Measurement-Based Care (MBC) Training Curriculum

(MBC Training Curriculum for Psychiatrists and Mental Health Professionals) Ahmed Aboraya, MD, Dr. PH

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Important Note: ***This is a summary of the MBC training curriculum designed for psychiatrists and mental health professionals. Full access to the MBC curriculum, including videotaped interviews, is available in Dr. Aboraya's SCIP Manual.***

Manual for the Standard for Clinicians' Interview in Psychiatry (SCIP): A New Assessment Tool for Measurement-Based Care (MBC) and Personalized Medicine in Psychiatry (PMP), **published by Springer.**
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1. Introduction

1. Measurement-based care (MBC) is the systematic administration of symptom rating scales and the use of results to drive clinical decision making at the level of the individual patient [1].

2. Measurement-based care (MBC) has been out-of-reach for practicing psychiatrists and clinicians for decades [2-6].

3. Recent research shows the superiority of MBC compared to usual standard care (USC) in improving patient outcomes [1, 2, 7, 8]. A recent, blind-rater and randomized trial by Guo et al. (2015) showed that MBC is more effective than USC both in achieving response and remission and in reducing the time to response and remission [9]**.**

4. The Standard for Clinicians' Interview in Psychiatry (SCIP) was developed as a measurement-based care tool for clinician use [10-15]. The SCIP is the only instrument that includes 18 clinician-rated scales covering most adult symptom domains: generalized anxiety, obsessions, compulsions, posttraumatic stress, depression, mania, delusions, hallucinations, disorganized thoughts, aggression, negative symptoms, alcohol use, drug use, attention deficit, hyperactivity, anorexia, binge-eating, and bulimia. The SCIP rating scales meet the criteria for MBC because they are efficient, reliable, and valid. They also reflect the decision-making process by which clinicians assess psychiatric disorders [14]. **The SCIP is the only existing tool that allows for the comprehensive implementation of MBC in psychiatric practice with adults.**

5. The Standard for Clinicians' Interview in Psychiatry (SCIP) also includes 15 self-administered scales (completed by the patients while they are waiting to be seen) covering: generalized anxiety, obsessions, compulsions, posttraumatic stress, depression, mania, delusions, hallucinations, alcohol use, drug use, attention deficit, hyperactivity, anorexia, binge-eating, and bulimia.

6. This MBC training curriculum is designed for psychiatrists and mental health professionals such as psychologists, therapists, clinical social workers, counselors, nurses, nurse practitioners, physician assistants, mental health researchers, and others. To ensure that future generations of psychiatrists have adequate training in MBC, a training curriculum for psychiatry residency programs was also developed by the author. **To our knowledge, this is the first comprehensive training curriculum designed specifically for MBC.**

2. Trainer and trainee qualifications

Trainer Qualifications: Even though practicing clinicians (psychiatrists and psychologists) have tremendous experience in assessing and treating patients with mental disorders, most clinicians did not have formal training in MBC. Clinicians and researchers who have been involved in mental health research (such as clinical trials) and who have used scales are "trainers" by definition. Clinicians and researchers who learn and practice the 3 core elements of the MBC training curriculum described below are qualified to be MBC trainers.

Trainee Qualifications: Mental health professionals include psychiatrists, psychiatry residents, clinical psychologists, therapists, clinical social workers, counselors, nurses, nurse practitioners, physician assistants, mental health researchers, and others. At least one year of clinical experience, including interviewing skills, and good knowledge of DSM and ICD criteria are recommended for basic qualifications. Experience may involve a variety of settings: inpatient, outpatient, day hospital, or another setting that cares for patients with mental disorders.

3. MBC Core Element I: MBC didactic lectures

This training curriculum provides the basic elements of MBC through 4 PowerPoint presentations prepared by the author. The titles of the 4 PowerPoint presentations are **(Link):**

1. Measurement-Based Care Basics
2. Assessment of Psychopathology
3. Epidemiological Concepts
4. Measurement-Based Care Tools

The presentations cover topics on measures in psychiatry, psychiatric interview contribution to MBC, descriptive psychopathology, screening of psychopathology, types of psychopathology, principles of assessment of symptoms and signs, evaluation of distress and function, stages of psychiatric diagnosis, advantages of MBC, barriers to MBC, criteria of MBC tools, clinician-administered scales, self-administered scales, and examples of MBC tools. The MBC didactic lectures are the bare minimum knowledge required for MBC training. Trainees are expected to continue to read articles and books on MBC, the science of psychopathology assessment, rating scales, and related topics.

4. Core Element II: MBC Training videos

This training curriculum includes 15 videotaped interviews with real patients who consented to be videotaped for teaching purposes. The videotapes cover most adult psychiatric disorders: generalized anxiety, panic, posttraumatic stress, depression, mania, delusions, hallucinations, alcohol use, drug use, attention deficit, hyperactivity, anorexia, binge-eating, and bulimia.

Trainees can access the MBC videotaped interviews through the SCIP Manual published by Springer and posted in Springer website:

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Trainees are expected to watch the videotapes as follows:

a. Trainees should first watch video #1 (expert rating) and read the SCIP instruction manual.
b. Next, trainees can watch eight videos (videos # 2 to 9) in any sequence. Each video has 3 parts: introduction, patient interview and the expert ratings. Trainees are advised to watch the introduction and the patient interview first. Then, trainees make their own ratings of the interview. Trainees can then compare their own ratings to the expert ratings and explore and explain any differences.
c. Finally, trainees can watch the last six videos (videos #10,11,12,13,14,15) which do not have expert ratings. Trainees are expected to rate the last six videos on their own and discuss with other trainees and trainers.

