

Mental Health Screening of Persons Moving through the Jail System Pretrial 2001-2003:  
A Validation Study

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## Mental Health Screening of Persons Moving through the Jail System Pretrial 2001-2003: A Validation Study

According to the National Survey of American Life (NSAL) – the most recent nationally representative survey of Americans’ mental health – 26.4% of Americans (2001-2003) have a prior arrest and 9.3% of Americans have a prior jail sentence. According to the Survey of Inmates of Local Jails (SILJ) 64% of jail inmates had a mental health problem (James & Glaze, 2006). Clearly, the jail system is holding a disproportionate number of mentally ill persons. Osher, Scott, Steadman, and Robbins (2006) designed the Brief Jail Mental Health Screen (BJMHS) to locate and assign these persons to treatment at intake. The BJMHS can potentially be used at initial arraignments and bookings to divert new inmates into mental health courts and other forms of pretrial diversion, allowing jail mental health care providers to focus on longer-term inmates. Yet jails and pretrial programs have not adopted the use of the BJMHS; perhaps due to lack of nationally representative validation studies. Using the NSAL and the SILJ, we find that the BJMHS is successful at detecting mental illness among 1) jail inmates from a sample of US jail inmates; 2) jail inmates currently in jail during the pretrial stage from a sample of US jail inmates; and 3) former criminal defendants from a sample of the US general population. This suggests that pretrial programs and jail classification teams can implement the BJMHS with minimal concern for needing to adjust the BJMHS for local factors.

## A Risky Set of Gaps in Our Knowledge about Pretrial Mental Health Screens/Risk Assessments

The literature on mental health of pretrial defendants in the United States is rather limited. We have some literature concerning how to do case processing of mental health defendants (Clark, 2004; Council of State Governments, 2002). There is also a considerable literature on the use of mental health courts to treat defendants diagnosed with mental health issues (McNiel & Binder, 2007). However, the conceptualization of risk assessment of pretrial defendants with SMI (serious mental illness) is only in its infancy (Lurigio & Swartz, 2006; Osher, Scott, Steadman, & Robbins, 2006). Several issues are outstanding: 1) are the BJMHS findings gleaned from four Maryland and New York county jails able to be applied elsewhere; 2) is there a need for gender-specific risk assessment scales; and 3) is the BJMHS robust against varying “clinical gold standards” other than the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I).

### Literature Review

As Swartz observed, it is rare to find criminal justice agencies that employ validated brief mental health screening tools (2006). In part, this is due to the relative newness of mental health issues emerging as a problem for jail and prison managers. Jails did not traditionally provide mental health services (Roesch, Ogloff, Zapf, Hart, & Otto, 1998; Steadman, McCarty, & Morrissey, 1989). Mental health issues first emerged for managers of jail and prison populations in the wake of the deinstitutionalization of the mentally ill during the 1980s. The subsequent expansion of jails and prison populations during the 1980s and 1990s from drug crime policies and three strikes crime policies further stressed the capacity limits of jails and prisons. Nevertheless, it took several years before psychologists and criminologists began research into alternatives to lengthy clinical assessments of jail inmates to detect at risk inmates.

One reason for the delay was that clinical screens do have the great asset of a high degree of accuracy – the combination of sensitivity and specificity. Yet they are expensive, requiring trained psychologists or clinical technicians to administer. Moreover, clinical screens are exercises in long-term interviewing and assessment. When the fraction of cohorts of new jail inmates with mental illnesses was small and when the volume of new inmates to screen was small, clinical assessments made sense (Lurigio & Swartz, 2006).

The first modern actuarial style mental health screens were developed in the late 1980s. Teplin and Swartz (1989) developed the Referral Decision Scale (RDS). The RDS utilized 14 questions and had three subscales for schizophrenia, manic-depressive illness, and major depression. It was developed based on local samples of Los Angeles, CA and Cook County, IL jail inmates and validated with a sample of North Carolina inmates (Teplin, 1994). The RDS never caught on. One major issue with the RDS was it under-identified inmates in need of mental treatment for illnesses that are not part of the RDS subscales, such as post-traumatic stress disorder and generalized anxiety disorder (Lurigio & Swartz, 2006). As of 1997, Steadman and Veysey documented the 83% of all US jails provided some form of intake mental health screening, but that these screening

procedures were extremely variable.

