worked with Dane County Department of Human Services (DCDHS) Planning & Evaluation staff to create a program logic model. Logic models help programs identify their inputs, activities, outputs, and outcomes. They can be used both in process evaluations (did the program and activities happen as planned?) and outcome evaluations (did the intended results happen?). The program logic model helps identify measures to quantify in this report:

- **Output:** Number of students and parents/guardians served
- **Output:** Demographic information
- **Output:** Number of one-month (closing) and 6-month follow-ups
- **Outcome (Intermediate):** Students develop strategies and resources so they can be successful

Building Bridges uses the Columbia Impairment Scale for parents (CIS-P) to measure change in childrens’ functional impairment from intake to closing (one-month follow-up) and 6 months after closing. The CIS-P is used to measure the intermediate outcome “students develop strategies and resources so they can be successful.” Success looks like reduction in the level of impairment indicated by the scale. The CIS-P was chosen

- for its simplicity (only 13 items),
- because it can be administered directly by lay or clinical interviewers,
- it is valid for ages 6-17 (roughly 1<sup>st</sup> through 11<sup>th</sup> grade),
- it is accessible for free,
- it measures four major areas of functioning: interpersonal relationships, broad psychopathological domains, functioning in jobs or at school, and use of leisure time, as well as that
- psychometric properties of the scale are established.

Figure 1: CIS-P Completed At



This report compiles results from the 2018-2019, 2019-2020, and 2020-2021 academic years. Results are displayed by academic year and in aggregate (total across the three years). The next sections report on the number of people served, participating student demographics, units of service rendered, and analysis of the Columbia Impairment Scale for parents (CIS-P).

## Key Findings

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*The Building Bridges program is a necessary program that is helping school-aged children improve their mental health.*

### The need:

- The *Children’s Mental Health Report* from the CDC states, “Mental health is important to overall health. Mental disorders are chronic health conditions that can continue through the lifespan. Without early diagnosis and treatment, children with mental disorders can have problems at home, in school, and in forming friendships. This can also interfere with their healthy development, and these problems can continue into adulthood.”<sup>8</sup>
- The *2021 Dane County Youth Assessment: 7<sup>th</sup>-8<sup>th</sup> Grade Report – All Schools Combined*<sup>9</sup> indicate mental health concerns among Dane County youth. In the last 30 days, among other measures, student report
  - “always” or “often” becoming easily annoyed or irritable (41%)
  - “always” or “often” feeling nervous, anxious or on edge (36%)
  - “always” or “often” worrying too much about different things (34%)

### Signs of improvement:

- Building Bridges measures impact using the CIS-P. Youth show meaningful improvement in two ways:
  - statistically significant reduction in the proportion of students with clinically significant functional impairment from intake (78% average, 73%-80% by academic year) to closing (61% average, 58%-63% by academic year). The proportion of students with clinically significant functional impairment continues to trend downward from closing to 6-month follow-up and in some cases is statistically significant (see Figure 9).
  - almost no reliable worsening (2% on average, 2%-3% by academic year) from intake to closing but about one in five showing reliable improvement (22% on average, 18%-34% by academic year) from intake to closing (see Figure 10). Reliable improvement gets better from intake to 6-month follow-up (38% on average, 36%-40% by academic year) (see Figure 11).

In three academic years, the Building Bridges program has served 763 unique parents/guardians and 525 unique students across 11 school districts in Dane County (see Table 3). It has delivered more than 13,000 units of service to parents/guardians and students. While service units rendered to students was cut in half in 2020-2021 (668.75 units), parents/guardians only saw a 15% reduction in service units rendered (2,937 units) (see Figure 2), a significant accomplishment given the changes from in-person services to virtual services.

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<sup>8</sup> “Children’s Mental Health Report,” Centers for Disease Control, March 22, 2021, <https://www.cdc.gov/childrensmentalhealth/features/kf-childrens-mental-health-report.html>.

<sup>9</sup> Dane County Youth Commission, “2021 Dane County Youth Assessment 7<sup>th</sup>-8<sup>th</sup> Grade Report – All Schools Combined,” Dane County Department of Human Services, July 29, 2021, <https://www.dcdhs.com/documents/pdf/Youth/YouthCommission/DCYA-2021-Middle-School-Report.pdf>.



## Results

### Output: Number of Students and Parents/Guardians Served

An output of the Building Bridges program is the number of unique parents/guardians and students served. To be included in these counts, the person had to

- have a service start date within the given academic year (September or later),
- have a service end date within the same academic year (June or earlier), and
- have services rendered.
  - Some people enroll but have zero units rendered, they are not included in the counts.

Aggregate data is less than the sum of the academic years because people who received services in more than one academic year are only counted once.

