Update on Science, Reimbursement and Decision Support in Mental Health

The M3 Process

M3 Information™

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The U.S. Preventive Services Task Force (USPSTF) recommends screening and behavioral counseling interventions to reduce alcohol misuse by adults, including pregnant women, in primary care settings.

The USPSTF found good evidence that treating depressed adults and older adults identified through screening in primary care settings with antidepressants and/or psychotherapy ***decreases*** *clinical morbidity. They also found that programs combining depression screening and feedback with staff assisted depression care supports* ***improve clinical outcomes in adults****. There is fair evidence that screening and feedback alone without staff-assisted care supports* ***do not improve clinical outcomes*** *in adults.*

It also recommends that ***all positive screening results should lead to additional assessment*** *that considers severity of depression and comorbid psychological problems (e.g. anxiety, panic attacks, or substance abuse), alternate diagnoses, and medical conditions. Patients who screen positive should be appropriately diagnosed and treated with evidence-based care or referred to a setting that can provide the necessary care.*

The USPSTF found adequate evidence that the magnitude of harms of screening for depression in adults is ***small to none****.***

**Siu AL, and the US Preventive Services Task Force (USPSTF). Screening for Depression in Adults: US Preventive Services Task Force Recommendation Statement. JAMA.2016;315(4):380-387.

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About M3 Checklist

The evidence-based M3 Checklist empowers providers by detecting, measuring and organizing symptoms of several common mental health conditions: depression, anxiety disorders, bipolar disorders and PTSD. Consisting of 27 questions, the patient-engaging web and mobile screening assessment can be easily completed during office visits, in the waiting or exam room, or remotely in just three to five minutes. Once the assessment is completed, the M3 Checklist computes and assigns a numeric value, the M3 score, which can be viewed in real time and used to provide clinical support at the point of care.

Why M3 Checklist Through LabCorp?

- Provides an individualized patient assessment geared towards early detection of comorbid illness
- Identifies people in distress regardless of their diagnosis
- Facilitates longitudinal monitoring and communication among care team members
- Mood and anxiety disorders are the most common psychiatric conditions seen in primary care, yet they remain under-detected and under-treated
- Is Interoperable with most electronic health records via existing LabCorp account interfaces. Provides HL-7 structured data.
- The M3 was clinically validated in a research study performed at the University of North Carolina, and published in the Annals of Family Medicine.

Mental Health Challenges in the United States

- 40M US adults (18-54) have an anxiety disorder in a given year
- 50% do not receive help
- 35% of patients with a chronic medical condition have a mental illness
- 20% of patients diagnosed with depression are in fact actually suffering from bipolar disorder
- 28% of all hospital readmissions are impacted by mental illness

Sources: NAMI, APA, CMS, Project Red

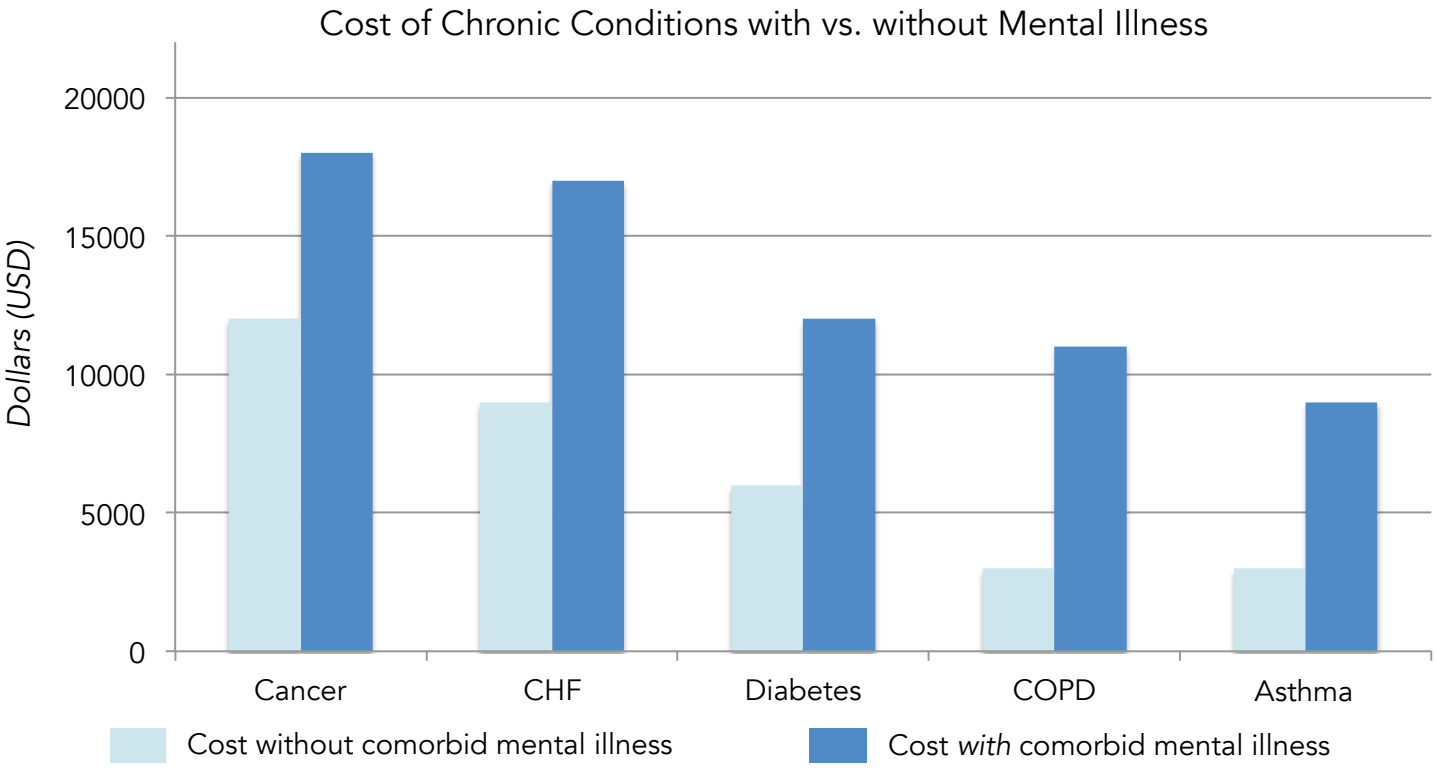
Who Should Use M3 Checklist?

- Mental health professionals
- Federally qualified health centers
- Patient centered medical homes
- Primary care practitioners
- Mental health clinics
- Integrated delivery networks
- Accountable care organizations
- Private & government payers
- Employee assistance programs

The Cost of Mental Illness

Across these 9 conditions, depression and anxiety go undiagnosed *85% of the time*. The cost of a patient with a chronic illness is *significantly* increased by a mental illness.

