

Measuring and improving the quality of mental health care: a global perspective

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Mental disorders are common worldwide, yet the quality of care for these disorders has not increased to the same extent as that for physical conditions. In this paper, we present a framework for promoting quality measurement as a tool for improving quality of mental health care. We identify key barriers to this effort, including lack of standardized information technology-based data sources, limited scientific evidence for mental health quality measures, lack of provider training and support, and cultural barriers to integrating mental health care within general health environments. We describe several innovations that are underway worldwide which can mitigate these barriers. Based on these experiences, we offer several recommendations for improving quality of mental health care. Health care payers and providers will need a portfolio of validated measures of patient-centered outcomes across a spectrum of conditions. Common data elements will have to be developed and embedded within existing electronic health records and other information technology tools. Mental health outcomes will need to be assessed more routinely, and measurement-based care should become part of the overall culture of the mental health care system. Health care systems will need a valid way to stratify quality measures, in order to address potential gaps among subpopulations and identify groups in most need of quality improvement. Much more attention should be devoted to workforce training in and capacity for quality improvement. The field of mental health quality improvement is a team sport, requiring coordination across different providers, involvement of consumer advocates, and leveraging of resources and incentives from health care payers and systems.

Key words: Mental disorders, quality of care, quality measurement, health informatics, electronic health records, patient-centered outcomes, health care systems, health policy

Mental disorders are responsible worldwide for 32% of years of disability and 13% of disability adjusted life years¹. In addition, persons with these disorders face increased rates of morbidity from general medical conditions²⁻⁴ and a higher risk of premature mortality⁵. Among persons with mental disorders, disparities in quality and outcomes of care are more pronounced for racial/ethnic minorities⁶⁻⁸, and those from lower socio-economic status groups⁹. Severe mental illness (e.g., schizophrenia and bipolar disorder) is emerging as a prominent health disparity category, given estimates that persons in this group die 8-25 years younger than the general population^{10,11}. Despite the contribution of mental disorders to the global burden of disease, the quality of care for these disorders remains suboptimal, and there are persistent gaps in access to and receipt of mental health services worldwide¹²⁻¹⁸.

Quality of care, as described by the Donabedian framework, includes structure, or organization of care, the influence of structure on clinical processes of care as delivered by providers, and ultimately, patient-level health care outcomes¹⁹⁻²¹ (see Table 1). This system-level perspective of health care quality (structure, process, outcomes) became the foundation for two US Institute of Medicine's reports: Crossing the Quality Chasm²² in 2001 and Improving the Quality of Health Care for Mental and Substance-Use Conditions²³ in 2006.

The Crossing the Quality Chasm report highlighted six aims towards quality improvement – safe, effective, patient-centered, timely, efficient, and equitable care – and stated that “quality problems occur typically not because of failure of goodwill, knowledge, effort or resources devoted to health care, but because of fundamental shortcomings in the ways care is organized”²². The 2006 report further noted the persistent gaps in quality of mental health care and called for systematic efforts to improve quality in this area²³.

Nonetheless, the overall quality of mental health care has hardly improved since publication of these reports and, in some cases, has worsened over time²⁴. In the US, only a third of those in need receive adequate mental health care²⁵. The level of mental health quality of care is poor and the rate of improvement is slow compared to general medical conditions²⁶. For example, recent data indicate that less than half of patients with publically funded insurance get adequate follow-up after mental health hospitalization²⁷. This persistent gap in quality of mental health care is due in part to lack of systematic methods for measuring quality. We cannot improve what we cannot measure.

As health care costs continue to rise and mental disorders become more prevalent worldwide, health care leaders and providers will need valid information on quality of care, in order to: a) identify population needs and make decisions on how to provide the best services, and b) apply effective strategies to improve quality and reduce disparities. This paper describes

the current state of quality measurement of mental health care and the challenges it poses to health care systems internationally, and suggests next steps for health care systems around the world to better implement quality measurement and ultimately improve quality of mental health care.

CURRENT STATE OF MEASURING MENTAL HEALTH CARE QUALITY

Worldwide, efforts to standardize mental health care quality measurement are slowly evolving. Measuring and reporting quality of care on a routine basis enables the application of quality improvement at provider, clinic and health system levels, as well as accountability mechanisms that include public reporting and financial penalties and rewards. However, measuring quality of mental health care is challenging worldwide, as it can vary based on the organization of services by country. In general, structure, process and outcome measures have all been employed for accreditation, standard setting, quality improvement and accountability in health care generally and in mental health care. Each have strengths and weaknesses and, ultimately, a balanced portfolio across these categories is needed.

