

**Oxygenation Assessment for Pneumonia –  
Achieving the Standard of Care  
Tools and Resources for Hospital Performance Measurement  
Improvement Activities**

**Tenth in a series of targeted quality improvement articles**

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**Illinois Hospital Association**

# **Oxygenation Assessment for Pneumonia – Achieving the Standard of Care Tools and Resources for Hospital Performance Measurement Improvement Activities**

## **Achieving the Highest Standard of Care**

Oxygenation assessment measure examines whether patients received oxygenation assessment within 24 hours of hospital arrival. Illinois Hospital Association (IHA) Comparative Performance Measurement Initiative shows Illinois hospitals in the 1<sup>st</sup> quarter of 2004 achieved 98.2% compliance with the measure, a rate identical for nationally reported Joint Commission on Accreditation of Healthcare Organizations (JCAHO) measurement data for the same period. The goal for all Illinois hospitals is **100% compliance** with the standard of care.

## **Oxygenation Assessment for Pneumonia Measurement Description**

Pneumonia is characterized by an acute inflammation of the lungs. This in turn can impair a patient's ability to breath, adversely affecting gas exchange and subsequent oxygenation of the body's vital organs and tissues. Oxygenation assessment can be determined with arterial blood gases and pulse oxymetry. Given the two assessment methods, pulse oxymetry may be more practical and desirable.

Pulse oxymetry is readily available, more comfortable for the patient, and associated with lower costs providing immediate clinical results as compared to blood gas analysis. However, blood gas analysis may be beneficial when pulse oxymetry is not feasible, the results of pulse oxymetry are in doubt or when oxygen saturation measures need to be supplemented with acid-base laboratory measures. Evidence-based medicine has demonstrated improved survival with oxygenation assessment and treatment with supplemental oxygen administration for patients with pneumonia.

*Calculating the Measure's Performance.* Oxygenation assessment for pneumonia is reported as a percent, based on:

- Numerator includes pneumonia patients who were assessed for oxygenation with arterial blood gas or pulse oximetry within 24 hours prior to or after hospital arrival.
- Denominator includes patients with a “working diagnosis” of pneumonia at admission and:
  - *Principle Diagnosis* code of Pneumonia or
  - *Principal Diagnosis* code of Septicemia or Respiratory Failure and *Other Diagnosis* code of Pneumonia.

The *Technical Specifications* manuals are a resource for the measure description, rationale, inclusions and exclusions, contraindications, and how data is processed including what results in *missing data* and *not in measure populations*. To view, click on the links below and follow the additional steps.

- JCAHO manual for discharges effective 7/1/2004 and after, go to:

[www.jcaho.org/](http://www.jcaho.org/)

Click on Performance Measurement (top left), click on Core Measure Information (on top), click on “Specifications Manual...2004,” scroll down to “Measure Information Forms”, select the Core Measurement of interest.

- Center for Medicare and Medicaid Services (CMS) manual for discharges effective 7/1/2004 and after, go to:

[www.qnetexchange.org/](http://www.qnetexchange.org/)

Click on HDC (on top), left menu bar, scroll down to Related Resources, click on “Topic-Specific Resources, Zip Files” to download each measurement set.

### **Successful Quality Improvement and Compliance Experiences Shared by Illinois Hospitals**

The experiences and successes for achieving compliance with oxygenation assessment for pneumonia are presented below from hospitals representing a variety of characteristics and locations throughout Illinois. The Illinois Hospital Association appreciates the efforts of these hospitals in sharing their experiences with others and also the sharing of contact names at each hospital for follow up questions or discussions.

Some common and unique success factors or strategies include:

- Intensive teaching
- Multiple intervention strategies
- Multidisciplinary team involvement
- Organizational culture driving performance improvement

#### **Loretto Hospital**

Loretto Hospital is a 223-bed urban hospital serving the needs of the diverse communities on Chicago’s Westside. Paula Crossen, Vice-President Performance Improvement, shares that the hospital looked at their performance compared to other Illinois hospitals and recognized their need for improvement. “We were at 95% compliance with oxygenation assessment for patients with pneumonia when other hospitals were performing at 98-100% and we knew we could do better.”

To improve their performance with the standards of care, Loretto Hospital implemented “intensive teaching” and educational sessions with the emergency area staff – nurses, physicians and cardio-pulmonary (respiratory therapy) staff. In-service education helped to ensure that the hospital staff were informed and knowledgeable about the core measures, the standards of care and what we were measuring, relates Crossen.

As a follow up to the education interventions and to sustain the gains achieved through education, Loretto Hospital implement “reminder sheets” for each of the core measures – AMI, heart failure and pneumonia. The reminder sheets, laminated and posted throughout the emergency area and medical/surgical units, list the core measures in “remember to” statements about patient care. “Reminder sheets are even attached to staff clip boards for easy and quick reference by the staff.”

