

An Initial Examination of Massachusetts Youth
Screening Instrument (MAYSI) Data:
Recommendations for Policy and Practice



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Introduction

Providing mental health and substance abuse services involve three steps:

1. Screening youth for possible problems,
2. Assessing identified youth to diagnosis the problem, and
3. Providing mental health services.

In 2000, the Florida Department of Juvenile Justice (DJJ) began using the Massachusetts Youth Screening Instrument-2 (MAYSI-2) as a mental health and substance abuse screening tool for all youth entering the juvenile justice system. The MAYSI-2 is a standardized, reliable, 52-item, self-administered questionnaire. It is a means of identifying signs of mental/emotional disturbance or distress, including suicide risk. The scores obtained on the MAYSI are used to assist in the decision of whether to refer a youth for an assessment or crisis intervention.

This report presents the results of an initial examination of the MAYSI-2 as used by DJJ. Recommendations for policy development regarding administration of the instrument, and changes to the design of the MAYSI form in the Juvenile Justice Information System (JJIS) are provided.

Development of the MAYSI

The MAYSI was developed by Thomas Grisso, Ph.D., and Richard Barnum, M.D. They developed the initial questionnaire based on a literature review, input from a panel of national experts and pilot testing on a sample of children in the juvenile justice system. Fifty-two questions focusing on thoughts, emotions, and behaviors in the past few months were selected and the instrument was administered to over 1,300 youths in probation, detention, and correctional programs in Massachusetts. Their study, completed in 1998, involved comparing the results of the MAYSI to several other more comprehensive measures of child psychopathology (Child Behavior Checklist and the Millon Adolescent Clinical Inventory) in order to refine the psychometric properties of the instrument, establish its reliability, and examine initial validity. Additional research in California, Washington, and several other states has contributed further information about the MAYSI's validity, strengths, and limits.

A revised version, the MAYSI-2, was released in early 2000. The instrument is now used in over 200 juvenile justice programs and facilities nationwide. About one-quarter of the states employ the MAYSI-2 routinely in their statewide probation, detention, or juvenile correctional systems.

The MAYSI Scales

The questions in the instrument, which are answered *yes* or *no*, form six scales for girls and seven scales for boys. They include:

1. **Alcohol/Drug Use** (8 questions): reports a pattern of frequent use of alcohol or drugs, which interferes with functioning.
2. **Angry-Irritable** (9 questions): experiences frustration, lasting anger, and moodiness.
3. **Depressed-Anxious** (9 questions): experiences a combination of depressed and anxious feelings.
4. **Somatic Complaints** (6 questions): reports bodily symptoms associated with emotional distress.
5. **Suicide Ideation** (5 questions): have thoughts of harming oneself or experiencing signs of depression.
6. **Thought Disturbance** (5 questions): has unusual beliefs or perceptions suggestive of thought disorders (boys only). There is no thought disturbance scale for girls due to the developers' inability to develop one that was reliable.
7. **Traumatic Experiences** (5 questions): lifetime exposure to potentially traumatizing experiences.

DJJ's Adoption and Use of the MAYSI

The process of identifying a screening instrument began in 1997. In the Fall of 1997, the Florida Juvenile Justice Association received a federal grant from the US Department of Justice to develop improved assessment instruments. A workgroup of DJJ staff, Department of Children and Families/ADM staff and provider staff was established. During their attempts to revise the instrument that had been used for years (SAMH-1), the workgroup became aware of the MAYSI. It was decided to test both the MAYSI and the SAMH-1. Researchers at the University of South Florida/Florida Mental health Institute agreed to conduct the analysis. DJJ conducted a pilot during January 2000 in five sites (Polk, Hillsborough, Orange, Osceola and Brevard). Based on the results of this pilot, in October 2000 the Probation and Community Corrections Branch recommended to the Deputy Secretary that "...the Department of Juvenile Justice implement the MAYSI_2 to fulfill the statutorily mandated screening for mental health and substance abuse issues of all youth that are arrested and brought under our jurisdiction".¹ The MAYSI went into use in January 2001.

DJJ policy requires that the MAYSI be conducted during the detention screening and intake process for each youth. The Basic Training for Juvenile Probation Officers Screening and Intake section² states that the only exception is youth who have been screened within the last 180 days. JPO training covers the use of the MAYSI. It states that if there is a positive response on one of the scales or if there is information in the youth's file that indicates a previous history of mental health or substance abuse problems the JPO must refer the juvenile to Treatment Alternatives for Safe Communities (TASC) provider for in-depth assessment.

The assessment can be conducted using the form in JJIS called the SAMH-2 or another instrument if DJJ approval is obtained. When using the SAMH-2 the results are written up in a

¹ Memo from Kurt Friedenaur to Frank Alarcon, October 9, 2000.

² February 2002.

report format called the SAMH-3. The assessment must be completed with 30 calendar days of the intake screening conferences or the intake conference, whichever is sooner. The training does indicate that the youth and family must cooperate in order for the assessment to occur.