Health care structural components, such as resources (personnel, training, facilities) and policies that support measurement-based care, are fundamental to achieving high quality care. However, while adequate structure measures create the necessary infrastructure for reporting on processes and outcomes and conducting improvement activities, they do not provide sufficient detail as to whether quality services are actually being delivered as intended (fidelity) nor if the outcomes obtained are acceptable.

Ideally, process measures can fill this gap and assess whether evidence-based practices are in fact being implemented. These measures generally involve operationalizing clinical guidelines into specifically defined denominators and numerators, using data that can be reliably obtained from feasibly accessed data sources. However, many widely used mental health process measures lack evidence to be used in mental health quality and outcome improvement. Only a few studies have linked quality of care process measures to improvements in patient functioning and clinical outcomes, calling into question the clinical validity of these measures. Some notable exceptions that have been reported recently show that measures for improved processes of care (e.g., appropriate pharmacotherapy, continuity of care, and psychotherapy use) are associated with reduced mortality²⁸⁻³¹ and reduced symptom severity³². Still, even among existing mental health process measures that could be reported, not all have been

validated^{25,26,33-39}.

Outcome measures assess whether the care that a patient receives actually improves his/her symptoms – e.g., improvement or remission in Patient Health Questionnaire-9 (PHQ-9) scores – or functioning. These measures can also assist providers in planning, monitoring and adjusting treatment options (e.g., change in medication, multi-component treatment collaboration). However, in order to address the complexity of mental disorders, mental health outcome measures should not only focus on symptoms and functioning, but also on issues such as quality of life, recovery, and community tenure.

Furthermore, the use of outcome measures for the purpose of evaluating the quality of mental health care requires sophisticated risk adjustment approaches to control for underlying patient risk factors beyond providers' control, such as severity of illness, medical history/health status, socio-demographic factors, in order to minimize “cherry-picking” of the healthiest patients. This, however, may be challenging, due to typically limited available data on psychiatric symptoms, social context and other patient characteristics. Increasingly, there are calls to add patients' experiences to a balanced portfolio of measures, to get their view about a system's structures, the care they have received, as well as self-reported outcomes.

In addition, the mental health service field lacks consistent outcome measures and tools that are embedded in current information systems and other rapidly changing technologies. Lack of ability for system-wide routine data collection within existing electronic health care systems can ultimately impede continuous quality improvement for patients. To mitigate this challenge, mental health experts are embracing measurement-based care to promote the use of outcome measures on a routine basis.

Measurement-based care is a core component of the chronic care model⁴⁰⁻⁴², which uses proactive data collection to provide patient-centered care plans. These are delivered by a care manager who also coordinates care between different providers so that it is tailored to the patient's current disposition and self-management preferences. The chronic care model has been shown in multiple randomized trials to improve physical and mental health outcomes across different mental disorders, with little to no added cost⁴². Measurement-based care relies on clinical measures (e.g., PHQ-9, mental health vital signs) as well as systematic, longitudinal and action-oriented care to track, assess and respond to changes in individualized outcomes, such as symptom severity and goal attainment, frequently and over the long term.

Key international examples of measurement-based care include the Improving Access to Psychological Therapies (IAPT) program within the UK National Health Service^{43,44}, the Dutch Depression Initiative primary mental health collaborative care model⁴⁵, and the Australian

TrueBlue model⁴⁶. Notably, after initial pilot testing and successful evaluation, the IAPT was expanded in the UK for at least 1.5 million adults to access care each year by 2020/21⁴⁷, and the Depression Initiative primary mental health collaborative care model was included in the Netherlands into the list of national essential benefits as part of the Health Insurance Act⁴⁵. However, these programs do not reach all patients with mental disorders, and a majority of health care providers do not routinely apply measurement-based care^{48,49}.

In the US, there are a few notable examples of public and private measurement-based care programs in primary and specialty mental health care settings that are adopted as clinical tools, but to date not widely used for quality measurement. For example, the Sequenced Treatment Alternatives to Relieve Depression (STAR*D)⁵⁰, the US Department of Veterans Affairs Behavioral Health Laboratory model^{51,52} and the US Department of Defense Behavioral Health Data Portal⁵³ are all examples of measurement-based care applied to patient populations. In the State of Minnesota, the Depression Improvement Across Minnesota, Offering a New Direction (DIAMOND) initiative implemented measurement-based care to help benchmark quality improvement efforts as part of a bundled payment initiative for depression care management⁵⁴.

