Yes You CANS!
How to Analyze and Use Your CANS Data to Improve Outcomes for Youth
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one hope united

Jewish Child & Family Services

JVS CHICAGO

Systems Change – Do you ever feel like you are dancing alone?

https://www.youtube.com/watch?v=GA8z7f7a2Pk

Introductions

- Presenters
  - Background
  - Experience with data
  - Current role

- Audience
  - Do you use some version of the CANS/ANSA?
  - Do you really "use" this data at any level?

Today, participants will learn…

- the key components necessary for successful CANS implementation.
- practical strategies to be able to enter and analyze their own CANS data for outcome achievement.
- how to review and interpret CANS data reports to identify research questions and develop quality improvement plans.

Presentation Overview

1. History of CANS Utilization
2. Components of a Successful CANS Implementation
3. Strategies for Successful Implementation at Your Agency
   1. Training and Coaching
   2. Reporting: data entry, data analysis, data visualization
   3. Quality Improvement Process

History of CANS Utilization:
Jewish Child and Family Services
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The JCFS CANS Experience

| 2003 - DCFS requires use of CANS in System of Care (SOC) now known as IPS
• Built into client database
• Integrated into clinical reporting | 2005 - DCFS expands CANS to Specialized Foster Care/Residential
• JCFS adopts CANS for all Foster Care contracts | 2009 - JCFS chooses ANSA for outpatient counseling
2010 – MAC chooses FAST | 2013- JCFS chooses CANS for outpatient counseling; MAC shifts to CANS |

Burden ▶ Tool

Current Tools in Use at JCFS

- JCFS CANS Comprehensive
  - Based on the NCTSN CANS
  - Used in counseling and Maintaining Adoption Connections (MAC)
- ANSA 2.0
  - Based on the Indiana ANSA
  - Used in outpatient counseling
- DCFS CANS 2.0
  - Used in Foster Care and IPS

❖ *Therapeutic Day School in process of developing a CANS version for their program*

CANS Implementation at JCFS

- Reliability Training
  - Initial, annual recertification
- Data entered into client information system
- Client level reporting on demand
  - Full CANS report
  - CANS Summary
- Quarterly Client Change report in CQI
- Program level reporting twice yearly

One Hope United

CANS Utilization: From Burden to Less of a Burden...Depending on Who you Ask

Different Versions of the Tool

- CANS 1.0 – Residential
- CANS 2.0 – Intact, Foster Care, IPS, & Counseling
- Childhood Severity of Psychiatric Illness (CSPI) – SASS
- *Attachment, Self-Regulation, & Competency (ARC CANS) – The Healing Path & Sexual Abuse Counseling*
- *CANS Juvenile Justice (JJ) – MST & Youth Diversion Program*

CANS Outcome Over the Years

FY10: 80% of discharged clients will show an overall improvement between initial and closing CANS ratings

- Data Dictionary
  - Must have a pre and a post CANS.
  - Must have at least 30 days of service.
- What was not included
  - Didn't define what improvement means

FY16: 80% of clients will maintain or show improvement in the following domains of the CANS: Trauma Symptoms; Behavioral Emotional Needs; Risk Behaviors; Life Domain Functioning; Caregiver Needs & Strengths; and Child Strengths

- Data Dictionary
  - Must have a pre and post CANS.
  - The child/youth must have at least 90 days of service after treatment plan completion.
  - Improvement is defined as a decrease in the number of actionable items. (Ex. 10 actionable items at Opening to 2 actionable items at Closing = Improvement. 0 actionable items at Opening and Closing = Maintain...and is included as a positive outcome.)

A Tale of Two Cities

- **Champion City**
  - "Yes, let's do it."
  - "It makes total sense."
  - "We can better communicate as to where we are having impact and where we need to focus."