MBC Training Videos

#	*Topic*	*Video Name*	*Length of the video*	*Interviewer*
1	Expert Rating	1 Video_Expert_Rated	***39 minutes***	***Dr. Aboraya***
2	Panic and depression	2 Video_Panic_Depression_Rated	***16 minutes***	***Dr. Aboraya***
3	ADHD and depression	3 Video_ADHD_Depression_Rated	***37 minutes***	***Dr. Aboraya***
4	Alcohol	4 Video_Alcohol_Rated	***14 minutes***	***Dr. Zafar***
5	PTSD	5 Video_PTSD_Rated	***25 minutes***	***Dr. Hustead***
6	Eating d/o	6 Video_Eating_Rated	***18 minutes***	***Dr. Hustead***
7	Psychosis, mania	7 Video_Psychosis_Mania_Rated	***32 minutes***	***Dr. Aboraya***
8	Anxiety and Panic	8 Video_Anxiety_Panic_Rated	***25 minutes***	***Dr. Aboraya***
9	Narcotic Use and depression	9 Video_Narcotic_Depression_Rated	***48 minutes***	***Dr. Rastgar***
10	Full interview 1	10 Video_Full_Interview	***29 minutes***	***Dr. Hill***
11	Full interview 2	11 Video_Full_Interview	***43 minutes***	***Dr. Chandran***
12	Full interview 3	12 Video_Full_Interview	***51 minutes***	***Dr. Parks***
13	Extra Practice 1	13 Video_Extra_Practice1	***31 minutes***	***Dr. Berry***
14	Extra Practice 2	14 Video_Extra_Practice2	***27 minutes***	***Dr. Elswick***
15	Extra Practice 3	15 Video_Extra_Practice3	***45 minutes***	***Sara Berzingi***

5. MBC Core Element III: MBC Scales

The SCIP scales are the focus of this training curriculum. Clinicians may choose other scales available in the literature such as Positive and Negative Syndrome Scale (PANSS), Brief Psychiatric Rating Scale (BPRS), Hamilton Rating Scale for Depression (HAM-D), Montgomery-Asberg Depression Rating Scale (MADRS), Young Mania Rating Scale (YMRS), Quick Inventory for Depressive Symptomatology (Clinician-Rated) (QIDS-CR), Yale-Brown Obsessive Compulsive Scale (Y-BOCS), Patient Health Questionnaire PHQ-9 for Depression, Clinically Useful Depression Outcome Scale (CUDOS), Clinically Useful Anxiety Outcome Scale (CUXOS), Quick Inventory for Depressive Symptomatology (Self-Report) (QIDS-SR) and other scales.

After learning the three MBC core elements, clinicians are expected to implement the MBC and practice using the scales with their own patients.

6. The Psychiatric Interview Contribution to MBC

The psychiatric interview consists of direct interaction and communication between the patient and the clinician and is the clinician's main source of patient information. Regardless of the interviewer's style or technique, the psychiatric interview is a combination of art and science. **The art of the psychiatric interview** refers to the interviewer's skills with building rapport with the patient and engaging him/her in the therapeutic process. These skills include the interviewer's ability to show empathy, compassion, and sensitivity to the patient, which promotes the patient's trust and comfort with the interviewer. The interviewer's ability to demonstrate that he/she is actively listening to the patient is conveyed by paying attention to the patient's statements and following up on leads provided by the patient. The art of the interview is learned by practice and experience, rather than from strictly reading articles or books.

The science of the psychiatric interview refers to the interviewer's ability to elicit valid and reliable data that can be used for diagnostic, therapeutic, and research purposes. The clinician must balance the need to engage the patient in the therapeutic process and the need to collect diverse data required for these purposes.

Shea articulated seven comprehensive goals of the psychiatric interview, which can be categorized under the rubrics of art and science [16]:

Art of the interview:

1. "To establish a sound engagement of the patient in a therapeutic alliance"
2. "To develop an evolving and compassionate understanding of the patient"
3. "To effect some decrease of anxiety in the patient"
4. "To instill hope and ensure that the client will return for the next appointment"

Science of the interview:

1. "To collect a valid data base"
2. "To develop an assessment from which a tentative diagnosis can be made"
3. "To develop an appropriate disposition and treatment plan"

Measurement-based care (MBC) includes two main components: routine initial assessments, such as using diagnostic interviews and measuring illness severity with rating scales, and the use of measurement to make clinical decisions at the individual level. Even though it might seem that MBC would be considered part of the science of interviewing, the art of conducting a good interview and establishing trust with the patient is crucial to obtaining valid information. The art and science of the interview are often intertwined.

The Components of Psychiatric Assessment

The process of psychiatric assessment has three components: the psychiatric interview, the etiological search, and the disorder classification.

A. The psychiatric interview (dimensional component): This is the direct psychiatric interview with the patient, which produces a broad range of clinical data such as chief complaints, the history of present illness, past psychiatric history, medical history, mental status examination, and other relevant data. The individual symptoms, present and past, are evaluated for their presence or absence and form the dimensions of psychopathology. To be useful to the clinician, the wealth of information collected will need to be organized through the etiological search and disease classification.

