EDITORIAL/*EDITORIAL*

Garbage codes assigned as cause-of-death in health statistics

Códigos garbage declarados como causas de morte nas estatísticas de saúde

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Approximately 1.3 million deaths occur in Brazil every year. Of these, more than 600,000 are premature deaths of people under 70 years old, mostly due to cardiovascular diseases, violence or accidents, and neoplasms[1]; many of them avoidable. Given this context, how can accurate and timely information be obtained about deaths and their causes? Evaluating the quality of information on causes of death is essential for the decision process on how to implement the necessary health interventions[2]. Brazil stands out in this respect due to the advances achieved with the creation of nationwide health information systems[3]. The Mortality Information System (SIM) is an example of this advance as it has recorded more than 95% of estimated deaths between 2000-2010[4].

The quality of statistics on causes of death is, however, questionable since approximately 400,000 deaths with causes classified as garbage codes (GC)[1] are recorded in the SIM annualy. This term refers to a concept introduced in the first Global Burden of Disease Study (GBD)[5] for causes that should not be considered as the underlying cause of death or are non-specific, therefore considered insufficient concerning prevention. Septicemia and heart failure, for example, may stem from different pathologies and are, however, classified at the highest GC level of severity considering the potential impact on the development of public policies used in the prevention of premature deaths[6]. According to the GBD study method, all GCs should be redistributed to specific causes, in accordance with defined algorithms[7,8].

Which initiatives could be taking in tackling this problem in Brazil? In 2016, the Ministry of Health (MoH) proposed four priority interventions aimed at improving information on causes of death as part of the Bloomberg Philanthropies *Data for Health Initiative* (D4H) project, of which Brazil was one of the 20 invited countries. Among the proposed interventions, the investigation of GC cases registered in the SIM in 2017 and the training of physicians in the correct completion of death certificates were prioritized.

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When assuming the D4H project in Brazil, the MoH identified a suitable partner in the Universidade Federal de Minas Gerais which, in turn, proposed a systematic monitoring and evaluation study as part of the project.

Evaluating implies good judgment and always represents a great challenge to research. Its main objective is to influence decision makers[9]. Such evaluations influence the fields of education and research that are the main goals of the university. Moreover, the ethical-political-social dimension is incorporated, which should guide the articulation between these fields to reach their final recipient, the society in which the university is located. Given this perspective, how can a larger number of professionals who have participated in the investigation of GCs be incorporated in a scientific production focused on evaluation studies?

In September 2018, the Centers for Disease Control and Prevention (CDC) with advice and support from Vital Strategies offered a course on writing articles for health professionals from 17 municipalities from all 5 regions of the country. The themes of the articles to be undertaken by specific groups were defined at the end of this intense and successful course. Two national workshops were held in February and May 2019 for presentation and discussion of the articles, in addition to several regional meetings for discussing possible study designs, methodologies and partial results.

This special supplement of RBE summarizes, but does not entirely demonstrate the enormous effort put in. It presents 13 original articles on the quality of information on causes of death in Brazil and results of the proposed intervention to reduce GCs. The participation of some international researchers in short reports was requested due to the importance of the D4H project to offer an overview of the project scope in other countries. These reports explored the initiatives created to improve the data of vital statistics and their use in the elaboration of health policies, enabling a dialogue with Brazil's experience. In this area, Marinho discusses the insertion of Brazil in the project that incorporated several other interventions as a broader strategy to qualify information about causes of death, in addition to the investigation of GCs.

The organization of the original articles was conceived to demonstrate the potential of the studies, which can be classified into 4 groups. The first group is comprised of articles on the evaluation of the quality of the SIM before intervention (Teixeira et al., Vidor et al.). The articles in the second group address the results of studies in the country since the pilot study (Lima et al.) and general results (Marinho et al.), as well as studies in some Brazilian regions (Benedetti et al., Oliveira et al.), or large capitals of the southeast (Martinez et al., Correa et al.). The third group of articles evaluates results for selected garbage causes (França et al., Soares Filho et al., Santos et al., Mamed et al.). Finally, in the last group, Ishitani et al. present a study evaluating the smartphone app AtestaDO, produced for aiding medical certification of causes of death.