MAYSI Scoring

Scoring is based on a count of the *yes* responses to the questions that make up each scale³. Scores on each scale are compared to cut-off scores; there is no “total score”. For each of the six main scales, the developers identified two types of cut-off scores were identified by the developers: “Caution cut-offs” and “Warning cut-offs”. Youth who score above the Caution cut-off (called the assessment zone) are likely to have "clinically significant" needs and should be referred for a more in-depth assessment. A score within the *assessment zone* on any one of the scales triggers such a referral. The original cut-offs were determined by comparing each MAYSI-2 scale to scales on more comprehensive measures of child psychopathology that were administered to youths in the original MAYSI-2 study. Warning cut-offs are based on the highest 10% of scores of youths in the original study. These cut-offs identify a more serious level of need.

The cut-off scores provided by the developers are only suggestions. They recommend that agencies implementing the MAYSI-2 examine their own populations, needs, and capacities in order to develop their own assessment zones. DJJ choose to lower the cut-off zones by one question for each scale and to include the Trauma scale in the scoring calculation (something that is not done in Massachusetts). Under Florida’s current scoring system, one question on the Trauma scale is enough to place a youth in the assessment zone, thus requiring a referral. One specific question (“Have you ever in your whole life had something very bad or terrifying happen to you?”) was mentioned by a number of staff as unnecessarily triggering a referral for an assessment.

Benefits and Limitations

The main benefit of the MAYSI-2 is that it can easily be administered to all referred youth. It takes no more than a few minutes to administer (the developers estimate 10-15 minutes), and it can be scored and interpreted without the expertise of a mental health professional. In addition, there is no charge to use the instrument.

Among the limitations of the MAYSI-2 is the fact that it relies on youths' self reports, raising the possibility of both under-reporting and exaggeration. Furthermore, the focus is on recent and current experiences (i.e., past few months), and therefore, does not provide information about a youth's past history of clinical problems, or other risk factors that might be available from family members or previous records. For these reasons, the developers warn that the MAYSI-2 serves as a "triage" tool for decisions about the possible need for immediate intervention, at a time (e.g., within 24-48 hours after admission to secure facilities) when little other information about a youth is available. For that reason it should not be the sole basis for decisions about mental health or substance abuse needs. More comprehensive assessments are needed for decisions about long-range placement or treatment planning.

³ Of the 52 questions in the instruments, 45 are used in the scoring process.

Another limitation is that the instruments require a 5th grade reading level. For youth whose reading level is lower, alternative methods of administration are required.

The instrument is designed for youth between 12 and 17 years of age. Approximately 7% of youth referred to DJJ annually are under the age of 12 or over the age of 17.⁴ There are instances of staff indicating that they felt the instrument was invalid due to youth being either too young or too old. However 8% of all instruments were filled out on youth who were under 12 or over 17.

Data and Methodology

Data for this report come from the MAYSI form in the JJIS database, and a survey of staff who use the MAYSI. The MAYSI data are inputted into a computerized instrument that is part of the JJIS database. In order to interpret these data it is necessary to understand how the data are entered. In addition to a careful examination of these data, a survey of staff who administers the MAYSI was conducted in order to improve our understanding of how these data are entered.

When the user fills out a MAYSI instrument in JJIS it is tied to a specific referral. The date that the screening was completed is entered by the user, and a computer generate date corresponding to the date the instrument was saved is available. The first MAYSI was administered on January 22, 2001. As of May 20, 2002 there were 161,157 instruments in the database. Of these 2,842 are marked as deleted. Of the remaining 158,315 instruments in the database, over 15,337 are marked as invalid. An additional 14,888 instruments have no responses marked for any of the questions. (A discussion of the invalid instruments is provided below). Excluding these unusable and invalid instruments, there are 128,090 instruments available for analysis.

Of the 128,090 instruments, 96% are filled out on a separate referral. However there are 5,356 instruments that represent duplicate MAYSI's for the same referral. The 128,090 instruments represent 87,652 different youth of whom 23,725 (27%) have more than one MAYSI. Multiple MAYSI's per youth are a result of:

- **MAYSI's being filled out on multiple referrals:** this appears consistent with the directive to fill out a MAYSI on every referral.
- **Multiple MAYSI's for one referral.** There are 5,356 instruments that are duplicate MAYSI's tied to one referral. Of those duplicates, 1,192 were both completed on the same day. Based on a survey of staff using the MAYSI it appears that most of these duplicate MAYSI's are mistakes (tying an instrument to the wrong referral, being interrupted in the middle of completing an instrument and starting a new one later, JPO's not realizing that JAC personnel have already filled one out). Other duplicates were attributed to attempts to conform to their understanding of policy including feeling the need to create a MAYSI instrument even if the youth was not available in order to meet QA requirements, JPO's filling out MAYSI's even though a JAC staff has filled one out

⁴ 1999-2000 Florida DJJ Profile of Delinquency Referrals and Youth Referred Bureau of Data and Research Management Report 2000-1. January 2001. Just because a MAYSI is marked as needing a referral does not guarantee that the referral for an assessment was made, or that the assessment occurred

on paper. Some of these forms may be mistakes, but also indicated that staff at different points in the process (intake, detention etc) might each be completing a MAYSI.

The percentage of referrals that have multiple MAYSI's has not varied much from month to month with a low of 3.5% to a high of 5.5%. In April 2002, 4.6% of all referrals had multiple MAYSI's.

