

# PUTTING THE CANS TO USE AT THE WRAPAROUND PROGRAM AND SYSTEM LEVEL

## A GUIDE FOR SUPERVISORS AND ADMINISTRATORS

Prepared by the University of Washington School of Medicine  
Wraparound Evaluation and Research Team

Spencer W. Hensley | Jennifer Schurer Coldiron | Ryan Parigoris | Eric J. Bruns

## PURPOSE

The simultaneous implementation of Wraparound and the Child and Adolescent Needs and Strengths (CANS) assessment tool is increasingly common across the United States. Current estimates suggest that 44 states with Wraparound initiatives in at least some jurisdictions also require the regular administration of the CANS. We receive frequent requests for guidance about how best to use the CANS tool within the Wraparound process, and it has become clear that many sites have years' worth of historical CANS data, only some of which is being used to inform program and system-level decision making.

This guide is intended to provide suggestions and examples of how Wraparound provider organizations (WPOs) and larger systems can or do make use of CANS data, getting it out of the files and databases and into action.

We are focusing on the CANS not only because of its ubiquity, but also because of its unique measurement approach, which can lead to confusion and less-than-ideal use. This document is not meant as an endorsement of the CANS, or any other specific tool. We suggest programs and systems explore a variety of standardized and ideographic measurement tools, and choose those which best fit with their information needs and the Wraparound approach.

## SECTIONS OF THIS GUIDE

CANS developer, John Lyons, suggests that the tool can be used at multiple levels of practice to manage complex systems, such as systems of care where Wraparound is typically implemented. Within his Transformational Collaborative Outcomes Management (TCOMS) framework, Dr. Lyons breaks out three broad applications of CANS data. This guide is organized around those areas:

**DECISION SUPPORT:** How CANS data has been integrated into decision making about level of care authorization, workforce development, and system planning in some jurisdictions.

**OUTCOMES MONITORING:** Explores multiple approaches to measuring change in youths' CANS scores and how this information can be appropriately used at the program and system level. Provides enrollment to discharge change statistics for a national sample from nine large Wraparound-implementing organizations and states.

**QUALITY IMPROVEMENT:** Summarizes how and when CANS data can be used to monitor the impact of your decisions.

## FOR MORE INFORMATION ABOUT THE CANS

The CANS is a multi-item "communimetrics" tool designed to assess youth and family strengths and needs in relation to the level of action needed to improve functioning in the home and community.

For more information, visit the CANS website at <https://praedfoundation.org/>

This guide focuses specifically on applications of the CANS at the program and system level. For guidance about how to be more outcomes-based at the level of individual cases and how the CANS fits into this principle, please see our 2016 *Putting the Outcomes-based Principle into Action, Part One: A guide for Wraparound care coordinators*.

## CONTINUOUS QUALITY IMPROVEMENT



This guide is designed to serve as a companion to existing accountability routines. We urge all WPOs, system of care governance bodies, care management entities, and state agencies that have access to CANS and other data to think about how those data can inform decision making and be meaningfully integrated into practice at all levels.

This should not be a static endeavor, but rather part of a continuous cycle of quality improvement in which a data-based picture of practice and impact is collaboratively developed and areas for improvement are prioritized and planned for (Plan). Over the course of the quality improvement initiative's implementation (Do) data should be gathered and analyzed to keep track of its impact (Study) and make mid-course corrections, if necessary (Adjust). This is not unlike the Wraparound process itself.

## DATA USED IN THIS GUIDE

When possible, this guide includes data to support guidance and provide examples of data use. These data come from a diverse group of eleven Wraparound-providing organizations and states who have given the authors access to a sample of their CANS data.

The data represent assessments done between 2008 and 2016. Although we have a large number of matched youth assessments, there are some important caveats to consider when comparing your own data to data presented here.

- The data is not necessarily representative of all Wraparound-enrolled youth, and is very unlikely to be representative of all WPOs.
  - The assessments come from a relatively small number of sites that were not selected randomly, and across which there are important differences in system-, Wraparound-, and CANS-implementation contexts.
- When we present data from this dataset, it is usually for illustrative purposes—to provide an example of how data might be analyzed, visualized, or interpreted at a local program or system level. The specific data presented should not be considered benchmarks or norms.
- The CANS is highly customizable, and items are organized into “domains” differently in different sites. Our data sorts all CANS items into three super-domains: Youth Needs, Youth Strengths, and Caregiver Items (both Needs and Strengths).

The specific numbers presented should not be considered benchmarks or norms.



*This document was prepared for the National Technical Assistance Network for Children's Behavioral Health under contract with the U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Contract #HHSS280201500007C. However, the contents do not necessarily represent the policy of the U.S. Department of Health and Human Services, and you should not assume endorsement by the Federal Government*

