Discussion Brief: Reporting Sputum Conversion Rates for MDR-TB Monitoring
By Megan McLaughlin; Reviewed by Sophie Beauvais, Masoud Dara, MD

Monthly examination of sputum samples is an important aspect of treatment monitoring for MDR-TB patients. Reviewing the patient’s cultures and smears provides information about the patient’s treatment response, and culture conversion determines the overall duration of MDR treatment, which should continue for a minimum of 18 months after conversion. The World Health Organization offers standardized definitions for MDR-TB treatment outcomes, including culture and smear conversion. However, because the frequency of bacteriological monitoring varies across programs, reporting recommendations are difficult to implement across all settings.

A GHDonline member in Taiwan presented several cases and asked if each patient would be considered to have sputum conversion at 6 months according WHO guidelines. In the dialogue that followed, moderators and members clarified the meaning of “culture conversion at 6 months,” date of sputum conversion and time to conversion, but also shared important distinctions between the use in clinical care versus evaluations of program performance.

Key Points

- For clinical care of MDR-TB patients, the WHO recommends close monitoring of treatment response: “[S]putum smears and cultures should be performed monthly until smear and culture conversion. […] After conversion, the minimum frequency recommended for bacteriological monitoring is monthly for smears and quarterly for cultures.”
- According to the WHO’s 2008 updated guidelines for the management of DR-TB, “Sputum conversion is defined as two sets of consecutive negative smears and cultures, from samples collected at least 30 days apart. […] The date of the first set of negative cultures and smears is used as the date of conversion (and the date to determine the length of the initial phase and treatment).”
- For the purpose of clinical care and by definition, the time to conversion is simply the time interval between treatment initiation and the date of the first negative culture.
- Time to conversion can be shorter than 6 months. Patients who have at least two negative cultures 30 days apart any time between the initiation of treatment and 6 months can be considered “culture converted at 6 months.”
- Programs often use sputum conversion rate at 6 months to assess program performance. For the purpose of program evaluation, the precise time of conversion and the frequency with which smears are collected have implications for interpreting assessments of program performance. The WHO recommends monthly smears and cultures before sputum conversion, followed by monthly smears and quarterly cultures after sputum conversion.
- Optimal frequency of sputum smear and culture depends on availability of resources and the cost/benefit of different options.

Key References


Enrich the GHDonline Knowledge Base
Please consider replying to this discussion with the following information
- Does your program define sputum conversion according to the above mentioned criteria?
- What challenges did you/your team face when reporting sputum conversion rates for MDR-TB?