Invalid Instruments

In late April 2001, the MAYSI WEB form was redesigned to include a check box where the user could indicate they felt the instrument was invalid and a text field for the user to explain their reasoning. There were 15,337 MAYSI's marked as invalid between April 24, 2001 and May 20, 2002. This represents 11% of all MAYSI's. In addition there were 14,888 "blank" forms where responses to all questions were missing. These also should have been identified as invalid. Overall 19% of the forms are invalid or blank, with an increase from 20% of all forms in May 2001 to 27% in May 2002.

In identifying why forms were marked as invalid both the written narrative provided on the MAYSI, along with the staff survey where employed. An attempt was made to categorize the reasons given for marking the instrument as invalid. However since these data are in text, each narrative has to be read individually, categories have to be chosen and each response coded. A non-random sample, of approximately one-half of the 15,337 instruments were examined and categorized. The most frequent reason (61%) for marking an instrument invalid was that the youth was unavailable to complete the instrument or refused to complete the instrument (thus resulting in a blank instrument). In reviewing the staff survey it was determined that blank forms are purposeful; the practice is to create a MAYSI form on every youth at intake even if they refuse to complete it. However given that there were an additional 14,888 blank forms which were not marked invalid, it is clear that marking blank forms as invalid is a practice inconsistently applied. The second most frequent reason, accounting for 25% of the responses coded, was that staff had knowledge of the youth's involvement with drugs, but that the youth's score on the drug/alcohol scale had not fallen within the assessment zone.

More importantly a number of issues were brought to light by examining the responses that will be discussed in the recommendation section below. All the instruments marked as invalid were excluded from all further analyses.

Missing Data

When filling out the MAYSI in JJIS the user is not forced to choose a response (*yes* or *no*) for each question before saving the instrument. This results in a high percentage of instruments having missing responses for one or more questions. Thirty six percent of the instruments and 28% of the youth had at least one question without a response. It is not possible to determine whether a missing response indicates that the question was not answered, or whether it was answered *no*. A survey of staff completing the MAYSI revealed that some staff are purposively,

if mistakenly, only marking the *yes* answers and leaving questions that youth responded *no* to blank.

Data Analyses

Two units of analysis are used in this report; the first is each MAYSI, the second is youths. The percentage of MAYSI's that resulted in a referral for assessment will differ from the percentage of youth referred for assessment because of the existence of multiple MAYSI's. Analyzing the data by MAYSI provides information about how the form is being administrated and forms, and helps to identify problems in the way the data is being entered into JJIS. Analyzing the data by youth provides information about the number and percentage of youth coming in to the system who need mental health or substance abuse assessments and possibility services. It also allows the prevalence of the problems identified by each of the seven scales to be determined

In calculating percentages, the extent of the missing data (28% of all MAYSI's have at least one question without a response) made it was necessary to use two methods. The *number* of MAYSIs or youths who fall within the assessment zone is not at issue. However the *percentage* of MAYSIs or youths who fall within the assessment zone will differ depending on the treatment of the instruments with missing data. The first approach, referred to as Completed Forms, results in higher estimates of the percentage of youth who require further assessment because it limits the instruments used to construct each scale to those:

- with a valid response to all questions, or
- where, if there is missing data, the score for a specific scale reaches the cut-off point.

This reduces the number of MAYSI's included in the analysis thus resulting in higher estimates of the percentage of referrals or youth who reach the cut-off for various scales.

Based on the response from the staff survey that *no* responses are often left blank, the second approach, referred to as, all MAYSI's, is to recode all missing data as *no* and include all instruments. This results in a higher denominator and thus lower estimates.

In both cases, any affirmative response was counted in calculating the scores for each scale for each youth included in the analysis. This impacts the 23,725 youth who have multiple MAYSI's. Taking the highest scoring scale for each youth gives a picture of the percentage of youth who need to be screened.

Findings

In this section, the percentage of youth who are referred for assessment (referral rates) will be examined along with breakdowns by demographic characteristics. In addition, a more detailed look at the seven scales, as well as the individual questions. Prevalence of specific mental health issues is examined for gender, racial and age groups.

Examining Referral Rates

The end result of the MAYSI is a determination of whether a referral for assessment or crisis intervention is needed. The computerized version of the MAYSI automatically calculates the score for each of the seven scales, but the user must mark one of the choices on the form:

1. refer for assessment,
2. refer to crisis intervention or treatment, or
3. no referral is necessary based upon available information.

There are two ways to examine the referral rate. First is the percentage of forms result in a referral. Second is the percentage of youth who are referred.⁵

Referral Rates For All Instruments

Examining each MAYSI provides insight into how the form is administered, how the data is entered into JJIS, and possible areas of concern. There are two methods for determining the percentage of MAYSI's that resulted in a referral for assessment. One way is to use the data field on the MAYSI where the user indicates whether assessment is needed. The table below presents the breakdown of the recommendations recorded on the MAYSI's. Of the 128,090 MAYSI's, 64% are marked as requiring a mental health assessment, 26% are marked as not requiring a referral, and less than 1% of the instruments are classified as being in need of crisis intervention or treatment. A recommendation is missing on 9% of the MAYSI's.

Recommendation Recorded on MAYSI		
	Frequency	Percent
Left Blank	11,646	9%
Refer for Assessment	82,322	64%
Refer for Crisis Intervention	1,145	1%
No Referral Necessary	32,977	26%
Total	128,090	100%

Assessing the Reliability of Referral Rates.

