Case Study Series on Pneumonia Care Improvement Measures: Improvement Strategies of Top-Performing Hospitals

The following synthesis of performance improvement strategies is based on a case study series published on The Commonwealth Fund Web site, WhyNotTheBest.org. The hospitals profiled in this series were identified based on their performance on the pneumonia care improvement measures that are reported to the Centers for Medicare and Medicaid Services. Please see the case studies for a full description of the selection methodology.

The case studies describe the strategies and factors that appear to contribute to performance improvement on the pneumonia measures. It is based on information obtained from interviews with key hospital personnel and materials provided by the hospitals.[i]

The hospitals profiled in the case study series are:

- Holland Community Hospital, Holland, Mich.
- Parkview Medical Center, Pueblo, Colo.
- St. Luke's Regional Medical Center, Sioux City, Iowa
- Walla Walla General Hospital, Walla Walla, Wash.
- Western Baptist Hospital, Paducah, Ky.

Category	Pneumonia Care Strategy	Example/Method
General Quality Improvement Strategies, Applied to Pneumonia Care		
Establishing and nurturing culture of quality improvement	Set benchmarks and goals	Set internal benchmarks against which core measure performance, including pneumonia care performance, will be monitored. Increase the benchmarks each year. (Holland Hospital)
		Benchmark hospitals across the health care system. Member hospitals can see how they compare to peers. This "friendly competition" can be a motivating factor in quality improvement efforts. (Walla Walla General Hospital)
	Establish interdisciplinary team focused on pneumonia care improvement	Establish an interdisciplinary team to monitor pneumonia care performance, review non-compliant cases, perform root cause analysis, and develop pneumonia care improvement strategies. (Walla Walla General Hospital; Holland Hospital; Western Baptist Hospital)
		Include physicians on the team to provide an opportunity for meaningful input. Having physicians on the team is critical to achieving physician buy-in for new initiatives. Physician leaders can help "sell" the core measures and performance improvement initiatives among the medical staff. (Walla Walla General Hospital; Holland Hospital; Western Baptist Hospital)
	Cultivate a "blame free" culture	When investigating the root cause of a non-compliant case, brainstorm opportunities to improve established patient care processes instead of placing blame on individuals. (Holland Hospital)
	Engage physician leaders in pneumonia care improvement efforts to attain physician buy-in and keep energy levels high	Allow physician leaders to naturally emerge through participation in quality improvement activities, such as inclusion in pneumonia care improvement teams. (Holland Hospital)
		Have a physician take on the informal role of physician champion. Physician champions can help develop pre-printed order sets and provide direction on the best ways to present changes to medical staff. (St. Luke's Medical Center)
		Identify a physician champion to lead performance improvement teams. Solidify the physician champion's role in a formal agreement and provide compensation. Responsibilities can include: 1) providing reports and updates at

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		medical staff meetings; 2) reviewing core measure performance data and cases of non-compliance; and 3) meeting one-on-one with non-compliant physicians. (Western Baptist Hospital)
Incorporating improvement tools and processes into daily routines	Perform concurrent review or daily audit of patient medical records	Perform concurrent review as a way to address issues of non-compliance before a patient is discharged from the hospital. (Western Baptist Hospital; Walla Walla General Hospital; St. Luke's Medical Center; Holland Hospital; Parkview Medical Center)
		Use the concurrent review process to build relationships with clinicians and educate them about the pneumonia care core measures and how they improve patient care. Effective concurrent reviewers will be considered part of the patient care team and not as a "rule enforcer." (Parkview Medical Center)
		Review patient medical records five to 10 days after discharge to correct charts as needed. (Walla Walla General Hospital)
		Flag core measures patients in the hospital's EMR and send patient cases to the quality department for an analyst to review and follow. As an additional assurance, compile daily status reports of core measures patients that clinical managers and directors can review. (Holland Hospital)
		Meet with staff to provide education in real time about cases that are not meeting the core measures. (Western Baptist Hospital; St. Luke's Medical Center; Parkview Medical Center)
	Develop pre-printed order sets to standardize the pneumonia care process and guide clinicians in the provision of care	Involve primary users, such as internists and emergency department physicians, in the development of the order set. (Holland Hospital; St. Luke's Medical Center; Walla Walla General Hospital)
		Rely on a recognized provider of clinical decision support tools to ensure that pre-printed order sets are up to date with the most current evidenced-based medicine. (St. Luke's Medical Center)
		Make sure order sets are convenient, easy-to-use, and accessible. Order sets should be easily incorporated into physician routines. Remove any extraneous information from order sets. (St. Luke's Medical Center)

