

Implementation of Patient Reported Outcome Measures in Substance Use Disorder Care

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Disclosure Information

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April 15, 2023 – 1:15 – 2:30PM

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Learning Objectives

- ★ Understand the definition, purpose, and evidence supporting measurement based care (MBC) and patient reported outcome measures (PROMs)
- ★ Demonstrate understanding of real-world MBC and PROM implementation processes and methods
- ★ Demonstrate knowledge of barriers and facilitators to MBC and PROM implementation in various care settings

Agenda

- ☀ Defining PROMs and MBC

- ☀ Research evidence supporting PROMs/MBC

- ☀ Case Studies

1. The MBC2OTP Project

- ☀ MBC in New England Opioid Treatment Programs

2. PROMs in Midwestern Primary Care Substance Use Treatment

Patient-reported Outcome Measures (PROM)

- ☀ Patient-report outcomes (PROs):
 - ☀ Direct feedback from patients, “on their feelings or what they are able to do as they are dealing with chronic diseases or conditions.”¹
- ☀ Patient-reported outcome measures (PROMs):
 - ☀ Tools or instruments used to measure PROs.
- ☀ PRO categories:
 - ☀ Health-related quality of life
 - ☀ Functional status
 - ☀ Symptoms / Symptom burden
 - ☀ Health behaviors
 - ☀ Patient experience

PROM Evidence

- ☀ Evidence in an array of settings, diseases, populations

- ☀ Example:

 - ☀ PROs and predictive analytics to support shared surgery decisions for patients with arthritis.¹

 - ☀ PROs for early symptom detection in patients with metastatic cancer.²

 - ☀ Successfully embed PROs in residential SUD/AUD treatment.³

- ☀ Uptake of PROs with payors:

 - ☀ CMS joint replacement bundle payment program requires PROMs⁴

1. Franklin PD, Zheng H, Bond C, Lavalley DC.

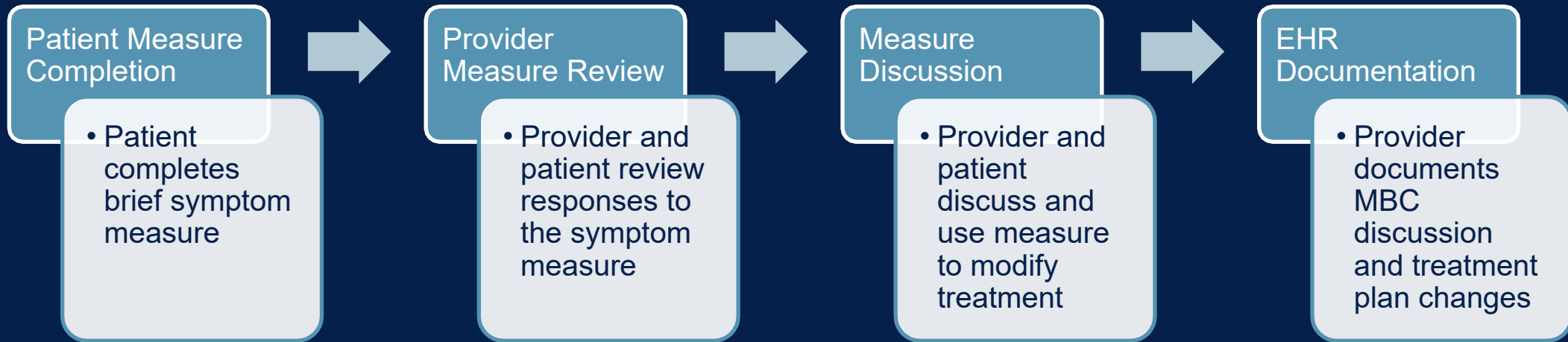
2. Basch, E., Schrag, D., Henson, S., et al.

3. Yi CM, Huhn AS, Hobelmann JG, et al.

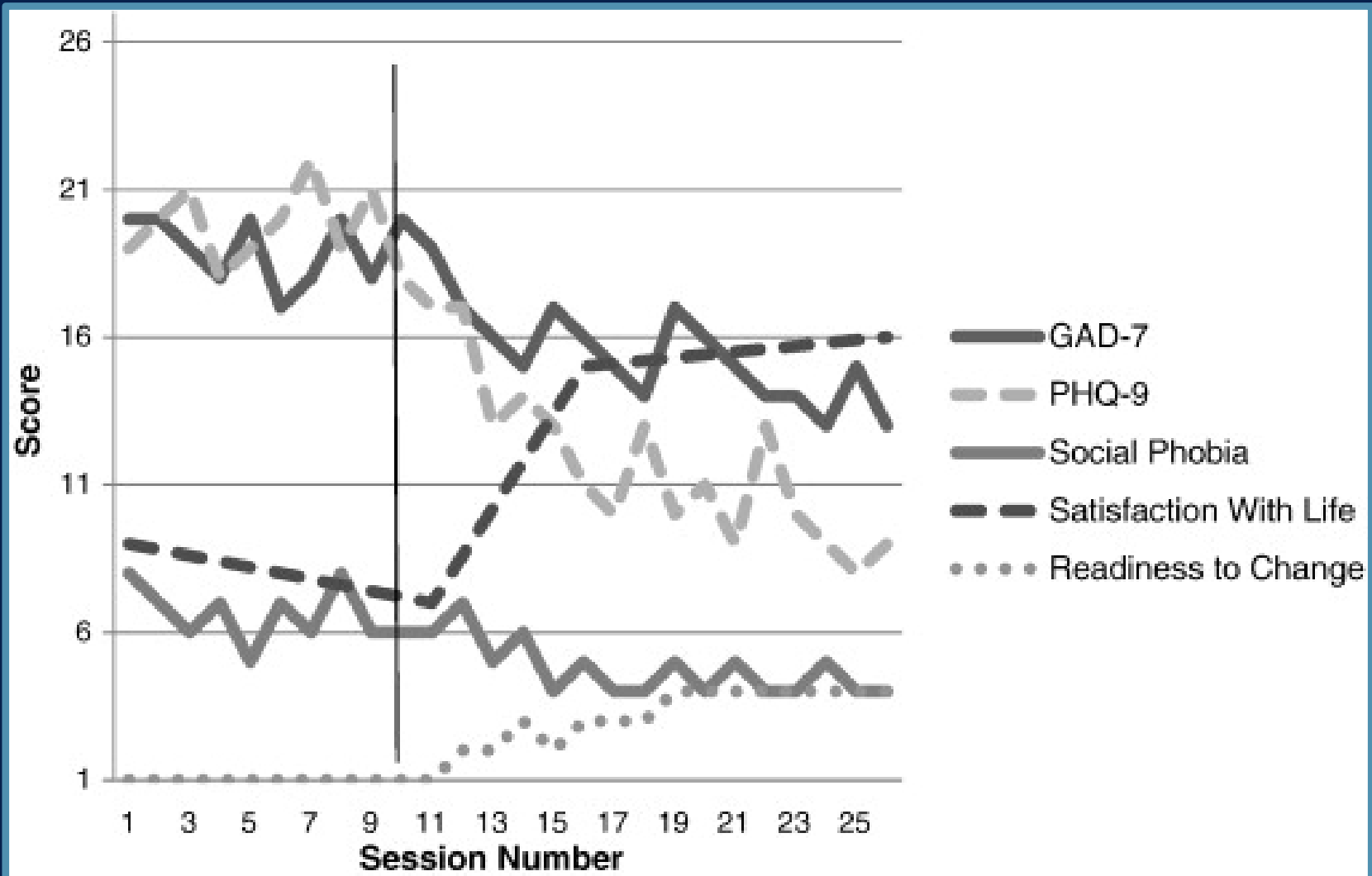
4. <https://innovation.cms.gov/innovation-models/cjr>

