

Note: this document is a chapter from Dr. John Lyons' upcoming book, "Communimetrics..." that deals exclusively with the CANS. It is still in draft form and has not yet been published (as of 1/30/09). The book is expected to come out in Spring 2009.

Chapter 5. The Child and Adolescent Needs and Strengths (CANS)

You could describe the Child and Adolescent Needs and Strengths (CANS) as the first communimetric tool. But actually, the experiences taken from the development and implementation of the CANS led to the creation of the communication-based theory of measurement. The journey from a measure of psychiatric case-mix used in a planning study in the late 1980's to a practice framework for the child serving system resulted in collaborations with literally thousands of professionals, parents, and youth who informed the evolution of the approach. The story of the development of the CANS is really the story of the evolution of the communimetric theory of measurement.

A Developmental History

In 1986, prospective payment was the new big thing in healthcare. At the time, close to a quarter of the Gross National Product was being spent on healthcare and about one quarter of that was spent on behavioral healthcare. This expenditure level was described as a healthcare crisis. Cost containment was considered a viable strategy. Prospective payment, whereby a hospital was paid a episode of care rate based on the characteristics of the patient using diagnostic related groups (DRG), was implemented in Medicare. DRGs worked fairly well with medical/surgical patients (e.g Safran, Poter, Slack & Bleich, 1987). Cost differences were relatively consistent and predictable between a hip replacement and a hernia repair. DRGs did not work for psychiatric hospitalization. Since psychiatry has few, if any, procedures (e.g. Electro Convulsive Therapy, ECT remains available but is rarely used), length of stay is the primary

determinant of the cost of a stay in a psychiatric hospital. There was almost no relationship between diagnostic groupings and psychiatric hospital length of stay. Around this time, with colleagues, I published a study predicting psychiatric hospital length of stay and found that the single best predictor was the attending psychiatrist (Lyons, O'Mahoney, & Larson, 1991). In other words, practice pattern variation exceeded any other predictor. The psychiatrist predicted 12% of the variation in length of stay. Shortly after I completed this study, I was talking to a colleague in the Department of Medicine, Joe Feinglass, Ph.D. and he reported the identical size of practice pattern effect for internal medicine—12%. The big difference was the in his work, diagnosis accounted for around 40% of the variation. In my study, DRG only accounted for 4%. That conversation triggered a thought. Maybe applying a health services model in which diagnosis is the primary clinical variable is inappropriate for mental health services research. Perhaps factors other than diagnosis would drive decision-making about the use of psychiatric hospitalization and, therefore, predict costs.

But that realization created a new challenge. To do this type of services research you need information on thousands of cases. This research is not like clinical trials or experimental psychopathology studies which routinely publish studies with samples of less than 100 subjects. In services research you utilize large database to pursue the policy relevant questions. Because these databases are usually collected for other purposes such as billing or utilization management, they are called convenience databases in health services research. They are used because they are convenient to use. But convenience databases in behavioral health only had psychiatric diagnosis. So, if we were going to create large database that contained information relevant to the actual decision-making in

the field, we would need to create a measurement process that was easy, efficient, and meaningful to the clinician so that it could be available in large databases to match with other health services information.

When I worked with the Department of Medicine for a year, I was exposed to Susan Horn's work on the Severity of Illness (Horn, 1983). I was very impressed with how she was able to formalize a measurement strategy that could be applied to medical chart data in a fashion that was reliable and meaningful. I had been trained in graduate school to mistrust any measurement taken from clinical documentation as 'too soft for science'. When I saw how her system worked I thought that she had cleverly overcome the inherent limitations of her data source by simplifying the structure of her measurement process.

I met with a number of psychiatrists and crisis workers individually and reviewed the existing literature on psychiatric emergency services and psychiatric hospitalization. I also reviewed the standards for involuntary admission into the hospital since, at the time, these criteria (i.e. danger to self, danger to others, inability to care for oneself) were becoming the new standard for medical necessity. During this process, I came across an unpublished measure called the Whittington Index which I liked for its simplicity and focus on matters relevant to psychiatric crisis services. From these experiences I crafted a measure I called the Severity of Psychiatric Illness (SPI) since the framework and even the four point scales were borrowed by Susan Horn's approach. My experience of the four point scales is that they did not demand more precision than what was often available in the medical charts. My thinking was that if it was in the chart, whomever was noting it, thought it was important. So, if the SPI could simply

quantify the information routinely available in the medical chart, then it would have the potential to be easily adopted in prospective use. The capacity for widespread prospective use was key to any success in getting better mental health indicators in large billing databases to support mental health services research.

The SPI was quite accurate in terms of predicting decisions to admit patients into the psychiatric hospital and also predicted hospital outcomes. It was reasonably accurate for predicting hospital length of stay (Lyons, et al, 1995; Lyons, et al 1997a; 1997b). It has been translated into Spanish, Dutch and German and published in these languages as well. The success of the SPI in modeling the clinical rationale of psychiatric crisis services set the stage for the development of the CANS by establishing credibility to the basic measurement approach.

In 1995, the Illinois Department of Children and Family Services (IDCFS) had a major challenge. They had 55,000 children in care and a budget of about \$1.5 billion. About one third of these dollars was tied up in behavioral health care. For a managed behavioral health firm that would be a very appealing financial situation. Further, about 80% of the \$450 million invested in behavioral health was spent on psychiatric hospitalizations and residential treatment, leaving only a relatively small amount for community-based services. This disparity led to the evolution of a two-tiered system whereby children and youth would not be served in their communities and then because community services weren't available, they would end up hospitalized. Then, the very fact that they were hospitalized became an indicator that they needed a 'higher level of care', i.e. residential treatment. Thus after a couple of hospitalizations with little community follow-up these children and youth were often referred to residential

treatment. Further complicating the problem was the fact that providers were generally located where people wanted to go to work but children with child welfare involvement generally live in the poorest communities in the state (Lyons, Mintzer, Kisiel & Shallcross, 2000).

A new director, Jess McDonald was named to head IDCFS. He wanted to address this problem. An important aspect of the solution would be to create more services in the communities where the children lived. Service creation, however, requires the investment of new dollars. It would have been great if the legislature was ready to give IDCFS more money to develop these intensive community-based services, but at the time of his appointment, Mr. McDonald could not even get confirmed by the Illinois State Senate. The Chicago Tribune was running a series called “Death of Our Children” which inventoried a series of missteps by IDCFS workers. So under the circumstances, the legislature did not want to ‘put good money after bad’ and decided to force the new Director to make changes without any additional resources. They only agreed to allow him to reinvest anything he was able to save. This promise proved to be enough.

IDCFS leadership decided that their only viable approach was to use a community re-investment strategy in which they moved children and youth from expensive residential treatment programs (from \$100 to \$600/day) into community placements, such as foster homes and return to families. Further, they would bring children and youth from out of state placement to replace those moved into the community from in-state providers to lessen the financial impact of the reduce residential placements on in-state providers. In undertaking this project, they explained their strategy to residential providers and then asked the providers to nominate children and youth to participate in

this process of return to the community. This strategy proved to be a costly misstep. Unfortunately, since without checks and balances, all institutions function at the convenience of the institution, residential providers sometimes failed to nominate children and youth who were doing well (e.g. “We are helping. Don’t disrupt their treatment.”) and, instead, nominated children and youth who still required intensive services (e.g. “We are not helping. Maybe you can help.”). Thus the provider nomination process sometimes resulted in the identification of exactly the wrong children and youth for return to the community.

An absolutely tragic event happened in which a very high need youth who was in a very intensive out of state placement was identified for return (i.e., They weren’t able to help him). Unfortunately he had grandparents who loved him. They said that if no one else were willing, they would try. They lived in a small town and six weeks after they moved this young man from a very intensive residential program to living with his grandparents, he murdered both of them. This story is a tragic example of how not to manage a service system. This young man needed an intensive service setting. He needed to be in a safe, structured, residential treatment center. But, because a community placement was available and there was pressure to reduce the number of youth in placements, the decision was made to step this young man down to living with relatives.