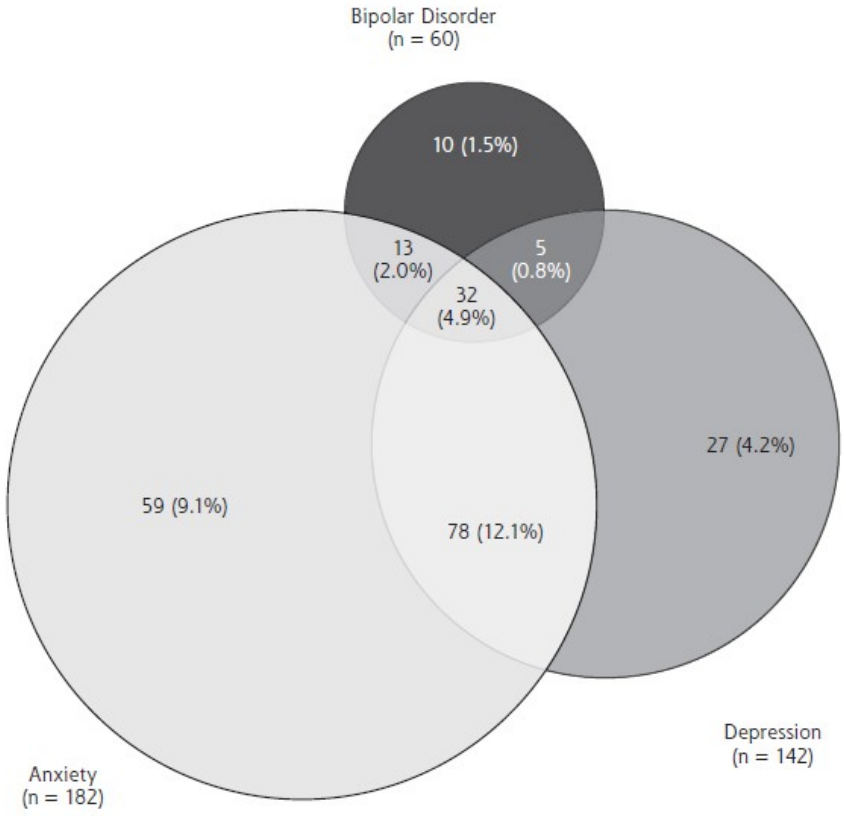
Medical Costs per Disease State					
Chronic Medical Condition	PMPM With Behavioral Condition*	PMPM Without Behavioral Condition*	% Treated for Depression or Anxiety	Expected Depression or Anxiety Prevalence	% Missed
Arthritis	$872	$565	7.1%	32.2%	77.9%
Asthma	$862	$470	6.8%	60.5%	88.8%
Cancer (Malignant)	$1,181	$1,018	5.7%	39.8%	85.7%
Chronic Pain	$1,211	$885	5.9%	61.2%	90.4%
Coronary Artery Disease	$1,305	$958	5.7%	48.2%	88.1%
Diabetes	$1,110	$828	5.2%	30.8%	83.2%
Heart Failure	$2,243	$1,888	7.0%	43.8%	84.1%
Hypertension	$880	$588	5.5%	30.5%	82.0%
Ischemic Stroke	$1,462	$1,255	7.7%	52.4%	85.2%



What is Mental Health?

Anxiety disorders, Depression and Bipolar Disorders represent 99% of mental health conditions. An existing provider bias towards depression—by only screening with the PHQ-9—results in a significant amount of misdiagnosis and mistreatment. The figure to the right details the approximate breakdown of major mood, anxiety, and other disorders in America. The figure below illustrates the potential for mental health problems to present together (comorbid diagnoses). Most notably, 12% of patients in this sample of diagnosable participants presented with both depression *and* anxiety.

Figure 1. Summary of 224 participants with a diagnosis by MINI.



Note: No mood or anxiety disorder = 423 (65.4%).

Mental Health Census

A new study suggests that **55%** of Americans will suffer from a mental disorder during their lifetime.

Percentage of Americans who will have specific disorders in their lifetime

DISORDER	LIFETIME PREVALENCE
Any anxiety disorder	**28.8%**
Panic disorder	4.7%
Agoraphobia without panic	1.4%
Specific phobia	12.5%
Social phobia	12.1%
Generalized anxiety disorder	5.7%
Post-traumatic stress disorder	6.8%
Obsessive-compulsive	1.6%
Separation anxiety	5.2%
Mood disorder	**20.8%**
Major depression	16.6%
Dysthymia	2.5%
Bipolar I or II	3.9%
Impulse-control disorder	**24.8%**
Oppositional-defiant disorder	8.5%
Conduct disorder	9.5%
Attention deficit hyperactivity	8.1%
Intermittent explosive	5.2%
Substance disorder	**14.6%**
Alcohol abuse	13.2%
Alcohol dependence	5.4%
Drug abuse	7.9%
Drug dependence	3.0%

Source: Dr. Ronald C. Kessler, Harvard University

Feasibility and Diagnostic Validity of the M-3 Checklist: A Brief, Self-Rated Screen for Depressive, Bipolar, Anxiety, and Post-Traumatic Stress Disorders in Primary Care

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Conflicts of interest: listed at the end of this article

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ABSTRACT

PURPOSE Mood and anxiety disorders are the most common psychiatric conditions seen in primary care, yet they remain underdetected and undertreated. Screening tools can improve detection, but available instruments are limited by the number of disorders assessed. We wanted to assess the feasibility and diagnostic validity of the My Mood Monitor (M-3) checklist, a new, 1-page, patient-rated, 27-item tool developed to screen for multiple psychiatric disorders in primary care.

METHODS We enrolled a sample of 647 consecutive participants aged 18 years and older who were seeking primary care at an academic family medicine clinic between July 2007 and February 2008. We used a 2-step scoring procedure to make screening more efficient. The main outcomes measured were the sensitivity and specificity of the M-3 for major depression, bipolar disorder, any anxiety disorder, and post-traumatic stress disorder (PTSD), a specific type of anxiety disorder. Using a split sample technique, analysis proceeded from determination of optimal screening thresholds to assessment of the psychometric properties of the self-report instrument using the determined thresholds. We used the Mini International Neuropsychiatric Interview as the diagnostic standard. Feasibility was assessed with patient and physician exit questionnaires.

RESULTS The depression module had a sensitivity of 0.84 and a specificity of 0.80. The bipolar module had a sensitivity of 0.88, and a specificity of 0.70. The anxiety module had a sensitivity of 0.82 and a specificity of 0.78, and the PTSD module had a sensitivity of 0.88 and a specificity of 0.76. As a screen for any psychiatric disorder, sensitivity was 0.83 and specificity was 0.76. Patients took less than 5 minutes to complete the M-3 in the waiting room, and less than 1% reported not having time to complete it. Eighty-three percent of clinicians reviewed the checklist in 30 or fewer seconds, and 80% thought it was helpful in reviewing patients' emotional health.

CONCLUSIONS The M-3 demonstrates utility as a valid, efficient, and feasible tool for screening multiple common psychiatric illnesses, including bipolar disorder and PTSD, in primary care. Its diagnostic accuracy equals that of currently used single-disorder screens and has the additional bene t of being combined into a 1-page tool. The M-3 potentially can reduce missed psychiatric diagnoses and facilitate proper treatment of identified cases.