UNIQUE CHALLENGES TO MENTAL HEALTH CARE QUALITY MEASUREMENT

In the US and worldwide, mental health care quality measurement and measurement-based care have a weak infrastructure in health care systems. This is due to a multitude of barriers specifically related to mental health, that involve limitations in policy and technology as well as limited scientific evidence for mental health quality measures, lack of provider training and support, and cultural barriers to integrating mental health care within general health environments.

The development and application of mental health care quality measures has lagged behind other areas of medicine, in part to lagging policy and technological initiatives. For example, in the US, quality measures are used for chronic medical conditions to set reimbursement through Medicare, the government's public insurance program for elderly individuals (e.g., Value-Based Purchasing Modifier⁵⁵), Medicaid⁵⁶ and State Medicaid Reporting Programs⁵⁷, and to benchmark care quality in the private sector (e.g., PhysicianCompare.Gov⁵⁸, HospitalCompare.Gov⁵⁹). Yet, despite the mental health parity laws passed ten years ago, which stipulate equal coverage for mental health conditions, and the availability of over 500 measures for monitoring quality of mental health care, only 5% of these measures are actually

used in the above major quality reporting programs, and only 10% of the measures have been endorsed by the US National Quality Forum⁶⁰ (e.g., Value Based Inpatient Psychiatry Quality Reporting Program⁶¹). Of these available measures, the majority (72%) focus on processes quite distal to outcomes (e.g., screening/assessment)⁶⁰ rather than on process measures that indicate treatment adequacy or intensity for mental health care.

On the other hand, there are many important gaps in the evidence base to support mental health quality measurement, especially for outcomes that are most meaningful to consumers, as well as for specific populations such as children. Measures are also lacking for mental health conditions commonly experienced in populations, such as anxiety disorders, and lacking in depth for evidence-based treatments such as psychotherapy. While there is well-established evidence for mental health interventions such as pharmacotherapies, specific manualized psychotherapies (e.g., cognitive behavioral therapy), and team-based interventions (e.g., assertive community treatment), the evidence base for many other psychosocial interventions needs to be strengthened⁶². For evidence-based psychotherapies, quality measures may not fully capture whether they were delivered adequately. Moreover, many providers are able to codify psychosocial interventions in administrative data, but not whether the intervention was delivered with fidelity^{23,63}.

There is also insufficient attention to the development and implementation of performance measures that reflect patients' views and treatment choices. As a result, few endorsed mental health quality measures assess patient-centered care, notably mental health recovery. The US Substance Abuse and Mental Health Services Administration defines mental health recovery as "a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential"⁶⁴. Yet, identifying valid recovery measures has been hampered by a lack of consensus about an operational and measurable definition of recovery among providers, the research community and, most importantly, consumers of mental health services. While this is partially inherent to the subjective process of recovery, it has resulted in a large variation in reliability and validity of recovery measures and tools. Beyond the needs for further evidence to support clinical guideline development and a broader array of valid and useful patient reported outcomes, there has been little investment in the development and testing of mental health care quality and recovery measures to assure their validity, utility and comprehensiveness.

Furthermore, the mental health field is far behind other areas of medicine with regard to the implementation of technologies, notably health information technology to capture relevant health information that could support reporting on mental health care quality measures. Despite some

incentives to implement electronic health records (e.g., the HITECH Act in the US), there is no specific requirement worldwide to include mental health data in electronic records. Currently, many mental health care quality measures are not linked to existing data sources, which mostly rely on claims data rather than data derived from electronic health records or electronically-reported patient outcomes^{26,65}. As a result, these measures cannot be automated to generate meaningful data⁶⁰, which in return could support quality measurement and inform routine medical practices and procedures. In addition, mental health providers often use separate electronic medical record systems from their general medical provider counterparts, or do not have access to these systems at all, creating big challenges to engage the mental health field as a whole in quality measurement and improvement of care for patients who often require coordinated services across different sectors.

