

CANS in Clinical Use

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LOS ANGELES COUNTY
DEPARTMENT OF
MENTAL HEALTH
hope. recovery. wellbeing.

▶▶ Today!

1. Why is the CANS so... frustrating!!!
2. CANS profile - a great starting point
3. Six ways CANS data can be explored for change
4. Advanced exploration with CANS data
5. A cautionary tale

▶▶ Opening the CANS for Clinical Use

Why is CANS so
Frustrating?

It offers a mix of
sweet and sour



▶▶ A Strength the CANS brings to Practice

Comprehensive
50 of the most
important items

The image displays three overlapping CANS (Child and Adolescent Needs and Strengths) assessment forms. The forms are tilted and show various domains and items with checkboxes for scoring.

BEHAVIORAL/EMOTIONAL NEEDS DOMAIN
0=no evidence
2=interferes with functioning; action needed
1=history or suspicion; monitor
3=disabling, dangerous; immediate or intensive action needed

	0	1	2	3
1. Psychosis (Thought Disorder)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Impulsivity/Hyperactivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Depression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Anxiety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Oppositional Conduct	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Substance Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Anger Control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Adjustment to Trauma	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. Community Life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. Natural Supports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Resiliency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

RISK BEHAVIORS
0=no evidence
2=interferes with functioning; action needed
1=history or suspicion; monitor
3=disabling, dangerous; immediate or intensive action needed

	0	1	2	3
21. Suicide Risk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Non-Suicidal Self-Injurious Behavior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Other Self-Harm (Recklessness)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Danger to Others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Runaway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Sexual Aggression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Delinquent Behavior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Intentional Misbehavior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50a. Safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CAREGIVER RESOURCES AND NEEDS

▶▶ A Weakness the CANS brings to Practice

The image shows three overlapping CANS assessment forms. The top-left form is the 'BEHAVIORAL/EMOTIONAL NEEDS DOMAIN' with a legend: 0=no evidence, 1=history or suspicion; monitor, 2=interferes with functioning; action needed, 3=disabling, dangerous; immediate or intensive action needed. It lists items 1-9 and 38-40. The top-right form is the 'RISK BEHAVIORS' section with the same legend, listing items 21-28 and 50a. The middle form is the 'CAREGIVER RESOURCES AND NEEDS' section, partially obscured.

Item	0	1	2	3
1. Psychosis (Thought Disorder)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Impulsivity/Hyperactivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Depression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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6. Substance Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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39. Resiliency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Resiliency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Item	0	1	2	3
21. Suicide Risk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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28. Intentional Misbehavior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50a. Safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comprehensive
50 of the most
important items

▶▶ A Strength the CANS brings to Practice

Flexible
Lets clinicians
be clinicians



▶▶ **A Weakness** the CANS brings to Practice



**Demands more
of clinicians**

▶▶ **A Strength** the CANS brings to Practice

The CANS “is a multiple purpose **information Integration tool** that is designed to be the output of an assessment process....

completion of the CANS ...is accomplished in order to allow for the **effective communication of this shared vision...**

The purpose of the CANS comprehensive is to accurately represent the shared vision”



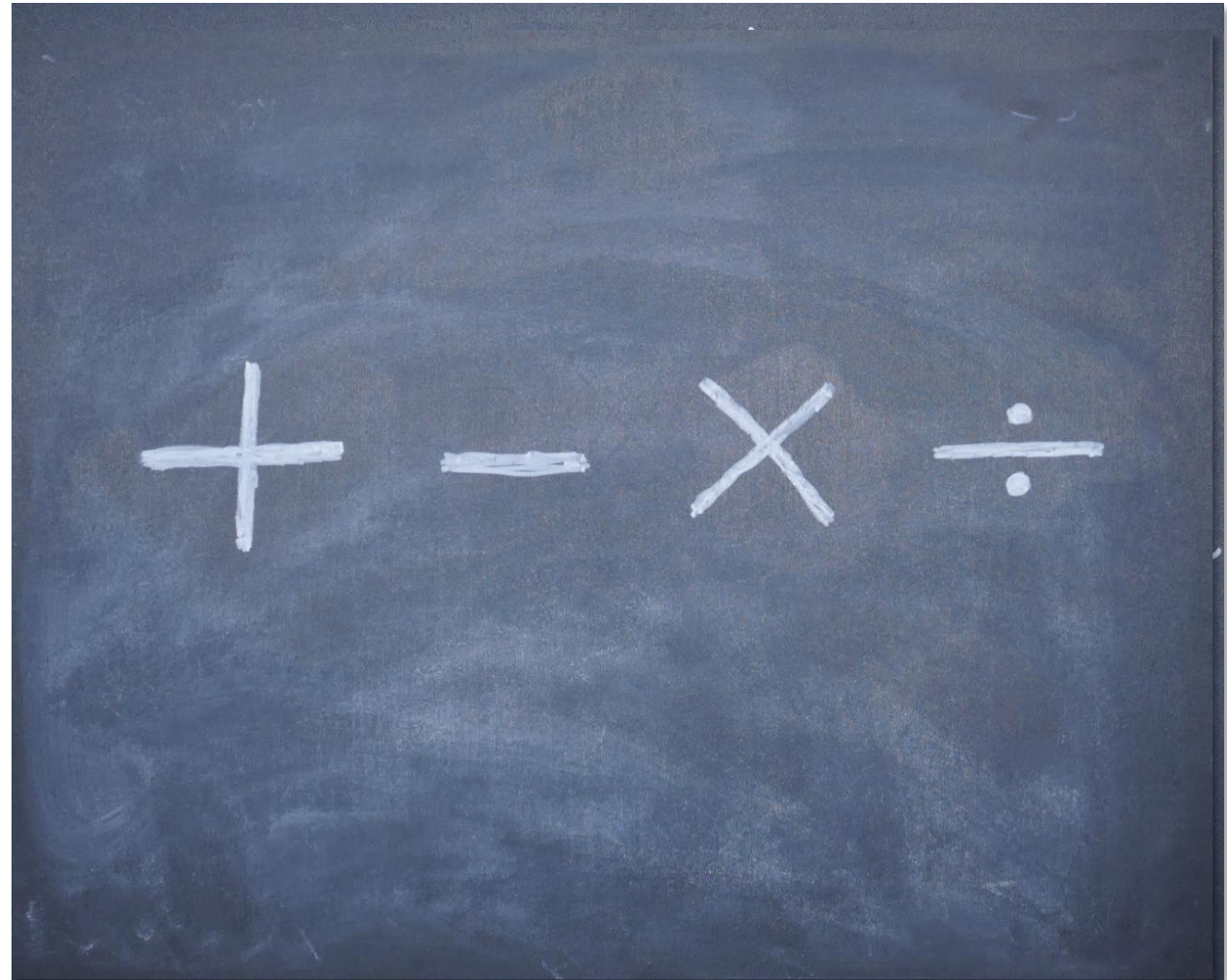
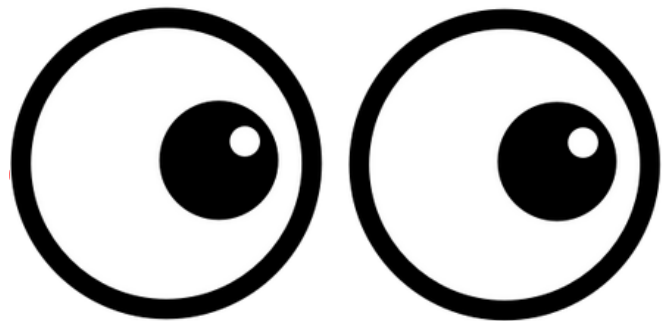
▶▶ **A Weakness** the CANS brings to Practice

The CANS is not a typical measure...there are no standardized indicators of success



▶▶ Statistical analysis can help but...