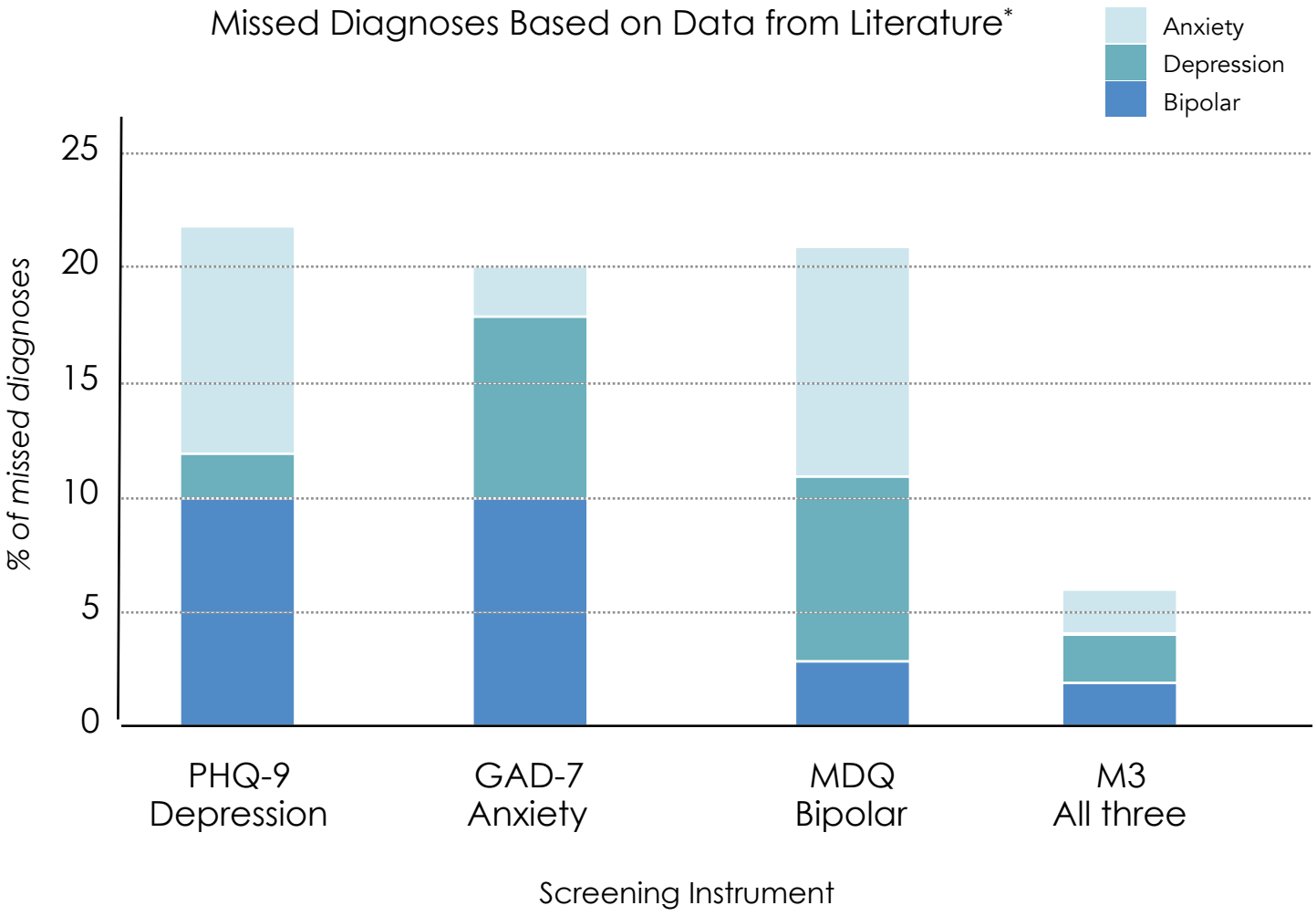
Ann Fam Med 2010;8:160-169. doi: 10.1370/afm.1092.

INTRODUCTION

Psychiatric illness is common in primary care settings, where mood and anxiety disorders are the 2 psychiatric disorders most frequently encountered.[1, 2] Although primary care physicians account for most mental health visits and write the bulk of antidepressant and antianxiety

What Differentiates M3 from Other Mental Health Screens?

While there are other mental health screens out there, they are predominantly one-dimensional. Some of these other screens are effective for their dimension, for example, the PHQ-9 for depression. What separates M3 is its ability to screen for symptoms in multiple dimensions, and it can do so as accurately as any single test.



*Kroenke, et al., Ann Intern Med 2007;146:317
Das, et al. JAMA 2005; 293:956
Depression Guideline Panel, Depression in Primary Care: Volume 1, AHCPR, Publication No. 93-0550, 1993

Comparison of Common, Validated Mental Health Screening Tools

	M3 Checklist	PHQ-9,4,2	GAD-7	AUDIT-C	DAST-10	DASS-21	MDQ	SF-20
No. Questions	27	9, 4, 2	7	3	10	21	13	20
Time to Complete	3-5 mins.	3, 2, 1 min(s).	2 mins.	1 min.	3 mins.	7 mins.	5 mins.	7 mins.
Depression	✓	✓				✓		✓
Bipolar	✓						✓	
Anxiety	✓		✓			✓		✓
PTSD	✓							
Substance Misuse	✓			✓	✓			
Functional Impairment	✓							✓
Structured Data Transmitted to EHR	✓							

How to Interpret the LabCorp M3 Checklist Report

How to Review this Report

In the left hand column titled TESTS is the parameter that has been assessed by the M3 Checklist. After noting the parameter, the RESULT column displays a score (e.g. *33)*, a frequency (e.g. *Often)*, or the diagnostic risk (e.g. *Positive-Low)*. The next column, entitled FLAG indicates that special attention should be paid to this item. For both the RESULTS column and the FLAG column, **bolded** items indicate an item that requires special attention. Similarly, a result that is ***bolded***, ***underlined***, and ***italicized*** is a red flag—it is imperative that the clinician follows up on these responses and refers the patient to an appropriate specialist if appropriate. Lastly, the REFERENCE RANGE in the right hand column indicates the baseline range for its respective parameter. For example, the baseline range for the *M3 score* is 0 to 32.

1 Review M3 Score and M3 Gateway

This item is the first piece of insight into a patient's mental health. A higher score indicates a higher level of general symptom burden. Scores that are 33 or higher have about a 71% risk of having a mental health diagnosis. The M3 Gateway indicates whether a patient is presenting functional impairment (see (2)).

2 Review Impairment

Questions 5 and 24-27 correspond to the patient's level of functional impairment, which is a criterion in the DSM-5 for many diagnoses. Positive answers to these questions, *especially regarding suicidal thoughts*, should be followed up with questioning by the physician. These items are listed before the rest of the assessment because the items require immediate attention and are highly indicative of mental health disorders.

3 Review Diagnostic/Subscore Risk

Look at how a patient's risk is distributed across the four dimensions and which have the highest risk. Family history of bipolar indicates higher risk; this helps, as there is a high rate of false positive for bipolar disorder. The corresponding scores for these risk levels can be found under the heading SYMPTOM SEVERITY.

4 Review of Specific Responses

Here and below on the full report, the clinician can review the specific answers given and risks associated with each question. These responses should inform how the clinician focuses his/her follow up questions. Questions (1-7) relate to depression, (8-19) to anxiety, (20-23) to bipolar. Questions 24 to 27 are found above under the GATEWAY QUESTIONS heading.

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Phone: **336–222–7566**

Specimen Number	Patient ID	Control Number	Account Number	Account Phone Number	Route
111–990–9685–0		006663423	66600009	336–584–5171	50

Patient Last Name	Account Address
TESTING	KRISTIE'S TESTING ACCOUNT PROGRAMMING 3060 S CHURCH ST KOURY CTR BURLINGTON NC 27215

Patient First Name	Patient Middle Name
DINO	**O**

Patient SS#	Patient Phone	Total Volume

Age (Y/M/D)	Date of Birth	Sex	Fasting
19/03/27	12/24/96	M	No

Patient Address	Additional Information
	STEVE@M3INFORMATION.COM

Date and Time Collected	Date Entered	Date and Time Reported	Physician Name	NPI	Physician ID
04/20/16 04:00	04/20/16	04/25/16 08:11ET			

Tests Ordered
M3 CHECKLIST

	TESTS	RESULT	FLAG	UNITS	REFERENCE INTERVAL	LAB
	M3 CHECKLIST					
	Assessment Date/Time 04/22/2016 03:09PM EDT					01
1	**M3 Score**	**61**	**High**		0–32	01
	M3 Gateway	**Positive–Hi**	**High**		Negative	01
	DIAGNOSIS RISK					01
	Depression Dx Risk	**Positive–Hi**	**High**		Negative	01
	Bipolar Diagnosis Risk	**Positive–Hi**	**High**		Negative	01
	Anxiety Diagnosis Risk	**Positive–Med**	**High**		Negative	01
	PTSD Diagnosis Risk	**Positive–Lo**	**High**		Negative	01
2	GATEWAY QUESTIONS					01
	Q5 Thoughts of suicide	**Sometimes**	**High**		None	01
	Q24 Impairs work school	**Most time**	**High**		No–Sometimes	01
	Q25 Impairs friends family	**Most time**	**High**		No–Sometimes	01
	Q26 Led to using alcohol	None			No–Sometimes	01
	Q27 Led to using drugs	None			None	01
3	SYMPTOM (Sx) SEVERITY					01
	M3 Depression Sx Subscore	**21**	**High**		0 – 12	01
	Reference Range: None 0–6 / Mild 7–12 / Mod 13–19 / Severe 20–28					
	M3 Bipolar Sx Subscore	**13**	**High**		0 – 7	01
	Reference Range: None 0–3 / Mild 4–7 / Mod 8–11 / Severe 12–16					
	M3 Anxiety Sx Subscore	19			0 – 21	01
	Reference Range: None 0–10 / Mild 11–21 / Mod 22–33 / Severe 34–48					
	M3 PTSD Sx Subscore	4			0 – 7	01
	Reference Range: None 0–3 / Mild 4–7 / Mod 8–11 / Severe 12–16					
4	QUESTIONS					01
	Q1 Feel sad, unhappy	**Often**	**High**		None–Rarely	01

