Enhancing quality, accountability, and effectiveness in Addiction Care:
The Measurement-based Practice Model

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If You Can't Measure It, You Can't Improve It

(William Thomson, Lord Kelvin)
Outline

- The rationale for measurement-based (MBP) practice
- What are “outcomes” and how/when do we measure them?
- Some advantages and empirical examples of MPB
- Measurement-Assisted Practice System (MAPS™)
Outline

The rationale for measurement-based (MBP) practice

What are “Outcomes” and how/when do we measure them?

Some advantages and empirical examples of MPB

Measurement-Assisted Practice System (MAPS™)
MBP can be conceptually linked to notion of “Value-Based” Health Care...

• Rewards quality rather than quantity
• Better healthcare at lower costs through evidence-based medicine and treatment
• Critical aspect of assessing value is measurement

<table>
<thead>
<tr>
<th>VALUE-BASED PROGRAMS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LEGISLATION</strong></td>
</tr>
<tr>
<td>ACA: Affordable Care Act</td>
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<tr>
<td>MIPPA: Medicare Improvements for Patients &amp; Providers Act</td>
</tr>
<tr>
<td>PAMA: Protecting Access to Medicare Act</td>
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<tr>
<td><strong>PROGRAM</strong></td>
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<tr>
<td>ESRD-QIP</td>
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<tr>
<td>HVRP</td>
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<tr>
<td>HRRP</td>
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<tr>
<td><strong>APM</strong></td>
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<tr>
<td><strong>PROGRAM</strong></td>
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<tr>
<td>APMs: Alternative Payment Models</td>
</tr>
<tr>
<td>ESRD-QIP: End-Stage Renal Disease Quality Incentive Program</td>
</tr>
<tr>
<td>HACRP: Hospital-Acquired Condition Reduction Program</td>
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<td>HRRP: Hospital Readmissions Reduction Program</td>
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<td>HVBP: Hospital Value-Based Purchasing Program</td>
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<tr>
<td>MIPS: Merit-Based Incentive Payment System</td>
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<tr>
<td>VM: Value Modifier or Physician Value-Based Modifier (PVBM)</td>
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<tr>
<td>SNF-VBP: Skilled Nursing Facility Value-Based Purchasing Program</td>
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</tbody>
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SUD Stigma and Discrimination

- SUD is top public health problem in United States
- Yet, SUD continues to be stigmatized - adequate insurance coverage for treatment and continuing care remains limited and challenging
- How do we ensure and demonstrate that our SUD treatment system and services have value and are:
  - Of high quality? (evidence-based practices? delivered by licensed/qualified staff in dignified, respectful, settings?)
  - Effective? (outcomes?)
  - Accountable? (auditing/convincingly demonstrate health benefits of treatment?)
- These (quality, effectiveness, accountability) can all be captured in an MBP model...
Why MBP? Challenges with standard model: “Evidence-based practice”

- **Long delays** between:
  - A. innovative clinical ideas and efficacy, effectiveness, implementation research studies + publication of findings (5-10yrs)
  - B. proven effectiveness and adoption, dissemination and implementation of novel treatments in real-world settings

- **Generalizability and applicability** of research findings conducted under excellent/ideal/optimal conditions with certain specific patient case-mixes

- **Most studies do not test moderators of response**; if they do, typically only one variable (i.e., two-way interactions), when a 2-3 variable profile is more helpful and informative (e.g., “young women with opioid use disorder”, instead of just “gender”)}
Why MBP? Challenges with standard value based model: “Evidence-based practice”

- Program reports of deployment of “evidence-based practices” (“yeah, we do that”) in actuality may not be delivered with sufficient adherence and competence with regard to the original empirically-supported protocols resulting in unknown benefit.