MBC Definition

- ☀ MBC: The systematic use of patient self-reported progress measures (i.e., PROMs) to guide treatment decisions at each clinical encounter.
- ☀ Use of MBC with fidelity involves:



MBC in Practice



MBC Evidence

- ✦ Initial evidence in pharmacotherapy studies:
 - ✦ Use of MBC to inform medication selection and dosage
 - ✦ Increases provision of personalized care
- ✦ Evidence expanded to psychotherapy research
 - ✦ MBC outperforms usual care across care settings
 - ✦ Community mental health, substance use treatment
 - ✦ MBC effective across populations
 - ✦ Youth receiving MBC show faster symptom improvement compared to usual care
 - ✦ MBC especially effective for patients not responding to treatment

MBC is Transdiagnostic and Transtheoretical

- ☀ MBC can be applied regardless of a provider training background, patient presenting problems, or number of co-occurring conditions.

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

DATE: _____

How have you been

GAD-7 Anxiety

Over the last two weeks, how often have you been bothered by the following problems?	Not at all	Several days
1. Feeling nervous, anxious, or on edge	0	1
2. Not being able to stop or control worrying	0	1
3. Worrying too much about different things	0	1
4. Trouble relaxing	0	1
5. Being so restless that it is hard to sit still	0	1
6. Becoming easily annoyed or irritable	0	1
7. Feeling afraid, as if something awful might happen	0	1

Column totals _____ + _____

If you checked any problems, how difficult have they made it for you to things at home, or get along with other people?

Not difficult at all Somewhat difficult Very difficult
☐ ☐ ☐

Source: Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PRQ) developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke, and colleagues

Brief Addiction Monitor-Revised (BAM-R)

Name: _____ Date: _____

This is a standard set of questions about several areas of your life such as your health, alcohol and drug use, etc. The questions generally ask about the past 30 days. Please consider each question and answer as accurately as possible.

Method of Administration:

Clinician Interview

Self Report

Phone

1. In the past 30 days, how would you say your physical health has been?

- ☐ Excellent (0)
☐ Very Good (8)
☐ Good (15)
☐ Fair (22)
☐ Poor (30)

2. In the past 30 days, how many nights did you have trouble falling asleep or staying asleep? ____

3. In the past 30 days, how many days have you felt depressed, anxious, angry or very upset throughout most of the day?

4. In the past 30 days, how many days did you drink ANY alcohol?

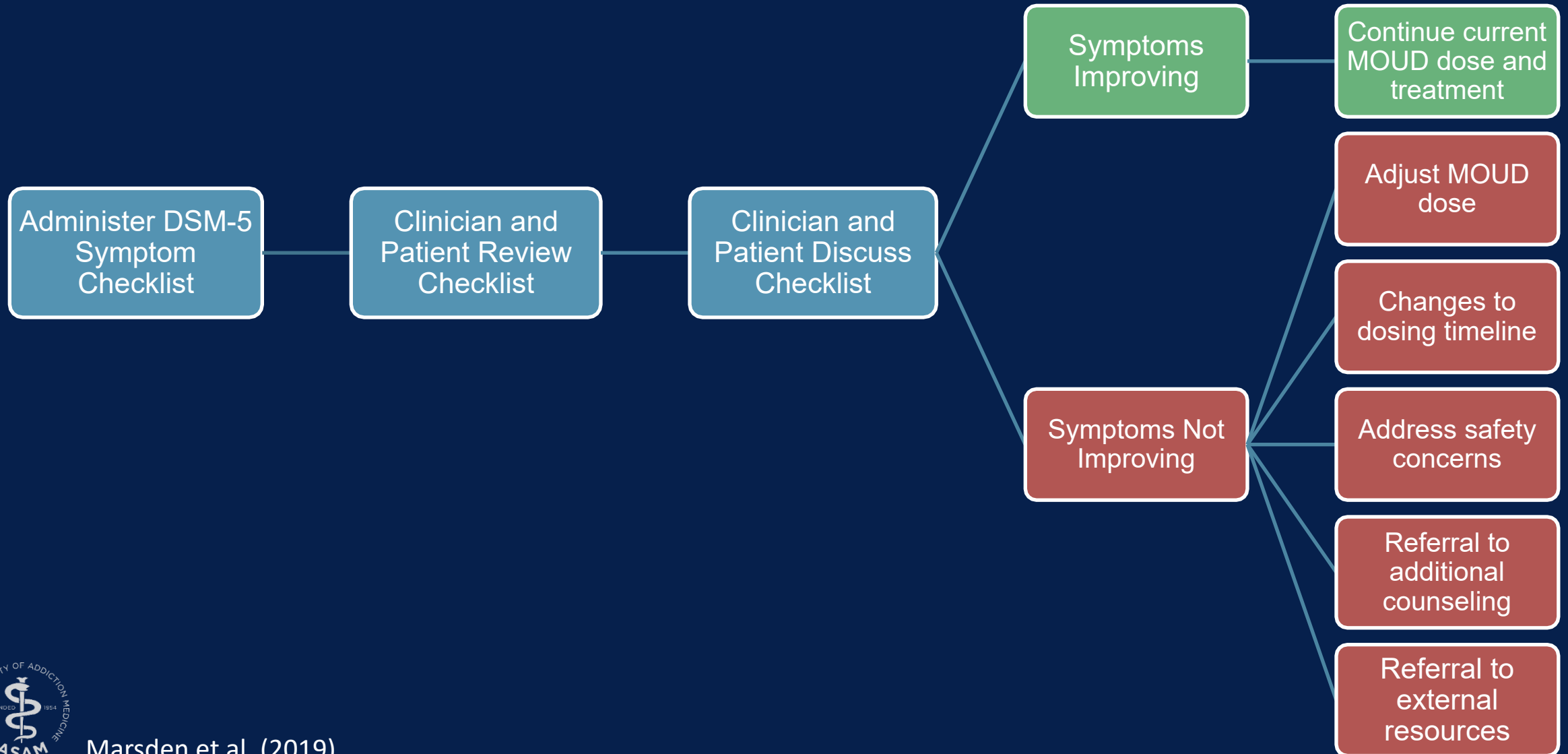
____ (If 00, Skip to #6)

