



## **Association of key vaccines with judicious antibiotic use turns out to be an efficient strategy against antibiotic resistance**

- **Immunization programs with an effective pneumococcal conjugate vaccine show evidence of significant reduction in pneumococcal diseases**
- **Judicious use of antibiotics associated with key vaccines can control antibiotic resistance**

Based on recent programs to control pneumococcal diseases, experts show that targeted action can assist in preventing ill health and in controlling antibiotic resistance at the same time, when associating the judicious use of antibiotics with prevention in the form of key vaccines. This was the message delivered by leading health experts at a workshop addressing anti-microbial resistance at the European Health Forum Gastein, the European Union's pre-eminent conference for decision-makers and experts on health politics.

Evidence shows this strategy has worked in at least one risk group – young children – in preventing pneumococcal diseases like pneumococcal meningitis, pneumonia or middle ear infection<sup>1</sup>. Samuel Coenen, post-doctoral fellow at Antwerp University (Belgium), pointed to statistics showing the range of antibiotic uptake across the European Union. He further provided examples of successful programmes in Belgium and France that focus on the rational use of antibiotics. In Belgium for example, the prevalence of antibiotic-resistant pathogens, in particular, penicillin-nonsusceptible *S. pneumoniae*, has decreased since the start of the national public campaigns.

Hanna Nohynek of the University of Tampere (Finland) explained that there can be a synergy between national programmes to control unnecessary antibiotic use and immunization programs with an effective pneumococcal conjugate vaccine. “In fact, this strategy brings at least a 2-fold decrease in antimicrobial resistance even to bacteria commonly responsible for widespread infections in children and adults,” she explained. She continued by outlining how infant vaccination can limit the spread of disease causing pneumococci within a community – particularly for the antibiotic-resistant pneumococci -- by reducing the likelihood of *S. pneumoniae* transmission between vaccinated children and other unvaccinated members of the community, such as elderly adults.

Paolo Bonanni of the University of Florence (Italy) added, “Given the effectiveness of key pneumococcal conjugate vaccines, there is a need to enhance access to preventive medicine like these vaccines for all European citizens.” Philippe Beutels of the University of Antwerp (Belgium) concluded the session by highlighting a report stating that “the cost-effectiveness of PCV7 vaccination can be viewed as attractive in most developed countries”<sup>2</sup>.

“At a time when countries are looking to shrink their budgets, these experts' findings come as good news,” says David McIntosh, Medical Director, Wyeth Pharmaceuticals. “Invasive pneumococcal disease is serious at any age and the high prevalence of resistance to antibiotics



in some countries means we need new solutions. Whilst effective pneumococcal conjugate vaccines are not the only solution, when used in association with the judicious use of antibiotics, we have seen positive results. They offer real life health care solutions against pneumococcal disease that can save money and more importantly alleviate concerns of families across Europe.”

**Editor’s notes:**

**Pneumococcal Disease**

According to the World Health Organization (WHO), pneumococcal disease is the leading cause of vaccine-preventable death worldwide in children younger than 5 years and is estimated to cause up to 1 million deaths worldwide in children each year.

Pneumococcal disease is complex and describes a group of illnesses, all caused by the bacterium *Streptococcus pneumoniae*. Pneumococcal disease affects both children and adults, and includes invasive infections such as bacteremia/sepsis and meningitis, as well as pneumonia and acute otitis media.

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1. Cohen R. The need for prudent use of antibiotics and routine use of vaccines. *Clin Microbiol Infect.* 2009 Apr;15 Suppl 3:21-3.

2. Beutels P., Thiry N., Van Damme P. Convincing or confusing? Economic evaluations of childhood pneumococcal conjugate vaccination – a review (2002-2006) *Vaccine* 25 (2007) 1355-1367.