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Title: Incidence of tuberculosis: The application of capture-recapture method to compare two sources of information

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Body: Introduction: the true incidence of tuberculosis is higher than that in national and international records. Underreporting is estimated to vary between 7% and 27% according to studies. Objective: estimate the rate of tuberculosis in an area of Leon for the years 2008 and 2009 using the capture-recapture method to compare two sources of information: tuberculostatic drugs prescribed (rifampicin-isoniazid association) and the register of the regional epidemiological surveillance system (SIVE). Method: retrospective descriptive study in an area of 351,086 inhabitants of the cases of tuberculosis using as source:(i), information on tuberculostatic drugs prescribed, and (ii), the SIVE register. We calculated incidence rates for each source by the capture-recapture method. We analyzed epidemiological and demographic data, symptoms, diagnosis, treatment and monitoring. Results: the incidence obtained in 2008 using the SIVE data was 18,80x100000 and the rate using the pharmacy register was 26,77. In 2009, the SIVE data gave an estimate of 18,23 and the pharmacy register 22,50. When applied the capture-recapture method, the annual incidence for 2008 was 44,14 (95%CI 37,88 - 50,41) and for 2009 of 34,17 (95% CI 30,19-38,17). In each of the years studied the number of cases obtained from the pharmacy register was higher. Conclusions: the SIVE data on the incidence of tuberculosis in the study area underestimates the true incidence rate. The source of information that involves recording cases of tuberculosis in the community is underused. The capture-recapture method is a good alternative to measure the incidence of tuberculosis and to check the surveillance systems.