Process Measures Used in Quality Assessment and Improvement: Are They Based on Research Evidence?

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Background

Gaps between actual and evidence-based practices (EBPs) have been observed throughout health care. Models of routine, measurement-based quality assessment and improvement (QA/QI) are advocated as a means of enabling healthcare organizations to narrow gaps and otherwise improve quality of care.

Most facilities have begun to implement QA/QI, but there is little rigorous evidence that these programs are succeeding in improving clinical outcomes. There are many reasons why this may be so:
1) QA/QI models may be flawed.
2) QA/QI models may be inadequately implemented.
3) QA/QI may not be focusing on EBPs. Without evidence linking a clinical practice to outcome, improvement in that practice would not be expected to improve outcomes.

This study examines the third possibility: do the quality measures used for QA/QI in mental health address EBPs? Quality measures are chosen by local facilities & delivery systems, payers, MCOs, regulators, accreditors, and other groups. These measures shape the focus of QI activities.

Aim

Using data from a national inventory of process measures proposed for QA/QI, the objectives of this study were to determine:

1) The proportion of measures in which the underlying clinical process is supported by good research evidence, fair research evidence, or clinical opinion.

2) The proportion of measures for which predictive validity has been established through linkage between measure conformance and improved clinical outcomes.

3) The association between the evidence basis of quality measures and their use in routine QA/QI.

Illustrative Process Measure for QA/QI

Measure Name: Medication Treatment for Acute Depression

Summary: The proportion of individuals started on an antidepressant for major depression who remain on the medication for at least 12 weeks.
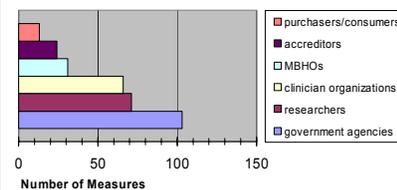
Evidence Level: AHRQ Level A. Good research-based evidence
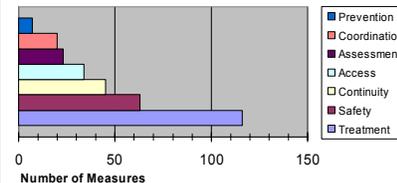
Source: HEDIS 2.0 (NCQA)

Methods

Measure data were drawn from the National Inventory of Mental Health Quality Measures, a survey of single-item process measures proposed or implemented for QA/QI by U.S. healthcare stakeholder organizations. 348 organizations were contacted using chain-referral and snowball collection techniques, mailings, website review, and database searches. 308 unique measures were identified from 50 organizations representing a variety of stakeholder perspectives. (Figure 1).

Figure 1. Measure Developers

Legend: purchasers/consumers, accreditors, MBHOs, clinician organizations, researchers, government agencies

Number of Measures (0, 50, 100, 150)

Literature reviews were conducted to assess the evidence basis for the practice area underlying each measure. Studies of the association between these processes and clinical outcomes were identified and rated using AHRQ criteria (defined in Figure 3). Evidence ratings were tested for inter-rater reliability, with kappa=0.7. Studies assessing measure validity were also reviewed. Chi square tests were used to assess the association between evidence basis and use of measures for routine QA/QI.

Figure 2. Domain of Quality

Legend: Prevention, Coordination, Assessment, Access, Continuity, Safety, Treatment
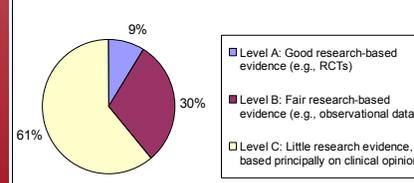
Number of Measures (0, 50, 100, 150)

Results

Measure Subjects. The 308 measures addressed a variety of clinical diagnoses, treatment modalities, and vulnerable populations. 39% examined the quality of care across diagnoses; 14% assessed care for depression, 11% for schizophrenia, and 8% for substance-related disorders. Dementia, personality disorders, and bipolar disorder were addressed by less than 1% of measures. Of 178 measures examining specific treatment modalities, 55% assessed psychosocial treatments and 45% somatic treatments. 16% assessed care for child and adolescents, 7% care for elderly patients, and 3% for individuals with comorbid psychiatric and medical conditions.

Measure Use. 55% of measures had been implemented for routine use in QA/QI, while 26% had been pilot tested or used in research studies. 19% of measures had been proposed by stakeholder groups, but not tested or implemented.

Evidence Basis. Figure 3 depicts the distribution of measures by their basis in evidence from clinical research. The majority of measures (61%) were based principally on clinical consensus or or opinion. 9% were based on rigorously controlled studies, while 30% were based on observational data and less well controlled trials. Measures assessing biological interventions were more likely to be evidence-based than those assessing psychosocial interventions (X^2=3.6, p=0.057). Measures based on research evidence were significantly less likely to have been implemented for routine QA/QI (X^2=16.8, p<0.0001).

Measure Testing. Only 8% of measures had been tested for validity (8 positive, 10 negative, 8 mixed) and 7% for reliability (15 positive, 3 negative, 1 mixed).

Figure 3. Research Evidence for Clinical Processes Underlying Measures

9%, 30%, 61%

Legend:
Level A: Good research-based evidence (e.g., RCTs)
Level B: Fair research-based evidence (e.g., observational data)
Level C: Little research evidence, based principally on clinical opinion

Conclusions

Several hundred process measures have been proposed for QA/QI in mental health care, but the majority of these examine clinical practices and processes that are not supported by research evidence. Few measures have been tested for validity. Measures based on research evidence are less likely to be used in routine QA/QI programs.

Significance

Spurred by policy makers, payers, and accreditors, healthcare systems and facilities are putting greater resources into QA/QI activities. These activities have been advocated as a means of improving patient outcomes by closing gaps in the use of EBPs. Fulfilment of this expectation may be limited by our finding that most quality measures for mental health QA/QI examine clinical processes not based on research evidence. This conclusion raises several questions for further study:

If not a basis in research evidence, what values and/or priorities *are* represented in the selection of topics for QA/QI activities?
• Patient perspectives of care?
• Access and continuity?
• Accreditation requirements?
• Cost considerations?

Is stakeholder interest in improving the use of EBPs greater than that suggested by current quality measures? If so, what are the barriers to addressing EBPs in routine QA/QI?
• Availability of adequate, validated measures?
• Burden of data collection to assess EBPs?
• Agreement among stakeholders on QI goals?
• Availability of effective methods for improvement?

How can barriers to addressing EBPs in QA/QI activities be overcome?

Acknowledgements & Resources

The National Inventory of Mental Health Quality Measures can be accessed through a searchable database at **www.cqaimh.org**

A toolkit, "Selecting and Using Process Measures in Quality Improvement", is available through **www.hsri.org**