

Does Brazil need a national surveillance system for death from tuberculosis?

The Brazilian National Tuberculosis Control Program (PNCT) and scientific community have discussed for some time the need to implement a surveillance system for deaths from tuberculosis (TB), and for numerous reasons. Various academic and operational studies have analyzed the issue ^{1,2}.

In this issue of *Cadernos de Saúde Pública*, Rocha et al. (p. 709-21) provide detailed data to back the position that the implementation of such a surveillance system would have positive effects for the PNCT. The article analyzes the multiple causes of death in the TB cohort reported in 2006 and notes that for a large share, even those deaths that occurred during the assumed treatment period, there is no mention of TB as underlying or associated cause. Naturally, some TB patients die of other causes, but what stands out is that many of these records state, as the underlying cause of death, vague codes for diseases of the respiratory system or ill-defined causes. These vague codes may hide various deaths from TB that were underreported as a result. Based on this premise, Rocha et al. propose the classification and investigation of these deaths. Their proposal could ultimately be part of a surveillance project for deaths from TB, serving to upgrade the data in both the Information System on Diseases of Notification (SINAN) and the Mortality Information System (SIM). Above all, this project would contribute to an understanding of where and why the PNCT, and in a broader sense the Brazilian Unified National Health System (SUS), have failed to prevent an event which is still largely avoidable, notwithstanding the worldwide spread of multi-resistant TB.

Surveillance of TB mortality could be implemented along the lines of Brazil's successful programs for surveillance of infant and maternal mortality and deaths from ill-defined causes. It would be necessary to develop a strategy consistent with the specificities of the disease and within the possibilities of the PCNT and its partners, allowing identification of the death, investigation of its causes, notification, and correction of erroneous or missing data in the information systems, and leading to a supply of information that would orient measures to prevent future deaths from TB.

How can such surveillance be operationalized? A necessary tool is record linkage between the SINAN and SIM databases. Since this is not an easy task with large databases and in the absence of a common identifier, matching could be done with computational programs at the national or state level, and the results would be transferred to the municipal programs, and particularly to the epidemiological surveillance services at large hospitals. Meanwhile, small municipalities could perform manual matching of cases and deaths. Record linkage would identify both deaths from tuberculosis that were not matched to SINAN records and reported TB cases that died during or after treatment and whose causes of death did not include TB. Next, the circumstances of each death would be analyzed, as well as the characteristics of the services where they occurred using the adequate investigation tools to confirm TB as underlying or associated cause of death and to establish which errors or omissions could have been avoided during the deceased patient's treatment. Information resulting from this investigation would be used to complete or correct the corresponding variables in the SINAN and SIM databases and would serve to identify which corrective measures could be proposed to improve the treatment of other patients.

Health authorities at the more peripheral level, including the hospitals where most of these deaths occur, will bear a large share of the responsibility for investigating TB deaths and implementing corrective measures. In this sense, partnership between the local TB control program and the epidemiological surveillance services at the hospitals within its coverage area will be crucial for the initiative's success. Another key partnership will be with the STD/AIDS program. Civil society also needs to participate actively to guarantee that the circumstances of each death are completely elucidated, resulting in comprehensive and feasible corrective measures. If successful, a surveillance system that responds to TB deaths would be a major step forward in improving the measurement of the burden of mortality and even TB incidence in Brazil, and generally improving the work by the PCNT.

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1. Selig L, Kritski AL, Cascao AM, Braga JU, Trajman A, de Carvalho RM. Proposal for tuberculosis death surveillance in information systems. *Rev Saúde Pública* 2010; 44:1072-8.
 2. Bartholomay P, Oliveira GP, Pinheiro RS, Vasconcelos AM. Melhoria da qualidade das informacoes sobre tuberculose a partir do relacionamento entre bases de dados. *Cad Saúde Pública* 2014; 30:2459-70.