MBC is a Clinical Best Practice

- ★ MBC is included in the best practice guidelines and recommendations from:
 - ★ The American Psychological Association
 - ★ The Department of Veteran's Affairs
 - ★ NAADAC, The Association for Addiction Professionals
 - ★ American Society of Addiction Medicine
- ★ MBC has been recommended for use in Opioid Treatment Programs (OTPs) by the Director of NIDA and colleagues

Population	Measure	Timeline	Clinical Recommendations
<ul style="list-style-type: none">• Patients receiving MOUD (methadone, buprenorphine)	<ul style="list-style-type: none">• DSM-5 OUD symptom checklist	<ul style="list-style-type: none">• Intake• 3 mos.• 6 mos.• 12 mos.	<ul style="list-style-type: none">• Assess progress• Modify case formulation• Revisit treatment plan

MBC Workflow for OUD



MBC/PROM Barriers in Substance Use Treatment

Go to **menti.com** and use code **6405 0760**



MBC Faces Barriers to Implementation

- ☀ MBC and PROMs face barriers to implementation across treatment settings
 - ☀ Patient Level
 - ☀ Provider Level
 - ☀ Organization and System Level
- ☀ “**Implementation science** is the scientific study of methods and strategies that facilitate the uptake of evidence-based practice and research into regular use by practitioners and policymakers.”



Connors et al. (2021); Keepers et al. (2023); Lewis et al. (2019)

<https://impsciuw.org/implementation-science/learn/implementation-science-overview/>

MBC in OTPs Knowledge Gap

- ✶ Is the DSM-5 symptom checklist an optimal measure for MBC?
- ✶ Is this MBC workflow acceptable, feasible, and appropriate for use in OTPs?
 - ✶ What are the unique barriers and facilitators to MBC use in OTPs
- ✶ Does MBC's effectiveness extend to enhancing recovery for patients with OUD?
- ✶ Can MBC be successfully implemented in OTPs?

Case Study 1: The Measurement Based Care to Opioid Treatment Programs Project (MBC2OTP)

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The Measurement Based Care to Opioid Treatment Programs Project

NIDA K23DA050729, PI: Scott

GOAL: To co-design and test an MBC tool and protocol for use in community opioid treatment programs (OTPs) with leaders, treatment providers, and patients



The MBC2OTP Project

☀ The MBC2OTP Project has two Phases:



- ☀ **Phase 1:** Using Rapid Assessment Procedure Informed Clinical Ethnography (RAPICE) to develop an MBC tool/measure and protocol for OTPs
- ☀ **Phase 2:** Pilot hybrid type 1 effectiveness-implementation trial to evaluate MBC's clinical effects and implementation in OTPs



Phase 1 Methods: RAPICE

- ☀ Rapid Assessment Procedure Informed Clinical Ethnography (RAPICE) combines Rapid Assessment Procedure and Clinical Ethnography methods to collect and rapidly analyze rich qualitative data
- ☀ RAPICE can be used to strengthen community partnerships through active engagement with participating research partners

Clinical Ethnography

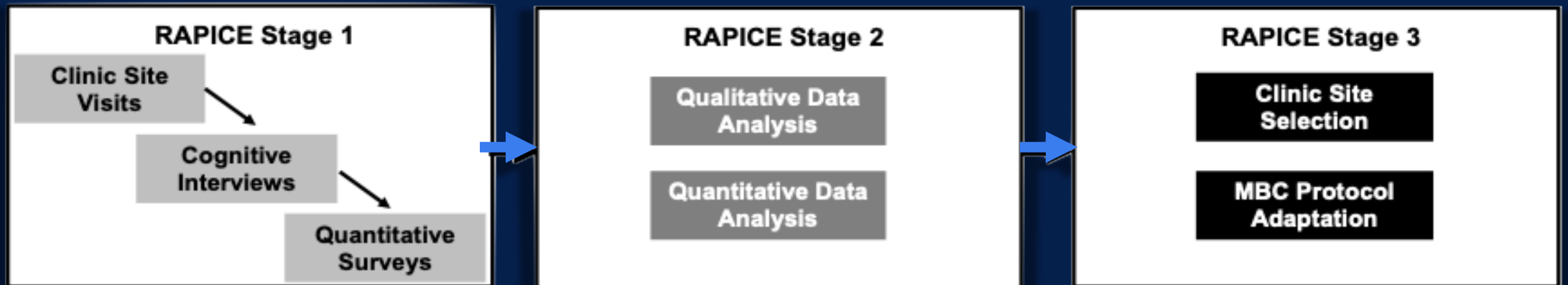
- Participant observation 
- In-depth interviews 
- Researcher immersion into clinical setting