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3060 S Church Street
Burlington, NC 27215–5153

Phone: **336–222–7566**

Patient Name					Specimen Number		
TESTING, DINO O					**111–990–9685–0**		
Account Number	Patient ID	Control Number	Date and Time Collected	Date Reported	Sex	Age(Y/M/D)	Date of Birth
66600009		006663423	04/20/16 04:00	04/25/16	M	19/03/27	12/24/96

TESTS	RESULT	FLAG	UNITS	REFERENCE INTERVAL	LAB
Q2 Can't concentrate/focus	**Often**	**High**		None–Rarely	01
Q3 Nothing gives pleasure	**Often**	**High**		None–Rarely	01
Q4 Tired, no energy	**Most time**	**High**		None–Rarely	01
Q6A Difficulty sleeping	**Often**	**High**		None–Rarely	01
Q6B Sleeping too much	**Often**	**High**		None–Rarely	01
Q7A Decreased appetite	**Often**	**High**		None–Rarely	01
Q7B Increased appetite	**Often**	**High**		None–Rarely	01
Q8 Tense anxious can't sit	**Often**	**High**		None–Rarely	01
Q9 Worried or fearful	**Often**	**High**		None–Rarely	01
Q10 Panic Attacks	**Sometimes**	**High**		None–Rarely	01
Q11 Dying losing control	Rarely			None–Rarely	01
Q12 Nervous shaky social	**Sometimes**	**High**		None–Rarely	01
Q13 Nightmares, flashbacks	None			None–Rarely	01
Q14 Jumpy, startled easily	Rarely			None–Rarely	01
Q15 Avoids places	None			None–Rarely	01
Q16 Dull numb or detached	**Often**	**High**		None–Rarely	01
Q17 Can't get thoughts out	**Most time**	**High**		None–Rarely	01
Q18 Must repeat rituals	None			None–Rarely	01
Q19 Need to check/recheck	None			None–Rarely	01
Q20 More energy than usual	**Often**	**High**		None–Rarely	01
Q21 Irritable angry	**Most time**	**High**		None–Rarely	01
Q22 Excited revved high	**Often**	**High**		None–Rarely	01
Q23 Needed less sleep	**Often**	**High**		None–Rarely	01
Comments:					01

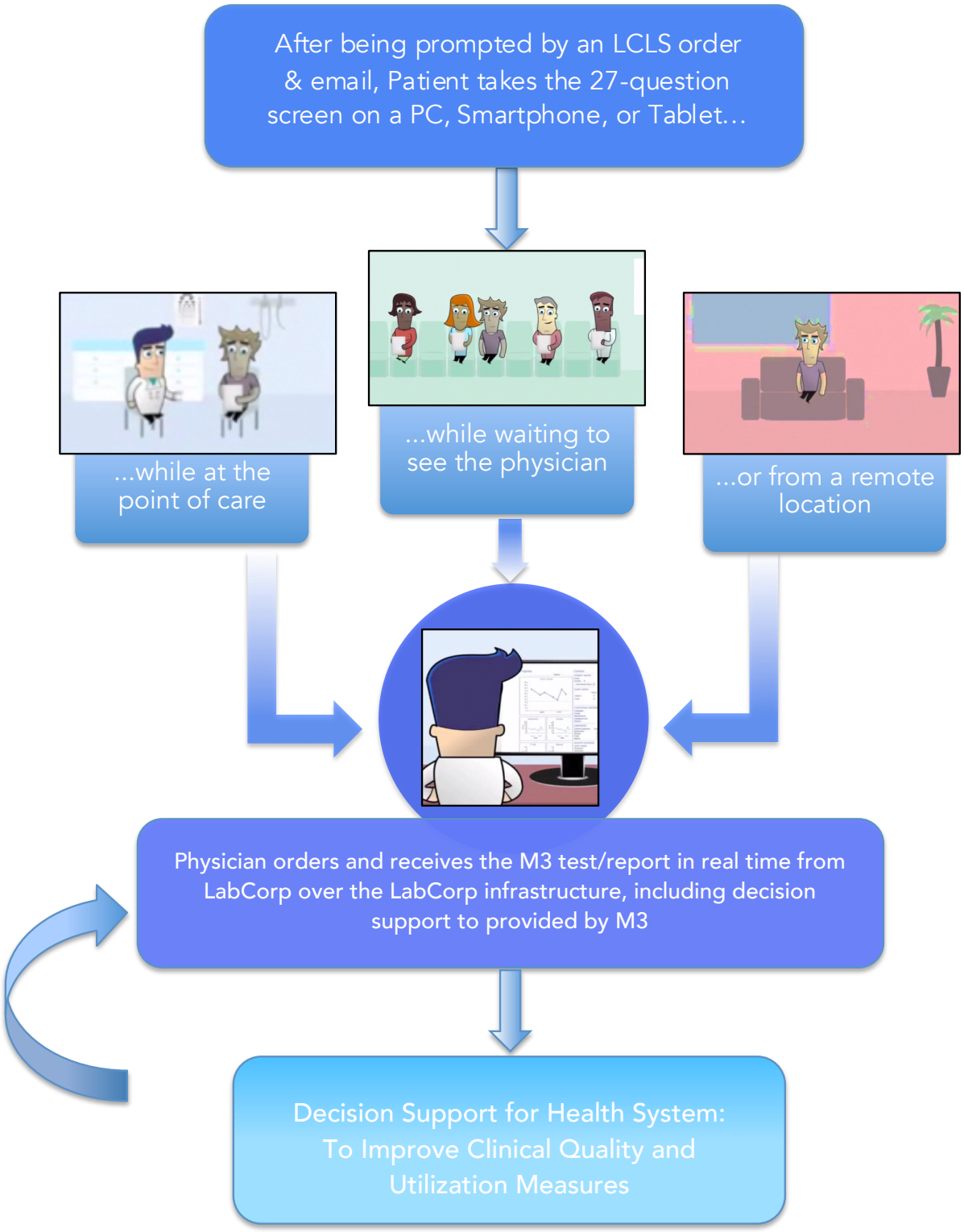
The M3 Score reflects relative symptom severity. The M3 Gateway, when positive, reflects a negative impact on lifestyle and function. Both are considered when assessing diagnosis risk and when comparing prior scores [1]. The Diagnosis Risk reflects the likelihood of having a diagnosis based on both the Symptom and the Gateway ratings when compared to the MINI [2]. Those who deny role impairment (Q24–25), substance abuse (Q26–27), and suicidal ideation (Q5), will have a negative Gateway and negative Diagnosis Risk, even with higher symptom scores. People with negative Gateways and M3 Scores less than 33 have the lowest likelihood of having a diagnosis. The highest M3 Score is 108.

A) All proposed categories of Risk (low, med, high) are positive and may be used for risk stratification pending further studies.

B) The M-3 Checklist is a screening test designed to aid in the detection of common mental health conditions. It is not a diagnostic procedure and should not be used as the sole means of detecting these conditions. Both false-positive and false-negative reports do occur [1]. The diagnoses screened for include major depressive, bipolar, posttraumatic stress, and anxiety disorders (generalized anxiety, social anxiety, panic, and obsessive-compulsive disorders).

M3 Workflow

With the LabCorp integration, M3 is ordered as a test through the practice EMR as a Lab Order and the Lab Results are published in the EMR as discrete data and in the results viewer.



