

Comparison of 3 Strategies To Improve the Care of Patients with Pneumonia Treated in the Emergency Department

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The full report is titled "Effect of Increasing the Intensity of Implementing Pneumonia Guidelines. A Randomized, Controlled Trial." It is in the 20 December 2005 issue of *Annals of Internal Medicine* (volume 143, pages 881-894). The authors are D.M. Yealy, T.E. Auble, R.A. Stone, J.R. Lave, T.P. Meehan, L.G. Graff, J.M. Fine, D.S. Obrosky, M.K. Mor, J. Whittle, and M.J. Fine.

What is the problem and what is known about it so far?

Pneumonia is a lung infection. Most patients get better with antibiotics, but some develop serious complications or die. Factors that increase the chance of dying of pneumonia include older age, living in a nursing home, having other illnesses (especially cancer), and having certain abnormal physical examination or test results. Experts agree that patients at high risk for pneumonia complications should be hospitalized and patients at low risk should get treatment at home. Guidelines are recommendations for managing medical conditions that are based on studies that identify the types of care that work best. For pneumonia, 1 guideline identifies the types of patients who require hospitalization and those who can safely get treatment at home. Other guidelines recommend tests and treatments for patients with pneumonia. Unfortunately, many patients with pneumonia do not get treatment that agrees with guidelines. Hospitals are trying to identify strategies to improve pneumonia care.

Why did the researchers do this particular study?

To compare 3 strategies for improving pneumonia care.

Who was studied?

3219 patients with pneumonia who were seen in emergency departments at 32 hospitals in Pennsylvania and Connecticut.

How was the study done?

The researchers assigned hospitals to use 1 of 3 strategies to improve pneumonia care. A low-intensity strategy was used at 8 hospitals. This strategy gave hospitals information about their care of pneumonia patients in the previous year and asked each hospital to develop a plan to increase the number of patients who received care according to the pneumonia guidelines. A medium-intensity strategy was used at 12 hospitals. In addition to incorporating every element of the low-intensity strategy, this strategy required that the quality improvement plan 1) specify guidelines for appropriately assigning patients to the hospital or care at home and 2) require an educational session for medical care providers. The other 12 hospitals received a high-intensity strategy. This strategy incorporated the elements from the other 2 strategies plus 1-page reminders about the pneumonia guidelines. These reminders were delivered to doctors and nurses at the time of each patient's treatment, and caregivers gave feedback 1 week later about whether that patient's care agreed with the guidelines. The high-intensity sites also received instructions for conducting quality improvement projects and information on how well the site was doing with pneumonia care every 2 months.

The researchers collected information about the care and outcomes of patients with pneumonia treated at each of the emergency departments and compared the low-intensity, medium-intensity, and high-intensity groups.

What did the researchers find?

Both the moderate-intensity and high-intensity strategies increased the proportion of low-risk patients who received treatment at home. The high-intensity strategy resulted in the highest proportion of patients receiving care according to the recommendations, either treated at home or in the hospital.

What were the limitations of the study?

Many pneumonia patients seen in the 32 emergency departments during the study period did not participate. It is difficult to know which of the many components of the high-intensity strategy lead to the improvements.

What are the implications of the study?

To improve care of pneumonia, high-intensity quality improvement strategies appear to result in bigger improvements than less intense strategies.

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