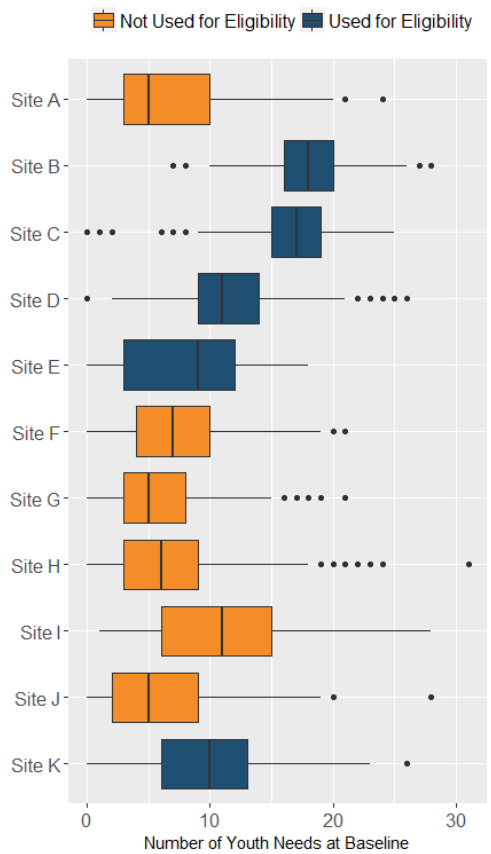
*Suggested Citation for this document  
Hensley, S.W., Schurer Coldiron, J., Parigoris, R., Bruns, E.J.  
(2017). Putting CANS Data to Use at the Wraparound Program and System Level: A guide for supervisors and administrators; Baltimore, MD. The National Technical Assistance Network for Children's Behavioral Health.*

# DECISION SUPPORT

## INTEGRATING THE CANS INTO ADMIN PRACTICE

The CANS is one of many possible pieces of information that could enhance decision making about determining appropriate level of care, planning service array, and targeting workforce development, among many other crucial decisions administrators make every day. Engaging stakeholders in the interpretation of data, being transparent about data use with those responsible for collecting it, and monitoring accuracy can increase confidence in any data-driven decision-making process.

Figure 1. Number of actionable youth needs at enrollment.



The figure summarizes the range of actionable needs at enrollment at each site. The boxes show where half of all youth fall at each site, and the vertical line is the median number of needs. The whiskers (horizontal bars) and dots show the range and any outliers.

## DETERMINING ELIGIBILITY FOR WRAPAROUND

There are many ways to determine eligibility into Wraparound. While we do not recommend that CANS be the only criteria for an eligibility determination, some states use the CANS as part of an algorithm to determine and authorize various levels of care.

- Lyons provides guidance about creating eligibility criteria using the CANS in *Communimetrics* (pg. 62).
- Sites that do not use an algorithm for eligibility typically have less rigid clinical decision-making guidelines (often about the youth’s acuity and complexity) that are applied by either the Wraparound provider or a larger jurisdictional board.

Using the CANS in this way will naturally impact the population of youth being served, and consequently the site’s CANS scores themselves.

Our dataset of Wraparound-enrolled youth shows a difference in average actionable needs at enrollment between sites that use the CANS for eligibility and those that do not (see Figure 1). Those that use the CANS to determine eligibility typically enroll youth with more actionable needs than sites that do not use the CANS for eligibility.

- Given our data, it is not possible to know whether this difference should be interpreted as youth in need of Wraparound are being excluded unnecessarily due to eligibility algorithms, or whether non-eligibility sites are enrolling youth who would be better and more efficiently served in a lower level of care, or if there is some other explanation, such as characteristics at the system-level. What is clear, however, is the use of the CANS for eligibility determination is related to the initial complexity of need of Wraparound-enrolled youth, or measured by the CANS.
- Take this impact into account when comparing CANS scores across sites and over time, where eligibility rules may have been different.

Algorithms *may* provide incentives to CANS assessors, especially those associated with the service provider, to score the CANS to ensure Wraparound authorization, if that’s what the family and team think is best, leading to bias in CANS scores.

## STEP DOWN AND TRANSITION

Within sites that use the CANS for initial Wraparound eligibility determination, youth are often required to transition out of Wraparound within 30-90 days of a subsequent CANS assessment falling within the algorithm for a different level of care.

- While this may result in efficient resource use, it can be a source of tension with Wraparound principles and practice. See box to the right.
- **We recommend allowing initially eligible youth and families to experience the full Wraparound process, only transitioning out of services once they and/or their team decide it is time, regardless of subsequent CANS assessment results.**
- We also recommend a clear and fair appeal process to respond to algorithmic decisions that may run counter to the family and Wraparound team’s feelings about the appropriateness of Wraparound.

If a CANS-based level of care algorithm is not being used, some have asked if there are benchmarks for what can be considered to be “enough change” on the CANS to warrant transition out of Wraparound. **We do not recommend using specific benchmarks of change (e.g., when youth have met three needs) to determine readiness for transition.**

- Figure 2 demonstrates just how much variation is common in change scores for Wraparound-enrolled families. Although, on average, youth have about two fewer needs after six months of Wraparound, there are many youth with many fewer and even many more needs.

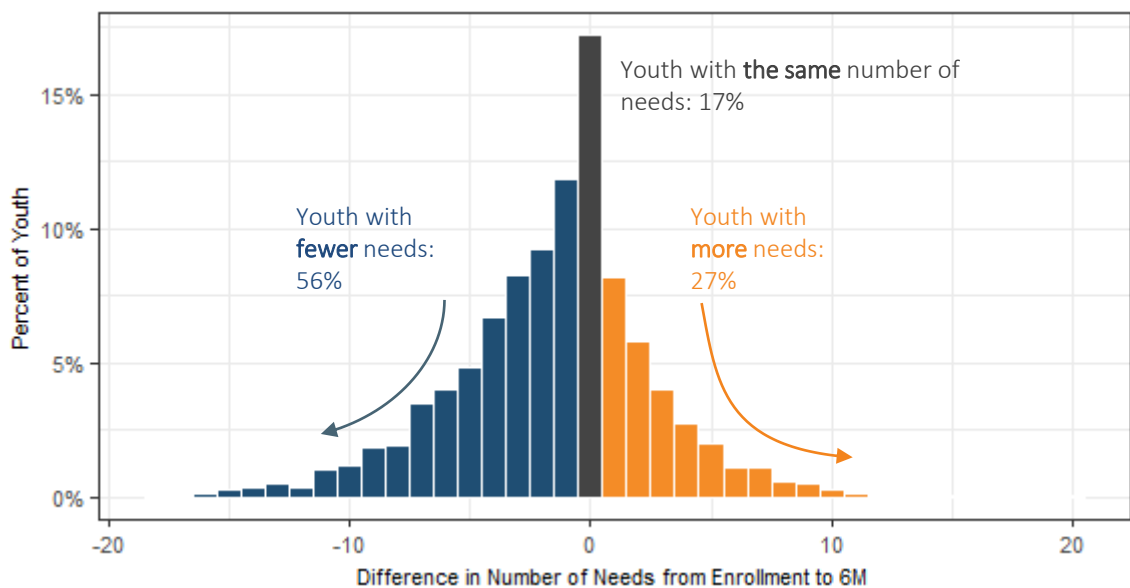
### TRANSITION, WRAPAROUND, AND COMPETING FRAMEWORKS

