FAST

A Tuberculosis Infection Control Strategy

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TB CARE II

Acknowledgements

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Introduction

The purpose of this booklet and the associated materials is to provide a comprehensive introduction to the *FAST* strategy: a focused approach to stopping TB spread in congregate settings. In English, *FAST* stands for **F**inding TB cases **A**ctively, **S**eparating safely, and **T**reating effectively. *FAST* focuses health care workers on the most important administrative TB transmission control intervention: effective treatment.

The *FAST* strategy is built on a renewed appreciation of evidence showing that effective TB treatment reduces TB spread rapidly, even before sputum smear and culture turn negative.

The *FAST* strategy can be used to reduce TB or MDR-TB transmission in the following settings: hospitals, clinics, prisons, and other congregant settings like homeless shelters or refugee camps. This booklet explains how *FAST* may be implemented in two types of health care settings: (1) a general medical setting, where the focus is finding patients with unsuspected contagious TB; and (2) TB settings where patients are already diagnosed with TB and the focus is finding patients with MDR-TB in order to provide effective therapy and rapidly stop spread. The materials provided are designed to be visual reminders for the specific personnel implementing the *FAST* strategy, for patients, staff, and decision makers who should understand why certain activities are occurring. It is anticipated that these materials will be adapted to specific country and institutional circumstances.

Commonly Used *FAST* Terms

FAST

A focused tuberculosis transmission control strategy that prioritizes the administrative components of traditional TB infection control: rapid diagnosis and effective treatment. ***FAST*** stands for "**F**inding TB cases **A**ctively, **S**eparating safely, **T**reating effectively."

Infection Control (IC)/Tuberculosis Infection Control (TB IC)

Controlling transmission of infectious diseases is an essential part of any health care delivery system. At the facility level, infection control includes a set of practices to reduce potential exposure and transmission of pathogens, such as hand washing and instrument sterilization. For tuberculosis, transmission control practices are traditionally prioritized in the following order: (1) administrative, (2) environmental, and (3) respiratory protection. ***FAST*** focuses attention on implementing and monitoring the administrative processes and procedures necessary to find and rapidly diagnose unsuspected infectious TB and drug resistant TB cases, such that effective therapy may start within days, not weeks or months of presentation.

Tuberculosis (TB)

TB is a contagious infectious disease that generally affects the lungs. It can be fatal if undiagnosed and untreated, and it can spread to others in congregate settings.

Multi-drug resistant Tuberculosis (MDR-TB)

MDR-TB is caused by the same germs that cause TB, but it is more dangerous because it is not killed by the two most important TB drugs, isoniazid and rifampicin.

Health care workers (HCW)

All individuals involved in providing patient care. For example, nurses, doctors, laboratory technicians, and hospital cleaners would all be considered health care workers because they are exposed to patients in the course of their work.

FAST for General Medical Settings—Outpatient or Inpatient

The most important setting where FAST should be implemented is the general medical area of a facility, outpatient or inpatient, where large numbers of people with diverse complaints are seen or admitted and contagious TB can be overlooked. Studies have shown that actively looking for otherwise unsuspected TB patients through organized cough surveillance in general medical hospitals or clinics will reveal many TB suspects, some of which will have the disease. New molecular tests allow rapid diagnosis of TB and drug resistance — both essential for the effective treatment that will rapidly stop its spread.

Finding TB Patients:

The most infectious TB patients are the ones that we don't know about because they are not being treated. Undiagnosed TB patients can be in clinics, waiting areas, hospital emergency rooms, and wards that care for surgical or other medical problems. Asking all patients about TB symptoms, such as chronic cough, fever, and weight loss can lead to finding previously unsuspected TB cases, as can observing patients for cough in waiting rooms, registration areas, and admission holding areas.

Actively:

TB is usually diagnosed passively, occurring when patients' symptoms lead them to seek help. However, symptoms, such as cough, fever, and weight loss can be present for a long time, be attributed to other conditions, or be overshadowed by other pressing issues. The **FAST** strategy incorporates specifically trained staff called "cough monitors" or "cough surveillance officers" whose job is to identify patients with chronic cough and other TB symptoms, and promptly collect sputum, which would ideally be sent for rapid molecular testing.

Separating safely:

MDR-TB patients should be moved to a well-ventilated area to prevent the transmission of MDR-TB to other patients.

Treatment:

Treatment is the final and most important step in preventing transmission of TB to others. Patients become non-infectious soon after starting effective TB treatment.