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		Include standing orders, such as smoking cessation counseling, vaccination screening, and blood culture prior to antibiotic administration, in the pre-printed order set. (St. Luke's Medical Center; Walla Walla General Hospital)
		Show physicians the evidence base for pre-printed order sets. Provide education to make sure the hospital's physicians understand that the order set is available for use, up to date, and evidenced-based. (Walla Walla General Hospital)
		Bring in outside specialists, such as an infectious disease specialist, to validate recommendations included on the pneumonia order set. (St. Luke's Medical Center)
		Require physicians to document any departure from the order set. (Holland Hospital)
Monitoring, rewards, and accountability	Monitor pneumonia care performance, provide feedback, and celebrate successes	Track and trend data about pneumonia care performance. Share data and core measures failures with relevant hospital committees and medical staff. Discuss failures and ideas to improve the pneumonia care process with these groups. (Parkview Medical Center; St. Luke's Medical Center)
		Recognize units that show improvement with tokens or treats. Highlight performance in hospital newsletters and/or signage throughout the hospital. (Walla Walla General Hospital; Western Baptist Hospital)
		Provide physician report cards to individual physicians. (Walla Walla General Hospital; Holland Hospital)
		Review physician report cards during the physician re-credentialing process. (Holland Hospital; Western Baptist Hospital)
		Build goal sharing program around established benchmarks, and reward hospital staff when certain goals are met. (Holland Hospital)

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		Distribute operational dashboard reports, including core measures performance, to the hospital's board of directors to reinforce the importance of the core measures. (Walla Walla General Hospital)
Ongoing education from without and within	Derive knowledge and momentum from state and national quality improvement initiatives	Participate as a beta site for new clinical information system tools. (Parkview Medical Center)
		Partner with other hospitals that sponsor quality improvement initiatives to build a culture of patient safety and create momentum for ongoing quality improvement work. (Walla Walla General Hospital)
		Participate in pneumonia-specific collaboratives, such as the Health Care Excel Pneumonia Collaborative, for networking opportunities and access to best practices. (Western Baptist Hospital)
	Anticipate and prepare for changes in the core measures	Extend concurrent review to new populations, such as the stroke population, in anticipation of CMS adopting a new set of core measures. (Parkview Medical Center)
		Implement necessary process changes immediately, before new or revised measures become effective, to ramp up and show stronger performance when reporting initial data to CMS. (Western Baptist Hospital)
	Educate hospital staff and physicians about pneumonia care improvement	When an improvement to the pneumonia patient care process is implemented, explain the "why behind the what." Present the measures as an opportunity to improve patient care. (Holland Hospital; Parkview Medical Center; St. Luke's Medical Center; Walla Walla General Hospital)
		Use evidence-based literature or invite specialists from other fields to validate core measures activities and help attain physician buy-in. (Holland Hospital; Parkview Medical Center; Western Baptist Hospital)
		Repetition is key until the core measures become second nature to staff. (St. Luke's Medical Center; Walla Walla General Hospital)
		Inform new staff about the core measures and their importance during staff orientation. (Parkview Medical Center; St. Luke's Medical Center)
		Emphasize the importance of every case—one failure can skew performance at