The Wraparound practice model describes transition as a process that begins early on in Wraparound, and intensifies as the team begins to meet underlying needs (distinct from “needs” items on the CANS), family vision, and the overall team mission. A family is ready for transition not only when certain clinical milestones have been met, but also when the youth and family has built sufficient capacity and resource networks to maintain their new level of functioning. The transition phase in Wraparound typically lasts at least three months, during which time the team helps the family produce a transition plan and post-transition crisis plan.

In an ideal world, these activities would coincide with systems-level step-down criteria. In reality, there is tension between these frameworks. At NWIC, we recommend adhering to the Wraparound practice model above all else.

Eligibility rules, including CANS scores, can be a useful “check” on the amount of progress made, but should not alone determine when a family is ready to transition, particularly in instances where post-transition plans have not yet been created.

Figure 2. Change in the number of actionable needs between enrollment and six months for 6 sites (n=4052)



# PLANNING WORKFORCE DEVELOPMENT

The prevalence of particular needs can help to inform workforce development needs. Compare the needs of enrolled youth and families with the competencies of staff.

The same process of identifying opportunities related to service array can also be used to inform workforce development efforts.

# FINDING SERVICE ARRAY GAPS

Successful Wraparound depends on much more than simply the skills and effort of care coordinators. It also requires a robust and collaborative system environment, service array, and the availability of Evidence Based Practices (EBPs).

Systems could identify needs that are common, resistant to change, or highly disruptive (fire setting, sexual aggression, etc.) and uses these assess the adequacy of their related service array, including a systematic exploration of available EBPs.

### CANS DATA IN ACTION: AN EXAMPLE

The Washington County Wraparound Initiative notices that the among their most common actionable CANS needs for their youth at enrollment, two are resistant to change: School and Impulsivity. See Figure 3.

They wonder if part of the problem may be the availability of local services aimed at addressing Impulsivity and School issues, and whether there is anything they can do to support their staff to more effectively address these needs.

1. First, they make a list of the possibly-relevant services—such as the availability of psychiatrists and family respite—and of branded EBPs. See Figure 4.
  - a) Next, they systematically review the availability and quality of these services in their local system.
2. Simultaneously, they ask their staff about common strategies and referral sources for youth who struggle in school and with impulsivity, and their impression of what is missing. They make a list of possible workforce development strategies:
  - a) For example, staff may benefit from increased training around navigating the school system, such as the criteria for an IEP, effective strategies for parents to encourage homework completion, and connections with the school to encourage teachers to participate in Wraparound meetings.
3. Finally, they use a list of proposed changes as a guide for decisions about next year’s training curriculum, advocacy, and system-level change.

Figure 3. Most common needs at enrollment and six months

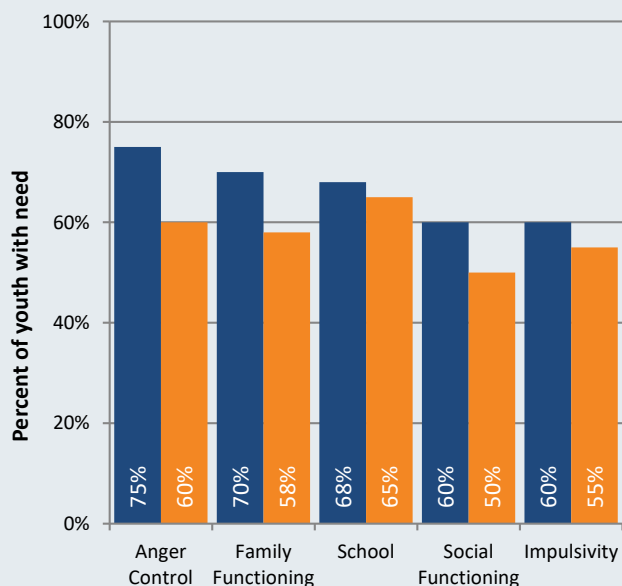


Figure 4. Crosswalk of most common needs and potential EBPs

Need	Potential EBPs	Currently Available EBPs
<b>Anger Control</b>	- Second Step - Incredible Years - MST - CBT	- MST - CBT
<b>Family Functioning</b>	- PCIT - Family-Based Beh. Tx - FFT - MDFT	- PCIT
<b>School</b>	- Project Achieve - MST - Contingency Mgmt	- MST - Contingency Mgmt
<b>Social Functioning</b>	- PEERS - Peer Pairing	- Peer Pairing
<b>Impulsivity</b>	- PBS - Medication Mgmt - Behavioral Parent Training - Behavioral Classroom Mgmt	- Medication Mgmt - Behavioral Parent Training

# OUTCOMES MONITORING

## CANS MEASUREMENT IS ABOUT ACTION

At the level of programs and systems, measurement can feel abstract. It's helpful to always remember what scores are meant to represent at the individual level. CANS measurement prioritizes information that can be immediately translated into action.