- Systemic inability to ensure programs are implementing “evidence-base” (cf. JCAHO, CARF)

- Cost and effort of dissemination, adoption, and implementation of “evidence-based/empirically supported” interventions even when monitored for fidelity/adherence/competence may not actually result in improved patients’ outcomes (e.g., for psychosocial interventions) over treatment as usual (e.g., Morgenstern, Blanchard et al, 2001; Smedslund, Berg, et al, 2011).
Why MBP? Challenges with standard value model: Quality of care at Patient/Clinic-Level

- **Lack of patient awareness** of progress, and in what ways they’re progressing/not progressing during SUD treatment —disservice to patients (cf. HTN, diabetes)

- **Lack of clinician awareness** of patients’ specific status, trends, and patterns, on important clinical variables

- **Poor program** awareness and **knowledge** about own clinical effectiveness (e.g., rates of engagement, retention/dropout, response, “success rates”)

Why MBP? Challenges with standard value model:
Patient/Clinic-Level

• Inability to identify which patient sub-groups fail to respond to standard of care - consequently lowering overall program effectiveness

• Limited basis for clinical innovation other than unsystematic hunches; limited ability to measure effectiveness of any innovation

• Instead of clinical innovators driving clinical progress there is passivity, perceived impotence, even resentment - forced to deliver external “evidence-base/what the research shows”) that may not result in improved patient outcomes
Other Health Care example of MBP: Cystic Fibrosis

• Cystic Fibrosis Foundation (CFF) has detailed data from all clinics (k=117) nationally for past 50yrs.... How come?

• Not because “more enlightened” but because physician (LeRoy Mathews), in 1960s Cleveland was claiming a 2% mortality rate (national was 20%+; most dead by age 3yrs)

• In 1964, CFF gave UMN pediatrician Warren Warwick $10,000 to collect reports on every patient treated at the 31 CF centers in US—to test Matthews’s claim.

• Mdn age at death for patients in Matthews’s center = age 21!! - 7x older than patients treated elsewhere.

• He was found to be trying new procedures based on cumulative aspects of the disease; brought in other international treatment perspectives...

• By 1970s, 95% of patients living past 18th birthday

• His model soon became national standard

Source: The Bell Curve, Gwande, A. 2004
Outline

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“Outcomes”

• What is the “success rate” of your program?

• What is the “outcome” we’re interested in?

• How/when should we measure outcomes?
Why are treatments of addiction & hypertension evaluated differently?

The successful treatment of hypertension is seen as an ongoing process. The successful treatment of addiction is seen as something that begins after treatment stops.
We are treating a chronic illness; clinical course of SUD and achievement of stable remission can take a long time...

Opportunity for earlier detection through screening in non-specialty settings like primary care/ED

Addiction Onset

Help Seeking

4-5 years

Self-initiated cessation attempts

8 years

4-5 Treatment episodes/mutual-help

5 years

Full Sustained Remission (1 year abstinent)

Relapse Risk drops below 15%

Continuing care/mutual-help

60% of individuals with addiction will achieve full sustained remission (White, 2013)
Challenges in programs’ post-treatment “Outcomes” measurement...

• Three Cs
  • **Cost** – to do longer-term post-treatment follow up well ensure high/representative follow-up is expensive, proper measures, analyses

• **Case-mix** – “success rates” need to be adjusted/related to severity/prognosis demographics of clientele

• **Credibility** – will anybody believe me if I report my outcomes/suspect bias?
"The Cure for Alcoholism is offering readers something that's never been offered before ... A REAL CURE. This book will change the face of alcoholism and rock the rehab industry."

—Arnold Lazarus, Professor Emeritus, Rutgers

The Cure for Alcoholism

DRINK YOUR WAY SOBER

WITHOUT WILLPOWER,

ABSTINENCE OR

DISCOMFORT

Roy Eskapa, PhD

Foreword by David Sinclair, PhD

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This book reveals the 3-step holistic program to total recovery that is the basis of the miraculous success of the Passages substance abuse treatment center.

Chris Prentiss proves that alcohol and drugs are not the problems. They are merely the substances people choose to help themselves cope with their real problems.