FAST Implementation for General Medical Settings

1. A cough surveillance officer should be present at each entry point at the health facility, or more efficiently, at a central triage station if there is one. For example, a ward where all patients wait for initial admissions testing and bed assignments would be ideal. Cough surveillance in clinic waiting areas may be more difficult, especially if there are many waiting areas and patients are coming and going, however, *FAST* within this setting is still possible. Patient registration is another point in many health care facilities where asking about TB symptoms or doing cough surveillance would work well.
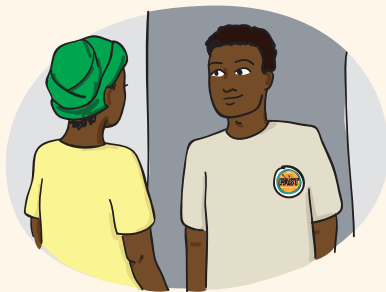
2. The cough surveillance officer should then move the coughing patient to a designated, well-ventilated area that is away from other patients while their sputum is collected and they wait to be seen by a clinician. For public health reasons, patients that are coughing should "jump the queue" and be evaluated by a clinician quickly. Explaining the purpose of preferential treatment of coughing patients to other patients is one purpose of the posters that accompany these guidelines. There is the potential for abuse if patients conclude that the way to be seen sooner is to cough. Thus, the cough officer should explain to patients the rationale behind "jumping the queue" when possible. Additionally, patients should be educated in cough hygiene as they wait to be seen by a health care provider.

3. As quickly as possible, the patient should be tested for TB by a rapid testing method, preferably molecular testing of sputum. In some settings, the cough surveillance officer can request that the doctor order a chest x-ray, another rapid and non-specific test for TB. Xpert® MTB/RIF is preferred because it diagnoses MDR-TB. If not available, and in a low MDR-TB prevalence setting, smear microscopy can be performed.

4. Any patient that has a positive sputum test or is judged to have TB by the clinician should be started on TB treatment. If Xpert® MTB/RIF is used, the treatment should be chosen according to national guidelines to be effective against the resistance pattern detected. Even if Xpert® MTB/RIF is not used, in areas where drug resistance is low, standard treatment for drug susceptible TB is likely to be effective and the patient will become non-infectious very soon.
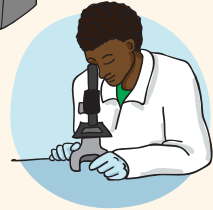
5. An assessment plan, along with the responsible personnel for various parts of the plan, can be decided upon by the country or institution implementing the FAST strategy. However, the following time intervals for effective implementation must be collected. The time intervals for each step from: a) the patient entering the facility to cough detection; b) cough detection to sputum collection; c) sputum collection to lab receipt; d) lab receipt of the specimen to lab result available; e) lab result available to lab result received; f) lab result received to effective treatment initiation, must be collected.

FAST for TB Settings—Outpatient or Inpatient

FAST can also be applied to a TB setting, such as a TB clinic or TB ward. In these settings, patients have already been diagnosed with TB. Most patients are assumed to have drug-susceptible TB, and the challenge is to find those patients who have MDR-TB.

Finding MDR-TB patients:

Undiagnosed and inadequately treated MDR-TB patients can infect or re-infect other patients or health care workers. Most TB patients are not tested for drug resistance until they fail first-line treatment, therefore, there are some patients with undiagnosed MDR-TB being inadequately treated with drugs for drug susceptible TB. Such patients remain infectious. The purpose of detecting drug resistant TB is to treat it effectively and stop transmission.

Actively:

MDR-TB patients look exactly like drug-susceptible TB patients. The fastest way to tell a MDR-TB patient from a patient with drug-susceptible TB is drug susceptibility testing. Xpert® MTB/RIF can identify MDR-TB patients within two hours. It is essential that all TB patients are tested for MDR-TB at the time of TB diagnosis.

Separating safely:

After diagnosis, for the short time that it takes for effective treatment to begin and take effect, MDR-TB patients should be moved to a well-ventilated MDR-TB area to prevent the transmission of MDR-TB to other TB patients.

Treatment:

Treatment is the most important way to interrupt MDR-TB transmission. MDR-TB patients should be started immediately on second-line TB drugs according to national guidelines. MDR-TB patients rapidly become non-infectious after being started on effective treatment. The effect of effective treatment on transmission occurs much faster than the conversion of sputum smear or culture to negative.

FAST Implementation for TB Settings

1. All patients admitted or entering a TB setting should immediately be tested for MDR-TB with Xpert® MTB/RIF. For TB patients who are smear positive, a spot sputum sample should be collected immediately and sent for Xpert® MTB/RIF testing. For smear negative TB patients, obtaining an early morning sample is more important.

2. Using Xpert® MTB/RIF, results for rifampicin resistance should be back from the laboratory in two hours. The results should definitely be available within the same day the test is done and sputum sample collected.

3. Patients diagnosed with rifampicin resistance should be separated to a designated, well-ventilated MDR-TB area until placed on effective treatment.

4. Once a patient is diagnosed with rifampicin resistance, the health care worker should put the patient on a standard MDR-TB treatment regimen according to national MDR-TB guidelines. Patients who are negative for rifampicin resistance by Xpert® MTB/RIF should continue standard TB treatment according to national guidelines.