Given my experience in using structured assessments to model the clinical rationale of the psychiatric crisis services, I was invited to participate in the design of a process for identifying which children and youth could return to the community without tragedy. Since I was unfamiliar with the child welfare system, and relatively unfamiliar with children’s behavioral health, we initiated the project by holding a number of focus

groups in which the discussion was focused on identifying exactly what characteristics of children and youth should inform good decision-making in the child welfare system.

In these discussions, a three dimension model emerged. Symptoms of behavioral and emotional disorders tended to inform choice of treatment approach. If a child was hallucinating, one should consider psychotropic medication. If a child was depressed or anxious even the Surgeon General Report (2001) recommended a psychotherapeutic approach (i.e. talking). But if a child is oppositional, every evidence-based practice suggests an environment intervention focus on the caregivers (Brestand & Eyeberg, 1998; Kazdin, 2005). But, knowledge of symptoms does not fully inform the intensity with which services should be applied. In fact, high risk behaviors become an important consideration to how intensively an intervention is needed. Factors such as suicide, violence, or sexual aggression influence intensity of service/level of care decisions. However, symptoms and risks do not fully inform decision-making in the child serving system. Knowing that a child is depressed and suicidal, you might still feel comfortable serving them in a community setting but only if their parent/caregiver was knowledgeable and able to provide appropriate supervision, etc.

The result of these focus group discussions was the creation of a tool that included the identified three dimensions described above—symptoms, risks, and caregiver capacity. The original version was called the Childhood Severity of Psychiatric Illness (CSPI). Table 5.1 contains the items included in the original CSPI. Based on the SPI in structure, the items of the CSPI were designed to assess the unique clinical characteristics of children and adolescents in care. The basic design of the SPI worked for this project because it was essential to first answer the primary question “are there

children and youth currently placed in residential treatment who do not need to be there”.

Susan Horn and her colleague had already demonstrated that it was possible to obtain information relevant to decision making from chart review provided the tool was designed appropriately. By using the structure of the SPI, we could use the CSPI to review the records of children and youth currently in residential treatment to rapidly assess the potential appropriateness of these placements.

Table 5.1 Items included on the original Childhood Severity of Psychiatric Illness

Symptoms:

- Neuropsychiatric Disturbance
- Emotional Disturbance
- Conduct Disturbance
- Oppositional Behavior
- Impulsivity
- Contextual Consistency of Symptoms
- Temporal Consistency of Symptoms

Risk Factors*:

- Suicide Risk
- Danger to Others
- Elopement Risk
- Crime/Delinquency
- Sexual Aggression

Functioning:

- School Dysfunction
- Family Dysfunction
- Peer Dysfunction

Co-morbidity:

- Adjustment to Original Trauma/Separation
- Medical
- Substance Abuse
- Severity of Abuse
- Sexual Development
- Learning and Developmental Disabilities

Systems Factors:

- Caregiver Ability to Provide Supervision
- Caregiver Motivation for Change
- Caregiver Knowledge of Child
- Placement Safety
- Community Capacity for WRAP Services
- Multi-System Needs

We then applied the CSPI to a stratified random sample of children and youth in residential treatment in Illinois (Lyons, Mintzer, Kisiel, Shallcross, 1998). In this review, we found that 13% of children and youth had never engaged in any of the five high risk behaviors. About 20% had a history of engaging in at least one of these high risk behaviors but not in the time period immediately prior to the most recent admission into residential treatment. So, fully one third of children and youth in residential placement reasonably could be stepped down into the community without intensive services already in place.

Once the findings of this study were accepted, IDCFS designed a process to reduce the number of children and youth based on their CSPI profiles. A one third reduction was accomplished within eighteen months by simultaneously applying a simple decision model for both placement into residential treatment and step down from residential treatment back to a community placement. Basically the original CSPI decision model for residential treatment was that one needed at least one '2' or '3' on at least one Symptom need AND at least one '2' or '3' on at least one Risk Behavior. It should be noted that this simple model represents an *extremely* low threshold to residential placement that no jurisdiction uses anymore. It was a starting point to initiate a system transformation. A shifting decision model is an example of planned incrementalism. A staged approach to system change can be an effective and sustainable change strategy and a key premise of this approach is to not get too far ahead of the field. Reducing the number of children and youth in residential treatment by one third was seen as sufficient to fund the development of intensive community services in the state.

This change was difficult enough for residential providers in the state, a more dramatic reduction would have been far more difficult to achieve.

The community re-investment strategy envisioned by DCFS leadership became a reality over the next two years with the number of children and youth placed in expensive residential treatment centers dropping from a peak of more than 6,000 in 1995 to about 4,000 eighteen months later. At the writing of this book, approximately 1,600 children and youth are currently in residential placements through Illinois DCFS.

The reduction of more than 2,000 admissions to residential treatment had major consequences to the child serving system beyond freeing up resources to fund intensive community services. Since the average residential treatment center has about 50 beds, the success of this initiative resulted in the inevitable closure of a number of programs. As anyone who has ever worked in the public sector will tell you, this type of dramatic change process can be fairly easy to derail. All that would have had to happen is for a few Chief Executive Officers of large residential programs to call their legislators and complain that the state is forcing the closure of a business(es) in the legislator's district. Politicians use their influence to bring business in their districts. State funded child welfare business is as good as any other, particularly in rural areas that have been hurt by shifts in agriculture and the closing of manufacturing plants. Children don't vote but employees of residential treatment centers do. Thus political contingencies often favor human service providers over state bureaucrats. Despite the ease with which this complaint can be used effectively, it did not happen in this process to any great extent. In fact, a number of facilities closed voluntarily and, where possible, began to shift their business model towards developing intensive community service programs.

I have been convinced that a primary driving factor in the long-term success of the community re-investment strategy was that the process was always about what was in the best interests of children. This focus on a shared vision of the child serving system and our ability to keep the children and youth's needs at the forefront of the planning and change process through the development and use of the CSPI was a fundamental reason for the success of the initiative. This experience is captured by the constitutive concept of communication—creating a shared meaning about how to best serve children and then representing it in a measurement process to guide the implementation and reinforce the shared meaning.

Following this experience, Northwestern University decided to exercise intellectual property rights over the CSPI and entered a contract with the Psychological Corporation. This arrangement was not really satisfactory for any of the parties as the company sought the CSPI to sell a managed care/outcomes management software system that never really took off. The University only made a few hundred dollars of which they generously shared half with the Mental Health Services and Policy Program. The Psychological Corporation has since released the copyright on the CSPI and related tools.

Despite the commercial failure of the CSPI, saving millions of dollars for reinvestment in community services without the use of a managed care company, garner a lot of attention in the child serving system. Because of the success of the Illinois initiative to reduce residential treatment utilization, I began to get invited to national meetings. In the process of being included by the national leadership at that time in the child serving system, I became exposed to issues that had not come up in the Illinois project. Primary among these issues was strengths and strength-based planning. During

the Illinois focus groups and discussions, the issue of strengths was never raised.

However, in the late 1990's, strengths had become a very hot topic on the U.S. national child serving scene.

The concept of strengths is that children, youth and families have assets that can help them through challenging times. Focusing on identifying, developing, and using these assets is the heart of strength-based planning. Intensive community treatment approaches, called wraparound services, embraced strength-based planning a guiding premise to its approach to working with families (c.f., Vanderberg & Grealish, 1998) .

At that time there was considerable tension between advocates of strength-based approaches and what was considered traditional clinical approaches that diagnoses psychopathology and worked to directly treat the identified symptoms of psychiatric disorders. Strength-based advocates called this deficit-based and decried it was out of date and out of touch with what children and families really need. Clinical advocates considered the strength-based advocates to be Pollyanna and, frankly naïve.