We were determined to make analysis simple to encourage providers to explore their own data

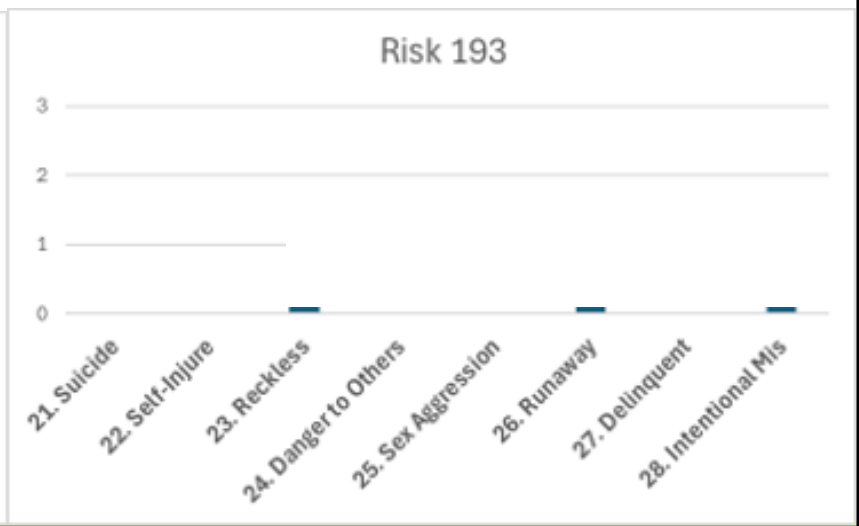
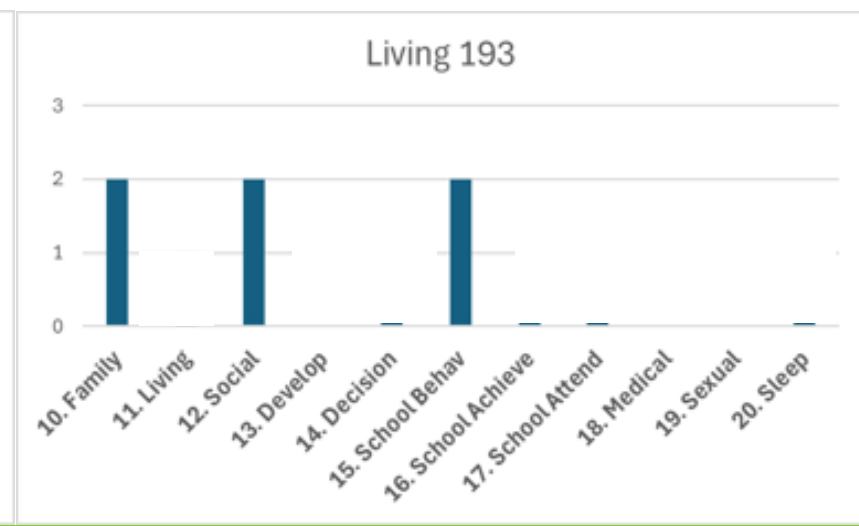
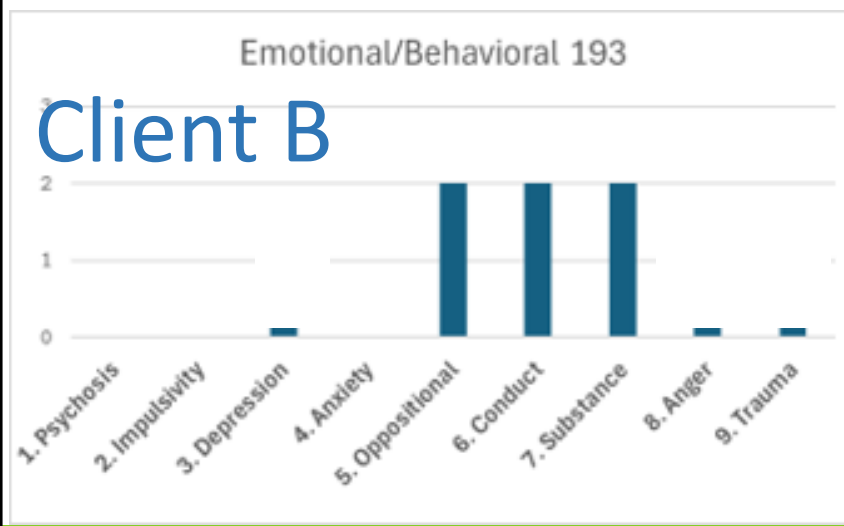
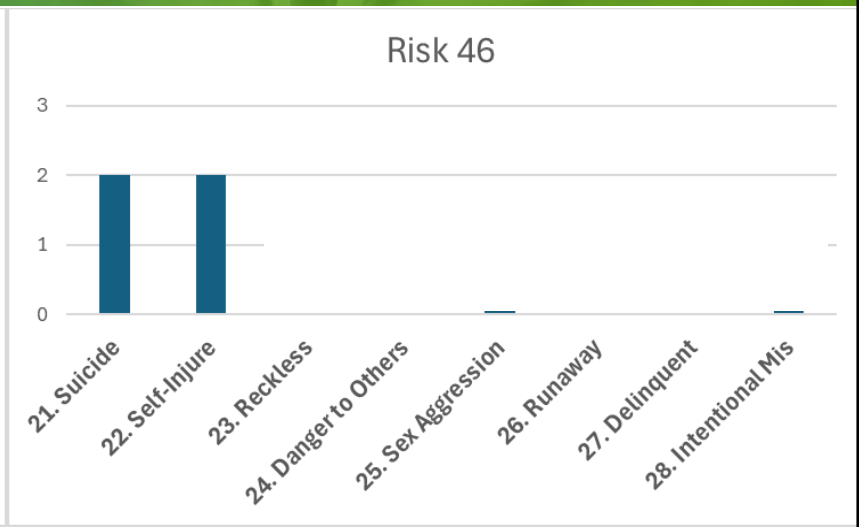
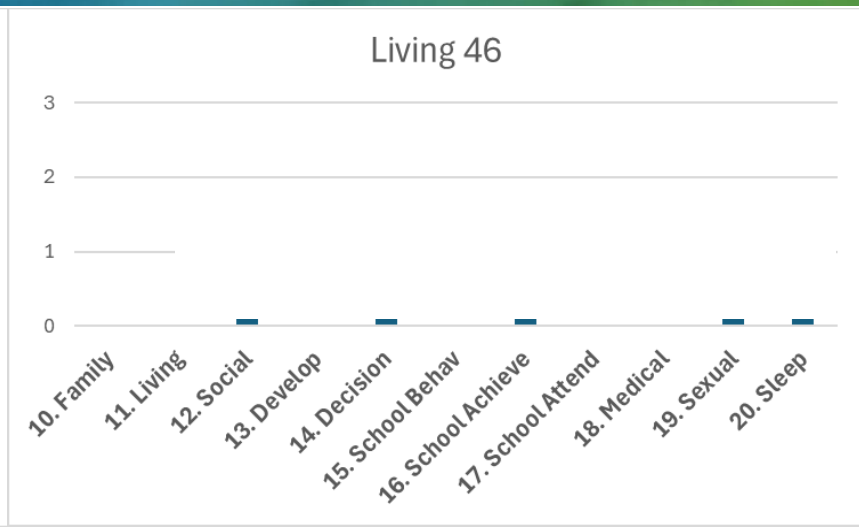
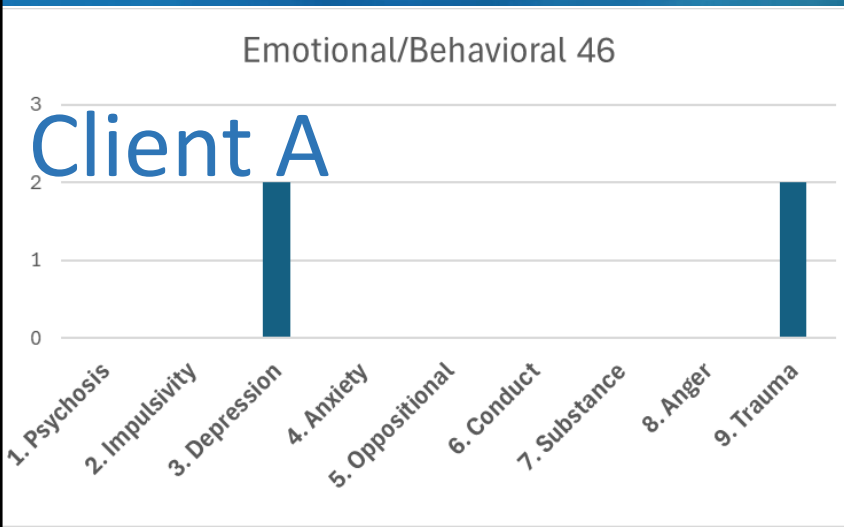