Rapid Assessment Procedure

- Multidisciplinary research team
- Training for non-researchers
- Triangulation of multiple data sources
- Iterative data analysis
- Rapid project completion

Phase 1 Methods

- ☀ Community partnership building with two large multi-site OTPs in the New England Region
- ☀ Mixed method data collection using RAPICE:



Phase 1 Methods

☀ Clinic Site Visits

- ☀ Clinical ethnography with 3 OTPs – site visits, tours, and observation

☀ Cognitive Interviews

- Semi-structured cognitive interviews completed with with OTP leaders ($n = 8$) and treatment providers ($n = 5$)
- Participants reviewed measure with DSM-5 opioid use disorder criteria questions and provided feedback on MBC workflow preferences

Phase 1 Methods

Measurement-Based Care Interview Table

Question	What does this mean to you?	Is this question clear? Relevant?	Would you recommend any wording changes? Recommend keeping or deleting?
1. Have you used opioids, sedatives, or cocaine in the past 3, 6, or 12 months? a. Yes b. No			
1a. If yes, how often have you used them? a. 5-6 times per week b. 3-4 times per week c. 2 times per week d. 1 time per week e. 1-3 times a month f. Less often			
1b. Did you inject any of these? a. Yes b. No			
2. Have you drank more than 4 (women) or 5 (men) standard drinks on a single occasion of 2 hours or less in the past 3 months? A standard drink consists of			

Phase 1 Methods

- ☀ **Data Analysis** - immersion/crystallization technique
 - ☀ Reflecting on site visit logs
 - ☀ Preparing descriptive memos identifying topics and themes, and
 - ☀ Discussing commonalities in themes to form data impressions
- ☀ Thematic content analysis for qualitative interviews



Phase 1 Results

- ☀ Participants ($N = 13$) were 92% Female, 85% White, and 92% had a Master's Degree or higher

Measure Format and Content

...additional questions that should be there about something that is related to positive [like] 'have you noticed any positive behavioral changes? Has this improved your life?

**Strengths Based and Harm
Reduction Emphasis**

What is your motivation for seeking the effect of opioids?' I don't think that makes much sense ...is that really the way that we all speak to each other, right?

Language and Clarity

Phase 1 Results

MBC Protocol for OTPs

So yeah if they answer the first [assessment] question, they haven't used [opioids] in a significant amount of time, just not continuing [with the other questions].

**Length and Administration
Time**

...in a group setting I wonder if patients would feel uncomfortable disclosing the answers...some people feel uncomfortable even being asked in a group.

**Fit for Group
Counseling**

MBC2OTP Lessons Learned

- Researcher developed or DSM-5 criteria based measures may not be optimal for OTPs
- **Measure language and clarity improvements** across all DSM-5 criteria questions are warranted
 - Focus on **strengths-based questions**
- OTP-based MBC protocols need to be:
 1. **Brief in length**
 2. **Streamlined** based on client symptoms,
 3. **Modified to protect privacy and address stigma** in group counseling settings

MBC2OTP Next Steps

Complete Phase 1 with 5 additional OTPs - New England and Chicagoland



Iterative redesign of MBC measurement tool and protocol



Integration of MBC into OTP electronic health records



Evaluation of MBC effectiveness and implementation via a hybrid type 1 effectiveness-implementation trial

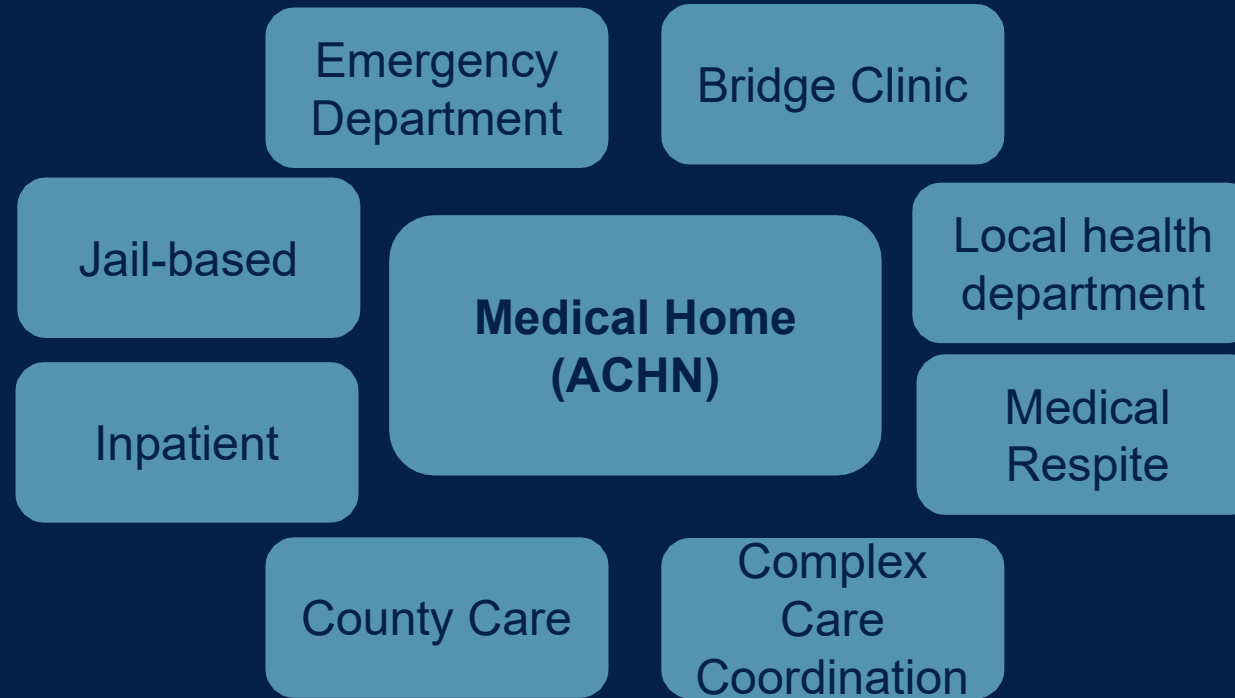
Case Study 2: PROMs in Primary Care Integrated SUD Care

Cook County Health (CCH) Substance Use Disorder Program

System-Level: No Wrong Door

Program Principles

- Multidisciplinary
- Patient-centered
- Physical, Mental, Social Health
- Harm reduction / overdose prevention



Medical home:

500+ active patients each month
35+ engaged medical providers
Embedded recovery coaches

Why PROMs?