Given the strong interest in strengths at the national level, my colleagues and I created a brief strengths assessment to be used in parallel to the CSPI. We called the measure the Child and Adolescent Strengths Assessment (CASA, Lyons, Uziel-Miller, Sokol, & Reyes, 2000). We used it in a project in Florida investigating a bundled-rated payment methodology in Medicaid to pilot this measure. In studying the relationship between the CASA and the CSPI we discovered that strengths and symptoms both have significant relationships to level of functioning and the likelihood of high risk behavior but these relationships are completely independent of one another. In other words, the more symptomatic a child, the lower his/her level of functioning and the more likely

he/she will engage in high risk behavior. Completely independent of symptoms levels, the more strengths a child has; the higher his/her level of functioning and the less likely he/she is to engage in high risk behavior. So, both the clinical and the strength-based advocates were right in their perspectives but wrong in their disrespect for the others' viewpoint. The clear implication of these findings is the optimally effective treatment of children and youth should include both efforts to reduce symptomatology *and* efforts to use and build strengths. Based on the results of this study, the CANS was created in an effort to integrate the clinical and strengths perspective into a single assessment approach.

The very first state-wide implementation of the CANS started in Florida within one year of this project; however, it was with the next project that the shift of the CANS to a communimetric measurement tool actually occurred. I was invited to work with Allegheny County, Pennsylvania (e.g. Pittsburgh) on tailoring the CANS for their project which was a funded through the Substance Abuse and Mental Health Service Administration (SAMHSA) as a system of care site. SAMHSA funds many jurisdictions around the country to develop intensive community—based services using system of care philosophy (Stroul & Freidman, 1986). Allegheny County wanted to use the CANS as an integrated assessment process within their project.

It is useful to consider the nature of system of care projects as it relates to the evolution of the CANS. System of care philosophy is articulated in the guiding principles and core values listed in Table 5.2. One of the implications of this philosophy is that parents and youth should be involved in all aspects of the service system.

Table 5.2 Core Values and Guiding Principles of the Child and Adolescent Support Services Programs (CASSP)

CASSP Core Values

1. The system of care should be child centered, with the needs of the child and family dictating the types and mix of services provided.
2. The system of care should be community-based, with the locus of services as well as management and decision-making responsibility resting at the community level.

CASSP Guiding Principles

1. Emotionally disturbed children should have access to a comprehensive array of services that address the child's physical, emotional, social, and educational needs.
2. Emotionally disturbed children should receive individualized services in accordance with the unique needs and potentials of each child, and guided by an individualized service plan.
3. Emotionally disturbed children should receive services within the least restrictive, most normative environment that is clinically appropriate.
4. The families and surrogate families of emotionally disturbed children should be full participants in all aspects of the planning and delivery of services.
5. Emotionally disturbed children should receive services that are integrated, with linkages between child-caring agencies and programs and mechanisms for planning, developing, and coordinating services.

6. Emotionally disturbed children should be provided with case management or similar mechanisms to ensure that multiple services are delivered in a coordinated and therapeutic manner, and that they can move through the system of services in accordance with their changing needs.
7. Early identification and intervention for children with emotional problems should be promoted by the system of care in order to enhance the likelihood of positive outcomes.
8. Emotionally disturbed children should be ensured smooth transitions to the adult services system as they reach maturity.
9. The rights of emotionally disturbed children should be protected, and effective advocacy efforts for emotionally disturbed children and youth should be promoted.
10. Emotionally disturbed children should receive services without regard to race, religion, national origin, sex, physical disability, or other characteristics, and services should be sensitive and responsive to cultural differences and special needs.

Source: Adapted from the Child and Adolescent Support Services Programs guidelines (Stroul, 1993).

Allegheny County had very strong family representation through a group of parent advocates led by Julie Hdalio. The project director, Gwen White, wanted the family members to be the driving force behind the tailoring of the CANS. So, I along with the project evaluator, Mary Beth Rauptis, Ph.D. met with the family member on

multiple times to hammer out relevant items and language that they felt capture the needs and strengths of their children in a way that reduce stigma and judgment coming from professionals. The constitutive communication process initiated with the creation of the CSPI was taken to an entirely different level in this process. The explicit effort was to develop a measure that could serve as a mechanism for creating shared meaning for families and service professionals in the service delivery process. We referred to it as developing a common language.

As importantly, walking back from lunch during one of these marathon meeting I was causally talking to the lead parent, Ms. Hdalio. To establish the context, the levels of the CSPI was defined using more traditional Likert-type rating scales of None, Mild, Moderate and Severe. But in training first in the CSPI and then with the CANS, I had often taken to mentioning that you could also think about things from a service planning perspective of No Evidence, Watchful waiting/prevention, Action, and Immediate/Intensive Action. These ratings were not explicit aspects of the CANS at that time just alternative ways of understanding the Likert ratings. During this conversation, Julie told me emphatically that the thing she really liked about the CANS were, in fact, these action levels that I had described in my presentation. She said that the action levels would make immediate sense to parents. Parents experience many assessments of their children and often do not know how to translate these assessments into what should happen next. Parents then struggle to hold providers accountable for following up on the findings of the assessment. She felt that the action levels made the relation between assessment and services planning and receipt transparent and that was the primary value of the approach.

By that time the CANS had evolved into a tool that could be tailored to different circumstances, includes both needs and strengths in an effort to integrate competing conceptualization and now was action-oriented in its item structure. So the Allegheny County version of the CANS was the first full communimetric measure—evolved to be the shared meaning in the child serving system between parents and professionals and facilitate communication within the service planning process.

The number of jurisdictions and agencies implementing of the CANS has continued to increase since that time. Figure 5.1 displays all of the current North American applications by jurisdiction at the time of this writing. Additional states are considering state-wide implementations. Learning collaborative to support training and analysis and interpretation have been initiative to support the mass collaboration model of dissemination of innovation (see Chapter 8)

Insert Figure 5.1 about here

Measurement Characteristics of the CANS

Reliability

There is substantial research and implementations establishing the reliability of the CANS. Anderson, et al (2000) demonstrated that the CANS is reliable at the item level both prospectively and using field audit methods. In a variety of published research, the reliability of the CANS as a case review method has been reported to be

about 0.85 (Lyons, 2004). Reliability testing prospectively (with two ratings describing the same child) has been observed to around 0.90 (Lyons, 2004).

Use of the CANS generally requires formal certification which means that trainees must complete a test case vignette with a reliability (intraclass correlation) of 0.70 or above. There are more than 30,000 individuals around the world who have been certified in the reliability use of the CANS. Following a standard half day training, between 80% and 90% achieve this level of reliability on their first attempt. The majority of fail initially achieve reliability on their second test vignette.

At this point, there is no doubt that the CANS can be a reliable measure. However, it also is true that it can be used unreliably. In our experience the key to ongoing reliability are the factors discussed early in this text—use, transparency, and ongoing monitoring.

Validity

Several types of validity have been studied and established for the CANS. Face validity is demonstrated by its widespread acceptance in a large variety of child serving systems. There has been remarkably little resistance from family advocates and clinicians for most implementations. The approach clearly makes sense to those working directly with children and families. Most resistance to CANS implementations actually comes from individuals schooled in traditional psychometric measurement approaches who are uncomfortable with the communimetric approach.

In terms of construct validity, CANS dimension scores have been shown to correlated with other measures of child status such as the CAFAS and the Child Behavior Checklist (Lyons, 2004). These correlations are highest when the context is the same for

all children in the sample. When some children are in a residential placement and others are in the community, the correlation between the CANS and the CAFAS is much lower as the CANS does not report setting effects as meeting the needs of children while the CAFAS does (Lyons, 2004). In other words, a child who is going to school at a campus based residential program because staff wake him/her up and ensure that he/she attends the on-campus school would be seen as fine on the CAFAS but on the CANS could still be seen as having school attendance needs.

Utility validity has been reported. The CANS has been widely embedded in treatment and service planning processes and is widely used in supervision and quality improvement (O'Brien & Schneider, 2007). There have been many reports of improved attention to strengths resulting in the use of this structured assessment process (e.g., Craig & MacIntyre, 2008). Rawal, et al (2008) has demonstrated that this approach can reduce and practically eliminate racial disparities in psychiatric hospital admissions.

