



# Case Study

High-Performing Health Care Organization • December 2009

## Parkview Medical Center: Underscoring the Importance of Communication in Pneumonia Care

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HEALTH MANAGEMENT ASSOCIATES

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### Vital Signs

*Location:* Pueblo, Colo.

*Type:* Private, not-for-profit hospital

*Beds:* 265

*Distinction:* Top 3 percent in composite of seven pneumonia process-of-care measures, among more than 2,800 hospitals (more than half of U.S. acute-care hospitals) eligible for the analysis.

*Timeframe:* April 2007 through March 2008. See [Appendix](#) for full methodology.

This case study describes the strategies and factors that appear to contribute to high performance on pneumonia care measures at Parkview Medical Center. It is based on information obtained from interviews with key hospital personnel, publicly available information, and materials provided by the hospital during July and August 2009.



### SUMMARY

Parkview Medical Center is one of the top-performing hospitals in the country in the pneumonia process-of-care measures, or “core,” measures. The core measures, developed by the Hospital Quality Alliance, relate to achievement of recommended treatment in four clinical areas: heart attack, heart failure, pneumonia, and surgical care. In addition to performing strongly in the pneumonia care core measures, Parkview has achieved 99 percent compliance in the heart failure core measures.

Hospital leaders credit the organization’s strong performance in pneumonia care to the regular communication and reinforcement provided by quality improvement staff. Concurrent review in particular is relied on as an opportunity to provide real-time education and reminders to providers at the point of care. Those interviewed also emphasize that the hospital leaders are willing to try anything in the name of improving patient care.

## ORGANIZATION

Parkview Medical Center, in Pueblo, Colo., serves Pueblo and 14 surrounding counties. It has 265 acute-care beds and over 300 physicians on its medical staff. On an annual basis, Parkview has approximately 14,000 inpatient admissions, 60,000 emergency department visits, 158,000 outpatient visits, and 11,000 surgeries.

Parkview is implementing a comprehensive electronic medical record system, with physician order entry, in 2010. Judy Sikes, Ph.D., C.P.H.Q. (Certified Professional in Healthcare Quality), director of accreditation and medical staff services, and Kay Dennis, M.A., lead Joint Commission/Centers for Medicare and Medicaid Services (CMS) abstractor, are working closely with the system's design team to ensure the quality improvement strategies already built into the hospital's manual recordkeeping will be translated into the electronic medical record system.

## HOSPITAL-WIDE STRATEGIES

### Continuous Quality Improvement

According to Sikes, Parkview has been focused on continuous quality improvement since the late 1980s, when Edwards Deming's teachings first gained attention in the U.S.<sup>1</sup> "We are always looking for new ways to take better care of our patients," she said. "Patients are the reason we are all here." The hospital uses data analysis, best practices, and teamwork to improve its care processes. Sikes says that the hospital does not emphasize the costs of quality improvement work "because the past 20 years has taught us that if we do things right the first time, cost savings will occur." She notes that the focus on quality improvement and patient-centered care has likely had a positive impact on the hospital's market share. Since the 1980s, Parkview's market share has grown from about 35 percent to 65 percent.

Parkview's commitment to quality improvement is not confined to the hospital walls. It regularly participates in state and national improvement initiatives. For example, it participates in the Colorado 5 Million Lives Campaign, which aims to improve patient safety

and reduce medical injuries.<sup>2</sup> It also participated as a beta site in the IntelliDOT's CAREt system for medication administration and provided input in the CAREt system's final design.<sup>3</sup> Parkview is an IHI Mentor Hospital and routinely shares best practices with other hospitals, Medicare Quality Improvement Organizations (QIOs), and hospital associations.<sup>4</sup>

### Experimenting with Concurrent Review

Soon after the core measures were introduced, Parkview began experimenting with concurrent review to improve core measure performance. Sikes believed that if staff could catch noncompliant cases or documentation errors before a patient was discharged from the hospital, they could intervene and make a difference. She and her staff conducted concurrent reviews in their spare time and on weekends to see if the activity would make a difference in patient care. They focused on building relationships with nurses and unit secretaries. Sikes and her staff explained how the core measures improved patient outcomes and emphasized that their intention was not to inspect the unit's work, but to be an additional resource.