- **Unspoken Heroes City**
  - "Already have so many other critical things to do...the CANS is put on the back burner and sometimes isn't completed." (Compliance)
  - "I don't even think they are scoring it accurately." (Fidelity)
  - "We don't use the CANS for anything. It doesn't inform the work." (Make Meaning)

CANS Impact Activities

- **Compliance**
  - Monitoring of CANS completion and submission
  - Only report CANS outcome if...at the very least...there is a statistically valid sample.
- **Fidelity**
  - Focused CANS review where the CANS was reviewed to see if it matched other client assessments/information in the file.
  - Training
- **Make Meaning**
  - Training
  - Getting Supervisors on board
  - Partnering with Northwestern for assistance

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Realities of CANS Use in IL

- DCFS requires use of the tool, but does not provide comprehensive support for implementation
- Without booster certification, users do not trust other users ("bad data")
- Various versions are in use across the system
- Two main sources for data and reporting:
  - Northwestern University
  - Illinois Outcomes website

Illinois Outcomes Report
(Foster Care Only)

- CANS Comparison Summary Example Excerpt

#	CANS Context	IA	CAYIT	CWS	CWS	CWS
	Status	Approved	Submitted	Approved	Approved	Approved
	Assessor	Name, Fake	Name, Fake	Name, Fake	Name, Fake	Name, Fake
	CANS Date	05-06-2008	08-12-2009	10-21-2009	03-03-2010	09-15-2010
	CANS Version	1.0	1.0	2.0	2.0	2.0
Trauma Experiences						
#	CANS Context	IA	CAYIT	CWS	CWS	CWS
1	Sexual Abuse	0	0	0	0	0
2	Physical Abuse	3*	3	3	3*	3*
3	Emotional Abuse	2	2	2	1	1
4	Neglect	3	2	2	2*	2*
5	Medical Trauma	2	3	3	3*	3*
6	Witness to Family Violence	0	2	2	2*	2*
7	Community Violence	0	0	0	0	0
8	School Violence	0	0	0	0	0
9	Natural or Manmade Disasters	0	0	0	0	0
10	War Affected	0	0	0	0	0
11	Terrorism Affected	0	0	0	0	0
12	Witness/Victim to Criminal Activity	0	3	3	3*	3*
13	Parental Criminal Behavior	2	0	0	1	1

Northwestern University Reports (Residential Only)

4 standard reports:

1. **Unit Support Intensity:** assists administrators with *milieu monitoring and resource allocation* by generating an aggregate measurement on total intensity of youth needs for a given unit.

2. **Unit Progress:** includes changes in CANS scores over time to let clinicians and milieu staff quickly assess the current progress of youth in a given unit.

3. **Strength Development:** includes changes in CANS scores by unit, contract, and all residential youth to assist agency administrators with *identifying areas of strength* and *identify new strengths* across youth in a given unit.

4. **Individual Youth Progress:** tracks CANS scores by youth to assist Residential therapists, case managers, and treatment team members with treatment planning and tracking outcomes.

So what is the CANS really?

- Based on a communimetric theory
- Represents the shared vision of a child-serving system – the child and family!
- An assessment tool that translates to service plan – action!

John S. Lyons

Communimetrics

A Communication Theory of Measurement in Human Service Settings

Springer

TCOM Grid of Tactics

	Family & Youth	Program	System
Decision Support	Care Planning Effective practices EBP's	Eligibility Step-down	Resource Management Right-sizing
Outcome Monitoring	Service Transitions & Celebrations	Evaluation	Provider Profiles Performance/ Contracting
Quality Improvement	Case Management Integrated Care Supervision	CQI/QA Accreditation Program Redesign	Transformation Business Model Design

Transformational Collaborative Outcomes Management
http://praedfoundation.org/tools/transformational-collaborative-outcomes-management-tcom/

SIX KEY COMPONENTS OF A COMMUNIMETRIC TOOL

1. Items are selected based on relevance to planning.
2. Action levels for all items
3. Consider culture and development before establishing the action level
4. Agnostic as to etiology—descriptive, no cause and effect
5. About the child, not about the service. Rate needs when masked by interventions.
6. Specific ratings window (e.g. 30 days) can be over-ridden based on action levels

What is necessary for a successful CANS implementation?