B. Etiological search (etiological component): As the clinician conducts the interview, he/she explores the potential causes of symptoms. If the patient reports depression and drinks alcohol, the clinician should explore whether depressed mood is secondary to alcohol use or whether the patient has a dual diagnosis (e.g. alcohol use disorder and major depression). For example, a patient may have had no depressive symptoms prior to alcohol use but started to feel depressed after the alcohol use began. The same patient may stop drinking alcohol and find that his mood returns back to normal. This temporal sequence indicates alcohol-induced depression. Another patient may have had months of sobriety (no alcohol or drug abuse), during which he felt depressed, hopeless, suicidal, and met the criteria of major depression, then started to drink alcohol to cope with his depression. This patient may have a primary mood disorder and alcohol use disorder (dual diagnoses). Since medical conditions affect psychiatric presentations, a psychiatrist uses his or her medical knowledge and clinical skills to decide whether any medical conditions might have caused or exacerbated psychiatric symptoms. The

clinician may need to order certain labs, such as a urine drug screen or neuroimaging, to confirm or refute an etiological factor.

C. Disorder classification (categorical component): The clinician evaluates whether a symptom or cluster of symptoms causes significant distress (Table 1) or functional impairment (Table 2). Finally, the clinician utilizes all of the information available to decide whether the patient meets the criteria for a psychiatric disorder(s) based on the Diagnostic and Statistical Manual (DSM) or International Classification of Disease (ICD) criteria. Once a diagnosis is established, a treatment plan is formulated for the patient.

Table 1 (DISTRESS

EVALUATION)

A symptom or cluster of symptoms can cause distress to the patient as follows:

CODES:

0 = No distress

1 = Some distress, but manageable

2 = Significant distress: the patient is distressed, upset or bothered by symptom(s) more than half the time

Table 2

(FUNCTION IMPAIRMENT EVALUATION)

A symptom or a cluster of symptoms can affect the functioning of the patient as follows:

CODES:

0 = No impairment in social or occupational activities

1 = Some impairment in social and occupational activities, but many activities are still intact

2 = Significant impairment of most or all social and occupational activities

Phases of the Psychiatric Interview

A typical psychiatric interview conducted by psychiatrists and other mental health clinicians has three phases.

Phase one (5-10 minutes): The clinician greets the patient, introduces himself/herself and asks the patient basic demographic questions (age, marital status, education, occupation and living arrangements). The clinician asks

about the chief complaint(s) and allows the patient to take the lead by describing the history of the present illness and any recent stressor(s). The clinician observes and listens to the patient, allowing for good rapport to be established, and may write brief notes. The clinician gives attention to the patient in order to maintain good rapport. Questions in this phase tend to be open-ended to allow the patient to talk freely and the interviewer to listen.

Phase two (15-25 minutes): At the beginning of this phase, the clinician should have a good idea about the patient's main problem(s). The clinician takes the lead and asks screening questions covering the main domains of psychopathology. The screening questions cover anxiety, mood, psychosis, alcohol, drugs, somatoform disorders, eating, attention, and hyperactivity. There is no specific order for the screening questions. The clinician may choose the order of questions that allows the interview to flow smoothly and maintains a good rapport with the patient. For example, if the patient's main symptom is depressed mood, it is wise to start with the mood questions and inquire more about anhedonia, elevated mood and mood swings. Then the clinician can screen for anxiety and psychosis. Another example: if the patient's main problem is alcohol or drug use, it is wise to start with the alcohol and drug questions and get relevant information as to the extent of the substance use problem. The clinician inquires about a time when the patient was sober for a reasonable amount of time and screens for anxiety, mood and psychosis during the time of sobriety. Another example: if the patient starts the interview with bizarre statements about aliens from Mars invading earth and appears disorganized, the clinician may inquire about delusions and hallucinations. For this patient, the clinician may skip anxiety and attention deficit questions because the patient is too disorganized to provide any valid information. In summary, there are no rules or specific order to be followed in this phase. The clinician utilizes his/her clinical skills, aided by the screening questions, to detect any abnormal psychopathology. It is important to remember that the screening questions represent a review of the main psychopathological domains of adults. It is also important for the clinician not to miss any important areas of psychopathology in this phase. If a patient presents with depressive symptoms and the clinician does not ask about history of manic episodes, the interview is flawed and may result in misdiagnosis and mistreatment.

Phase three (10-15 minutes): By this phase of the interview, the clinician should have determined potential diagnostic possibilities. The clinician asks specific closed-ended questions to test whether the patient meets the criteria of a specific disorder, a process called pattern-matching or hypothesis testing [17]. During this phase, the clinician determines whether the symptoms cause significant distress or impairment of function. Finally, the clinician determines whether the patient does or does not have a psychiatric disorder(s) and initiates treatment planning.

It is important to know that the sequence of three phases described above does not have to be followed in that order. Many psychiatrists like to start by asking patients about the chief complaint(s) and history of

present illness at the beginning of the interview and the demographic information comes later as the interview proceeds. Many psychiatrists do phases two and three together. For example, if the patient describes depressed mood, the interviewer follows up by asking about depressive symptoms (anhedonia, hopelessness, suicidal thoughts and plans, etc.). Similarly, if the patient reports abuse, the interviewer asks about posttraumatic stress symptoms (bad dreams, nightmares, flashbacks, etc.). The technique of conducting phases two and three simultaneously makes the interview proceed smoothly with a natural progression and helps to maintain good rapport with the patient. Finally, the interviewer has a lot of freedom as long as he/she conducts an artful and skillful interview that results in valid information, accurate diagnoses and ultimately proper treatment.

Inputs and Outputs of the Psychiatric Interview

Inputs result from direct questioning of the patient and can be summarized as:

1. Demographic data and social history.
2. History of present illness and past psychiatric history.
3. History of suicide and self-injurious behavior.
4. Alcohol and drug history.
5. Allergies, medications.
6. Medical and family history.