In some countries with common claims datasets or electronic medical records, mental health care measures have been variably adopted^{66,67}. For example, the UK National Health Service has a long tradition of using electronic medical records in primary care for routine quality measurement, most notably through the Quality Outcomes Framework, the largest payment-by-results program in the world. Over the past ten years, the National Health Service has tried to implement a similar outcome-based reimbursement program in mental health care⁶⁸. This would have made routine measurement mandatory for funding. However, the administrative burden involved and the risk of gaming (i.e., biased reporting to improve apparent performance) has led to resistance from the profession^{68,69}. The program has now been indefinitely postponed in implementation in favor of smaller areas of work⁷⁰. One of these areas is the above-mentioned IAPT initiative, which embedded routine outcome measurement – using validated tools such as the PHQ-9 and the Clinical Outcomes in Routine Evaluation (CORE) – and could demonstrate good outcomes that have led to further funding into the initiative⁷¹. In Canada, there has been the adoption of mental health care quality measures in electronic medical records⁶⁷. Still, due to long-standing stigmatization and functional challenges, consumers of mental health services may feel burdened by the data gathering. Overall, integrating health information technology into routine mental health treatment practices is paramount to support measurement-based care for mental health^{72,73}.

In addition, heterogeneity of provider training and certification requirements within mental health care can also hinder quality measurement implementation. For example, in spite of their extensive involvement in mental health care, less than one third of US social workers receive training in quality measurement and effective clinical practices⁷⁴. Moreover, many of the challenges that providers address with their patients include service needs beyond health care

(employment, housing, education, criminal justice and welfare), and quality of care for these services is rarely measured to ensure improved mental health outcomes and recovery. These services often require coordination across different providers, settings, agencies and even sectors, but there is little incentive to improve quality when there are no measures to assess accountability for these services. A notable exception to this has been the US cross-agency priority goal of ending Veteran homelessness, where the US Department of Veterans Affairs began working with other federal, state and local agencies to provide housing vouchers and track outcomes over time⁷⁵.

Finally, cultural and administrative differences between physical and mental health providers hinder quality measurement. “Physical” and “mental health” services, in many if not most countries, are often administratively separated at clinical, organizational, policy and financial levels. Mental health care also requires more of a team effort between psychiatrists, social workers, psychologists and case managers, and mental health visits are typically longer, due to the nature of the illnesses.

INNOVATIONS IN MENTAL HEALTH CARE QUALITY MEASUREMENT AND IMPROVEMENT

Several innovations are underway worldwide for measuring and improving quality of mental health care. These initiatives combine advances in technology or measurement-based care with concerted efforts to obtain patient and provider buy-in towards continuous quality measurement and improvement.

International innovations in quality measurement include the World Health Organization (WHO)'s Assessment Instrument for Mental Health Systems⁷⁶, and the International Initiative for Mental Health Leadership⁷⁷, which provides data on reporting, ability to report, and ascertainment of data across countries.

In the Netherlands, routine outcome monitoring has been incorporated into health insurance reimbursement mechanisms. This evaluates three aspects of quality – effectiveness of treatment, safety and client satisfaction – through ten measures that are repeated at the start and end of treatment⁷⁸. The initiative stipulates that the indicators are collected centrally and published transparently to stimulate continuous quality improvement.

In Australia, the use of standard outcome measures for all mental health service users was mandated in 2000, and all Australian states have signed agreements to submit routinely

collected outcomes and case mix data. The principal outcome measures are the Health of the Nation Outcome Scales (HoNOS) and a quality of life instrument. To be able to implement this initiative on such a large scale required considerable investment in mental health providers, ongoing training and a broad program of engagement⁷⁹.

In New Zealand, mental health providers focus on monitoring of key indicators, such as seclusion and restraint minimization, and suicide reduction⁸⁰. In the UK, the National Health Service Benchmarking Network⁸¹ is a collaboration between all mental health provider organizations, which supply data to benchmark their own practice against others. The Benchmarking Network was developed because of the perceived inadequacy of the national data collection system and the lack of feedback on the large amount of data collected. As a ground-up initiative, the Benchmarking Network required a large degree of engagement and dynamic leadership.

In the US, national efforts are underway to identify cross-cutting mental health care quality measures and to determine who “owns” responsibility for improving quality. In the Department of Veterans Affairs, quality measures are set by central leadership for implementation in over 160 medical centers. While quality of mental health care in the Department has been widely documented, regional variations in processes and outcomes of care are common⁸²⁻⁸⁶. Hence, while regional service directors are ultimately responsible for improving quality, the Department has launched national initiatives to improve quality of care and reduce disparities in mental health care, notably through the implementation of the Uniform Mental Health Services Handbook⁸⁷ and the deployment of mental health care managers in primary care settings to promote integrated care. The Department has also sponsored the national implementation of evidence-based psychotherapy for post-traumatic stress disorder⁸⁸.

