

## The persistence of acute respiratory infections as a Public Health problem

Acute respiratory infections (ARIs) constitute a clinical syndrome whose most common infectious agents are respiratory viruses like the respiratory syncytial virus and bacteria such as *Streptococcus pneumoniae* and *Haemophilus influenzae*. Children, older persons, socially underprivileged populations in developing countries, and ethnic minorities are particularly susceptible.

ARI incidence is similar in children under 5 worldwide, while the incidence rates for severe forms, such as clinical pneumonia (bronchiolitis and pneumonia), hospitalizations, and deaths are heterogeneous. In developing countries, there are an estimated 0.29 episodes of clinical pneumonia/child-year or 151.8 million new cases per year (95% of the world incidence in children under 5 years); 7 to 13% of the cases result in hospitalization; and more than 2 million evolve to death, making pneumonia the main single cause of death in children. The proportions of death from pneumonia vary from 12% (Americas and Europe) to 21% (Africa and Eastern Mediterranean), with relatively greater importance in regions with more precarious health systems.

Brazil is one of the 15 countries with the highest number of annual cases of clinical pneumonia in children under 5 (1.8 million), with an estimated incidence of 0.11 episodes/child-year. In this group, 30 to 50% of outpatient consultations, more than 50% of hospitalizations, and 10 to 15% of deaths are attributed to ARIs, 80% of which due to pneumonia. From 2000 to 2007, there was an 18% decrease in hospitalizations due to clinical pneumonia in children under 1 year of age and a 27% decrease from 1 to 4 years of age, although the hospitalization rate due to this cause remained stable during the same period (27%). However, the hospitalization costs increased, reaching 189 million *reais* (more than 100 million US dollars) and 20.5% of hospitalization expenditures in children under 5. The number of deaths decreased, but the proportion of deaths from clinical pneumonia remained stable, representing the second cause of death in a major portion of the States of Brazil. Among indigenous peoples in South and Southeast Brazil, the annual mortality rates in children under 5 years (54.8/1,000) and under 1 year of age (35.6/1,000) exceeded the corresponding rates for Brazil as a whole by 2.8 times and 84.4%, respectively, with 85.7% of infant deaths concentrated in the post-neonatal period. ARI mortality accounts for more than half of all-cause mortality in under-5 indigenous children.

Brazil is making strides towards reaching the Millennium Development Goal of reducing the under-5 mortality rate by two-thirds by the year 2015. However, the mean childhood mortality indicators disguise inequalities between the groups comprising Brazilian national society, in regional, ethnic or racial, and socioeconomic terms. Another relevant issue is that the reduction in mortality means a probable increase in the impacts of ARI morbidity on children's growth and physical and cognitive development, with repercussions throughout life.

Although the Brazilian Ministry of Health promotes comprehensive maternal and child health care through the expansion of the Family Health Strategy, Integrated Management of Childhood Illnesses (IMCI, Neonatal IMCI), and the Pact for the Reduction of Infant Mortality in the Northeast and Legal Amazonia, among others, the persistence of ARIs among the main causes of morbidity and mortality in the Brazilian population, inequalities in access to health, lack of vaccines to prevent the spectrum of infectious agents in ARIs, and the complexity and long-term effects of interventions on social and environmental health determinants, make ARIs a contemporary public health problem, calling for prioritization by health services, policy-makers, and researchers in the areas of communicable diseases and technological innovations in health.

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