1. Certification

2. Local Trainer or Coaches

3. Standardized Multilevel Feedback Reports

4. System Improvement Process Infrastructure

Source: Israel, N. and Lardner, M. 2014 Annual TCOM Conference

Strategies for Successful Implementation at Your Agency

1. Develop Trainers and Coaches
2. Reporting at Multiple Levels
3. Use of CANS in Quality Improvement Process

1) Develop Trainers and Coaches

Question – How do you re-engage staff so that they value CANS data?

- JCFS Example of a re-moralization message

Group Exercise:

- Break up into small groups (<5)
- Develop your remoralization message
- Consider the 6 core principles and the TCOM grid of tactics

1) Develop Trainers and Coaches (continued)

- Develop and implement reliability training that complements external resources
- Resources: Annual TCOM conference, http://praedfoundation.org/

Group Exercise:
- Read the Timmy vignette in its entirety
- Score the Life Domain Functioning items
- Use the manual and consider the Action Level of the items

2) Reporting at Multiple Levels

Data Collection/Entry

Data Analysis

Data Visualization and Reporting

How to Create a Data Collection System

Strategies for obtaining and collecting CANS assessment data

Database/Statistical Packages

- SPSS
- STATA
- SAS
- Microsoft products (Excel & Access)
- Survey Monkey

Resource Implications

- Cost – statistical packages are expensive
- Capacity – need someone who can build and maintain these systems
- Time – a lot of data entry

Northwestern University Data Export

Northwestern can do "data dumps" of your CANS data that is submitted to them.

Resource Implications

- Free
- They will also do reports
- Reduces Data Entry
- Time – it still takes time to organize the data for analysis
- Dependent on the Northwestern timetable

Client Management System

Many Client Management Systems have the ability to collect outcomes.

Resource Implications

- Cost – the more bells and whistles the more expensive
  - Build an entire assessment into the system...over 100 CANS items...with multi-level reporting
  - Just record the result with some basic reports
- Capacity – need someone to maintain the system
- Time – a lot of data entry

Data Analysis

Data Analysis

1. Scoring Guidelines

2. Array of Outcome Indicators

3. Data Analysis Software Options

Scoring Guidelines

- Cleaning Your Data
  - Remove duplicate CANS ratings/assessments
  - Exclude N/A responses

- Choosing a Baseline Assessment
  - *Informed by your overall analysis/outcomes question
  - Historic Initial: Swap Intake, 3- or 6-month assessment
  - Highest % actionable needs assessment historically
  - First assessment in fiscal year

- Identifying a Discharge Assessment
  - Completed within 30 days of discharge
  - Completed at last ACR for permanency

Outcome Indicators

- Domain Scores

- Reliable Change Index (RCI)

- Actionable Needs and Strengths

- Item Level Change

- Composite Indices

Domain Scores

- How to calculate:
    1. Add all scores on items in a domain to create a sum. Exclude N/A values.
    2. Divide the sum/total items completed for the scale, excluding missing and N/A. At least 75% of items within a domain must be rated. Multiply by 10.
    3. Will end up with uniform 30 point domain score where 0='0' ratings on all items and 30=all '3' ratings on every item in the domain.

- How useful:
    - Groups items into their core domains on the CANS
    - Provides a general snapshot of functioning. All rated items are included (includes the 1s or watchful waiting).

- Challenges:
    - Not all domains will have a score. 75% or more of the domain has to have been completed.
    - Must determine whether change in any domain is acceptable.

Domain Scores Example

Domain	Mean	Min	Max	SD
Child Strengths	9.74	0.00	27.27	5.54
Life Domain Functioning	3.82	0.00	15.71	2.48
Emotional/Behavioral Needs	4.23	0.00	16.43	2.77
Risk Behaviors	.80	0.00	11.82	1.30
Acculturation	.77	0.00	5.00	1.53
Birth-Five	5.85	.67	12.00	2.75
Transition to Adulthood	4.45	0.00	15.00	5.23

Reliable Change Index (RCI)

- What is it?
  - The RCI is the amount of change necessary in the domain score above and beyond measurement change (reliable change). *Jacobson* & *Truax* 1991
- How to calculate:
  1. Calculate the standard deviation for each domain.
  2. If you have the reliability scores of your CANS raters, calculate the average reliability score. Otherwise, you may use the minimum passing score of 0.70.
  3. Calculate RCI = 1.28 * (standard deviation) X SQRT(1-reliability).