Pay-for-performance (now more often termed “value-based payment”⁸⁹) models are also increasingly being advocated in the US and internationally. These initiatives reward providers for outcomes improvement and are also increasingly becoming used in mental health care^{90,91}. Other innovations involve care beyond the clinic walls, including the measurement of recovery-oriented services⁹² and incorporation of mobile health to capture outcome data^{65,93}. The US Centers for Medicare & Medicaid Services is also deploying initiatives that seek to improve provider use/engagement in evidence-based practices as well as delivery system changes to sustain them. The main focus has been to integrate mental health treatment into primary care, where most patients with mental health symptoms initially present. The Institute for Healthcare Improvement Breakthrough series used business practices to integrate chronic illness care management for depression in primary care settings⁹⁴. There also exist other pockets of

innovations in integrating mental health into primary care (e.g., the Health Care System Research Network, the Community Mental Health - Cherokee Health System⁹⁵), but few frameworks to scale up and spread.

In the UK, the Commission for Quality and Innovation is implementing pay-for-performance for mental health, in which payments are based on meeting national quality improvement targets⁹⁶. The targets are set locally, but with centrally agreed goals. Nonetheless, inevitable variations in care delivery make the development of quality measures a more difficult process in the mental health field.

Finally, there are emerging efforts to engage multi-stakeholder groups to solicit feedback throughout the entire process of quality measurement development and implementation. While frontline clinicians are often able to provide input for quality measures development, garnering feedback from consumers and their caregivers is also considered essential for buy-in⁹⁷. Byron et al⁹⁸ describe a process of engaging stakeholders at all levels of measure development and implementation for Children's Health Insurance Program Reauthorization Act (CHIPRA) quality measures. The Measure Development Plan outlines the planned process, including engaging stakeholders⁹⁹. The National Quality Forum uses a consensus process for review and endorsement of measures, including periods for public comment¹⁰⁰. Moreover, the Centers for Medicare & Medicaid Services recently convened technical expert panels to help develop, select and maintain measures including clinicians, statisticians, quality improvement experts and methodologists¹⁰¹.

RECOMMENDATIONS

We offer several recommendations for implementing quality measurement as an ultimate tool for improving quality of mental health care. First, health care payers and providers will need a portfolio of validated measures of patient-centered outcomes across a spectrum of conditions commonly experienced, as well as for special populations, including children/youth¹⁰². Moreover, valid measures that assess mental health care access are also needed, in order to more comprehensively determine quality of care beyond what happens within the clinical encounter. Measures need to be validated across the Donabedian spectrum (structure, process, outcome).

Second, common data elements should be developed and implemented for diagnoses, clinical measures and mental health "vital signs" and embedded within existing electronic health

records and other information technology tools such as smartphones. Other elements that need to be standardized include coding in both electronic health records and administrative datasets for interventions such as medications, psychotherapies (including fidelity measures) and other treatments or care processes. Innovations such as natural language processing, or the automated capture of information from electronic medical records, are already being used to facilitate data capture for information (e.g., homelessness or suicide risk) not readily apparent from claims data.

Third, mental health outcomes will need to be assessed more routinely, and measurement-based care not only needs to be embedded within existing technologies, but should become part of the overall culture of the treatment setting and health care system. Regular outcome assessments have been linked to improvements in service delivery and lower readmission rates¹⁰³, whereas infrequent outcome measurement did little to improve quality¹⁰⁴. Moreover, routine outcome measurement that was fed back to the clinician and used to make joint treatment decisions with the patient did lead to better quality of life¹⁰⁵. Quality measures need to be used in health systems that can generate near-real time data on quality in order to promote continuous quality improvement, and need to be monitored for unintentional consequences such as gaming.

Fourth, health systems need to provide investment, leadership and coordination to improve and link data sources in order to measure quality across settings. Systems will need to involve frontline providers and consumers in quality measurement endorsement and design measures that fit the needs of these providers and consumers rather than those of the administrators. Too often systematic quality outcome measurement is driven by a desire to inform policy or reduce expenditure rather than improve treatment decisions for individuals, which may have an adverse effect if staff (who are meant to be collecting the data) perceive it as a distraction with little value. Efforts like the UK Benchmarking Network are a good way of incorporating these perspectives¹⁰⁶.

