Composite Measures: A New Gold Standard in Diabetes Care

Type II diabetes has become a national public health threat. As a chronic disease, diabetes is one of the leading causes of death and disability. In the United States, approximately 25.8 million people (8.3 percent of the population) meet the criteria for a diagnosis of diabetes, and 79 million people have pre-diabetes or impaired glucose tolerance. According to the National Institutes of Health, diabetes is associated with long-term complications that affect almost every part of the body. The disease often leads to blindness, heart and blood vessel disease, stroke, kidney failure, amputations, and nerve damage.

As rates of diabetes increase, so, too, do associated direct and indirect costs. In 2007, diabetes cost $174 billion in the United States, both in terms of direct costs (such as hospitalizations, medical care, and treatment supplies) and indirect costs (such as disability payments and lost time from work). Increasing rates of diabetes in the population pose a significant challenge. Making sure those with diabetes receive optimal care is as complex as the disease itself. Many different indicators of health should be monitored on a regular basis. The goal of diabetes management is to keep levels of blood glucose, blood pressure, and cholesterol as close to the normal range as safely possible. Complications from diabetes can be prevented or at least delayed with appropriate monitoring and treatment.

About Aligning Forces for Quality

Aligning Forces for Quality (AF4Q) is the Robert Wood Johnson Foundation's signature effort to lift the overall quality of health care in targeted communities, as well as reduce racial and ethnic disparities and provide real models for national reform. The Foundation's commitment to improve health care in 16 AF4Q communities is the largest effort of its kind ever undertaken by a U.S. philanthropy. AF4Q asks the people who get care, give care and pay for care to work together to improve the quality and value of care delivered locally. The Center for Health Care Quality in the Department of Health Policy at George Washington University School of Public Health and Health Services serves as the national program office. Learn more about AF4Q at http://www.forces4quality.org.

The National Committee for Quality Assurance, a nonprofit dedicated to transforming health care, along with the Robert Wood Johnson Foundation, have strongly advocated for the use of composite measures and scores as a potential new gold standard for quality measurement in managing diabetes. The Institute of Medicine defines composite measures as "the bundling of measures for specific conditions to determine whether all critical aspects of care for a given condition have been achieved for an individual patient, thereby enhancing measurement to extend beyond tracking performance on separate measures." That is, a composite score is a combined metric useful in assessing quality of care. Keeping diabetes under control in the doctor's office reduces the risks of other illnesses and future

hospitalizations, and composite measures serve as checklists for doctors to make sure nothing is overlooked during a patient's visit. Some of the other common reasons to use composite measures include improving consumer comprehension, communicating with policy makers, and encouraging systematic improvements.

Aligning Forces for Quality communities that have implemented customized diabetes composite measures into their public reporting structures are already experiencing success in both clinical outcomes and improved performance. Synthesizing indicators of good diabetes management has helped simplify the challenges of chronic care management while improving efficiency and performance.

Minnesota: Complete Care for Diabetes

Heart disease, a major complication of diabetes, accounts for approximately one in every five deaths in Minnesota. MN Community Measurement, leader of the Aligning Forces for Quality in the state, set a goal to improve quality of care for patients with diabetes. In 2004, regional data revealed that only 4 percent of adult diabetes patients had been checked for all five key indicators on how well their diabetes was under control.

Gail Amundson, MD, a principle founder of Minnesota Community Measurement, worked with other physicians and other plans, including Medicare and Blue Cross and BlueShield of Minnesota, to create the D5 composite measure. MN Community Measurement developed the D5 composite measure to set guidelines for providers and consumers on optimal diabetes care.

"Minnesota wanted to focus beyond blood sugar and really look at heart risk, which is core to our diabetes composite measure. We aimed for the completeness of care because we really wanted to create an impact around cardiovascular risk for our diabetes patients," explained Jim Chase, president of MN Community Measurement.

At first, achieving change on the practice level was difficult.

"We saw some practices and providers get perhaps three out of five measures, but it was difficult for everyone to regularly achieve five out of five," said Chase.