But what would the impact of this GC research project actually mean? In addition to reducing the proportion of GCs by reclassifying these causes in others more useful for public health, it opens up the prospect of using these results for possible redistribution of

remaining cases of garbage causes, which still represent a large proportion of deaths even after investigations.

The accuracy of these terms used here, reclassification and redistribution, should be carefully considered. A procedure almost similar to the cases reported with specific cause is used for reclassification of hospital deaths. In other words, a physician evaluates the information collected from medical records and defines the causes. The concept of redistribution implies indirect procedures for defining the underlying causes of GCs, generally based on statistical methods or analysis of multiple causes for inferences[7,8]. In the Brazilian context, the redistribution procedures could be more accurate and even improved with the results of reclassified causes. In other words, with specific causes detected among the cases of GC investigated.

GC deaths also represent indicators to the quality of health care. Unequal access and quality of medical care are related to the proportion of deaths due to ill-defined causes[10]. Thus, the reduction of GC deaths does not only depend on the physician, since a GC may occur due to insufficient clinical information at the time of death. Therefore, the evaluation of the GC investigation is an important instrument in helping management of health interventions aiming at better quality of information and more qualified health services. It also offers an opportunity for learning and continuous improvement. The quality of information on causes of death is not solely related to the reclassification or redistribution of GCs, and would be better interpreted as a condition for practices aimed at improving the general health of the Brazilian population.

REFERÊNCIAS

1. Brasil. Ministério da Saúde. Informações de Saúde (tabnet): Estatísticas vitais-Mortalidade geral [Internet]. 2019 [cited 2019 June 16]. Available from: http://www2.datasus.gov.br/DATASUS/index.php?area=0205&id=6937

2. Mathers CD, Fat DM, Inoue M, Rao C, Lopez AD. Counting the dead and what they died from: an assessment of the global status of cause of death data. Bull World Health Organ. 2005;83(3):171-7. http://doi.org/10.1590/S0042-96862005000300009

3. Mello Jorge MHP, Laurenti R, Gotlieb SLD. Análise da qualidade das estatísticas vitais brasileiras: a experiência de implantação do SIM e do SINASC. Ciênc Saúde Coletiva. 2007;12(3):643-54. http://dx.doi.org/10.1590/S1413-81232007000300014

4. Lima EEC, Queiroz BL. Evolution of the deaths registry system in Brazil: associations with changes in the mortality profile, under-registration of death counts, and ill-defined causes of death. Cad Saúde Pública. 2014;30(8):1721-30. http://dx.doi.org/10.1590/0102-311X00131113

5. Murray CJL, Lopez AD, editores. The Global Burden of Disease. A comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020. Cambridge: Harvard University Press; 1996.

6. Mikkelsen L, Richards N, Lopez AD. Redefining 'garbage codes' for public health policy: Report on the expert group meeting, 27-28 February 2017. Melbourne: University of Melbourne; 2018.

7. Naghavi M, Makela S, Foreman K, O'Brien J, Pourmalek F, Lozano R. Algorithms for enhancing public health utility of national causes-of-death data. Popul Health Metr. 2010 May 10;8:9. http://dx.doi.org/10.1186/1478-7954-8-9

8. GBD 2017 Causes of Death Collaborators. Global, regional, and national age-sex-specific mortality for 282 causes of death in 195 countries and territories, 1980-2017: a systematic analysis for the Global Burden of Disease Study 2017. Lancet. 2018;392(10159):1736-88. https://doi.org/10.1016/S0140-6736(18)32203-7

9. Habicht JP, Victora CG, Vaughan JP. Evaluation designs for adequacy, plausibility and probability

of public health programme performance and impact. Int J Epidemiol. 1999;28(1):10-8. https://doi.org/10.1093/ije/28.1.10

10. Teixeira CLS, Klein CH, Bloch KV, Coeli CM. Reclassificação dos grupos de causas prováveis dos óbitos de causa mal definida, com base nas Autorizações de Internação Hospitalar no Sistema Único de Saúde, Estado do Rio de Janeiro, Brasil. Cad Saúde Pública. 2006;22(6):1315-24. http://dx.doi.org/10.1590/S0102-311X2006000600020

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