EDITORIAL

Child pneumonia: beyond pneumococcal vaccine and 2015

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Impressive gains have been made in child survival over the last decade, including a reduction in deaths due to childhood pneumonia.¹ Pneumonia nonetheless remains the main reason why many children still do not live to enjoy their fifth birthday. The Global Coalition Against Child Pneumonia was established in 2009 to provide leadership for World Pneumonia Day, marked each year on November 12 to encourage donors, policy makers, health care providers and the general public to combat the disease.

Pneumonia is caused by a wide range of pathogens, the relative importance of which varies between settings. Immunisation has played an important role in preventing pneumonia deaths due to measles, pertussis and *Haemophilus influenzae*. The availability of the pneumococcal conjugate vaccine, and its support for implementation in high mortality settings by the Global Alliance for Vaccines and Immunizations, has resulted in great optimism as it is likely to prevent a large number of deaths due to pneumococcal pneumonia (and meningitis). However, pneumonia-related deaths in neonates and children will continue to occur, including those due to non-vaccine pneumococcal serotypes, other common bacteria and viruses.

The wide range of pathogens and limitations in current diagnostics present major challenges for investments in research and programme implementation for pneumonia. These have been neglected relative to research and programmes for malaria and the human immunodeficiency virus (HIV), which have been based on comprehensive approaches and evidence, and are strong in preventive and curative interventions. For example, malaria has been the focus of 22% of the randomised trials conducted in child health in developing countries in the last decade, while pneumonia represents less than 4%.² Moreover, malaria research has been integrated into programmes rapidly, with resulting unprecedented gains in disease control and reductions in child mortality due to malaria.

For pneumonia a similar approach is needed that goes beyond the introduction of the pneumococcal vaccine. A balanced and comprehensive approach would emphasise other preventive strategies: nutrition and breastfeeding, reduction in indoor air pollution, hand-washing and improved case management. Curative interventions include addressing the rising rates of bacterial resistance, models of community care, the role of zinc, improved outcomes for high-risk patients (malnourished, HIV-infected and neonates), as well as

wider availability of oxygen therapy and other methods of respiratory support.

Controlled treatment trials in the last decade have established the safety of different approaches to community-based case management of World Health Organization defined non-severe and severe pneumonia in some settings.^{3,4} Most of these have been in urban and peri-urban areas in south Asia, characterised by low mortality and a high prevalence of viral infection. The challenge is to conduct research in populations with higher mortality, a higher prevalence of bacterial pneumonia, malnutrition and HIV, and where access to care is more challenging. The heterogeneity of populations and uncertainties about the global applicability of research are illustrated by trials evaluating zinc adjunct therapy, where the findings have not been consistent between settings. A recent randomised trial in Uganda reported significant benefit of zinc adjunct therapy with regard to mortality, particularly in HIV-infected children.⁵

Understanding where evidence does and does not apply is a challenge for balanced and comprehensive pneumonia control programmes. Understanding the social and health system determinants of pneumonia causation and death is crucial to developing comprehensive approaches. Incorporating comprehensive approaches in national plans for child survival is the way to proceed. It won't be as easy as a single vaccine, but a more comprehensive approach will take countries beyond this—and 2015—in tackling pneumonia.

References

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