Major alternatives to the RDS have only begun to emerge. One option experimented with by the jail system in British Columbia, Canada blends clinical judgment and structured screens. The Jail Screening Assessment Tool (JSAT) is a comprehensive screener that utilizes a 10-20 minute interview on sociodemographics, current charges, criminal history, social circumstances, past and present substance abuse/treatment, past and present mental health status/treatment, suicide, violence and self-harm history and well as current ideation and intent (Nicholls, Lee, Corrado, & Ogloff, 2004). Several validation studies on Canadian pretrial jail populations have been conducted. The most recent validated the JSAT for female pretrial populations. When tested against two different forms of clinical diagnoses, the JSAT was able to distinguish between healthy females and non-SMI females versus SMI females (Nicholls, Lee, Corrado, & Ogloff, 2004). Since the JSAT is a structured semi-clinical judgment, it has no scoring and referral decisions are not based on numbers (Grisso, 2006). As a result, the JSAT is still far too reliant on mental health professionals to be inexpensively fielded by United States correctional population managers.

Lurigio and Swartz (2006) proposed utilizing the K6/K10, an instrument developed for the general population that screens for symptom severity and level of functional impairment rather than picking up as many Diagnostic and Statistical Manual of Mental Disorders, IV (DSM-IV) Axis I disorders as possible (Kessler, Andrews, Colpe, Hiripi, Mroczek, Normand, Walters, & Zavalasky, 2002). The logic is straightforward. The screeners developed for the general population that clinicians use to do DSM-IV diagnoses detect many persons with symptoms that correctional institutions need not treat to effectively manage the safety and basic well-being of their correctional populations. A general population screener developed to detect only severe cases may well be useful for detecting those jail inmates who are most at risk for any type of mental illness – the inmates correctional population managers need to treat.

The Brief Jail Mental Health Screen (BJMHS) was derived from the RDS, but presents several advances over the RDS (Ford, Trestman, Osher, Scott, Steadman, & Robbins, 2006; Osher, Scott, Steadman, & Robbins, 2006; Steadman, Scott, Osher, Agnese, & Robbins, 2005). The BJMHS was explicitly designed to 1) be brief, 2) have explicit decision criteria, 3) exhibit a low false-negative rate, and 4) exhibit no more than a modest false-positive rate. In fulfillment of those criteria, the BJMHS: 1) is only eight binary response (yes/no) questions; 2) scores above 3 “yeses” (at least 1 form of treatment and 2 or more symptoms) trigger a referral to mental health treatment; and 3) the BJMHS is designed to detect severe symptoms – SMI, rather than non-severe impairment or illness. Unlike the older RDS, the BJMHS benefits from validation studies conducted on the RDS that detected problems in the manic-depressive subscale and face validity issues for behaviors that simply cannot easily occur among jail inmates (Rogers, Sewell, Ustad, Reinhardt, & Edwards, 1995; Veysey, Steadman, Morrissey, Johnson, & Beckstead, 1998).

With these qualities of brevity and clarity of decision making for jail classification staff

and pretrial program staff, the BJMHS shows great promise for large scale adoption among US jails and pretrial programs. Yet the BJMHS has not yet been widely adopted. There are two clear reasons for this. First, the BJMHS is only two years old. Second, the BJMHS has some classification problems acknowledged by the development team. The BJMHS validation tests in 2002-2003 in four jails in Maryland and New York detected problems with the BJMHS under-classifying females as having a SMI. A retest using three of the four original jails, plus one replacement in 2005-2006 found no such problem. The team concluded that the differences between the two BJMHS validity studies may have been due to the jails included in the studies (Steadman & Robbins, 2007). If the BJMHS is to be widely adopted by jail managers and used by pretrial programs for diversion referrals, the BJMHS needs to be validated using nationally representative data.