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		a small hospital. Staff education can include online tutorials. A quiz follows the online tutorial, and staff must have a certain score to pass. (Walla Walla General Hospital)
		Education can take a variety of forms, including online tutorials, hospital signage, annual skills fairs, staff orientations, and the presence on the floor of chart abstractors who perform concurrent review. (Parkview Medical Center; St. Luke's Medical Center; Walla Walla General Hospital) Post educational materials on the core measures in bathrooms or other high-traffic areas. (Western Baptist Hospital)
	Collaborate with sister hospitals in the same health care system	Participate in collaborative workgroups sponsored by the parent organization to share best practices and bounce ideas off one another. (St. Luke's Medical Center; Western Baptist Hospital)
Involve clinical staff in quality improvement	Empower frontline staff	Encourage physicians and nurses to analyze problems and identify solutions at the point of care. Be open to solutions that come from frontline staff. (St. Luke's Medical Center)
		When a case falls out of compliance, meet with the staff members and department leaders involved in the case. Perform a root cause analysis and solicit feedback directly from the individuals involved. Inquire about the steps that can be taken to avoid similar cases occurring in the future. (Walla Walla General Hospital)
	Hire staff hospitalist physicians	In terms of introducing changes to patient care, hospitalist physicians may provide more consistent care and may be easier to work with than community physicians. (Walla Walla General Hospital)
Specific Pneumonia Care Improvement Strategies		
Vaccination assessment and administration improvement	Program pneumonia care reminders into the hospital's EMR	If pneumonia patients are not being assessed for vaccination need, include vaccination screening questions in the electronic nursing record. Program the system to require answers to the vaccination screening questions before the nurse can proceed with the patient assessment. (Holland Hospital; Parkview

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strategies		Medical Center; St. Luke's Medical Center)
		Program the EMR to, on October 1 (beginning of flu season), require all current inpatients to be screened for the influenza vaccination. The screening ensures current inpatients will receive their vaccination prior to discharge despite being admitted prior to the beginning of flu season. (Western Baptist Hospital)
	Screen all patients for vaccinations	Screen all patients, not only pneumonia patients, for vaccination need on the first day they are admitted to the hospital. (St. Luke's Medical Center; Parkview Medical Center; Holland Hospital; Western Baptist Hospital)
		Include vaccination assessment tool in the admission packet. Incorporate any hospital-required consent forms into the assessment tool. (Western Baptist Hospital)
	Give nurses vaccination authority, and empower patients	In cases where patients meet certain criteria, give nurses the power to administer vaccinations without a physician's order. (Holland Hospital; Parkview Medical Center; Western Baptist Hospital) To attain nurse buy-in, share CMS guidelines and Board of Nursing rules with the nursing staff. Reinforce with education provided during concurrent review. (Parkview Medical Center)
		Invite physicians from the state's quality improvement organization to speak to physician groups that resist allowing nurses to perform vaccinations without a physician's order. (Parkview Medical Center)
		If clinicians withhold vaccinations from patients they believe to be "too sick" to receive them, take the decision out of clinicians' hands and into patients' hands. Provide patients with information regarding the risks and benefits of vaccination. Before discharge, ask patients if they would like to receive the vaccination. (Walla Walla General Hospital)
	Implement visual	Use a dry erase board to serve as a highly visible reminder of the patients that

