

Managing community-acquired pneumonia across a health care system

Pharmacy Management

The challenge

Published estimates suggest that there are 2-3 million cases of community-acquired pneumonia (CAP) annually in the U.S., resulting in approximately 10 million physician visits, 500,000 hospitalizations and 45,000 deaths. (CDC. MMWR Morb Mortal Wkly Rep 1997;46:556; Marston BJ et al. Arch Intern Med 1997;157:1709-18.) The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has determined that hospitalization represents an underutilized opportunity for adult vaccination, and has established a Core Measure targeting patients 65 and older.

Despite the clinical success of a long-standing order set for the management of CAP at Swedish Medical Center, the system was not achieving an adequate rate of vaccination.

Background

Swedish Medical Center, a three-hospital system with a total of 1,245 beds in the Seattle area, is the Northwest's largest, most comprehensive medical center. The healthcare system has had a standardized CAP care pathway in place for 15 years. The order set has proven very effective in ensuring consistent antibiotic therapy, prompt administration of IV antibiotics, and early IV to PO antibiotic conversion. It was not, however, adequately addressing vaccination. In fact, the system's average monthly vaccination rate was at a level that placed it in the bottom 10% of hospitals in the country. "With just 8% of our eligible patients receiving vaccines," says Judy Morton, Swedish Medical Center's Vice President of Quality Integration and Improvement, "we determined that we had a major opportunity to improve the care we provide to pneumonia patients." Spurred by the promulgation of JCAHO's Core Measure vaccination standard for the disease, the system was able to leverage Cardinal Health's pharmacy expertise to dramatically improve its vaccination rate.

Solution

To address this issue, the system launched a pneumonia management initiative with a goal of moving from the bottom to the top 10% of hospitals in the country (i.e., those with a vaccination rate above 77%). Its pharmacy, which is managed by the Pharmacy Management business of Cardinal Health, played a critical part in this initiative, and the effort was conducted in stepwise fashion, with the vaccination rate monitored after each intervention.

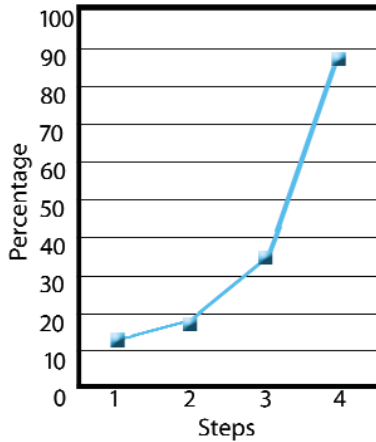
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Key elements of the initiative

- Development and communication of criteria to identify qualifying patients
- Modification of the order set to shorten the time between hospital admission and vaccine administration
- Intensive education program for nursing staff
- Ongoing, individualized follow-up by pharmacists with nurses to ensure that qualifying patients receive vaccination
- Speedy medication delivery
- Follow-up during multi-disciplinary rounds



Improvement in pneumococcal vaccination rate at Swedish Medical Center



Steps

1. Start of initiative: Modification to care pathway and order to vaccinate on 3rd hospital day
2. Order changed to 2nd hospital day; intense nursing education
3. Outreach by pharmacy to identify and follow up on every eligible patient
4. Rate of 87% reached, placing Swedish Medical Center in top 10% of hospitals nationwide

The group's first step was the development of criteria to facilitate the identification of patients who qualified for the vaccine. Completed in consultation with infectious disease and pulmonology specialists as well as nursing, this information was incorporated directly onto the order set, with the recommendation that appropriate patients receive the vaccine on the morning of their third hospital day. This move succeeded in improving the system's vaccination rate to 18%. Changing the recommendation to the second day of hospitalization, combined with intensive nursing education, raised the rate to 35%.

While this figure is nearly twice the national average, it fell far short of the initiative's goal. It was at this point that the pharmacy's involvement became critical for further improvement. Using its IT capabilities, the pharmacy began producing a daily listing of all patients on the CAP pathway, flagging individual patients who were due for vaccination each day. For each of these flagged patients, pharmacists personally contacted each patient's nurse to determine whether the vaccine was to be given. The pharmacy also took steps to expedite vaccine delivery for these patients.

Result

The system's vaccination rate rose to more than 80% within two months of the pharmacy's focused outreach effort. An additional level of follow-up was subsequently added during multi-disciplinary rounds, and the system has since been able to sustain a rate of vaccination (87%) that places it in the top 10% of hospitals nationwide.

Despite careful attention to the order set and extensive education efforts, moving Swedish Medical Center's performance to the highest levels has required daily attention by the pharmacy staff to identify appropriate patients and to serve as an advocate to ensure vaccination. Today, the pharmacy is following up on 100% of qualifying patients to ensure that each one receives the vaccine on the second hospital day. According to Morton, "The Cardinal Health-led pharmacist team was instrumental in helping us reach a new level of reliability: 100%. This level of performance could never have been achieved without the support and leadership of the Cardinal Health pharmacy team."

The Pharmacy Management business of Cardinal Health has more than 30 years of expertise in helping hospitals and health care systems improve both the financial predictability of pharmacies and the quality of patient care. Through clinical utilization, workflow processes and effectively managing pharmaceutical inventories, our experts can improve the pharmacy practice and provide the benchmarks to measure success.

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