Outputs are the result of clinician interpretation of the data collected and can be summarized as:

1. Mental status examination.
2. Evaluation of past episodes.
3. Provisional diagnosis and differential diagnosis.
4. Treatment plan.

Mental Status Examination:

Mental status examination (MSE) is the evaluation of the patient's current state of the cognitive and emotional function and is evaluated throughout the entire interview [17]. Table 3 has the definitions and examples of the main items of the MSE.

Table 3

MSE item	Definition and examples
Appearance	Kempt, unkempt, alert, drowsy, intoxicated, other
Behavior	Cooperative, defensive, guarded, angry, suspicious, calm, tense, pacing, agitated, other
Motor activities	Posture: erect, rigid, relaxed, stooped over Gait: normal, shuffling gait, other Abnormal movements: tremors, tics, mannerism, twitches, stereotyped behavior, catatonia, rigidity, other
Speech	Rate: normal, slowed, pressured, monotonous Volume: normal, high, low Content: clear, slurred, coherent, incoherent, rambling, echolalia (repetition of a word or sentence just spoken by another person), stuttering, mute, clanging, distractible, other
Mood	The current state of feeling manifested by thoughts or actions. A patient may express feeling depressed. Another patient may appear very sad without expressing sadness in words. A mood can be happy, sad, irritable, labile (changing during the day or from day to day), stable, expansive, other.
Affect	Affect is the patient's external facial expression of the mood. Affect can be appropriate or inappropriate. Affect range can be full, constricted, blunted or flat.
Thought process	Goal-oriented. Circumstantiality: excessive details that may be relevant or irrelevant. Looseness of association: speech shifts to different topics, related or unrelated. Tangentiality: reply to a question is related in some distant way or totally unrelated. Thought blocking: sudden cessation of thoughts. Perseveration: repetition of a meaningless word or sentence. Other.

Thought content	Delusions: thoughts characterized by being false, firm (held with conviction) and fixed (held regardless of counter evidence). Types of delusions: paranoid, grandiose, somatic, bizarre and others. Obsession: an intrusive thought or image that does not make sense and keeps coming back to the mind. Compulsion: repeating things over and over that can be actions (e.g. checking doors) or mental (e.g. repeating numbers). Suicidal thought: with the intent to die. Self-harm thought: without the intent to die. Homicidal thoughts toward others.
Perception	Hallucinations: subjective perception without stimuli and can be auditory, visual, olfactory, gustatory or tactile.

Cognitive function	Orientation: time, place, person, situation. Attention: e.g. counting backward by ones from 57. Calculation: e.g. subtracting 7 from 100 or 3 from 20. General information: e.g. names of the presidents. Abstraction: interpretation of proverbs: e.g. how are apple and orange alike? Memory: Immediate memory: registration of information (e.g. repeating 3 names). Short term memory: e.g. 5 minutes recall. Long term memory: recalling events of the past several days, months or years.
Insight	Self-understanding of the illness and need for treatment
Judgment	Patient's ability to make rational decisions

The mental status examination (MSE) contributes to MBC. For example: a 25-year-old male patient may present with depressed symptoms and inform the interviewer he has been feeling sad most of the time for the

past month. The MSE describes current depressed mood. This information will be reflected in the current episode of depression and rated 2 (depression most of the time).

Evaluation of Past Episodes:

Depending on the clinical presentation of the patient, the clinician may decide to explore past episodes of emotional problems. For the same 25-year-old male patient described above, the clinician may go beyond the current state and episode of depression and explore other episodes of depression in the past. The clinician should inquire about past episodes of mania. The same patient may tell the interviewer that last year he was feeling extremely happy, euphoric and on top of the world and that the feeling lasted 10 days, during which he was highly energetic and not sleeping. The interviewer then evaluates that manic episode a year ago and may rate a past episode of euphoric mood as 2 (euphoric mood most of the time).

Approaches to Psychiatric Diagnoses:

To make a psychiatric diagnosis, the clinician may follow one of three approaches described in the literature: the "top-down" approach, "bottom-up" approach and "Bottom First Then Top" (BFTT) approach [13]. **In the top-down approach,** the clinician has a strong working knowledge of the diagnostic criteria of main psychiatric disorders according to the DSM. The clinician also knows the necessary criteria to make a specific diagnosis. If the patient denies feeling sad and denies anhedonia, the clinician knows in advance that the patient will not meet the criteria for a major depressive episode according to the DSM-5 criteria. In a research setting, the top-down approach is exemplified by the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I); questions are grouped by diagnosis and criteria; within each diagnosis, if a required criterion is not met, the interviewer skips the remaining questions assessing the other criteria for that diagnosis. For example, if the patient denies depressed mood and anhedonia, the SCID-I instructs the interviewer to skip the remaining questions related to the diagnosis of major depression [18]. The top-down approach leads to efficient interviews by focusing on diagnoses, facilitates clinical communication among providers and improves reliability. On the other hand, diagnostic interviews based upon the top-down approach tend to be biased toward preconceived diagnostic criteria, lack validity, may result in loss of important information and need to be updated every time the diagnostic system changes.

In the bottom-up approach, the clinician focuses on complete and comprehensive assessment of symptoms, regardless of the diagnosis. After the assessment of symptoms, the clinician considers a diagnosis based upon the positive symptoms and other relevant data. In a research setting, the bottom-up approach is

exemplified by the Schedules for Clinical Assessment in Neuropsychiatry (SCAN); the interview is based upon a comprehensive assessment of symptoms, while being agnostic to diagnosis [19]. After symptom assessment, algorithms are used to make psychiatric diagnoses. The bottom-up approach has the advantages of avoiding biases toward preconceived diagnoses and can survive diagnostic criteria changes. However, the bottom-up approach leads to lengthy interviews and may lack the precision needed to fulfill diagnostic criteria [20].

