GUIDELINE FOR IMPLEMENTATION OF FAST
A STRATEGY BASED ON RAPID, SAFE, EFFECTIVE APPROACHES IN DETECTION AND MANAGEMENT OF TB AND MDR-TB CASES

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The National Tuberculosis Control Program would like to sincerely thank the American people through the United States Agency for International Development (USAID)’s TB CARE II Project, managed by University Research Co., LLC (URC), for providing technical and financial support for development and publication of this document.
Tuberculosis (TB) disease remains a global health issue because the number of TB-related deaths is still high. The Vietnam National TB control Program (NTP) has achieved several great results. Specifically, Vietnam is one of nine countries with high TB burden in the world, which has reached all three targets of the TB-related Millennium Development Goals in 2015, including TB incidence, prevalence and death rate targets. One of every five TB patients, however, was still missed and up to 16,000 people died of TB in 2015 despite sufficient tests for diagnosis and drugs for treatment, even in cases of extensively drug-resistant TB. These numbers are not acceptable.

What can we do and how can we do it? The new directions of the NTP are to achieve: 1) the earliest detection of all forms of TB including multidrug-resistant (MDR) and extensively drug-resistant TB, 2) rapid enrollment in treatment using an anti-TB drug regimen informed by drug susceptibility testing for all diagnosed cases, 3) rational treatment management with a patient-centered approach and 4) safe infection control practices through all the steps of TB care cascade.

A new way of thinking, renovated technologies and innovative approaches are needed to make progress on each of these directions. The FAST strategy is an innovative idea, and as an administrative procedure reform, is a renovated way of implementing. FAST requires a strong commitment of directors and the whole NTP system but minimal additional financial and resource investments because it is fundamentally a refocusing of existing procedures implemented to obtain higher effectiveness and safety.

The FAST strategy was based on scientific evidence that early TB treatment with an effective regimen stops TB transmission. Therefore, to provide an effective regimen, drug susceptibility testing results need to be available prior to treatment initiation. It is a very big challenge but it is now possible using the GeneXpert MTB/RIF technique.

The FAST strategy is mainly implemented at specialized and general hospitals with TB units. Being a new implementation approach, there is a need for guidelines for facilities so that they can implement the strategy in a consistent way to obtain good effects on a large scale, reduce TB incidence, and move forward to ending the TB epidemic – the NTP's Goals.

With support from the USAID TB CARE II Project, the NTP developed the “Guideline for FAST strategy implementation”. According to the Guideline, implementing facilities should immediately order GeneXpert MTB/RIF tests for eligible patients including: Pulmonary TB patients AFB(+), presumptive drug-resistant TB patients, presumptive TB among HIV positive people, children with presumptive TB or TB meningitis. The NTP has developed a roadmap to increase early access to GeneXpert MTB/RIF for patients with abnormal chest X-ray suggestive for TB and other presumptive TB patients.

This Guideline considers FAST as a quality brand for health care service of the implementing facilities regarding rapid TB and MDR-TB diagnosis and effective treatment and reduced transmission at the hospitals.

During the implementation of this guideline, the Vietnam NTP would like to receive constructive comments from national and international colleagues to better refine and update this document for the next edition.

DIRECTOR OF NATIONAL LUNG HOSPITAL
MANAGER OF NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Asso. Prof. Nguyen Viet Nhung, MD., PhD.
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# ABBREVIATIONS AND ACRONYMS

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<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>AFB</td>
<td>Acid Fast Baccilli</td>
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<tr>
<td>DGH</td>
<td>District General Hospital</td>
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<tr>
<td>DR-TB</td>
<td>Drug-resistant tuberculosis</td>
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<tr>
<td>PHTBLD</td>
<td>Provincial Hospital of TB and Lung Diseases</td>
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<td>NTP</td>
<td>National Tuberculosis Control Programme</td>
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<tr>
<td>FAST</td>
<td>Finding cases Actively - Separate safely - Treating effectively</td>
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<tr>
<td>GeneXpert MTB/RIF</td>
<td>Cartridge based nucleic acid amplification test, automated diagnostic test that can identify <em>Mycobacterium tuberculosis</em> (MTB) DNA and resistance to rifampicin (RIF)</td>
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<tr>
<td>HCW</td>
<td>Health care workers</td>
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<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<tr>
<td>MDR-TB</td>
<td>Multidrug-resistant tuberculosis</td>
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<tr>
<td>MTB</td>
<td><em>Mycobacterium tuberculosis</em></td>
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<td>TB</td>
<td>Tuberculosis</td>
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<tr>
<td>URC</td>
<td>University Research Co., LLC</td>
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<td>USAID</td>
<td>United States Agency for International Development</td>
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<tr>
<td>VITIMES</td>
<td>The Viet Nam TB Information Management Electronic System</td>
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PART 1. INTRODUCTION

1. Terms and Definitions

**FAST strategy**: is a TB infection control strategy, classified as a set of administrative control measures which focus on screening, rapid diagnosis and effective treatment. **FAST** stands for “Finding cases Actively, Separating safely, Treating effectively”.