The reliability of referral outcomes based on the referral data field can be determined by examining whether the scores fell within the assessment zone. Utilizing scale scores to verify the referral outcomes for the 128,090 MAYSI's revealed that 79% were scored correctly; that is, the scale scores fell within the assessment zone and the referral data field indicated "refer for assessment" or the scale scores did not fall within the assessment zone and the referral data field was marked "no referral necessary". An additional 4% of the MAYSI's had the referral data field left blank, but the scores did not fall within the assessment zone anyway. On 10,836 forms (8.5%) the referral data field was marked "refer for assessment" but the scale scores did not fall within the assessment zone. Staff may have properly relied on their professional judgment to

⁵ Just because a MAYSI is marked as needing a referral does not guarantee that the referral for an assessment was made, or that the assessment occurred.

determine that the youth needed an assessment even though scores did not fall within the assessment zone. However, if that is the case, it seems that these instruments should have been marked as invalid.

The most troubling type of error is failing to mark the instrument as needing an assessment when at least one of the scales fell within the assessment zone. A total of 8% of all forms were marked “no referral for an assessment is necessary” when, in fact, a scale score fell within the assessment zone indicating that a referral for assessment should have been made.

In sum, 26,605 (21%) forms contained a referral outcome inconsistent with the MAYSI score. Additional training for staff and/or a redesign of the form is necessary to lower this error rate. In particular, clarifying when the MAYSI should be marked invalid should reduce the inconsistencies.

Referrals Rates For Youth

While examining each MAYSI provides some indication of the extent of data entry errors, examining the data by youth also provides important information. One of the uses for the MAYSI is to determine what percentage of the youth that come into contact with DJJ are in need of an assessment to identify mental health and/or substance abuse issues that may need to be addressed. Sixty-eight percent (n=59,794) of the youth needed a mental health/substance abuse assessment according to what was marked in the referral data field on the MAYSI forms. However, based on Florida’s cut-off scores for each of the scales, 60,078 (69%) youth should have been referred for an assessment. While this 1% difference appears minimal, this is misleading because there are two types of errors that in effect, appear to cancel each other out. In fact, 15,610 youth (18%) have incorrect data in the referral data field.

Sixty-nine percent (69%) of the youth were in need of a mental health assessment based on the MAYSI scores.

There were 3,475 youth who should have been referred for an assessment based on their scores, but whose MAYSI was not marked as such, and an additional 3,067 youth whose scores fell within the assessment zone, but for whom the referral field was left blank. It is not known whether this is solely data input error, or whether it is indicative of service delivery problems. A review of case files would be necessary to see if these youth, in fact, received a referral for an assessment, and/or were assessed.

A less serious problem is the 6,258 youth whose scores did not fall within the assessment zone, but whose MAYSI were marked as “refer for assessment.” It is possible in some cases that the staff used their professional judgment to refer the youth for an assessment even if the scores did not fall within the assessment zone. While this is permissible, it seems that these instruments should have been marked invalid

Referral Rates Based On MAYSI's Developer's Scoring Suggestions

As discussed, DJJ choose to lower the cut-off zones by one question for each scale and to include the Trauma Scale as part of the scoring calculation. If the suggestions of the MAYSI developers for determining whether an assessment was needed had been used (higher cut-off scores and excluding the Trauma Scales from the assessment decision), the Florida rate of referral for assessment would have been only 48% as compared to 69%. Just dropping the Trauma Scale from the scoring calculation would reduce the referral rate from 69% to 56%.

Determining the Range of Problems

A further examination of the 60,078 youth who required an assessment based on their scores reveals that 2 out of 3 scored within the assessment zone on more than one scale. This proportion varied slightly by gender; among the girls who needed assessments 70% scored within the assessment zone on more than one scale compared to 65% of the boys.

Two out of three youth who required an assessment, scored within the assessment zone on more than one scale.

Youth Referral Rates by Race, Gender, and Age

The table below presents the percentage of youth who scored within the assessment zone on at least one scale by race, gender and age. There are small differences among the groups. The lowest assessment rate is for youth who are 17 years of age or over.

Data is available to compare rates found in Florida with the normative sample of youth with whom the instrument was developed. In Florida 68% of the boys and 70% of the girls had at least one elevated scale, compared to 66% of the boys and 79% of the girls in the normative sample. The difference between Florida's rates and the normative sample is much greater for girls than it is for boys. The comparison is based on lower cut-off scores for the Florida sample, so the lower rates for girls are even more surprising.

Analyzing Prevalence Rates for Each Scale

In addition to examining the overall rate of referral for assessment, a more detailed look at the seven scales provides information about the specific issues facing youth. The results are presented in two ways (discussed in more detail in the methodology section). The first way recodes all missing responses as *no* and includes all youth. The second excludes those youth who had missing responses on specific scales, unless they reached the assessment zone despite the missing responses.

