

# Evidence Update

Summary of a Systematic Review

Tuberculosis Series

## What are the factors associated with the delay in TB diagnosis and treatment?

**Various factors related to both the patient and the health care system are associated with the delay in TB diagnosis and initiation of treatment**

Researchers conducted a review of the factors associated with the delayed tuberculosis (TB) diagnosis and treatment. A search for relevant studies identified 58 observational studies.

### Why is this question important?

Early diagnosis and prompt initiation of treatment are important for effective TB management. The majority of TB transmission occurs between the onset of cough and initiation of treatment, and patients become more contagious as the delay increases. Early treatment of TB reduces the risk of disease transmission within the community and may avert early mortality associated with severe disease due to delayed presentation. This may be particularly pertinent in children where disease progression is rapid.

### Are the review findings reliable?

There are some concerns regarding the reliability of this review. The search was conducted in February 2007 and so although up to date when published, it is now 7 years out of date. Extensive searches were conducted which included attempts to locate published and ongoing studies and are likely to have identified most relevant studies. Observational studies were included, which was appropriate to address the review question. However, the selection criteria do not appear to have been applied systematically as the authors stated that it was their intention not to exclude studies based on strict criteria. A formal risk of bias assessment of included studies was not performed.

A narrative synthesis with detailed discussion of differences between studies was appropriate but did not consider the reliability of the primary studies. A mean value for treatment delay across studies was calculated, which did not appear to have been based on formal meta-analytic methods.

Overall the conclusions are supported by the data but should be interpreted with some caution as these data do not include more recently published studies, selection did not appear to be systematic, and the risk of bias in primary studies was not considered.

### What does the research say?

The total diagnostic delay ranged from 31 to 136 days with most studies reporting a delay of 60–90 days (mean  $\pm$  standard deviation: 72 days  $\pm$  28 days). Possible risk factors for diagnostic delay were not consistent across studies.

The key factors associated with diagnostic delay were linked to both the patient and the healthcare system. These included human immunodeficiency virus (HIV); coexistence of chronic cough and/or other lung diseases; negative sputum smear; extra-pulmonary TB; rural residence; limited access to healthcare (geographical or socio-psychological barriers); initial visit to a government low-level healthcare facility, private practitioner, or traditional healer; old age; poverty; female sex; alcoholism and substance abuse; history of immigration; low educational level and/or low knowledge or awareness of TB; self-treatment; and stigma. The authors identified a cycle of repeated visits at the same healthcare level resulting in nonspecific antibiotic treatment and failure to access specialised TB services as the core problem in the delay of diagnosis and treatment.

### Can the review findings be applied to my setting?

Studies included in the review were conducted in high and low-middle income countries.

### This summary is based on the following systematic review:

Storla DG, Yimer S, Bjune GA. A systematic review of delay in the diagnosis and treatment of Tuberculosis. *BMC Public Health* 2008, 8:15

**What is a systematic review?** A systematic review seeks to answer a well formulated and specific question by identifying, critically appraising, and summarising the results of all relevant studies, published and unpublished, according to pre-stated and transparent methods.