**FAST strategy in Viet Nam**: is a strategy based on fast, safe, effective approaches in detection and management of TB and MDR-TB cases.

**Presumptive pulmonary TB patient**:
A patient with the following symptoms is classified as a presumptive pulmonary TB case:

- Cough persisting for more than 2 weeks (dry cough, productive cough with sputum, hemoptysis) is the most important symptom suggesting TB
- In addition, other suggestive symptoms include:
  - Weight loss, loss of appetite, fatigue
  - Low grade fever in the afternoon
  - Night sweats
  - Chest pain, sometimes with difficult breathing
  - Patients with cough of any duration should also be evaluated with chest X-ray if there is clinical concern for TB.

**Tuberculosis disease**: is an infectious disease caused by *Mycobacterium tuberculosis*. TB disease can affect all the organs in the body. Pulmonary TB is the most common (accounting for 80-85% of all cases) and most contagious form that poses the greatest risk to the surrounding people.

**Presumptive drug-resistant TB patients for whom GeneXpert MTB/RIF test are ordered**:

1. Failure of Category II
2. New presumptive TB patient or new TB patient who is contact of MDR-TB patient
3. Failure of Category I
4. Nonconverter after 2nd or 3rd month of treatment with Category I or Category II regimen
5. Relapsed TB patients (Relapse Categories I and II)
6. Treatment after default (after treatment with Category I or Category II regimen)
7. New TB patient living with HIV
8. Other cases: Presumptive TB cases or TB patients who have history of more than one month of treatment with anti-TB drugs (including presumptive relapsed TB, presumptive TB after default, presumptive TB or TB patients who have history of treatment with anti-TB drugs at private health care facilities with unknown treatment outcomes)
9. New pulmonary TB patients with smear microscopy AFB (+)
Multidrug-resistant Tuberculosis disease:
Multidrug-resistant tuberculosis: Concurrently resistant to at least isoniazid and rifampicin.
Rifampicin resistant TB: resistant to rifampicin, with or without resistance to other anti-TB drugs. Currently in Vietnam, up to 90% of bacteria resistant to rifampicin also are resistant to isoniazid. Therefore, patients who are diagnosed with rifampicin resistance are considered multidrug-resistant and are treated with MDR-TB regimen.

Infection Control/ TB Infection Control: Controlling transmission of infectious diseases is an essential part of any healthcare delivery system. At health care facility, infection control includes a set of practices to reduce potential transmission of pathogens, such as hand washing and instrument sterilization. Tuberculosis infection control practices are usually prioritized in the following order: (1) administrative, (2) environmental, and (3) personal protection.

Health care workers (HCW): All individuals involved in providing patient care. For example, doctors, nurses, laboratory technicians, and nurse assistants would all be considered as health care workers because they are exposed to patients in the course of their work.

2. Implementing facility, guideline user and target population

Target implementing facilities: Provincial Hospitals of TB and Lung Diseases (PHTBLD) and District General Hospitals (DGH) with TB units.

Target Guideline users: All health care workers at the hospitals including directors, doctors, nurses, nurse assistants, technicians, pharmacists and support staff at the hospitals.

Target population: All patients of all ages visit the outpatient department or are hospitalized in health care facilities of the Vietnam NTP network. FAST strategy also screens all patients currently on TB treatment to timely detect MDR-TB and put them on effective treatment.

Patients for whom FAST strategy does not apply: Patients who have been diagnosed with or currently on treatment of MDR-TB. Those patients visiting the hospitals will be managed in line with the national MDR-TB treatment and management guidelines.

