

Quality Improvement in the Indian Health Service

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Welcome to Quality Matters, a bimonthly roundup of news and opinion on quality and efficiency, information technology, performance improvement initiatives, and policy innovations.

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In Focus: Promoting Quality Throughout Indian Country

Summary: Despite the fact that the Indian Health Service is underfunded, its federal, tribal, and urban health facilities have been making strides in quality improvement. It has achieved this in part by harnessing the clinical data available within its longstanding information system, and by reaching out to communities through partnerships with local tribes to promote health and prevent disease.

By Vida Foubister

American Indians and Alaska Natives, the population served by the Indian Health Service, face many of the same disparities in care as do other racial and ethnic minorities in the United States. They also suffer from a disproportionate burden of chronic disease; among these the prevalence of diabetes has been well publicized.

As a result, diabetes prevention and management have been the focus of many improvement efforts and have benefited from grant funding, leading to the establishment of strong diabetes programs and departments throughout the system. But, when the Indian Health Service started work in 2006 on a new initiative to improve the treatment of other chronic diseases, there was a general recognition that

the advances made in treating diabetes were, in the words of many, siloed.

"We've had a system-wide project to improve diabetes care for a long time, but a lot of the improvements in diabetes care didn't spill over to other conditions," says C. Ty Reidhead, M.D., national chief clinical consultant in internal medicine for the Indian Health Service. "When we started thinking about how to improve care [more broadly] within our system, we decided that, instead of working on a new condition or a series of conditions, we wanted to try to take it all on at one time. We recognized the only way to really improve care for chronic disease was to change the way we take care of patients."

Or, as its partner in this new improvement process, the Cambridge, Mass.-based Institute for Healthcare Improvement (IHI), describes it, the Indian Health Service's Chronic Care Initiative had "scope creep," says Cindy Hupke, R.N., B.S., M.B.A., an IHI director. "It rapidly evolved into a model that has more depth and breadth than when they started." The pilot that grew out of the Chronic Care Initiative, called the Innovations in Planned Care for the Indian Health System collaborative, has begun evaluating patients' experiences and the costs of the care, as well as measuring providers' ability to meet the standards of care for managing and preventing various chronic diseases.

Prioritizing Change to Maximize Limited Funds

An agency within the Department of Health and Human Services, the Indian Health Service is an integrated health system that serves 562 American Indian and Alaska Native tribes in 35 states. It provides medical services through federally run hospitals and

health clinics, tribally operated facilities, and urban health centers.

Based on a comparison with a federal employee's health benefit package, the Indian Health Service's budget is estimated to be funded at 54 percent of the level of need, says Robert G. McSwain, its director. The agency's chronic underfunding has forced it to ensure that the "resources we do have, which are limited, are used as a catalyst" to help providers deliver care in different ways than they have in the past, he says. This includes having clinic and hospital staff learn how to work together in care teams and to make patients the focus of care.

McSwain's predecessor, Charles W. Grim, D.D.S., M.H.S.A., started down this path when he chose to reduce the director's priorities from up to a dozen initiatives to three: behavioral health, chronic care, and health promotion and disease prevention. The goal, which McSwain has continued to push in his year-long tenure, has been to integrate these three initiatives into a single effort across the Indian Health Service.

"We have been having discussions about the three initiatives and how they begin to work together," says McSwain. "Part of that, as one example, is ensuring there are mental health workers that are located physically in the primary care settings." Because many Indian Health Service facilities are located in rural areas, patients may travel long distances for their appointments. Research has shown that they are much more likely to follow through on a referral if they can meet with those providers at one site.

A representative cross section of sites was chosen to participate in the first phase of the Innovations in Planned Care collaborative. When it began in 2007, the pilot involved eight federally operated sites, five tribal facilities, and one urban program, which

were selected from each of the 12 regions within the Indian Health Service. "The change package that has to be developed for all these organizations to benefit really has to be something that could be applied anywhere," explains Hupke.

The second phase of the pilot, which was launched this October, includes 40 sites across the Indian Health Service. Phase II will continue to measure providers' performance in three areas: prevention and management of chronic disease, patient experiences, and cost of care. But the measures will be refined to better reflect desired clinical outcomes and prioritized to ensure sites address the most important features of the model at the outset of the project. By the time the initiative is rolled out to the entire system—currently proposed for 2010—"we should have a change package that's much more polished and much more well tested," says Hupke.

Drawing on Clinical Data, a Systemwide Strength

Much of the pilot sites' efforts to improve care processes rely on data available in the Indian Health Service's information system, the Resource and Patient Management System (RPMS), which was developed internally in the 1970s. This system stores personal health information and epidemiological data for local populations, including clinical data on physical exam findings such as blood pressure measurements, laboratory and radiology results, medication prescriptions, and billing information. Since 2003, the Indian Health Service has been working to develop user-friendly interfaces that increase the ease of data analysis for performance measurement and quality improvement.

Currently, most health care facilities within the Indian Health Service maintain an

RPMS database and, as of August 2008, 182 hospitals and clinics have implemented the Indian Health Service Electronic Health Record (EHR). Additional sites have adopted a Windows-based user interface that offers some improvements on the RPMS system, yet lacks all the features of a fully implemented EHR. iCare, which was first released in May 2007, functions as a population management software tool that has the ability to create multiple panels of patients with common characteristics—such as age, diagnosis, and community—and enables providers to personalize the way patient data are viewed.