The organization saw an immediate spike in its core measures scores. According to Sikes, "it wasn't that we weren't already following many of the recommended practices, but [before concurrent review] they were not being documented correctly." Smoking cessation counseling is a good example. The hospital's compliance with this core measure increased from 3 to 100 percent after full implementation of concurrent review. Nurses were routinely providing smoking cessation counseling, but most of the time they were not documenting it.

After seeing these positive results, Parkview managers approved the hiring of two abstractors to perform concurrent review. Today, six abstractors now perform concurrent review to ensure patients receive evidenced-based care. The process is performed for all core measures patients, as well as stroke patients in anticipation of CMS soon adopting a measure of stroke care. Dennis views concurrent review as a one-on-one, year-round training opportunity that improves

communication within the organization. At least half of all problems within an organization are the result of miscommunication, she believes.

The reviews provide opportunities to intervene and improve core measure compliance before patients are discharged. Each night at midnight a report is run for patients admitted during the previous 24 hours. The report includes the admitting diagnosis, lab values, written diagnosis, consultations, and other details. Abstractors review the patient information and choose about 30 patients to follow. According to Thomas Hair, Joint Commission/CMS concurrent abstractor, the abstractors initially “throw a wide net” to capture any patients that could potentially fall into the core measures population. The abstractors will not remove any patients from the list until sufficient information is received to rule them out.

Once a patient is identified for concurrent review, the abstractors visit their floor to monitor their medical history, lab results, progress notes, physician orders, and diagnostic results. Sikes has taught her staff to act more like “firemen” than “policemen”—as additional support for the nurses and physicians instead of a “rule enforcer.” This philosophy, as well

as the presence of the abstractors on hospital floors, has helped build relationships with clinicians, who now consider the abstractors part of the care team.

**PNEUMONIA CARE IMPROVEMENT STRATEGIES**

Most of Parkview’s pneumonia care improvement strategies relate to education and communication. Sikes has found that as long as quality improvement staff focus on the clinical evidence supporting the core measures, clinicians will change their practices. The hospital’s education and communication efforts have taken a variety of forms, including annual skills fairs, staff orientations, and, most important, the presence on the floor of the abstractors that perform concurrent review.

There also have been some changes to care processes. A vaccination screening was built into the hospital’s admission assessment, so that all patients over age 18 are screened for vaccination need. In addition, any patient who indicates during the admission process that they have smoked a cigarette in the past 12 months receives information about how to quit. Also, the electronic nursing record in the emergency

**Figure 1. Parkview Medical Center Scores on Pneumonia Care Core Measures Compared with State and National Averages**

<b>Pneumonia Care Improvement Indicator</b>	<b>National Average</b>	<b>Colorado Average</b>	<b>Parkview Medical Center</b>
Percent of pneumonia patients given oxygenation assessment	99%	99%	100% of 191 patients
Percent of pneumonia patients assessed and given pneumococcal vaccination	83%	79%	100% of 145 patients
Percent of pneumonia patients whose initial emergency room blood culture was performed prior to the administration of the first hospital dose of antibiotics	90%	90%	98% of 130 patients
Percent of pneumonia patients given smoking cessation advice/counseling	88%	86%	100% of 72 patients
Percent of pneumonia patients given initial antibiotic(s) within 6 hours after arrival	93%	94%	95% of 157 patients
Percent of pneumonia patients given the most appropriate initial antibiotic(s)	87%	88%	93% of 102 patients
Percent of pneumonia patients assessed and given influenza vaccination	79%	75%	99% of 113 patients

Source: [www.hospitalcompare.hhs.gov](http://www.hospitalcompare.hhs.gov). Data are from July 2007 through June 2008.

department automatically reminds nurses to ensure that a blood culture has been taken prior to antibiotic administration.

The Emergency Department Quality Assurance Committee tracks data about pneumonia core measure performance. At the monthly meeting of this committee, any core measure failures are shared with physicians and a discussion of case details and suggestions for improvement are put into action.

### **Shifting Responsibilities for Vaccination Administration**

Parkview initially struggled to comply with the core measures related to pneumococcal and influenza vaccination assessment and administration. Like other hospitals interviewed in this series, it sought to improve performance by transferring the responsibility for ordering and administering the vaccinations from physicians to nurses.