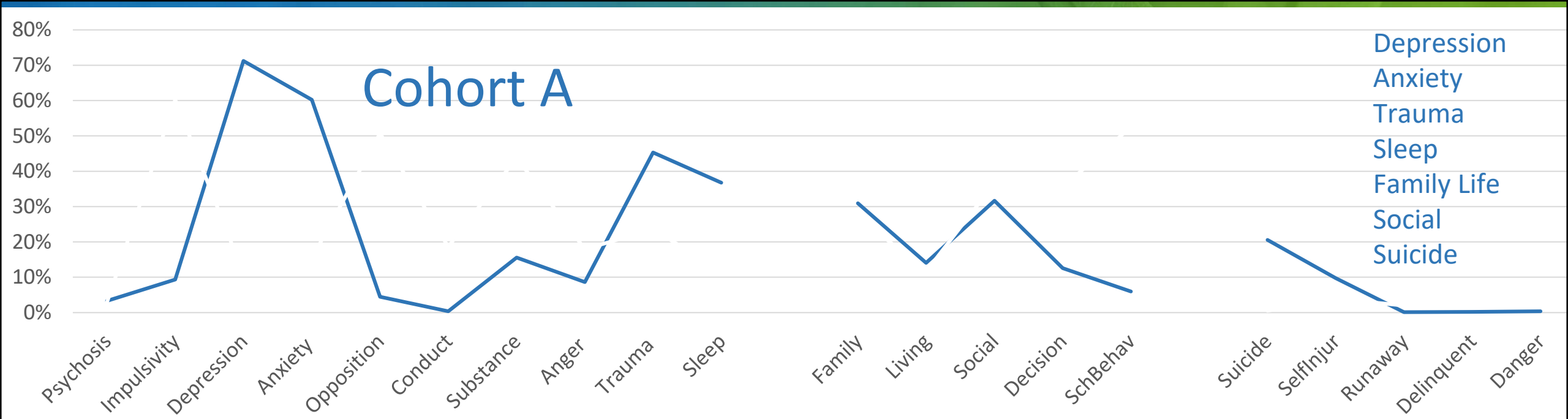


CANS Profile

a great starting point

▶▶ Individual and Cohort Profiles





▶▶ How to Explore CANS data for Change

1. Basic Approach: Individual Analysis

▶▶ Basic Approach: Item by Item

BEHAVIORAL/EMOTIONAL NEEDS DOMAIN
0=no evidence
2=interferes with functioning;
action needed
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or intensive action needed

Pre

	0	1	2	3
1. Psychosis (Thought Disorder)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Impulsivity/Hyperactivity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Depression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Anxiety	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Oppositional	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Conduct	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Substance Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Anger Control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Adjustment to Trauma	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BEHAVIORAL/EMOTIONAL NEEDS DOMAIN
0=no evidence
2=interferes with functioning;
action needed
1=history or suspicion; monitor
3=disabling, dangerous; immediate
or intensive action needed

Update

	0	1	2	3
1. Psychosis (Thought Disorder)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Impulsivity/Hyperactivity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Depression	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Anxiety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Oppositional	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Conduct	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Substance Use	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Anger Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Adjustment to Trauma	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Compare CANS data by the boxes

▶▶ Basic Approach: Item by Item

	Domain	
	Behavioral/Emotional Needs	T1
	Psychosis (Thought Disord)	0
	Impulsivity/Hyperactivity	0
	Depression	2
	Anxiety	3
	Oppositional	0
	Conduct	0
	Anger Control	0
	Substance Use	0
	Adj to Trauma	3

	Domain	
	Behavioral/Emotional Needs	T2
	Psychosis (Thought Dis)	0
	Impulsivity/Hyperactivity	0
	Depression	1
	Anxiety	2
	Oppositional	0
	Conduct	0
	Anger Control	0
	Substance Use	0
	Adj to Trauma	1

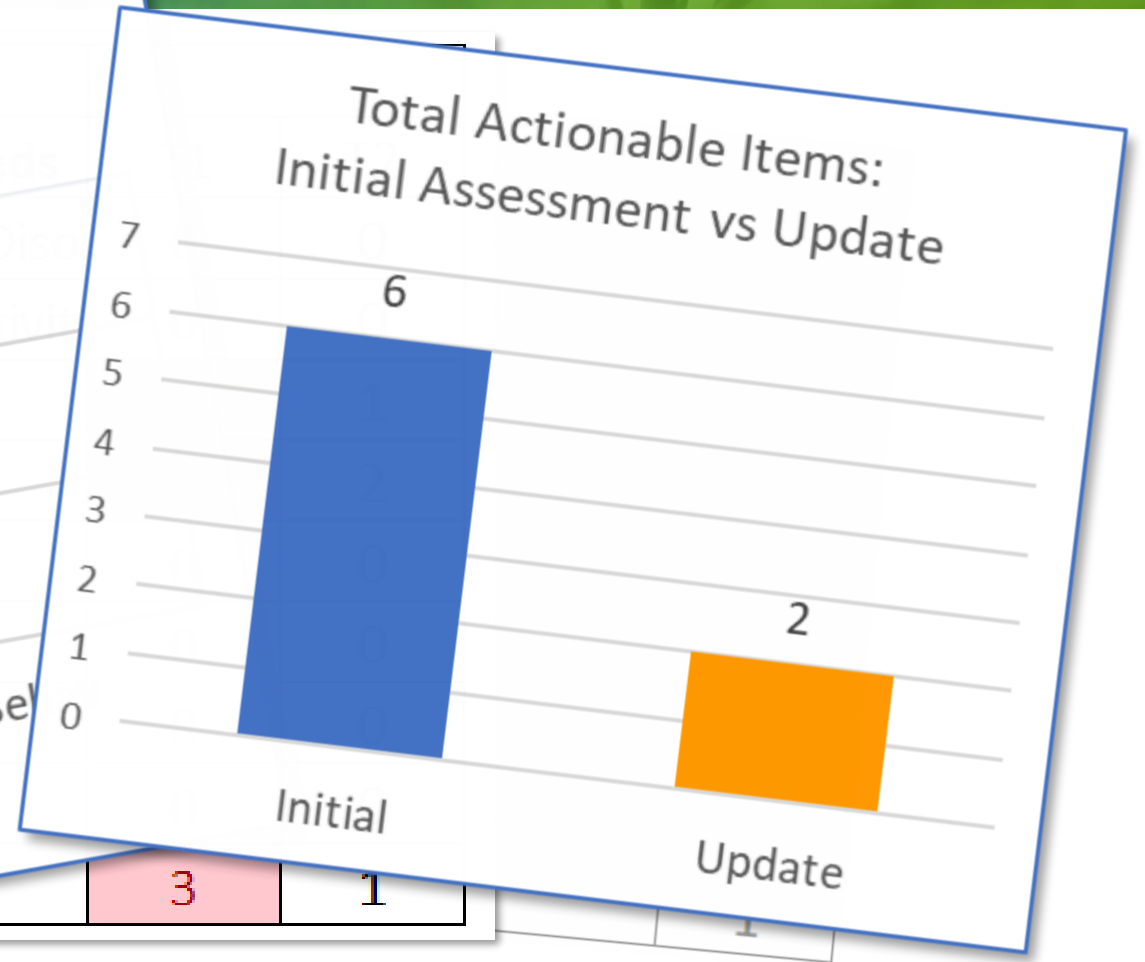
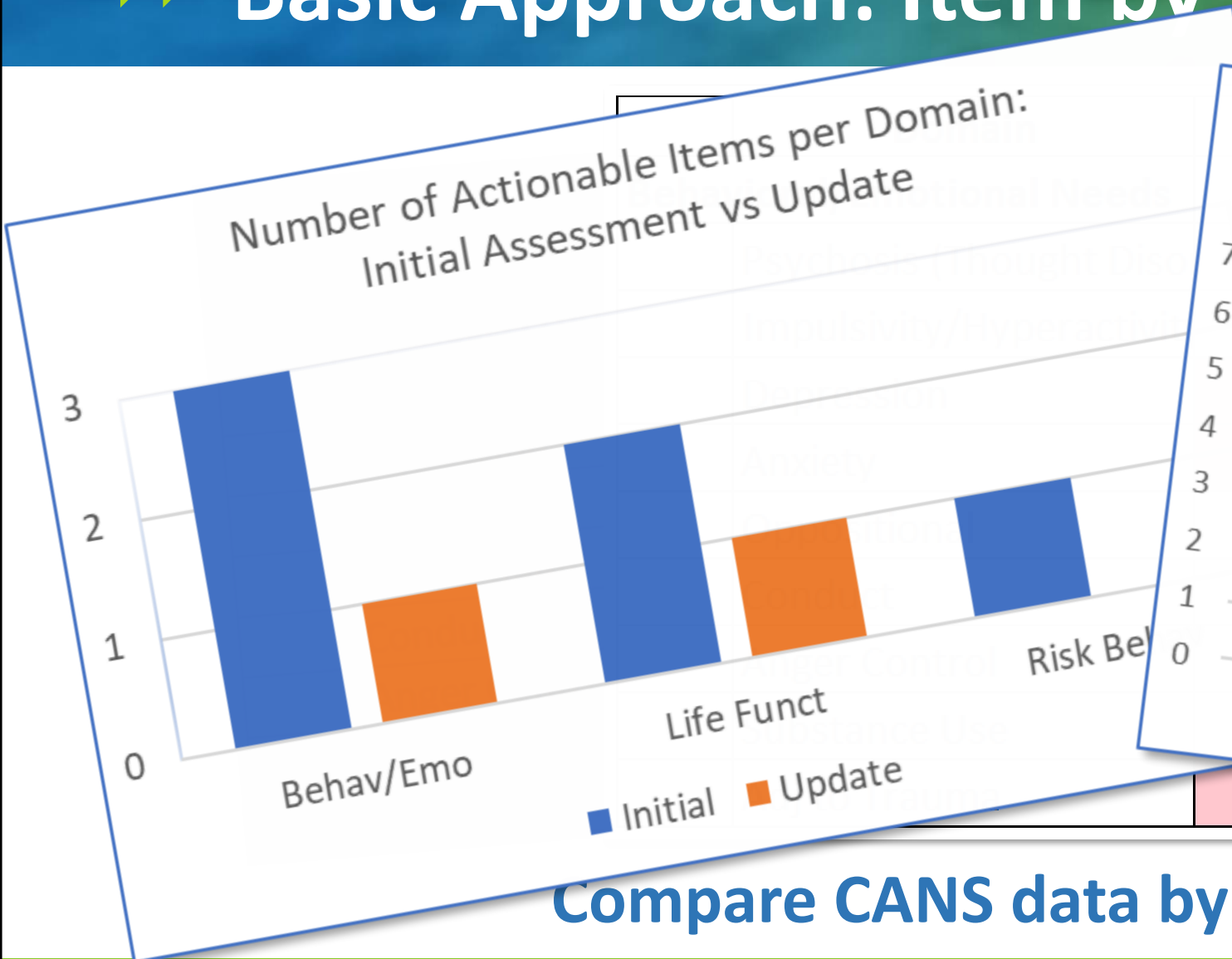
Compare CANS data by the numbers

