

Closing the Efficacy-Effectiveness Gap: Translating Both the What and the How From Randomized Controlled Trials to Clinical Practice

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There is a well-known gap between the clinical outcomes achieved within randomized controlled trials (RCTs) and those seen in real-world clinical practice. This phenomenon, sometimes called the “efficacy-effectiveness” gap, has been cited as a potential barrier to achieving optimal benefit from available treatments.^{1,2} The time lag between medical discovery and routine implementation can at times be extraordinarily long (such as the 264-year gap between the first use and the routine use of lemon juice for treatment of scurvy),³ with current estimates suggesting an average 17-year lapse between initial publication and widespread clinical practice.⁴ This pattern has been demonstrated in multiple settings within health care, including psychiatry.⁵

One major cause of this gap is the failure to consistently implement those treatments identified as efficacious in RCTs. For example, Wang et al.⁶ demonstrated that less than half of all patients treated by mental health specialists received minimally adequate care. Indeed, the rate of concordance with evidence-based mental health care practice may be as low as 10% for certain processes, such as those related to the recognition of and intervention for alcohol use disorders.⁷ In addition to these errors of omission, substantial variation in clinical practice has been identified, with rates of antidepressant initiation varying several-fold even among highly similar specialty mental health clinics.⁸

To encourage adoption of more consistent, evidence-based treatment practices, a number of disorder-specific guidelines and treatment algorithms have been developed.⁹⁻¹² The goal of these guidelines is to replicate the

outcomes achieved in RCTs by advising clinicians to implement those treatments found to be most successful. This approach emphasizes the *what*; that is, it emphasizes translation of the *content* of RCTs as being important for improving real-world clinical practice.

Even in a guideline-driven practice, however, clinical treatment is often associated with wide variations among practitioners. Clinicians may differ, for example, in how they assess the outcomes of treatment (e.g., symptoms, function, side effects), with clinical impression often used instead of objective symptom assessments, even though the former is less accurate.¹³ They may also differ in the degree to which patients are involved in the decision-making process, a concept shown to promote greater medication adherence.¹⁴ These differences in the process of care delivery may result in wide variation in outcome, even if the content of that care is consistent.¹⁵

Therefore, while we strongly agree with the importance of translating the *content* of RCTs to clinical practice, we also believe that clinicians should adopt some of the *processes* that have been shown to be effective in clinical trials, including routine outcomes measurement and involvement of patients in decision making. This implies translating the *how* from RCTs to real-world clinical care, something which has received relatively less attention.

Outcome Measurement and Patient Involvement

As noted by others,^{4,16} progress in the domain of routine outcome assessment is the key to implementing research findings into ordinary practice. Routine and systematic measures of patients' functioning and well-being, along with disease-specific clinical outcomes at appropriate time intervals, have been long recognized as important tools for patient management.¹⁷ Thus, the assessment of clinical effectiveness and efficiency should be based not only on the outcomes achieved across a delivery system (sometimes called traditional or “driven” outcome assessment) but also on the routine outcome assessment performed by clinicians at the front lines of care.¹⁸ In the words of Eisen and Dickey,¹⁹ implicit in this shift is the idea that “although not all clinical practitioners can be

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outcome researchers, all can (and perhaps should) conduct outcome assessment with their clients in their clinical practices.”^(p181) A significant proportion of the available literature is aimed at defining the concepts, boundaries, and characteristics of routine outcome assessment, as well as its application within mental health care settings.^{14,18,20,21}

The use of outcomes instruments may actually enhance, rather than detract from, the patient-centeredness of the mental health care experience. This is important, as a patient-centered approach that facilitates patient participation and actively seeks the patient’s perspective in the treatment interaction has been found to be associated with increased satisfaction and compliance,²² less symptom burden,²³ and fewer misunderstandings.²⁴ The use of patient-reported outcome measures, particularly those that capture important aspects of the patient’s experience (such as quality of life or distress), may increase health professionals’ awareness of and ability to address patients’ concerns.²⁵ These measures might be used as conversation starters, as methods to identify patient preferences and help clinicians to make informed decisions, with an end goal of improving patient-provider communication and shared decision making.^{26,27} With routine collection and feedback at the point of care, these standardized measures, augmented in some cases by individualized patient measures (e.g., how many times did you leave the house this week?), can be used to track treatment success (or lack thereof) from both staff and patient perspectives.¹⁶