Seasoned and competent psychiatrists generally use the "**Bottom First Then Top" (BFTT)** approach in diagnostic assessment. An ideal psychiatric diagnostic interview starts with a bottom-up approach: the psychiatrist establishes rapport with the patient and inquires about chief complaint(s) and history of the present illness. The patient is initially allowed to take the lead to express feelings, thoughts, current stressors and other problems. The psychiatrist continues the bottom-up approach by obtaining a detailed life history, screening for symptoms, examining mental status, exploring potential causes of symptoms and utilizing records and informants as needed. As the psychiatrist narrows down the potential differential diagnoses, the top-down approach takes over the interview process. The psychiatrist checks the symptoms and decides whether or not the patient meets the diagnostic criteria of a disorder. The psychiatric interview component and the etiological component are mainly bottom-up approaches. The disorders classification component is mainly a top-down approach. ***The motto of the BFTT approach is to listen to and understand the patient first, and then focus on making a diagnosis.*** Another term proposed to describe this approach is "**Patient First Then Clinician" (PFTC)** highlighting the importance of listening and understanding the patient first before making a diagnosis.

To summarize, the journey of psychiatric interviewing starts with greeting the patient and ends with a provisional diagnosis and initiation of a treatment plan. The recent information technology revolution has directly impacted psychiatric interviewing. More information is requested and expected by insurers, accreditation agencies, patients, and the public. To ease the burden on clinicians, self-rating scales that can be completed by patients have been developed for use in a variety of settings. The emergence of MBC, the need to use reliable measures to make decisions at the individual level, and the need for inter-provider collaboration now require the collection of more patient information. The clinician is tasked with the challenge of balancing the need to engage the patient in the therapeutic process (the art of interviewing) and the need to collect more data (the science of interviewing) required for clinical, research and billing purposes.

7. Principles of rating symptoms and signs of mental disorders

Coding Symptoms of Psychopathology:

First, questions are asked regarding a specific period (past week, past month, past year, etc.). The interviewer decides on the specific time frame for the questions and modules. The interviewer may choose the

past month when evaluating mood, the past year when evaluating alcohol use, and so on. The general principle is to code 0 for absent or subclinical symptoms.

Many questions have ratings of 0 (absent or subclinical symptom) and 1 (clinical symptoms):

Example: PANIC ATTACKS WITHOUT PHOBIA	kappa
Have you gotten suddenly anxious and frightened for a short period of time (up to 60 minutes)? **During that time, did you feel that your heart was racing or pounding, or did you start shaking or sweating, or did you feel you were choking?** 0 Patient had no panic attacks. 1 Patient had panic attacks.	0.92

Some questions have the following codes:

0 = Absent or non-significant.

1 = A symptom is present less than 50% of the time or less than 50% of times.

The mere presence of a symptom does not qualify for a rating of one. To receive a rating of one, a symptom must be more than what a normal person would experience, or cause at least some distress, or force the patient to seek professional help.

2 = The same as a rating of one. In addition, the symptom is present more than 50% of the time or more than 50% of times.

Example: Hopelessness	Kappa
Have you felt hopeless about your future? 0 Patient has no feelings of hopelessness. 1 Patient feels hopeless less than half the time. 2 Patient feels hopeless more than half the time.	0.82

Some questions have possible responses of 0 (absent or subclinical), 1, 2 and 3 to allow for severity measurement and to generate a dimensional score when added to responses from other questions.

Example: Frequency of auditory hallucinations	kappa
How often do you hear any noises (like music, whispering sounds) or voices talking to you when there is no one around? 0 No auditory hallucination 1 1-4 days / month 2 5-15 days / month 3 >15 days / month	0.93

Coding Signs of psychopathology:

The SCIP interview includes observational items to assess for signs of mental illness. The interviewer listens to the patient, asks him/her questions, examines the patient, and rates the observational items.

Some observational items have questions. For example, the interviewer observes the patient's speech and can ask about symptom of pressured speech over a specific period of time.

Example: Pressured speech	kappa
Have you been talking faster than usual during that time (examples: people said that they were unable to understand you because you were speaking too fast or you felt a pressure to continue talking)? 0 Patient has normal speech. 1 Patient has pressured speech less than half the time. 2 Patient has pressured speech more than half the time.	0.72

Some observational items require active interviewer observation, as in catatonia. The interviewer observes the patient, tests for mobility, rigidity, catalepsy and waxy flexibility, and rates catatonia items.

Catalepsy: Patients maintain any odd or unusual posture the interviewer places them in.

0 Patient has no catalepsy.

1 Patient has catalepsy.

Waxy flexibility: Patient maintains a limb in a certain position. When the interviewer moves the limb, the limb feels as if it were made of wax.

0 Patient has no waxy flexibility.

1 Patient has waxy flexibility.

Some observational items are described and observed.

Flight of Ideas (a combination of pressured speech and derailment):	kappa
0 Patient has no flight of ideas. 1 Patient has flight of ideas.	0.62

Observed hallucinations:	Kappa
0 Patient has not been observed talking to self. 1 Patient has been observed talking to self, talking to a mirror, or running a conversation with unseen person.	0.55

Derailment (looseness of association):	**Kappa**
0 Normal speech. 1 Patient has derailment (looseness of association): speech shifts to different topics, related or unrelated, but eventually comes back to the main topic. 2 Patient has severe derailment (looseness of association): speech shifts to different topics, mostly unrelated and never comes back to main topic.	**0.65**

Tangentiality:		**Kappa**
0	Normal speech.	**0.57**
1	Patient has some tangentiality: replying to a question is related in some distant way.	
2	Patient has severe tangentiality: replying to a question is totally unrelated.	

