

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

## Public Health

journal homepage: [www.elsevier.com/puhe](http://www.elsevier.com/puhe)

## Plenary

## Epidemiology and global policy in child health

C.G. Victora

Postgraduate Programme in Epidemiology, Universidade Federal de Pelotas, Pelotas, Brazil

## ARTICLE INFO

## Article history:

Available online 4 February 2012

## Keywords:

Maternal and child health  
Global health  
Epidemiology

## SUMMARY

Global interest in child health has waxed and waned over the last 30 years. In the 1980s, the United Nations Children's Fund led the child survival revolution, focusing on growth monitoring, oral rehydration, breastfeeding promotion and immunizations. By the 1990s, however, global interest in the health of mothers and children had waned. Key indicators such as immunization rates, which had increased sharply in the 1980s, either stagnated or declined in the 1990s. Attempting to reverse this situation, concerned scientists and policy makers joined forces, building upon the Millennium Development Goals which included a specific target of a reduction in under-five mortality by two-thirds by 2015. Sound epidemiological research laid the foundation for selecting a handful of cost-effective interventions and advocating for their incorporation into national and international policies. Epidemiology then contributed to measuring coverage with these interventions, assessing which population groups are lagging behind, feeding this information back to policy makers on a continuous basis, and evaluating the impact of large-scale programmes. Focusing on childhood pneumonia, this paper shows how child health has improved considerably as a result of this renewed vigor and international collaboration.

© 2011 The Royal Society for Public Health. Published by Elsevier Ltd. All rights reserved.

Global interest in child health has waxed and waned over the last 30 years. In the 1980s, the United Nations Children's Fund (UNICEF) led the child survival revolution, focusing on growth monitoring, oral rehydration, breastfeeding promotion and immunizations. This so-called 'GOBI initiative' resulted in strong commitment among global leaders and increased funding for child survival programmes (<http://www.unicef.org/sowc96/1980s.htm>). By the 1990s, however, global interest in the health of mothers and children had waned. Human immunodeficiency virus (HIV), malaria and tuberculosis, as well as non-communicable diseases, were centre stage on the global agenda. The annual rate of reduction in global under-five mortality fell to 1.1% in the 1990s, compared with 2.4% in the 1980s. Key indicators such as immunization rates, which had increased

sharply in the 1980s, either stagnated or declined in the 1990s.<sup>1,2</sup>

Attempting to reverse this situation, concerned scientists and policy makers joined forces to produce the Lancet Child Survival Series in 2003, claiming that renewed investments were needed to prevent two-thirds of >10 million annual deaths of children under 5 years of age through cost-effective, off-the-shelf interventions.<sup>2–5</sup> The closing paper in this series<sup>6</sup> called for a series of global conferences, every 2 years or so, 'to provide regular opportunities for the world to take stock of progress in preventing child deaths, and to hold countries and their partners accountable'. Building upon the Millennium Development Goals, which included a specific target of reduction in under-five mortality by two-thirds by 2015, this series of conferences became known as the 'Countdown to 2015: maternal, newborn

E-mail address: [cvictora@terra.com.br](mailto:cvictora@terra.com.br).

and child survival' (<http://www.countdown2015mnch.org/>). Countdown conferences have been held in London (2005), Cape Town (2008) and Washington (2010). The conference reports include country profiles reporting on approximately 50 indicators of mortality; undernutrition; and coverage of proven, cost-effective maternal and child health interventions.<sup>7–9</sup> The number of countries monitored by the Countdown has increased from 42 in 2005 to 74 at the current time. Its main purpose is to hold governments and international actors accountable for insufficient performance. A key partner is the International Parliamentary Union that includes congressmen and women from most countries in the world, and Countdown sessions are often featured in their meetings.

The Countdown database, reports and scientific articles represent a major effort of data collection, analyses and synthesis, and the International Epidemiological Association is one of the partners in this initiative. Sound epidemiological research laid the foundation for selecting a handful of cost-effective interventions and advocating for their incorporation into national and international policies. Epidemiology then contributed to measuring coverage with these interventions, assessing which population groups are lagging behind, feeding this information back to policy makers on a continuous basis, and evaluating the impact of large-scale programmes. Providing sound scientific results, however, is not sufficient for promoting changes at global level.

For interventions to reach all mothers and children, supporting policies must be adopted and implemented at both global and national levels. The Countdown set up a proactive process for tracking and reporting on national-level adoption of such policies. However, approving policies is not enough unless programmes receive sufficient attention and funding. This, in turn, requires that the intervention or health problem must be seen as a priority by international funding agencies. Possibly, the most blatant imbalance is that between HIV/acquired immunodeficiency syndrome (AIDS), which accounts for 31% of the global burden of infectious diseases and receives 46% of corresponding international funding, and childhood pneumonia, which represents 26% of the burden yet attracts only 2% of the funding.<sup>10</sup> Schiffman proposed a framework for priority setting which helps to explain why some health issues receive wide attention whereas others do not.<sup>11–13</sup> The framework includes four categories: actor power (the strength of individuals and organizations concerned with the issue or intervention, either for or against it); ideas (the ways in which those involved with the issue understand and portray it); political context (the environment in which actors operate); issue characteristics (whether there are credible indicators for assessing the health condition; how severe it is; and whether effective interventions exist). Epidemiologists are typically concerned about issue characteristics, but unless attention is given to all four aspects, it is unlikely that the health problem will receive sufficient investment.