In comparing the percentage of youth who fall within the assessment zone for each scale it should be noted that there are different standards for reaching the assessment zone for each scale. On the Suicide Ideation, Trauma and Thought Disturbances one affirmative answer places the

youth in the assessment zone⁶. The highest prevalence is for the Trauma Scales with between 54% and 62% of the youth falling within the assessment zone depending on which population is examined. The Angry/Irritable scale has the second highest prevalence rate with between 33% and 39% of youth scoring within the assessment zone. The Alcohol/Drug Use scale has the

Breakdown of Scores for Each MAYSI Scale

MAYSI Scale	Score Requiring Assessment/Total Items in	Subpopulation	% Within Each Group Below			
			No Affirmative Responses	Assessment Zone	In Assessment Zone	N
Angry/Irritable	4/9	Completed Forms*	30%	31%	39%	73,553
		All MAYSI's	29%	38%	33%	87,652
Somatic Complaints	3/6	Completed Forms*	33%	37%	30%	80,628
		All MAYSI's	38%	24%	28%	87,652
Depression/Anxious	3/9	Completed Forms*	48%	28%	25%	70,447
		All MAYSI's	47%	33%	20%	87,652
Suicidal	1/5	Completed Forms*	78%	n.a.	22%	70,328
		All MAYSI's	82%	n.a.	18%	87,652
Thought Disturbances: Boys**	1/5	All MAYSI's	77%	n.a.	23%	50,900
		All MAYSI's	81%	n.a.	19%	63,020
Trauma: Girls	1/5	Completed Forms*	39%	n.a.	61%	22,093
		All MAYSI's	46%	n.a.	54%	24,656
Trauma: Boys	1/5	Completed Forms*	38%	n.a.	62%	57,125
		All MAYSI's	44%	n.a.	56%	63,020
Alcohol/Drug Use	3/8	Completed Forms*	65%	15%	21%	65,496
		All MAYSI's	67%	17%	15%	87,652

* This includes only those youth who had responses to every question on that particular scale or who reached the assessment zone anyway.

** There is no Thought Disturbances scale for girls

lowest percentage of youth scoring within the assessment zone (between 15% and 21%). Approximately one in five youth respond affirmatively to the Suicide Ideation questions. These youth are supposed to be provided with crisis intervention.

Demographic Differences on Seven Scales

Gender

While the percentage of males and females that fell within Florida's assessment zone overall was very similar (68% and 70% respectively), there are more substantial differences when specific scales are examined. On all scales except the Alcohol/Drug Use Scale, a higher percentage of girls fall within the assessment zone. The largest differences are on the Depressed/Anxious and the Suicide Ideation Scale with one in six girls requiring an assessment as compared to one in four boys.

Race

There was no consistent pattern between race and the percentage of youth who fell within the assessment zone for the seven scales. The biggest difference between black and white youth was on the Alcohol /Drug Scale in which 19% of white youth scored within the assessment zone compared to only 10% of black youth. A slightly higher percentage of black males reported traumatic experiences than did white males. The opposite pattern was observed for females.

⁶ These are the cut off zones that were established by DJJ and are actually lower than the ones set by the developer. This results in more youth falling within the assessment zone.

Age

There was no consistent pattern between age and the percentage of youth who fell within the assessment zone for the seven scales. The only scale on which there was a consistent pattern was the Alcohol/Drug scale; the percentage of youth in the assessment zone consistently increased with age. The youngest youth (under 12) had the highest rates on the Angry/Irritable, Depressed/Anxious and the Thought Disturbances (Boys) scales. However as the MAYSI is not designed for this age group, these results must be interpreted with caution.

Prevalence Rates for Individual Questions

Of the 52 questions on the instrument, only 45 are actually used in the scoring of the seven scales. The table below presents the distribution of affirmative answers for the 45 questions. The questions with over 40% of the referrals and/or youth responding in the affirmative are:

- Lost temper easily? 43%
- Been easily upset? 47%
- Ever in your whole life had something very bad or terrifying happen to you? 43%

The questions with less than 10% of the referrals and/or youth responding in the affirmative are:

- Seen things other people say are not really there-3%
- Been able to make other people do things just by thinking about it-3%
- Other people have been able to control your brain or your thoughts? -3%
- Heard voices other people cant hear -4%
- Gotten in trouble when high or drinking for fighting-4%
- Parents or friends thought you drink too much-6%
- Given up hope for your life? -6%
- Felt like hurting self? -8%
- Felt like killing self-7%

Percentage of Affirmative Responses for Each of the Questions That Comprise the MAYSI Scales