"Prior to 2000, there wasn't a focus on quality measurement and quality reporting in the Indian Health Service," says Tom Sequist, M.D., an assistant professor of medicine and health care policy at Brigham and Women's Hospital and Harvard Medical School, who is working with the Indian Health Service to identify how best to use its information systems to improve care. "This really allows them to take a closer look, not just across the country but at individual clinic sites," and identify gaps in quality as well as high-performing disease management and treatment programs that other sites could learn from.

The Indian Health Service EHR and iCare have also helped the Indian Health Service meet new, federally mandated quality reporting requirements. Since 2002, the Government Performance and Results Act has required the Indian Health Service (and other federal agencies, including the Department of Veterans Affairs and the Department of Defense) to report 24 national-level performance measures to Congress and the Office of Management and Budget annually. This year, in response to a 2006 Presidential Executive Order, the Indian Health Service launched a [health transparency Web site](#) that includes facility-

level data on seven clinical performance measures for diabetes, immunizations, pneumonia, asthma, and stroke (see [Text Box](#)). It plans to report on five additional measures in 2009.

Individual sites involved in the Innovations in Planned Care pilot, including one within the Cherokee Nation, have also chosen to display performance results at the team level within participating clinics. "It's really transparent," says Gloria A. Grim, M.D., medical director for the Cherokee Nation. "[Patients] can see how the physicians in that facility are doing and make sure they're receiving quality health care."

Working with the Community

Many of the pilot sites have found that their reach can be extended through partnerships with tribal programs. Within the Cherokee Nation, for example, the tribe's Healthy Nation program (also known as the Health Promotion/Disease Prevention Initiative) "serves as a link between the clinic and the community," says Julie Deerinwater, M.P.H., Healthy Nation primary prevention coordinator for the Cherokee Nation.

Community health representatives design interventions around risk factors for chronic diseases such as diabetes, obesity, and asthma and offer educational classes on topics ranging from healthy eating and cooking to smoking cessation. They have found that, as providers at the health clinics implement the Innovations in Planned Care pilot, their referrals have grown. Over the past year, for example, as one clinic raised its tobacco screening rate from 71 percent to 92 percent, the number of patients participating in the community's tobacco cessation classes increased.

The health care facilities also refer patients to other community programs, such as

vocational rehabilitation or social services. "We try to look at the whole person and all of the things that contribute to their health status indirectly and try to find ways to meet those needs," says Grim.

Such linkages are perhaps easier to establish between tribally run health facilities and community leaders and services, and can spread a message to more people than providers are able to reach through individual patient visits. Cherokee Nation health facilities, for example, were able to drive a policy change that led to the removal of soda and candy machines from schools, broadening discussions about nutrition to all families in the area with school-age children. Though similar partnerships between federally operated facilities and tribal programs can require greater effort, they, too, can be successful.

Jana Towne, R.N., an assistant nurse executive at the Whiteriver Indian Hospital in Arizona, a federally operated facility, was able to increase the rate of colorectal cancer screening among the mostly White Mountain Apache patient population through a partnership with the tribe's community health representatives. She overcame the first obstacle to achieving this by presenting data to the health representatives showing that colorectal cancer was not "a white man's disease" and had in fact affected 10 members of the community, of whom half had died. After that, members of the care team began to accompany community health representatives on home visits, an effort that increased the colorectal cancer screening rate from 39 percent to 64 percent within the past year.

Harvesting Results After One Year

Based on the [Wagner model of chronic care](#), the Innovations in Planned Care pilot

formed care teams and divided patient care responsibilities in ways that best utilized each team member's strengths. They empanelled patients and reviewed charts prior to scheduled visits, and launched Plan-Do-Study-Act cycles to achieve improvements in the care provided.

"We made a lot of strides and we've been able to see that the changes we've made have resulted in improvement, but we've just scratched the surface," says Teresa L. Chaudoin, M.P.H., M.A., director of the Cherokee Nation's diabetes program. Further efforts, she says, should focus on: strengthening self-management support, establishing information systems that enable decision support at the point of care, and developing closer relationships between the clinics and the community health representatives, as well as between care teams and patient's families. "I know it's going to keep me busy until I retire," says Chaudoin.

Her enthusiasm for change has been echoed by many of those involved in the initial pilot. It has also been evidenced by the overwhelming interest in participation in the initiative. Nearly 300 Indian Health Service staff members attended the Institute for Healthcare Improvement's annual meeting in 2007. The Chronic Care Initiative developed a "Readiness Curriculum" to

share information on the Wagner care model, as well as other quality improvement methodologies, through a monthly, Web-based call series.

"Our hope is that this becomes how we do business," says Towne of Whiteriver Hospital. "It's not Innovations in Planned Care, not a microsystem, but it's how Whiteriver operates and it's how we go about improving care."

Quality of Care Web Site

The Indian Health Service began reporting on seven clinical performance measures, as listed below, in 2008. It will add two immunization and three cardiovascular disease-related measures in 2009. This information is being reported at the facility level, and patients can compare the care at their clinic or hospital with others within their region, or with the performance of other facilities on a regional or national basis.