### Attempting a Nationally Representative Validation Study of the BJMHS

#### *Assembling the Necessary Data*

The simplicity of the BJMHS instrumentation lends itself to being replicated. The BJMHS questions are actually found in totality on the 2002 Survey of Inmates of Local Jails (SILJ) conducted by the Bureau of Justice Statistics, US Department of Justice (BJS). In addition, the SILJ has a battery of variables indicating diagnoses for various DSM-IV Axis I serious mental illnesses. The affinity of approaches between the BJMHS and the K6/K10 instruments is another great asset when conducting a validation study. The 2001-2003 National Survey of American Life (NSAL), was developed by the designer of the K6/K10 instruments and contains the full battery of Composite International Diagnostic Review (CIDI). Within the CIDI are surrogates for the BJMHS questions. The NSAL contains a highly detailed set of clinical DSM-IV assessments of respondents. Most unusual for a national epidemiological survey, the NSAL also asks about a respondent's prior criminal behaviors, prior arrests and prior incarcerations. This enables researchers to construct a sample of persons in the general population with a prior arrest, who went through the pretrial process and see how well the BJMHS performs at detecting SMI among these respondents.

Each of these two surveys is nationally representative of a population. The SILJ is a computer assisted personal interview (CAPI) survey where respondents were selected from a universe of 3,365 jails housing 529,084 adult males, 67,464 adult females and 9,449 juveniles. Cases were weighted on four factors so the data would equal 631,241 – the number of jail inmates on June 30, 2001. The SILJ was conducted by the US Bureau of the Census. The NSAL universe included adults in the three target groups: Black Americans of African descent, Black Americans of Caribbean descent, and White Americans, who were aged 18 years and older residing in households located in the coterminous United States. Four thousand eight hundred and forty two CAPI interviews were conducted with a 71.5% response rate. The NSAL was conducted by the Institute for Social Research.

The BJMHS is comprised of eight questions:

1. Do you currently believe that someone can control your mind by putting thoughts into your head or taking thoughts out of your head?
2. Do you currently feel that other people know your thoughts and can read your mind?
3. Have you currently lost or gained as much as two pounds a week for several weeks without even trying?
4. Have you or your family or friends noticed that you are currently much more active than you usually are?
5. Do you currently feel like you have to talk or move more slowly than you usually do?
6. Have there currently been a few weeks when you felt like you were useless or sinful?
7. Have you ever been in a hospital for emotional or mental health problems?
8. Are you currently taking any medication prescribed for you by a physician for any emotional or mental health problems?

The corresponding variables on the SILJ and NSAL are in table 1.

Table 1. SILJ and NSAL Variable for BJMHS Simulation		
	SILJ	NSAL
Question 1	v2008	ps1c1 & ps1d1
Question 2	v2014	ps1a1 & ps1b1
Question 3	v2011	dp26c & dp26e
Question 4	v2009	sc24, m7e, m7f, & m7g
Question 5	v2005	dp26l & dp26m
Question 6	v2012 & v2017	sc21, sc22, sc23, dp26v, & dp26w
Question 7	v2034	sr3 & sr8
Question 8	v2032	sr13a
See appendix tables 1 & 2 for a complete listing of these variables.		

The SILJ is nearly ideal for testing purposes in that the instrumentation is so similar – an interview setting with a battery of eight yes/no questions posed to the jail inmate. The NSAL has multiple questions that tap into the relevant questions due to a stem and branch structure skip pattern for the CIDI. However, for all but the eighth question, the NSAL duplicates the ease of response to questions by making them yes/no. The last question asks for a date of last prescription. We are not concerned with the accuracy of the date, only that one was taken recently, so any response to s13a was coded as a “yes.”

The SILJ has a very straightforward battery of questions by which to identify if an inmate has been diagnosed with a SMI by a medical professional:

- v2022 Defendant diagnosed with a depressive disorder;
- v2023 Defendant diagnosed with a bi-polar disorder;
- v2024 Defendant diagnosed with a psychotic disorder;
- v2025 Defendant diagnosed with a post-traumatic stress disorder;
- v2026 Defendant diagnosed with another anxiety disorder;
- v2027 Defendant diagnosed with a personality disorder; and
- v2028 Defendant diagnosed with another mental condition.