Another effective means to sustain improvement is achieved through continuous monitoring. “We have one person assigned to check all new pneumonia admissions regarding care delivered,” states Crossen. These monitoring efforts alert Loretto Hospital about what they are doing consistently and where there might be shortfalls. This continuous pattern of monitoring, said Crossen, “allows for timely follow up with care givers while the events are fresh in their minds.”

Loretto Hospital has shown consistent improvement with the other pneumonia core measures – antibiotic time and pneumococcal vaccination. The improvement gains were achieved in a similar manner as with oxygenation assessment. Improvements with rate in pneumococcal vaccination “is a struggle,” notes Crossen. Loretto Hospital implemented a nursing assessment/order sheet with some success but currently is revising the form to facilitate more and effective patient assessment and information gathering. Crossen notes, “we have also been working with the nursing homes that Loretto receives patients from to ensure that the documents sent with each patient reflect their immunization status at the time of transfer. Contact: Paula Crossen, Vice-President Performance Improvement at [paulacross@aol.com](mailto:paulacross@aol.com).

### **Abraham Lincoln Memorial Hospital**

Abraham Lincoln Memorial Hospital is a small, rural hospital situated mid-state in Lincoln, Illinois and is one of three hospitals in Memorial Health System. Dolan Dalpoas, Assistant Administrator and Director, Quality Management, states “we have made a great deal of progress with the pneumonia core measure and all the measures... but we have a long way to go to be where we want to be.” Dalpoas described four key activities the hospital has followed to drive process improvement.

The key factor in driving performance improvement is administrative support. Dalpoas relates, “The number one factor in driving performance improvement is the huge buy-in and support of our governing board and the President and CEO, Woody Hester. They led the charge by setting the expectation that we must provide the best clinical care possible, which was based on science and evidence; and achieve benchmark performance – that is 100% compliance with the measures.”

The second key factor was to create expectations around responsibility for performance. This is rooted in the hospital’s strategic plan that includes all of the clinical indicators in the performance measurement sets. According to Dalpoas, we communicated, “An expectation that performance improvement with the core measures was vital to the success of the hospital and it was each and everyone’s responsibility with the support of administration to get there.”

To further the sense of expectations, the hospital posted Strategic Plan Wall Maps in every unit that included the hospital’s Vision, Mission, and Strategic Goals so that staff knew where the hospital was going, how they planned to get there, and how they would measure the change, explains Dalpoas.

The third key factor driving performance improvement was the transference of the larger expectations into unit and personal goals. All hospital staff, explains Dalpoas, from the CEO to the front line, have personal goals they carry with them, which support the hospital's strategic emphasis on performance improvement.

Guidance and direction with the core measure performance is provided by the Clinical Effectiveness Committee, the fourth key factor Dalpoas spoke about. The committee members are responsible for reviewing and interpreting the hospital's core measure data, brainstorming on possible ways to improve, and taking action that leads to positive change. The committee is chaired by Melissa Hardiek, M.D., who serves in the role of Physician Champion. Having physician involvement and leadership is important to gaining the support of the larger group of physicians, notes Dalpoas.

Abraham Lincoln Memorial Hospital's increased compliance with the pneumonia core measures resulted from the Clinical Effectiveness Committee reviewing the practice guidelines and recommendations of the Infectious Diseases Society of America and implementing the standards of care. Dalpoas concludes, "It is our Vision to be the best rural hospital in America. We'll get there by involving our staff and looking at what we do so that we are doing the right thing for every patient every time." Contact: Dolan Dalpoas, Assistant Administrator and Director, Quality Management at [dalpoas.dolan@mhsil.com](mailto:dalpoas.dolan@mhsil.com).

### **Silver Cross Hospital**

Located 45 miles southwest of Chicago in Joliet, Illinois; Silver Cross Hospital's Pneumonia Quality Improvement Team has used multiple interventions and strategies to promote that standards of care and improve the compliance with the core measures for pneumonia patients. Judy Bienvenu, R.N, Case Manager and Team Facilitator assembled many of the multidisciplinary team members to describe Silver Cross Hospital's efforts.

Most pneumonia patients are admitted through the Emergency area, relates Bienvenu. Rapid identification and movement of the patients though the "triage" area was a key change in their care process. "We try to bring our patients back to the examining room within a few minutes of their arrival, relates Dave Mikolajczak, D.O., Director of Emergency. "Oxygen assessment is part of our vital signs," explains Dr. Mikolajczak, "we consider pulse oximetry to be the 5<sup>th</sup> or 6<sup>th</sup> vital sign if you include the patient's weight. This quick assessment allows for more immediate interventions, if necessary."