Making Addiction Treatment More Realistic And Pragmatic: The Perfect Should Not Be The Enemy Of The Good

[Nora D. Volkow](#)

JANUARY 3, 2022

HealthAffairs

10.1377/forefront.20211221.691862

The magnitude of this crisis demands out-of-the-box thinking and willingness to jettison old, unhelpful, and unsupported assumptions about what treatment and recovery need to look like. Among them is the traditional view that abstinence is the sole aim and only valid outcome of addiction treatment.

Healthcare and society must move beyond this dichotomous, moralistic view of drug use and abstinence and the judgmental attitudes and practices that go with it.

<https://www.healthaffairs.org/doi/10.1377/forefront.20211221.691862/full/>



What can we do about it?

☀ Training

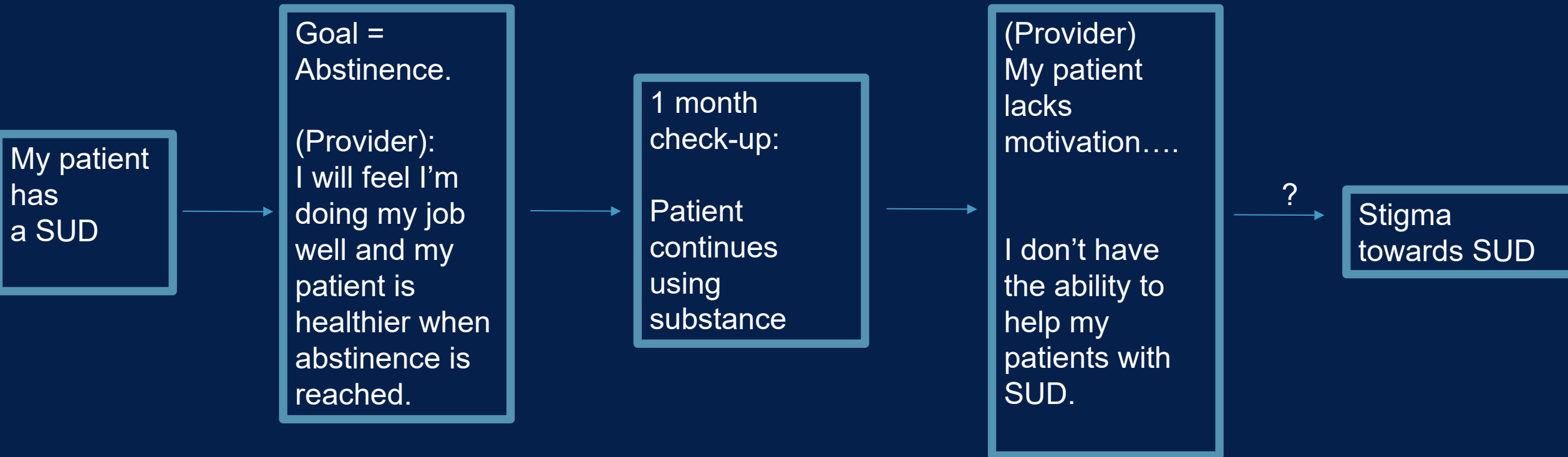
☀ Contact-based strategies¹

☀ Language²

☀ Policies

Long-term effect???

Provider self-efficacy and stigma



Theories of behavior change (provider behavior)

☀ Social cognitive (social learning) theory

- Cognition, self-efficacy, outcome expectancy

☀ Theory of reasoned action

- Expectations re: outcomes of the behavior.

☀ Health belief model

- Perception of the potential effectiveness of treatment

Building provider self-efficacy

- ☀ Skill building

- ☀ Training

- ☀ Broadening definition of success

- ☀ PROs!

The magnitude of this crisis demands out-of-the-box thinking and willingness to jettison old, unhelpful, and unsupported assumptions about what treatment and recovery need to look like. Among them is the traditional view that abstinence is the sole aim and only valid outcome of addiction treatment.

Why broaden the definition of success?

- 5-year longitudinal study
- N= 7700+
- Persons with OUD, England, receiving buprenorphine or methadone
- % reporting some heroin use at 6 months?
- at one year?
- At 5 years?

Why broaden the definition of success?