3. Objectives and principles of FAST strategy implementation

3.1. Key objectives of FAST strategy:
- Shortening time from patient presentation to diagnosis
- Shortening time from TB or MDR-TB diagnosis to initiation of effective treatment
- Implementing infection control measures and separating safely

3.2. Principles:
- The FAST strategy contains three main components:
  - TB screening for all patients at hospital entries and in clinical wards;
  - Rapid diagnosis of TB and MDR-TB with GeneXpert MTB/RIF;
  - Expedited treatment initiation after the diagnostic test results are notified.
- These three components above are supplemented by
  - Other good practices such as classifying patients based on their ability to produce sputum spontaneously or need induction during the first TB screening, improving
sputum quality assurance, shortening times to sputum collection and transportation, testing, the result notification and diagnosis.

- Other simple and effective administrative, environmental and personal protection infection control measures include those such as consulting patients on cough hygiene, especially requesting coughing patients to wear facial masks, arranging well ventilated waiting areas, providing instructions on how and where to produce and place sputum, arranging one-way patient’s movement flow, giving priority for diagnostic tests for outpatients to make early decisions and indications, effectively using natural ventilation, fans, and UV lights.

- Closely monitoring of important time milestones:
  - When a patient presents at a health care facility
  - When collecting sputum of presumptive TB patients for testing
  - When a laboratory receives a specimen
  - When a test result is notified to a doctor in charge of treatment
  - When the patient starts treatment after having received a diagnostic test result

- Use of the existing service systems, health personnel and resources available at the health care facilities of the NTP network.
PART 2. INSTRUCTIONS FOR FAST STRATEGY IMPLEMENTATION

1. General instructions

- FAST is an innovative strategy which promotes the use of appropriate TB diagnostic techniques in the most effective and safe way for healthcare workers and patients. Hospitals should prioritize implementation of the strategy given these benefits.

- Prior to FAST strategy implementation, hospital directors and key staff should conduct a self-assessment of protocols, procedures and practices using “FAST strategy implementation readiness self-assessment form” in Annex 1 and the time indicators in “FAST-TB” and “FAST-MDR-TB” forms. Based on the self-assessment, the hospital develops or adjusts technical protocols and procedures in line with administrative procedure reform approach, to achieve the key objectives, which are to shorten times to diagnosis and treatment initiation with effective treatment regimens. Time indicators are presented as percentages of patients who are diagnosed with TB from patient presentation or bacteriological-confirmed diagnosis to initiation of effective treatment within one day, two days, 3-5 days, and 6 days and above. Based on baseline evaluation and internal consensus, the hospital should set targets for the above mentioned time indicators and develop a roadmap for continuous improvement of service quality. The shorter the times to diagnosis or treatment, the better the service quality is. The hospital should include the time indicators in the hospital technical evaluation criteria.

- The hospital director should assign responsible staff at the General Planning and Networking Direction Departments, which in collaboration with Information Technology unit, should take the following responsibilities:
  + Supervise execution of technical protocols and procedures at the hospital;
  + Conduct data management and analysis, monitoring, reporting and providing feedback on time indicators and reviewing lists of cases diagnosed at the hospital and district TB units under PHTBLD’s technical direction in monthly review meetings to improve service quality.

- The hospitals should ensure data entry on cases in a complete, accurate and timely manner. The hospitals should also check the data quality and conduct data cleaning in the two NTP databases named VITIMES and eTBmanager monthly to monitor and evaluate time indicators and report these indicators to the NTP quarterly, using “FAST-TB” and “FAST-MDR-TB” forms.

- Hospitals implementing FAST should provide uninterrupted access to diagnostic tests (chest X-ray, sputum smear microscopy and GeneXpert MTB/RIF test) and drugs during the weekends and public holidays to ensure early detection and treatment initiation for the patients.
2. Instruction for FAST strategy implementation at PHTBLD

2.1. Algorithm 1 describes steps for FAST strategy implementation at PHTBLD

**Step 1:** A reception nurse conducts TB screening (cough ≥2 weeks, afternoon fever, weight loss, night sweats) and classifies all visiting patients at the outpatient department in the following groups:

- **Group 1:** Presumptive TB or MDR-TB patients
- **Group 2:** Currently on TB treatment
- **Group 3:** Other lung conditions

**Step 2:** A reception nurse records cough ≥2 weeks, afternoon fever, weight loss, night sweats in the information system

**Step 3A:** Doctor at the outpatient department asks TB-focused history, conducts physical exam, reviews diagnosis and test results from a referring facility and makes patient classification

- Patients admitted to clinical wards

**Step 3B:** Doctor conducts exam and makes patient classification

**Step 4:** Order concurrent standard tests* and Order direct sputum specimen for other presumptive TB patients

Immediately order GeneXpert MTB/RIF for eligible patients in line with the national guideline**