These questions are not based on a particular time frame, but a follow-up question (v2029) reveals that 43% of those diagnosed were diagnosed most recently within the

past year. Nearly 58% of those diagnosed were diagnosed within the past two years. The remainder of those diagnosed were diagnosed later, did not know, or refused to answer. For purposes of our analysis, we will assume that this is functionally equivalent to a diagnosis performed at jail intake or during an inmate’s jail term.

We actually have a means by which to examine the appropriateness of our assumption. The NSAL has a set of 18 variables that cover the range of DSM-IV Axis I disorders occurring during the past 12 months and the past 30 days. It seems reasonable to assume that episodes of mental illness occurring within the past 30 days are very likely still ongoing at the time of the screening process, and should be detected by a BJMHS simulation screener.

Table 2. DSM-IV Axis I Disorders Used to Create Gold Standard for Testing BJMHS		
	Past 12 Months Timeframe	Past 30 Days Timeframe
DSM-IV Major Depressive Disorder with Hierarchy	d_mddh12	d_mddh30
DSM-IV Major Depressive Episode	d_mde12	d_mde30
DSM-IV Dysthymia	d_dys12	d_dys30
DSM-IV Dysthymia with Hierarchy	d_dysh12	d_dysh30
DSM-IV Mania	d_man12	d_man30
DSM-IV Hypomania	d_hyp12	d_hyp30
DSM-IV Panic Attack	d_pat12	d_pat30
DSM-IV Panic Disorder	d_pds12	d_pds30
DSM-IV Social Phobia	d_so12	d_so30
DSM-IV Agoraphobia with or without Panic Disorder	d_gad12	d_gad30
DSM-IV General Anxiety Disorder with Hierarchy	d_gadh12	d_gadh30
DSM-IV Posttraumatic Stress Disorder	d_pts12	Not available
DSM-IV Attention Deficit Disorder	d_add12	Not available
DSM-IV Oppositional Defiant Disorder	d_odd12	Not available
DSM-IV Oppositional Defiant Disorder with Hierarchy	d_oddh12	Not available
DSM-IV Conduct Disorder	d_cd12	Not available
DSM-IV Adult Separation Anxiety Disorder	d_asa12	d_asa30
DSM-IV Bi-polar I	d_bp1_12	Not available
DSM-IV Bi-polar II	d_bp2_12	Not available

Using these batteries of questions, we constructed two types of “gold standard variables”

for mental illness: a blanket indicator and a reduced “serious” mental illness indicator. In the SILJ, the blanket mental illness indicator is a yes if any of variables v2022 through v2028 is a yes. In the NSAL, the blanket mental illness indicator for a 12 month period is a yes if any of variables d\_mddh12 through d\_bp2\_12 is a yes. The blanket mental illness indicator for a 30 day period is a yes if any of variables d\_mddh30 through d\_asa\_30 is a yes. In the SILJ the serious mental health illness indicator is a yes if any of variables v2022 through v2025 is a yes. In the NSAL, the serious mental illness indicator for a 12 month period is a yes if any of variables d\_mddh12 through d\_hyp12 or d\_pts12 or d\_bp1\_12 or d\_bp2\_12 is a yes. The serious mental illness indicator for a 30 day period is a yes if any of variables d\_mddh30 through d\_hyp\_30 is a yes.

### *Statistical Analyses*

To validate the BJMHS, we use receiver operating characteristic (ROC) analysis to go beyond percent correctly predicted. When dealing with populations with low percentages or high percentages of an outcome, the percent correctly predicted can be a poor measure, as predicting no need for a referral 100% of the time for a population which has only 20% of the population with a serious mental illness can result in 80% of the predictions being correct.

ROC analysis has its roots in the sensitivity and specificity of a risk assessment /screener instrument. The sensitivity of an instrument is the degree to which the instrument does not under-predict (e.g., classify a seriously mentally ill person as without a serious mental illness). The specificity of an instrument is the degree to which the instrument does not over-predict (e.g., incorrectly classify a person as having a serious mental illness). ROC analysis is based on obtaining a series of cutoff values for data, or in our case a single cutoff value, computing the sensitivity rate at the cutoff value and the specificity rate and then plotting the sensitivity rate (classified as needing treatment and mentally ill/mentally ill) for a cutoff value against 1-the specificity rate (1-(classified as not needing treatment and mentally ill/mentally ill)). When dealing with a single cutoff, the relevant area under the curve is really the triangle formed by the diagonal line between the coordinates 0,0 and 1,1. After all, the non-cutoff points on the two shorter sides of the triangle are simply default plots of “ties.” That triangle is the improvement in prediction over chance. Another way to phrase it is an AUC of .679 is a .179 improvement over chance.