Incoherent speech		**Kappa**
0	Normal speech.	**0.41**
1	Patient has incoherent speech: each sentence by itself is valid and makes sense. However, the first sentence is unrelated to the next sentence.	

General Notes on Ratings:

a. Do not over-rate symptoms. If the symptom is present and the clinician is not sure whether to rate 1 or 2, the code should be 1. If the clinician decides that the patient has a concentration problem, but he/she forgot to ask about the duration of the problem, the code should be 1 and not 2.

b. A symptom rated 1 will qualify for diagnostic criteria.

c. If the clinician is not sure whether the symptom is present after a thorough questioning, the clinician can make a judgment call about whether the symptom is present or absent. If the clinician does not feel comfortable making a decision, he/she can choose the rating of "." for "Not Sure" .

Special Notes on Delusions:

Delusions are ideas with the following criteria:

a. The idea is false based on what most people of the same culture know (false idea).

b. The patient is convinced that the idea is true (firm idea).

c. If the patient is provided with evidence that contradicts the idea, the patient is still convinced that the idea is true (fixed idea).

If the patient has paranoid delusions less than half the time, the rating is one. If the patient has paranoid delusions more than half the time, the rating is two. Typically, a patient with delusions goes through three phases:

a. Initial partial delusions: The initial transition from normal thoughts to delusional thoughts. The delusional thoughts gradually occupy some of the patient's time. As time goes on without treatment, the delusional thoughts occupy more of the patient's time.

b. Full delusions: The delusions occupy most or the entirety of a patient's time. Typically, when patients are admitted to hospitals, they have full delusions.

c. Residual partial delusions: As the patient receives antipsychotic medications and improves, the patient starts to question his/her delusional thoughts. The delusional thoughts occupy less and less of the patient's time. Eventually, the delusional thoughts disappear.

8. Principles of creating reliable questions and clinically useful dimensions of psychopathology.

Principles of Designing the SCIP Questions:

As in the case of medicine, modern psychiatric diagnosis depends on the assessment of psychopathological symptoms and signs. The SCIP interview reflects a state-of-the-art approach to assessment and includes questions designed to evaluate symptoms and observational items for the signs of mental illness. **The SCIP questions were designed with four principles:**

a. Questions are worded to be simple and easily understood by patients regardless of their intellectual level.

b. Questions simulate what seasoned psychiatrists usually ask.

c. The meaning of the questions and examples are embedded in the questions so that each question

and the response reflect the criterion being examined.

d. Responses to questions have the fewest possible subcategories to reflect the clinical significance of the symptom, **following the principle of least subcategories of symptom severity (LSSS).** The fewer subcategories reflecting symptom severity, the more efficient the interview, and the more likely that clinicians will use the questions.

For example, one criterion for a major depressive episode is "diminished ability to think or concentrate." Here is the SCIP question and possible responses:

Example: Loss of concentration	kappa
Have you found that your concentration has decreased and you are unable to complete a task (e.g. at work, reading an article, reading a book, or watching a movie), even though you were able to do that before? 0 Patient has no concentration problems. 1 Patient has difficulty concentrating less than half the time. 2 Patient has difficulty concentrating more than half the time	0.80

The question and responses explain the criterion, give examples of impaired concentration, and measure the severity of the problem (less than half the time or more than half the time).

Principles of Designing Clinically Useful Psychological Dimensions:

The SCIP study measured Kappa for 200 psychological symptoms and signs and 30 SCIP screening questions. Based upon reliable SCIP items, the SCIP dimensions were created. The SCIP questions were designed so that dimensional measures can be generated easily whether the interviewer is using the paper version or the SCIP software. ***The SCIP method of creating reliable and clinically relevant dimensions was based upon the following 9 principles:***

1. **Reliable dimensions require reliable symptoms and signs.** Psychological symptoms and signs are the building blocks of psychological dimensions. The SCIP study confirmed the hypothesis that reliable psychological dimensions require reliable symptoms and signs. The absence of valid and reliable symptoms was the main limiting factor in prior attempts to create dimensional models [21]. The SCIP reliable symptoms and signs removed this major obstacle. Based upon reliable SCIP items, the SCIP dimensions were created and have evidenced reliability [12].
2. **Each item is given one score, regardless of the number of questions exploring the item.**

Typically, a SCIP item is assessed with one question. The question has embedded examples, if needed, so that each question and the response reflect the criterion being examined. Sometimes, one criterion needs to be assessed using several questions. In that case, even if the patient responds yes to several questions evaluating the criterion, the score is the same as if the criterion was measured with one question.

For example, the symptom of suicidal ideation can be assessed by the following eight questions:

Have you had thoughts of suicide?

Have you had thoughts of ending your life?

Have you had thoughts about killing yourself?

Have you had thoughts of wishing to be dead?

Have you had thoughts that life is not worth living?

Have you had thoughts that you would not care if you didn't wake in the morning?

Have you had thoughts the world is better off without you?

Have you had thoughts you would be better off dead?

If the patient responds yes to the first four questions, these questions still only reflect one criterion: suicidal ideation.

3. **Dimensions are built upon significant symptoms and signs.** Absent or mild symptoms are coded "0" in the SCIP.