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	reminders for staff	need vaccinations. After a vaccination is administered, update the dry erase board with a check mark to indicate that the patient received the vaccination. (Western Baptist Hospital)
	Make improvements outside of the EMR	Keep pneumococcal and influenza vaccinations in the automated medication dispensing cabinets on each nursing unit to ensure that nurses have what they need to administer vaccinations at discharge. Placing vaccinations on the nursing units also helps improve patient satisfaction because it decreases patient discharge time. (Western Baptist Hospital)
Appropriate initial antibiotics improvement strategies	Develop a pneumonia pre-printed order set, including a list of appropriate antibiotics	Include a list of appropriate antibiotics on the pneumonia care pre-printed order set. (Holland Hospital; Western Baptist Hospital)
		Present the recommended antibiotic selections to emergency department physicians for discussion and input before including the selections on a pre-printed order set. (Parkview Medical Center)
		Leave room on the order set for physicians to document deviations from the recommended antibiotic selections. (St. Luke's Medical Center)
		Encourage nurses to press physicians to use order sets until it becomes entrenched in the physicians' routines. (St. Luke's Medical Center)
	Anticipate and prepare for changes in the core measures	Each time CMS and the Joint Commission update the list of antibiotics recommended for pneumonia patients, make sure the antibiotics are available and on the hospital's formulary. (Western Baptist)
Blood culture prior to antibiotic administration improvement strategies	Hardwire patient care improvements into staff routines	Program the EMR to place a "hold" on antibiotics ordered for pneumonia patients if a blood culture has not been drawn. (Holland Hospital)
		Design the medication administration system to ask if a blood culture has been performed before dispensing the antibiotic. The clinician must request an order for a blood culture or request assistance before the antibiotic will be dispensed. (St. Luke's Medical Center)
		Use pre-printed orders in the emergency department to ensure that a blood

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		culture is automatically ordered for any pneumonia patient. The emergency department nurse takes the blood culture and administers the antibiotic. (Western Baptist)
	Implement visual reminders for staff	Use the dry-erase board in the emergency department to indicate which patients have received a blood culture. (St. Luke's Medical Center)
		Identify patients who have had a blood culture with red cobans (i.e., bandages). This eliminates any confusion about whether blood has been drawn and alerts emergency department nurses that they are to proceed promptly with the administration of antibiotics. (Walla Walla General Hospital)
	Transfer staff responsibilities	To eliminate delays in administering antibiotics after blood culture, and to avoid having providers assume blood cultures have been taken when they have not, transfer the responsibility for taking blood cultures from phlebotomists to emergency department nurses. Because the nurses are also responsible for administering antibiotics, they can control the order in which the two interventions occur. (Holland Hospital)
	Educate hospital staff and physicians	To address improper documentation of blood culture administration time, provide general training to all laboratory staff. Supplement general education with one-on-one follow-up. Ask emergency department nurses to document the blood culture administration time until the laboratory documentation is sufficient. (Walla Walla General Hospital)
		Meet with laboratory staff to address delays in processing blood culture results. If laboratory staff do not believe blood culture results are a high priority, emergency department physicians should spend time with lab staff explaining why blood culture results are a priority. (Western Baptist Hospital)
Antibiotic within six hours of arrival improvement strategies	Transfer staff responsibilities	Administer the initial course of antibiotics in the emergency department instead of a medical unit to help ensure that it is administered within six hours of arrival. (Holland Hospital; St. Luke's Hospital)
	Establish "workarounds"	Educate staff that antibiotics can be started in pill form. This addresses delays caused when staff have trouble establishing a central IV line for antibiotic

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		therapy. (Walla Walla General Hospital)
		To address delays in antibiotic administration for patients admitted directly to the hospital by their community physician, began ordering the antibiotic as part of the registration process. When a patient is admitted to the hospital with a pneumonia diagnosis by their family physician, the nurse can fax an order for the appropriate antibiotic to pharmacy. (Western Baptist)
Smoking cessation counseling improvement strategies	Program pneumonia care reminders into the hospital's EMR	Include a trigger in the electronic nursing record to remind nurses to talk to pneumonia patients about smoking. (Walla Walla General Hospital; Holland Hospital) Program the electronic nursing record to keep the smoking cessation counseling reminder visible until hospital staff indicate that the required counseling has been provided. (Holland Hospital)
		Provide all patients who indicate during admission that they have smoked a cigarette in the past 12 months with printed information about how to quit. (Parkview Medical Center)
	Hardwire patient care improvements into staff routines	Include smoking cessation advice in every admission packet. "Everyone, even non-smokers, has a family member or knows someone who is a smoker and could benefit from the education." (Walla Walla General Hospital)

[i] These studies were 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.