Research documenting the decision validity is growing and some will be reported below. There is a growing body of research that has not yet been published that documents that CANS recommended program placements results in improved outcomes. Hancock (2008) reported that using the CANS decision model to assist in placements in residential treatment resulted in improved within-episode outcomes for residential treatment providers.

Scoring Options

There are three strategies for scoring the CANS. The first is the simplest. Since the CANS is designed to be reliable at the item level and research has documented this

level of reliability, it is completely legitimate to analyze information from individual items. Individual item analyses are useful both for describing the characteristics of children, youth and families presenting to a program or the system or for monitoring outcomes from episodes of care. Reporting the percent of children or youth who move from an actionable level of need ('2' or '3') to a '0' or '1' is one widely used strategy for reporting met need.

The second scoring strategy is by CANS dimensions. The recommended scoring strategy is to average available items and multiply by 10. This creates 30 point scales in which a 0 is a child or youth with all '0' ratings on the items within a dimension and a 30 would be a child or youth with all '3' ratings on the items within a dimension. Dimension scores are quite useful for program evaluation applications to allow for the study of the effects of different interventions (Weiner, Schneider & Lyons, 2008; Lyons, Shasha, Griffin, Quentenz, Jenuwine, 2003).

The third strategy is to create a single score to represent the functional status of a child or youth. This approach is not recommended but is possible if one only utilizes a subset of the items. Specifically, it is possible to create a single score by combining items from Behavioral/Emotional needs, Risk Behaviors, and Functioning. These items form a reasonable scale in traditional psychometric terms. It is not a good idea to include Strengths or Caregiver items in this total scale and these two dimensions represent very different constructs than the three child/youth specific need dimensions. Ann Doucette's (2007) scaling of the comprehensive version of the CANS supports this scoring option.

Psychometric Scale Properties

Once you choose to score the CANS by adding items within dimension you must subject it to the same measurement standards as any psychometric measure.

Interestingly, it appears that when you do analyze the CANS from traditional psychometric perspectives, you find that you can, in fact, score it by dimensions and use these indices just like you would a traditional measure designed from a psychometric perspective.

For example, Table 5.3 presents a correlation matrix for behavioral health items from the Comprehensive version of the CANS. In addition, the item to total correlation between each item and the total Behavioral Health score (item average X 10) is provided. Review of these data suggests that all items fit the standard classical test theory of at least an item-total correlation coefficient of 0.30. The highest correlations are the disruptive behavior items which are the most common behavioral health needs but these correlations do not top 0.70. Cronbach's alpha for this set of items is 0.70 on this sample of 6010 children and youth. Under classical test theory, these characteristics are sufficient to justify using a total behavioral/emotional needs score. Substance Use has some inter-item correlations that might lead one to suggest it not be included in the total score; however its item-total correlation is sufficient. It is probably the relationship of this need item to the age of the youth that diminishes its correlation with some other needs.

Insert Table 5.3 about here

Table 5.4 presents a similar correlation matrix for the Strength items. The Cronbach's alpha for these items was 0.71, again sufficient to justify using a scale score. Inter-item correlations are all consistent with a sound classically designed measure.

Based on these analyses, a classically trained psychometrician might argue for the shortening of the behavioral/emotional needs scale to just the three highly correlated disruptive behavior items (i.e. Oppositional, Conduct, and Anger Control) or to specifically exclude Substance Use (i.e. it as a zero or even low negative correlation with some other items). A communimetric approach would never support such a strategy. The inclusion of items has to do with the work that must be done not with the statistical relationship among items. The measure does not exist only to generate a total score. The measure exists to support the work with the human service enterprise. Although disruptive behavior is more common, some children and youth have major mental illness or depression and/or anxiety, different treatment approaches are indicated for these different needs. Good treatment planning requires the inclusion of all of these items separately and, therefore, changing the measure because of the statistics would be misguided. This is a fundamental difference between a communimetric tool and a psychometric tool. You do not use inter-item performance indicators to guide measurement development--only to guide scoring options.

Rasch Modeling the CANS

Item response theory and Rasch modeling specifically is another strategy for understanding the scale properties of a communimetric tool when you wish to aggregate it into scores. This section presents a Rasch scaling of the Illinois Department of Children and Family Services (IDCFS) version of the CANS. This version can be found

in Appendix A. A sample of 4182 children and youth at entry into the IDCFS system were used for these analyses. It should be noted that at entry into IDCFS it is anticipated that children and youth have lower needs than if one were to sample other points in the system. For example, children and youth who disrupt from regular foster care have higher needs (Chor, 2008). Children and youth who stay in the custody of the state longer have higher needs than those who return to permanency rapidly. These sample variations in the frequency of needs has an impact on how items scale. Given the design of the CANS, a sample of children and youth at entry into state custody would be expected to populate the lower end of the full distribution of children and youth who might be assessed with the CANS.

For the sample at entry into the IDCFS system, when all items are scaled together this version of the CANS was a Item Separation of 2.69 which translates into a Cronbach's alpha of about 0.88 which is adequate from a scaling perspective. Thus the overall CANS is scalable using this model. From a Rasch perspective, the most 'noise' was generated by the '1' level rating (i.e., watchful waiting/prevention for the need items). This finding may relate to the multiple ways this level is used (e.g. suspicion, need for assessment, and history).

The success of Rasch scaling, like other psychometric approaches is somewhat dependent on the length of the scale. More items tend to scale better than fewer items. However, it is important to scale needs and strengths separately as they use a different set of action levels. Further, caregiver items are assessing a very different construct than those designed for describing children and youth. Therefore, separate analyses were accomplished for each domain of the CANS.

For the Strengths dimension the Item Separation statistic was a 1.81 which translates into a Child Reliability of 0.77. This is certainly adequate. Table 5.5 presents the item fit statistics for this scale. Review of this table demonstrates that Vocational Strengths is the only item with a fit statistic outside the recommended range. This finding should not be surprising because Vocational Strengths are not applicable for children and young adolescents but quite relevant for older youth. It may be advisable not to include Vocational Strengths in Strength dimension scores if children and young adolescents are predominant in the sample. Table 5.6 present the probability distribution across the four levels of each item within the Strengths dimension. Again, the structure is adequate with the '1' rating providing the most noise.

Insert Tables 5.5 and 5.6 about here

Table 5.7 provides an item analysis for a combination of behavioral/emotional, risk behaviors, and life domain functioning items. Together these items hang together reasonably well as an overall measure of a child/youth's functional status with a Separation Index of 1.98 and a Reliability of 0.80; however, review of the individual items reveals three items: Job Functioning, Medical Functioning, and Developmental as not fitting particularly well. This finding should not be surprising as only a small subset of youth are working, severe medical problems are rare at entry into child welfare, and the developmental item is a static indicator of mental retardation or a developmental delay. The interpretation of these finding from a scaling perspective is that you would not includes these three items in a total score to be used in an outcome analysis, but that a

single scale combining these items to give an overall functional status measure for children and youth would be feasible.

Insert Table 5.7 about here

It is important to remember that the above analyses were done using the population of children and youth at their entry into child welfare. There are many children and youth with minimal needs at this particular time. Since, psychometric techniques require variation in order to achieve good statistical performance of the items, this sample is not optimal for these scaling approaches. When a broader sample of children and youth actually in service are used for scaling purposes, the performance of the CANS dimensions improves dramatically. In a scaling of 6010 children and youth from New Jersey, Ann Doucette (2007) found that the comprehensive version of the CANS had good scaling properties for each of the dimensions and that a combination of behavioral/emotional, risk behaviors, and functioning made a well functioning total score. Strengths did not scale with the other items which should be expected given the difference in the definitions of action levels between needs and strengths.