One final way to think of it is that when the persons with a SMI were compared were compared to persons without SMI in terms of the screener indicating a need for a referral, in 67.9% of those parings those with SMI would have a referral.

### Findings – A Good Instrument for Jail Populations, but not for Arrestees in the General Population

The findings here are divided up by gender, since Osher, Scott, Steadman, and Robbins (2006) have given us reason to believe that the BJMHS may be better attuned to males than females. In the analysis below, we are placing Osher, et al.’s (2006) results for comparison.

Males			Females		
	Not Referred	Referred		Not Referred	Referred
SCID-I-No	117	36	SCID-I-No	62	36
SCID-I-Yes	20	38	SCID-I-Yes	33	28
Percent Correctly Classified	73.460		Percent Correctly Classified	61.644	
Sensitivity	65.517		Sensitivity	45.902	
Specificity	76.471		Specificity	72.941	
ROC	0.71		ROC	0.594	

Cell numbers are counts. SCID-I – Structured Clinical Interview for DSM-IV Axis I Disorders.

If we look at table 4, the first thing that can be concluded is that the BJMHS classifies inmates statistically significantly better than mere chance assignment. Yet there is more to be found. The validity diagnostics indicate that the BJMHS actually performs better for females than males when tested on a nationally representative sample. The ROC areas under the curves are higher for females than males (.713 & .748 versus .666 & .672). As the confidence intervals indicate, these gender differences are statistically significant at the 95% confidence level. This is true of both all inmates and the subset of inmates held pretrial. In fact, the disparity between males and females is greater among those held pretrial than the inmate populations as a whole. However, we must caution that this last observation not be carried too far. The BJMHS operates in a similar fashion for all inmates and the subset of inmates held pretrial. The ROC areas are not statistically significantly different for all inmates and the subset of inmates held pretrial.

Males			Males Held Pretrial		
	Not Referred	Referred		Not Referred	Referred
DSM-IV-No	415,438	6,604	DSM-IV-No	113,607	2,422
DSM-IV-Yes	80,366	44,918	DSM-IV-Yes	23,238	14,570
Percent Correctly Classified	84.110		Percent Correctly Classified	83.320	
Sensitivity	35.853		Sensitivity	38.537	
Specificity	98.435		Specificity	97.913	
ROC	0.666***		ROC	0.672***	
ROC SE	0.01		ROC SE	0.018	
ROC Lower Bound 95% CI	0.646		ROC Lower Bound 95% CI	0.636	
ROC Upper Bound 95% CI	0.686		ROC Upper Bound 95% CI	0.708	
Females			Females Held Pretrial		
	Not Referred	Referred		Not Referred	Referred
DSM-IV-No	38,170	1,016	DSM-IV-No	9,617	60
DSM-IV-Yes	17,399	14,664	DSM-IV-Yes	4,035	4,597
Percent Correctly Classified	74.154		Percent Correctly Classified	77.634	

Sensitivity	45.735		Sensitivity	53.255
Specificity	97.407		Specificity	99.380
ROC	0.713***		ROC	0.748***
ROC SE	0.012		ROC SE	0.023
ROC Lower Bound 95% CI	0.689		ROC Lower Bound 95% CI	0.703
ROC Upper Bound 95% CI	0.737		ROC Upper Bound 95% CI	0.794
+p≤.10; *p≤.05; **p≤.01; ***p≤.001.				
Cell numbers are weighted counts. Percentages are based on weighted counts. ROC numbers are based on unweighted analysis of the data. SE – Standard Error; CI – Confidence Interval.				