Go to **menti.com** and use code **6405 0760**

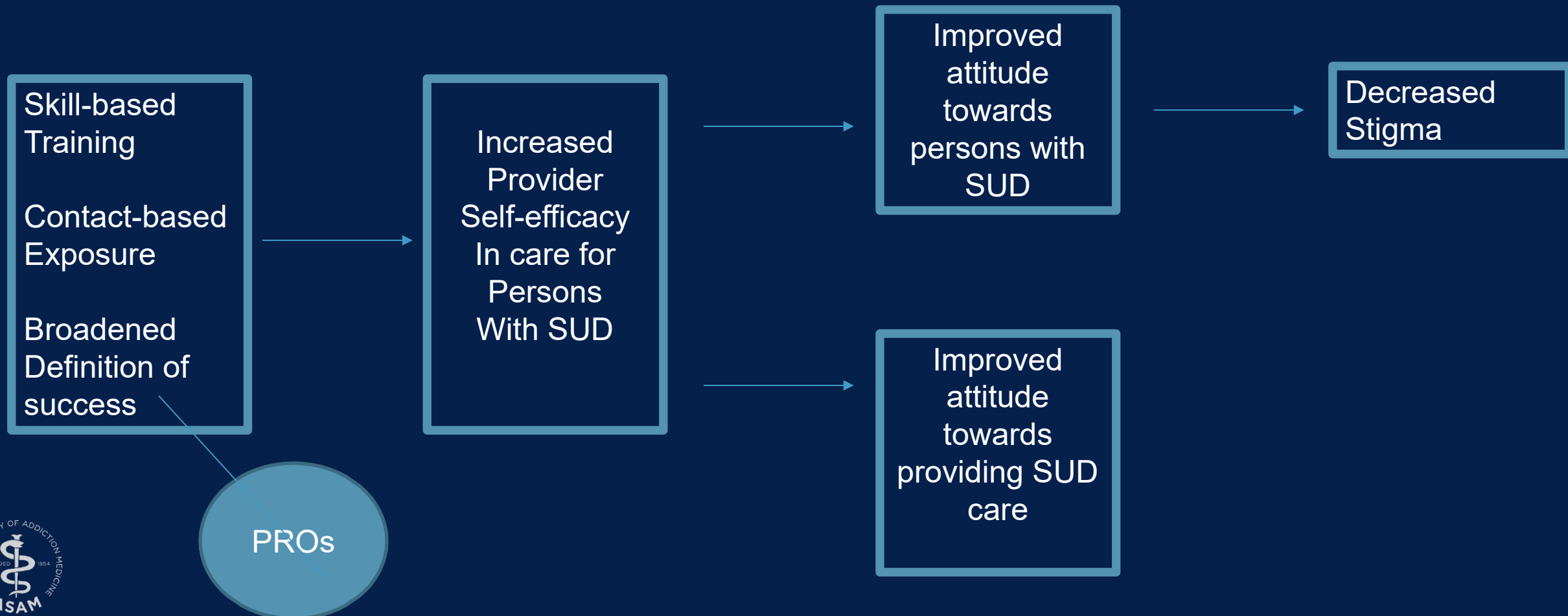


Why broaden the definition of success?

- 5-year longitudinal study
- N= 7700+
- Persons with OUD, England, receiving buprenorphine or methadone
- % reporting some heroin use at 6 months? **63%**
- at one year? **59%**
- At 5 years? **43%**
- **Approx 1/3: no return to use**

Broadened definition does not imply abstinence is not an important goal
Krieger ecosocial model of behavior change for patient

Provider self-efficacy and stigma



Which PROMs?

Which PROM?

- ☀ Patient-reported Outcomes Measurement Information System (PROMIS)
 - ☀ An original NIH roadmap program
 - ☀ Day to day function of patients with chronic conditions
 - ☀ Symptom focused
 - ☀ Multiple measures
 - ☀ Publicly available
- ☀ Ability to participate in social roles and activities (4Q short form)
- ☀ Emotional Support (4Q short form)

PROM implementation

- ★ Key decision: how deliver the PROM?
 - ★ Waiting room survey, computer adaptive testing....
- ★ Recovery coach as new team member
- ★ Design of EHR note
 - ★ Clinical needs, regulatory, grant reporting
 - ★ PROMs
- ★ Workflow
 - ★ Intake at first visit
 - ★ Progress tool every 1, 2, 3, 6, 9, and 12 months

Cocaine/Rock Cocaine days used: 0 Days

Benzo not Rx/you days used: 0 Days

Other Substances days used: 0 Days

OD Heroin/Opiates: No

Recovery Environment

Living most of time, past 30 days: House/apartment rented or owned by client

Spent even 1 night in, 30 days: No

Worried about losing housing?: No

Anyone in home using drugs/alcohol: Yes

Assistance With Transportation?: No

I have someone who will listen to me when I need to talk: Always

I have someone to confide in or talk to about myself or my p: Always

I have someone who makes me feel appreciated: Always

I have someone to talk with when I have a bad day: Always

Who supports you in your recovery?: Patient reports her sponsor and N/A meetings

What do you do for leisure?: Patient reports going meetings, plants

Implementation lessons

- ☀️ 2017: launch!
- ☀️ 2018: PROs are....
 - ☀️ buried in chart, challenging to read
 - ☀️ Hard to compare over time
 - ☀️ Hard to see improvements or setbacks
 - ☀️ Not used by most team members
- ☀️ 2020: create PRO dashboard

SUD Self Reported Substance Use in Past 30 Days



LEGEND

- 0 Days
- 1-3 days
- 4-10 days
- >10 days

SUD Social Roles and Responsibility

Question	26-Jul-19	07-Oct-19	07-Jan-20	18-Sep-20	06-Oct-21
I have trouble doing all of my regular leisure activities with others	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
I have trouble doing all of my usual work (including work at home)	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
I have trouble doing all of the activities with friends that I want to	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
I have trouble doing all of the family activities that I want to	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
T-Score	64.2	44.2	51.9	44.2	46.2

Color Legends

Always

Usually

Sometimes

Rarely

Never

SUD Emotional Support

Question	26-Jul-19	07-Oct-19	07-Jan-20	18-Sep-20	06-Oct-21
I Have Someone to Confide In Or Talk to About Myself Or My Problems	Usually	Sometimes	Usually	Sometimes	Sometimes
I Have Someone to Talk With When I Have a Bad Day	Usually	Never	Usually	Sometimes	Sometimes
I Have Someone Who Makes Me Feel Appreciated	Usually	Never	Usually	Sometimes	Sometimes
I Have Someone Who Will Listen to Me When I Talk	Usually	Sometimes	Usually	Sometimes	Sometimes
T-Score	64.2	37.3	64.2	44.2	44.2