- 0 No Evidence, no need for further action
- 1 Watching waiting/prevention
- 2 Action is needed
- 3 Immediate or intensive action is needed

## COMMON MEASURES OF CHANGE

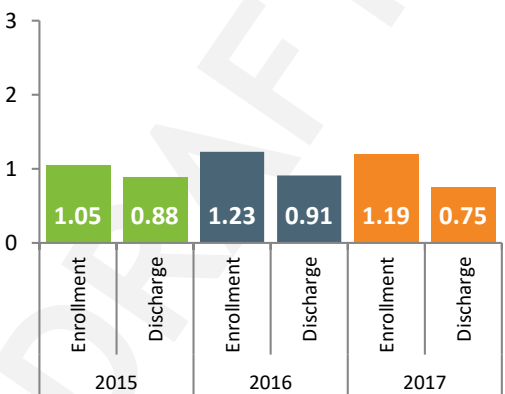
Figure 6: 4x4 table

		Follow-Up CANS Score			
		0	1	2	3
Initial CANS Score	0	10			2
	1	1	5	3	
	2		6	5	
	3		4		

**4x4 TABLE:** sometimes called a "Crosstab," visualizes change between CANS assessments administered at two time points. Each cell shows how many times a possible pre-post score pair occurred (e.g., 0 at enrollment, 2 at follow up). See Figure 6. The left (grey) diagonal shows instances where no change occurred. The upper-right (red) cells capture worsening. The bottom-left (green) cells show improvement.

- These can be created on the level of...
  - *Individual items:* cells are counts of a sample of youth's pre-post scores on a single item. "10 youth scored 0 on 'Anger Control' at both enrollment and Discharge."
  - *Individual youth:* cells are the counts of multiple items' pre-post scores, often within one domain. "For this youth, 10 needs items were scored as a 0 at both enrollment and Discharge."
  - *Program or system population:* cells are the counts of both items and youth "Among all the CANS administered in this jurisdiction during a particular timeframe, there were 10 instances where an item was scored as a 0 at both enrollment and Discharge."
- This approach does not result in the loss of information, like many other attempts at summarizing scores. You do not need to rely on a subset of youth for whom a need was or was not actionable at a certain time point.

Figure 7: Average "Youth Risk" domain change score over time\*



**AVERAGE DOMAIN AND TOTAL SCORES:** Figure 7 illustrates how program-level average scores can be used to track overall "Youth Risk" over time.

Proceed with caution, however. While such a single score is highly convenient, it obscures the focus on action that the CANS is built around. Refer to Figure 8 and recall that a 1 indicates "watching/waiting" while a 3 indicates "immediate action is needed." Average scores treat these two youth as equally "needy." As a result it is difficult to say with confidence what average scores represent.

Figure 8: Example of the information lost in average scores

	Youth A	Youth B
Suicidal Behavior	3	1
Bullying	0	1
Anger Control	0	1
<b>Average</b>	<b>1.0</b>	<b>1.0</b>

\*Traditionally, average domain and total scores are multiplied by 10. We recommend using the raw average, as it is more easily connected to the CANS response options.



# COMMON MEASURES OF CHANGE (CONT.)

**CHANGE CATEGORIES:** Categorical descriptions of how CANS scores have changed. Figure 9 lists the possible change categories for any given item.

- Note that these categories overlap, and rely only on subsets of the data (e.g., “resolution” can only occur for those youth for whom the need was “actionable” at enrollment).
- While “resolution” of a need (e.g., a change from a 2 or 3 to a 1 or 0) is a commonly used metric, it may obscure progress made, especially if the CANS is scored in accordance to the guidance that a need persists if an intervention is necessary to maintain improved functioning.
- For a fuller picture, we suggest reporting the average number of items that fall into each category. For example, “After 6 months, youth had resolved an average of 2 needs, identified an average of 1 new need, made clinical improvement on an average of 7 needs, and showed evidence of worsening on an average of 3 needs.”
- Figure 10 illustrates how a system might track use one of these categories to track youth progress over time. Note that this still relies on a subset of youth who did not score a 0 on the item at enrollment.

**CHANGE IN NUMBER OF ACTIONABLE NEEDS:** an aggregation of the number of needs resolved and the number of needs newly identified. This is a useful single measure that remains grounded in action and the number of needs.

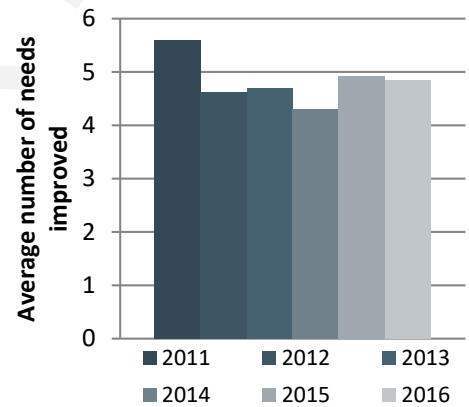
**RELIABLE CHANGE INDEX:** a statistical approach to determining whether an observed change in scores is “real” rather than an artifact of error or noise.