Toward a Measurement-Based Treatment Approach

We cannot definitely state that measurement is the “active ingredient” that distinguishes clinical trial outcomes from those in the community. Indeed, a number of factors, including differences in both patient factors (e.g., degree of comorbidity) and care delivery factors (e.g., intensity/frequency of interaction), may contribute to this phenomenon. That said, a growing body of evidence now suggests that outcomes measurement plays an important contributing role. The integration of outcomes measurement and patient involvement, sometimes called *collaborative care* or *measurement-based management*, has formed the basis for recent large-scale clinical trials of both bipolar disorder and unipolar major depression.^{28–32} These studies demonstrated the impact of embedding measurement in an evidence-based algorithmic approach to care, with data indicating favorable outcomes with respect to depressive symptomatology, functioning, and side effects.^{33,34} In fact, in the Sequenced Treatment Alternatives to Relieve Depression (STAR*D) trial, Gaynes et al.³⁵ found that equivalent high-quality depression treatment could be provided in either primary or specialty care, and will produce generally equivalent outcomes when it is delivered within the context of a measurement-based care approach.

In addition to these large-scale trials, the effectiveness of routine outcome assessment with feedback to the point

of care has itself been evaluated in the context of both medication management^{36,37} and psychotherapy.³⁸ Taken together, these studies demonstrate that the use of standardized clinical assessment tools in mental health care is not only feasible but also helpful to clinicians. Furthermore, this approach to care led to actual changes in the course of treatment, resulting in greater functional improvement³⁸ and even fewer psychiatric admissions when compared with treatment as usual.³⁶

It remains unclear why the addition of a relatively simple tool, such as a self-reported questionnaire, would have as large an impact on clinical practice as these studies suggest. The clinician unaided by the use of outcomes tools is making treatment decisions based on elicited responses and clinical observation (Is the patient smiling more? Less restless? More talkative?). Could it be that these tools fill in the assessment gaps that the harried clinician must otherwise leave unfilled due to time constraints? Could our observational skills be flawed or biased in some way, perhaps influenced by outside factors, at least in some percentage of cases? Or do these tools enhance an otherwise thorough and accurate clinical assessment by providing clinicians with greater certainty regarding the patient’s condition, allowing them to more confidently make changes in the treatment approach? At this point, we are left to speculate. Whatever the actual mechanism (and there may certainly be other potential explanations), we should not be put off by the apparent simplicity of the intervention. Recent evidence has shown that simple tools, such as brief checklists used prior to surgery, can in fact have a substantial impact on patient outcome.³⁹

Overcoming Barriers to Implementation

In spite of a growing international consensus that outcomes should be routinely measured in clinical work,^{40,41} routine use of this approach is unfortunately limited. There is certainly no shortage of real-world barriers to adopting measurement-based management, including lack of agreement about what to measure, lack of familiarity with the measurement instruments, lack of faith in the basic psychometric properties of available tools, lack of time and resources needed to complete and review measures, lack of concordance between measures and treatment philosophy, and organizational resistance to change.^{42–44} Measurement-guided care will not become routine until these barriers are addressed. This will require more work within the field to better define and demonstrate the best use of measures in the conduct of clinical care. It will also quite likely require realignment of the financial incentives, which, at this point, do not encourage or reward the effort involved in making this approach a routine component of psychiatric care.

Moreover, routine outcome assessment is more likely to happen if both patients and clinicians can perceive

some benefits. If they can use the information that is routinely collected in a meaningful way in the therapeutic process, they are more likely to comply with the requirements of data collection.¹⁴ Beyond that, measures should be crafted and disseminated in a manner that reflects the complex, time-crunched world of a clinician in clinical practice. Ultimately, this may favor patient self-report instruments seamlessly integrated with documentation systems to avoid duplication of effort. This approach, of course, would require a more integrated information system within mental health care.⁴⁵

Finally, we as clinicians must overcome our general overconfidence in our ability to intuit the condition of the patients we are trying to help. Our internal medicine colleagues no longer use the degree of cyanosis as a measure of a patient's oxygenation; although it is certainly a relevant marker, it is simply too gross a measure to optimally titrate therapy. Why do we in psychiatry still insist on using our own perception of a patient's "mental cyanosis" in determining whether to dose increase, switch, or augment? Like the pulse oximeter, better tools are available. We need to use them.

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