	Youth			Delinquency Referrals		
	Percentage of all Youth*	Percentage of "Completed" Youth**	Difference	Percentage of all Referrals	Percentage of Valid	Difference
Alcohol/Drug Use						
Done anything wished you had not when drunk or high?	14%	18%	4%	12%	16%	4%
Parents or friends though you drink too much?	6%	7%	2%	5%	6%	2%
Gotten in trouble when you've been high or drinking?	16%	20%	4%	14%	18%	5%
If affirmative to Q23, has the trouble been fighting?	4%	6%	1%	4%	5%	2%
Used alcohol or drugs to feel better?	18%	22%	4%	15%	20%	5%
Been drunk or high at school?	13%	16%	3%	11%	15%	4%
Used alcohol or drugs at the same time?	17%	21%	4%	15%	20%	5%
Been so drunk or high that you could not remember what happened?	10%	12%	3%	8%	11%	3%
Angry/Irritable						
Lost your temper easily?	43%	49%	6%	38%	46%	8%
Been easily upset?	47%	53%	6%	42%	50%	8%
Thought a lot about getting back at someone you have been angry at?	23%	28%	5%	19%	25%	6%
Been really jumpy or hyper?	23%	28%	5%	18%	24%	6%
Had too many bad moods?	27%	32%	5%	23%	29%	6%
Felt angry a lot?	28%	34%	6%	25%	31%	7%
Gotten frustrated easily?	38%	44%	6%	33%	40%	8%
Stayed mad for a long time?	24%	29%	5%	20%	27%	6%
Hurt or broken something on purpose, just because you were mad?	24%	29%	5%	20%	26%	6%
Depressed/Anxious						
Nervous or worried feelings kept you from doing things you wanted to do?	24%	28%	5%	19%	25%	6%
Had nightmares that are bad enough to make you afraid to go to sleep?	11%	13%	3%	8%	12%	3%
Felt lonely too much of the time?	17%	21%	4%	14%	19%	5%
Seems like some part of your body always hurts you?	12%	16%	3%	10%	14%	4%
Felt that you don't have fun with your friends anymore?	13%	16%	3%	10%	14%	4%
Felt angry a lot?	28%	34%	6%	25%	31%	7%
Been hard for you to feel close to people outside your family?	16%	19%	4%	13%	17%	4%
Given up hope for your life?	6%	8%	2%	5%	7%	2%
Had a lot of bad thoughts or dreams about a bad or scary event ?	13%	16%	3%	10%	14%	4%
Somatic Complaints						
When you feel nervous or anxious have/has you/r...				0%		
Felt shaky	31%	37%	6%	25%	32%	7%
Heart beat very fast?	38%	44%	6%	31%	39%	8%
Have your felt short of breath?	17%	21%	4%	14%	19%	5%
Hands felt sweaty?	24%	29%	5%	19%	25%	6%
Stomach been upset?	30%	35%	6%	24%	31%	7%
Had bad headaches?	28%	34%	6%	24%	31%	7%
Suicide Ideation						
Have you wished you were dead	10%	13%	3%	8%	12%	3%
Felt like hurting self?	8%	10%	2%	6%	9%	2%
Felt like life was not worth living?	12%	15%	3%	10%	14%	4%
Felt like killing yourself?	7%	9%	2%	6%	8%	2%
Given up hope for your life?	6%	8%	2%	5%	7%	2%
Thought Disturbances						
Seen things other people say are not really there?	3%	5%	1%	4%	6%	2%
Heard voices other people cant hear?	4%	5%	2%	4%	5%	2%
Other people have been able to control your brain or your thoughts?	3%	4%	1%	3%	4%	1%
Had a bad feeling that things don't seem real?	11%	15%	4%	11%	15%	4%
Been able to make other people do things just by thinking about it?	3%	4%	1%	3%	4%	1%
Traumatic Experience						
Ever in your whole life had something very bad or terrifying happen to you?	43%	49%	7%	34%	41%	7%
Been badly hurt or been in danger of getting badly hurt or killed?	18%	23%	5%	17%	23%	6%
Been raped or been in danger of getting raped?	18%	23%	5%	6%	8%	2%
Had a lot of bad thoughts or dreams about a bad or scary event?	18%	22%	5%	10%	14%	4%
Ever seen someone severely injured or killed?	23%	29%	5%	22%	29%	7%

* Assumes missing responses were negative.

**Examines only those youth for whom a response was recorded

Recommendations

Based on the analysis of the MAYSI's and the survey of staff, two sets of recommendations are presented. First are suggestions for changes in the administration of the MAYSI. The second are suggestions for changes to the design of the MAYSI instrument on JJIS WEB.

Recommendations Regarding Administration of the MAYSI

It is recommended that a statewide written policy for administration of the MAYSI be developed. It should address when and by whom the MAYSI should be administered, along with the specific issues discussed below.

The idea behind having the MAYSI on JJIS WEB was to allow direct data entry of youths' responses into the computer. The staff surveys revealed that there are many situations where it is necessary to provide a paper version of the instrument (i.e. when it is mailed, when intake takes place in court, when it is not feasible to interview a youth within access to a computer, when it is desired that the youth read the questions and respond privately). In these situations some staff are generating a paper form off the WEB. This is resulting in the questions being asked, not in the order that they were designed, but in labeled groups of questions. For example, all the questions for the Suicide Ideation scale as asked in a section that is labeled Suicide Ideation. In discussions about this practice, the developer, Tom Grisso, indicated that this might invalidate the instrument, and is in violation of DJJ's agreement not to change anything in the MAYSI-2. **It is recommended** that a paper form, consistent with the agreement with the developers, be developed and distributed to users.

In a related issue about 2% of the invalid instruments that were examined indicated that the reason the instrument was invalid was due to the youth's inability to read or understand English. Given that Spanish was most often mentioned as the alternative language, **it is recommended** that DJJ also design a Spanish language paper version and distribute it to users. The MAYSI authors state on their website that "a Spanish-language version is available, although the current version is a translation appropriate for Latino youths in the Northeastern U.S. Linguistic differences between this population and Latino populations in the Southern and Western U.S. may require additional translation."⁷

It is recommended that the developers be consulted regarding the inclusion of the Trauma scale in the cut-off scores. It is suggested that consideration be given to increasing the cut-off score, or even removing it from the referral decision.