- For information about calculating reliable change, see Jacobson & Traux, 1991<sup>1</sup>.
- While it can be convenient to have a single number to represent the amount of “real” change in your population, we have concerns that bias in CANS scoring is likely to be non-random, and that focusing on reliable change minimizes acknowledgement of progress and further obscures the CANS’ intended focus on actionable information.

Figure 9: CANS change categories

Change Category	Initial Score	Follow Up Score
Need Resolved	2 or 3	1 or 0
Need Newly Identified	1 or 0	2 or 3
Clinical Improvement	1, 2, or 3	A difference of at least -1
Worsening	0, 1, or 2	A difference of at least +1
Continuity of Need	2 or 3	2 or 3
Maintenance	1 or 0	1 or 0

Figure 10: Example of monitoring change in the number of needs of improved over time



## ENSURING DATA INTEGRITY

Figure 11: Example matched-sampling procedure

Youth	Enrollment CANS	Follow-Up CANS	Matched CANS
001	Yes	Yes	Yes
002	Yes	No	No
003	Yes	No	No
004	Yes	Yes	Yes
005	No	Yes	No
006	No	No	No
007	Yes	Yes	Yes
008	Yes	Yes	Yes
009	No	Yes	No
<b>Total</b>	<b>6</b>	<b>6</b>	<b>4</b>

### ALWAYS USE MATCHED SAMPLES WHEN MONITORING OUTCOMES

Whenever you are assessing change between two time points, it is critical to include only *matched* CANS. That is, you want to only select and report on youth who have assessments at **all** the time periods you are comparing.

- Always report your sample size. Try to keep it consistent throughout any report; or, if you report on all enrollment CANS and then want to assess change, make it clear when you are switching to the smaller, matched sample.

For example, in Figure 11, although there are 6 CANS complete at both enrollment and follow-up, only 4 CANS are complete at both time periods. There may be systematic reasons that youth would not have complete assessments. For example, youth without a follow-up CANS may have discharged earlier, or may have been less engaged. You should only compare the assessments for youth where you have all of the matched assessments.

<sup>1</sup>Jacobson, NS & Truax P. Clinical significance: a statistical approach to defining meaningful change in psychotherapy research. J Consult Clin Psychol. 1991 Feb;59(1):12-9.

# THE FLOW OF CANS DATA SUMMARY

• The appropriate summarization of CANS data at the program or system level depends on the focus of your investigation. Broadly, there are three decisions that will determine what metrics or statistics are available to you:

1. The **number of youth** you want to assess
2. The **number of items** you want to understand
3. The **number of time points** you want to explore

- All CANS measurement begins at the level of a single score (the top circle).
- These individual scores can be rolled up into summaries of a single youth, a single item, or a program/system—many items and many youth (the middle row of circles).
- These summaries of a single time point can be compared to identical summaries at another time point to measure change (the bottom row of circles).

Single Score

1 Youth

1 Item

1 Time point

- Single score (0-3)
- Actionable/not actionable (2/3 or 0/1)

Youth Summary

1 Youth

Many Items

1 Time point

- Average number of actionable needs per youth
- Average youth Score
- Most and least prevalent needs

Item Summary

Many Youth

1 Item

1 Time point

- Number of youth with actionable need
- Average score
- Frequency of responses (0-3)

Program Summary

Many Youth

Many Items

1 Time point

- Average number of actionable needs per youth
- Average youth score
- Most and least prevalent needs

Youth Change

1 Youth

Many Items

2 Time points

- 4x4 table
- Change in number of youth with actionable need
- Change categories
- Change in average score

Item Change

Many Youth

1 Item

2 Time points

- 4x4 table
- Change in average number of actionable needs per youth
- Change categories
- Change in average youth score

Program Change

Many Youth

Many Items

2 Time points

- 4x4 table
- Change in number of actionable needs
- Change categories
- Change in average score
- Reliable change



# CREATING "PROVIDER PROFILES" OF OUTCOMES

System administrators have a unique opportunity to help each WPO understand how they compare to other providers in the system. Any of the summaries or change metrics used to track outcomes or establish the severity and complexity of youth can be compared across WPOs or regions.