Diabetes: Hemoglobin A1c – Blood Sugar Control

Diabetes: LDL Cholesterol

Diabetes: Blood Pressure Control

Immunizations – Flu Shot

Pneumonia – Oxygen Assessment

Appropriate Medication for Asthma

Ischemic Stroke with Atrial Fibrillation –

Anticoagulant Therapy

See the [health transparency Web site](#) for more details

Case Study: Indian Health Council Creates a Medical Home for Patients

By Sarah Klein

Summary: *To build trust with patients and improve continuity of care, a tribally run ambulatory clinic in Southern California assigned patients with chronic conditions to one of several teams of providers. The clinic soon expanded the program to all patients, hoping the team-based approach would engage patients in their care. The no-show rate dropped precipitously. For the first team, the percentage of patients who failed to show up for scheduled appointments dropped by more than 75 percent in nine months.*

Issue

Improving the care of patients with chronic health conditions has been a long-term goal for the Indian Health Council, a consortium of nine tribes that provides medical services to Native Americans living on nine reservations in North San Diego County. As a group, American Indians/Alaska Natives suffer disproportionately high rates of diabetes, cardiovascular disease, and asthma, among other chronic conditions.[1] Better chronic care not only could improve those patients' quality of life, but also might prevent emergency room visits to area hospitals, which sap financial resources from the tribally run clinic's \$14 million annual budget.[2]

Clinic leaders also hoped the strategy of assigning patients to dedicated teams of providers would overcome some longstanding challenges, including patients' frustration with being treated by different staff members, some of whom were assigned to the clinic on a short-term basis to fulfill their obligations for medical education loans or National Guard duty. "Every time patients would come to the clinic, they'd have to retell their story [to a different physician]," says Corinna Nyquist, R.N., the clinic's director of ambulatory services. A "medical home"—one that provided patients with accessible, continuous, and coordinated care—might engage patients more, the clinic leaders reasoned.

In teams, the providers also might devise new methods for overcoming the fatalism expressed by patients from older generations, who tended to view chronic conditions such as diabetes and cardiovascular disease as neither preventable nor manageable. The clinic wanted to attract those patients to the clinic, as well as younger patients who had inherited the elders' skepticism about the quality of care provided there.

The clinic leadership believed the team approach would give providers a more complete view of the challenges that patients on the reservations faced in trying to manage their illnesses. Some patients lacked telephones, while others had trouble getting to the clinic during inclement weather. Many others were worried about privacy, since they often knew many of the clinic staff who had worked there a long time and/or lived on the reservations.

Organization and Leadership

The Indian Health Council has five primary care physicians, four nurses, and nine medical assistants on its full-time staff; these clinicians rotate through two ambulatory care clinics. The first clinic, a 50,000-square-foot facility in Valley Center, Calif., serves as the main office; a smaller satellite clinic is located in the mountainous area of San Ysabel, Calif. Both are in relatively rural areas, east of Escondido, Calif (see Map).



The Council also contracts with several clinicians to provide specialty services, including cardiology, ophthalmology, obstetrics and gynecology, podiatry, chiropractic care, and acupuncture, on a weekly or biweekly basis.

It receives support from four community health representatives, health paraprofessionals who provide outreach and education to the residents of the reservations, as well two to three public health nurses, who perform home visits and deliver information on disease prevention programs. (Health promotion and disease prevention is another priority initiative within the Indian Health Service.) "I call them my search-and-seize team," Nyquist says, because they are often successful at finding patients the clinic has been trying to reach.

In all, the two clinics have 21,000 patients registered within the Indian Health Council system. Of those patients, 6,400 have visited the clinics at least once in the last three years and 4,900 have visited the clinics at least two times in the last three years.

Nyquist, who has been with the Indian Health Council since 2000, oversees the chronic care pilot program. Others who are actively involved include Daniel Calac, M.D., the council's chief medical officer, a nurse practitioner, and two medical assistants.

Target Population

Providers at the two clinics see patients of all ages. Roughly 40 percent of their patients have one or more chronic conditions such as diabetes, obesity, cardiovascular disease, or asthma.

Process of Change

The Indian Health Council was selected as one of 14 pilot sites for the Indian Health Service's Innovations in Planned Care initiative in March 2006.[3] Soon after, it began meeting with organizers of the project from the Indian Health Service and the Boston-based Institute for Healthcare Improvement, which collaborated on the initiative. [4]

In conjunction with those two organizing groups, the clinic established goals for the project, including assigning nearly 5,000 patients to one of several provider teams within four to six months. The clinic focused on all patients, since so many had or were at risk of developing chronic conditions. The teams would be comprised of two physicians, one nurse, and two or three medical assistants. Each team would be measured on its success in administering evidence-based screening tests and conducting patient exams.

To start, the Indian Health Council built a single team focused around one nurse practitioner, Mary Jo Moses, F.N.P., who Nyquist says was "willing, motivated, and eager for change. That's what they recommended: find someone who really could help motivate other people." Using the Indian Health Service' Resource and Patient Management System (an internally developed information system), the clinic looked for patients who had seen Moses two or three times within the last 18 months. The 772 identified patients were assigned to her team. Moses served as the provider for the team.

