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## Echinococcosis in Pakistan: a call for research

We read with interest the Article by Francesca Tamarozzi and colleagues,<sup>1</sup> which identified cystic echinococcosis research gaps in rural endemic areas and called for the collection of additional epidemiological data in these regions. Cystic echinococcosis is an endemic disease in central Asia, with about 58% of the population at risk, including residents of Afghanistan, Iran, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Tajikistan, Turkmenistan, Uzbekistan, and western China.<sup>2</sup> We also read with interest the letter by Men-Bao Qian and Xiao-Nong Zhou<sup>3</sup> highlighting the establishment and outcomes of the Belt and Road Network for the Elimination and Control of Echinococcosis and Cysticercosis. The network includes 13 endemic Asian countries but, unfortunately, does not include Pakistan. Although Pakistan is considered part of this endemic region, only scarce data are available.<sup>4</sup> To better understand the local transmission and effects of cystic echinococcosis in Pakistan, additional epidemiological data are essential. These data can then help guide control and prevention strategies in a country where under-regulated livestock slaughtering and

the presence of free-roaming dogs help support parasite transmission.

Initial diagnosis of cystic echinococcosis is based primarily on diagnostic imaging (ultrasound or CT). Between July 2 and July 27, 2018, research personnel from Pakistan took part in a training programme focused on ultrasound screening for cystic echinococcosis, which was held at the WHO Collaborating Centre for Clinical Management of Cystic Echinococcosis at the University of Pavia, Italy, and funded by the Higher Education Commission, Pakistan. Cross-sectional surveys using community abdominal ultrasound screening are greatly needed to provide additional data for evaluation of the socioeconomic burden of the disease in Pakistan. At present, the only available data are from a few hospital-based studies that probably represent just a fraction of the national cases.<sup>4</sup> Between 1990 and 2018, 15 retrospective surveys and 19 case reports describing 1611 cases of cystic echinococcosis in Pakistan were published. The absence of a surveillance system to identify, or a national database to record, cystic echinococcosis cases has resulted in a substantial data gap for Pakistan. Although not formally assessed, cystic echinococcosis probably has a substantial economic effect on the local health sector, and preliminary studies in livestock suggest that the frequency of infection in intermediate hosts might be increasing (Ahmed H, unpublished).

In China, large-scale community studies have been done for echinococcosis, because western China is considered highly endemic for both cystic echinococcosis and alveolar echinococcosis. These studies have involved members of the international research community, with expertise in

medicine, epidemiology, diagnostic imaging, ecology, veterinary medicine, geography, and other disciplines. If Pakistan is to build the capacity to perform research and implement control for cystic echinococcosis, international collaborations are required, such as inclusion in the newly formed Belt and Road Network for the Elimination and Control of Echinococcosis and Cysticercosis.

In Pakistan, cystic echinococcosis is neglected by the health authorities, largely due to a scarcity of data on the number of cases and the monetary and non-monetary effects that these cases are having on the country. This is a call to the national and international research communities and to WHO to take notice of the threat of cystic echinococcosis in Pakistan and to help devise a strategy to address this neglected but important public health problem.

We declare no competing interests.

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