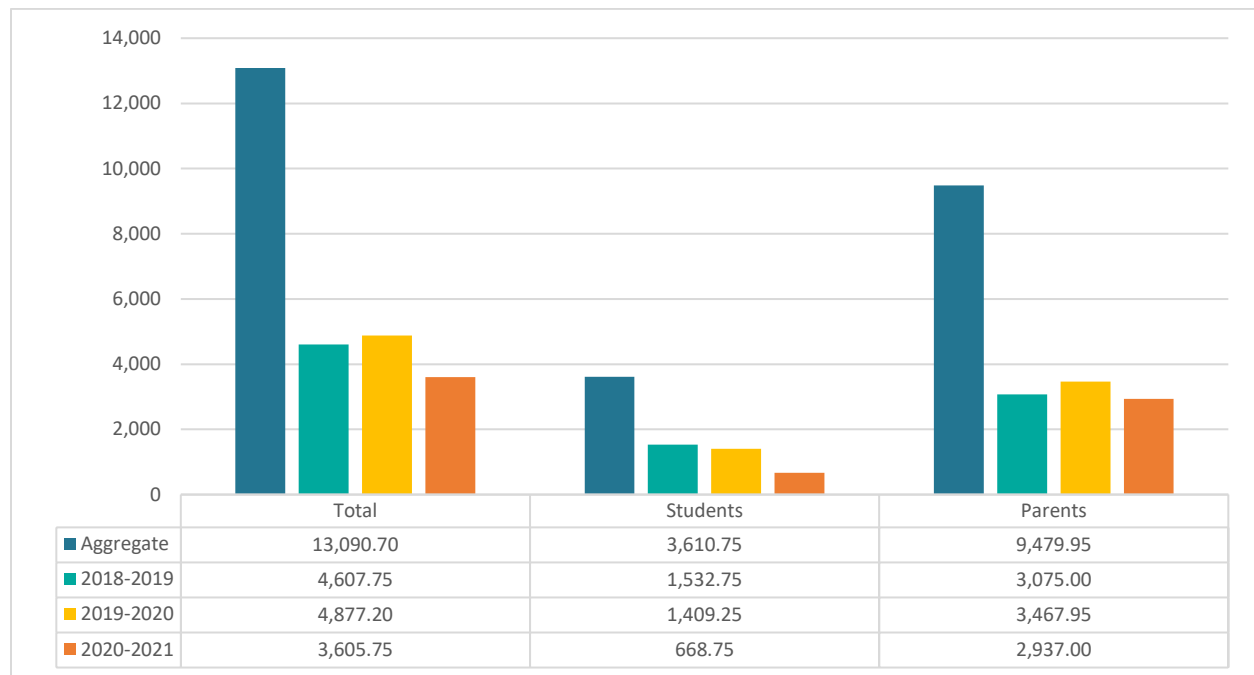
*Over three academic years, the Building Bridges Program has served nearly 1,300 unique individuals* (see Table 3). More parents/guardians are served each academic year than children. Commonly, students are from the Madison Metropolitan School District (MMSD) – with the exception of the 2020-2021 academic year where MMSD students receiving services drastically dropped from nearly 50 to only 16 (see Table 3). Notably, even with extreme changes in the 2020-2021 academic year, the Middleton-Cross Plains, Stoughton, and Sun Prairie school districts maintained the number of students served (see Table 3).

**Table 3: Unique Parents and Students Receiving Building Bridges Services**

	Aggregate	2018-2019	2019-2020	2020-2021
<b>GRAND TOTAL</b>	<b>1,288</b>	<b>499</b>	<b>513</b>	<b>349</b>
<b>Parents/Guardians</b>	<b>763</b>	<b>287</b>	<b>300</b>	<b>213</b>
<b>Students</b>	<b>525</b>	<b>212</b>	<b>213</b>	<b>118</b>
<b>Students By School District</b>				
DeForest	43	23	16	4
Madison Metropolitan School District (MMSD)	111	49	48	16
Middleton-Cross Plains	32	15	10	18
Monona Grove	25		20	6
Mount Horeb	49	18	21	13
Oregon	36	18	13	5
Stoughton	48	17	18	17
Sun Prairie	61	23	23	20
Verona	41	17	15	9
Waunakee	48	22	20	7
Wisconsin Heights	5	2	3	
District not identified	17	8	6	3

*In three academic years the Building Bridges program has delivered more than 13,000 units of service<sup>10</sup> to students and parents* (see Figure 2). The program has delivered 2.6 times the service units to parents (approximately 9,500 units) as to students (about 3,600 units). In all, students make up 28% of units delivered. Notably, while units of service delivered to students in the 2020-2021 was cut roughly in half from 2019-2020 (1,409 units to 669 units), units delivered to parents remained comparatively stable (3,468 to 2,937 which is only a 15% decrease).

**Figure 2: Building Bridges Service Units Delivered By Person Type**



*The number of individuals who enroll in Building Bridges but never had a service rendered doubled from the 2019-2020 academic year to the 2020-2021 academic year* (see Table 4). Closures on top of virtual learning and services were just beginning at the end of the 2019-2020 academic year, while the 2020-2021 academic year started off virtually and slowly transitioned to hybrid and/or fully in-person learning. These shifts in service opportunities may explain the large increase in individuals from the 2019-2020 academic year to the 2020-2021 academic year who enroll but never actually had a service rendered.

<sup>10</sup> One unit of service equals 1 hour of client contact.