A review of table 5 reveals that the findings in table 4 are robust against alternative specifications of the “gold standard” of mental illness. The BJMHS classifies inmates better than would be expected by mere chance assignment. Similar patterns of instrumentation working statistically significantly better for females than males exist. For the purpose of treatment assignment, the serious mental illness version of the “gold standard” is probably a more ideal test of the BJMHS than the more general version of the “gold standard” in table 4, as it reduces the group of persons needing detection to those in immediate need of treatment. As table 5 indicates, the BJMHS performs slightly better against the serious mental illness “gold standard” than the more general version. The difference is not statistically significant, but is in the expected direction. Osher, et al. (2006) had intended the BJMHS to identify inmates most in need of immediate mental health treatment for referral. On the other hand, the similarity of findings between table 4 and table 5, suggest that persons with serious mental illnesses that are not likely to pose a risk to public safety are also accurately detected using the BJMHS. These persons with mental illnesses that are not likely to pose a risk to public safety (e.g., attention deficit disorder, generalized anxiety disorder, & oppositional defiant disorder) may well be good candidates for mental health court diversion programs as well as treatment.

Table 5. SILJ - A Diagnosis for A Serious DSM-IV Axis I Mental Illness by BJMHS Simulation Referral Criteria						
Males			Males Held Pretrial			
	Not Referred	Referred		Not Referred	Referred	
DSM-IV-No	42,8884	8,706	DSM-IV-No	117,044	2,855	
DSM-IV-Yes	66,919	42,816	DSM-IV-Yes	19,801	14,137	
Percent Correctly Classified			Percent Correctly Classified			
86.183			85.273			
Sensitivity			Sensitivity			
39.018			41.655			
Specificity			Specificity			
98.010			97.619			
ROC			ROC			
0.679***			0.686***			
ROC SE			ROC SE			
0.011			0.019			
ROC Lower Bound 95% CI			ROC Lower Bound 95% CI			
0.657			0.648			
ROC Upper Bound 95% CI			ROC Upper Bound 95% CI			
0.7			0.724			
Females			Females Held Pretrial			
	Not Referred	Referred		Not Referred	Referred	
DSM-IV-No	40,369	1,684	DSM-IV-No	10,215	310	
DSM-IV-Yes	15,200	13,997	DSM-IV-Yes	3,436	4,348	

Percent Correctly Classified	76.303		Percent Correctly Classified	79.540
Sensitivity	47.940		Sensitivity	55.858
Specificity	95.996		Specificity	97.055
ROC	0.717***		ROC	0.753***
ROC SE	0.012		ROC SE	0.024
ROC Lower Bound 95% CI	0.692		ROC Lower Bound 95% CI	0.707
ROC Upper Bound 95% CI	0.741		ROC Upper Bound 95% CI	0.799
+p≤.10; *p≤.05; **p≤.01; ***p≤.001.				
Cell numbers are weighted counts. Percentages are based on weighted counts. ROC numbers are based on unweighted analysis of the data. SE – Standard Error; CI – Confidence Interval.				

Turning our attention to table 6, we can see that the BJMHS runs into difficulties screening persons previously arrested but currently in the general population. ROC numbers range in the .577 to .615 region, which is statistically significantly better than chance assignment, but is not a strong showing of classification efficiency. The NSAL has three time frames of reference for its DSM-IV diagnostics – lifetime, past 12 months and past 30 days. A diagnostic tool that detected all DSM-IV events over a lifetime would be far too over-inclusive for the purposes of pretrial assessment for treatment and diversion. For example, persons with childhood problems that had been properly dealt with or had resolved as part of the maturation process would be detected by lifetime DSM-IV diagnostics. For this reason, we chose to look at only the past 12 months and past 30 days. The NSAL screener for males operates better for arrested males on the “general DSM-IV gold standard” for the past 12 months, but better for females for the past 30 days. We caution any over-reliance on these results. A 30 day window seems to be a very narrow one in which events can occur. The ROC scores are low at least in part because of the limited variation in actual DSM-IV cases. For example, among males on the general DSM-IV, 91% did not have a mental illness diagnosis, so correct prediction would have been “easy” – we could simply assume no need for a referral and be right 91% of the time.

