



EDITORIAL

An ounce of prevention is worth a pound of cure

Mais vale prevenir do que remediar

Influenza and pneumococcal infections are major causes of death and disability in Europe, mainly affecting children between 2 and 24 months of age and people >65 years of age.^{1,2}

Despite the clear effectiveness of the vaccination approach, it has to be one of the major achievements of public health for population protection, both the general population and health-care workers have a low level of acceptance of vaccinations.^{3,4}

Vaccination programs in children with 7-valent pneumococcal conjugate vaccine have reduced the incidence of invasive pneumococcal disease (IPD) by almost 70%, with the herd effect in adults leading to an 18% reduction of IPD incidence in non-vaccinated adults aged 65 years or more.⁵ Moreover, the use of such vaccinations in children has reduced the incidence of antibiotic resistance, according to records for 1999 and 2002, from 40.8% to 26.4% for penicillin, from 34.9% to 9.4% for cephalosporin and from 29.5% to 18.1% for erythromycin.⁶

The introduction of 10- and 13-valent vaccines, increasing serotype coverage, may expand the clinical benefits in adult populations at risk for pneumococcal disease. The results of a large Dutch randomized controlled trial designed to test the efficacy and effectiveness of 13-valent vaccine in adults will be available soon, hopefully supporting indication for universal vaccination.⁷

Epidemiological evidence indicates that influenza contributes to all-cause mortality and to cardiovascular and respiratory hospitalisations and recent studies confirm that vaccination not only prevents influenza but also brings significant preventive benefits for patients at risk for acute myocardial infarction.^{8,9}

The Consensus Document for the prevention of respiratory infections in adults, published in this issue, underlines the importance of a comprehensive approach to prevention: for general measures and vaccinations.¹⁰

Smoking, high alcohol intake, being underweight, suffering from chronic diseases, living in a large household or having regular contact with children are associated with an increased risk of pneumonia.¹¹

Smoking cessation (and prevention) is clearly a major step towards reducing the burden of respiratory infections including tuberculosis and deserves comprehensive tobacco-control strategies including strong public campaigns as indicated by WHO and by ATS and ERS.^{12,13}

On the other hand, better management of chronic diseases is a cornerstone of prevention of respiratory infections and vaccinations are a cornerstone of the best management of these diseases.

Vaccination strategies based on the use of more effective vaccines are expected to have a substantial public health impact on respiratory infections and health services costs by reducing the burden of influenza and pneumococcal infections.

Another important issue that should be taken into account when considering prevention of respiratory infections is the role of health disparities.

Lower socioeconomic status and belonging to ethnic minorities are associated with higher prevalence of tobacco smoking, environmental exposures, occupational hazards, poor nutrition and lack of access to quality healthcare including vaccinations.¹³

As stated in the consensus document, a comprehensive approach to prevention and a proactive policy to implementing the recommendations are mandatory and of paramount importance in reducing the present and future burden of respiratory infections.

References

1. The European lung white book: respiratory health and disease in Europe. European Respiratory Society. <http://www.erswhitebook.org>
2. Blasi F, Mantero M, Santus P, Tarsia P. Understanding the burden of pneumococcal disease in adults. *Clin Microbiol Infect.* 2012;18 Suppl. 5:7–14.
3. Centers for Disease Control and Prevention (CDC). Estimated influenza illnesses and hospitalizations averted by influenza vaccination – United States, 2012–2013 influenza season. *MMWR Morb Mortal Wkly Rep.* 2013;62:997–1000.

4. Blasi F, Aliberti S, Mantero M, Centanni S. Compliance with anti-H1N1 vaccine among healthcare workers and general population. *Clin Microbiol Infect.* 2012;18 Suppl. 5:37–41.
5. Whitney CG, Farley MM, Hadler J, Harrison LH, Bennett NM, Lynfield R, et al. Decline in invasive pneumococcal disease after the introduction of protein polysaccharide conjugate vaccine. *N Engl J Med.* 2003;348:1737–46.
6. Talbot TR, Poehling AK, Hartert TV, Arbogast PG, Halasa NB, Mitchel E, et al. Griffin MR reduction in high rates of antibiotic-nonsusceptible invasive pneumococcal disease in Tennessee after introduction of the pneumococcal conjugate vaccine. *Clin Infect Dis.* 2004;39:641–8.
7. Hak E, Grobbee DE, Sanders EA, Verheij TJ, Bolkenbaas M, Huijts SM, et al. Rationale and design of CAPITA: a RCT of 13-valent conjugated pneumococcal vaccine efficacy among older adults. *Neth J Med.* 2008;66:378–83.
8. Hardelid P, Fleming DM, Andrews N, Barley M, Durnall H, Mangtani P, et al. Effectiveness of trivalent and pandemic influenza vaccines in England and Wales 2008–2010: results from a cohort study in general practice. *Vaccine.* 2012;30:1371–8.
9. Macintyre CR, Heywood AE, Kovoov P, Ridda I, Seale H, Tan T, et al. Ischaemic heart disease, influenza and influenza vaccination: a prospective case control study. *Heart.* 2013;99:1843–8.
10. Froes F, Diniz A, Robalo Cordeiro C, Serrado M, Ramalho de Almeida A. Consensus document for the prevention of respiratory infections in adults. *PJP.* 2014;20:111–4.
11. Torres A, Peetermans WE, Viegi G, Blasi F. Risk factors for community-acquired pneumonia in adults in Europe: a literature review. *Thorax.* 2013;68:1057–65.
12. WHO report on the global tobacco epidemic, 2013: enforcing bans on tobacco advertising, promotion and sponsorship. http://www.who.int/tobacco/global_report/en/index.html
13. Schraufnagel DE, Blasi F, Kraft M, Gaga M, Finn P, Rabe KF. An official American Thoracic Society and European Respiratory Society policy statement: disparities in respiratory health. *Eur Respir J.* 2013;42:906–15.

F. Blasi*, M. Mantero

*Department of Pathophysiology and Transplantation,
University of Milan, IRCCS Fondazione Ca'Granda Milano,
Milan, Italy*

*Corresponding author.

E-mail address: francesco.blasi@unimi.it (F. Blasi).