

Abstract

Background: Cause-specific mortality rate is a very important reference in identifying health problems, setting priority, and evaluating health related programs. If there were errors in producing the cause-specific mortality rate, the conclusions derived from it would be misleading. Previous studies revealed several errors in tuberculosis mortality rate; nevertheless, no Taiwanese studies touched this problem.

Objectives: First, to determine the percentage of tuberculosis-related deaths in which the national coders incorrectly assigning the underlying cause of death (UCD)? Second, to illustrate the trends of adjusted tuberculosis mortality trends in Taiwan. Third, to examine the differences in mortality trends calculated according to national coders and ACME (Automated Classification of Medical Entities). Forth, to estimate the percentage of tuberculosis-related deaths in which tuberculosis is real UCD.

Methods: First, All death certificates issued in the year 1987, 1992, 1997, and 2002 in Taiwan in which TB was mentioned anywhere in death certificate were extracted for analysis. All diagnoses listed in death certificate were all coded and key in for ACME. UCD selected by ACME was compared to UCD selected by national coders. Age-specific and age-adjusted tuberculosis mortality trends calculated according national coders and ACME were compared. Reasons of discordance between the two methods were discussed. Second, we mailed back the death certificates to issued hospitals and asked for discharge summary of the last admission of the deceased. Criteria set by the expert panel were used to determine whether the UCD of the dying process was due to tuberculosis.

Results: National coders in Taiwan assigned tuberculosis as UCD in 1835, 1876, 1737, and 1418 death certificates for the year 1987, 1992, 1997, and 2002; however, 1846, 1830, 1625, and 1343 were selected by ACME. Using the UCD assigned by ACME as standard, national coders underestimated tuberculosis death in the first study year and became overestimated since. The highest overestimation of tuberculosis deaths was in 1997. The pattern of mortality trends by total tuberculosis or respiratory tuberculosis did not differ very much according to two methods. Nevertheless, there were large differences between the two methods if we used location-specific tuberculosis mortality. Most of the discordance between national coders and ACME in early study years were due to coding errors. It became selection errors in the later study years.

Conclusions: In conclusion, it was appropriate to use official Taiwan cause-of-death statistics for total tuberculosis and respiratory tuberculosis

mortality analysis. However, it was inappropriate to analyze location-specific tuberculosis mortality in which many coding errors were noted.

Keywords : Mortality ; Tuberculosis ; Cause of death ; Accuracy ; Epidemiology