Table 4: Unique Parents and Students Enrolled but Not Receiving Building Bridges Services

	Aggregate	2018-2019	2019-2020	2020-2021
<b>GRAND TOTAL</b>	182	1	61	125
<b>Parents</b>	37	1	12	25
<b>Students</b>	145	-	49	100
<b>Students By School District</b>				
DeForest	8	-	-	8
Madison Metropolitan School District (MMSD)	81	-	30	54
Middleton-Cross Plains	1	-	-	1
Monona Grove	1		-	1
Mount Horeb	1	-	-	1
Oregon	23	-	7	17
Stoughton	3	-	3	-
Sun Prairie	1	-	-	1
Verona	6	-	1	5
Waunakee	15	-	3	12
Wisconsin Heights	-	-	-	
District not identified	5	-	5	-

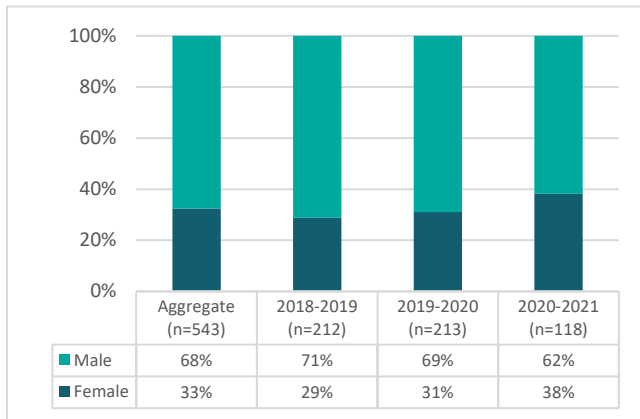
### Output: Student Demographic Information

Demographic information is only available for students in the DCDHS Information System. In the past, there were a number of students each year (see Table 5) who are recorded on Catholic Charities' enrollee list but are not in the DCDHS Information System. *For the 2020-2021 academic year, only one student was in the Catholic Charities list and not in the DCDHS information system. This is a big improvement over prior years.* Building Bridges should strive to maintain the level of matching between Catholic Charities and DCHDS Information System into future years.

Table 5: Students Recorded in Catholic Charities Enrollment List But Not In DCDHS Information System

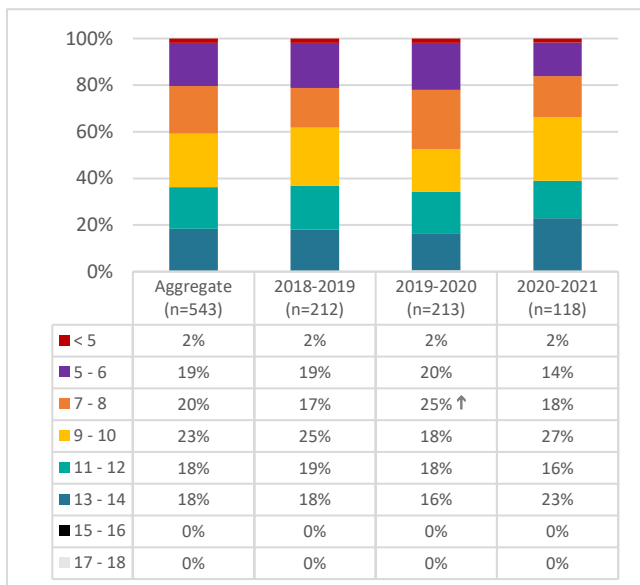
	Aggregate	2018-2019	2019-2020	2020-2021
<b>TOTAL</b>	121	63	57	1
DeForest	3	-	3	-
Madison Metropolitan School District (MMSD)	81	49	32	-
Middleton-Cross Plains	-	-	-	-
Monona Grove	-		-	-
Mount Horeb	-	-	-	-
Oregon	18	7	11	-
Stoughton	3	-	3	-
Sun Prairie	4	1	2	1
Verona	2	-	2	-
Waunakee	7	3	4	-
Wisconsin Heights	1	1	-	

**Figure 3: Gender By Academic Year And Aggregate**



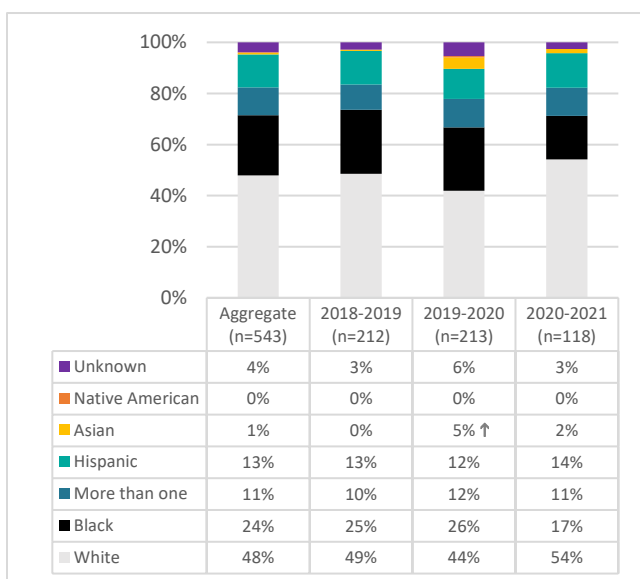
*The Building Bridges program has consistently served the same demographics of children across the three academic years examined in this report.* Statistical testing was performed to identify any changes in percentages from 2018-2019 to 2019-2020 and from 2019-2020 to 2020-2021. When statistically significant differences are present, they are marked with arrows (↑↓) in the data table below the graph. There are only two differences in proportions that indicate statistically significant change.

**Figure 4: Age By Academic Year And Aggregate**



- More students age 7 to 8 were served in the 2019-2020 academic year (25%) than the prior academic year (17% in 2018-2019) (see Figure 4).
- More Asian students were served in the 2019-2020 academic year (5%) than the prior year when less than 1% of students served were Asian (see Figure 5).