How to Interpret the AUDIT-C Alcohol Screen

In the left hand column titled TESTS is the parameter that has been assessed by the AUDIT-C. After noting the RESULT column displays a score (e.g. *8*), a frequency (e.g. *Monthly*), or the diagnostic risk (e.g. *Positive*). The next column, entitled FLAG indicates whether special attention should be paid to this item. For both the RESULTS column and the FLAG column, bolded items indicate an item that requires special attention. Lastly, the REFERENCE INTERVAL in the right hand column indicates the baseline rage for its respective parameter. For example, the baseline range for the *Total Score* is 0-2.

1 Review the Result and Total Score

A *Positive* result indicates the possible presence of alcohol abuse or dependency. For *Total Score*, a higher score indicates a higher risk of abuse or dependence. For scoring of the AUDIT-C, see the previous page

2 Review of Specific Responses

Here, the clinician can review the specific answers given and risks associated with each question. These responses should inform how the clinician focuses his/her follow-up questions. These questions have to do with frequency, quantity, and the presence of binging behavior in relation to alcohol.

3 Question 3

This question is designed to elicit binge-drinking behavior. Any positive response to Question 3, despite a negative overall result, warrants further questioning.

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111–990–9681–0		027365839	66600009	336–584–5171	50

Patient Last Name	Account Address
TESTING	KRISTIE'S TESTING ACCOUNT PROGRAMMING 3060 S CHURCH ST KOURY CTR BURLINGTON NC 27215

Patient First Name	Patient Middle Name
TULIP	**T**

Patient SS#	Patient Phone	Total Volume

Age (Y/M/D)	Date of Birth	Sex	Fasting
77/10/22	05/29/38	F	No

Patient Address	Additional Information
	STEVE@M3INFORMATION.COM

Date and Time Collected	Date Entered	Date and Time Reported	Physician Name	NPI	Physician ID
04/20/16 04:00	04/20/16	04/25/16 08:11ET			

Tests Ordered
AUDIT-C

TESTS	RESULT	FLAG	UNITS	REFERENCE INTERVAL	LAB
AUDIT-C					
Assessment Date/Time 04/22/2016 06:37PM EDT					01
1 AUDIT-C	Negative			Negative	01
AUDIT-C Total Score	1			0-2	01
2 Q1 How often in past year	Monthly				01
Q2 How many on a typical day	0-2 drinks				01
3 Q3 6+ drinks per occasion	Never			Never	01

Comments: 01

A) AUDIT-C identifies people at high risk for heavy drinking (6+ at once) or for alcohol use disorder. A Positive test is a total score of 3 or higher (though some use 4 or higher for greater specificity [1]). The highest total score is 12.

B) Any positive response to Q3 despite a Negative test suggests further questioning.

C) For risk of heavy drinking, sensitivity is 0.98 and specificity is 0.57. For risk of alcohol use disorder, sensitivity is 0.90 and specificity is 0.45.

Reference: 01

[1] Bush et al., 2003. The AUDIT Alcohol Consumption Questions (AUDIT-C). Arch Int Med 158:1789-95.

Disclaimer: 01

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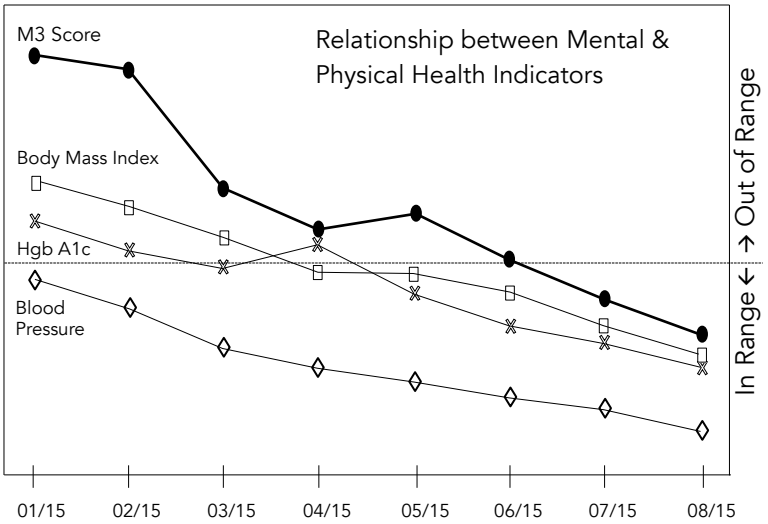
M3 Information

Patient Name: Testing, Teal
Provider Name: Kristie's Testing Account

DOB: 01/01/1987 (Age 28) ID: 364-990-5501-0
Gender: Female
Collected: 12/30/15, 09:35 Reported: 12/30/2015

M3 Score: 50 (High) *Reference Range: 0-32*

M3 Gateway: Positive-Med *Reference Range: Negative*



Observations

Your patient's responses indicate a high level of anxiety symptoms, with panic symptoms being most prevalent, and a mild level of depression. The prevalence of anxiety disorders in people with diabetes is 40%,* and can negatively impact diabetes-related outcomes by:

- Symptoms of hypoglycemia and of anxiety overlap and can be hard to differentiate the cause
- Needle- and lancet-related anxiety triggers anticipatory anxiety and impairs self-management
- Anxiety related to fear of becoming hypoglycemic results in some people maintaining a higher glucose level for a "buffer zone"

* Grigsby AB, Anderson RJ, Freedland KE, Clouse RE, Lustman PJ. Prevalence of anxiety in adults with diabetes: a systematic review. Journal of Psychosomatic Research 2002;53:105

Diabetes Discussion

Depression in diabetes can be impacted by the stress of the regimen of self-management, concerns about complications, and feeling guilty when diabetes outcomes are unsatisfactory.

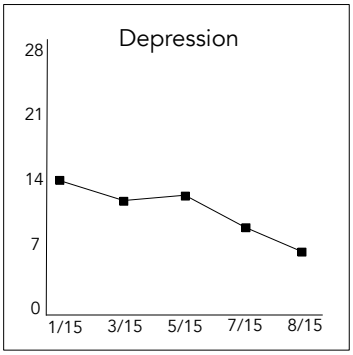
Management

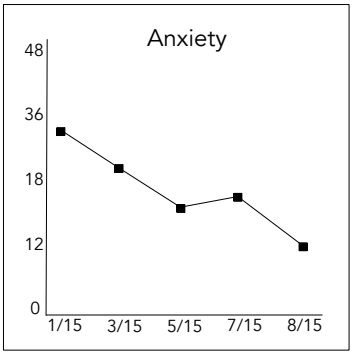
Monitor mood and anxiety symptoms every 2 weeks or as close to this as possible. Target a 50% reduction of M3 Bipolar and Anxiety Subscores over 4 to 8 weeks, with a long term goal of Bipolar Subscore <3 and the Anxiety Subscore ≤10.

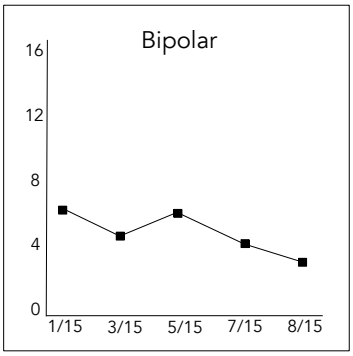
Bipolar symptoms are best managed with atypical antipsychotics in the short term, and with lithium or divalproex for maintenance. Judicious use of non-benzodiazepine sedative hypnotics, or a sedating antipsychotic to ensure adequate sleep is essential. When such patients cannot be relied on to adhere to the treatment, referral to a specialist is essential.

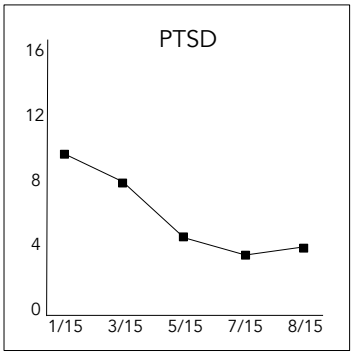
Anxiety-targeted (CBT or interpersonal) psychotherapy and biological rhythm therapy are two highly useful adjuncts.