Moses' team spent 30 minutes at the start of each day reviewing the charts of patients scheduled for clinic visits. The goal of this meeting—or "huddle," as it was called—was to identify and plan for medical tests or exams that were needed, including immunizations, mammograms, and physicals. For tests that could be completed before the exam, such as in-house labs, the physician wrote orders at the morning meeting.

This initial chart review proved to be an overwhelming process for team members, even though they were aided by a Windows-based software interface (iCare, see In Focus for detail) that identified and flagged missing lab work, tests, and patient

education, Nyquist says. The records themselves were part of the problem. Because of data entry errors, some charts had the names of primary care providers and lab technicians reversed. In other cases, the clinic had not recorded results for off-site tests. To fix the records and keep them accurately updated, program leaders decided to train all of the clinics' nurses and medical assistants on data entry, instead of relying on a single person, as it had been doing.

"Initially, it seemed like a lot of extra work," Nyquist says. Yet, within four or five months, after the data entry problems were corrected and the team had a chance to catch up on missing tests and patient education, "things went a lot smoother." Providers had more time to ask patients open-ended questions—"What is it you want from me today?" or "What are your goals?"—that deepened their understanding of the patients and their needs.

A few patients were taken aback by this new approach, Nyquist says. "Some of them were shocked when we asked, 'What can we do for you today?' [Some said,] 'Well, I don't know. You always tell me why I'm here.' It's a role reversal. It was hard on both sides."

As the pilot progressed, patients began to feel more comfortable. "The patients are generally a little bit more open with what they are able to do and what they can't do when we ask them," Nyquist says. One patient who had an abnormal breast exam insisted it wasn't a priority to get a diagnostic mammogram, as she had a family to feed and work to do. As a team, the providers called her repeatedly to stress the importance of the test, which she ultimately agreed to get. "She ended up having cancer. But we moved through the rest of the [treatment] process relatively quickly," says Nyquist. As a result of the approach, the patient had treatment immediately and is doing well.

In another case, an elderly patient's daughter called to say her mother wasn't acting quite right. Because the team knew the patient and her medical history, they agreed that the symptoms suggested the patient needed care and directed the daughter to take her mother to the hospital. The team "knows the patient. It's not...second guessing everything," Nyquist says.

The clinic expanded the empaneling process to other teams after 12 months, slightly later than it had intended because two physicians objected to the team model and left the clinic. In all, 74 percent of patients have been assigned to a team. Clinic leaders plan to report outcomes for all of the teams later this month. "We are hoping to elicit competition [among them]," Ms. Nyquist says. They also will have an opportunity to learn from one another. "As we are just beginning this process, we will use our monthly staff development meeting to review outcomes and ask each team to complete a Plan-Do-Study-Act worksheet . . . in which they will report outcomes, good or bad, to the [entire group]," Nyquist says.

Key Measures

To gauge the impact of the pilot program, the Indian Health Council used national quality measures for primary care. The measures included broad health indicators, such as cholesterol levels, blood pressure control, and immunization rates, as well as specific tests related to chronic conditions, including cancer, depression, diabetes and asthma, among others.

The clinic also measured patient satisfaction levels quarterly and staff satisfaction levels biannually.

To gain a sense of whether being assigned a primary care provider resulted in greater

numbers of patients showing up for appointments, the clinic also measured no-show rates.

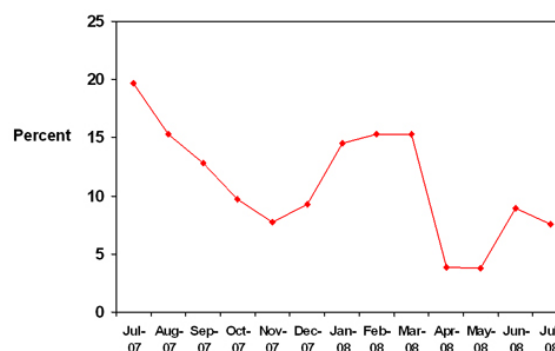
Results

The clinic found that its no-show rates, the measure of patients who simply skipped appointments, dropped to slightly less than 4 percent in April 2008 from nearly 20 percent in July 2007 within the trial group (Figure 1). Nyquist attributes this change to patients' reluctance to skip visits with providers with whom they have developed relationships.

The team made significant improvements in screening for such conditions as alcohol misuse and colorectal cancer. Screening for the former rose to 68 percent in August 2008, from less than 32 percent in March 2007, when the program began (Figure 2). Rates of colorectal cancer screening rose to 60 percent from 25 percent during the same period (Figure 3). The rates for the latter are in the 60-percent range because "we have individuals who refuse the test, are uninsured and not eligible for our contracted dollars or do not keep appointments or return fecal-occult blood cards; however, we continue to remind and stress the importance of colorectal cancer screening," Nyquist says. Part of the improvement in colorectal cancer screening rates was attributed to better data entry methods, which captured tests that had been performed off site, but were not reflected in the clinic system.

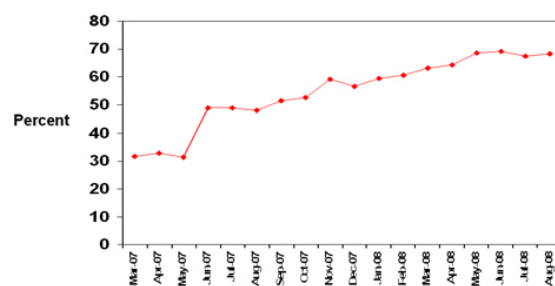
The clinic achieved less in the delivery of the comprehensive tests for diabetic patients. Nearly 80 percent of diabetes patients had their hemoglobin A1c levels checked, 75 percent had their blood pressure checked, and more than 50 percent had eye and foot exams. Still, less than 50 percent had cholesterol levels checked or tests for diabetic neuropathy.