The Alcoholism & Addiction Cure shows how you can create a personalized treatment program to heal the underlying causes of your dependency, end your relapse..."
Solution= Measurement-based Practice

• Contemporaneous measurement, summarization, and graphic representation of brief, psychometrically validated, patient-reported, clinical variables (outcomes), that have concurrent and predictive real-world utility and validity in assessing patients’ progress during treatment and continuing care for SUD (“addiction vital signs”)

• Use measures that have clinical utility and that are important to patients, providers, programs, payors

• Encourages within and between-program feedback and comparison; random audit (e.g., JCAHO-like auditing)
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MBP advantages

• **Enhanced patient awareness** of current status, trends, and patterns, on clinically relevant intermediate/ultimate outcomes (e.g., craving, days of use, pain)

• **Enhanced clinician awareness** of patients’ status, trends, and patterns (etc.) that can highlight off-course cases early and raise consciousness and allow adjustments to course and intensify of treatment

• **Enhanced program awareness** of program’s effectiveness in engagement, retention, clinical response to delivered care through continuous data aggregation

• **Enhanced ability to detect patient sub-groups failing to respond to standard of care** lowering overall program effectiveness
MBP advantages

• Enhanced awareness of poor patient response for patient sub-groups facilitates immediate development, testing and evaluation of clinical innovations NOW to meet needs of vulnerable populations (i.e., constant QI)

• Clinic/program-level data comparison across collaborating centers and systems can allow identification of over-performing programs (as well as under-performing programs)

• System-wide MBP can allow for continual identification of the most effective programs/practices and clinical innovations that have real-world ecological validity removing barriers of “research to practice” lags and translation

• Identify where exactly in the treatment causal therapeutic chain the treatment fails and thus enhance theories of SUD-related behavior change identifying the mobilizers, mechanisms, and moderators of such change...
Model for Testing Treatment Theories & Purported Mechanisms

- Possible to evaluate tx models (e.g., 12-step, cognitive-behavioral) by investigating extent to which presumed underlying mechanisms/proximal outcomes, in a particular tx model/theory, are met and relate to long-term outcomes.

- By specifying and testing linkages in the tx process chain, one can find out where, if anywhere, the process breaks down, identify the specific type of failure involved and make targeted improvements (Suchman, 1965; Finney, 1995).

Belief/Attitude change (e.g., increased need to attend AA)

Model for Testing Treatment Theories & Purported Mechanisms

Intermediate/proximal outcome

Ultimate/distal outcome

Treatment

Implementation Failure

Program Failure

Theory Failure

AA attendance/involvement

Abstinence

MBP examples

- Michael Lambert (OQ45)
- Tom McLellan (Concurrent Recovery Monitoring “Recovery Track”)
- Scott Miller (Feedback Informed Treatment FIT)
Beyond Measures and Monitoring: Realizing the Potential of Feedback-Informed Treatment

Scott D. Miller, Mark A. Hubble, Daryl Chow, and Jason Seidel
International Center for Clinical Excellence, Chicago, Illinois

More than a dozen randomized controlled trials and several meta-analyses have provided strong empirical support for routine outcome monitoring (ROM) in clinical practice. Despite current enthusiasm, advances in implementation, and the growing belief among some proponents and policymakers that ROM represents a major revolution in the practice of psychotherapy, other research has suggested that the focus on measurement and monitoring is in danger of missing the point. Any clinical tool or technology is only as good as the therapist who uses it. Failing to attend to the therapist’s contribution, the long neglected variable in psychotherapy outcome, ensures that efforts to create, research, and refine new outcome measurement systems will inevitably fall short. Research from the field of expertise and expert performance provides guidance for realizing the full potential of ROM.
EFFECTS OF USING ASSESSMENT INSTRUMENTS ON SUBSTANCE-ABUSE OUTPATIENTS’ ADHERENCE TO TREATMENT

SAMPLE
Baseline participants (n=280) were randomized into either intention-to-treat (n=116; control n=111) or per-protocol (n=100; control n=111) treatment groups. Participants were individuals with multiple substance use disorders who were a part of one of the five outpatient drug treatment centers in Belgium.

