Discussion Brief: Disposal of Sputum in Home Settings

By Shivani Kaul; Reviewed by Edward Nardell, MD

The World Health Organization classifies sputum induction as a high risk aerosol-generating procedure (2009). When conducting the procedure at home while the patient is still infectious, the question of subsequent sputum disposal collection and safe disposal arises. The Stop TB Partnership recommends avoiding “indiscriminate spitting” during at-home sputum collection; thus patients and other residents should be cautious of where and how they keep potentially infectious sputum (2008).

In this discussion, GHDonline members and moderators exchange knowledge on the appropriate way to dispose of sputum collected in homes of infectious TB patients to control transmission.

Key Points

- If patients are on effective therapy (meaning diagnosis and effective treatment of drug resistance if present), sputum will not likely be infectious.
- Compared to the risk of transmission from unsuspected, untreated cases in the community or the household, the risk of acquiring TB from expectorated sputum is likely to be extremely small. Keeping our priorities is important.
- Spitting is considered generally unhygienic, but not a TB transmission risk as it is difficult to generate airborne aerosols from secretions on surfaces.
- Aerosolization is theoretically possible from patients opening and closing sputum containers, which is common. But sputum is not concentrated like a pure culture and is thus much less significant as a possible source of airborne infection than is coughing. Opening or coughing should be done in a well-ventilated environment.
- Household medical waste can be put into plastic bags, tied, and disposed of with normal garbage, though this could be risky where scavengers mine municipal dumps trash bags for things of value.
- Sandeep Ahuja, CEO of Operation ASHA in New Delhi, India, advises patients to collect the sputum in a covered tin container throughout the day. There is a risk that someone might hit the container, turn it over, and result in aerosolized sputum, so the container should be kept in a place to avoid such disruption. At the end of the day, patients should add a little water to the sputum collected, boil it for 20 minutes, and dispose of it in running water. (E Nardell thinks this is overkill – his opinion based on no data – handling being more likely to result in spills and aerosol than simple disposal out of reach of children, etc).
- In a community-based TB program in Zimbabwe, patients were advised to spit in one of two disposal container options discarded twice a day (morning/wake-up and evening/sunset): 1) a plastic or zinc container that could be at least 2 liters and filled with 1/4 sand and discarded in a pit latrine toilet or buried underground; 2) a 5-liter plastic or zinc container filled halfway through with sand and old newspapers that are burned.
- Although of uncertain efficacy, patients should be encouraged to cover their mouths when coughing. Patient education is an important tool to promote this behavior change.
- Dr. Edward Nardell, co-moderator, noted that a soon-to-be-published study will show that patients wearing surgical masks reduces the infectivity of TB patients in South Africa by about 50%. In his opinion, the optimal use of surgical masks is on coughing patients for short periods in waiting rooms and other common areas until the start of effective treatment. Covering coughs should have a similar benefit.
- Dilution by outdoor air is important, thus anything that can be done outside should be. Natural ventilation is less reliable indoors because wind is unreliable in many climates, and windows are often closed at night for security and warmth. Sunlight is unreliable, but probably is a TB disinfectant, especially because outdoors it is combined with dilution.

Key References

- TB Infection Control in single-room homes (Discussion Brief)
- Recommendations for Outdoor Sputum Induction (Discussion Brief)

Enrich the GHDonline Knowledge Base

Please consider replying to this discussion with the following information

- Additional precautionary recommendations to limit exposure to sputum samples collected at home or in the community.

Recommendations

You may also be interested in the following content in GHDonline communities

- Sputum Collection Stall Safety (Resource)
- WHO Policy on TB Infection Control in Health Care (Resource)
- Perceptions and Practices of Sputum Positive Pulmonary Tuberculosis Patients Regarding their Disease and its Management. NTI Bulletin 2005 41 (PDF, full text)