Figure 1: Indian Health Council No-Show Rates, 2007-2008



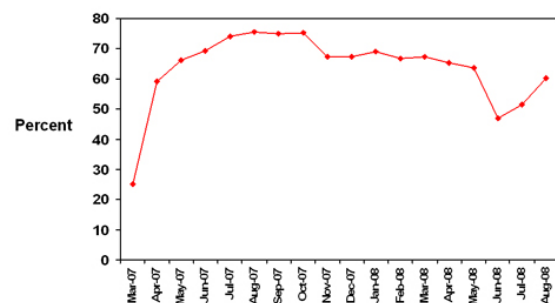
No-show rates are percent of patients who did not arrive at scheduled appointments. Source: Indian Health Council, 2008.

Figure 2: Indian Health Council Alcohol Misuse Screening Rates, March 2007-August 2008



Source: Indian Health Council, 2008.

Figure 3: Indian Health Council Colorectal Cancer Screening Rates, March 2007-September 2008



Source: Indian Health Council, 2008.

The total number of patients who received all six of the recommended tests or exams was slightly less than 25 percent.

"What we found out is that, a lot of times, the patients didn't realize they had to have certain tests annually or more than annually,"

Nyquist says. Patients who received notices for exams would say, "'Oh, I already had it,' and ignore it," she says. "Now we have a scorecard we give to the patients that says here's what you need every year," she says.

Implications

Clinic leaders believe the team-based approach will have a dramatic impact on the quality of care for patients there. "I don't think we really had 'relationships' with patients before. It was more like: 'We are seeing you today for what?'" Nyquist says.

Dr. Calac, who grew up on one of the nine reservations, is equally optimistic. "The changes we are putting in place now ... this is the way medicine is going to be practiced from here on out. It really is an exciting time," he says.

In the future, the clinic plans to focus on developing care processes for patients with asthma, obesity, depression, and cardiovascular disease, among others. For those conditions, the clinic will design a standardized process for care and develop registries accordingly.

To overcome the stigma against using mental health services in a rural community and patients' reluctance to visit the behavioral health department of the clinic, the IHC plans to include members of its behavioral health department on the primary care teams. The providers will perform depression screenings within the medical offices.

References

[1] For diabetes rates, see www.cdc.gov/media/pressrel/2008/r080624.htm; for heart disease rates, see www.cdc.gov/DHDSP/library/fs_aian.htm; for childhood asthma rates, see pediatrics.aappublications.org/cgi/content/full/122/1/e217; and for asthma rates by race/ethnicity, see [www.cdc.gov/asthma/pdfs/mmwr_53\(7\)2004.pdf](http://www.cdc.gov/asthma/pdfs/mmwr_53(7)2004.pdf).

[2] The budget covers 68,000 visits to the clinic per year.

[3] The 14 sites were: Gallup Indian Medical Center; Albuquerque Service Unit; Warm Springs Service Unit; Chinle Comprehensive Health Care Center; Wind River Service Unit; Sells Service Unit; Whiteriver Service Unit; Rapid City Service Unit; Indian Health Council Inc.; Cherokee Nation Health Services; The Choctaw Health Center;

Lessons Learned

While the first team achieved some substantial increases in screening rates as a result of this approach, getting other teams together has not proven to be an easy process. Two physicians objected to the concept of working as a group and ultimately left the clinic. At least three other staff members, who had been caught up in the dissension over the pilot's implementation and were frustrated by it, ultimately chose to leave as well.

Nyquist believes that keeping staff informed and involved in the further development of the program may limit such resistance, but it's also crucial to have the organization's leaders articulate the importance of the program to all staff. "Otherwise you will have people who say, 'I'm not going to do it,'" she says.

The clinics also found that it is important to clean up data collected in its information system before embarking on such a program, as a significant amount of time was spent doing this once errors were identified. The clinic assumed its records were far more accurate than they proved to be.

For More Information

Contact Corinna Nyquist, R.N., at cnyquist@indianhealth.com or Daniel Calac, M.D., dcalac@indianhealth.com.

Eastern Aleutian Tribe; Forest County Potawatomi Health & Wellness Center; and The Gerald L. Ignace Indian Health Center

[4] The Indian Health Service paid the clinic \$35,000 for the 18-month pilot, the bulk of which was to reimburse the clinic for the time a staff member spent administering the project. It also covered travel for meetings and the purchase of any equipment necessary for Web-based collaborations related to the pilot.



Building Trust in the IHS: An Audio Interview with Peter Ziegler, M.D., Clinical Director of the Sells Service Unit (MP3)

Interviewed by Sarah Klein

To listen to the interview, please visit the Fund's Web site www.commonwealthfund.org/qualitymatters

News Briefs

Disclosure of Patient Satisfaction Data Linked to Improvement

Last month, the survey and consulting firm Press Ganey published [research](#) showing that—since the Centers for Medicare and Medicaid Services (CMS) began publishing hospital-specific patient satisfaction scores—these scores have dramatically improved. This finding helps to make the case that public disclosure of such scores can spur hospitals to take action to improve patient care.