METHOD
The experimental group were informed about the intervention and of subsequent assessments plus feedback that would happen after each session. Assessments were given with the Readiness to Change Questionnaire (RCQ) and the Personal Resources Diagnostic System (PREDI). In the control group, individuals received

Individuals in the experiment group which included assessment with direct feedback had increased adherence to treatment at and beyond eight sessions as well as at and beyond twelve sessions.
In both conditions (intention-to-treat and per-protocol group), individual treatment where assessment and direct feedback were given improved adherence to treatment at or beyond eight sessions.

<table>
<thead>
<tr>
<th>Table 3 Adherence at and beyond eight and twelve sessions in intention-to-treat and per-protocol analysis</th>
</tr>
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<tbody>
<tr>
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<tr>
<td><strong>Intention-to-treat (n = 227)</strong></td>
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<td></td>
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<tr>
<td>experimental control</td>
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<tr>
<td>&gt;= 8 sessions</td>
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<tr>
<td>53.4%</td>
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<tr>
<td>34.2%</td>
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<tr>
<td>&gt;= 12 sessions</td>
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<td>33.6%</td>
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<td>20.7%</td>
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<tr>
<td>Risk ratio (RR)</td>
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<tr>
<td>1.6</td>
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<tr>
<td>1.6</td>
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<tr>
<td>95% CI</td>
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<tr>
<td>1.2-2.1</td>
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<td>1.0-2.5</td>
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<td>Per-protocol (n = 211)</td>
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<tr>
<td>experimental control</td>
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<tr>
<td>&gt;= 8 sessions</td>
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<tr>
<td>56.0%</td>
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<td>34.2%</td>
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<tr>
<td>&gt;= 12 sessions</td>
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<td>1.7</td>
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<tr>
<td>95% CI</td>
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<tr>
<td>1.2-2.2</td>
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<tr>
<td>1.1-2.7</td>
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</tbody>
</table>
SAMPLE
Patients (n=304), Clinicians (n=38) had patients complete assessments.

METHOD
During Phase I, administered self-report questionnaires (OQ-45) to track patient progress in tx. During Phase II, same patients given OQ-45, and the clinicians received immediate feedback. In the case the patient was “off-track”, the clinician was able to use clinical support tools to suggest improvements.

OUTCOMES
For patients who were “off-track”, feedback to counselors led to superior treatment outcomes compared to no feedback. The effects of feedback were evident on general psychiatric symptoms and alcohol and drug use.
High scores on the OQ-45 indicates greater levels of symptoms and poorer functioning.
During treatment, measure at beginning of sessions to evaluate progress and make care decisions … shows potential for timely and clinically relevant and accountable evaluation (“concurrent recovery monitoring” (CRM)).

CRM data allow clinicians better sense of patients’ recovery process and customize tx plans for each patients.
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Measurement Assisted Practice System

Quality    Accountability    Effectiveness    Empowerment
MEASUREMENT ASSISTED PRACTICE SYSTEM (MAPS)™
Abstinence self-efficacy
Frequency bothered Mental health symptoms
Recovery Motivation
IV drug use
Pain
Coping
Craving
Frequency of use
Frequency of intoxication
Engagement/Retention
Frequency substances/MH symptoms affected functioning
Medication Compliance
Mutual-help attendance
# Patient Measures

<table>
<thead>
<tr>
<th>Measured Constructs</th>
<th>Intake (Baseline)</th>
<th>Follow Up (Weekly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Medical History</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Needle Use/Overdose</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Substance Use &amp; Related Functioning</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Medication History &amp; Compliance</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mental Health Symptoms &amp; Related Functioning</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Abstinence Self-Efficacy &amp; Behavioral Intention</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Addiction Severity</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Craving &amp; Pain</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Recovery Motivation</td>
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MAPS Overview

Patient Access
● Patients have access to their unique, auto-generated survey via Tablet (HIPAA Compliant)
● Patients not able to resubmit survey or see additional information

Administrative Access
● Administrators have access to set up Patients, add/edit clinics, appointments, and set up Patient surveys
● Clinicians have access to see aggregate reports of all their Patients
● Directors have access to see aggregate reports of all Patients and by staff
● System has access to see aggregate reports of programs
Patient Survey Access

● When Patient arrives, Administrator easily configures tablet to auto-generate unique survey for Patient to complete prior to appointment.