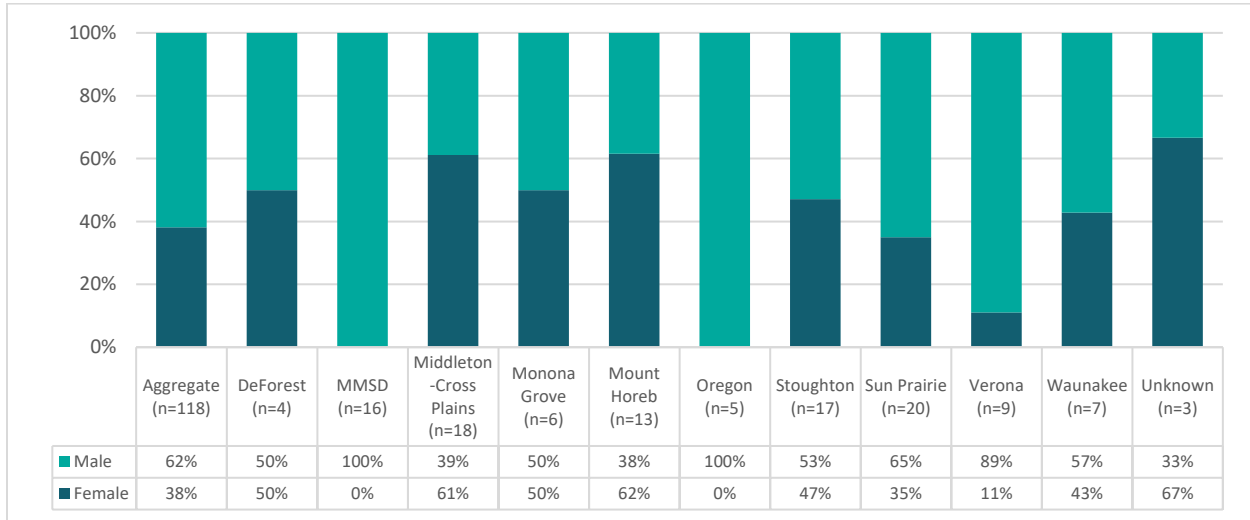
**Figure 5: Race/Ethnicity By Academic Year And Aggregate**



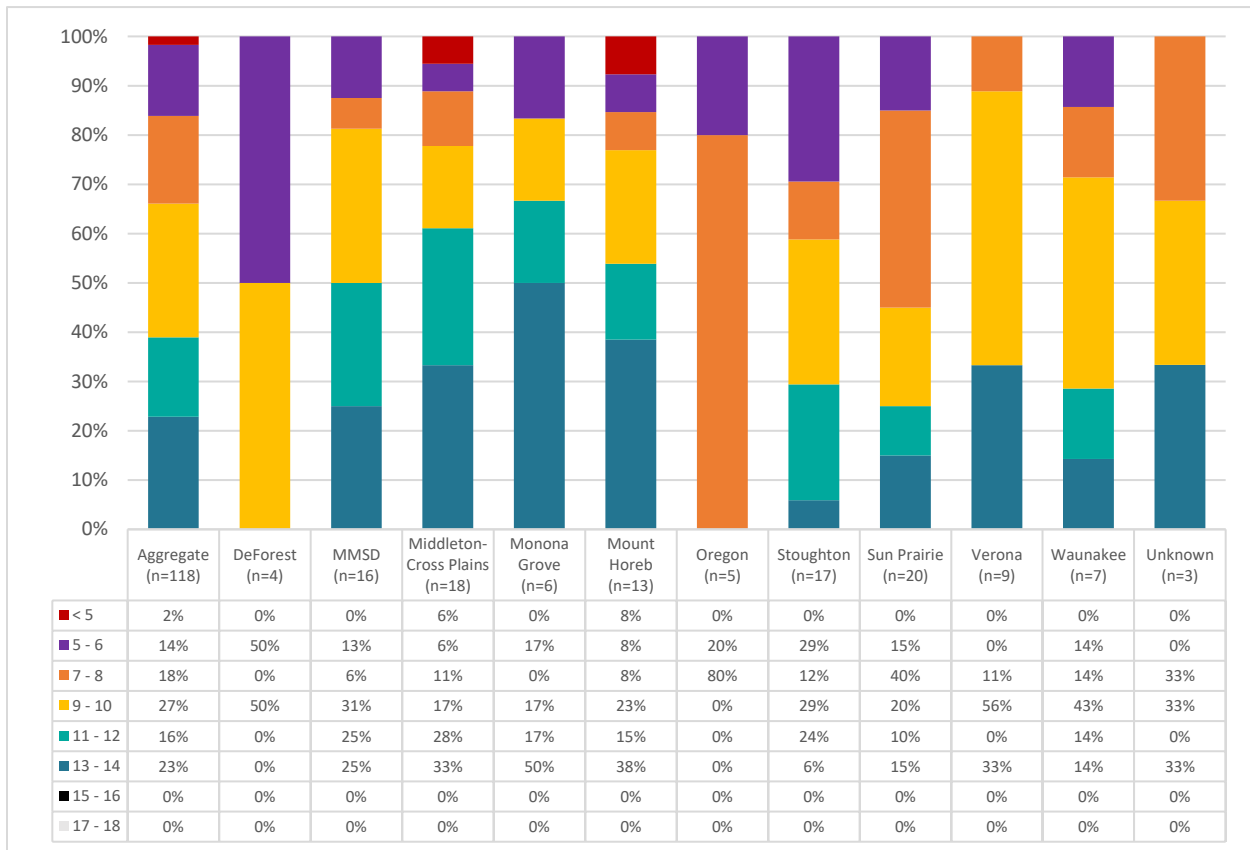
Over time, the majority of students served by Building Bridges are male (68%) (see Figure 3). They are about evenly distributed in two year increments from age 5 through age 14 (see Figure 4). And, they are commonly White (48%) or Black or African American (24%) – fewer are Hispanic or Latino (13%) or multiracial (11%). Almost none are Asian (1%) or Native American (<1%) (see Figure 5).