**Step 5:** Collect and transport specimen, conduct testing and notify of result

**Step 6:** Act upon receipt of sputum smear result

- AFB (+)
- AFB (-)

As per the national guidelines on diagnosis of smear (-) pulmonary TB

**Step 7:** Act upon receipt of GeneXpert MTB/RIF result

**Diagnosis of bacteriological-confirmed pulmonary TB**

Within one day

Initiating effective treatment as per the national guidelines

**Diagnosis of MDR-TB**

Within 3-5 days

Not TB

* Prioritize sputum specimens for GeneXpert MTB/RIF test

** Subjects eligible for immediate GeneXpert MTB/RIF test: presumptive DR-TB patients listed on page 4; presumptive TB among HIV positive people; Children with presumptive TB or presumptive TB meningitis at outpatient department or clinical wards based on specific conditions of individual hospital.
2.2. Description of FAST strategy implementation steps in algorithm 1 at PHTBLD

**Step 1 Patient screening and classification**

1. A reception nurse conducts TB screening (cough ≥2 weeks, afternoon fever, weight loss, night sweats) and classifies all visiting patients at outpatient department in the following groups:
   - Group 1: Presumptive TB or MDR-TB patients
   - Group 2: Currently on TB treatment
   - Group 3: Other lung conditions

2. A reception nurse should advise patients with cough about cough hygiene (i.e., explain why it is necessary for them to wear face masks and ask them to do it).

**Step 2 Information recording**

3. For group 1 and 2 patients, a reception nurse should record presumptive TB symptoms in the hospital information system to ensure that this information is transferred to a doctor in charge.

**Step 3A Medical exam and patient classification at the outpatient department**

4. Within 60 minutes after the patient enters the outpatient department, a doctor at the outpatient department conducts physical exam, asks TB-focused history, reviews diagnosis and test results from a referring facility of group 1 and 2 patients to make patient classification and order appropriate tests.

**Step 3B Medical exam and patient classification at clinical wards**

5. Within 60 minutes after the patient is admitted to the clinical ward, a doctor at the ward conducts physical exam, asks TB-focused history, reviews diagnosis and test results from a referring facility of group 1 and 2 patients to make patient classification and order appropriate tests as per the national guideline.

**Step 4 Requesting concurrent standard tests and**

6. GeneXpert MTB/RIF should be immediately ordered for presumptive DR-TB patients listed on page 4; presumptive TB among HIV positive people; children with presumptive TB or presumptive TB meningitis. Sputum specimen should be prioritized for testing with GeneXpert MTB/RIF.

7. Direct sputum smear microscopy should be ordered for other presumptive TB patients. It is recommended to use fluorescent light-emitting diode microscopy for TB diagnosis.

8. The TB test request form should be completed fully and accurately to avoid return of the form for filling in the missing information that can delay sputum processing.

**Step 5 Collect and transport specimen, conduct testing and notify of result**

9. When ordering TB test for a patient admitted to clinical wards, a doctor in charge should assess if the patient can produce sputum spontaneously. If the patient is unable to produce sputum spontaneously, the doctor in charge should consider sputum induction, gastric washing, or bronchoalveolar lavage for testing (see Annex 2 - Instruction for induced sputum specimen).

10. A nurse(s) should be assigned to:
   - Advise patients how and where to produce good sputum and indicate where sputum specimens should be submitted as per the hospital protocol.
   - Check the quality and quantity of specimen before transporting to the laboratory. The
responsible nurse should strictly follow sputum collection instructions. As poor quality sputum sample can affect diagnostic accuracy and lead to delayed treatment and consequently to the further spread of the disease.

11 When receiving the specimen, laboratory personnel should:
- Check the quality and quantity of specimen and notify a carrier if the sputum sample does not qualify for testing and if another specimen should be recollected and resubmitted.
- Request the doctor in charge to provide missing information in the TB test request form before processing the sputum specimen.

12 It is recommended that all hospitals implementing FAST develop time schedules for submitting sputum samples and providing notification of results between the laboratory, outpatient department and clinical wards (refer sample time schedules 3A and 3B in Annex 3). The doctor in charge should actively follow up test results if he is not notified of the test result according to the agreed time schedule.

13 Patients awaiting diagnostic test results should stay in a well-ventilated area.

Step 6 Act upon receipt of direct sputum smear result
14 AFB(-): As per the national guidelines on diagnosis of smear (-) pulmonary TB.
15 AFB(+): Order GeneXpert MTB/RIF test for the patient within one day from the result notification.

