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Role of Epidemiology in the Development of Public Policies in the 21st Century

Editorial

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Editorial

Epidemics have become more frequent, more complex and more difficult to prevent and control with the rapid evolution of ecology, urbanisation, climate change, increased travel and fragile public health systems. Over the course of this century, social, economic and political inequalities, already deeply rooted in the world, have increased due to the various epidemic outbreaks that have emerged and re–emerged, exerting strong pressure on public policy makers and thus on the population [1].

While public health experts predicted the role of social conditions in shaping the morbidity and mortality caused by these epidemics, few imagined how the politicisation of public health and the chaotic government response would magnify these disparities. This requires objective deliberation on the role of epidemiology in public policy and its relationship to the social determinants of health [2].

Epidemiology plays a relevant role in the definition of public policies, especially in recent years, when, as a consequence of the enthronement by the World Health Organization of the notion of social determinants of health [3], the connection between health and the socially constructed has become more evident. The use of epidemiology, however, is often limited to the development and evaluation of policies originating in health bureaucracies and with risk factor amelioration as the sole social objective. This is a reductionist view of the issue, as health is gained and lost mainly through extra–health policies [4,5].

To broaden the role of epidemiology as a policy tool, we first need to reflect on its definition: the "study of what hangs over the people"–epi–demos–logos–is conceptualized as the study of the pattern of distribution of political, social and economic events related to the health–disease process and how social structures, institutions and relationships – agreements – influence the population [6–8].

In this sense, epidemiology is one of the fundamental disciplines to accompany the health decision–making process and the implementation of public policies. It permeates all the methodological elements necessary to determine and explain changing phenomena in society [9]; allowing explicit emphasis to be placed on social production as a powerful explanatory paradigm, improving the causal understanding of biological processes themselves and as an important discipline for identifying the policies needed to improve population health [10].

Secondly, the articulation of knowledge to develop public policies, whether in the health sector or not, requires a comprehensive model based on a "health in all policies" approach [11]. From this perspective, epidemiology can contribute: (a) in the problem identification phase, by providing technical information to support policy decisions at both the social movement and government levels, and by providing other evidence to be considered in the decision–making process; (b) in the policy formulation phase, it can help policy makers understand the complexity of the problem and its context, establish objectives and select interactions; (c) in the implementation phase, it can contribute to follow–up through various technologies, such as surveillance and participatory monitoring; and (d) in the evaluation process, epidemiological knowledge can be particularly useful in the analysis of expected and achieved impacts [12,13].

Finally, we consider the recommendations of Khoury et al. [14] to be opportune in order to strengthen the role of epidemiology in the formulation and implementation of resilient, equitable and supportive public policies: (i) extend the scope of epidemiology beyond aetiological recognition and investigation; (ii) transforming the practice of epidemiology by moving towards greater access to and sharing of information to foster collaboration with diverse sectors, ensure reproducibility and replicability; (iii) expand cohort studies to collect information across life cycles

and examine multiple health–related endpoints; (iv) developing and validating reliable methods and technologies to quantify and qualify risk exposures and outcomes on a large scale, while assessing the role of multiple determinants in complex diseases; (v) incorporating other non–health disciplines into the practice of epidemiology; (vi) broadening the integration of knowledge to drive research, policy and practice; (vii) transformative training of 21st century epidemiologists to address health in all policy areas; and (viii) optimise the use of resources and infrastructure to incorporate strategic applications of new technologies with a holistic vision.

These short reflections aim to generate a debate on the role of epidemiology in the development of health and other social policies, reaffirming the political and social commitment of this scientific discipline and recognising the need to articulate epidemiological knowledge together with other practices to improve public health and, consequently, quality of life.

This task is the great challenge, which will require the full energy and capacity of all, combined with strong political will and commitment.

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Conflict of interest

Author declares that there is no conflict of interest.

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