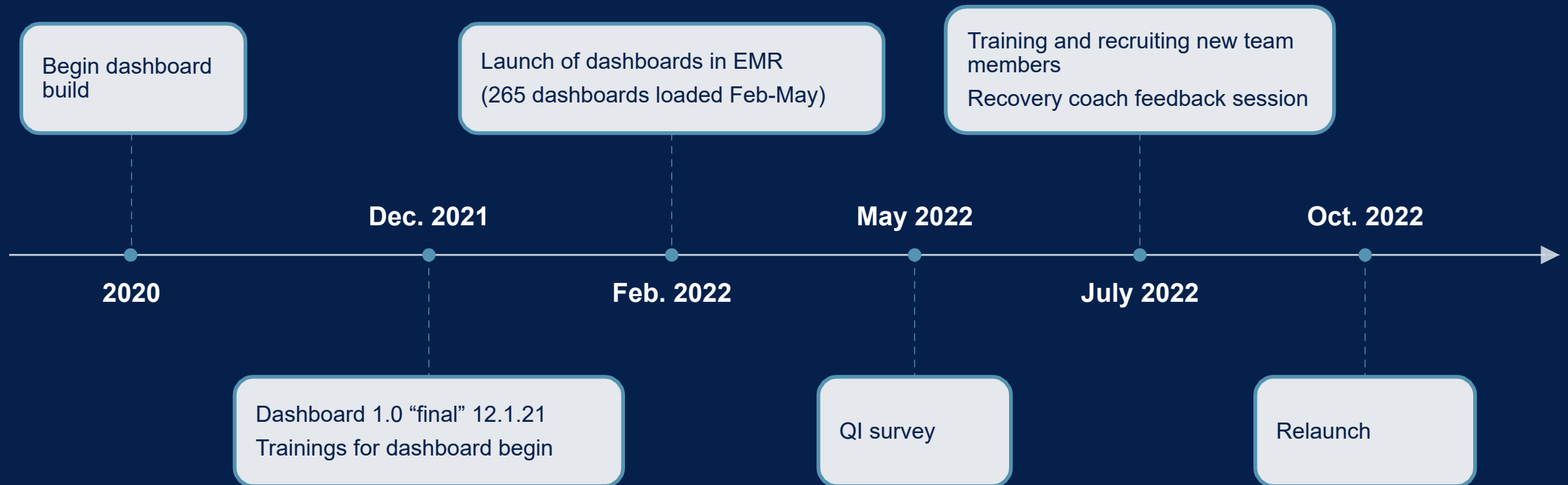
Color Legends

- Never
- Rarely
- Sometimes
- Usually
- Always

Dashboard Integration

- ☀ Dashboard in Tableau
- ☀ “Just click here...”
- ☀ Embedding in EMR
 - ☀ Medical student partners
 - ☀ EMR correspondence notes
- ☀ Launch Medications for Addiction Treatment Patient-reported Outcomes (MAT PRO) project
 - ☀ Written training for providers
 - ☀ Trainings for recovery coaches, social work

PRO timeline @ CCH SUD Program



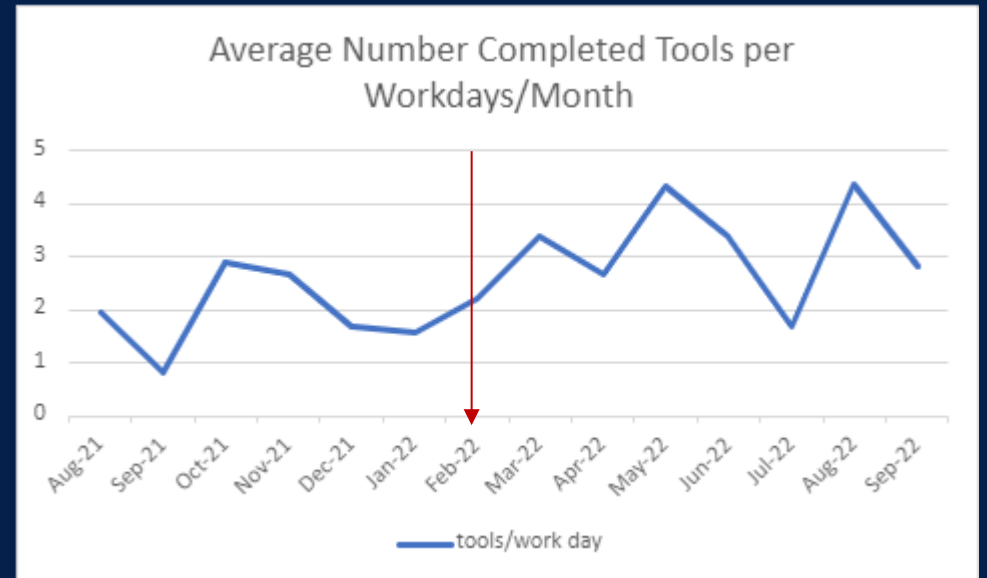
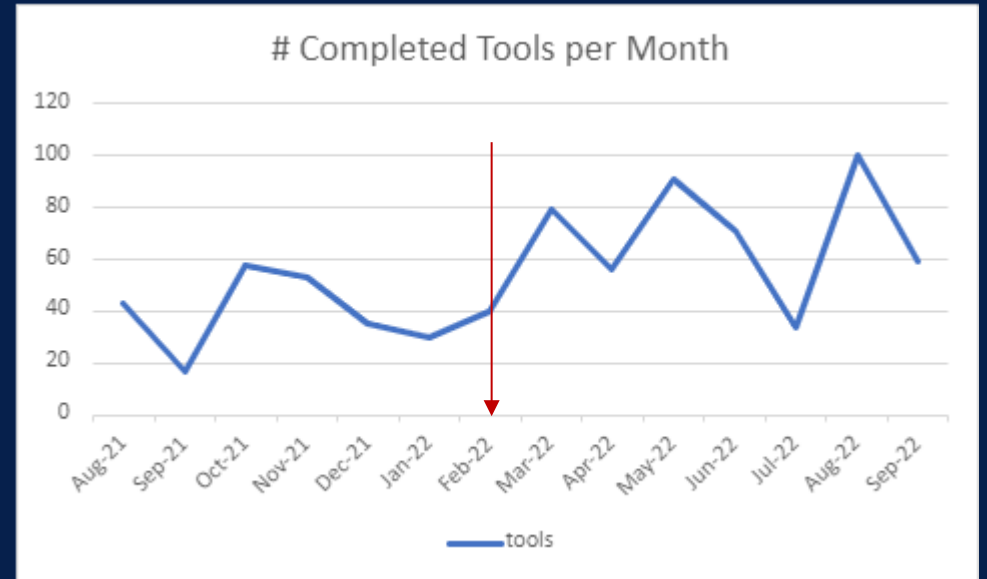
Unexpected barriers: file size, verification process

month	tools	# work days	tools/work day
Aug-21	43	22	1.95
Sep-21	17	21	0.81
Oct-21	58	20	2.9
Nov-21	53	20	2.65
Dec-21	35	21	1.67
Jan-22	30	19	1.58
Feb-22	40	18	2.22
Mar-22	79	23	3.39
Apr-22	56	21	2.67
May-22	91	21	4.33
22-Jun	71	21	3.38
22-Jul	34	20	1.7
22-Aug	100	23	4.35
22-Sep	59	21	2.8

