

## Immunization, vaccines: past and future

Smallpox eradication was a result of leadership provided by the World Health Organization headquarters and regional offices, national governments and, not least, national and multilateral aid agencies. The involvement of all these agencies encouraged a series of immunization initiatives and give rise to ambitious new goals for the eradication of diseases. The National Immunization Programs in Brazil and other countries, the WHO Expanded Programme on Immunization and the goal of global polio eradication were some of the more immediate results of successful smallpox eradication. Advances can be acknowledged; yet, several goals remain unfulfilled. The politics of global health, as well as the design and deployment immunization policies, have become increasingly complex in their various dimensions. This is unsurprising in a situation where immunization projects have been populated by new actors, new goals and new vaccines. The past, present and future of these trends are put under scrutiny by a range of historians in this issue of *Ciência & Saúde Coletiva*.

Immunization, in the form of an idealized dream, is a dream come true – a miraculous technological product, in the form of painless and a safe vaccine, ensures that many generations of society are protected from dangerous diseases. Reality, however, is far more complex. Technological products are not always as efficacious as advertised by manufacturers and other advocates. It is also worth noting that there are – and always have been – differing notions about vaccinal safety and effectiveness at any point of time. That some voices are heard – and advertised – more loudly than others is part of a complicated process of political and social negotiation; a point that is ignored or downplayed by those seeking to promote the idea of supposedly value free nature of science. Public health, medicine and all the sciences that underpin them are anything but; conceptions about disease, cures for it and even efforts to advocate the primacy of certain interventions over the others are deeply influenced by a variety of social, political and economic considerations (which are often shifting in nature). Global funding agencies are often swayed by those who insist that ever more effective “magic bullets” can be developed and put into place seamlessly; that should not be reason enough for us to agree with such a view and ignore the social negotiations that are capable of rallying stakeholders for interventions, the effective dissemination of information and the responsible development of ethical norms for field practice. Meaningful policy can only be developed on the back of meaningful commitment to the democratic introduction of health regimes. Democracy involves listening to other, often contrasting viewpoints, no matter the economic or social standing of those making the arguments. Such sensitivity in public health is time-consuming, but this type of investment of effort is always worthwhile, not least as it increases the quality of local stake-holding and also brings in a crucial element of adaptability to national and local chapters of global immunization programs.

Thus, the history of immunization, vaccines, and national and international eradication programs has an important role in the debate about the future of global public health. The history that is associated with the celebrations of the 30th anniversary of the eradication of smallpox needs to be detached, investigative and devoid of blithe heroic statements. Historical analysis produces knowledge and critical reflection in many ways. It can allow us to open the “black boxes” of the national and global health successes. Such scholarship can also reveal social and cultural affairs and conflicts that are often central to immunization activities. And, historians are well located to study and reveal networks of political and economic interests, which can go a very long way in explaining diversities and asymmetries marking work within countries, institutions and teams of workers. The greatest contribution of history to public health is its fundamental sense of time, space, contingency and complexity. Immunization’s future shape and responsibilities can be debated more effectively only after we have carefully reflected on its history.