▶▶ Basic Approach: Item by Item

	Domain	T1	T2
	Behavioral/Emotional Needs		
	Psychosis (Thought Diso	0	0
	Impulsivity/Hyperactivity	0	0
	Depression	2	1
	Anxiety	3	2
	Oppositional	0	0
	Conduct	0	0
	Anger Control	0	0
	Substance Use	0	0
	Adj to Trauma	3	1

Compare CANS data by the numbers

▶▶ Basic Approach: Item by Item



Compare CANS data by the numbers

▶▶ How to Explore CANS data for Change

2. Basic Approach: Cohort Assessment

▶▶ Basic Approach: Domain by Domain

Dr. John Lyon's suggests:

Behavioral/Emotional Domain

Average the scores
in each domain

Multiply the result by 10

Compare Domains across
administrations

Psychosis	Impulsivity	Depression	Anxiety	Oppositional	Conduct	Substance	Anger	Trauma
0	0	2	1	0	0	0	1	2
0	0	0	0	0	0	0	0	1
1	2	2	2	2	1	1	0	1
0	0	0	0	0	0	0	0	0
0	0	0	2	0	0	1	0	0
0	0	0	0	0	0	0	0	0
1	2	1	1	2	1	0	2	0
0	0	1	1	2	0	2	0	2
0	0	0	0	0	0	0	0	0
0	1	1	2	1	1	1	0	0
0	2	0	0	0	0	2	0	0
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0
0	1	2	2	0	0	1	0	2
0	0	2	0	1	0	1	0	0

Average score $.474 \times 10 = 4.74$

▶▶ Basic Approach: Domain by Domain

Dr. John Lyon's suggests:

Average the scores
in each domain

Time 1

4.74

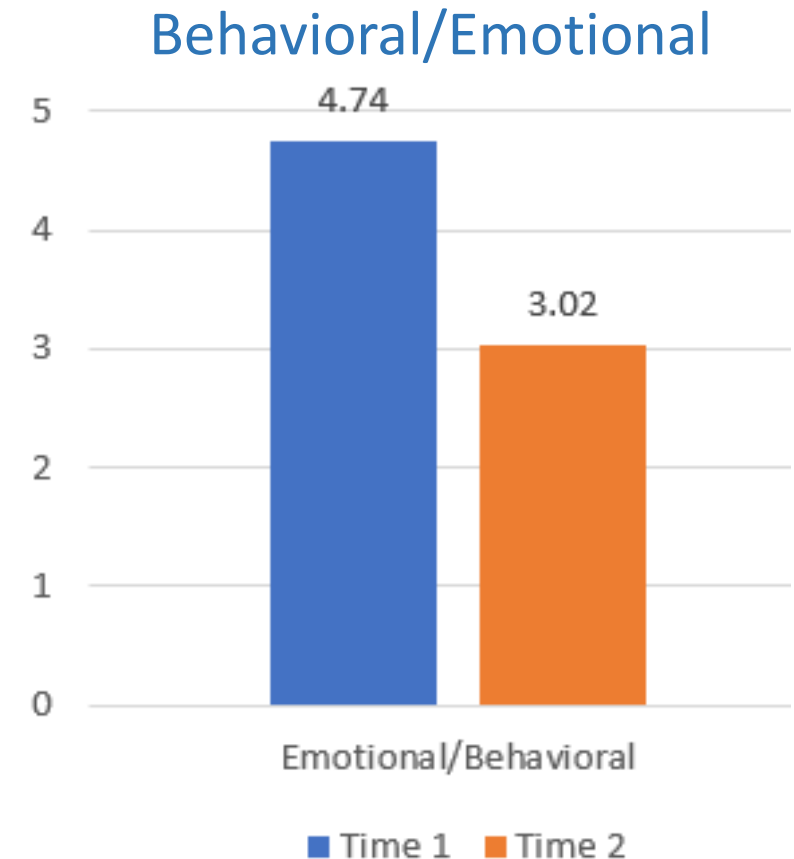
Time 2

3.02

Multiply the result by 10

Compare Domains across
administrations

Behavioral/Emotional



▶▶ How to Explore CANS data for Change

3. Intermediate Approach: Crosstab Assessment

►► Intermediate Approach: Crosstab

Each cell shows how many times a possible pre-post score pair occurs

Depression Scale Crosstab

Post-Score

	0	1	2	3
0	7			
1				
2	8			
3		2		

Pre-Score

Negative Change

No Change

Positive Change

►► Intermediate Approach: Crosstab

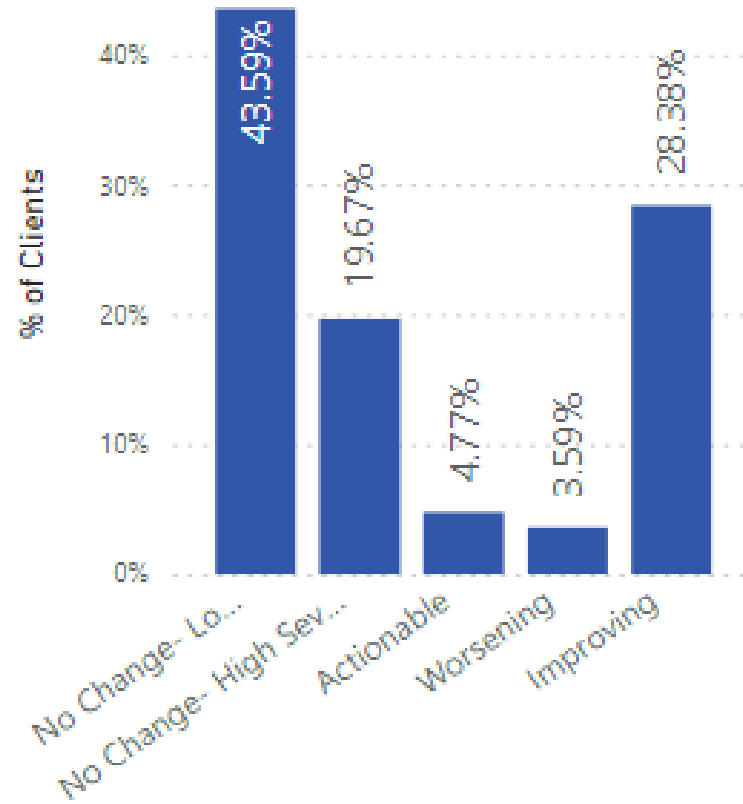
Each cell shows how many times a possible pre-post score pair occurs

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

►► Intermediate Approach: Crosstab

Clients across Improvement Categories
(Adjustment Trauma)



No Change-Low Severity
(A score of 1 remains a 1;
a 0 remains a 0)