It is recommended that clear directions regarding when to mark a MAYSI invalid are developed and added to the Basic Training for JPO's Screening and Intake Unit. The developers, who use the term invalid differently than Florida does, require that a scale be marked invalid if more than one question is missing an answer for the Suicide Ideation, Thought Disturbances or Somatic Complaint Scales, and if more than 2 questions are missing answers for the remaining scales.

It is recommended that the JJIS WEB form be redesigned to automatically mark scales as invalid in the scoring section based on the guidelines provided by the developers.

It is recommended that the current use of the current "invalid" section be changed to "override". Staff would mark the instruments of youth who did not fall within the assessment zone based on their MAYSI scores, but for whom staff had collateral information that lead them to believe an assessment was necessary as an "override". The current text box would be used to provide a justification of why they felt that the MAYSI score did not accurately reflect the youth's situation.

It is recommended that the guidelines clarify whose responses the MAYSI reflects. There are two data fields labeled "respondent" and "relationship to client" which seem to indicate that the MAYSI can be based on the responses of persons other than the youth, or in conjunction with the

⁷ <http://www.umassmed.edu/nysap/maysi2/what.cfm>

youth (percentages were not determined due to these data being in a text field). The MAYSI was designed as a self-report instrument. It should be clarified with the designers whether other people should have input into the MAYSI responses, or if the score should reflect only the youth's responses. If the responses to the 52 questions should be based solely on the youth's input, this will need to be clarified in the guidelines developed.

This confusion seems to stem from the lack of a distinction between the MAYSI itself (i.e., the 52 questions), and the top or what could be viewed as the summary portion of the WEB form, in which the referral decision is recorded. While a decision about the need for a mental health referral may be necessary for every delinquency referral, asking the 52 questions for every MAYSI may not make sense. **It is recommended** that training be revised to distinguish between the 52 questions and the summary portion of the WEB form, and that the policy be revised to require that a referral recommendation be recorded for every delinquency referral, but that asking the 52 questions is not always necessary.

A related issue concerns the purpose of the MAYSI. Based on staff comments it appears that some believe this instrument is to serve as the primary record of evidence of mental health and substance abuse issues. One of the explanations given by a number of staff for why there are multiple MAYSI's on the same delinquency referral was that "additional information was learned". This seems to indicate that instead of the MAYSI representing a youth's self report some staff is using it as a generalized data collection instrument. Part of the confusion may be attributable to lack of clarity as to whether the MAYSI score is the sole basis for deciding whether a youth should be referred for an assessment or crisis intervention. **It is recommended** that the guidelines clarify that the MAYSI score is only one method of obtaining information about a youth's mental health needs or staff can use other documentation or personal knowledge to decide an assessment is needed. The above recommendation that a distinction be made between the 52 questions and the summary portion of the form will also help to clarify this difference.

It is recommended that the guidelines address the conditions under which staff is to mark the instrument as invalid. Should staff use their knowledge to mark the instrument as invalid due to one or two questions that they believe were falsely answered? For example, if staff know a youth is involved with drugs, but this was not reported on the instrument, should the instrument be marked as invalid? What if the youth scores as needing an assessment anyway, does it matter that the answers may not have been "truthful."

DJJ QA Standards indicate that a MAYSI must be filled out on every delinquency referral. This requirement may explain the approximately 15% of the forms entered each month even though the youth refused to answer questions, or was not being able to be contacted, thus resulting in a blank form. It seems that saving this large number of blank forms in the JJIS database is a waste of resources. **It is recommended** that an alternative method of indicating that a MAYSI was not completed, and the reason why be developed somewhere else in the database.

It was difficult to get a clear picture of the procedures regarding administration of the MAYSI. In particular, it was unclear whether multiple parts of the system are charged with administering the MAYSI that may lead to unnecessary duplication. Under F.S. 985.21 (4)(c) the JPO is required to perform "the preliminary screening and making referrals for comprehensive assessment

regarding the child's need for substance abuse treatment services, mental health services.” It appears that in some cases a form is completed at the JAC and then again by the JPO, and even by detention center staff.

While the problem of multiple MAYSI’s on the same delinquency referral accounts for a small percentage of forms, it would be beneficial that the issue of when multiple MAYSI's should be administered for the same delinquency referral should be clarified for staff. It would appear that once the MAYSI was complete, staff who come into contact with the youth later in the process would be able to access it on JJIS. Furthermore, it should be clarified when an instrument in JJIS could/should be modified and when a new instrument should be administered

The guidelines should clarify the situations when administration of the MAYSI is, and is not required. The current policy is to administer a MAYSI for every delinquency referral and to link the MAYSI to the delinquency referral identification number in JJIS. There are a number of situations where this policy needs clarification. Among the situations that should be addressed include:

- when an intake is being conducted on multiple delinquency referrals does the MAYSI really need to be administered multiple times, or is there that one MAYSI can be tied to multiple delinquency referrals in JJIS.⁸
- when a MAYSI had been conducted within a certain time frame,
- when an assessment was conducted within a certain time frame,
- when youth is already receiving some mental health or substance abuse services,
- when youth is being held in a detention center for transportation purposes,
- when a youth was in commitment status.