Subscores

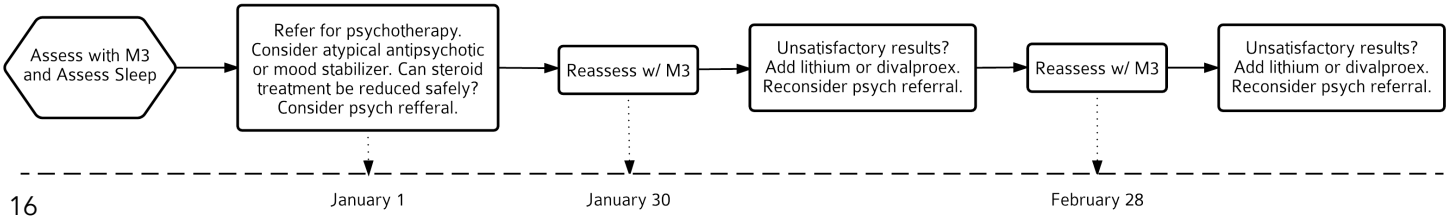








Bipolar Treatment Pathway



Getting Reimbursed

The information provided below is for your convenience and is not intended as specific coding advice.

For many providers, the M3 assessment has been eligible for reimbursement under the three most commonly reimbursed behavioral health assessment procedures codes – 99420, 96103 and G0444. These codes may not be accepted by all payers, so check with your coding/legal experts. Success in obtaining reimbursement requires use of the appropriate billing (CPT or HCPS) code, diagnostic code (ICD-9) and, in some cases, an appropriate modifier.

Payer	CPT Code	Description	Estimated Reimbursement
Medicare	G0442	Prevention: Screening for alcohol misuse in adults including pregnant women once per year. No coinsurance; no deductible for patient.	$17.36
Medicare	G0443	Prevention: Up to four, 15 minute, brief face-to-face behavioral counseling interventions per year for individuals, including pregnant women, who screen positive for alcohol misuse; No coinsurance; No deductible for patient.	$25.19
Medicare	G0444	Annual depression screening no more than every 12 months.	$17.36
Medicare/ Commercial	96103	Psychological testing (includes a psychodiagnostic assessment of emotionality, intellectual abilities, personality and psychopathology, e.g., MMPI and WAIS), administered by a computer, with qualified health care professional interpretation and report.	$26.55/Varies
Commercial	99408	Alcohol and/or substance (other than tobacco) abuse structured screening (e.g., AUDIT, DAST) and brief intervention (SBI) services; 15 to 30 minutes.	$33.41
Medicare	G0396		$29.42
Commercial	99420	Administration and interpretation of health risk assessment instrument (e.g., health hazard appraisal).	Varies
Medicare	96127	Brief emotional/behavioral assessment (e.g. depression inventory, attention-deficit/hyperactivity disorder [ADHD] scale), with scoring and documentation, per standardized instrument. Up to 4 units can be billed per day.	$7.81 each

Frequently Asked Questions

1. What are Mood Disorders?

Mood disorders are a group of conditions characterized by an individual's loss of control of his or her feelings and customary state of mind.[1] These changes are typically distressing to the individual and his or her family and often impair work or school performance. The particular collection of symptoms that arise may indicate one or more of the following:

- Unipolar Depression
- Bipolar Depression, Hypomania or Mania
- Anxiety Disorders (which include Generalized Anxiety, Panic, Social Anxiety, Simple Phobias, Obsessive-Compulsive Disorder, and Post-traumatic Stress Disorder (PTSD)).

2. What is the Purpose of the M3 Checklist?

The M3 Checklist provides a private, self-rated checklist for potential mood and anxiety symptoms. The checklist responses are quantified and calculated into an individual's percentage risk of suffering from a mental health condition. Then, M3 provides guidance as to potential diagnoses of depression, anxiety-spectrum disorders, bipolar disorder and PTSD. The information provided by the M3 facilitates doctor-patient discussion of relevant mental health issues at their next office visit. The M3 can help patients be aware of their mood discrepancies and direct the clinician toward a more accurate diagnosis. By providing an individualized report, the M3 encourages doctor-patient engagement based on a patient's symptoms.

3. Who can Benefit from Completing the M3 Online?

Anyone 18 years or older may complete the M3 Checklist. Clinicians and health care practices can benefit from the M3 because undiagnosed or poorly treated mood and anxiety disorders can delay or block responses to medical therapies and often result in worse outcomes for comorbid chronic medical conditions, the costs of which double with comorbid behavioral health conditions (and 80% of those excess costs are on the medical side).[3] Within the tight time constraints of a typical office visit, the M3 provides an algorithm for up-to-date, evidence-based treatment of mood and anxiety disorders that might otherwise go untreated.

4. How many Americans Suffer from Mood and Anxiety Disorders?

According to a major 2005 study reported in the New England Journal of Medicine, one out of every six Americans has a diagnosable, moderate to severe mental disorder.[3] Additionally, the Surgeon General's Report on Mental Health in 2000 reported that nearly 75% of all patients who visit a primary care physician have a psychological component to their initial complaint.[4] More

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[1] American Psychiatric Association: Diagnostic and Statisti-cal Manual of Mental Disorders, Fifth Edition. Arlington, VA, American Psychiatric Associa-tion, 2013.

[2] Melek S, Norris D (2008) Chronic Conditions and Comorbid Psychological Disorders. Seattle: Milliman Research Report.

[3] National Survey on Drug Use and Health: Mental Health Findings. (2013). Retrieved September 10, 2015.

[4] Surgeon General's Report on Mental Health, 2000

than 16% of Americans (35 million people) suffer from depression severe enough to warrant treatment at some time in their lives, according to the National Comorbidity Study, sponsored by the National Institutes of Health.[5]

5. What is the Rate of Treatment for Mood and Anxiety Disorder?

Less than half of Americans with a diagnosable mental disorder—nearly 28.9 million people—receive help for their condition, according to the Centers for Disease Control and Prevention.[6]

6. Are Americans Receiving Proper Treatment for Mood/Anxiety Disorders?

In general, no. According to a study by the National Institute of Health, sixty percent of people in treatment for depression do not receive adequate care. The study defines "adequate treatment" as 30 days of an antidepressant or a mood stabilizer in conjunction with four visits to a doctor or at least eight 30-minute psychotherapy sessions with a qualified mental health professional.[7] Many people with other mood or anxiety spectrum disorders are un-, under- or misdiagnosed for their conditions.

7. How Does the M3 Checklist Help Ensure Appropriate Diagnosing?

The M3 Checklist is not designed to diagnose mental illness on its own. Rather, it is meant to elicit symptoms that may indicate a psychiatric illness. Physicians must use the symptoms checklist responses and risk assessment provided as a basis for formulating a diagnosis and treatment.

8. How Often Will Patients Use the M3?

Once they have completed the initial screen, patients who begin medicinal treatment and/or therapy are encouraged to measure their progress on a biweekly basis for the first month and monthly thereafter. The M3 monitors mood adjustments and potential side effects.

9. How Was the M3 Checklist Validated?

A research group from the University of North Carolina, headed by Dr. Bradley Gaynes, conducted a study of 650 patients at the UNC Family Practice Clinic.[8] This study confirmed the validity of the M3 Checklist as a diagnostic tool utilizing the Mini International Neuropsychiatric Interview as a standard.

10. Who Created M3?

The M3 was created by primary collaborators Robert Post, MD, Head of the Bipolar Collaborative Network; Bernard Snyder, MD, Assistant Clinical Professor of Psychiatry at

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[5] Kessler RC, Berglund P, Demler O, et al. The Epidemiology of Major Depressive Disorder: Results From the National Comorbidity Survey Replication (NCS-R). *JAMA*. 2003;289(23):3095-3105. doi:10.1001/jama.289.23.3095.

