Reviewer's report

Title: DOTS improves treatment outcomes and service coverage for tuberculosis in South Ethiopia: a retrospective trend analysis

Version: 1 Date: 8 March 2005

Reviewer: Marijke Becx-Bleumink

Reviewer's report:

General

This study intends to assess trends in expansion of DOTS and treatment outcomes. In order to assess such trends the authors should describe the trend in DOTS expansion, i.e. year of DOTS implementation in the clinics under study and the treatment outcome in the clinics prior to introduction of DOTS and after introduction. The authors have failed to do so:
- treatment results include patients on SCC and patients on LCC for the various categories of patients,
- also prior to implementation of DOTS patients were treated with SCC although apparently not daily supervised,
- if the objective of the study is to improve that DOTS improves treatment outcome the outcome after DOTS implementation should be compared with that prior to the implementation, while including patients treated with SCC prior to DOTS implementation in the last group.

A table of expansion of DOTS expansion over the year, the number of patients diagnosed prior to DOTS implementation and after DOTS implementation should be included.

For several analysis data are not presented, including those on treatment outcome of female patients, page 9, on treatment outcome of "returns after default" and treatment failures, page 9, and for the analysis made on page 10, first 2 paragraphs, page 11, distribution of patients with missing data, page 12, treatment of small and larger centres, page 13, last 2 lines on patients with unrecorded records.

Several statistical analysis are made, however the missing data of substantial groups of patients do not justify this:
- Follow-up smear examinations (table 4) at 2nd, 5th and end of treatment were available for 60%, 30% and 21% of new smear-positive patients respectively. Although a decline in positivity rate can be observed, there are too many missing results to draw the conclusions given on page 8. Follow-up
- Table 5 and the text on page 8. Treatment results give treatment outcome of 16,943 patients, although the heading of the table gives n=18,020. Hence results of 19,971-16,943= 3,028 patients are missing. Table 6 apparently excludes patients with missing information and those transferred out. The same applies to the analysis presented in table 7.

The presentation under Methods, page 5, 1st paragraph is confusing. The treatment regimens for the different categories of patients under DOTS and non-DOTS should be clearly described, e.g. in a table. Criteria for SCC or LCC in non-DOTS areas should be given. There is no mention of a regimen for re-treatment cases, while Ethiopia has adopted the internationally recommended regimen for such cases. From table 3 it appears that retreatment cases are still treated with LCC. The authors should at least have discussed this, because this definitely influences treatment outcome.

The data presented in the text are different from those presented in the tables.
- Abstract, results, 3rd line 57% and 84% should be 62% and 85% (table 6),
- Results, 1st paragraph, 14 unknown sex patients not mentioned. The 4th-6th line give 19,799 patients in total as compared to 19,971.
- Results, Treatment given, page 7, 1st line, n= 7917, while table 3, 1st line gives 7,923. 4th line from
7% in 1994 to 59% in 1999 and 99% in 2001 should be 58% in 1999 and 97% in 2001.
- Results, Follow-up, Page 8, 2nd line n=5112, should be 5009 (table 4), Line 4, 93 should be 77 and 2000 should be 1804; line 6, 33/2000 should be 26/*
- Results, Treatment results, page 8, 2nd line, 18,020 should be 16,943, the total of table 5. The number of patients in the next lines are different from those presented in table 5.
- Results, page 9, 3rd paragraph, data presented on treatment success among different categories of patients on SCC is different from that presented.
- Results, page 9, 3rd paragraph, data presented on treatment success among different categories of patients on SCC is different from that presented in the table, 8th line of paragraph 80%, 63% and 74% should be 72%, 63% and 68% respectively. Also several results on following pages are different from those presented in the tables.

The discussion is poorly presented and several conclusions are not confirmed by the data presented.

In conclusion:
- the question posed by the authors is not new and not well defined and addressed,
- the methods used are not appropriate,
- the data are poorly controlled and there are numerous discrepancies between the data presented in the text and in the tables,
- the data are not well organized,
- the discussion is poorly structured and several conclusions are not supported by data,
- the title is not very clear; "service coverage" is not defined in the text. A better title would have been "DOTS expansion improves treatment outcome".

My advise is to reject the manuscript because it is scientifically unsound.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

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 Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

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Discretionary Revisions (which the author can choose to ignore)