4. **The principle of least subcategories of symptom severity (LSSS):** Symptom severity subcategories should be used sparingly and reflect the symptom's clinical significance. The symptom of panic attacks can be assessed as absent or present (0, 1). The symptom of poor concentration in a patient with depression can be assessed as absent, less than half the time and more than half the time (0, 1, 2). It is important to know how much of the time the concentration problem is present, because it may affect the patient's functioning at work or in school. The fewer subcategories reflecting symptom severity, the more efficient the interview, and the more likely that

clinicians will use the questions. If there are too many unnecessary subcategories of symptoms severity, clinically useful dimensions cannot be created. For example, the Positive and Negative Syndrome Scale (PANSS) has seven subcategories: absent, minimal, mild, moderate, moderate severe, severe and extreme [22]. For clinicians, the differences between minimal and mild, moderate and moderate severe, and severe and extreme are not useful or relevant. Not surprisingly, psychiatrists do not use the PANSS in clinical settings [23].

5. **The frequency of symptoms:** The more frequent the symptom, the higher the score on the item. A good example is the frequency of auditory hallucinations:

   How often do you hear noises (like music, whispering sounds) or voices talking to you when there is no one around?

   0 Patient has no auditory hallucinations.

   1 Patient has auditory hallucinations (1-4 days / month).

   2 Patient has auditory hallucinations (5-15 days / month).

   3 Patient has auditory hallucinations (>15 days / month).

6. **The duration of symptoms:** The longer the duration of a symptom, the higher the score on the item.

   Do you have an intrusive thought or image that does not make sense and keeps coming back to your mind even when you try not to have the thought or the image?

   0 Patient has no obsessions.

   1 Patient has obsessions less than 1 hour/day.

   2 Patient has obsessions 1-4 hours/day.

   3 Patient has obsessions more than 4 hours/day.

7. **The recency of a symptom:** More recent behavior has a higher score than temporally distant behavior.

   For example, in response to the timing of the suicidal ideation question:

   Have you ever had thoughts of suicide?

   0 Patient has never had suicidal ideation.

   1 Patient had suicidal ideation in past, but not in the past three months.

   2 Patient had suicidal ideation during the past three months <u>(excluding past week).</u>

3 Patient had suicidal ideation during the past week.

Suicidal thoughts during the past week receive a score of 3, past three months receive a score of 2, and if the patient has had suicidal thoughts before the past three months, this receives a score of 1. A patient with suicidal thoughts during the past week, past 3 months and past year receives a score of 6.

8. **The quality of symptoms:** Certain qualities of some symptoms increase the score on the item. For example, auditory hallucination with and without commands.

   Do you hear noises (like music, whispering sounds) or voices talking to you when there is no one around?

   0 Patient has no auditory hallucinations.

   1 Patient has auditory hallucinations.

   2 Patient has auditory hallucinations with command.

9. **Summation Principle:** The total score of a dimension is the summation of symptom presence, recency, frequency, duration and quality.

9. Evaluation of Episodes

In psychiatry, an episode is a significant symptom or a cluster of symptoms occurring during a specific period of time during the course of a mental disorder. For example, a patient may have an episode of auditory hallucinations that lasted 3 months until the patient responded to clozapine. Another patient may have an episode of binge eating that lasted 5 months. More often, patients have episodes of a group of symptoms occurring together during a specific period of time. A patient may have an episode of depression (depressed mood with anhedonia, psychomotor retardation, hopelessness, poor concentration and suicidal thoughts) that lasted 2 months until the antidepressant medication took effect to alleviate the depression. To delineate one episode from another, a 2-month or longer interval without significant symptoms have been recommended [24]. The DSM-5 followed the 2-month interval of absence of significant symptoms as demonstrated in dysthymia diagnostic criteria ("the individual has never been without the symptoms in Criteria A and B for more than 2 months at a time") [25]. Depending on the timing of the episode, the following main episodes have been described:

1. **Present episode (PE):** is measured from the onset of significant symptom(s) to the present time. The present episode may vary from one day or a few days to several months or years, as long as no symptom-free intervals have lasted 2 months or more. A patient may have had a recent

depressive episode that started 2 weeks ago until now. Another patient may have had a depressive episode for the last 3 years.

2. **Representative episode (RE):** A patient may have had several depressive or manic episodes in the past and the interviewer may choose to evaluate one representative episode. The clinician decides on the type of episode to serve diagnostic and clinical purposes. If a patient is presenting with a recent depressive episode, the clinician may choose another depressive episode in the past as a representative episode to use when comparing the severity of depression between the two periods. For another patient presenting with a recent depressive episode, the clinician may choose a manic episode in the past as representative episode to confirm the diagnosis of bipolar disorder. The clinician can decide on the duration of the RE (e.g., a week if evaluating a manic episode, a two-week period if evaluating a depressive episode, or a month if evaluating a psychotic episode…etc.).
3. **Present State (PS):** The present state describes the psychopathology during the month before the interview and has been an essential part of the Present State Examination (PSE) developed by professor John Wing [19, 26-29]. If the present episode is longer than a month, the present state is the most recent part of the present episode [24]. The clinician makes a clinical judgment whether to use the PS or the PE for a particular patient, depending on the goals of the interview.

Finally, the diagnostic criteria of mental disorders may define the length of the period evaluated such as:

Manic episode: the usual period is one week or longer.
Major depressive episode: the usual period is 2 weeks or longer.
Eating disorders: the usual period is 3 months or longer.
Schizophrenia: the usual period is 6 months or longer.
Alcohol and drug disorders: the usual period is 12 months or longer.
Dysthymia: the usual period is 2 years or longer.