The guidelines need to clarify to staff whether the MAYSI should be administered to youth under 12 or over 17 the age limits set by the developers. If not, an alternative method of indicating that a MAYSI was not completed due to age needs to be developed somewhere else in the database. DJJ Quality Assurance standards would need to be modified to limit the requirement to the appropriate age range.

Finally, **it is recommended** that DJJ clarify what, if any, other ways the MAYSI will be used in addition to it being used to screen youth to determine if they are in need of further assessment. In addressing this the developers stated: “entry level screening instruments like the MAYSI _2 are not suitable for making predictions about long-range behavior such as recidivism, or providing information about personality psychopathology for addressing forensic questions, or for offering valid information for long-term treatment planning”.⁹ A policy titled “Needs Assessment and Performance Planning in Residential and Correctional Facilities” currently under review seems to suggest that the MAYSI will be used as an assessment tool (see page 3, Section A4c titled Needs Assessment). In light of this, expectations that the MAYSI can be used

⁸ This report does not examine the issue of how many referrals in JJIS are missing a MAYSI.

⁹ Grisso, Thomas and R. Barnum (2000) Massachusetts Youth Screening Instrument_2: User’s Manual and Technical Report. Worcester, MA: University of Massachusetts Medical School, p.14.

to describe the prevalence of mental health issues facing DJJ youth, or as a risk factor for recidivism need to be examined carefully.

Recommendations for WEB Form Design Changes

It is recommended that the JJIS WEB form be changed to require that the *referred to* data field be filled out. While the redesign of the instrument that went into place in April 2001 reduced the percentage of missing data by close to one-half, there are still about 4% of the instruments administered each month that are missing this instrument.

It is recommended that an additional choice be added to the *referred to* data field that allows staff to distinguish between a recommendation for a referral based on the MAYSI score and a recommendation, from a recommendation that is based on collateral information and/or professional judgment. Training could be revised to clarify that what goes on the summary portion of the WEB form is based on the MAYSI score, along with other information in the youth's file or gained from interviews with others.

It is recommended that the field indicating whether the youth is in detention be mandatory. It is missing on 51% of the instruments.

There are a number of data fields that are text fields. This makes the data virtually unusable for research purposes. For example, there is a text field in which to indicate the relationship of the person who responded to the MAYSI to the youth. It appears that most of the time the person responding is the youth him or her self. However, the terms self, himself, herself, youth, client, child and numerous misspellings of these words are all used to refer to the youth. If there is any likelihood that this field will ever need to be analyzed, **it is recommended** that the field be changed from a text field. One possibility is to have a drop down box with a list of the most frequent responses, with a second text field for responses that don't appear on the list. The researchers could provide a list of the most common responses.

Another example of a text field that is virtually useable is the field that indicates the unit of the person who completed the instrument. This field would be useful for identifying error rates, as well as determining the workload of various units. **It is recommended** that the field be changed to a drop down box, or be automatically populated with the users unit based on their log on id.

As the web form is currently designed the only way the user can include a comment or feedback about the youth's responses is by marking the instrument as invalid. **It is recommended** that a data field be created that allows for general comments.

If the policy that requires a MAYSI on every youth within a certain time frame is not changed, in order to stop staff from trying to comply with the policy by saving blank forms on youth who refuse to answer the questions, **it is recommended** a data field be added that allows the user to indicate that the instrument could not be administered and the reason why.

There is no simple way to determine by looking at a MAYSI at what stage (detention, JAC, intake, probation) the instrument was administered. **It is recommended** that a data field be

added to the first page of the web form to indicate the youth's status within the system. Suggested choices include: intake, detention, currently on probation, currently committed. These statuses will have to be clearly defined in the guidelines. Such a distinction may become even more important given the reported directive of the Deputy Secretary that the MAYSI be used throughout the placement process.

Conclusion

This initial analysis of the MAYSI data has revealed some serious concerns regarding the administration of the instrument that need to be addressed immediately. Based on this analysis, Probation and Community Corrections staff sent a memo on June 3rd, 2002 directing staff to mark negative responses when entering data into the web form. Of immediate concern is the use of the paper version generated of the report to administer the instrument. It is not known how widespread this practice is, nor if other paper versions are in use, but one official version needs to be developed at HQ and disseminated statewide.

The data revealed a high level of referrals for assessment; 68% of all youth. The current inclusion of the Trauma scale is contributing to this high rate. Consideration should be given to removing it from the referral decision.

The MAYSI is only a screening instrument designed to assist in the determining whether a mental health assessment or crisis intervention is needed. The results of the MAYSI should not be used to describe the prevalence of mental health issues facing DJJ youth, nor used as a risk factor for predicting recidivism. For these purposes, an actual assessment and diagnosis of mental health problems would be more appropriate.

Finally, it is important to keep in mind the limitations of the data reported here. It is only possible to analyze what is being recorded on MAYSI forms. These data do not allow a determination of whether assessments are being conducted, what diagnosis was made, nor if mental health services are being received.

Sources

Grisso, Thomas and R. Barnum (2000) *Massachusetts Youth Screening Instrument_2: User's Manual and Technical Report*. Worcester, MA: University of Massachusetts Medical School

National Youth Screening Assistance Project (NYSAP) website: www.umassmed.edu/nysap/maysi2/

DJJ Quality Assurance Standards for Juvenile Justice Community Corrections Programs (2002).

Florida Statutes, Section 985, 2002.

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