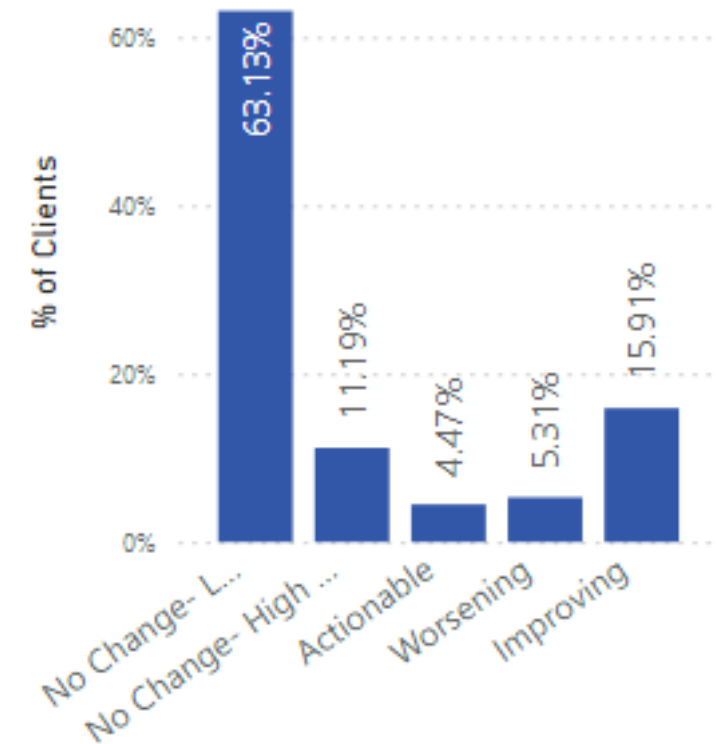
No Change-High Severity
(A scores of 2 and/or 3 remain 2 or 3)

Move to Actionable
(A score of 1 or 0 becomes a 2 or 3)

Worsening
(A score of 2 becomes a 3)

Improving
(A score of 3 becomes a 2, or 1;
a 2 becomes a 1 or 0;
a 1 becomes a 0)

Clients across Improvement Categories
(Impulsivity)



▶▶ How to Explore CANS data for Change

4. Intermediate Approach: Reliable Change

►► Intermediate Approach: Reliable Change

Reliable change is a statistical process that seeks to determine whether outcome results represent true change or not

Every measure includes a level of error

Reliable change determines how many scores exceed the error and thus are considered true

Pre-Test Score	Post-Test Score	Difference	Test-Retest Reliability	Standard Deviation	Standard Error	Sdiff	Reliability of Change Index	Lower	Upper	Neg	No	Positive
5	0	-5	0.78	3.16	1.48	2.10	-2.39					
5	2	-3	0.78	3.16	1.48	2.10	-0.95					
6	1	-5	0.78	3.16	1.48	2.10	-2.39					
4	2	-2	0.78	3.16	1.48	2.10	-0.95					
12	2	-10	0.78	3.16	1.48	2.10	-4.77					
1	1	0	0.78	3.16	1.48	2.10	0.00					
0	0	-1	0.78	3.16	1.48	2.10	-0.48					
4	0	-4	0.78	3.16	1.48	2.10	-1.91					
16	5	-11	0.78	3.16	1.48	2.10	-5.25					
6	0	-6	0.78	3.16	1.48	2.10	-2.86					
6	4	-2	0.78	3.16	1.48	2.10	-0.95					
1	7	6	0.78	3.16	1.48	2.10	3.82					
10	7	-3	0.78	3.16	1.48	2.10	-1.43					
4	3	-1	0.78	3.16	1.48	2.10	-0.48	-1.96	1.96	0	Yes	0
6	4	-2	0.78	3.16	1.48	2.10	-0.95	-1.96	1.96	0	Yes	0
3	5	2	0.78	3.16	1.48	2.10	0.95	-1.96	1.96	0	Yes	0
2	0	-2	0.78	3.16	1.48	2.10	-0.95	-1.96	1.96	0	Yes	0

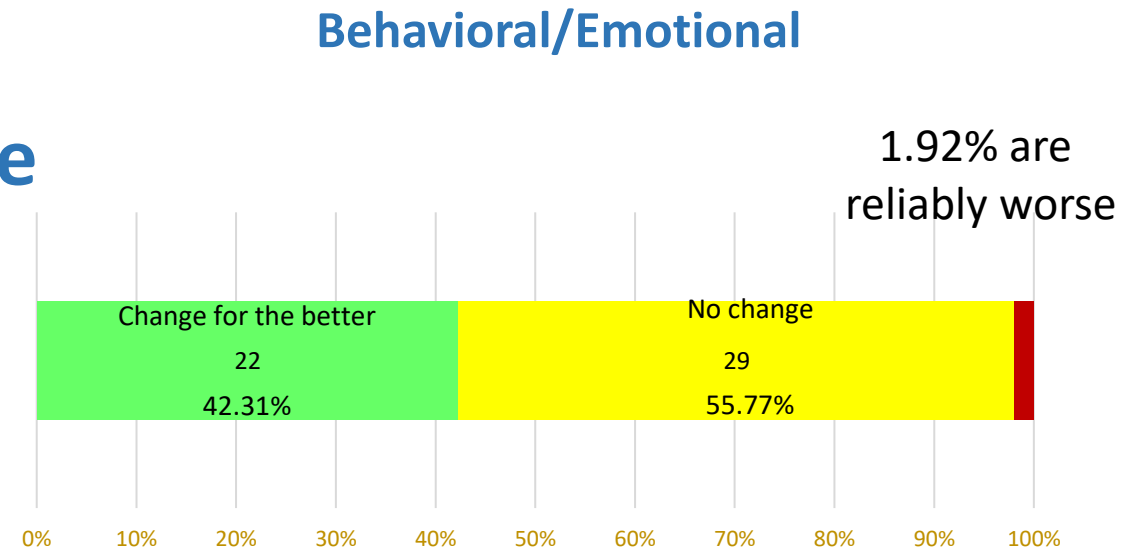
<u>Change for the Better</u>	<u>No Change</u>	<u>Change for the Worse</u>
22	29	1
Percent 42.31	Percent 55.77	Percent 1.92

▶▶ Intermediate Approach: Reliable Change

Reliable change is a statistical process that seeks to determine whether outcome results represent true change or not

Every measure includes a level of error

Reliable change determines how many scores exceed the error and thus are considered true

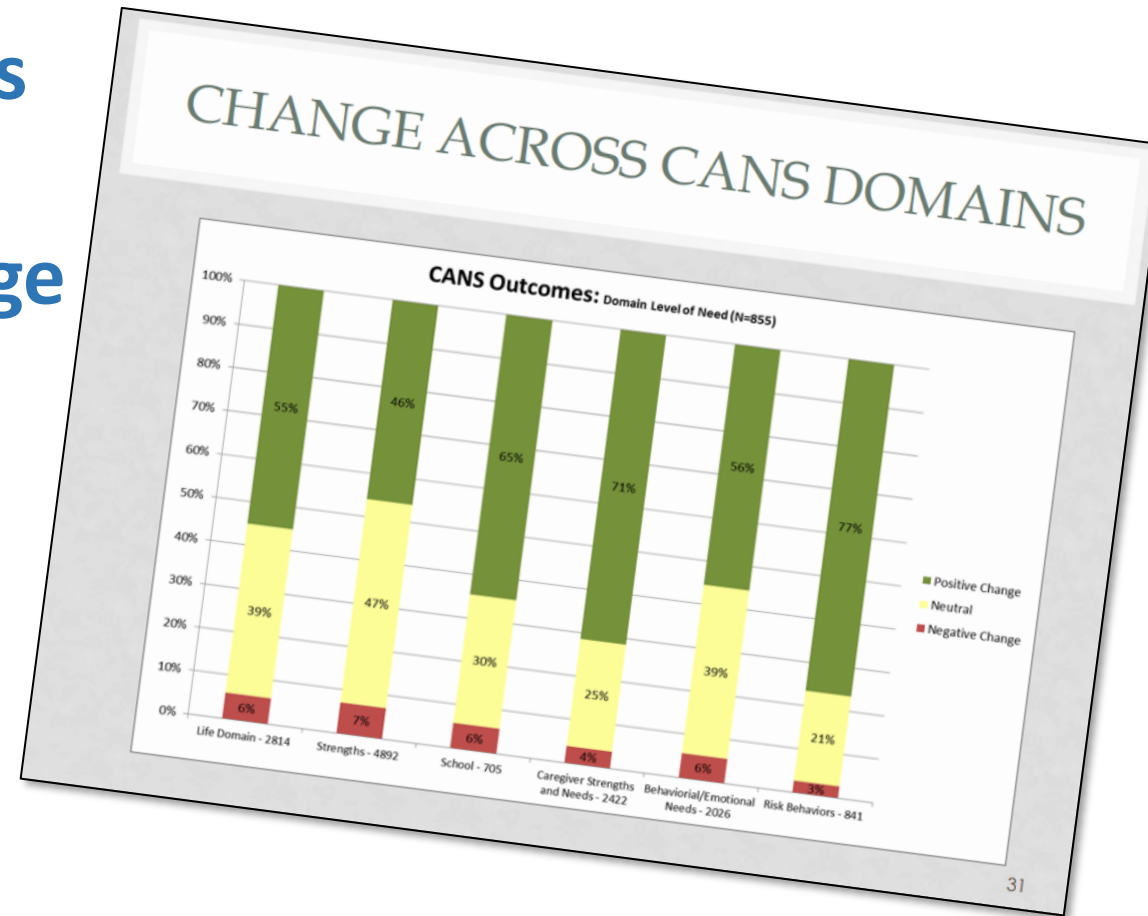


►► Intermediate Approach: Reliable Change

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Reliable change determines how many scores exceed the error and thus are considered true