10. Guidelines for Timing and Frequency of Using the MBC Scales

Diagnosis	Scale(s)	When to administer the scale(s):
Generalized anxiety	SCIP anxiety scale	**<u>Outpatient Setting (Self-Administered Scales):</u>** 1. Baseline or first assessment opportunity. 2. Every 6 months. 3. Each time the patient starts a new anti-anxiety medication. 4. Repeat 6-8 weeks from starting a new anti-anxiety medication. Typically, that will be the next outpatient scheduled visit. 5. When there is a change in mental status or the clinician thinks there is a need to repeat the anxiety scale.
Major depression	SCIP depression scale	**<u>Outpatient Setting (Self-Administered Scales):</u>** 1. Baseline or first assessment opportunity. 2. Every 6 months. 3. Each time the patient starts a new antidepressant. 4. Repeat 6-8 weeks from starting a new anti-depressant medication. Typically, that will be the next outpatient scheduled visit. 5.When there is a change in mental status or the clinician thinks there is a need to repeat the depression scale. **<u>Inpatient or Day Hospital Setting:</u>** 1. Upon admission to inpatient or day hospital. 2. Upon discharge from inpatient or day hospital.

Bipolar disorder	SCIP mania scale	**<u>Outpatient Setting (Self-Administered Scales):</u>** 1. Baseline or first assessment opportunity. 2. Every 6 months. 3. Each time the patient starts a mood stabilizer. 4. Repeat 6-8 weeks from starting a new mood stabilizer. Typically, that will be the next outpatient scheduled visit. 5. When there is a change in mental status or the clinician thinks there is a need to repeat the mania scale. **<u>Inpatient or Day Hospital Setting:</u>** 1.Upon admission to inpatient or day hospital. 2. Upon discharge from inpatient or day hospital.
Obsessive compulsive disorder (OCD)	SCIP OCD scale	**<u>Outpatient Setting (Self-Administered Scales):</u>** 1. Baseline or first assessment opportunity. 2. Every 6 months. 3. Each time the patient starts a new medication for OCD. 4. Repeat 6-8 weeks from starting a new medication for OCD. Typically, that will be the next outpatient scheduled visit. 5. When there is a change in mental status or the clinician thinks there is a need to repeat the OCD scale.
Posttraumatic stress disorder (PTSD)	SCIP PTSD scale	**<u>Outpatient Setting (Self-Administered Scales):</u>** 1. Baseline or first assessment opportunity. 2. Every 6 months. 3. Each time the patient starts a new medication for PTSD. 4. Repeat 6-8 weeks from starting a new medication for PTSD. Typically, that will be the next outpatient scheduled visit. 5. When there is a change in mental status or the clinician thinks there is a need to repeat the PTSD scale.

Schizophrenia	**Three core schizophrenia scales:** 1.SCIP delusions scale 2.SCIP hallucinations scale 3.SCIP disorganizations scale **Other scales used in schizophrenia:** 1.SCIP negative scale 2.SCIP aggression scale	**<u>Outpatient Setting (Self-Administered Scales):</u>** **Administer the 3 core schizophrenia scales:** 1. Baseline or at first assessment opportunity. 2. Every 6 months. 3. Each time the patient starts a new antipsychotic medication. 4. Repeat 6-8 weeks from starting a new antipsychotic medication. Typically, that will be the next outpatient scheduled visit. 5. When there is a change in mental status or the clinician thinks there is a need to repeat the schizophrenia scales. **<u>Inpatient or Day Hospital Setting:</u>** 1. Administer the 3 core schizophrenia scales upon admission to inpatient or day hospital. 2. Administer the 3 core schizophrenia scales upon discharge from inpatient or day hospital. **Administering the SCIP negative scale and the SCIP aggression scale:** 1. Baseline or first assessment opportunity (inpatient, day hospital or outpatient setting). 2. Every 6 months or if clinically indicated (inpatient, day hospital or outpatient setting).
Schizoaffective disorder, depressed type	SCIP depression scale	1. Follow schizophrenia guidelines. 2. Use depression scale as clinically indicated.
Schizoaffective disorder, bipolar type	SCIP mania scale	1. Follow schizophrenia guidelines. 2. Use mania scale as clinically indicated.

Diagnosis	Scale(s)	When to administer the scale(s):
Alcohol use disorder	SCIP alcohol scale	1.Once as a baseline (inpatient, day hospital or outpatient setting). 2. Repeat alcohol scale if clinically indicated (inpatient, day hospital or outpatient setting).
Drug use disorder	SCIP drug scale	1.Once as a baseline (inpatient, day hospital or outpatient setting). 2. Repeat drug scale if clinically indicated (inpatient, day hospital or outpatient setting).
Attention Deficit Hyperactivity disorder (ADHD)	SCIP ADHD scale	**<u>Outpatient Setting (Self-Administered Scales):</u>** 1. Once as a baseline. 2. Repeat every 6 months. 3. One time when the patient starts a new medication for ADHD. 4. Repeat 6-8 weeks from starting a new medication for ADHD. Typically, that will be the next outpatient scheduled visit. 5. One time when there is a change in mental status or the clinician thinks there is a need to repeat the ADHD scale.
Eating disorders	SCIP anorexia, binge-eating and bulimia scales	**<u>Outpatient Setting (Self-Administered Scales):</u>** 1. Once as a baseline. 2. Repeat every 6 months. 3. One time when there is a change in mental status or the clinician thinks there is a need to repeat the eating disorders scales.
Other scales	e.g. PHQ-9	Scales will be used as clinically indicated.

Appendix (rating scales)

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