Reliable Change Index (RCI, continued)

- How useful:
  - After calculating the change in each Domain Score, if difference is equal to or greater than the RCI for the domain, you will know if it is sufficient change to be "real" change.
- Challenges:
  - Depending on the population served or service delivery model – reliable change may be unrealistic. Must be consistent with program's theory of change.
  - For optional domains (e.g., Birth to 5, Transition to Adulthood) might not have a large enough sample to calculate a RCI.

Reliable Change Index (RCI) Example

	N	Minimum	Maximum	Mean	SD	RCI
Traumatic Stress Score	141	0.00	25.00	8.05	5.22	3.34
Child Strengths Score	131	0.00	27.78	13.89	5.74	3.67
Life Domain Functioning Score	137	0.00	16.67	6.90	3.51	2.25
Acculturation Score	141	0.00	15.00	1.06	2.71	1.73
Emotional and Behavioral Needs Score	137	0.00	15.38	6.58	3.71	2.37
Risk Behaviors Score	134	0.00	11.82	3.60	3.17	2.03
0-5 Developmental Subscale Score	34	0.00	15.56	4.59	4.24	
Older Youth Score	46	3.75	20.00	8.99	3.63	
Caregiver Safety	69	0.00	16.00	3.83	4.11	
Caregiver Knowledge of Parenting	76	0.00	30.00	6.29	6.23	
Caregiver Use of Concrete Supports	77	0.00	27.50	5.02	5.68	Cannot Be Calculated Due to Low n
Caregiver Social Connections	69	0.00	30.00	5.07	6.11	
Caregiver Ability to Nurture	69	0.00	30.00	6.52	6.52	
Caregiver Resilience	77	0.00	30.00	2.75	4.47	
Foster Parent Commitment to Permanency	62	0.00	30.00	3.28	5.48	
Bio Parent Commitment to Permanency	44	0.00	30.00	11.05	9.81	

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Actionable Needs and Strengths

- How to calculate:
  1. Count any items scored a 2 or a 3 (numerator).
  2. Count items rated 0 – 3 (denominator).
  3. Divide actionable items by the total number of items rated excluding N/As. Can calculate an overall % actionable for all items or calculate at the domain level.

- How useful:
  - Focuses analysis on where action or immediate action is needed
  - Do not have to have 75% or greater in each domain to calculate

- Challenges:
  - May not provide the complete picture of improvement – if a youth moves from all 1s to 0s – this measure will not capture that change.
  - Will not show strength building from 1s to 0s.

Actionable Needs and Strengths Example

Domain	Baseline % Actionable				Most Recent % Actionable			
	Mean	Min	Max	SD	Mean	Min	Max	SD
Traumatic Stress Symptoms	36%	0%	83%	27%	42%	0%	100%	30%
Child Strengths	46%	0%	90%	22%	39%	0%	80%	23%
Life Domain Functioning	25%	0%	67%	17%	21%	0%	50%	12%
Acculturation	0%	0%	0%	0%	1%	0%	25%	4%
Behavioral/Emotional Needs	26%	0%	62%	17%	26%	0%	62%	17%
Risk Behaviors	18%	0%	45%	12%	16%	0%	64%	16%

Domain	Improved		No Change		Declined	
	#	%	#	%	#	%
Traumatic Stress Symptoms	3	9%	24	71%	7	21%
Child Strengths	3	9%	28	85%	2	6%
Life Domain Functioning	8	24%	21	62%	5	15%
Acculturation	1	3%	31	91%	2	6%
Behavioral/Emotional Needs	4	12%	25	74%	5	15%
Risk Behaviors	6	18%	24	71%	4	12%

Item Level Change

- How to calculate:
    1. For each CANS item, calculate the difference between Time 1 and Time 2 (excluding N/As).
    2. If a negative number=decline, if positive=improvement (e.g. 3 – 2 = 1 or improved, 1 – 3 = -2 or declined).
- How useful:
    - All items, ratings, and change is included. Consistent with 6 Core Principles.
    - Unlike domain score and actionable needs, can see where change is specifically happening.
- Challenges:
    - Can lose sight of the big picture