Decision Support For Level of Care and Intensity of Services

As discussed in previous chapters, a well designed communimetric measure should be able to perform varied tasks within a complex system. The Total Clinical Outcomes Management framework in child and youth services requires the ability of the measure to function as a decision support tool at the program level (Lyons, 2004). This application is generally called level of care or intensity of service decision support.

There are a wide variety of these types of decision support model, sometimes referred to as algorithms.

In chapter 2, we discussed the difference between the concepts of severity and complexity. It is in the application of a communimetric measure to program level decision support where this distinction is most important. Most other decision support approaches use a severity indicator with a cut-off. For example, with the CAFAS (Hodges & Wotring, 2000) a total score is calculated and different levels of care are recommended for children and youth scoring a 120 or above and a 80 to 119. The challenge with the severity approach is that it does not necessarily reflect the decision inputs that actually go into good decision making about program eligibility. In fact, most program eligibility models actually reflect complexity rather than severity as primary inputs into decision-making.

CANS and Level of Care Recommendations

Residential Treatment. The CANS embraces a complexity model in its decision support applications at the program level. Rather than calculating a total score with cut-offs, the logic of complexity dictates that a variety of actionable needs across different domains would influence a decision towards a higher level of care or more intensive treatment intervention. For example, the very first decision algorithm developed from this model was the one used in the residential treatment reform described above in which the first communimetric tool (CSPI) was developed. As described earlier, that project sought the description of a child or youth who should be served in a residential treatment center. The very first model suggested that in order to place a child in residential treatment, he or she should have, at minimum at least one '2' or '3' rating on a

symptom of emotional/behavioral disorders AND at least one '2' or '3' on a risk behavior from among the five risk original behaviors as presented in Table 5.1.

Work on decision models has continued and now sophisticated models exist in a number of jurisdictions. The most recent example of the level of care model used in child welfare in Illinois is contained in Table 5.8.

Table 5.8 CANS Comprehensive Decision Support Model for the Illinois Department of Children and Family Services

OPTION 1. SERVICES IN FOSTER CARE (SFC)

Criterion 1.1: Child is 5 or younger and receives a '2' on at least one of the following:

- Communication
- Failure to Thrive
- Regulatory Problems
- Pica
- Substance Exposure

Criterion 1.2: At least one '2' or '3' on any of the Behavioral/Emotional needs items:

- Psychosis
- Attention deficit/Impulse
- Depression
- Anxiety
- Oppositional Behavior
- Antisocial Behavior
- Attachment
- Adjustment to Trauma
- Substance use
- Anger Control
- Affect Dysregulation
- Eating Disturbance
- Behavioral Regression
- Somatization

To be suggested for SFC referral, a child must either meet Criteria 1.1 OR 1.2

OPTION 2. SPECIALIZED FOSTER CARE

Criterion 2.1 A rating of '2' or '3' on Medical/Physical or Somatization

Criterion 2.2. At least one '2' or '3' on one of the following

- Psychosis
- Attention deficit/Impulse
- Depression
- Anxiety

Oppositional Behavior
Antisocial Behavior
Anger Control
Attachment
Adjustment to Trauma
Substance use
Affect Dysregulation
Eating Disturbance
Behavioral Regression

Criterion 2.3. A rating of '3' on at least one of the following:

Motor
Sensory
Intellectual
Communication
Failure to Thrive
Regulatory Problems
Failure to Thrive
Substance Exposure
Developmental
Self Care

Criterion 2.4 A rating of '3' on at least one of the following

School Behavior
Social Behavior
Sexually Reactive Behavior

Criterion 2.5 A rating of '2' or '3' on at least one of the following

Suicide Risk
Self Mutilation
Other Self Harm
Danger to Others
Runaway
Sexual Aggression
Fire Setting
Delinquency

A child is suggested for Specialized Foster, if he/she meets EITHER

a. Criteria 2.1 for referral to Medically Complex OR

b. Criteria 2.2 and (EITHER 2.3 OR 2.4 OR 2.5) for Mental Health

NOTE: Unless a youth is 15 years old or older and Attachment is rated as a '2' or '3', then consider Group Home (see Group Home criteria below).

OPTION 3. GROUP HOME/TREATMENT GROUP HOME

For this level three different threshold models should be used, depending on the age of the child.

For Children less than 12 years old

Criterion 3a.1. At least one or more '3' or two or more '2' among the following needs

Psychosis
Attention deficit/Impulse

Depression
Anxiety
Oppositional Behavior
Antisocial Behavior
Attachment
Adjustment to Trauma
Substance use
Anger Control
Affect Dysregulation
Eating Disturbance
Behavioral Regression

Criterion 3a.2 A rating of at least '2' on Developmental

Criterion 3a.3. One '3' among the following risk behaviors

Suicide Risk
Self Mutilation
Other Self Harm
Danger to Others
Sexual Aggression
Fire Setting
Delinquency

Criterion 3a.4. Two or more '2' among the following risk behaviors

Suicide Risk
Self Mutilation
Other Self Harm
Danger to Others
Runaway
Sexual Aggression
Fire Setting
Delinquency

**A child who is less than 12 to be suggested for Group Home, if he/she meets
(EITHER Criterion 3a.1 OR Criterion 3a.2) AND (Criterion 3a.3 OR Criterion 3a.4)**

- If Criterion 3a.2 is met consider a specialty program
- If Sexual aggression is rated a '2' or '3' consider a specialty program
- If Physical/Medical is rated a '2' or '3' consider a specialty program
- If Delinquency is rated a '2' or '3' consider a specialty program

For youth ages 12 through 14 years of age:

Criterion 3b.1. At least one or more '3' or two or more '2' among the following needs

Psychosis
Attention deficit/Impulse
Depression
Anxiety
Oppositional Behavior
Antisocial Behavior
Attachment

Adjustment to Trauma
Substance use
Anger Control
Affect Dysregulation
Eating Disturbance
Behavioral Regression
Somatization

Criterion 3b.2 A rating of '2' or '3' on Developmental

Criterion 3b.3. One '3' among the following risk behaviors

Danger to Self
Self Mutilation
Other Self Harm
Danger to Others
Sexual Aggression
Fire Setting
Delinquency
Sexually Reactive Behavior

Criterion 3b.4. Two or more '2' among the following risk behaviors

Danger to Self
Self Mutilation
Other Self Harm
Danger to Others
Runaway
Sexual Aggression
Fire Setting
Delinquency
Sexually Reactive Behavior

A 12-14 year old youth would be suggested for Group Home if he/she met (EITHER Criterion 3b.1 OR Criterion 3b.2) AND (EITHER Criterion 3b.3 OR Criterion 3b.4)

- If Criterion 3b.2 is met consider a specialty program
- If Sexual aggression is rated a '2' or '3' consider a specialty program
- If Physical/Medical is rated a '2' or '3' consider a specialty program
- If Delinquency is rated a '2' or '3' consider a specialty program

Youth 15 years and older:

Criterion 3c.1. Attachment is rated as a '2' or '3'

Criterion 3c.2 Meets criteria for Specialized Foster Care

Criterion 3c.3 Female ward who is pregnant (rated a '2' or '3' on Parenting Role)

A youth 15 years or older would be suggested for Group Home is he/she met criteria set for 12 to 14 year olds OR youth met (both Criterion 3c.1 AND Criterion 3c.2) OR youth meets Criterion 3c.3

- If Criterion 3c.2 is met consider a specialty program
- If Sexual aggression is rated a '2' or '3' consider a specialty program
- If Physical/Medical is rated a '2' or '3' consider a specialty program
- If Delinquency is rated a '2' or '3' consider a specialty program
- If Criterion 3c.3 is met consider a specialty program

OPTION 4. RESIDENTIAL TREATMENT CENTER

Criterion 4.1. At least two or more '3' among the following needs

Psychosis
 Attention deficit/Impulse
 Depression
 Anxiety
 Oppositional Behavior
 Antisocial Behavior
 Attachment
 Adjustment to Trauma
 Substance use
 Anger Control
 Affect Dysregulation
 Eating Disturbance
 Behavioral Regression
 Somatization