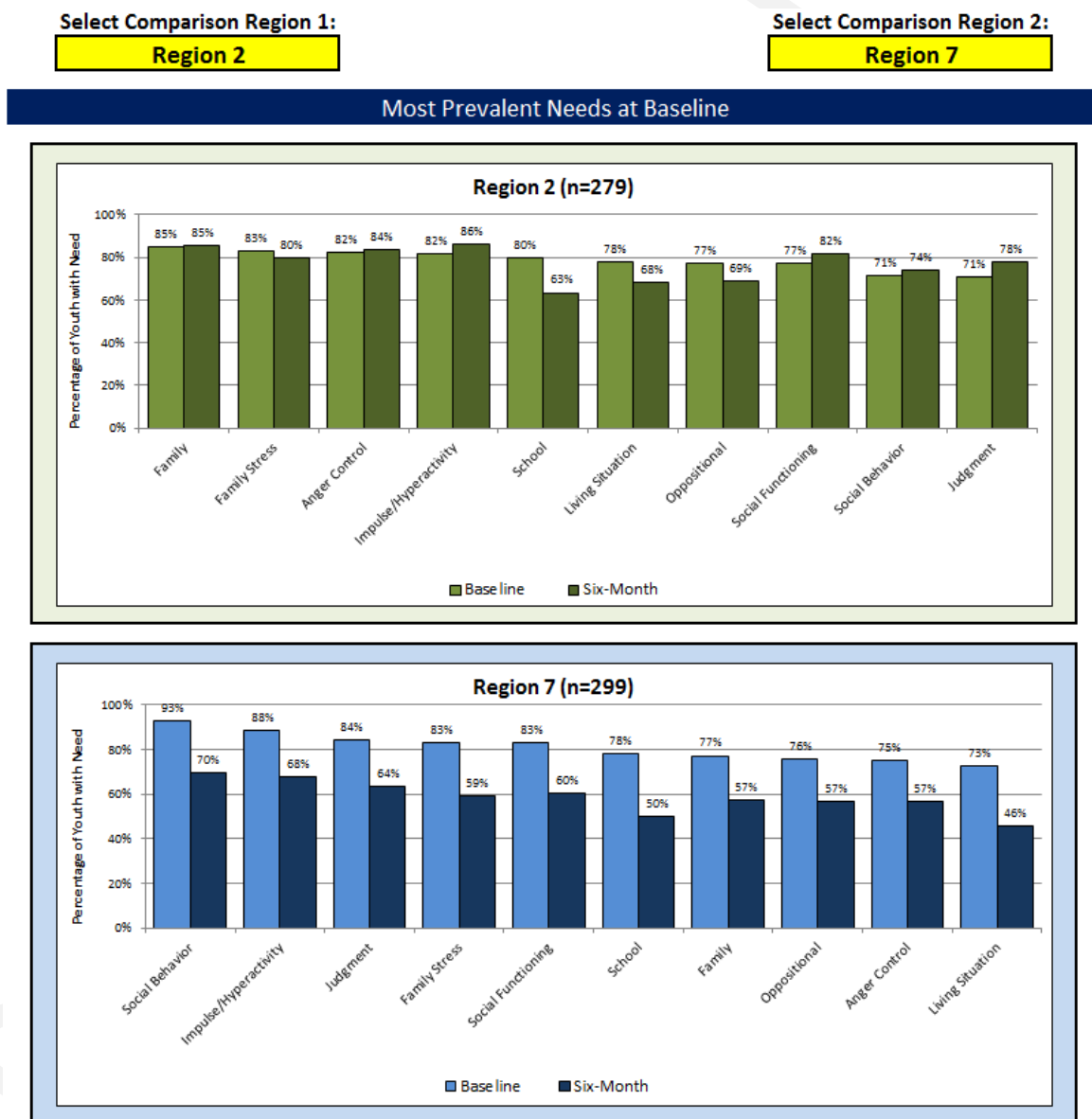
Consider creating dashboards or provider profiles to feed the information back to stakeholders and stimulate meaningful use of the data. Figure 12 below illustrates an Excel dashboard that allows a system to compare the most common needs across separate regions within the system. This information can help facilitate discussions about and guide resource allocation.

- Some out-of-the-box software can help, such as Tableau or PowerBI

**NOTE OF CAUTION:** When comparing outcomes, it is important to think critically about and communicate to stakeholders an understanding of the variety of things that may influence an organization's or region's outcomes other than the skill or performance of staff.

- For example, when comparing a dense urban county and a sparse-populated rural county, the urban county almost will almost certainly have a more robust service array than the rural county, and may also serve youth with quite different needs.

Figure 12: Example of a CANS dashboard comparing need prevalence across regions.



# DISCHARGE OUTCOMES FROM A SAMPLE OF WRAPAROUND SITES

The table below summarizes the change experienced by youth enrolled at nine Wraparound sites, as measured by their CANS, at enrollment and discharge. Because each site’s CANS differs in length and domain structure, we created three overarching domains: “Youth Needs, comprised of all items assessing functioning, risk, behavior, etc.,” “Youth Strengths,” and “Caregiver Items,” which include both strengths and needs items related to caregivers. **The specific numbers presented should not be considered benchmarks or norms.**

## SYSTEM-LEVEL TRENDS

In our sample, most youth started Wraparound with between 6 and 12 actionable needs, and had 2 or 3 fewer needs at discharge, suggesting that, even at discharge, Wraparound-enrolled youth still struggle with several “actionable” needs and/or need supports and services to maintain a desired level of functioning.

- Note that while there is a lot of variation between these sites, there is even more variation within the sites.

Youth demonstrated improvement (a change of at least -1) on a wider range of needs: between 6 and 10 .

- These represent around 40% of the items where improvement was possible (not scored a 0 at enrollment), suggesting **broad improvement in spite of a number of needs that still require action at discharge.**

At a system-level, youth developed 1 or 2 Strengths by the time they discharged from Wraparound.

Caregiver items demonstrated less change. On average, 3 were actionable at enrollment, and less than 1 item was “resolved” by discharge.

### THE CANS IS A CUSTOMIZABLE “STANDARDIZED” TOOL

Each Wraparound initiative can tailor their CANS to include a different set of items. While most items have standardized anchor language, it can slightly vary, and sites have the option of developing unique items to meet their needs. Furthermore, items can be grouped into a variety of Domains and Modules. While there is some consistency across sites, the CANS you use may not closely resemble the CANS used in the comparison sites.

