



## ASHP Foundation News Release

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### Using Preliminary Culture Results to Determine Pneumonia in Patients on Ventilators Can Significantly Reduce Antibiotic Use in Hospitals

6/23/09

#### Core News Facts

Patients on ventilators run an increased risk of developing pneumonia. When pneumonia does occur, the normal course of treatment involves administering antibiotics, but this raises a concern: An intensive care patient is already on a number of high-risk medications, and adding yet another medication is not desirable. Excessive antibiotic use is associated with increased bacterial resistance, adverse drug reactions and high costs. Stopping antibiotic treatment as soon as possible is necessary, but how to determine when this treatment can be halted is difficult.

With a small research grant from the ASHP Research and Education Foundation, G. Christopher Wood, Pharm.D., led a study that provides important new information regarding one of the biggest concerns of hospitals caring for patients on ventilators. Wood, who is an Associate Professor of Clinical Pharmacy at the University of Tennessee Health Science Center in Memphis, and his research team found that monitoring the number of microorganisms present in the mucous lining of the bronchi and alveoli of the lungs – rather than just using clinical signs and symptoms – can quickly identify patients without pneumonia for whom antibiotic use can be discontinued.

The study, “Using Preliminary Bronchoalveolar Lavage (pBAL) Results to Guide Discontinuation of Antibiotics for Suspected Ventilator-Associated Pneumonia (VAP),” showed that it is possible to significantly shorten the duration of antibiotic therapy when relying on the results of pBAL – a test that involves inserting a tube into the bronchi of the lungs (the structures that are responsible for the movement and oxygenation of air). The tube collects mucous from the lining of these structures, which is then tested for microorganism concentrations that indicate the presence of pneumonia. Preliminary test results are available within 1 to 2 days, whereas final test results take up to 4 days. The study found that the preliminary results matched the final results 98% of the time, and so the team concluded that it is safe and preferable to stop antibiotic use based on the results of a preliminary test.

#### Suggested Persons to Interview and Attributable Quotes

G. Christopher Wood, Pharm.D.

Associate Professor of Clinical Pharmacy, University of Tennessee Health Science Center  
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“This study has changed the way we practice here. We found that we could decrease antibiotic use significantly, and our resistance rates are better than the national average.”

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“Anecdotally, I can tell you that more hospitals are using BAL. Colleagues I have spoken with are intrigued by the idea of using the culture’s preliminary results, and they feel it’s on the cutting edge. But right now we are faced with getting them ‘over the hump’ – in other words, getting them to do BAL and convincing them the results can be trusted.”

“I’m encouraging pharmacists and physicians to replicate this study in their own hospitals and see the results in their own environments. This is a relatively easy way to decrease antibiotic usage, and there is an existing body of literature to support doing this. Half of the antibiotics used in hospitals are used to treat VAP, so if you can affect that usage, you will have a major impact in your hospital.”

Daniel J. Cobaugh, Pharm.D.,

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“Translating the findings of this ASHP Foundation-supported research into practice is a high priority for the Foundation. Wood has presented his results at two national professional meetings and published them in the *Journal of Trauma*. Nonetheless, similar to other innovative research findings, actual implementation of the findings at the bedside is a challenge.”

### **Related Resources**

For more information about this study, visit [www.ashpfoundation.org/publishedresearch](http://www.ashpfoundation.org/publishedresearch).

### **About the ASHP Foundation**

The ASHP Research and Education Foundation was established in 1968 by the American Society of Health-System Pharmacists as a nonprofit, tax-exempt organization. The mission of the Foundation is to improve the health and well-being of patients in hospitals and health systems through appropriate, safe and effective medication use. The Foundation provides leadership and conducts education and research activities that foster the coordination of interdisciplinary medication management leading to optimal patient outcomes. Emphasis is given to programs that will have a major impact on advancing pharmacy practice in hospitals and health systems, thereby improving public health.

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