Criterion 4.2 Three or more '2' among the following needs

Psychosis
 Attention deficit/Impulse
 Depression
 Anxiety
 Oppositional Behavior
 Antisocial Behavior
 Attachment
 Adjustment to Trauma
 Substance use
 Anger Control
 Affect Dysregulation
 Eating Disturbance
 Behavioral Regression
 Somatization

Criterion 4.3 A rating of '2' or '3' on Developmental

Criterion 4.4 At least one '3' among the following risk behaviors

Suicide Risk
 Self Mutilation
 Other Self Harm
 Danger to Others
 Sexual Aggression
 Fire Setting

Delinquency
Criterion 4.5 Three or more '2' among the following risk behaviors
Suicide Risk
Self Mutilation
Other Self Harm
Danger to Others
Runaway
Sexual Aggression
Fire Setting
Delinquency
Judgment
Social Behavior
Sexually Reactive Behavior

**To be suggested for RTC, a child should meet
(EITHER Criteria 4.1 OR 4.2 OR 4.3) AND (Criteria 4.4 OR 4.5)**

- If Criterion 4.3 is met consider a specialty program
- If Sexual Aggression is rated a '2' or '3' consider a specialty program
- If Physical/Medical is rated a '2' or '3' consider a specialty program
- If Delinquency is rated a '2' or '3' consider a specialty program

OPTION 5. TRANSITIONAL LIVING

Criterion 5.1 Youth is 17 to 19 years old

Criterion 5.2 Youth is 19 to 21 years old

Criterion 5.3 A rating of '2' or '3' on Independent Living Skills

Criterion 5.4 A rating of '2' or '3' on any of the following

Intimate Relations
Parenting Role
Victimization
Medication Compliance

Criterion 5.5 A rating of '1' higher on Educational Attainment and has not graduated from high school

Criterion 5.6 Does not meet criteria for Group Home or Residential Treatment

Criterion 5.7 Youth is NOT currently living in a stable foster home

A youth would be suggested for

Level 1 Transitional Living if he/she meets Criterion 5.1 and 5.3 and 5.6 and 5.7

**Level 2 Transitional Living if he/she meets Criterion 5.1 and
(Criterion 5.3 AND Criterion 5.4) and Criterion 5.6 and 5.7**

Level 3 Transitional Living if he/she meets Criterion 5.2 AND

(Criterion 5.3 AND Criterion 5.5) and Criterion 5.6 and 5.7

OPTION 6. INDEPENDENT LIVING

Criterion 6.1 Youth is 19 years or older

Criterion 6.2 A rating of '0' or '1' on Independent Living Skills

Criterion 6.3 Youth does not meet criteria for Group Home or Residential Treatment

Criterion 6.4 Youth is NOT currently living in a stable foster home

A youth is suggested for Independent Living if he/she meets Criterion 6.1 AND Criterion 6.2 AND Criterion 6.3 AND Criterion 6.4

A growing body of validity information demonstrates that the decision models result in better outcomes than decisions made that are not consistent with the CANS recommended level of care. For example, in a sample of 1020 children placed through a child/family team model in child welfare in Illinois (Child and Youth Investment Team, CAYIT), the CANS is used to advise the team but the team is free to choose any placement. So children are placed at levels of care lower than recommended, some at higher. Comparing placement duration (i.e. stability), between the three groups (matched, lower, or higher), a statistically significant differences is observed ($F(2, 1017)=3.74, p=.024$):

- Children placed at higher level than CANS recommended 151.8 days (n=240)
- Children placed at the CANS recommended level 164.8 days (n=471)
- Children placed at a lower level than CANS recommended 134.6 days (n=309)

Figure 5.2 presents a survival curve for placement stability following a CAYIT. The most stable placements are those consistent with the CANS recommendation (match=0), followed by those who are placed at a less intensive level of care. The least stable

placements are those where the child/youth are placed at a lower level of care than indicated by the CANS (match=1).

Insert Figure 5.2 about here

So when child family teams following the CANS recommended, the following placement was more stable than if they did not.

Crisis Intervention and Psychiatric Hospitalization. Decision support models also have been used to model decision-making about psychiatric hospitalization for children and youth. Initially, we used logistic regression to predict which children/youth would be hospitalized versus served in the community. As evidence mounted we realized that you could not use logistic regression in the field, so we used a loglinear model that successfully predicted about 85% of decisions to admit or treat in the community. The model worked used the following indicators adding one point for the presence of each:

Suicide Risk rating of 2 or 3

Judgment rating of 2 or 3

Depression rating of 2 or 3

Impulsivity rating of 2 or 3

Danger to Others rating of 2 or 3

Anger Control rating of 3

Psychosis rating of 1, 2 or 3

This model results in an indicator that can range from 0 for a child or youth with none of these needs to a 7 for a child or youth with all of them. Using a sample of 330 crisis

episodes we divided the cases into low risk (0 or 1 on the indicator), medium risk (2, 3 or 4 on the indicator) and high risk (5, 6 or 7) on the indicator. Changes on the CSPI total score can be seen over the course of the 90 day crisis episode in Figure 5.X. Review of these findings reveal that psychiatric hospitalization has significantly better outcomes than community treatment for high risk children/youth but is associated with reliable worsening for low risk children/youth

Insert Figure 5.3 about here

Using CANS scores to assess change over time: Outcome applications

Perhaps the area of greatest controversy with communimetric tools is their suitability to measure change. Anyone who has studied measurement knows that items with restricted options, therefore, have restricted ranges and, de facto, are less sensitive to change than a measure with many options. Of course, anyone who is sophisticated in their knowledge of measuring change also knows that the utility of a measure to assess change is not solely determined by its response options but also by its reliability and relevance to things that might be expected to actually change. A highly reliable measure can be sensitive to change even when the response options are restricted. An unreliable measure will not be sensitive to detecting real change even with a every large range of scores.

The Childhood Functional Assessment Form is a good example of a measure that fits traditional psychometric theory in terms of allowing a wide range of response options

but whose reliability is so poor that it is not a good measure of change. The CFARS utilizes 10 levels of ratings for each of 16 items.

1 – No problem

2 – Less than slight

3 – Slight

4 – Slight to moderate

5 – Moderate

6 – Moderate to severe

7 – Severe

8 – Severe to extreme

9 - Extreme

Good luck trying to define the actual, meaningful difference between ‘Slight’ and ‘Less than slight’ in actual practice.

Unlike psychometric measures in which clinical significance is a more rigorous standard than statistical significance, any change on the CANS is clinically significant. The child/youth is different in terms of their actionable needs. Ironically, statistical significance is actually a more conservative standard and becomes relevant for dimension score analyses. With psychometric tools, statistical significance is generally viewed as a less conservative standard. Reliable change indices have been created for the CANS and the percent of children and youth who demonstrate reliable change (usually a 2 to 4 point change on the 30 point dimension scale) can be reported. Benchmarks of reliable

change for the overall score, individual dimension scores, or the likelihood of any reliable change across all dimensions are available.

As described in scoring options above, the CANS can be used for outcomes in two ways. First, the percent change in actionable ratings (or in any levels of ratings) can be studied for individual items. Figure 5.4 demonstrates this type of analysis for behavioral/emotional needs from a wraparound program in New Jersey. Youth with actionable trauma problems account for 26% of all cases at enrollment but by the end of the treatment episode only 16% still have actionable needs regarding Adjustment to Trauma.

Insert Figure 5.4 about here

Outcomes also can be studied with the CANS using dimension scores. This approach is nearly identical to the applications with psychometric measures and should follow the same standards. Concepts like reliable change and internal consistency of the dimension score are all relevant to the science of outcomes analysis.