Finally, health care systems need a valid way to stratify quality measures, in order to address potential gaps among subpopulations and identify groups in most need of quality improvement. A much greater expectancy for workforce training in and capacity for quality improvement is essential. Strategies for quality improvement and accountability need to be adapted, developed, and applied routinely in mental health settings.

In Table 2, we propose a broad multilevel process that outlines barriers to quality measurement and potential facilitators leading to quality improvement¹⁰⁷. This process, based on the US National Academy of Medicine Learning Health Care System framework, is updated

to include “levers” that address organizational barriers experienced in mental health care¹⁰⁸. Learning health care systems leverage existing data (e.g., electronic health records) to deploy and evaluate innovations and best practices across health care organizations with the goal of improving population health.

CONCLUSIONS

Improving quality of mental health care is a team sport, requiring coordination across different providers, involvement of consumer advocates, and leveraging of resources and incentives from health care payers and systems. Figure 1 offers a roadmap for measuring and improving quality of mental health care. First, patients, providers and health care systems need to provide input on the choice of measures and their implementation. The steps to be taken include establishing an evidence base for quality measures through practice guidelines, operationalizing guidelines into quality measures that have a numerator and denominator based on data easily captured from health care settings, testing quality measures for their reliability and validity (ensuring that they also do not lead to gaming or manipulation), finalizing measures based on endorsement from patients, providers and system leaders as well as professional organizations, adopting the measures for use in routine practice, aligning measures across multiple settings (e.g., primary care, social services), and finally, identifying a group to “own” the measures that will continually monitor and provide strategies to incorporate quality improvement where necessary.

The recommendations for improving quality of mental health services presented here can apply to health care in general. Indeed, mental health has led the way in other health care innovations, including moving care into the community, use of innovative models of integrated care, as well as measures of patient-centered recovery. Moreover, there are lessons learned from mental health services that will inform the rest of health care to adopt a learning health care system. For years, mental health consumers and their family members have advocated for “patient-centered” care and greater focus on the personal goals of the patient, above and beyond receipt of medical services.

The diverse nature of mental health providers also challenges the health care system to take into consideration the perspectives of frontline staff including nurses, social workers, and increasingly peer specialists in owning quality improvement. It is not surprising that many of the quality improvement methods used in mental health care have influenced the growing field of

implementation science¹⁰⁹, which is the study of provider behavioral change within the context of organizational constraints. Finally, the growth of value-based payment models that reward health systems and providers on achieving outcomes rather than on volume of services holds great promise for improving the quality of mental health care.

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Table 1 Mental health quality measures: key examples

Structure	Description	Examples
Process	Are evidence-based processes of care delivered?	Adequate number of components available in assertive community treatment program Availability of mental health specialists in primary care practices Presence of a mental health care manager
Outcome	Does care improve clinical outcomes?	Percent of patients in mental health program who have documented substance use screening Receipt of adequate dose of psychotherapy Outpatient follow-up within 7 days after mental health hospitalization discharge

WHO-DAS – World Health Organization Disability Assessment Scale, PHQ-9 – Patient Health Questionnaire-9

Table 2 Learning health care system framework for mental health care quality improvement

	Barriers	Leverage opportunities in learning health care systems
Patients	<p>Medical and behavioral health conditions co-occur</p> <p>The majority of patients are still seen in small primary care practices</p>	<p>Adopt mental health measurement-based care (continuous use of validated outcome assessments that inform changes in treatment decisions)</p> <p>Consumer organizations link patients to recovery-oriented services in the region</p>
Providers	<p>The majority of providers lack training in quality improvement and evidence-based practice implementation</p> <p>Lack of incentives for non-mental health providers to incorporate mental health services where patients are more likely seen (e.g., primary care), and lack of integration with social services</p>	<p>Professional organizations mandating training in quality measurement and improvement methods</p> <p>Same-day billing for mental health and physical health care</p> <p>Mental health professional organizations adopt common quality measures, guidelines, and improvement strategies</p>
Practices/ Organizations	<p>Limited electronic medical record use in the majority of mental health sites</p> <p>Lack of effective strategies to scale up and spread evidence-based mental health treatments and models of care</p>	<p>Standard health information exchanges need to include mental health services</p> <p>Embed quality improvement experts to help identify, test and scale up treatment models to promote measurement-based care</p>
Purchasers/ National health systems	<p>Primarily fee for service, few bundled payment models</p> <p>Instability in health insurance markets</p>	<p>Plan-level mental health care coordination</p> <p>Value-based reimbursement payment models benchmark on improved quality rather than volume</p>
Population	<p>Stigma</p>	<p>Public reporting of quality measures</p>