The following pages breakdown student demographics for the 2020-2021 academic year by school district. Due to the small number of participants by district, statistical testing was not performed. However, it is notable that Madison (MMSD) and Oregon served only males (see Figure 6).

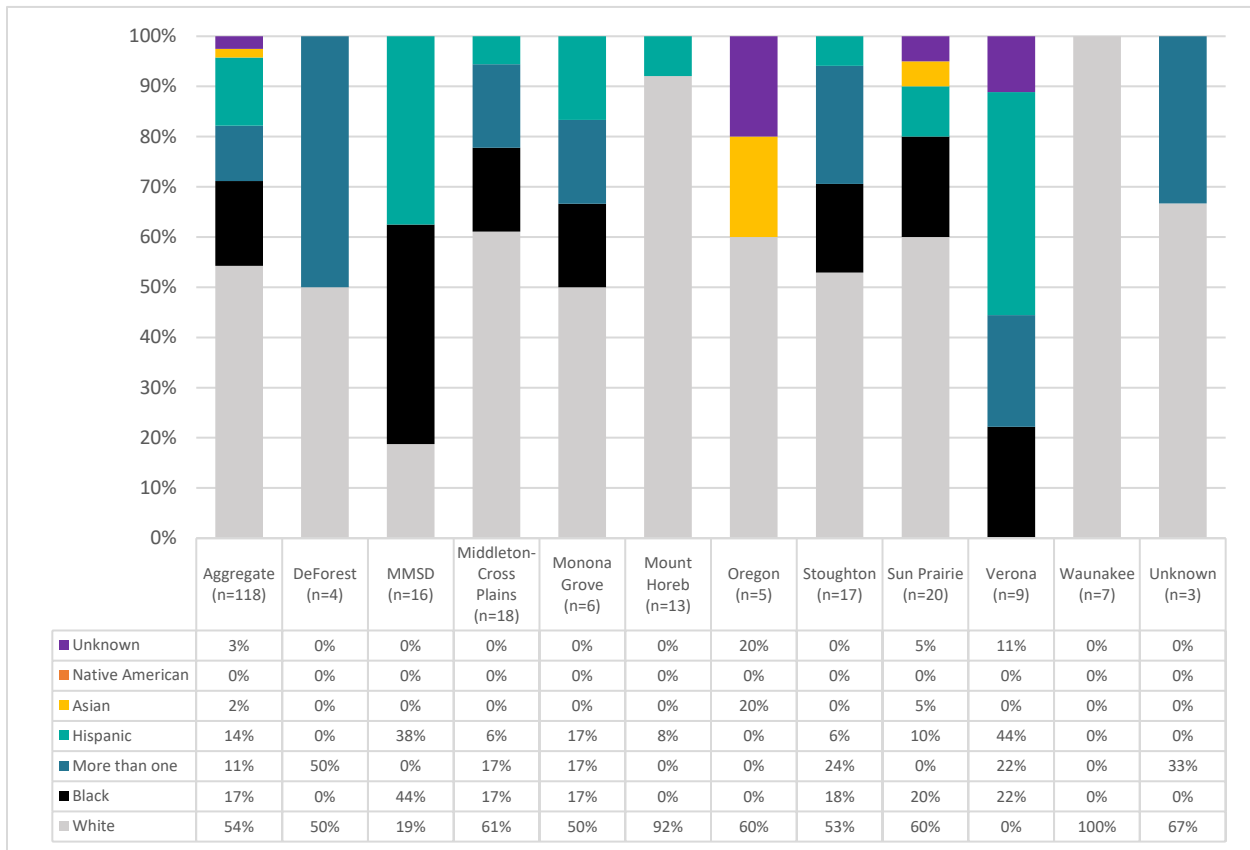
**Figure 6: 2020-2021 Student Gender By School District**



**Figure 7: 2020-2021 Student Age By School District**



**Figure 8: 2020-2021 Student Race/Ethnicity By School District**



There are a number of interesting observations by race/ethnicity and school district (see Figure 8).

- One-half (54%) of students served by Building Bridges in the 2020-2021 academic year are White.
- Waunakee served only White students while almost all students served by Mount Horeb are also White (92%). This is to be expected from overall student demographics.
  - Notably, 92% of elementary students enrolled in Mount Horeb for the 2019-2020 academic year were White.<sup>11</sup>
  - That year, 86% of Waunakee elementary school students were White.<sup>12</sup>
- Verona (0%) and Madison (19%) served the smallest proportions of White students.
  - Although, only 14% of students served by Building Bridges are Hispanic or Latino, roughly four in ten students served by Verona (44%) and Madison (38%) are Hispanic or Latino.
    - Verona serves Hispanic/Latino students at 2.4 times the rate of their presence in school enrollments, while White students are under served compared to their general enrollment. 18.2% of elementary students in Verona were Hispanic

<sup>11</sup> "Enrollment Percent by Race/Ethnicity (2019-20)," WISEdash Public Portal, Accessed December 3, 2021, <https://wisedash.dpi.wi.gov/Dashboard/dashboard/18110>.