Using the CANS dimension scores over time, it is possible to track change in residential treatment. Comparisons can be made between youth placed in residential treatment consistent with the CANS recommendation (Concordant) and those placed in residential treatment when the CANS suggested a lower level of care intensity. Figure 5.5 presents the outcome comparison between these two groups for changes in Behavioral/Emotional needs based on nearly 400 youth. Review of these data indicates that the concordant youth improve over time in residential treatment from their status in

the community prior to placement while the discordant group actually demonstrates a higher level of symptomatology after placement. Figure 5.6 displays the same information for high Risk behaviors. All differences in both figures are statistically significant between groups and over time. These two figures together demonstrate that the reliable worsening observed in the discordant group on behavioral/emotional needs is not a regression to the mean phenomenon as both groups improved on high risk behaviors.

Insert Figure 5.5 and 5.6 about here

Percent Change Analyses. There is one commonly used type of analysis that is not recommended for CANS or other communimetric tools. Because of differences in baseline values with psychometric measures are common and since these measures are by their nature arbitrary, some investigators recommend the use of percent change as a strategy to assess the size of an outcome (Harris, 1967), although others warn against this approach of any outcome analysis (Vickers, 2001). Such analyses are an extremely bad idea with a communimetric tool since the level of the score has a meaning in terms of the intensity or complexity of service needs (or strengths-based opportunities). A change from a '15' to a '10' on a CANS dimension score is substantially more meaningful in terms of need (or strength) than a change from a '3' to a '2'. To value these two outcomes as identical, as a percent change model does is forgetting the fundamentals of the communimetric approach. In fact, movement from dangerous and disabling to

actionable may be of greater value than moving from actionable to watchful waiting/prevention.

Implementation Experiences

As discussed in Chapter 3, implementation of a communimetric tool is more than just ensuring people complete it. The idea is to fully embed the tool into the fabric of the work where it is being employed. Since the CANS is the first and most evolved communimetric tool, we have substantial experience on its implementation across a broad range of jurisdictions as demonstrated in Figure 5.1. All of these have been initiated since 2000.

Any statewide implementation is likely to involve requiring specific individuals to complete the CANS. Establishing the methods by which this is accomplished actually becomes an aspect of the business rules of that service system. Table 5.9 provides the business rules for the use of the CANS throughout the Illinois Department of Children and Family Services (DCFS) system.

Table 5.X CANS Assessment Business Rules for use within the Illinois DCFS system. CANS Assessment for Administrative Case Review

1. Person Responsible for Completing the CANS

1.1 DCFS/POS Caseworker. In all cases, it is the DCFS or POS caseworker's (or the caseworker's supervisor's especially if the current caseworker has been assigned the case less than 30 days) responsibility to ensure that a "current" CANS assessment (see definition in 2.1, below) is included in the Administrative Case Review (ACR). This CANS assessment should be completed in the context of the Child and Family Team (CFT) meeting occurring prior to the ACR review. At the time of the CFT meeting, the worker should assemble (contradicted below 2.1 where option is given to complete CANS prior to CFT) all those individuals who have completed a CANS assessment on the youth, or in their absence, should obtain copies of those previously completed CANS. These individuals may include outpatient counselors, therapists, CAYIT reviewers, clinical screeners, SOC workers, or residential staff. As always, the CFT should also include the parents, client, case worker, and clinical supervisor.

- 1.2 Outpatient Behavioral Healthcare Provider.** Outpatient therapists and counselors may complete the CANS assessment in the course of monitoring progress in outpatient treatment. It is recommended that the CANS be completed every 6 months, and these CANS should be submitted to the caseworker for inclusion in the CFT meeting, during which discussion will take place incorporating all of the supporting documentation into a summary CANS. If the therapist's CANS is the most recent CANS (completed in the last 90 days) and there has been no CAYIT or psychiatric hospitalization, the worker will review the therapist's CANS and use it as the basis for the completion of the CANS that will be submitted to ACR.
- 1.3 Residential Treatment staff.** The CANS is completed every 3 months by residential staff. The most recent CANS should be submitted to the worker for inclusion in the CFT discussion regarding the most current CANS. The residential CANS is likely to be the most recent in cases where there have been no recent CAYIT or psychiatric hospitalizations. In these cases, the residential CANS can be used as the basis for the CANS that will be submitted to ACR. The worker will lead a review of the document in the CFT meeting preceding ACR, at which time item scores will be confirmed by participants and additional information (if available) will be incorporated.
- 1.4 Integrated Assessment Clinical Screeners.** A CANS is completed as part of Integrated Assessment (IA) within the first 45 days of the case. This is most likely to be the child and family's first CANS. Consequently, every effort should be made to collect comprehensive information about the child's history, functioning, strengths, and symptoms. In the IA context, the CANS is used to develop a service plan that targets areas of need and builds upon strengths. The CANS, (specifically the Caregiver Needs and Parent Readiness for Reunification modules), is also used at IA to provide support for permanency goals. If the IA CANS is the only CANS completed in a case thus far it can be used as a basis for the re-scoring at the CFT by the caseworker and team members.
- 1.5 CAYIT Reviewers.** A CANS is completed as part of every Child and Adolescent Youth Investment Team (CAYIT) meeting. These meetings evaluate child functioning and appropriateness for placement at times when the placement is in question and a new placement is needed. Although the CAYIT CANS should be submitted to the worker for inclusion in the CFT meeting prior to ACR, if it is the only CANS completed within the last 90 days a new CANS should be completed. In the context of CAYIT the CANS is used to guide decisions about level of care and placement.
- 1.6 SOC CANS.** If the child is receiving SOC services they are assessed using the CANS at the initiation of these services and subsequently every six months. The SOC CANS should be submitted to the worker for inclusion in the CFT prior to ACR, and if it was completed within 90 days of this meeting it can be used as the basis for the "current" CANS. The SOC CANS is used to develop individualize plans of care for wards that address needs and build upon strengths.

2. Principles for Determining the "Current" CANS

- 2.1 Prior to Administrative Case Review.** If previously completed CANS (by those individuals mentioned in 1, above, excluding CAYIT or Psychiatric Hospitalization, see below) were completed within 90 days of the CFT prior to ACR, the recent

CANS need only be reviewed by the caseworker and item scores confirmed. The caseworker may choose to accept all item ratings, or raise items for revision in the meeting rating areas that have undergone change since the recent CANS was completed. If the previously completed CANS is older than 90 days, the worker must lead the process of completing a CANS assessment, prior to or as part of the CFT meeting. If the caseworker determines that there is no “current” CANS according to these guidelines, a new CANS must be completed. This may require completing the entire document, or, if there is an existing (outdated) CANS, it is acceptable for the DCFS caseworker to review it and use it as the basis for a new CANS in which items which have changed are revised, but existing ratings are maintained in areas where there has been no change. It is the DCFS caseworker’s responsibility to determine whether there is a current CANS, and to initiate the completion of a new one if necessary. Once the CANS has been reviewed, participants in the meeting will sign the document. These participants may include (but are not limited to) the Parents, Client, Case Worker, Therapist, and Clinical Supervisor.

2.2 Under circumstances of Psychiatric Hospitalization. A current CANS must be reviewed at discharge from the hospital to identify areas of need. The CANS used for discharge planning must be “current” within 3 months. For children who are flagged (those who have been readmitted to the hospital within 30 days of a prior hospitalization, those who are 6 or under, those who are without placement, and those who have been hospitalized 3 or more times in 6 months), a CANS within the last 30 days is required for treatment planning at discharge. For children who have multiple instances of a “flag” trigger, the CANS must be reviewed for treatment planning at discharge but should not be completed more than once in a 30-day period. If the caseworker determines that there is no “current” CANS according to these guidelines, a new CANS must be completed prior to discharge. This may require completing the entire document. Or, if there is an existing (outdated) CANS, it is acceptable for the DCFS caseworker to review it and use it as the basis for a new CANS in which items which have changed are revised, but existing ratings are maintained in areas where there has been no change. It is the DCFS caseworker’s responsibility to determine whether there is a current CANS, and to complete a new one if necessary, and bring it to the clinical staffing for review by the DCFS & POS clinical supervisor and the hospital staff. Once the CANS has been reviewed, participants in the meeting will sign the document. These participants may include (but are not limited to) the Physician, Hospital Social Worker, Caseworker, and Clinical Supervisor.

