

## INFLUENZA VACCINATION REDUCES DEATHS IN COMMUNITY-ACQUIRED PNEUMONIA



Lea Paterson/Science Photo Library

**P**rior influenza vaccination significantly reduces deaths in people admitted to hospital with community-acquired pneumonia (CAP).

A US study followed consecutive individuals hospitalised with CAP during the 'influenza season' (November to April, 1999-2003). Among the 17,393 adults studied, 1,590 (19% of those with recorded vaccine status) had a history of influenza vaccination in the current or most recent influenza season.

Results showed that people who had been vaccinated were less likely to die in hospital of any cause than those who had not been vaccinated (odds ratio, 0.30; 95% confidence interval, 0.22-0.41). These effects remained significant after adjusting for the co-morbid illnesses and pneumococcal vaccination (adjusted odds ratio for death, 0.61; 95% confidence interval, 0.43-0.87).

### ACTION

This observation suggests that ensuring at-risk groups receive an annual influenza vaccination may provide additional benefit in reducing deaths due to community-acquired pneumonia on top of reducing illness associated with influenza.

*Arch Intern Med* 2007; **167**: 53-59.



Evidence in Practice compiled by:  
Susan Mayor  
Managing editor of BJPCN

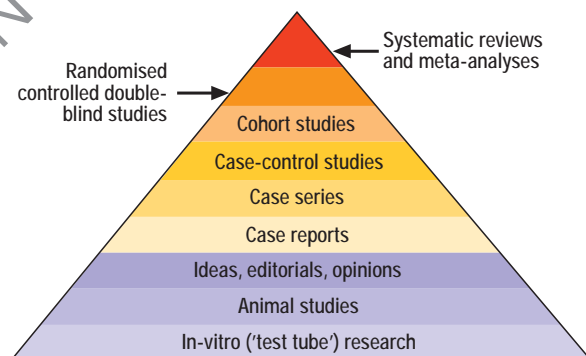
This series aims to demystify research by breaking research concepts down into 'bite-sized' chunks.

Jane Upton

Research Project Manager, Education for Health

### LEVELS OF EVIDENCE

**R**esearch studies that collect quantitative data (see previous article in this series<sup>1</sup>) are based on the notion that there is an objective truth waiting to be discovered. For example, that one drug may be better than another for the alleviation of headaches. The task of the researcher is therefore to design and conduct a study that will reveal this truth. Some types of quantitative research designs are better at doing this than others. For example, an experiment to investigate if drug A is more beneficial for patients than drug B (known as a randomised controlled trial; RCT) is more likely to provide 'true' findings than if the researcher were to record and compare case notes. This is represented by the 'evidence pyramid' shown below. Each slice of the pyramid represents a type of research design; the longer slices at the bottom illustrate that these types of studies are more numerous. However, the types of studies at the top of the pyramid provide research findings (evidence) which are nearer to the objective truth.



Clinical guidelines help clinicians to base their practice on the best available research evidence and expert opinion. These guidelines use a grading system to enable clinicians to know the level of evidence on which each part of the guideline is based. Although the way that studies are graded varies slightly between guidelines, the BTS/SIGN guideline for the management of asthma provides a good example<sup>2</sup>. In these guidelines each piece of evidence is labelled from 1++ (systematic reviews of RCTs) to 4 (expert opinion). In the next article in this series the randomised controlled trial will be discussed in more detail.

<sup>1</sup> Upton J, Walker S. Research Made Easy. *The Cochrane Database of Systematic Reviews*. 2006.

<sup>2</sup> British Thoracic Society (BTS), Scottish Intercollegiate Guidelines Network. *British Guidelines on the Management of Asthma*. 2005. [www.brit-thoracic.org.uk](http://www.brit-thoracic.org.uk)