

PERFORMANCE MEASUREMENT

How Hospitals Are Using Patient-Reported Outcomes to Improve Care

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Increasingly, physicians' every action and outcome is measured and reported. The data-gathering process can be frustrating, and many clinicians are growing skeptical of its clinical value. For them, outcomes measurement may seem like just another reimbursement requirement or process compliance task. However, measuring patient-reported outcomes (PROs) – patients' own accounting of their symptoms, functional status, and quality of life – can and should be a clinical tool. In the past year, there has been a flurry of announcements by international organizations and governments declaring their commitment to making PROs a centerpiece of quality assessment. As outcomes-measurement programs move from individual hospital-led initiatives to large-scale, top-down efforts, it's critical that clinicians are engaged in the change and understand the potential for PRO measurement to improve the care they provide.

Here we describe three examples of clinicians who are using outcomes measurement to improve clinical care. Communicating successes like these is a powerful way to bring other physicians on board.

Streamlining Conversations and Improving Assessments

Mayo Clinic's Dr. Shehzad Niazi had a problem. He wanted to build an electronic program for measuring depression and anxiety outcomes to systematically capture ICHOM's Depression and Anxiety Standard Set – a set of PROs and clinical outcomes that matter most to patients. However, he knew that if he emphasized only the quality assessment uses of outcomes reporting, his clinicians were unlikely to embrace the program. Therefore, Dr. Niazi designed his program to focus on using outcomes to improve the quality and productivity of clinical care conversations and reduce the time needed for documentation – all of which matter greatly to clinicians. Ultimately, he plans to use the outcomes data from the measurement program to compare his department's performance with others' in order to find ways to improve, but this was not touted as the central benefit.

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Introduced in Dr. Niazi's psychiatry clinic in January 2016, PRO questionnaires are completed by patients and used to populate automated survey reports. The reports identify patients' high-priority concerns and symptoms in areas such as depression, anxiety, pain, social support, and extent of functional impairment. Computer adaptive testing methodology and branching logic reduced the burden on patients completing PRO questionnaires. Individual symptoms in each domain, such as sleep, appetite, energy, and concentration, are categorized using color-coding – red (severe), orange, light orange, or green (absent or mild) – to flag patients' top-priority concerns. Dr. Niazi's PRO data is immediately available at the point of care, guiding the entire clinical interaction and grounding treatment planning in priorities indicated by the patient. Dr. Niazi's team has found that inviting patients to report on a standard set of outcomes facilitates the discussion of topics that may be overlooked or are difficult to talk about. Further, longitudinal data collection during return visits allows for the review of treatment outcomes during follow-up visits so that patients can see their progress.

Patients give the program high ratings, and Mayo doctors are happy too; natural language processing and strategically-designed automated-report generators are saving them time – 15 minutes per initial evaluation per patient, on average. The program converts PRO responses into narrative paragraphs that are individualized to each provider using their own vocabulary to effectively complete almost 75% of the clinical note. Dr. Niazi's team has used Time-Driven Activity-Based Costing to prove that this program is cost effective, and is currently collecting data to assess its impact on patient outcomes. Several features of the program have already been expanded to other providers at Mayo.

Prompting Difficult Discussions and Calling for Consults

Dr. James Willig of the University of Alabama at Birmingham saw the potential of PRO tools to improve the quality of clinical conversations and care delivery at his HIV clinic. He knew there were also downstream benefits of capturing outcomes, but was more concerned with how they could improve the care he provided patients today. Following three years of program development, Dr. Willig and colleagues are using electronic PRO surveys to raise topics often missed or avoided in clinical consultation, flag signs of suicidal ideation, and trigger psychiatric or case-management interventions to improve safety and effective care delivery for patients.

In HIV clinics, topics of medical relevance can be taboo and stigmatized and so may be avoided by patients and physicians alike. PRO tools can help stimulate those conversations. Dr. Willig found that two-thirds of patients who committed suicide were seen in a health care setting in the month before their deaths. PRO responses, he reasoned, might save lives by flagging unaddressed symptoms of depression and anxiety as well as signs of suicidal ideation. In collaboration with Dr. Heidi Crane at the University of Washington, he built a model that can reveal suicidal ideation based on outpatient survey answers and coordinate a response to it.

The team used PRO data to identify factors associated with suicidal ideation, such as severity of depression or current substance abuse. The clinic now uses surveys to detect warning signs or worrisome symptoms to screen for suicidal ideation as well as signs of partner violence. When prompted, the system will notify a member of the psychiatry team to join Dr. Willig in the consultation room for support, counsel, and follow-up. This system significantly enhances detection of suicidal ideation, referral for appropriate care, and, potentially, the overall cost-effectiveness of HIV care through timely mental-health interventions.

A number of unanticipated benefits of PROs measurement have been uncovered through this program. Real-time monitoring of completion times alerts administrative staff when a patient is struggling with the survey (perhaps because of illiteracy), and the system provides staff with prompts to assist them. In addition, academic clinicians at the university are using PRO responses to tag patients eligible for clinical studies targeting pain, substance abuse, and compliance with medication regimes.

Aligning Expectations and Enhancing Care

Seeing a groundswell of interest in the use of outcomes data to support personalized care and involving patients in making medical decisions, Dr. John Spertus of Saint Luke's Mid America Heart Institute in Kansas City, Missouri, is developing algorithms to predict outcomes of treatment for heart failure. Using his own PRO tools and data from thousands of clinical-trial patients, Dr. Spertus is leveraging outcomes data to improve decision quality, reduce anxiety related to treatment decisions, and counsel patients and their families on expected results of care.

Since 2002, Dr. Spertus and colleagues have been correlating quality-of-life PRO data with treatment outcomes for heart failure and stroke. The Kansas City Cardiomyopathy Questionnaire (KCCQ) assesses the patient-reported effects of heart failure, including shortness of breath and fatigue. One of Dr. Spertus's models uses KCCQ data and other preprocedure patient characteristics to predict the likelihood of survival and quality of life six or 12 months after transcatheter aortic valve replacement (TAVR). By integrating harm to quality of life into the definition of a poor outcome, the program prioritizes what matters most to patients and helps them better understand the procedure's risks and their prospects for recovery. By producing a comprehensive predictive outcomes and risk report, the program helps physicians, patients, and family caregivers decide whether to proceed with TAVR or to pursue alternative treatment.

This work is an extension of Spertus' efforts to integrate patient-specific estimates of risk (calculated based on patient characteristics) into individualized consent documents that improve patients' understanding of their risks and their participation in making decisions with their physicians. Patients' increased awareness of appropriateness and suitability of interventions leading to modified decision behavior have resulted in marked reductions (45% and greater) in adverse outcomes during the treatment of heart failure (for example, bleeding and acute kidney injury).

While the focus of measurement programs is frequently on their long-term benefits, the potential for clinicians and patients to use outcomes data today is equally profound. At present, programs such as the ones described here are concentrated within a small group of pioneers, but they have tremendous potential to be emulated and scaled. The task today is to ensure that governments and hospitals refocus the aims of their outcomes collection efforts to ensure that they prioritize its use to improve clinical care. That those data can also support long-term quality assurance programs is a substantial benefit – but should not be the principal goal of outcomes collection efforts.

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