The report evaluated the experiences of 1.5 million patients in 1,158 hospitals across the nation, from January 2007 through June 2008, using Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) data.

After the first public release of HCAHPS data in March 2008, there was a positive increase from the previous years' performance in April, followed by statistically significant year-over-year increases in May and June. These increases

were seen both in the percentage of patients rating their hospital as a 9 or 10 (out of 10), as well as the percentage of patients who said they would definitely recommend the facility to others.

"We have always seen a slow and steady improvement in patient-centered care over the years," says Deirdre Mylod, M.D., vice president of acute services at Press Ganey, which has evaluated patient satisfaction trends for 23 years. "The HCAHPS measures show a dramatic increase ... following the public reporting which indicates that everyone really stepped up their efforts—and the results are astounding."

HealthGrades Report: Mortality Rates Decline, But Significant Variation Persists

Hospital mortality rates improved from 2005 to 2007 by 14 percent across the nation, according to a [study](#) published last month by HealthGrades, an independent ratings organization. Still, the study found widely varying mortality rates among states, regions, and individual hospitals; patients had a 70

percent lower change of dying at top-rated hospitals compared with lowest-rated hospitals.

The report was based on an analysis of 41 million Medicare patient records from about 5,000 hospitals. It examined 17 procedures and conditions, including heart failure, sepsis, pneumonia, and respiratory failure—four conditions that together accounted more than half of the potentially preventable deaths.

Hospitals were assigned quality ratings from best to worst—five, three, and one stars—based on risk-adjusted mortality and complication rates. According to this analysis, mortality rates at five-star hospitals declined by 14.7 percent between 2005 and 2007, compared with decreases of 13.1 percent and 12.3 percent at three-star hospitals and one-star hospitals, respectively. Researchers estimate that 237,420 Medicare beneficiaries' lives could have been saved from 2005 to 2007 if every hospital had performed at a five-star level.

The Upper Midwest—Illinois, Indiana, Michigan, Ohio, and Wisconsin—had the lowest risk-adjusted mortality rates, while Alabama, Kentucky, Mississippi, and Tennessee had the highest. The greatest regional variation in mortality rates by condition was seen for heart failure, pulmonary, stroke, and cardiac surgery.

Remote Monitoring of Chronic Diseases Could Save Billions, Report Finds

A [report](#) published last month found that using technology to remotely monitor patients with chronic conditions could reduce health care costs by as much as \$197 billion over the next 25 years.

The report, by the economist Robert Litan, vice president of research and policy at the

Kauffman Foundation and a senior fellow at the Brookings Institution, was funded by AT&T and Better Health Care Together, a nonprofit consortium that promotes health care reform. It analyzed the potential effects of vital sign remote monitoring for patients with chronic skin ulcers, chronic obstructive pulmonary disease, heart failure, and diabetes.

The potential savings would come from reduced emergency department visits as well as fewer and shorter hospitalizations. Remote monitoring could also improve patients' health outcomes and their quality of life. "Remote monitoring can spot health problems sooner, reduce hospitalization, improve life quality, and save money," Litan concludes.

To realize the full potential of remote chronic care management, broadband technology would have to be more widely deployed and health care purchasers would need to reimburse providers for the service. In addition, standards for privacy, liability, and interoperable systems would have to be established.

Unique Patient Identifiers Would Improve Safety, Efficiency of Care

A RAND Corporation [study](#) published last month concluded that the creation of unique patient identifiers (UPIs) would reduce medical errors, simplify use of electronic medical records, increase health system efficiency, and protect patient privacy. UPIs are conceived of as unique identifiers that would follow individuals throughout their lives and be used only for health records.

Federal legislation passed a decade ago supported the creation of UPIs, but concerns over patients' privacy have hindered efforts to make them a reality.

According to the researchers, creating a

nationwide UPI system would cost \$11 billion, but these costs could be offset by the savings from greater health system efficiency, estimated to be about \$77 billion annually. UPIs would enable physicians, hospitals, and other authorized users to easily and reliably share patients' clinical and administrative records.

Most health systems currently identify patients using a technique known as statistical matching, which retrieves a patient's medical record by searching for attributes such as name, birth date, address, gender, medical record numbers, and Social Security Number. Based on a review of previous studies, RAND researchers estimated that statistical matching returns incomplete medical records about 8 percent

of the time. In addition, this technique leaves room for error, because the information used to identify patients may not be unique to an individual, may change over time, and may be entered in varying formats in different databases.

The study also concluded that UPIs would not threaten patients' privacy or the security of their health information, as security and privacy in a networked health information system have more to do with how access is managed and records maintained than with the specific identifier approach. UPIs could actually help to strengthen security, the researchers say, since UPIs would become protected information under federal and state laws.

