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Increases in Lower Respiratory Tract Infections and Influenza-like Illnesses in Nursing Homes in 2011 Call for the Implementation of Structured Prevention Programs

Pneumonia and other lower respiratory tract infections are the second most common infections among nursing home residents and the leading cause of death from infections in the long-term care setting

HARRISBURG: The reported number of lower respiratory tract infections (LRTIs) and influenza-like illnesses (ILIs) increased by six percent and 28 percent respectively in Pennsylvania nursing homes in 2011 compared to 2010 data, emphasizing the need for structured prevention programs, according to information published in the December 2011 *Pennsylvania Patient Safety Advisory*.

Specifically, from January through June 2011, the monthly average number of LRTIs increased by 6.4 percent, and the number of ILIs increased by 28.2 percent compared to the first six months of 2010.

Targeted strategies to prevent LRTIs and ILIs must take into consideration increased risk factors associated with elderly long-term care residents, such as swallowing difficulties, smoking, immobility, poor oral care and lack of influenza and pneumococcal vaccination.

“Pneumonia cases can be decreased over twenty percent with adequate oral care and swallowing difficulty interventions,” Sharon Bradley, RN, CIC, Senior Infection Prevention Analyst from the Pennsylvania Patient Safety Authority, said. “Mandatory vaccination programs also can reduce influenza virus by sixty percent when one hundred percent of staff are vaccinated.”

In Pennsylvania nursing homes, the Authority identified that those implementing a mandatory staff vaccination program had a 21.5 percent lower combined seasonal LRTI/ILI infection rate from October 2010 through March 2011. Further, facilities with

mandatory vaccination programs have 42 percent lower mortality rates than nursing homes without mandatory programs.

The analysis comes from the Authority's 2010 annual survey to assess the effect of healthcare worker vaccination on the reduction of LRTI and ILI in Pennsylvania nursing homes. Eighteen of the 221 nursing homes that responded to the survey reported having mandatory annual healthcare worker vaccination programs in place.

Bradley added that comparing data between nursing homes with a mandatory program and those without, a projection of 616 potential respiratory tract infections could have been prevented among the remaining 203 facilities that responded. She said further statewide analysis shows that mandatory staff vaccination could have prevented up to 1,991 respiratory tract infections among all Pennsylvania nursing homes.

Patients who have difficulty swallowing (dysphagia) carry a sevenfold increased risk of aspiration pneumonia. Aspiration pneumonia is inflammation of the lungs and airways to the lungs (bronchial tubes) from breathing in foreign material. Nursing-home acquired aspiration pneumonia has the highest mortality rate of any healthcare-acquired infection. It is estimated that 30 percent of pneumonia in long-term care facilities is caused by aspiration.

“Identifying and implementing aspiration-prevention strategies is important because patients who have difficulty swallowing are at such an increased risk for aspiration-pneumonia,” Bradley added.

Several components crucial to structuring a targeted prevention program are detailed in the *Advisory* article, including an effective oral hygiene program, reducing dysphagia and aspiration risk factors and implementing a mandatory staff vaccination program.

For more information on prevention strategies for LRTIs and ILIs and to read the complete *Advisory* article, go to “*Strategies to Improve Outcomes in Nursing Home Residents with Modifiable Risk Factors for Respiratory Tract Infections*” on the Authority's website under *Patient Safety Advisories* December 2011. Consumer tips are also available on LRTIs and patients with swallowing difficulty (dysphagia) on the Authority's website under “Patients and Consumers.”

The Authority's 2011 December *Advisory* also contains other clinical articles with toolkits for the healthcare provider to improve patient safety. Highlights include:

- *Point-of-Care Technology: Glucose Meter's Role in Patient Care*: Glucose meters are point-of-care devices used in the management of blood glucose levels for hospitalized patients. Events reported to the Pennsylvania Patient Safety Authority demonstrate unintended consequences that arose when patients were treated based solely on glucose meter results. Proper meter use, hospital policies

and protocols, and a physical assessment coupled with effective communication are components are discussed in this *Advisory* article.

- *Survey of Emergency Department Practices in Pennsylvania Hospitals to Protect Patients and Staff*: In June 2011, the Authority conducted a survey to study violence protection practices in Pennsylvania acute care hospitals. The survey also examined potential barriers to compliance. Survey findings showed potential gaps in violence protection practices. This article discusses these findings and strategies for facilities to implement to protect patients and staff from violence in the emergency department.
- *Wrong-Site Surgery Update*: The wrong-site surgery project continues with 11 wrong-site surgeries reported this quarter. This number is an increase from the previous quarter, but is the third lowest quarterly number ever reported. This article details the events reported and highlights other wrong-site surgery projects in the state and successful time-out efforts in Minnesota. A toolkit for reducing wrong-site surgery has also been updated and is available on the Authority's website. Consumer tips and a brochure are also available under "Patients and Consumers."
- *Managing Drug Shortages*: This article discusses the challenges faced by healthcare facilities when there are drug shortages. The article discusses why there are drug shortages and what can be done to minimize and manage them to increase patient safety.
- *Gap Assessment of Hospitals' Adoption of the Just Culture Principles*: This article details an assessment done on Pennsylvania hospitals to determine whether or not facilities implemented a just culture as previously stated in an Authority survey. Results of the assessment show that facility representatives may have overstated just culture implementation and provides valuable information for an Authority statewide rollout for educating facilities about just culture.
- *Hydromorphone Labeling Revisions Approved*: In response to medication errors reported to the U.S. Food and Drug Administration (FDA), the Pennsylvania Patient Safety Authority, the Institute for Safe Medication Practices, and other reporting programs, the FDA has approved labeling revisions to HYDROmorphone products to promote safe use and prevent associated medication errors. Several *Advisory* articles highlighting data from events associated with HYDROmorphone are available on the Authority's website. A HYDROmorphone educational toolkit is also available on the Authority's website under "Educational Tools."

For the complete 2011 December *Pennsylvania Patient Safety Advisory*, go to www.patientsafetyauthority.org.

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