<sup>12</sup> Ibid.

- (compared to 44% of Building Bridges enrollments) and 63% were White (compared to 0% of Building Bridges enrollments) in 2019-2020.<sup>13</sup>
      - Likewise, Madison underrepresents White students and slightly over represents Hispanic students. That year, 21.4% of elementary students in MMSD were Hispanic (compared to 38% of Building Bridges enrollments), while 42% were White (compared 19% of Building Bridges enrollments).<sup>14</sup>
    - Madison serves Black or African American students at twice the rate or more (44%) of any other school district (0%-22%).
      - Additionally, Black students are enrolled in Building Bridges at twice the rate they are enrolled in MMSD elementary schools – 18% of MMDS elementary students were Black in 2019-2020<sup>15</sup> compared to 44% enrolled in Building Bridges.
  - There are very few Asian students in the Building Bridges program (2%) – they are enrolled in two school districts, Oregon (20%) and Sun Prairie (5%).
    - This is an over representation of Oregon elementary school students, who were only 1% Asian in the 2019-2020 academic year.<sup>16</sup>
    - Conversely, Asian students are underrepresented in Sun Prairie, which was 12% Asian during the 2019-2020 academic year.<sup>17</sup>

## Measuring Impact – The Columbia Impairment Scale

The impact of Building Bridges is measured through the Columbia Impairment Scale for parents (CIS-P). The parent/guardian rates their child on 13 items using the scale *0 – no problem, 1, 2 – some problem, 3, 4 – very bad problem, 5 not applicable/don't know*. The CIS-P is considered a global measure of impairment and has been used to measure progress over short treatment periods. Its psychometric properties have been established.

Output: Number of One-month (Closing) and 6-month Follow-ups

The program logic model names the number of completed CIS-P at closing and 6-month follow-up as an output of the Building Bridges program. The total number of valid CIS-P (627, see Table 6) exceeds the number of unique students receiving services (525, see Table 3) because some students had a CIS-P completed by more than one parent or guardian. ***While the number of valid CIS-P completed in the 2020-2021 academic year is less than prior academic years, almost four in ten (39%) of intakes had a matched pair at closing*** (see Table 6). This results in enough matched pairs to have confidence in further analysis.

Table 6 shows the number of valid CIS-P completed by a parent/guardian at each time point (intake, closing, and 6-month follow-up) by academic year. To be valid, the parent/guardian had to answer all 13 questions. When more than one response is circled for a question, the average of the answers is recorded and it is considered a valid answer.

<sup>13</sup> "Enrollment Percent by Race/Ethnicity (2019/2020)."

<sup>14</sup> Ibid.

<sup>15</sup> Ibid.

<sup>16</sup> Ibid.

<sup>17</sup> Ibid.

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**Table 6: Number of Valid CIS-P by Academic Year and Aggregate**

	Aggregate	2018-2019	2019-2020	2020-2021
Intake	627	259	215	153
Closing	350	178	98	74
<b>Usable matched pairs*</b>				
n	251	130	62	59
% of Intake	40%	50%	29%	39%
6-month follow-up	138	71	67	n/a
<b>Usable matched pairs<sup>+</sup></b>				
n	73	33	40	n/a
% of Intake	12%	13%	19%	n/a

\*Usable matched pairs have a valid intake CIS-P and a valid closing CIS-P

<sup>+</sup>Usable matched pairs have a valid intake CIS-P and a valid 6-month follow-up CIS-P

## Measuring Change

The paper “Establishment of a Reliable Change Index for the GAD-7” published in *Psychology, Community and Health* (2020)<sup>18</sup> explains two ways in which change can be measured. The first is through statistical significance, this requires a large sample size and is “often used in mental health research to evaluate whether or not treatments are associated with client change. Statistical significance measures how likely any differences in outcome between treatment and control groups are real and not due to chance.”<sup>19</sup> The article points out statistical significance has limitations and that “given a large enough sample, any difference can be statistically significant even if it lacks real-world significance.”<sup>20</sup> Clinical significance is an alternate to statistical significance and measures if change is meaningful.<sup>21</sup> So while we can run tests to measure statistically significant change, we should consider meaningful, real-world or clinically significant change.

## Clinically Significant Change: Functional Impairment

One real-world, meaningful change is a reduction in clinically significant functional impairment. The results of the CIS-P indicate if a child has clinically significant functional impairment. Total scores, the sum of each item (excluding those rated “5”), range from 0 to 52. A total score  $\geq 15$  is considered clinical impairment.<sup>22</sup>

<sup>18</sup> Thomas Bischoff et al. “Establishment of a Reliable Change Index for the GAD-7,” *Psychology, Community & Health* 8, no. 1 (2020): 176-187, doi: 10.5964/pch.v8i1.309.

<sup>19</sup> Thomas Bischoff et al.

<sup>20</sup> Thomas Bischoff et al.