Recent Publications of Note

Selected articles on quality improvement from a number of journals, including the *American Journal of Medicine*, *Annals of Internal Medicine*, *Archives of Pediatric and Adolescent Medicine*, *BMJ*, *Health Affairs*, *Health Services Research*, *International Journal for Quality in Health Care*, *Joint Commission Journal on Quality and Safety*, *Journal of the American Medical Association*, *Journal of General Internal Medicine*, *Journal of Patient Safety*, *Journal of Safety and Quality in Health Care*, *Medical Care*, *The Milbank Quarterly*, *The New England Journal of Medicine*, and *Pediatrics*. The articles are nominated by Editorial Advisory Board members from a preselected list.

Quality Tools in Practice

Nurse-Led Intervention "Reasonably" Cost-Effective

A cost-effectiveness analysis, conducted alongside a randomized trial, was used to evaluate whether nurse-led management for heart failure patients is cost effective. The 12-month intervention, which included one face-to-face encounter with a nurse and regular telephone follow-up, resulted in higher costs and quality of life as compared with usual care. Based on cost-effectiveness

acceptability curves, the authors conclude that the intervention was cost-effective for patients with less severe heart failure. P. L. Hebert, J. E. Sisk, J. J. Wang et al., [Cost-Effectiveness of Nurse-Led Disease Management for Heart Failure in an Ethnically Diverse Urban Community](#), *Annals of Internal Medicine*, Oct. 21, 2008 149(8): 540–548.

Study: QI Collaborative Failed to Improve Outcomes

A longitudinal cluster randomized trial was used to assess the effects of a quality

improvement collaborative—as the intervention—on preoperative antimicrobial prophylaxis. Hospitals were randomly assigned to the intervention group, which included participation in two in-person meetings led by experts, monthly teleconferences, and receipt of supplemental materials over a nine-month period. While noting the study's limitations, the authors found that the intervention did not improve patient's receipt of a properly timed antimicrobial prophylaxis dose, individual measures of antibiotic duration, use of appropriate drug, receipt of a single preoperative dose, or an all-or-none measure combining timing, duration, and selection. S. B. Kritchevsky, B. I. Braun, A. J. Bush et al., [The Effect of a Quality Improvement Collaborative to Improve Antimicrobial Prophylaxis in Surgical Patients: A Randomized Trial](#), *Annals of Internal Medicine*, Oct. 7, 2008 149(7): 472–480.

Geisinger: Improving Quality and Outcomes While Lowering Costs

This paper focuses on care innovations established at Geisinger Health System, an integrated delivery system serving 2.5 million patients in central and northeastern Pennsylvania, including strategies such as patient-centered medical homes, chronic disease management, and bundled payment of acute-care episodes. The authors conclude that, even if not fully generalizable to nonintegrated health care organizations, Geisinger's experience can prove useful for health care leaders seeking to enhance value and offer potential insight for health system reforms. R. A. Paulus, K. Davis, and G. D. Steele, [Continuous Innovation in Health Care: Implications of the Geisinger Experience](#), *Health Affairs*, Sept./Oct. 2008 27(5): 1235–1245.

Medical Home Adoption Among Large Groups Limited

The authors used data from the 2006–2007 National Study of Physician Organizations to examine the adoption of patient-centered medical home (PCMH) infrastructure components among large primary care and multispecialty medical groups. They found that the level of adoption of PCMH infrastructure components among large medical groups is, on average, low. However, PCMH infrastructure adoption varied considerably among these medical groups and was found to increase with very large organizational size and with ownership by a larger entity, such as a hospital or an HMO. They conclude that the model has a long way to go to achieve widespread implementation, and that its success depends on "whether it is able to go the distance and deliver a fundamentally different system of care that emphasizes primary care and results in improved overall health outcomes, decreased health disparities, and enhanced patient experience." D. R. Rittenhouse, L. P. Casalino, R. R. Gillies et al., [Measuring the Medical Home Infrastructure in Large Medical Groups](#), *Health Affairs*, Sept./Oct. 2008 27(5): 1246–1258

Measuring Performance

Process Measures Capture Unmeasured Information About Care

This study examined the association of hospital performance process measures with observed differences in risk-adjusted mortality rates and expected differences in risk-adjusted mortality rates. Using hospital performance data from Hospital Compare and risk-adjusted mortality rates from Medicare Part A claims in 2004, the authors compared observed differences in condition-specific hospital mortality rates based on

hospital performance with expected differences in mortality from the clinical studies underlying the measures at 3,657 acute care U.S. hospitals. They found that performance measures reflect care processes that both improve care directly and are also markers of elements of health care quality that are otherwise unmeasured. M. Werner, E. T. Bradlow, and D. A. Asch, [Does Hospital Performance on Process Measures Directly Measure High Quality Care or Is It a Marker of Unmeasured Care?](#) *Health Services Research*, Oct. 2008 43(5p1): 1464–1484.

Measures Show Asthma Care for Children Lacking

This study used a modified Rand appropriateness method to identify nine appropriate, feasible, and reliable evidence-based clinical process measures for assessing the quality of inpatient asthma care for children. The authors then evaluated provider compliance with these measures, through a retrospective, manual chart review of data for 252 children, ages 2 to 17, admitted to a tertiary care children's hospital for asthma exacerbations in 2005. They found that provider compliance with these measures was highly variable, but generally low, highlighting the opportunities for improvement in the provision of asthma care for hospitalized children and the need for future studies to confirm these findings in other inpatient settings. F. L. Nkoy, B. A. Fassel, T. D. Simon et al., [Quality of Care for Children Hospitalized With Asthma](#), *Pediatrics*, Nov. 2008 122(5): 1055–1063.