[6] Kessler RC, Berglund P, Demler O, et al. The Epidemiology of Major Depressive Disorder: Results From the National Comorbidity Survey Replication (NCS-R). JAMA. 2003;289(23):3095-3105. doi:10.1001/jama.289.23.3095.

[7] Wang, P. S., Demler, O., & Kessler, R. C. (2002). Adequacy of Treatment for Serious Mental Illness in the United States. American Journal of Public Health, 92(1), 92–98.

[8] Gaynes BN, DeVeaugh-Geiss J, Weir S, Gu H, MacPherson C, Schulberg HC, Culpepper L, Rubinow DR. Feasibility and diagnostic validity of the M-3 checklist: a brief, self-rated screen for depressive, bipolar, anxiety, and post-traumatic stress disorders in primary care. Ann Fam Med. 2010;8(2):160–9. doi: 10.1370/afm.1092.

Georgetown University; Michael Byer, Director of M3 Information; and Gerald Hurowitz, MD, Assistant Clinical Professor of Psychiatry at Columbia University.

11. Do Other Tools Similar to the M3 Checklist Already Exist?

Several other tests touch on aspects of the M3. To our knowledge, however, the M3 Checklist is the only clinical tool that elicits a patient's self-reported symptoms covering all of the major mood and anxiety disorders. Moreover, it is the only mental health screening this extensive that can be completed in the short span of a typical office visit. It is also the first instrument of its kind that monitors patient improvement and side effects *over the full course of treatment*.

12. Where is the M3 Checklist Available?

The M3 can be found in your LabCorp test catalogue.

13. Can the M3 Assess for Alcohol Use Disorders?

Yes, the M3 provides the clinician the option of adding the Audit-C, a 3-question screen for alcohol. This test can either be administered with the M3 or separately.

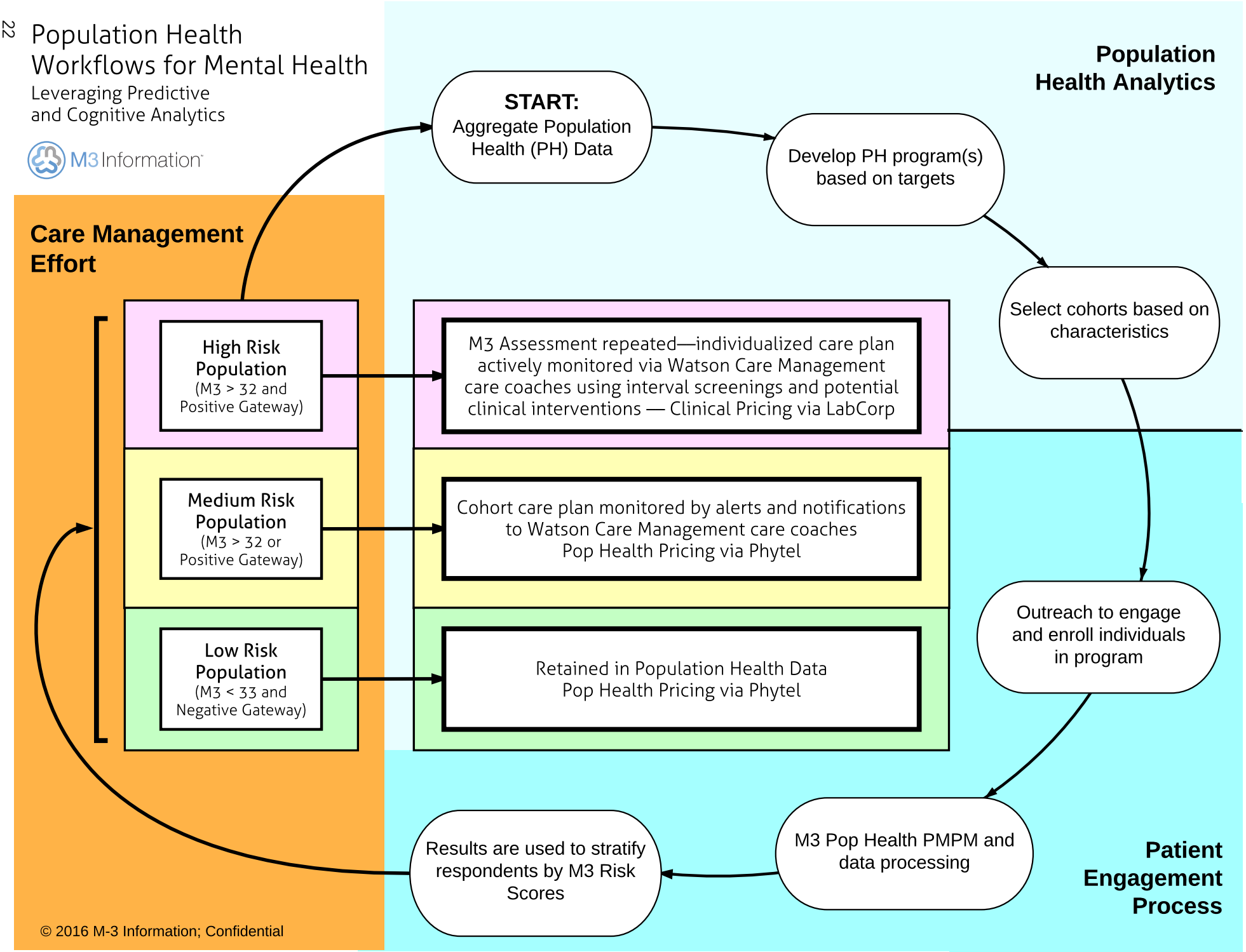
14. What is the Advantage of M3 Powered by LabCorp?

By adding a multi-dimensional assessment that is easily accessible to patients and interoperable with EHR's, LabCorp furthers the integration of physical and mental health. LabCorp can now provide effective and efficient mental health screening to its entire network of patients and clients. The consequences of untreated mood disorders extend well beyond the emotional suffering of the individual. Individuals suffering from depression are two to four times more likely to suffer from a heart attack, and once a heart attack strikes, two to four times more likely to die from it. Recovery from other illnesses — including stroke, diabetes, multiple sclerosis, and cancer — is delayed or hindered among individuals who have suffer from a mental illness. Through LabCorp's extensive network and high standard of care and M3's emphasis on symptom identification and treatment compliance—this collaboration has the potential to create to produce a quantum leap in the quality of mental health treatment, which could lead to significant savings for the healthcare system at large.