6mo pre:
1.93 tools/workday
39.3 tools/month

LAUNCH

6mo post:
2.95 tools/workday
61.8 tools/month



Qualitative data

- ☀ Dashboard helps me see progress and/or setbacks:
 - ☀ 67% agree/strongly agree
 - ☀ 7% disagree
- ☀ Dashboard helps to identify areas of improvement:
 - ☀ 65% agree/strongly agree
 - ☀ 7% disagree
- ☀ Helpful information, but no time in clinic to use:
 - ☀ 26% agree/strongly agree
- ☀ I understand the content:
 - ☀ 52% agree/strongly agree
- ☀ I'd like to use this dashboard:
 - ☀ 34% agree/strongly agree

Relaunch of Dashboards

- ☀ Targeted audience:
 - ☀ recovery coaches
 - ☀ Less time constraints, more frequent patient interaction
- ☀ Dissemination process:
 - ☀ Not in EMR
 - ☀ 1 monthly email with all active patients
- ☀ Exploring auto-input PROM text into medical provider note
- ☀ User-centered design session with recovery coaches
- ☀ Patient input

Final Takeaways/Summary

- ☀️ PROMs and MBC have evidence supporting effectiveness, but implementation in substance use treatment remains limited
- ☀️ Community-engaged research and implementation efforts are valuable to enhance scale-up
 - ☀️ Collaborative decision making around selection of measures, PROM/MBC protocols, and EHR/dashboard changes
 - ☀️ Include all key users in co-design processes
 - ☀️ Evaluate PROM/MBC effectiveness and implementation outcomes

References (PROMs)

1. Franklin PD, Zheng H, Bond C, Lavallee DC. Translating clinical and patient-reported data to tailored shared decision reports with predictive analytics for knee and hip arthritis. *Qual Life Res.* 2021 Nov;30(11):3171-3178. doi: 10.1007/s11136-020-02557-8. Epub 2020 Jun 19. PMID: 32562194; PMCID: PMC8528740.
2. Basch, E., Schrag, D., Hensson, S., Jansen, J., Ginos, B., Stover, A. M., Carr, P., Spears, P. A., Jonsson, M., Deal, A. M., Bennett, A. V., Thanarajasingam, G., Rogak, L. J., Reeve, B. B., Snyder, C., Bruner, D., Cella, D., Kottschade, L. A., Perlmutter, J., Geoghegan, C., ... Dueck, A. C. (2022). Effect of Electronic Symptom Monitoring on Patient-Reported Outcomes Among Patients With Metastatic Cancer: A Randomized Clinical Trial. *JAMA*, 327(24), 2413–2422. Yi CM, Huhn AS, Hobelmann JG, et al. Integration of patient-reported outcomes assessment into routine care for patients receiving residential treatment for alcohol and/or substance use disorder. *Journal of Addiction Medicine* 2022;16(4):e240-e247.
3. Knaak, S., Modgill, G., & Patten, S. B. (2014). Key ingredients of anti-stigma programs for health care providers: a data synthesis of evaluative studies. *Canadian journal of psychiatry. Revue canadienne de psychiatrie*, 59(10 Suppl 1), S19–S26.
4. Kelly, J. F., & Westerhoff, C. M. (2010). Does it matter how we refer to individuals with substance-related conditions? A randomized study of two commonly used terms. *The International journal on drug policy*, 21(3), 202–207.
5. Eastwood B, Strang J, Marsden J. Continuous opioid substitution treatment over five years: Heroin use trajectories and outcomes. *Drug Alcohol Depend.* 2018;188:200–208

References (MBC)

1. Bickman, L., Kelley, S. D., Breda, C., de Andrade, A. R., & Riemer, M. (2011). Effects of routine feedback to clinicians on mental health outcomes of youths: Results of a randomized trial. *Psychiatric Services*, 62(12), 1423-1429.
2. Connors, E. H., Douglas, S., Jensen-Doss, A., Landes, S. J., Lewis, C. C., McLeod, B. D., ... & Lyon, A. R. (2021). What gets measured gets done: How mental health agencies can leverage measurement-based care for better patient care, clinician supports, and organizational goals. *Administration and Policy in Mental Health and Mental Health Services Research*, 48, 250-265.
3. Keepers, B. C., Easterly, C. W., Dennis, N., Domino, M. E., & Bhalla, I. P. (2023). A survey of behavioral health care providers on use and barriers to use of measurement-based care. *Psychiatric services*, appi-ps.
4. Marsden, J., Tai, B., Ali, R., Hu, L., Rush, A. J., & Volkow, N. (2019). Measurement-based care using DSM-5 for opioid use disorder: can we make opioid medication treatment more effective?. *Addiction*, 114(8), 1346-1353.
5. Morris, D. W., Toups, M., & Trivedi, M. H. (2012). Measurement-based care in the treatment of clinical depression. *Focus*, 10(4), 428-433.
6. Lewis, C. C., Boyd, M., Puspitasari, A., Navarro, E., Howard, J., Kassab, H., ... & Kroenke, K. (2019). Implementing measurement-based care in behavioral health: a review. *JAMA psychiatry*, 76(3), 324-335.
7. Palinkas, L. A., & Zatzick, D. (2019). Rapid assessment procedure informed clinical ethnography (RAPICE) in pragmatic clinical trials of mental health services implementation: methods and applied case study. *Administration and Policy in Mental Health and Mental Health Services Research*, 46, 255-270.
8. Scott, K., & Lewis, C. C. (2015). Using measurement-based care to enhance any treatment. *Cognitive and behavioral practice*, 22(1), 49-59.