After adopting this change, it took about nine months to see results. As described by Sikes, the team encountered two barriers. Most significant, nurses did not understand, or even believe, that they had authority to administer vaccinations without a physician's order. To address this, Sikes and her team distributed the CMS guidelines authorizing vaccination by nurses and prepared a formal presentation for department staff meetings to review the guidelines as well as similar rules from the state Board of Nursing. The concurrent review process reinforced this education by reminding noncompliant nurses that they had the authority to order and administer vaccinations. Sikes and her team also tracked the data about vaccination administration. If certain nurses repeatedly failed to administer vaccinations, Sikes met with them and their supervisor to answer questions and address any misgivings they may have had.

The other barrier came from the physicians. While the majority of medical staff overwhelmingly approved the shift in responsibilities, a group of

oncologists pushed back. They believed their patients were sicker than the hospital's general patient population and therefore they should be involved in deciding whether their patients received vaccinations. To address the oncologists' concerns, Sikes invited a physician representing the state Medicare quality improvement organization to speak to the group. This physician explained that chemotherapy patients did not suffer adverse reactions when given the pneumonia or influenza vaccination. This evidence, coupled with a decision to allow physicians to document medically necessary decisions not to administer the vaccination, helped Sikes and her team secure buy-in from oncologists.

### **Improving Antibiotic Selection and Timing**

Like other hospitals interviewed in this pneumonia care case series, Parkview includes appropriate antibiotic selection on its preprinted order sets. To reinforce this, the emergency room director reviewed the CMS recommendations and presented the standards to the 25 emergency room physicians. Through such efforts, the recommended antibiotic selections became standard practice throughout the department.

Parkview also relied on educational efforts to ensure antibiotics were being administered within the recommended window of time after admission (originally four hours and now six). Data supporting the medical need for antibiotic administration shortly following admission was presented in meetings with physicians. According to Sikes, "as long as a change is framed as a patient care improvement strategy, the clinicians will buy in."

## **RESULTS**

Parkview exceeds state and national averages on all the pneumonia care core measures submitted to CMS. Figure 1 compares Parkview's compliance on the pneumonia care core measures with state and national averages. Figure 2 shows the trends over the last three years for each pneumonia care core measure.

**Exhibit 2. Parkview Medical Center Selected Pneumonia Care Performance, 2007–09**

	1Q 2007	2Q 2007	3Q 2007	4Q 2007	1Q 2008	2Q 2008	3Q 2008	4Q 2008	1Q 2009	2Q 2009
Oxygenation Assessment	100%	100%	100%	100%	100%	100%	100%	100%		
Pneumococcal Vaccination	98%	100%	94%	100%	100%	100%	100%	97%	100%	100%
Blood Culture performed prior to 1st dose antibiotics	100%	100%	100%	100%	83%	100%	100%	91%	98%	97%
Smoking Cessation Advice	95%	93%	97%	97%	96%	100%	100%	100%	100%	100%
Initial Antibiotics with 6 hours of Admission		100%	96%	97%	95%	100%	86%	95%	100%	100%
Most Appropriate Antibiotic Selection	86%	95%	100%	96%	93%	96%	96%	95%	100%	96%
Influenza Vaccination	96%	None	None	98%	100%	None	N/A	100%	98%	N/A

Source: Parkview Medical Center, 2009.

**CHALLENGES AND LESSONS LEARNED**

Hospitals looking to improve their performance in the pneumonia care core measures might evaluate their organization’s educational and communication strategies. Parkview relies heavily on concurrent review to reinforce the core measures and need for changes to the care processes. Other lessons from Parkview’s experience include:

- A continuous quality improvement culture creates a climate in which staff are willing to make changes in the name of improving patient care.
- Concurrent review enables staff to intervene and make a difference by catching noncompliant cases or documentation errors before patients are discharged.
- Transferring the responsibility for ordering and administering vaccinations from physicians to nurses can improve core measure performance.
- Providing the clinical evidence showing how the core measures can improve patient care can motivate clinicians to change their practices.

**FOR MORE INFORMATION**

For further information, contact Judy Sikes, Ph.D., C.P.H.Q., director of accreditation and medical staff services at [jsikes@parkviewmc.com](mailto:jsikes@parkviewmc.com).