3. Procedures for CANS review in CFT meeting

3.1 Completion of CANS in CFT meeting. Although the caseworker has the ultimate responsibility for completion of the CANS to be included in ACR, the CANS is intended to represent consensus among all of the participants in the CFT meeting. Negotiation among participants on item scores is to be expected and encouraged, as it is only by incorporating all available perspectives on the child’s functioning and strengths that the tool can accurately reflect the child’s current state.

3.2 Parent readiness for reunification. As long as the goal continues to be “return home”, the “Parent Readiness for Reunification” module of the CANS must be

completed as part of any CANS administration. This module, comprised of items 101 through 142, rates the parent’s ability to adequately care for the child.

3.3 Transition to Adulthood. This section should be completed for all youth in ILO/TLP placements, as well as all youth 14.5 years old. These items are optional in other cases where the worker deems them appropriate.

4. Training

4.1 Training. All caseworkers completing the CANS must be trained and certified in its use. DCFS is responsible for providing training opportunities. All caseworkers completing the CANS must obtain recertification each year by completing a case vignette and submitting it for scoring. Certification is contingent upon 70% reliability on scored items.

Occasion :	IA	CAYIT	Residential	Outpatient Therapy	ACR	Hospital Discharge	SOC
Person Responsible for completing the CANS	IA Clinical Screener	CAYIT Reviewer	Residential caseworker	Therapist	Caseworker	Caseworker	SOC Caseworker
Interval	45 days into case	At placement change	At intake, every three months, at discharge	Every six months	Every six months	At discharge	At initiation of SOC, Every six months, at discharge
Old CANS used if current within	-	-	Current CANS within 3 months	Current CANS within 6 months	Current CANS within 90 days	Current CANS within 90 days (30 days for cases with “triggers” *)	Current CANS within 6 months
Function	Drives the initial service plan by targeting needs and building upon	Used to guide decisions about level of care and placement.	Drives treatment plan and interventions.	Drives treatment plans and monitors progress in outpatient treatment.	Monitors progress of child and family	Current CANS must be reviewed at discharge from the hospital to identify areas of	Used to develop individualized plans of care that address needs and build

Occasion :	IA	CAYIT	Residential	Outpatient Therapy	ACR	Hospital Discharge	SOC
	strengths.					need for services and placement.	upon strengths.
Sharing	Must be shared with the caseworker and all service providers	Must be shared with the caseworker, residential staff, and service providers	Must be shared with the caseworker and all service providers	Must be shared with the caseworker.	Must be shared with all participants in the CFT.	Must be shared with all participants in the discharge meeting	Must be shared with the caseworker and service providers.
Rule	A new CANS must be completed by the caseworker at 6 months in conjunction with the CFT.	If CAYIT CANS is the only CANS completed within the last 90 days a new CANS should be completed by the caseworker in conjunction with the CFT.	The residential CANS is likely to be the most recent in cases where there have been no recent CAYIT or psychiatric hospitalizations. In these cases, the residential CANS can be used as the basis for the CANS that will be submitted to ACR.	If the therapist's CANS was completed within 90 days and there has been no CAYIT or psychiatric hospitalization, the therapist's CANS can be used as the basis for the CANS that will be submitted to ACR.	If Residential, SOC, or a Therapists CANS is the most recent (completed in the last 90 days) (excluding CAYIT or Psychiatric Hospitalization), that CANS can be used as the basis for the CANS that will be submitted to ACR. If the previously completed CANS is older than 90 days, the worker must complete a new CANS.	Any CANS completed within the last 90 days can be considered as a basis for completion of a new CANS upon discharge. This revised CANS must be brought to the clinical staffing with DCFS/PO S clinical supervisor and hospital staff.	If the SOC workers CANS is the most recent CANS (completed in the last 90 days) and there has been no CAYIT or psychiatric hospitalization, the worker will review the therapist's CANS and use it as the basis for the completion

Occasion :	IA	CAYIT	Residential	Outpatient Therapy	ACR	Hospital Discharge	SOC
							on of the CANS that will be submitted to ACR.

Matching Child Needs to Specific Providers

A unique aspect of use for the CANS in the DCFS system is that provider database which was launched in April, 2008. This system takes CANS assessment information and matches it to available providers using geomapping technology. For example, if a child has trauma-related treatment needs as identified by the CANS, then providers in their area would be identified by geographic distance. Figure 5.7 presents a screen from this system that identifies the actionable CANS needs and the possible service providers

 Insert Figure 5.7 about here

By clicking on the identified provider, the case worker can get directions to the site (Figure 5.8). In addition, the system gives detailed information about service/treatment options, information needed at intake, special services (e.g. language, day care). Thus the system is designed to facilitate the full use of the CANS by the DCFS caseworker by making their job more effective and efficient. In the communimetric theory of measurement this is one of the key ways that you facilitate the reliability and validity of the measurement process.

Insert Figure 5.8 about here

Once the system is useful to caseworker in their work with individual children, the same information can be used at the system level for other applications. Figure 5.9, 5.10 and 5.11 represent a gap analysis. Figure 5.9 is the location of all youth with an actionable substance use problem. Figure 5.10 is a map of the location of every provider in the state who is willing to serve Medicaid funded youth who have substance use problems. Figure 5.11 then is the overlay of the prior to figures and provides the gap analysis.

Insert Figures 5.9, 5.10 and 5.11 about here

Other jurisdictions have implemented the CANS in different ways. New Jersey was the first state to implement the CANS in a cross-systems applications. They created two versions of the tool—the Needs Assessment and the Strengths & Needs Assessment to embed into a new initiative design to create greater access to intensive community services through the creation of Care Management Organizations (CMO) with geographic responsibilities. Referrals to the CMO can come from mental health, juvenile justice, child welfare, or directly from parents who are concern about their children. The Needs Assessment is used to communicate the needs initially and it is used to determine eligibility for the CMO. Once children are accepted in the program, they receive a full assessment building on the already identified needs but expand the assessment to include

strengths and more details (i.e. modules) about specific needs that are globally identified in the Needs Assessment but require clarification for effective treatment planning. Figure 5.12 presents the admission levels of need on the total score (behavioral/emotional, risk behaviors and functioning) for supportive case management (Youth Case Management, YCM), wraparound (Care Management Organization, CMO), and Residential Treatment (RTC). Review of these comparisons demonstrates that the use of the CANS as a decision support has created a better separation between these dramatically different program types in terms of the needs of the children/youth served. In 2003, there was little difference. By 2007, the average difference among these three levels of care was far greater.

Insert Figure 5.12 about here

Tennessee’s Department of Children’s Services (DCS) uses the CANS as its initial assessment upon custody. The TN version of the CANS is initiated by the Child Protective Services (CPS) worker based on information collected as part of the investigation. If the child is removed, the CANS assessment process is transferred to a child welfare case worker to complete. This caseworker builds on the information provided by CPS and completes the CANS in time for the initial child family team which should take place within about one week of the custody decision. The CANS guides placement and permanency planning decisions at that time. The worker then completes the CANS at regular intervals throughout their stay with DCS.

Indiana was the first state to have all four of the major child serving system partners at the table for the design of their version of the CANS: mental health, child welfare, juvenile justice, and the schools. As a result, they identified and designed a new item, ‘Bullying’ to include as this is a very important need within the school system. Of course, this item was put into the mass collaboration mode (see Chapter 8) and a number of other jurisdictions now have included it in their version. Data from the first year, indicates that bullying is the second most common high risk behavior after ‘Social Behavior’ among children and youth receiving mental health services in the state.

Since 2000, the CANS has become a widely used tool for implementing change in the child serving system in the United States and elsewhere. Its rapidly spreading popularity alone suggests that it is useful. The emerging data from the various implementations suggests that the application of this approach is actually transforming for the child serving system to improve efficiency and effectiveness.