The D5 five indicators include:

1) a blood pressure reading lower than 130/80,

2) a low-density (LDL), or bad cholesterol, reading lower than 100 mg/dL,

3) blood sugar or HbA1c reading of less than 8 percent,

4) living tobacco-free,

5) and taking a daily dose of aspirin as appropriate.

Through 2012, 38 percent of Type I and Type II diabetes patients in Minnesota had met all five measurement goals. The diabetes composite measure has a ripple effect—the incidence of diabetes-related complications decreased over time as well. HealthPartners, one of Minnesota's largest regional networks of hospitals and clinics, found that in 2010, its 32,102 members with diabetes suffered 387 fewer heart attacks and received 69 fewer leg amputations, and 777 people avoided developing ocular complications.

"I feel we're just at the beginning of a new way of practicing medicine."

-Jim Chase

"Can we develop composite measures around pre-diabetes or mental health? Right now, our patients need a diabetes diagnosis to get into this model, but we want to brainstorm ways to bring them in through other checkpoints such as depression or heart problems. Those are questions from the practice viewpoint. Meanwhile, we're seeing changes at the population and individual patient levels. The composite model captures more critical data during a single visit so you're less likely to lose people through the cracks because one practice checked for cholesterol while another did not," Chase said.

Wisconsin: All-or-None

Minnesota's neighbor to the east, Wisconsin, has developed a different approach to diabetes care, recognizing the need to incorporate measurements of a patients' kidney function to prevent or manage kidney disease, a common complication of diabetes. Diabetes is the leading cause of kidney disease in the United States. There are 425,000 people in Wisconsin with diabetes, making it a leading cause of disability in the state. In 2011, among the 1,653 Wisconsin residents newly diagnosed with stage five kidney disease, 38 percent of those diagnosed had diabetes as the primary cause for kidney failure. The Wisconsin Collaborative for Healthcare Quality adopted two specific and separate measures for outcomes and processes related to optimal diabetes care. Both are all-or-none composite measures, meaning that all of the goals contained in the measurement must be reached. All three goals must be reached for each patient in order to meet the measure; there is no partial credit.

All-or-none measures may more closely reflect the interests of the patient. With the data collected in two scores (optimal testing and optimal results), patients can easily look at public data and see how

their provider group is performing on these criteria rather than trying to make sense of multiple scores on individual measures. The all-or-none measure represents a systems perspective emphasizing the importance of optimal care through a patient's entire health care experience. Handoffs and the entire sequence of care matter, and this is reflected in an all-or-none measurement.

In Wisconsin, the two all-or-none measures pertaining to diabetes are composed of goals that need to be met every time a diabetes patient sees a provider:

- *The All-or-None Process Measure (Optimal Testing) includes two A1C tests, one LDL test, and one kidney function test.*
- *The All-or-None Outcome Measure (Optimal Results) includes the most recent A1C test results less than 8 percent, most recent LDL measurement less than 100 mg/dL, and most recent blood pressure measurement of less than 140/90 mm Hg.*

"The all-or-none model is unique," explained Cindy Schlough, director of strategic partnerships for the Wisconsin Collaborative for Healthcare Quality. "We really wanted our focus to be on prevention. It's unusual to focus on kidney function as with the process measure, but it really does make a difference in terms of the types of conversations occurring between a patient and his or her health care team. The kidney function measure allows patients and providers get a better idea of how diabetes is being managed on an ongoing basis."

Wisconsin is among a handful of states to include kidney function testing in its diabetes process measure instead of having it as a separate quality indicator. In 2014, the diabetes composite outcome measure will be expanded to match Minnesota Community Measurement's D5 measure. The diabetes composite outcome measure will come to include five items, with the addition of tobacco status and aspirin use as appropriate. Data collection will be ongoing, and Wisconsin will review how the composite measures have affected the prevention or progression of kidney disease. Hopefully, drawing attention to kidney function will help patients and physicians work together towards better outcomes in diabetes.