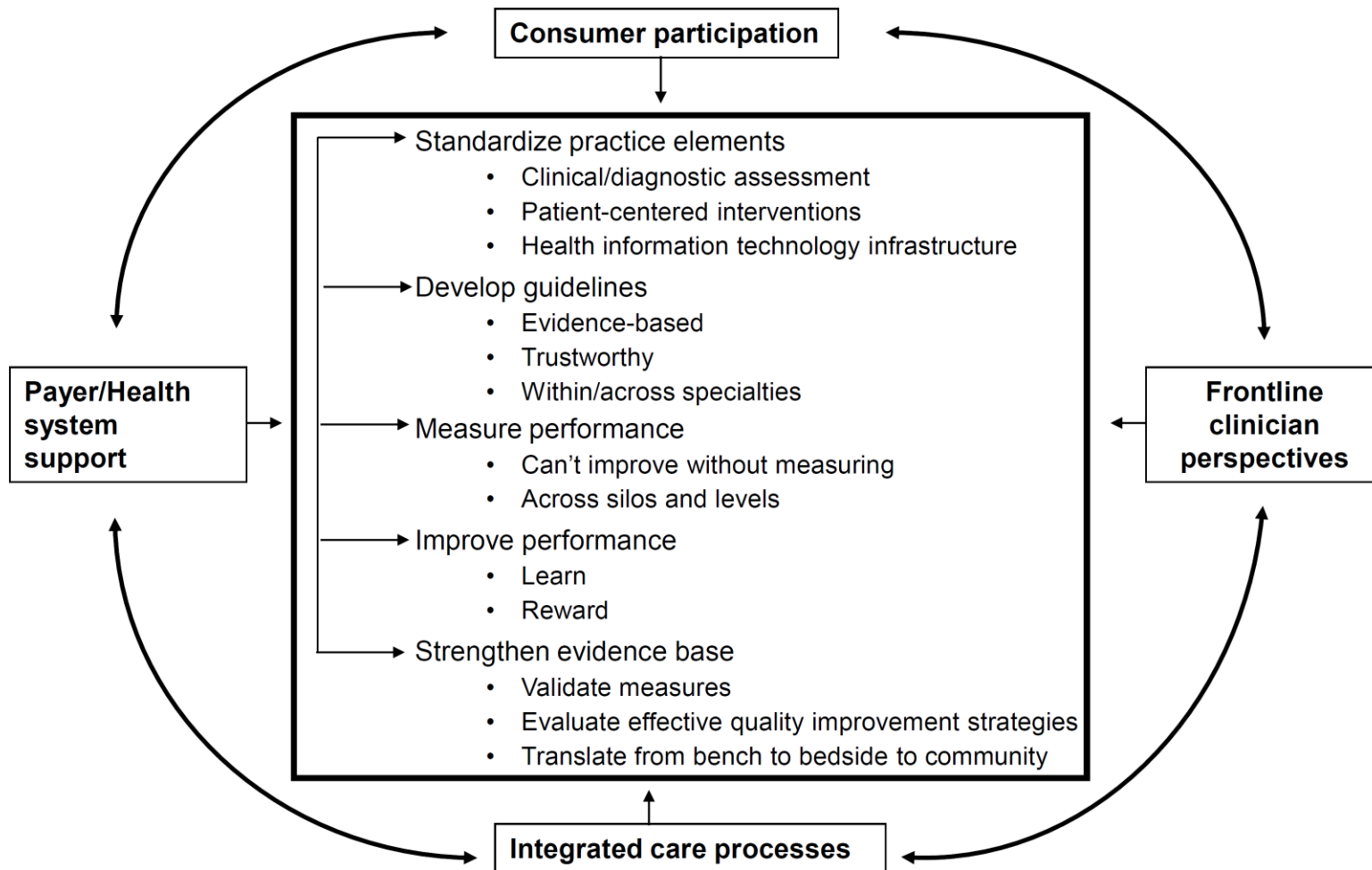


Figure 1 Multi-stakeholder roadmap for measuring and improving quality of mental health care

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