Item Level Change Example

CANS Items	Declined		No Change		Improved	
Caregiver Collaboration	3	25%	6	50%	3	25%
Sibling Relations	4	24%	11	65%	2	12%
Extended Family Relations	4	20%	12	60%	4	20%
Family Conflict	5	23%	12	55%	5	23%
Family Communication	4	18%	11	50%	7	32%
Role Appropriateness	6	27%	12	55%	4	18%
Family Safety	6	27%	12	55%	4	18%
Social Resources	3	14%	14	64%	5	23%
Residential Stability	5	23%	13	59%	4	18%
Knowledge of Needs	1	5%	13	59%	8	36%
Knowledge of Services	0	0%	14	64%	8	36%
Ability to Listen	2	9%	11	50%	9	41%
Ability to Communicate	3	14%	11	50%	8	36%
Caregiver Emotional Response	5	28%	9	50%	4	22%
Caregiver Boundaries	3	17%	11	61%	4	22%
Caregiver Involvement in Care	4	22%	10	56%	4	22%
Caregiver Supervision	3	17%	14	78%	1	6%
Caregiver Discipline	1	6%	13	72%	4	22%
Caregiver Partner Relationship	2	20%	6	60%	2	20%
Caregiver Vocational Functioning	1	6%	12	67%	5	28%
Caregiver Mental Health	6	**33%**	9	50%	3	17%
Caregiver Physical Health	4	22%	10	56%	4	22%

Composite Indices

- How to calculate:
  1. Can group CANS items together outside of their designated domain (e.g. Indiana's Recovery Index)
  2. Calculate the composite using whichever analysis option you have chosen (e.g., domain, RCI, actionable, item level)

- How useful:
  - Can tailor analysis to your population or analysis question. Can base composite on research of where change should happen to address a certain need/population (e.g., well-being, recovery)

- Challenges:
  - Same as the analysis option of your choosing

Data Visualization, Reporting, and Meaningful Use of Data

Report Options

- Client Reporting
- Supervisor Reporting
- Program Reporting
- Agency Reporting

Client Report: Example

- Intake Assessment – 6 actionable needs, 5 usable strengths

CORE NEEDS (RATED 2 OR 3)

LIFE DOMAIN FUNCTIONING

Social Functioning	3
Recreational	2
Decision Making	2

MENTAL HEALTH NEEDS

Psychosis	2
Interpersonal Problems	2
Anger Control	2

STRENGTHS (RATED 0 OR 1)

Family	1
Educational	1
Natural Supports	1
Resourcefulness	1
Volunteering	1

SPECIALTY MODULE NEEDS (RATED 2 OR 3)

DOMAIN SCORES (range from 0-30, higher scores indicate higher need)

Domain	Client Score	Program Mean Score	Reliable Change Index*
Life Domain Functioning	8.67	5.60	2.04
Strengths	16.67	12.39	3.42
Acculturation	2.50	1.67	1.96
Mental Health Needs	9.00	5.22	1.87
Risks	1.25	0.55	0.76
Caregiver	-	-	-

Reassessment – 2 actionable needs, 12 usable strengths

CORE NEEDS (RATED 2 OR 3)

MENTAL HEALTH NEEDS

Psychosis	2
Anger Control	2

STRENGTHS (RATED 0 OR 1)

Family	0
Interpersonal	1
Optimism	1
Educational	0
Job History	1
Talents/Interests	1
Spirtual/Religious	0
Community Connection	1
Natural Supports	0
Resiliency	1
Resourcefulness	0
Volunteering	0

SPECIALTY MODULE NEEDS (RATED 2 OR 3)

DOMAIN SCORES (range from 0-30, higher scores indicate higher need)

Domain	Client Score	Program Mean Score	Reliable Change Index*
Life Domain Functioning	4.67	5.60	2.04
Strengths	5.00	12.39	3.42
Acculturation	0.00	1.67	1.96
Mental Health Needs	8.00	5.22	1.87
Risks	0.00	0.55	0.76
Caregiver	-	-	-