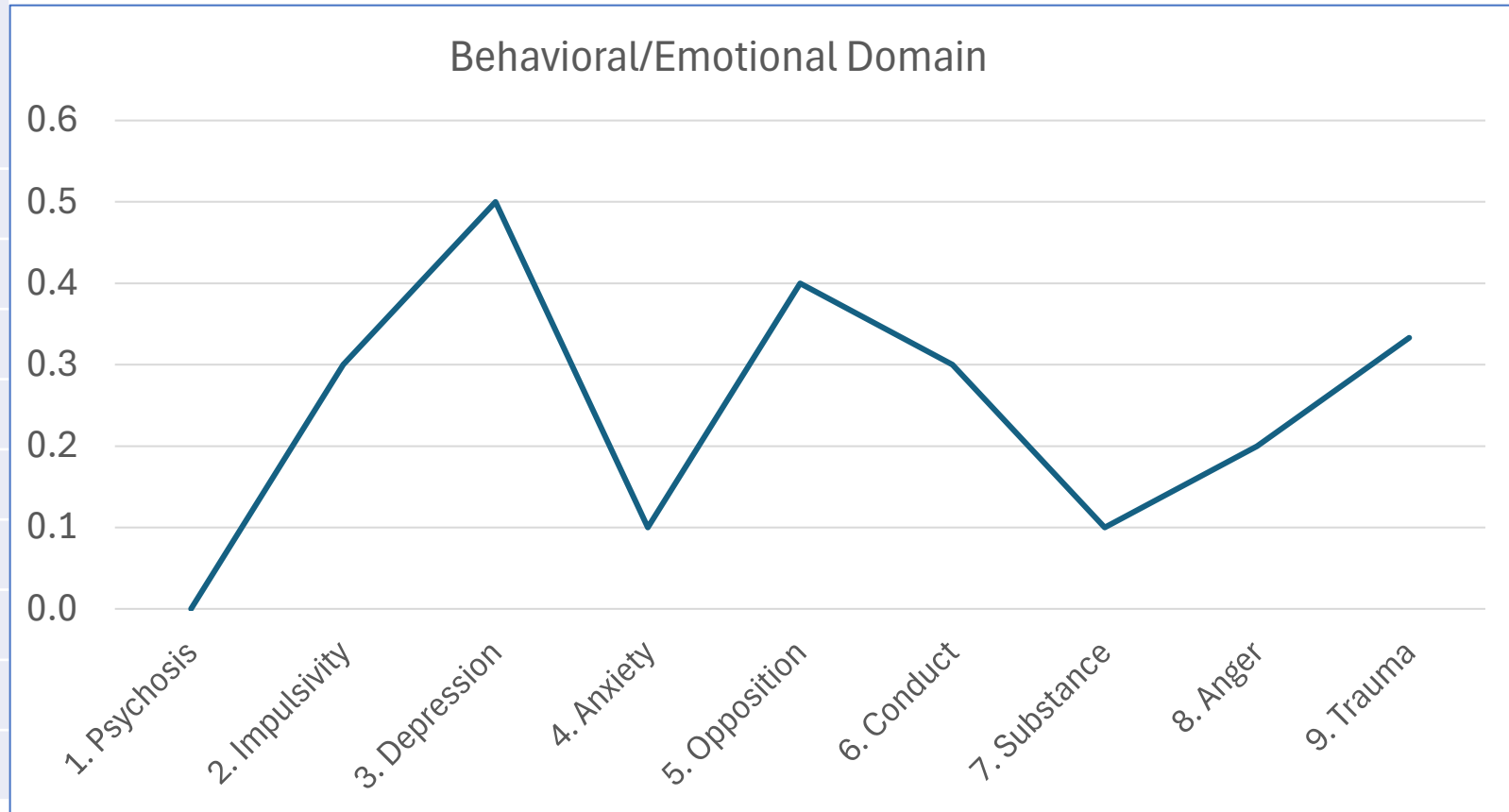


▶▶ How to Explore CANS data for Change

5. Intermediate Approach:
Percent of Actionable Items

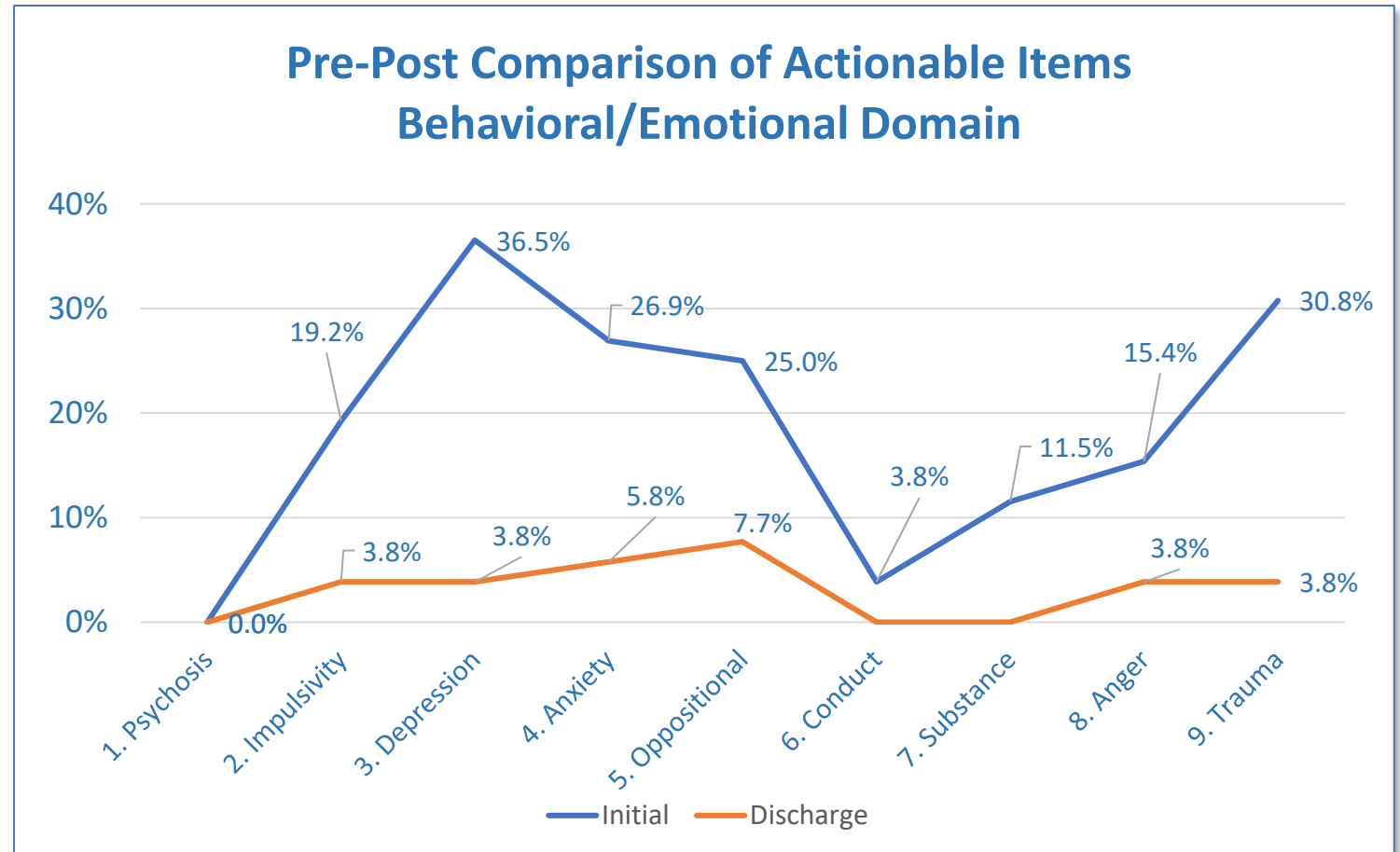
▶▶ Intermediate Approach: Actionable Score