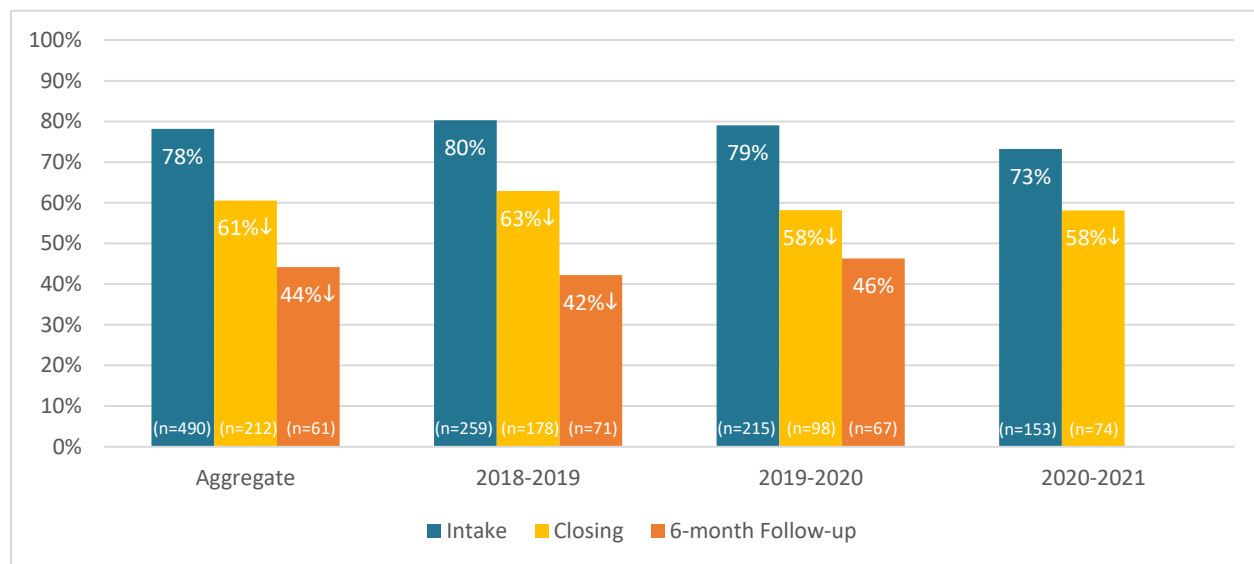
<sup>21</sup> Thomas Bischoff et al.

<sup>22</sup> National Evaluation Team, “Section VI: Clinical Measures, National Evaluation of the Comprehensive Community Mental Health Services for Children and their Families Program Data Profile Report (DPR),” Orange County New York, August 2011, [https://www.orangecountygov.com/DocumentCenter/View/12981/dpr\\_aug11\\_section\\_vi-PDF?bidid](https://www.orangecountygov.com/DocumentCenter/View/12981/dpr_aug11_section_vi-PDF?bidid).



*The percent of valid CIS-P that indicate the child is experiencing clinically significant functional impairment trends downward from intake to closing and closing to the 6-month follow-up (see Figure 9). The downward pattern is evident in the 2018-2019 and 2019-2020 academic year and looks promising to continue through the 2020-2021 academic year (for which 6-month follow up data is not yet available). **Notably, all three academic years show statistically significant decreases in the percent of children with clinically significant functional impairment from intake to closing** (see Figure 9).*

**Figure 9: Percent Valid CIS-P Indicating Clinically Significant Functional Impairment Over Time by Academic Year**



Statistically significant change from one time period to the next (intake to closing and closing to 6-month follow-up) is indicated by arrows (↑↓).

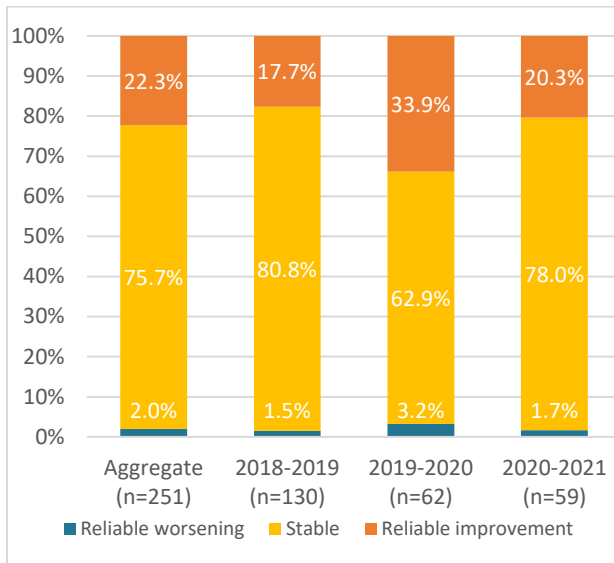
#### Clinically Significant Change: Reliable Change Index (RCI)

Recall clinical significance is an alternate to statistical significance and measures if change is meaningful. A large sample size is not needed to evaluate clinical significance, as it can evaluate change on an individual basis.<sup>23</sup> The Reliable Change Index (RCI) is an established way to measure clinically significant change. See **Appendix A: About the Reliable Change Index (RCI)** for detailed information on how the RCI is calculated. The major take away from the appendix is that the RCI classifies each individual as experiencing “reliable worsening,” “reliable improvement,” or they are “stable.”

