

Implementing a script to improve the quality of the Brazilian Disease Surveillance Data System using record linkage

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Introduction

The National Disease Surveillance Data System (SINAN) is the main tool used by tuberculosis control programs to measure control actions and disease incidence rates in Brazil. Therefore, data quality is essential to support health surveillance and management.

Objectives and Approach

The aim of this study was to propose an algorithm for the qualification of the variables type of entry, treatment outcome, HIV test, HIV/AIDS co-infection and diabetes comorbidity.

We conduct a probabilistic record linkage between three databases of the city of Rio de Janeiro: SINAN-Tuberculosis, 2004-2012; the Mortality Information System (SIM), 2009-2013; and AIDS unified database, until 2012 (SINAN-AIDS, SIM registries that AIDS was the basic cause of death, drug distribution and laboratory databases). The criteria for qualifying the variables were based on technical guidelines, published by the Brazilian Ministry of Health. We implemented a script using Structured Query Language.

Results

The script had 103 rules. There was an 115% increase in the treatment output classified as "dropout" due to a decrease in: i) the number of records with patient transference but that they were not followed by another health care unit; output treatment classified as "ignored"/missing values; records with treatment output classified as "cure" before the end of the treatment. There was a 28% decrease in the number of records with treatment output classified as "death due to tuberculosis" and a 64% increase in those classified as "death due to other causes". There was a 2.4% increase in the number of records with diabetes as a comorbidity, a 5.3% increase in the number of registries with HIV-positive test and a 8.7% increase in TB-HIV/AIDS co-infection.

Conclusion/Implications

Linking databases is an important strategy for retrieving information from other systems to improve the quality of information to support decision making for TB control.