Item	Ratio	Percentage
1. Psychosis	0/10	0.0
2. Impulsivity	3/10	0.3
3. Depression	5/10	0.5
4. Anxiety	1/10	0.1
5. Opposition	4/10	0.4
6. Conduct	3/10	0.3
7. Substance	0/10	0.1
8. Anger	2/10	0.2
9. Trauma	3/10	0.3



▶▶ Intermediate Approach: Actionable Score

You can compare the percentage of actionable scores per item over time



▶▶ How to Explore CANS data for Change

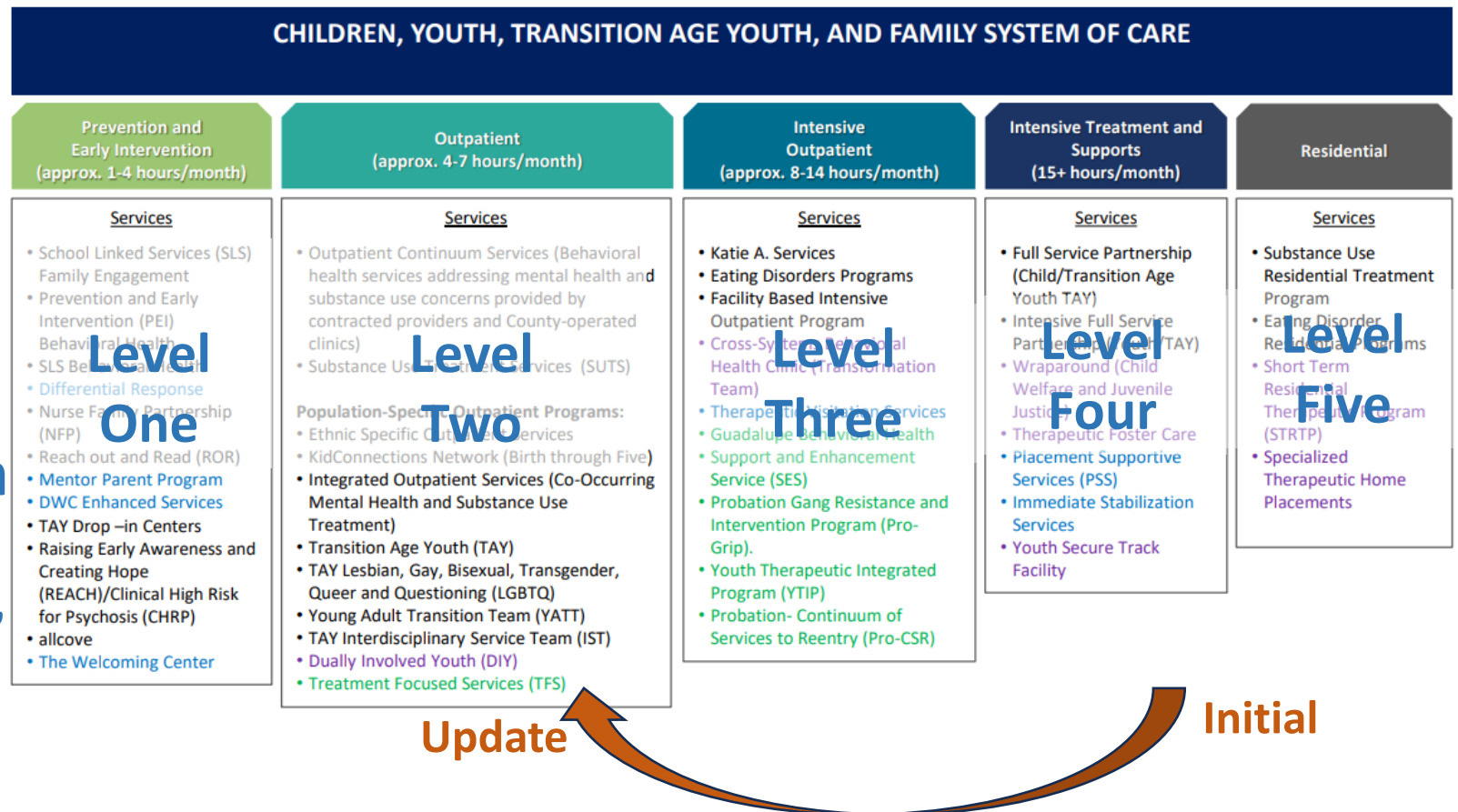
6. Advanced Approach: Level of Care

►► Intermediate Approach: Level of Care

Levels of Care Decision Model

Many agencies are using the CANS as decision model that turns a raw scores into treatment suggestions

The model uses specific item elevations to suggest probable “best level of care”

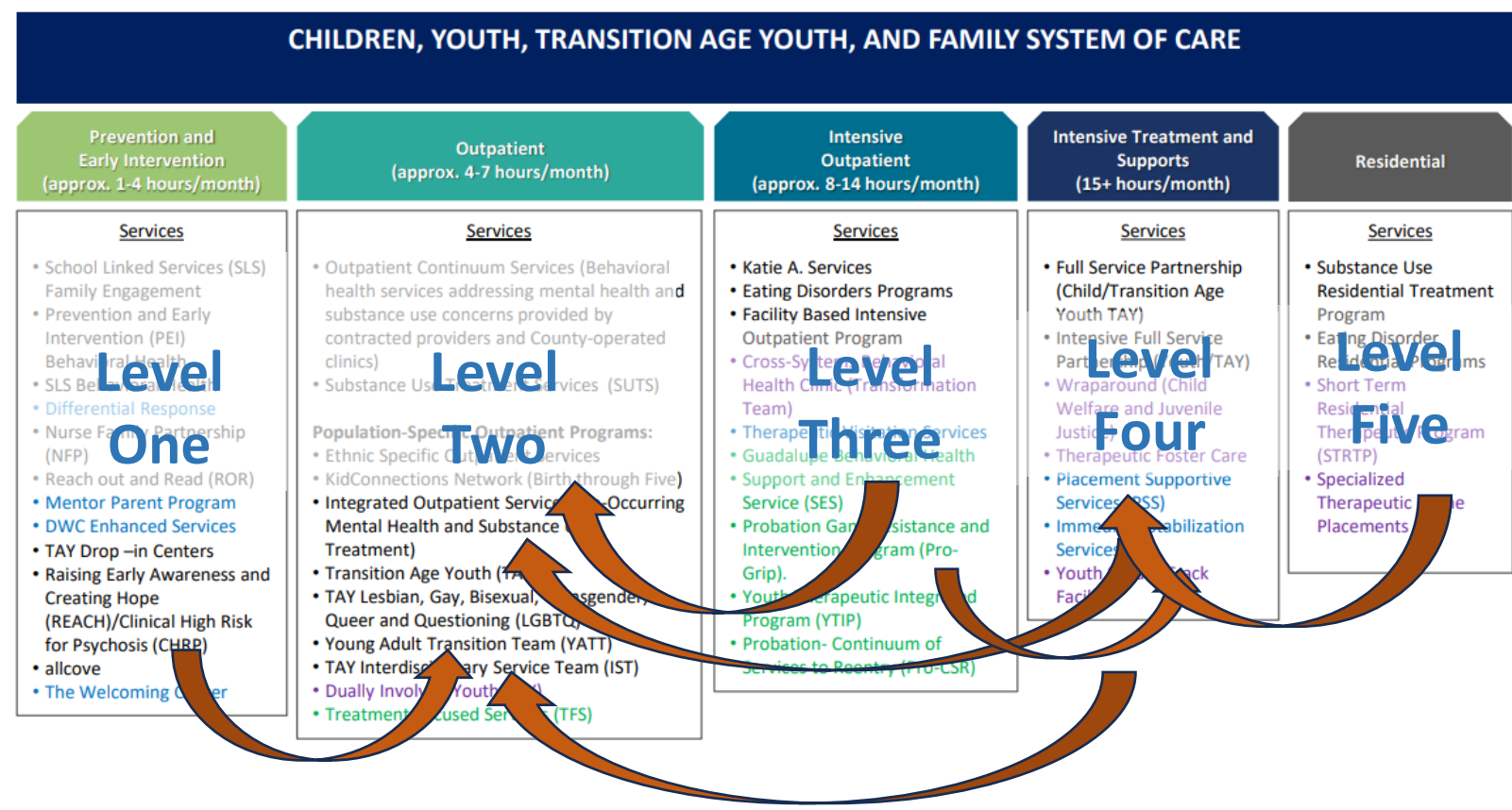


▶▶ CANS as a Level of Care tools

How many clients are better or worse and by how much?