Calculating average scores shows less change. On average, the score for all youth needs is -0.14 lower at discharge (on a scale from 0-3). This is likely due to the fact that most youth will score a 0 for most of the needs’ items. The table makes clear that **average scores underestimate change for Wraparound populations.**

	Site A	Site B	Site C	Site D	Site E	Site F	Site G	Site H	Site I	Site-Level Average
<b>Site Characteristics</b>										
CME, CMHC, or CBO	CME	CMHC	CME	CBO	CMHC	CBO	CBO	CMHC	CMHC	--
Year of Wrap Implementation	2013	2009	2013	1995	2015	2010	2010	2008	2013	--
Year of CANS Implementation	2008	2014	2014	2011	2014	2010	2007	2008	2012	--
CANS used for eligibility determination?	No	Yes	Yes	No	No	No	No	Yes	Yes	--
Start year of data	2010	2009	2013	2011	2011	2013	2009	2008	2013	--
End year of data	2015	2016	2016	2016	2016	2016	2016	2012	2016	--
<b>CANS Characteristics</b>										
Number of non-module CANS items	78	65	67	58	83	62	65	61	64	67
Youth Needs (e.g., Youth Risks, Behavioral & Emotional Needs, etc)	42	37	40	36	54	40	39	36	37	40
Youth Strengths	16	10	13	11	16	11	13	11	11	12
Caregiver Needs and Strengths	20	18	14	11	13	11	13	14	16	14
Number of matched Intake-Discharge Youth	151	41	1420	1635	137	577	543	311	543	595
<b>ENROLLMENT: Actionable Items</b>										
Average number of actionable youth needs	6.62	7.90	11.00	6.98	11.76	7.34	7.11	18.73	16.81	10.47
% of total needs items	16%	21%	27%	19%	22%	18%	18%	52%	45%	27%
Average number of youth strengths	7.68	6.51	3.96	4.43	7.49	5.53	4.76	2.65	2.54	5.06
% of total strengths items	48%	65%	30%	40%	47%	50%	37%	24%	23%	41%
Average number of actionable caregiver items	2.58	2.62	3.44	1.44	2.53	1.25	2.15	5.58	5.62	3.02
% of total caregiver items	13%	15%	25%	13%	19%	11%	17%	40%	35%	21%
<b>DISCHARGE: Change in number of actionable items</b>										
Actionable youth needs	-2.58	-0.90	-5.34	-1.81	-3.90	-2.93	-2.03	-4.09	-2.25	-2.87
% of total needs items	-6%	-2%	-13%	-5%	-7%	-7%	-5%	-11%	-6%	-7%
Youth strengths	3.93	-0.24	3.03	1.14	0.93	1.73	2.04	1.88	0.67	1.68
% of total strengths items	25%	-2%	23%	10%	6%	16%	16%	17%	6%	13%
Actionable caregiver items	-1.18	0.28	-1.24	-0.18	-0.56	-0.31	-0.10	-1.05	-0.55	-0.54
% of total caregiver items	-6%	2%	-9%	-2%	-4%	-3%	-1%	-7%	-3%	-4%
<b>DISCHARGE: Average Number of Items Improved</b>										
Youth needs	9.40	5.68	9.29	5.74	9.29	5.81	7.05	10.59	8.55	7.93
Average % improved (out of those items not scored 0 at BL)	62%	34%	56%	41%	40%	41%	47%	43%	39%	45%
Youth strengths	4.51	1.80	3.22	1.12	1.29	1.33	1.04	2.92	3.71	2.33
Average % improved (out of those items not scored 0 at BL)	58%	31%	49%	33%	24%	39%	17%	35%	43%	37%
Caregiver items	7.32	1.63	5.56	2.54	3.22	2.64	3.49	3.39	3.01	3.64
Average % improved (out of those items not scored 0 at BL)	51%	20%	46%	28%	26%	30%	40%	33%	29%	34%
<b>DISCHARGE: Change in average score (0-3)</b>										
Change in average youth needs score	-0.17	-0.02	-0.23	-0.10	-0.15	-0.11	-0.11	-0.23	-0.13	-0.14
Change in average youth strengths score	0.25	-0.02	0.23	0.11	0.06	0.16	0.11	0.10	0.06	0.12
Change in average caregiver items score	-0.15	-0.01	-0.16	-0.03	0.13	-0.03	-0.01	-0.08	-0.12	-0.05

# QUALITY IMPROVEMENT

## TEST HYPOTHESES

Implementing a complex process like Wraparound involves ongoing workforce and system development. CANS data can be used to check the impact of those initiatives and guide the inevitable adjustment of initial efforts. When you make changes to Wraparound and its system context, make hypotheses about the impact of those changes and test those hypotheses with data.

Figure 13: Example of CANS use to monitor workforce development.

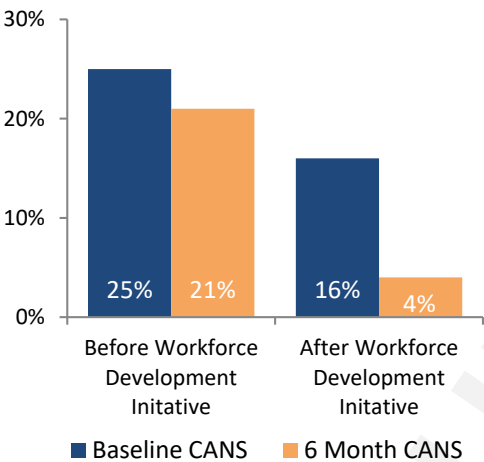
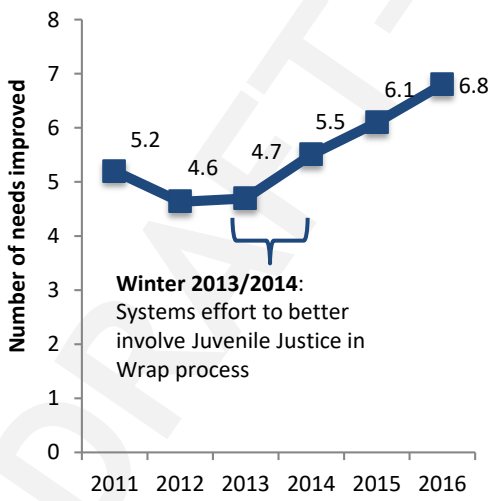


Figure 14: Example of CANS use to monitor system development.