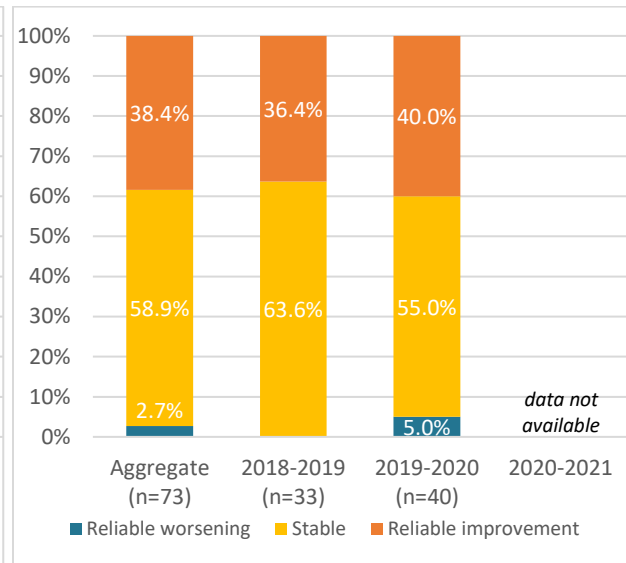
*In the short term, intake to closing, roughly one in five (22%) of students see reliable improvement in their CIS-P score after the Building Bridges program (see Figure 10). This holds true for the 2020-2021 academic year, which saw very little reliable worsening (1.7%) and about 20% reliable improvement – the rest of students with a valid CIS-P at intake and closing remained stable. Data is not yet available for intake to 6-month follow-up for the 2020-2021 academic year. However, the prior academic years show **the majority of students remain stable, but the proportion showing reliable improvement nearly doubles between closing (22%) (see Figure 10) and 6-month follow-up (38%) (see Figure 11).** The overall lack of reliable worsening and seeing some reliable improvement is a positive outcome for the Building Bridges program.*

<sup>23</sup> Ibid.

**Figure 10: RCI Intake to Closing**



**Figure 11: RCI Intake to 6-month Follow-up**



## Appendix A: About the Reliable Change Index (RCI)

The Reliable Change Index (RCI) is a relative measure that compares a child’s or caregiver’s score at two different points in time and indicates whether a change in score shows significant improvement, worsening, or stability (i.e., no significant change).<sup>24</sup> Using the RCI builds understanding of whether or not the Building Bridges program creates significant change in children. The RCI is calculated as follows<sup>25</sup>:

1) **Compute the standard error of the measure (SE<sub>M</sub>)**

$$SE_M = SD_1 \sqrt{1 - r_{xx}}$$

This relies on knowing the standard deviation (SD<sub>1</sub>) of the sample at the first time point. In this case, the standard deviation of scores at intake. Additionally, the test-retest reliability of the measure or Cronbach’s alpha (r<sub>xx</sub>) must be estimated. Literature suggests Chronbach’s alpha for the CIS-P is from 0.85 to 0.89.<sup>26</sup> A Chronbach’s alpha of 0.865 was used in this analysis, as that is the weighted mean of all Chronbach’s alpha for the data in this paper.

2) **Next, use SE<sub>M</sub> to compute S<sub>DIFF</sub>**

$$S_{DIFF} = \sqrt{2(SE_M^2)}$$

3) **Determine if change is reliable**

$$RC = \frac{x_1 - x_2}{S_{DIFF}}$$

This looks at an individual’s score at intake (x<sub>1</sub>) to time point two (x<sub>2</sub>) – closing or 6-month follow-up. If RC is

- greater than or equal to 1.96, then the change is categorized as “reliable improvement”
- between -1.95 and 1.95, then the change is categorized as “stable”
- less than or equal to -1.96, then the change is categorized as “reliable worsening”

Table 7 shows the values used to calculate the RCI by academic year. There are different values for each academic year because the standard deviation of the scores at intake is unique for each academic year. The values are plugged into the formulas above. A RCI is then calculated for each record that has a “matched pair,” that is a valid intake and closing or a valid intake and 6-month follow-up CIS-P. The RCI is then categorized as either “reliable worsening,” “stable,” or “reliable improvement.”

<sup>24</sup> Ibid.

<sup>25</sup> Neville M Blampied, “Reliable Change & The Reliable Change Index in the Context of Evidence-Based Practice: A Tutorial Review,” University of Canterbury, September 2016, [https://ir.canterbury.ac.nz/bitstream/handle/10092/13399/12664317\\_Reliable%20Change%5ETutorial%5ENZPsS%5E2016.pdf?sequence=1](https://ir.canterbury.ac.nz/bitstream/handle/10092/13399/12664317_Reliable%20Change%5ETutorial%5ENZPsS%5E2016.pdf?sequence=1).

<sup>26</sup> Brandon K Attell, et al. “Measuring Functional Impairment in Children and Adolescents: Psychometric Properties of the Columbia Impairment Scale (CIS),” *Evaluation & the Health Professions* 43, no. 1 (2018): 3-15, doi: 10.1177/0163278718775797.

Table 7: Values Used to Assess Reliable Change by Academic Year

	SD <sub>1</sub>	SE <sub>M</sub>	S <sub>DIFF</sub>	Number of Matched Pairs	
				Intake to closing	Intake to 6-month follow-up
<b>2018-2019</b>	9.247	3.398	4.805	130	33
<b>2019-2020</b>	9.846	3.618	5.116	62	40
<b>2020-2021</b>	10.800	3.968	5.612	59	<i>n/a</i>