Table 6. NSAL - A Diagnosis for A DSM-IV Axis I Mental Illness by BJMHS Simulation Referral Criteria					
Arrested Males Past 12 Months			Arrested Males Past 30 Days		
	Not Referred	Referred		Not Referred	Referred
DSM-IV-No	892	24	DSM-IV-No	1,003	40
DSM-IV-Yes	198	31	DSM-IV-Yes	88	16
Percent Correctly Classified			Percent Correctly Classified		
80.611			88.840		
Sensitivity			Sensitivity		
13.537			15.385		
Specificity			Specificity		
97.380			96.165		
ROC			ROC		
0.577**			0.615**		
ROC SE			ROC SE		
0.025			0.04		
ROC Lower Bound 95% CI			ROC Lower Bound 95% CI		
0.528			0.536		
ROC Upper Bound 95% CI			ROC Upper Bound 95% CI		
0.626			0.693		
Arrested Females Past 12 Months			Arrested Females Past 30 Days		
	Not Referred	Referred		Not Referred	Referred
DSM-IV-No	305	21	DSM-IV-No	356	45

DSM-IV-Yes	107	43		DSM-IV-Yes	56	19
Percent Correctly Classified		73.109		Percent Correctly Classified		78.782
Sensitivity		28.667		Sensitivity		25.333
Specificity		93.558		Specificity		88.778
ROC		0.615**		ROC		0.588**
ROC SE		0.025		ROC SE		0.034
ROC Lower Bound 95% CI		0.566		ROC Lower Bound 95% CI		0.522
ROC Upper Bound 95% CI		0.664		ROC Upper Bound 95% CI		0.654
+p≤.10; *p≤.05; **p≤.01; ***p≤.001.						
Cell numbers are weighted counts. Percentages are based on weighted counts. ROC numbers are based on unweighted analysis of the data. SE – Standard Error; CI – Confidence Interval.						

Similar problems of low variation plague the tests in table 7. In fact, it is here where we see some evidence that in the 30 day window, the BJMHS is not statistically significantly better than change assignment at classification for serious mental illness. We will discuss this finding more in the following section.

Table 7. NSAL - A Diagnosis for A Serious DSM-IV Axis I Mental Illness by BJMHS Simulation Referral Criteria						
Arrested Males Past 12 Months				Arrested Males Past 30 Days		
	Not Referred	Referred			Not Referred	Referred
DSM-IV-No	986	30		DSM-IV-No	1,045	45
DSM-IV-Yes	104	26		DSM-IV-Yes	48	8
Percent Correctly Classified		88.307		Percent Correctly Classified		91.885
Sensitivity		20.000		Sensitivity		14.286
Specificity		97.047		Specificity		95.872
ROC		0.613***		ROC		0.602 <sup>+</sup>
ROC SE		0.034		ROC SE		0.063
ROC Lower Bound 95% CI		0.546		ROC Lower Bound 95% CI		0.478
ROC Upper Bound 95% CI		0.68		ROC Upper Bound 95% CI		0.726
Arrested Females Past 12 Months				Arrested Females Past 30 Days		
	Not Referred	Referred			Not Referred	Referred
DSM-IV-No	354	34		DSM-IV-No	384	55
DSM-IV-Yes	58	29		DSM-IV-Yes	27	9
Percent Correctly Classified		80.632		Percent Correctly Classified		82.737
Sensitivity		33.333		Sensitivity		25.000
Specificity		91.237		Specificity		87.472
ROC		0.636***		ROC		0.555
ROC SE		0.03		ROC SE		0.045
ROC Lower Bound 95% CI		0.577		ROC Lower Bound 95% CI		0.466
ROC Upper Bound 95% CI		0.695		ROC Upper Bound 95% CI		0.643
+p≤.10; *p≤.05; **p≤.01; ***p≤.001.						
Cell numbers are weighted counts. Percentages are based on weighted counts. ROC numbers are based on unweighted analysis of the data. SE – Standard Error; CI – Confidence Interval.						