## MONITORING THE IMPACT OF YOUR DECISIONS

The impact of workforce development and related efforts can be monitored in the same way as outcomes. By examining unit or program performance in relevant CANS items before and after decision-making, hypotheses can be tested. A stakeholder group can explore other possible reasons for apparent change or lack of change to inform ongoing workforce development and resource allocation

- Figures 13 and 14 illustrate examples of how a program might monitor the impact of workforce development initiatives. In Figure 13, the fictional program believes that their development efforts will impact one item (Suicide Risk) directly and so check that item for evidence of its success.
- In figure 14, the program believes their initiatives will have a more global impact on the outcomes of youth and so track a more global outcome, the number of Youth Needs improved, also putting their current numbers into a wide context.
- Note that in either situation the impact on scores may be due to actual differences in youth's needs and/or changes in scoring practices; therefore it is important to consider changes to baseline scores post-intervention as well (see Figure 13).

## ENGAGING STAKEHOLDERS

Wraparound, at its very core, strives to engage and coordinate multiple internal and external stakeholders. This same principle should apply to accountability and quality improvement efforts.

- Regularly convene a Wraparound Quality Team to review **all** relevant data (including, but not limited to CANS) and ensure its meaningful use at every level of practice.
- Make sure a variety of perspectives are represented around the table to facilitate meaning making and hypothesis generation and testing.

# ADDITIONAL RESOURCES

## The CANS, Communimetrics, and TCOMS

- Official website of the CANS developer: <https://praedfoundation.org/tools/the-child-and-adolescent-needs-and-strengths-cans/>
- Lyons, J. S. (2009). *Communimetrics: A communication theory of measurement in human service settings*: Springer Science & Business Media.
- Transformational Collaborative Outcomes Management, the philosophy in which the CANS is grounded: <https://tcomconversations.org/>
- Lyons, J. S. (2004). *Redressing the emperor: Improving our children's public mental health system*. Greenwood Publishing Group.
- Lyons, J. S., & Walton, B. A. (2008). Implementation of a common assessment tool and quality management process across child service systems: Child and Adolescent Needs & Strengths (CANS). Available at: <https://scholarworks.iupui.edu/bitstream/handle/1805/7361/lyons-2008-implementation.pdf>
- Israel, N. (2017). TCOM Report Suite. Praed Foundation. Available at: [https://praedfoundation.files.wordpress.com/2017/04/tcom-suite-of-reports\\_final.pdf](https://praedfoundation.files.wordpress.com/2017/04/tcom-suite-of-reports_final.pdf)
- Lyons, J. S., Weiner, D. A., & Lyons, M. B. (2004). Measurement as communication in outcomes management: The child and adolescent needs and strengths (CANS). *The Use of Psychological Testing for Treatment Planning and Outcomes Assessment. Volume 2: Instruments for Children and Adolescents*. Available at: [https://www.researchgate.net/profile/John\\_Lyons5/publication/281304677\\_Measurement\\_as\\_communication\\_in\\_outcomes\\_management\\_The\\_Child\\_and\\_Adolescent\\_Needs\\_and\\_Strengths\\_CANS/links/5668c1b508ae7dc22ad38af4.pdf](https://www.researchgate.net/profile/John_Lyons5/publication/281304677_Measurement_as_communication_in_outcomes_management_The_Child_and_Adolescent_Needs_and_Strengths_CANS/links/5668c1b508ae7dc22ad38af4.pdf)

## The authors' previous work with the CANS

- Schurer Coldiron, J., Hensley, S.W., Bruns, E.J., Parigoris, R. (2016). *Putting the Outcomes-Based Principle into Action Part One: A Guide for Wraparound care coordinators*; Maryland, MD: The National Technical Assistance Network for Children's Behavioral Health. Available at: <https://nwi.pdx.edu/webinars/Webinar33-resource-Wraparound-Care-Coodinator-Guide.pdf>
- Bruns, E.J., Schurer Coldiron, J., Hensley, S.W. (2016) Conference presentation on use of administrative CANS data for benchmarking and outcomes monitoring in state-wide Wraparound initiatives. Presented at the 29th Annual Research & Policy Conference on Child, Adolescent and Young Adult Behavioral Health. March 14, 2016. Tampa, Florida. <https://nwi.pdx.edu/pdf/pres-CANS-Tampa-2016.pdf>
- Bruns, E.J., Schurer Coldiron, J. (2015) CANS and Wraparound: Opportunities and Challenges. Presented at the 11<sup>th</sup> Annual TCOM/CANS Conference. November 6, 2015. Seattle, WA. <https://depts.washington.edu/wrapeval/sites/default/files/presentations/CANS%20PLENARY%2011-6-15%20BRUNS.pdf>
- Schurer Coldiron, J., Hensley, S.W., Bruns, E.J., Parigoris, R. (2016). Learning from CANS to Inform Wraparound Initiatives: Discoveries and Challenges. Presented at the 11<sup>th</sup> Annual TCOM/CANS Conference. November 18, 2015. Princeton, NJ. [https://depts.washington.edu/wrapeval/sites/default/files/presentations/CANS%20PLENARY%2011-18-16%20Bruns\\_FINAL.pdf](https://depts.washington.edu/wrapeval/sites/default/files/presentations/CANS%20PLENARY%2011-18-16%20Bruns_FINAL.pdf)