Cincinnati: A Springboard to Action

Cincinnati's successful implementation of the diabetes composite measure and public reporting contributed to its success in leading on population health. In 2012, the Greater Cincinnati Health Council, along with the Health Collaborative and other regional partners, were one of only seven communities in the nation to receive a Center for Medicare & Medicaid Innovation's Comprehensive Primary Care Initiative (CPC) grant, a four-year award that focuses on supporting primary care practices to deliver coordinated, high-quality health care at lower costs.

> *"The CPC initiative represents a phenomenal opportunity for our region to move toward a health care delivery system that rewards quality rather than the volume of services provided,"*
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> *-Colleen O'Toole, PhD, president of the Greater Cincinnati Health Council*

The region was recognized for its dedication to quality improvement and the active onboarding and collaboration among key health care stakeholder groups. An important part of this collaboration began in 2009 when the Health Collaborative of Greater Cincinnati brought together a group of physicians to discuss the more than 32,000 of its adult residents diagnosed with diabetes. With a rate of 12 percent, higher than the national average, the group decided to take action to improve diabetes care in their communities through public reporting and composite measures.

The group launched efforts by using data abstraction and extraction from patient charts, such as vital sign measurements and clinical lab values, to provide physicians with a "daily dashboard" of their patients' progress.

"Unlike the annual report, the dashboard allows physicians to make real-time interventions to improve quality of care," said Michael Trombley, MD, family physician at Mercy Health of Cincinnati.

After the data are validated and audited, the group shares them with the public. A community average is generated for each measured condition and a score given for each physician practice. The scores are reported on the patient-focused web site: YourHealthMatters.org.

In 2011, Cincinnati adopted part of the Minnesota model by adding D5 data to the dashboard and aligned its measures with those of the national organizations Bridges to Excellence and the National Committee for Quality Assurance.

"Our work with AF4Q really set the stage for this," said Barbara B. Tobias, MD, medical director of the Health Collaborative, which partners with Greater Cincinnati Health Council and leads the Cincinnati Aligning Forces for Quality.

"Working with AF4Q these past few years, getting our public reporting in shape, creating a culture of transparency, developing payer alignment in our region and getting physicians prepared put our community ahead, made our primary care practices stronger and, most importantly, helped our patients better manage their chronic conditions."

-Dr. Barbara Tobias

While still in its infancy, the new reporting structure allowed providers and regional leadership to see that since the first year of the project, there was already a seven-percentage-point increase in the number of practices capturing all five quality indicators of the diabetes composite measure. Nearly 50 percent of clinics reporting in 2011 experienced an increase in their composite rate over 2010, and the number of practices scoring "Below Average" decreased by more than half.

"The dial is starting to move," said Dr. Tobias, noting that practices that miss any of the five goals comprising the diabetes composite measure receive a score of zero for that patient's visit.

Numbers will likely continue to evolve as more practices and providers join Cincinnati's efforts. To date, more than 500 practices have committed to the challenge. Between 2009 and 2011, physician participation in the Your Health Matters public report increased by 27 percent.

A Conclusion of Composite Measures

Using composite measures to improve the quality of care for diabetes patients, even in its early stages, is proving successful. Additional benefits, including cost savings, reducing the number of super-utilizers, and influencing policy makers, only add to the value of these interventions.

Minnesota, Wisconsin, and Cincinnati have proven there is more than one way to incorporate composite measures and be successful. Both measuring the D5 and using the All-or-Nothing method help practices make changes to improve quality of care and patient experience. These communities can serve as beacons to others across the nation hoping to have a positive, well-rounded impact on diabetes care and management.

"We won't know the full impact of the diabetes composite measure for another five to 10 years," said Dr. Tobias. "The diabetes composite measure really gives us a clearer picture of what's going on with our population and what's going at the practice level, and we just weren't getting that kind of information with individual measurements that varied practice to practice or hospital to hospital. We're really just at the beginning of this process and realizing its full potential."

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