HEDIS Measures' Effect on Cardiovascular Disease and Diabetes

In this article, the authors analyze the effect that the systematic use of performance measures on a national scale has had on cardiovascular disease and diabetes outcomes,

using the Archimedes model linked to the Third National Health and Nutrition Examination Survey. They found that the eight Health Care Employer Data and Information Set (HEDIS) measures for cardiovascular disease and diabetes "do a remarkable job in targeting opportunities for decreasing morbidity and mortality attributable to those conditions." At the time the HEDIS measures were introduced, almost half of U.S. adults stood to benefit from improved performance on at least one measure. Further, they found that "consistent implementation of the levels of performance achieved by the median health plan in 2005 would have prevented about two million myocardial infarctions between 1995 and 2005." D. M. Eddy, L. G. Pawlson, D. Schaaf et al., [The Potential Effects of HEDIS Performance Measures on the Quality of Care](#), *Health Affairs*, Sept./Oct. 2008 27(5): 1429–1441.

Study Finds Associations Between Patient Satisfaction and Quality

The authors examined patients' perceptions of their care in the hospital setting, assessing the association between hospital characteristics assumed to enhance care and patients' satisfaction with their experience, as well as performance on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey and its relationship to quality. They concluded that patients' experiences in U.S. hospitals offer insights into areas that need improvement. This was based on their findings that patients who received care in hospitals with a high ratio of nurses to patient-days reported somewhat better experiences than those who received care in hospitals with a lower ratio, and hospitals that performed well on the HCAHPS survey generally provided higher quality care than those that did not. A. K. Jha, E. J. Orav, J. Zheng et al., [Patients' Perception of Hospital](#)

Care in the United States, *New England Journal of Medicine*, Oct. 30, 2008 359(18): 1921–1931.

Guidelines for Publishing QI Studies Revised

This article presents a revised version of guidelines for reporting quality improvement studies, called Standards for QUality Improvement Reporting Excellence (SQUIRE), created to stimulate the publication of high-caliber improvement studies. The authors describe the development process used to create the guidelines and revisions since their original publication in 2005. They also discuss SQUIRE's limitations and their plans to further develop, test, and disseminate the guidelines. F. Davidoff, P. Batalden, D. Stevens et al., [Publication Guidelines for Improvement Studies in Health Care: Evolution of the SQUIRE Project](#), *Annals of Internal Medicine*, Nov. 4, 2008 149(9): 670–676.

Patient Safety

Study Finds Poor Patient Handoffs Cause Harm

Resident physicians in internal medicine and general surgery at Massachusetts General Hospital (MGH) were surveyed in 2006 about the quality and effects of handoffs during their most recent inpatient rotations. Among the 161 residents (response rate, 67.6 percent) who completed the survey, 59 percent reported that one or more patients had been harmed during their most recent clinical rotation because of problematic handoffs, and 12 percent reported that this harm had been major. The authors conclude that many best-practice recommendations for handoffs are not observed, although the extent to which such improvements would

reduce patient harm is unknown. They also note that MGH recently launched a handoff-safety educational program, along with other interventions designed to improve the safety and effectiveness of handoffs. B. T. Kitch, J. B. Cooper, W. M. Zapol et al., [Handoffs Causing Patient Harm: A Survey of Medical and Surgical House Staff](#), *Joint Commission Journal on Quality and Patient Safety*, Oct. 2008 34(10): 563–570.

Principles to Coordinate Inpatient and Outpatient Care Needed

Hospitalist use has shifted primary care physicians' primary responsibility for their patients, while hospitalized, to hospitalists who may be affiliated primarily with the hospital, a health plan, or other sponsors. The authors interviewed hospitalist and nonhospitalist respondents as part of the Community Tracking Study site visits to examine how the growing use of hospitalists has changed care delivery processes. They found that hospitalist programs have increased the burden of patient coordination and blurred accountability for the quality of postdischarge care, with arrangements where companies and multispecialty medical groups employ hospitalists more likely to establish routines for ensuring coordinated transitions. H. H. Pham, J. M. Grossman, G. Cohen et al., [Hospitalists and Care Transitions: The Divorce of Inpatient and Outpatient Care](#), *Health Affairs* Sept./Oct. 2008 27(5): 1315–1327.

Quicklist of Common Pediatric Medications Reduces Errors

A retrospective comparison of orders from 840 randomly selected visits to a pediatric emergency department—half before and half after the introduction of a drug dosing support tool targeting common medications, called a quicklist—was used to determine the tool's impact on medication prescribing

errors. Among the 724 medication orders generated by these visits, there were 156 medication prescribing errors. The authors found that the introduction of the quicklist led to a significant reduction in medication prescribing errors, from 24 to 13 errors per 100 visits and from 31 to 14 errors per 100 orders. They conclude that a "list with dosing support for commonly used pediatric

medications may help adapt computerized physician order entry systems designed for adults to serve pediatric populations more effectively." B. E. Sard, K. E. Walsh, G. Doros et al., [Retrospective Evaluation of a Computerized Physician Order Entry Adaptation to Prevent Prescribing Errors in a Pediatric Emergency Department](#), *Pediatrics*, Oct. 2008, 122(4): 782–787.

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