● There are 2 survey types:
  ○ **Intake** - this is an intensive initial survey completed at the onset of the program
  ○ **Follow Up** - this is a short survey intended to be taken at each follow up appointment
Patient Survey Access

- Once tablet is set up for patient, Administrator hands patient tablet for survey completion

- Patient completes survey and returns tablet to staff.

Note: Patient may not click ‘back’ button after survey submission, nor has access to any other part of the system.
Dashboard

- Successful login redirects user to the Administrative Dashboard
- Left navigation menu displays links to pages and reports
- Chiclet factoids show system overview stats
Displays links to everything in the system
- Dashboard - links to the admin homepage
- Patients - Links to patients admin
- Clinicians - Links to clinicians admin
- Staff - Links to staff admin
- Directors - Links to directors admin
- Clinics - Links to clinics admin
- Appointments - Links to appt setup
- Reports - Links to real-time reporting
- System Setup - Links to survey admin
### Patients Administration

#### Patients

Use this screen to:
- Add new patients
- Edit existing patients
- Remove patients

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Clinician</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test, Test</td>
<td>Doctor, Zhivago</td>
</tr>
<tr>
<td>Regan, Max</td>
<td>Doctor, Doctor</td>
</tr>
<tr>
<td>Regan, Copper</td>
<td>Happy, Gilmore</td>
</tr>
<tr>
<td>Regan, Erin</td>
<td>Happy, Gilmore</td>
</tr>
<tr>
<td>Regan, Caitlin</td>
<td>Doctor, Doctor</td>
</tr>
<tr>
<td>Regan, Devon</td>
<td>Happy, Gilmore</td>
</tr>
</tbody>
</table>
Clinicians Administration

Use this screen to:
● Add new clinicians
● Edit existing clinicians
● Remove clinicians
Staff Administration

Use this screen to:
- Add new staff
- Edit existing staff
- Remove staff
Directors Administration

Use this screen to:
- Add new directors
- Edit existing directors
- Remove directors
Clinics Administration

Use this screen to:
- Add new clinics
- Edit existing clinics
- Remove clinics
How It Works

Tablet Sign In

- Appointment ID
- Patient Last Name
- DOB - mm/dd/yyyy
- Survey Type

Start Survey
MAPS Types of Questions that can be answered with a few clicks of a mouse....

• How many patients have we seen since the start of the year/last year/last quarter?
• What proportion of patients completed at least 2 weeks of treatment/completed treatment in 2016? Did this improve since 2015? What is the trend in the past 5 years?
• What is our change in outcomes of abstinence/MH sxs/intoxication freq/craving/pain scores for our patients for past X yrs? Do men and women differ? Do young women with opioid use disorder do worse? How about young men? (etc. etc.)
• What is the degree of medication compliance for patients entering our program during the first month of treatment? Is this an improvement over 2015?
• Are we reducing IV drug use? To what degree?
• To what degree is our innovative treatment addressing young mothers improving engagement and retention/clinical outcomes?
1. During the past week, how many days did you go without using any alcohol, marijuana, or other drugs?
Individual Self-Efficacy

14. How confident are you that you will not use alcohol during the next week? (0 = Not confident at all, 10 = Very confident)
4. During the past week, on how many days have you attended one or more self-help group meetings (such as AA, NA, CA or SMART Recovery) for your alcohol or drug use?
Percent Days Abstinent Comparison By Gender

1. During the past week, how many days did you go without using any alcohol, marijuana, or other drugs?
Reports

Analysis and Comparisons....

- By Patient
- By age
- By Gender
- By primary substance
- By time
- By psychiatric dx
- Any combinations

- Dynamic temporal resolution of graphic displays
- Filter by Question
- Filter by Chart Type (Bar or Line)
Thank you!

If You Can't Measure It, You Can't Improve It

(William Thomson, Lord Kelvin)
MAPS™
Measurement Assisted Practice System
Quality  Accountability  Effectiveness

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