Discharge

- Client continued to be assessed with 2 actionable needs and 11 usable strengths
- Domain scores over time show reliable improvement in every domain

Change in Domain Scores Over Time*

	9/2009	9/2010	9/2011	Change from 1st to Last	Reliable Change Index*
Life Domain Functioning	8.67	4.67	5.33	3.33	2.04
Strengths	16.67	5.00	5.83	10.83	3.42
Acculturation	2.50	0.00	0.00	2.50	1.96
Mental Health Needs	9.00	8.00	6.00	3.00	1.87
Risk Behaviors	1.25	0.00	0.00	1.25	0.76
Caregiver (optional)					-

Supervisor Reports

- Caseload Assignments Based on # CANS Needs
  - Look at overall # of actionable items across caseload
- Training and Support
  - Domain level (e.g., if entire caseload majority of youth have Transition to Adulthood needs can see what resources in the community are available)
- Outcome Achievement by Staff
- Compliance Report for Staff
  - Reflects whether CANS due have been completed

Program Reports

- Baseline Needs
- Actionable Needs by Program (Support Intensity)
- % Youth Reliably Improve / Decrease % Actionable Needs in One Domain from Baseline to Most Recent Assessment
- % Youth Change by Domain
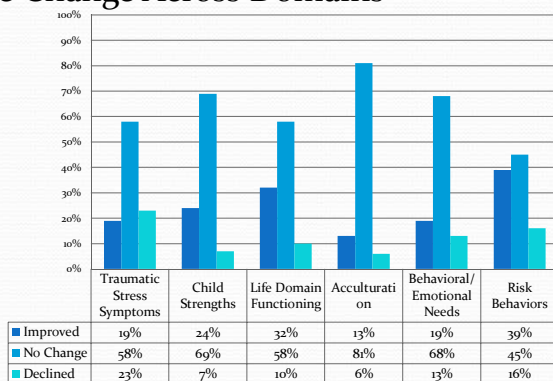- % Youth Item Level Change

Program Report: Example

- Reduced Youth Actionable Needs Over Time

Client	# CANS	SparkLine	Initial	6 Mos	1 Yr	1.5 Yr	2 Yr	2.5 Yr	3 Yr	3.5 Yr	4 Yr	4.5 Yr
Youth1	3		8%	0%	0%							
Youth2	2		8%	30%								
Youth3	1		17%									
Youth4	7		25%	25%	19%	19%	17%	11%	11%			
Youth5	3		18%	18%	7%							
Youth6	7		23%	15%	12%	3%	6%	10%	18%			
Youth7	9		5%	2%	10%	3%	9%	9%	8%	8%	6%	3%

Program Report: Example

- Reliable Change Across Domains

	Traumatic Stress Symptoms	Child Strengths	Life Domain Functioning	Acculturation	Behavioral/ Emotional Needs	Risk Behaviors
Improved	19%	24%	32%	13%	19%	39%
No Change	58%	69%	58%	81%	68%	45%
Declined	23%	7%	10%	6%	13%	16%

Agency Reports

- Overall Baseline Needs
- Improvement based on Program

CANS in Quality Improvement Process

- TCOM grid suggests...
  - Case Management
  - Integrated Care
  - Supervision
  - CQI/QA
  - Accreditation
  - Program Redesign
  - Transformation

- JCFS/OHU uses it for...
  - Identifying cases for additional staffing
  - Outcome monitoring
  - Supervision
  - Benchmarking performance
  - Accreditation

Pulling It All Together

Today, we...

- Revisited the underlying theory for the CANS
- Discussed ideal CANS implementation
- Experienced what it was like to be a CANS trainer and trainee
- Reviewed various methods of data collection
- Learned about the array of metrics possible with the CANS
- Looked over a range of reporting options

Discussion Questions

- ✓ Do you understand what it takes to successfully implement the CANS (or any other assessment tool)?
- ✓ What is currently missing from your agency's implementation?
- ✓ What are you planning to do to strengthen your implementation and use of client assessment data?

Thank you!

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