Rose Sontag, R.N., Emergency Services Case Manager, works closely with the Emergency Room staff to ensure the use of standing orders. Dr. Mikolajczak, recognizes how standing orders have positively affected practice patterns. Dr. Mikolajczak relates, "Our standing orders are used in the Emergency area and throughout the hospital." Bienvenu adds, "All the standing orders used at Silver Cross Hospital include the appropriate standards of care and reflect all of the core measures requirements."

The standing orders for pneumonia includes antibiotic selection and dosing and has reduced any guesswork and variation and helped standardize the care processes, explains Dr. Mikolajczak. “The orders are widely accepted and used by our physicians.” Further, the standing orders are expedited more efficiently with the Pyxis system in place as the antibiotics and other medications included in the standing orders are widely available.

Hari Gadde, M.D., Pulmonologist and Chairperson of the Department of Medicine, added that the standing orders are “hard wired” into our information system and generate protocols for staff to follow. An example of which is the Oxygen protocol. Merri Reiken, Respiratory Therapists adds, “the protocol results in daily assessment of oxygen saturation for all CAP patients.”

As some pneumonia patients are “direct admits” to the hospital, Bienvenu notes, Silver Cross Hospital assigns a case manager to focus on patient admissions. This practice of identifying, managing and monitoring patient admissions to impact quality has been reported by other hospitals.

Clinical Pathways are another means used by the nursing staff at Silver Cross Hospital to plan and deliver care and positively impact quality care for pneumonia patients. These pathways were designed to reflect the standards of care and the core measures. Short time intervals allow for frequent assessment that we are delivering the required care and allow for timely follow up, explains Bienvenu. Core measure performance is also monitored using the hospital’s information systems. A monitoring tool was designed and implemented to specifically track patients with a “working diagnosis of pneumonia,” notes Bienvenu.

Admission and discharge are key points in the care continuum to change practice and improve compliance. During the admission process, the Nursing Assessment includes asking the patient about their pneumococcal and influenza vaccination history. If a vaccination is indicated, a “vaccination sticker” is placed in the patients’ medical record on an order sheet as a reminder to the physician that the patient meets criteria for vaccination administration.

The Discharge Instruction Sheet becomes another pivotal point to reassess and record vaccination status. At Silver Cross Hospital, the discharge instructions are computerized and this allows for wide distribution to key care givers, including the attending and referring physicians, notes Dr. Gadde. “We can call this information up anytime, it helps minimize errors from occurring and improves the delivery of care.”

Silver Cross Hospital provides community outreach as another means to promote healthy lifestyles and improve quality and compliance with core measures. With the assistance of Dan Garganera, M.D., Infectious Diseases, the hospital recently offered evening educational program on pneumonia. Pneumococcal vaccinations were made available to attendees. Bienvenu shares that future sessions may be held at nursing homes and senior

services recognizing that these individuals are at greater risk of morbidity and mortality with pneumonia.

“The Silver Cross Hospital Board of Directors realizes the importance of quality,” said Billie Schimanski Vice-President of Quality Resource Management. Schimanski added that Silver Cross Hospital uses a Strategic Balance Scorecard to focus the organization’s attention to key performance measures. Antibiotic timing for CAP is one of the key measures and is a hospital wide goal. The CAP quality improvement team’s collaborative effort provides the best care for our patients. Contact: Billie Schimanski, Vice-President of Quality Resource Management at [bschiman@silvercross.org](mailto:bschiman@silvercross.org).

### **Oxygenation Assessment for Pneumonia Based Resources**

There were no new web resources specifically identified for oxygenation assessment. To view other web based resources identified for the pneumonia core measures; review the document “Pneumonia Web Based Resources” on the IHA web site. This document outlines web resources addressing clinical guidelines, educational materials, evidenced-based materials, and intervention tools.

#### ***Frequently Asked Questions – (FAQs)***

*FAQs* often reflect the insights and concerns of hospital staff involved in clinical care and data collection. Use *FAQs* as your first source to answer clinical and data related questions. *FAQs* are also an important educational tool for novice & expert.

- Select Pneumonia for the Topic. Different “key words” (oxygenation, oxygen, pulse oximetry) all resulted in 5 returns; “ABG and ABGs” yielded 3 returns each addressing limited clinical issues. The use of the terms “blood gas” was not beneficial as it yielded 39 results addressing blood cultures.

To review *FAQs* or to ask a new question, go to: [www.medqic.org](http://www.medqic.org), click on Pneumonia (top bar), click on *FAQs* (left menu bar).

For additional information about Antibiotic Timing for Pneumonia, the Ten Measurement Starter Set, or to comment on this series, please contact Tim Philipp, Director, Quality Improvement at [tphilipp@ihastaff.org](mailto:tphilipp@ihastaff.org).