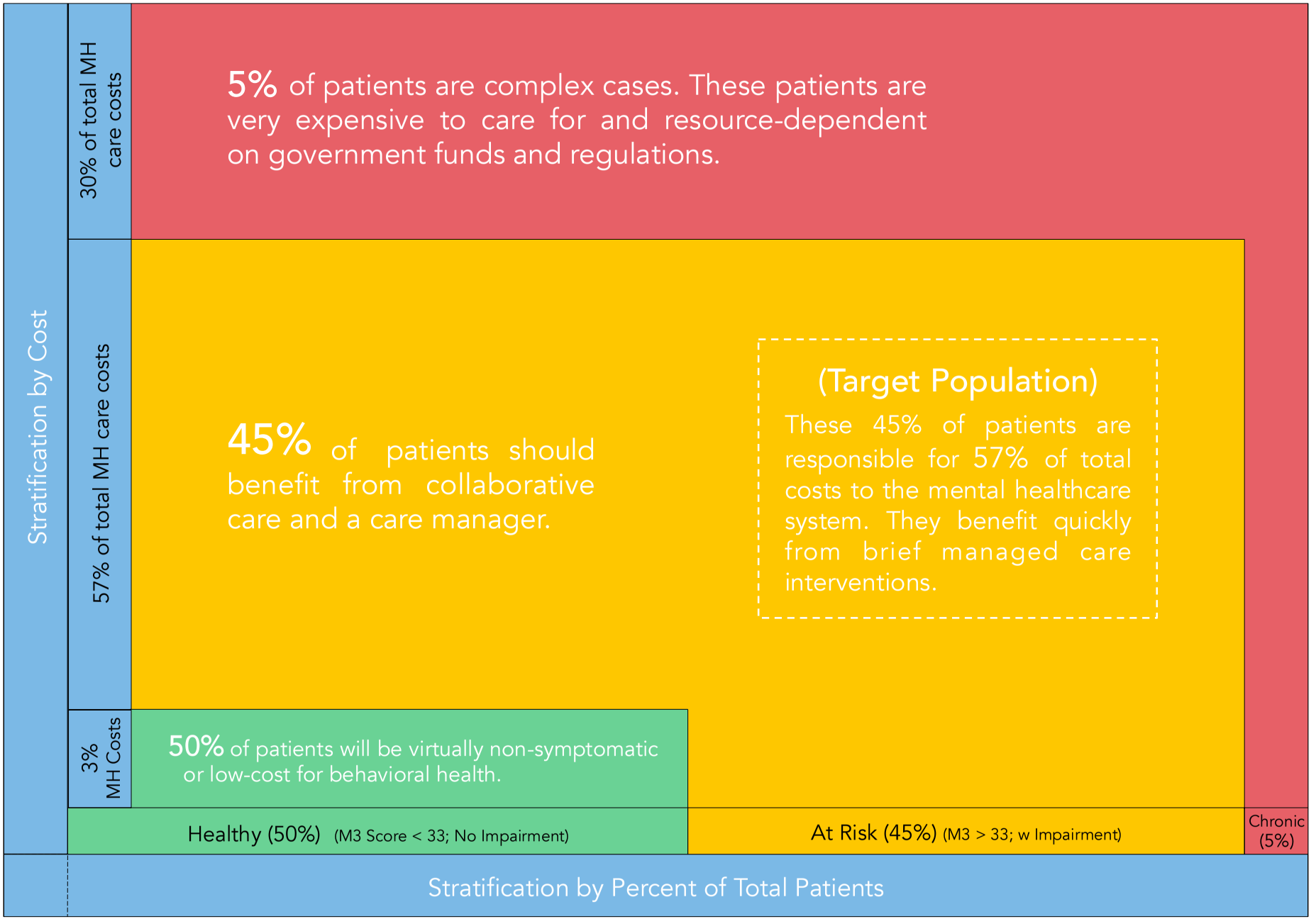
Population Health Workflows for Mental Health

Leveraging Predictive and Cognitive Analytics

M3 Information



M3 Resource Allocation Map for Behavioral Health:
3 Paths to Direct Care-Management Teams



AHRQ (Agency for Healthcare Research and Quality) and HHS (U.S. Department of Health and Human Services) Medical Expenditure Panel Survey. 2011. [September 2013].

*Y-axis not to scale

Success Metrics

There are three ways to measure the effectiveness of outcomes: Clinical, Social, and Utilization metrics.

Clinical	Social	Utilization
• HgbA1C, glucose levels • Rescue utilization, number of breathing attacks, changes in treatment • Weight and BMI changes • Lipid profile changes • CD4 count, viral load, opportunistic infections • Seizure control • Blood pressure and the BH conditions • M3 & PHQ-9 scores and derivatives • Alcoholic drinks consumed per week • Clinical diagnoses determined, etc.	• Occupation status (e.g. average days worked per week) • House status (stable housing/unstable housing, by patient report) • 12-step meeting attendance	• # PCP visits • # MH visits • # 12-step visits • # ED visits • # Hospitalizations • # Hospital days • # ICU admissions • # ICU days • # NH/ALF admissions • # NH/ALF days • # Psych hosp. admissions • # Psych hosp. days • # PHP/IOP days • # 911 calls (self-reported) • Meds. adherence (pill count, pharmacy records) • Cost data on the above

Others:

- Some measure of patient satisfaction or patient experience
- Some measure of clinician satisfaction
- Measures of Functional Impairment

Use Cases for M3 in Primary and Specialty Care Settings

Use Case	Logic	How Often to Administer
Annual Physical	Annual review to see if there is a problem	Once a year unless there are signs during the year
Monitoring those in therapy or receiving medication	Monitor progress to adjust treatment to improve outcomes	There are 35 million patients receiving mood medication and all should be monitored on renewal (4 times a year / patient)
As Part of Hospital Readmission Efforts	Mental illness increases the chances of readmissions	Mental illness is responsible for up to 20% of readmissions accoring to Project Red
Behavioral Health / Employee Assistance	Minimize absenteeism and "presentism"	Every 6 to 12 months routinely
Specialty Settings	High rates of mental illness and physical illness comorbidly	• OB/GYN (Post Partum) • Endocrine (Diabetes, Hypothyroidism) • Cardiology (Myocardial Infarction) • Neurology (Stroke, TBI, Epilepsy) • Etc.

Measurement-Based Care in the Modern Healthcare System:
What the biggest names in mental health care have to say

> *Given that over one-half of primary care patients have a mental or behavioral health diagnosis or symptoms that are significantly disabling…[a] whole person orientation simply cannot be imagined without including the behavioral together with the physical.*

The American Academy of Family Physicians (AAFP)

> *While NAMI supports depression screening and follow-up, we also urge CMS to add a measure or pilot a measure for assessment of a range of behavioral health problems in primary care settings (e.g., psychosis, mood dysregulation, anxiety disorders, PTSD)…*

National Alliance on Mental Illness (NAMI)

> *In addition, until some of these steps are taken, to better address current needs CMS could expand beyond the depression measure to a multi-dimensional mental health measure to capture a larger range of current problems without increasing the burden of measurement.*

Mental Health America (MHA)

> *All positive [depression] screening results should lead to additional assessment that considers severity of depression and comorbid psychological problems (e.g., anxiety, panic attacks, or substance abuse), alternate diagnoses, and medical conditions.*

United States Preventive Services Task Force (USPSTF)

M3 Accolades & Accomplishments

1. The M3 Checklist is available as a "lab test." This is a novel way of delivering patient-reported outcome measure results as structured data into the electronic health record using an HL7-compliant lab data channel.

2. At the Healthcare Information and Management Systems Society's mHealth Summit Venture+ Forum of 2013, M3 Information won in the "Startup" category for addressing recurrent systematic issues.

3. M3 Clinician is Patient Centered Medical Home (PCMH) pre-validated by NCQA to receive autocredit toward NCQA's PCMH 2014 scoring. This autocredit Is transferrable to M3 Clinician's PCMH client practices seeking NCQA's PCMH 2014 Recognition.

Department of Veterans Affairs
Health Services Research & Development Service

Evidence-based Synthesis Program

QUERI

Screening for Post-Traumatic Stress Disorder (PTSD) in Primary Care: A Systematic Review

January 2013

Prepared for:
Department of Veterans Affairs
Veterans Health Administration
Quality Enhancement Research Initiative

Investigators:
Principal Investigator:
Michele Spoont, Ph.D.

My Mood Monitor Checklist (M-3)

The initial validation study of the M-3 was published in 2010.[12] In the only, but well designed, study of the M-3, consecutive patients were approached in a university associated family medicine clinic. All were English speaking and mentally competent to consent to participate. Of those approached, 54% (n=723) agreed to participate. All who filled out the screening form were asked to be interviewed using the MINI by an experienced master's level interviewer blind to screening status. Within one month of screening, 647 were interviewed (89%). Optimal screening thresholds were determined on 80% of the initial cohort and then validated on the remaining 20%. The PTSD base rate was 6.3%. When compared with the MINI, the PTSD module (at the author-chosen cut score of 2) demonstrated a sensitivity of 88% and a specificity of 76%. The positive predictive value was 20% and the negative predictive value was 99%. Positive and negative likelihood ratios were 3.69 and 0.16, respectively. Area under the ROC curve was not reported.

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