LOC's that are better
 LOC's unchanged
 LOC's that are worse
 Or
 Crosstab

Levels of Care Decision Model



▶▶ How to Explore CANS data for Change

Advanced exploration
with CANS data

▶▶ Advanced Exploration with CANS data

Once one knows how to compare two CANS scores, many other comparisons can be included:

Client demographics

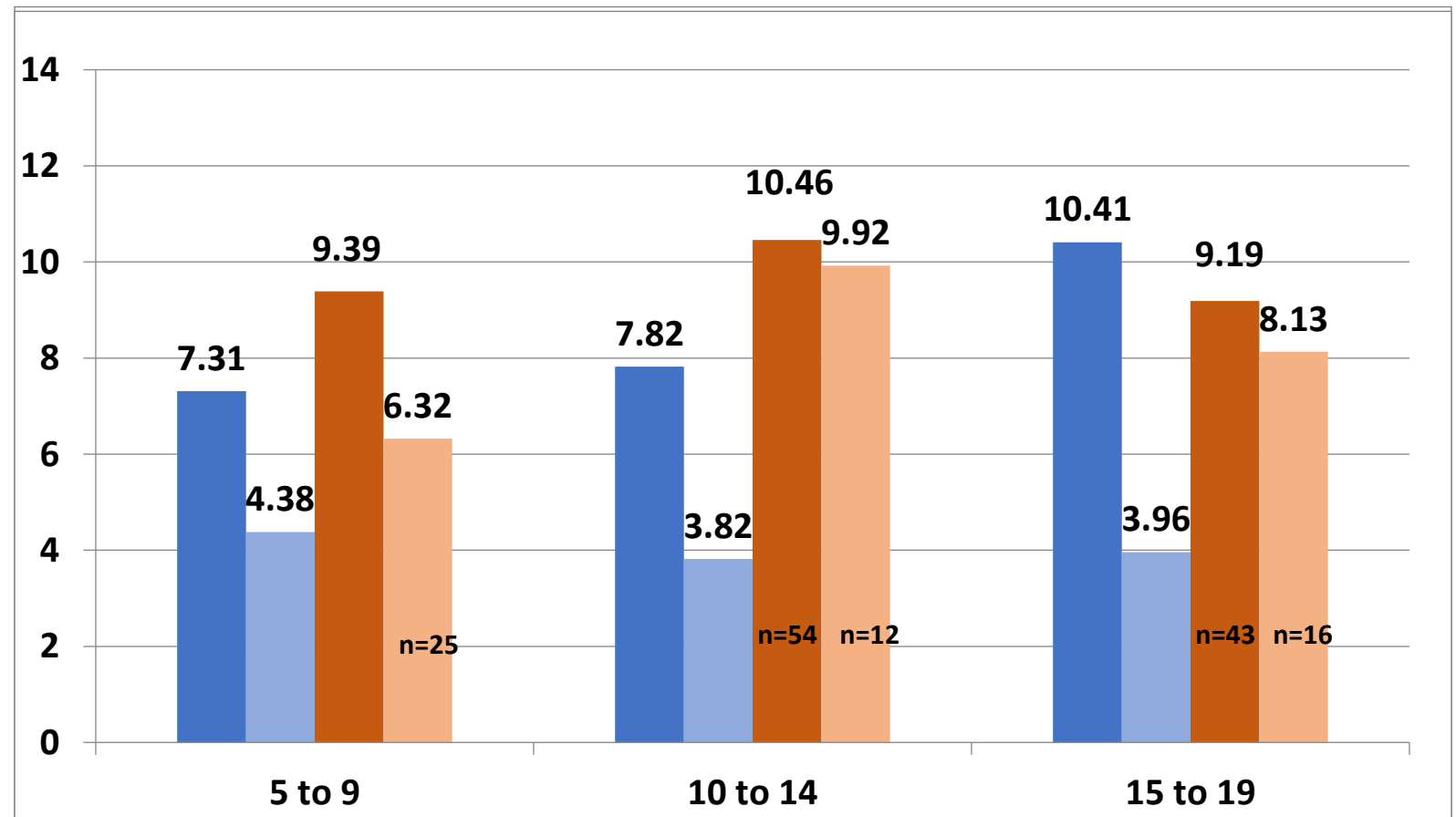
Duration in treatment

Diagnosis-prognosis

Cohort membership

Outcome differences based on location

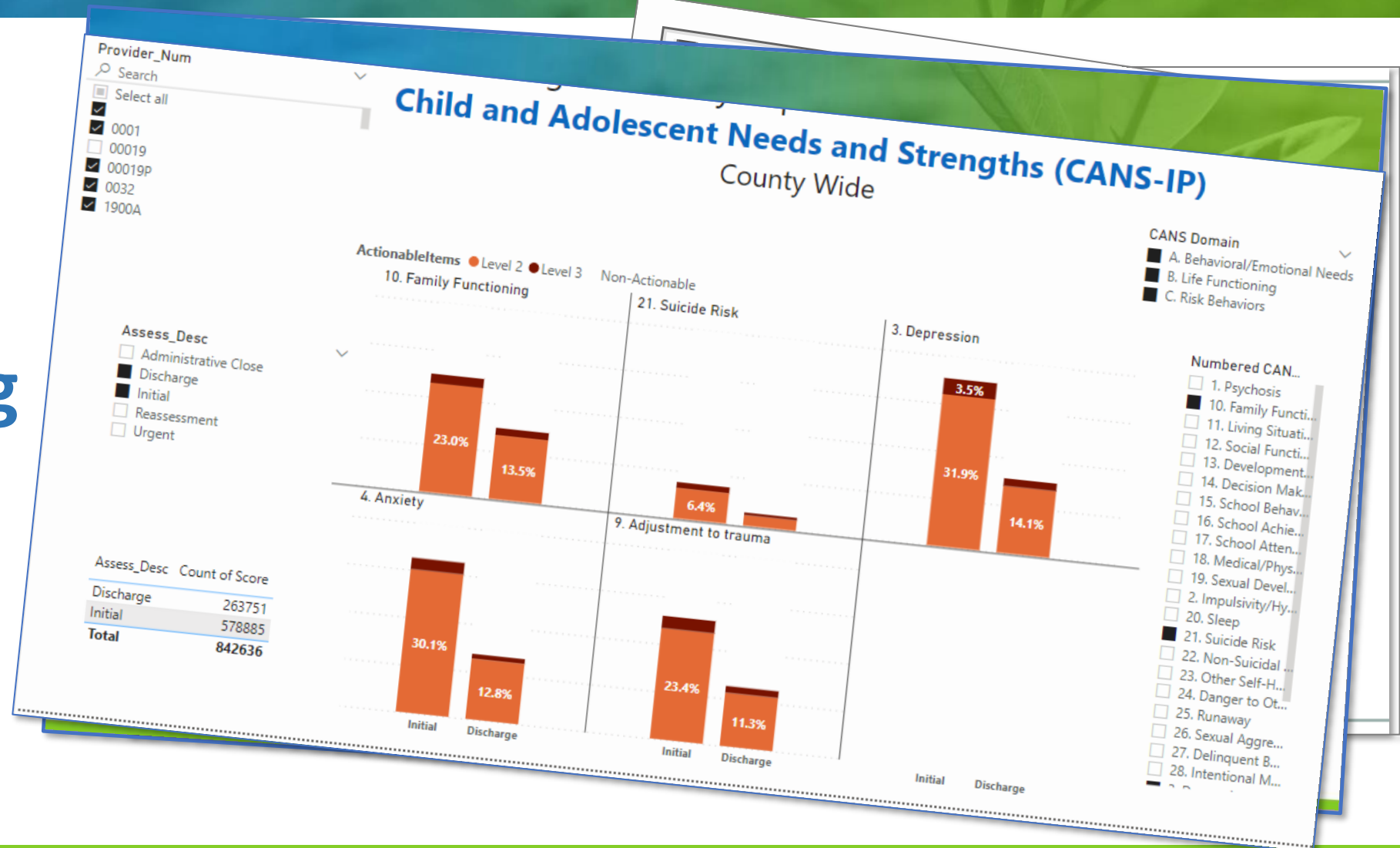
Clinician differentials



▶▶ Future CANS Resources

Tools to help
Clinicians

Data reporting
& analysis



▶▶ A Cautionary Tale

Avoiding Confirmation Bias

Data could be wrong or right

The analysis could be wrong or right

The interpretation could be wrong or right

SO

Include all necessary qualifications

Be circumspect in your conclusions

Be prepared to accept input from others



https://www.facebook.com/WeAreTeachers/photos/why-what-did-you-think-it-was/10159247139543708/?_rdr
https://www.facebook.com/WeAreTeachers/photos/why-what-did-you-think-it-was/10159247139543708/?_rdr

Questions?

pei@dmh.lacounty.gov | [@lacdmh](https://www.instagram.com/lacdmh)



LOS ANGELES COUNTY
**DEPARTMENT OF
MENTAL HEALTH**
hope. recovery. wellbeing.