## Discussion

So, what can we conclude from the SILJ results? First, the BJMHS does a good job at screening jail inmates for serious mental illnesses. Second, the BJMHS does a good job for both male and females jail inmates. Third, the BJMHS shows promise at also being used to detect potential candidates for diversion to alternatives to pretrial incarceration or to alternative court processes. The fact that the BJMHS can detect forms of mental illness less likely to pose a danger to the general public means that once a defendant is referred to a more comprehensive screening such as SCID-I, this smaller pool of defendants can be assessed accurately for placement in mental health court diversion &/or treatment. Accurate assessment is a key step both for the success of a mental health court and a treatment process (McNiel & Binder, 2007).

What can we conclude from the NSAL results? First, using a 30 day window to validate the BJMHS may not be appropriate. There is corroboration between the SILJ and NSAL on the male-female dichotomy (with ROC scores higher for females), and on the 10% or more improvement over chance classification barrier. Using the SILJ retrospective indefinite time frame comes up with results quite similar to the Osher, et al. (2006) study. Using the 12 month time frame has results also similar to the Osher, et al. study. We suggest that if researchers wish to test the BJMHS and similar test screens against retrospective databases of diagnoses like the NSAL or the SILJ, that they experiment with other time windows, such as six months. While the SILJ's indefinite window yields support for the BJMHS, the fact that the narrower NSAL windows yield lower support suggests further examination may be required. Second, the NSAL may not be ideal for testing. Clearly, persons back in the general population after an arrest may be so for a variety of reasons. Some of these reasons may well have to do with the fact that they probably have a lower incidence of SMI. If Corrado, Cohen, Hart, and Roesch (2000) and the CMHS National Gains Center are correct, the tendency to use jails to warehouse SMI persons would actually cull out the most severely impaired persons from the "arrested, but later released into the general population" class of persons found on the NSAL and other general population surveys.

We have the following recommendations for pretrial programs based on the validation of the BJMHS:

- In jurisdictions where the initial appearance occurs after jail intake screening pretrial programs ought to request their jail classification staff perform the BJMHS and turn over the BJMHS results to pretrial staff.
- In jurisdictions that have initial appearance prior to jail intake screening, we recommend that pretrial programs implement the BJMHS as the mental health risk assessment component of their risk assessment screen.
- In both types of jurisdictions, pretrial programs should use the findings from the BJMHS to issue recommendations to the judge or magistrate on whether to place the defendant into mental health treatment, a mental health court process if available, or some combination of the two.

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## Appendix

Question	Variable	Description
Question 1	v2008	Others controlling thoughts in last year
Question 2	v2014	Others able to read mind in past year
Question 3	v2011	Change in appetite for a period of 2 or more weeks in last year
Question 4	v2009	Change in activity level in last year
Question 5	v2005	Sense of sluggish thought/movement in last year
Question 6	v2012	Given up hope for your life or your future in last year
	v2017	Feeling of emptiness in last year
Question 7	v2034	Ever been admitted to mental treatment program
Question 8	v2032	Taking medication for a mental problem at the time of arrest

Question	Variable	Description
Question 1	ps1c1	Ever mind controlled when not dream/asleep/subs use
	ps1d1	Ever feel mind taken over when not dream/asleep/subs use
Question 2	ps1a1	Ever see vision others didn't when not dream/asleep/subs use
	ps1b1	Ever hear voices others didn't when not dream/asleep/subs use
Question 3	dp26c	Severe depression episode-gained weight without trying
	dp26e	Severe depression episode-lost weight without trying
Question 4	sc24	Energetic/restless/talkative/unusual behavior period
	m7e	Irritable episode-take on impossible tasks/large amounts of work
	m7f	Irritable episode-talked more than usual
	m7g	Irritable episode-constantly change plans/activities
Question 5	dp26l	Severe depression episode-talk/move more slowly than usual most days
	dp26m	Severe depression episode-others notice talk/move more slowly
Question 6	sc21	Sad/empty/depressed for several day period
	sc22	Discouraged about life for several day period
	sc23	Lost interest in enjoyable things for several day period
	dp26v	Severe depression episode-worthless feeling most days
	dp26w	Severe depression episode-felt guilty most days
Question 7	sr3	# times hospitalized for mental health/substance use
	sr8	Hospitalized for mental health in past 12 months
Question 8	sr13a	Age first prescription for emotions