5. An assessment plan, along with the responsible personnel for various parts of the plan, can be decided upon by the country or institution implementing the *FAST* strategy. However, the following time intervals for effective implementation must be collected. The time intervals for each step from: a) the patient entering the facility to cough detection; b) cough detection to sputum collection; c) sputum collection to lab receipt of specimen; d) lab receipt of the specimen to lab result available; e) lab result available to lab result received; f) lab result received to effective treatment initiation, must be collected.

FAST Materials

In addition to this booklet, there are other materials in this package that can be used in the *FAST* strategy. Below are descriptions on how these materials can be used when implementing *FAST* within a general medical or TB setting

1. All health care workers involved in the *FAST* strategy should wear one of the *FAST* buttons on their work uniforms to remind them and their colleagues that implementing *FAST* to identify TB patients and get them on effective TB or MDR-TB treatment is the most effective way to stop spread.
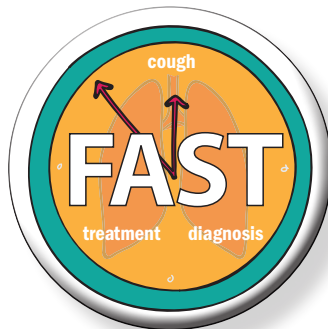
2. Health care workers should also carry with them the small *FAST* job aids in their pocket. These job aids will serve as a reminder to health care workers about the important steps of the *FAST* strategy.
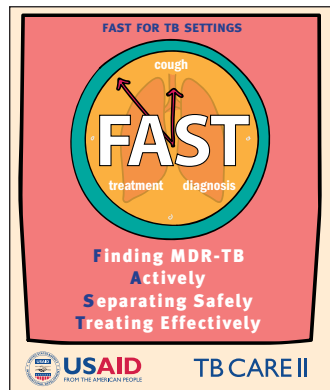
3. *FAST* posters can also be used as memory aids for the *FAST* strategy. These should be placed in the healthcare facility for reference.

Frequently asked *FAST* Questions

Who should participate in *FAST?*

- Clinicians providing direct patient care;
- Laboratory staff responsible for diagnosing TB and MDR-TB;
- Cough surveillance officers who look for and triage patients;
- Admissions clerks or staff who are responsible for admitting patients into the hospital , if surveillance at registration is selected; and
- Facility administrators and decision makers who support infection control policies and endorse the implementation of **FAST.**

Why should health care workers participate in *FAST?*

Health care workers should support the **FAST** strategy to help protect themselves and their patients from infection with TB, possibly drug-resistant TB.

What are the benefits of *FAST?*

The most important benefit is that patients suspected of having TB or MDR-TB get tested quickly, and if they are diagnosed with TB or MDR-TB, and they treated effectively, quickly. Effective treatment stops TB transmission.

Are other TB infection control practices no longer needed with *FAST?*

No. Other infection control practices should be conducted as usual. For example, wearing N95 respirators while attending to potential TB suspects is still important. However, in the **FAST** strategy, rapid diagnosis and effective treatment are given priority. Research has shown that when a TB patient is put on effective treatment, he or she becomes non-infectious very soon. Rapid diagnosis and effective treatment should therefore become the priority of TB administrative infection control practices.

Will *FAST* create more work for health care workers?

Yes, there is some additional work that is required as part of **FAST**. However, everyone benefits by more rapidly identifying and treating TB cases. The benefits of **FAST** are worth the extra work of actively looking for coughing patients, collecting sputum, promptly getting it tested, and getting those results to the clinician so that treatment can begin.

Can a healthcare facility still implement *FAST* if it does not have rapid diagnostic options, like Xpert® MTB/RIF?

Yes. For **FAST** to be most successful, a rapid molecular method is preferred, but smear microscopy can also be rapid. Xpert® MTB/RIF is more sensitive than smear microscopy and can diagnose MDR-TB at the same time. However, in low MDR-TB prevalence settings, traditional diagnostic methods like smear microscopy can be used until rapid molecular tests are available.

Where should the patient be separated while waiting for a diagnosis or to see a clinician?

The patient should be provided seating in an area of the health facility that is well-ventilated to reduce the risk of transmission to other patients. This may be another ward, room, or outside waiting area.

Won't implementing *FAST* cause some patients to be stigmatized?

Every effort should be made to reduce the stigmatization of TB patients and suspects. For example, when the patient is being triaged and separated, this activity should be conducted discreetly and with respect for the patient and their families.

What is effective cough surveillance?

Effective cough surveillance begins as the patient enters the health care facility. The definition of a TB suspect varies around the world. Cough for more than two weeks is the most common criteria for TB testing. Most importantly is to make sure that all patients entering the facility are assessed for cough.

What are the criteria for a cough surveillance officer?

- Usually a non-clinician who is compensated for his/her work;
- Trained to screen patients for cough, collect sputum, and register patients in the TB suspect register (if these functions are not carried out by another healthcare worker at the facility); and
- Someone who can educate patients and community members about TB.

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