## NOTES

- <sup>1</sup> The basic philosophy of Edwards Deming was that practicing continuous quality improvement throughout the system as a whole, as opposed to its parts, can increase quality while reducing costs.
- <sup>2</sup> See <http://www.colorado5millionlives.org/>.
- <sup>3</sup> IntelliDOT's handheld devices enable nurses to perform medication safety checks at the patient's bedside. When nurses scan a patient's wristband, the handheld device leads them through tasks and documentation to ensure the right patient receives the right medication and right dose at the right time. See <http://www.intellidotcorp.com/caret/index.htm#MedicationAdministration>.
- <sup>4</sup> IHI Mentor Hospitals volunteer to provide support, advice, clinical expertise, and tips to hospitals seeking help with their quality improvement efforts.

## Appendix. Selection Methodology

Selection of high-performing hospitals in process-of-care measures for this series of case studies is based on data submitted by hospitals to the Centers for Medicare and Medicaid Services. We use seven measures that are publicly available on the U.S. Department of Health and Human Services' Hospital Compare Web site ([www.hospitalcompare.hhs.gov](http://www.hospitalcompare.hhs.gov)). The measures, developed by the Hospital Quality Alliance, relate to practices in pneumonia care.

### *Pneumonia Care Process-of-Care Measures*

1. Percent of pneumonia patients given oxygenation assessment
2. Percent of pneumonia patients assessed and given pneumococcal vaccination
3. Percent of pneumonia patients whose initial emergency room blood culture was performed prior to the administration of the first hospital dose of antibiotics
4. Percent of pneumonia patients given smoking cessation advice/counseling
5. Percent of pneumonia patients given initial antibiotic(s) within 6 hours after arrival
6. Percent of pneumonia patients given the most appropriate initial antibiotic(s)
7. Percent of pneumonia patients assessed and given influenza vaccination

The analysis uses all-payer data from July 2007 through June 2008. To be included, a hospital must have submitted data for all seven measures (even if data submitted were based on zero cases), with a minimum of 30 cases for at least one measure, over four quarters. The top 3% among 2,887 hospitals eligible for the analysis and with 50 or more beds were considered high performers.

In calculating a composite score, no explicit weighting was incorporated, but higher-occurring cases give weight to that measure in the average. Since these are process measures (versus outcome measures), no risk adjustment was applied. Exclusion criteria and other specifications are available at <http://www.qualitynet.org/dcs/ContentServer?cid=1141662756099&pagename=OnetPublic%2FPage%2FQnetTier2&c=Page>.

While high score on a composite of pneumonia care improvement process-of-care measures was the primary criteria for selection in this series, the hospitals also had to meet the following criteria: at least 50 beds, not a government-owned hospital, not a specialty hospital, ranked within the top half of hospitals in the U.S. in a composite HCAHPS core measure score and in the percentage of patients who gave a rating of 9 or 10 out of 10 when asked how they rate the hospital overall (measured by Hospital Consumer Assessment of Healthcare Providers and Systems, HCAHPS), full accreditation by the Joint Commission, not an outlier in heart attack and/or heart failure mortality, no major recent violations or sanctions, and geographic diversity.

## ABOUT THE AUTHORS

Aimee Lashbrook, J.D., M.H.S.A., is a senior consultant in Health Management Associates' Lansing, Mich., office. Ms. Lashbrook has six years of experience working in the health care industry with hospitals, managed care organizations, and state Medicaid programs. She provides ongoing technical assistance to state Medicaid programs, and has played a key role in the development and implementation of new programs and initiatives. Since joining HMA in 2006, she has conducted research on a variety of health care topics. Aimee earned a juris doctor degree at Loyola University Chicago School of Law and a master of health services administration degree at the University of Michigan.

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This study was based on publicly available information and self-reported data provided by the case study institution(s). The Commonwealth Fund is not an accreditor of health care organizations or systems, and the inclusion of an institution in the Fund's case studies series is not an endorsement by the Fund for receipt of health care from the institution.

The aim of Commonwealth Fund–sponsored case studies of this type is to identify institutions that have achieved results indicating high performance in a particular area of interest, have undertaken innovations designed to reach higher performance, or exemplify attributes that can foster high performance. The studies are intended to enable other institutions to draw lessons from the studied institutions' experience that will be helpful in their own efforts to become high performers. It is important to note, however, that even the best-performing organizations may fall short in some areas; doing well in one dimension of quality does not necessarily mean that the same level of quality will be achieved in other dimensions. Similarly, performance may vary from one year to the next. Thus, it is critical to adopt systematic approaches for improving quality and preventing harm to patients and staff.

