Rationale for Choice of Measures for the FEP database

Measurement-based care occurs when information on key health outcomes is routinely collected and actively utilized by service providers and patients. Fully utilized measurement-based care improves outcomes, increases patient engagement, enhances patient-provider communication and evaluates treatment fidelity (1).

Measure selection for EPI-NC assessment is based on 1) clinical utility and administrative utility, 2) reliability and validity, and 3) feasibility. Of note, measure selection was to a large extent influenced by the expert consensus panel organized by a collaboration between NIMH and the PhenX project (https://www.phenxtoolkit.org/index.php?pageLink=browse.nimh.epsc). Table 1 provides a summary of rating scales chosen for EPI-NC.

Coordinated specialty care for early psychosis interventions are designed to improve the likelihood and sustainability of recovery from psychosis. For this reason the questionnaires reflect the process of recovery, framed in the biomedical model (reduction in symptoms, improved social and vocational function), the personal model (social connectedness, hope, identity, meaningful life, empowerment), and the impact on others (resource utilization, disability, family). The questionnaires are meant to be clinically meaningful and to be utilized as part of routine clinical practice. Specifically, the patient self-report measures are meant to be reviewed during a patient visit, and the information to guide the intervention in real time.

Feasibility of use is based on time-burden. The following describes the measures completed by the patient, therapist, medical provider, and program administrator:

- Patient self-report -
    - The Patient Self-Report questionnaire takes less than 3 minutes to complete and includes symptoms (Colorado Symptom Index)(2), social function & substance use (modified MHSIP), and personal recovery (Questionnaire about the Process of Recovery)(3). **The expectation is that patients complete this measure on a quarterly basis, and that the clinician and the patient review and discuss their responses (CSI with medical provider, QPR with therapist).**
    - The Program Satisfaction questionnaire includes 14 items from the MHSIP(4), evaluating fidelity to a collaborative model of care, staff sensitivity to culture, financial barriers to care, and overall program satisfaction. This questionnaire takes less than a minute to complete. The expectation is that this measure is requested on a quarterly basis.
    - Shared decision making is recognized as a key component of medical management of complex disorders. After medical provider visits patients rate the quality of the interaction with the ColloRATE, a 3-item rating scale (5).
- Therapists complete a questionnaire containing items from the MHSIP (6) on vocational function, arrests, and housing. This questionnaire takes about 1 minute to complete. The expectation is that this will be completed on a quarterly basis, and that the clinician and patient review and discuss the responses.
- Medical providers review the patient self-report of symptoms and evaluate symptom severity during their routine mental status exam. Severity of key symptoms is recorded on an abbreviated version of the anchored Brief Psychiatric Rating Scale (BPRS). Meta-analysis of the BPRS concludes that 17 items adequately cover the domains of psychosis, negative symptoms, affective symptoms and activation (7). The medical provider estimates, for patients who are in remission for a particular domain, the duration of remission. The medical provider also provides active diagnoses for psychotic, mood, and substance use disorders. As evaluation of symptoms is considered part of a routine medical visit, the time-burden to complete the questionnaire itself is the main consideration, and is about 5 minutes.
- Data on metabolic risk factors including height, weight, blood pressure, HGA1c (diabetes screen), and lipid panel is collected quarterly.
- The program administrator gives information on services that are provided. This information is collected on a quarterly basis.
- Additional measures are completed at baseline -

- Onset of psychosis (duration of psychosis should be less than 3 years).
- The program administrator collects information on referrals, including referral source, if the person was admitted to the program, and if not admitted, the reason. This information is intended to be used by the program to better target referral agencies.
- The program administrator collects demographic information. Age is calculated from birthdate and program admission date. Information about years of parental education is collected to estimate socio-economic status (SES). SES is a key mediator of clinical outcomes. On average individuals with lower SES are expected to require more resources and achieve overall lower levels of average patient recovery than individuals with higher SES.

- On discharge the program administrator collects information about date and reason. This information is used to determine discharge rates, reason for discharge (fidelity, program satisfaction).

Table 1: Specific measures used by EPI-NC
All of these measures have been thoroughly evaluated and shown to have excellent reliability and validity.

Measure	Rationale for Measure	Clinical Utility/Administrative Utility
Mental Health Statistics Improvement Program (MHSIP) Consumer Survey sections: • Educational Status • Current employment • Current school • Arrests • Substance use • Program satisfaction	The Center for Mental Health Services (part of SAMHSA) requires the MHSIP for grant-funded programs, as a national benchmark. We collect data for all of the domains covered in the MHSIP. We use the MHSIP sections listed (to the left), modified to collect information on social interactions via electronic communications as well as in-person.	• Social and vocational function are explicit targets of early intervention programs, as part of the biomedical model of recovery. • Arrests are an expensive aspect of service utilization and thus are important to the State. • Substance use may be a barrier to recovery. • Program satisfaction includes the patient's sense of whether program staff have a collaborative stance, are culturally sensitive, whether there were financial barriers to care, and overall program satisfaction. These are important to program administrators.
Colorado Symptom Index	Measures patient self-report of symptoms including mood, delusions, hallucinations, thought process, suicidal and homicidal thoughts.	Self-reported reduction in symptom frequency is relevant to the biomedical model of recovery.
Questionnaire about the Process of Recovery	This scale was developed as a collaboration between persons with psychosis, their clinicians, and researchers to evaluate key aspects of recovery: connectedness, hope, identity, meaning, and empowerment.	Measures interpersonal aspects of recovery from psychosis.
ColloboRATE	Evaluates medical provider's use of shared decision making approach, shown to enhance engagement.	Patient report, 3-items that ask about their perception of the medical provider's collaborative stance.
Brief Psychiatric Rating Scale	This is collected by the medical provider, and covers key target symptoms including mood, delusions, hallucinations, thought process, suicidal and homicidal thoughts.	Clinician-rated symptom severity may differ from self-report, and is relevant to the biomedical model of recovery.

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This document was created by EPI-NC Advisors wholly or in part with funding from the federal Community Mental Health Services Block Grant Fund (CFDA #93.958) as a project of the NC Division of Mental Health, Developmental Disabilities & Substance Abuse Services.