Childhood pneumonia provides an excellent example of the complex interaction between science, policy and politics. It is one of the leading killers of children worldwide, with 1.6 million deaths in 2008.<sup>14</sup> However, globally, only 48% of children with likely pneumonia seek care from an appropriate provider, and only 32% receive a life-saving antibiotic.<sup>9</sup> As doctors are rare where they are most needed, community case management (CCM) has been put forward as the approach to allow lay

workers, often volunteers, to be trained in identifying suspected pneumonia (based on cough and fast breathing) and treating it with simple antibiotics. Several randomized trials, over 20 years, have shown that CCM can prevent one-third or more of all pneumonia deaths,<sup>15,16</sup> but it took over 10 years for CCM to be endorsed by UNICEF and the World Health Organization.<sup>17</sup> In several countries, adoption of this policy has been slow, largely due to opposition from medical associations which argue that prescription of antibiotics should be restricted to physicians. In Brazil, for example, there has been a heated debate in congress about passing legislation on what constitutes a 'medical act' – such as prescribing antibiotics – that should be the privilege of doctors. This is in spite of the fact that 10% of the country's over 5000 municipalities do not have a single doctor, and approval of such legislation would outlaw other health workers from prescribing simple life-saving drugs. In addition to resistance by professional associations, pneumonia case management at the community level had not, until very recently, caught the attention and attracted funding by international donors. Ten of the original 42 countries monitored by the Countdown had national policies supporting CCM in 2005, and this number increased to 23 – or just over half of the high-priority countries – by 2010.<sup>9</sup> In short, while there is substantial progress in adopting these policies, the pace of policy adoption is painstakingly slow. Policies must be followed by implementation, namely ensuring that community health workers are trained, deployed and supervised, and have the necessary equipment and drugs available in their villages. This requires funding and building management capacity, which also takes time. It is hardly surprising – as mentioned above – that still only half of the children with pneumonia in the Countdown countries are seen by a trained provider, and only one in three receive an antibiotic.<sup>9</sup> Child pneumonia is a good example of a major global health issue that receives little funding, virtually no media attention, and does not benefit from champions such as movie stars or other celebrities – a very different situation from that of HIV/AIDS, for example.<sup>10</sup> Despite the fact that scientific evidence from randomized trials has been available since the early 1990s, pneumonia case management is yet to receive the attention it deserves.

This brief account shows how epidemiologists can – and should – become proactively involved in global health issues by working together with researchers from other disciplines (health policy, economics, demography, social sciences, etc.). The Countdown to 2015 is a good example of such interaction. Growing interest in global health will raise additional demands. Accountability,<sup>18</sup> results-based financing for health services (<http://www.rbfhealth.org/rbfhealth/>) and real-time mortality monitoring in low-income countries (<http://www.jhsph.edu/dept/ih/IIP/projects/rmm.html>) are generating additional measurement needs, all of which will require stronger involvement of epidemiologists in global initiatives.

---

## Acknowledgments

### Ethical approval

None declared.

**Funding**

None declared.

**Competing interests**

None declared.

**REFERENCES**

1. UNICEF. *Progress since the world summit for children: a statistical review*. New York: UNICEF; 2001.
2. Bryce J, el Arifeen S, Pariyo G, Lanata C, Gwatkin D, Habicht JP. Reducing child mortality: can public health deliver? *Lancet* 2003;**362**:159–64.
3. Black RE, Morris SS, Bryce J. Where and why are 10 million children dying every year? *Lancet* 2003;**361**:2226–34.
4. Jones G, Steketee RW, Black RE, Bhutta ZA, Morris SS. How many child deaths can we prevent this year? *Lancet* 2003;**362**:65–71.
5. Victora CG, Wagstaff A, Schellenberg JA, Gwatkin D, Claeson M, Habicht JP. Applying an equity lens to child health and mortality: more of the same is not enough. *Lancet* 2003;**362**:233–41.
6. Claeson M, Gillespie D, Mshinda H, Troedsson H, Victora CG. Knowledge into action for child survival. *Lancet* 2003;**362**:323–7.
7. Countdown to 2015. *Tracking progress in child survival: the 2005 report*. New York: United Nations Children's Fund; 2005.
8. Countdown to 2015. *Tracking progress in maternal, newborn and child survival: the 2008 report*. New York: UNICEF; 2008.
9. Countdown to 2015. *Countdown to 2015 decade report (2000–2010): taking stock of maternal, newborn and child survival*. Geneva: WHO, UNICEF; 2010.
10. Hudacek DL, Kuruvilla S, Kim N, Semrau K, Thea D, Qazi S, et al. Analyzing media coverage of the global fund diseases compared with lower funded diseases (childhood pneumonia, diarrhea and measles). *PLoS One* 2011;**6**:8.
11. Shiffman J, Smith S. Generation of political priority for global health initiatives: a framework and case study of maternal mortality. *Lancet* 2007;**370**:1370–9.
12. Shiffman J. Has donor prioritization of HIV/AIDS displaced aid for other health issues? *Health Policy Plan* 2008;**23**:95–100.
13. Shiffman J. A social explanation for the rise and fall of global health issues. *Bull World Health Organ* 2009;**87**:608–13.
14. Black RE, Cousens S, Johnson HL, Lawn JE, Rudan I, Bassani DG, et al. Global, regional, and national causes of child mortality in 2008: a systematic analysis. *Lancet* 2010;**375**:1969–87.
15. Sazawal S, Black RE. Meta-analysis of intervention trials on case-management of pneumonia in community settings. *Lancet* 1992;**340**:528–33.
16. Sazawal S, Black RE. Effect of pneumonia case management on mortality in neonates, infants, and preschool children: a meta-analysis of community-based trials. *Lancet Infect Dis* 2003;**3**:547–56.
17. World Health Organization, UNICEF. *Management of pneumonia in community settings*. Geneva: WHO/UNICEF; 2004.
18. Commission on Information and Accountability for Women's and Children's Health. *Keeping promises, measuring results*. Final report of the Commission. Geneva: World Health Organization; 2011.