

Barriers to implementation of both algorithms

Site barriers

- There was only one physician allocated to the HIV clinic which caused frequent delays in radiograph interpretation and clinical decision making when they were not on duty. During implementation of the WHO07, the physician left for further studies and a replacement could not be effected immediately. This increased delays in making clinical decisions and final diagnosis.
- Occasional stock outs of materials such as X-ray films, developer, caused delays in performing CXRs.

Patient barriers

- Reasons for failure to complete all elements of both algorithms included inability to provide sputum samples due to dry cough or failure to attend follow-up appointments.
- Difficulty in providing adequate quantity and quality of specimens for both smear examination and culture.
- Long distances, poverty, and high cost of travel to the facility were significant access barriers to the majority of patients and led to delays in providing sputum samples and attendance for follow-up appointments. The estimated cost was \$1.5 per visit per patient, largely for travel within this rural district to the hospital facility. This contributed to a high loss to follow-up for both algorithms.

Health worker barriers

- There was poor adherence by health care workers to the algorithm. This was addressed by repeated educational sessions and ongoing support but it remained a persistent problem.
 - CXRs were frequently ordered before results of second sputum smears became available.

- Antibiotics were given inappropriately for cough, with some clinicians giving antibiotics as a diagnostic trial to rule out TB even when WHO07 was used.