Step 7 Act upon receipt of GeneXpert MTB/RIF result
16 Test result is MTB(+) and not rifampicin resistance: Initiate pulmonary TB treatment as per the national guidelines within one day from the result notification.
17 Test result is MTB(+) and rifampicin resistance: Make diagnosis of MDR-TB and initiate treatment as per the national guidelines within 3-5 days from the result notification.
3. Instruction for FAST strategy implementation at DGH

3.1. Algorithm 2 describes steps for FAST strategy implementation at DGH

**Step 1:** A reception nurse at outpatient department asks about cough symptoms, visit reason and triage patients to appropriate examination rooms

**Step 2:** Cough for \( \geq 2 \) weeks symptom recorded in the information system

**Step 3:** Doctor at outpatient department conducts exam and patient classification:

- Eligible for GeneXpert MTB/RIF testing in line with the national guideline*
- Presumptive TB or MDR-TB, hospitalized
- Other diseases, hospitalized
- Cough \( \geq 2 \) weeks, outpatient

Refer the patient to facility which conducts GeneXpert MTB/RIF test

**Step 4A:** Infectious Disease/ TB ward: Doctor makes patient classification

- Patients eligible for GeneXpert MTB/RIF:
  - Refer patient to GeneXpert MTB/RIF site or
  - Transport specimen to GeneXpert MTB/RIF site, order direct sputum smear onsite

Refer the patient to facility which conducts GeneXpert MTB/RIF test

**Step 4B:** Other clinical wards:

- Other presumptive TB
- Order chest X-ray, direct sputum smear

**Step 5:** Collect and transport specimen, conduct testing and notify of result

**Step 6:** Act upon receipt of direct sputum smear result

- AFB (+): Immediately initiate TB treatment while waiting for GeneXpert MTB/RIF result
- AFB (-)
- Diagnosis of TB unchanged

As per the national guidelines on diagnosis of smear (-) pulmonary TB

**Step 7:** Act upon receipt of GeneXpert MTB/RIF result

- Diagnosis of MDR-TB
- Refer patient to MDR-TB treatment sites

Within 1-2 days

Within one hour

Within 3-5 days

* Subjects eligible for GeneXpert MTB/RIF test: presumptive DR-TB patients listed on page 4; presumptive TB among HIV positive people; Children with presumptive TB or presumptive TB meningitis
3.2. Description of FAST strategy implementation steps in algorithm 2 at DGH

**Step 1 Patient screening and classification**

1. A reception nurse should ask all patients attending the outpatient department of the DGH for cough ≥ 2 weeks symptoms regardless of the main reasons for seeking medical care and triage patients to appropriate examination rooms.

**Step 2 Information recording**

2. The reception nurse should record cough for ≥ 2 weeks symptom in the hospital information system to ensure that this information is transferred to a doctor in charge.

3. A reception nurse should advise patients with cough on cough hygiene (i.e., explain why it is necessary for them to wear face masks and ask them to wear it).

**Step 3 Patient classification and test request at the outpatient department**

4. The patient with cough should be seen by a doctor within 60 minutes after entering the outpatient department.

5. The doctor classifies the visiting patients into the four main groups as below:
   - **Group 1:** Patients eligible for GeneXpert MTB/RIF test in line with the national guideline, including presumptive DR-TB patients listed on page 4 of this document; presumptive TB among HIV positive people; children with presumptive TB or presumptive TB meningitis. The doctor should refer patients of this group to a facility which conducts GeneXpert MTB/RIF test.
   - **Group 2:** Presumptive TB or MDR-TB patients admitted to the Infectious Disease/ TB ward.
   - **Group 3:** Patients with other diseases admitted to other clinical wards.
   - **Group 4:** Patients with cough ≥ 2 weeks and outpatient care. The doctor at the outpatient department should order chest X-ray and direct sputum smear microscopy for this group.

6. It is recommended for patients with respiratory symptoms to be examined in a separate exam room and undergo rapid sputum smear microscopy if applicable. Other hospitals can consider triaging patients with respiratory symptoms to an internal medicine exam room.

**Step 4A Patient classification and test request at the Infectious Disease/ TB ward**

7. The doctor classifies patients into the two main groups as below:
   - **Group 1:** Patients eligible for GeneXpert MTB/RIF test in line with the national guideline
     - Advise and refer patients of this group to a facility which conducts GeneXpert MTB/RIF test or
     - Order to collect and transport a specimen to a facility which conducts GeneXpert MTB/RIF test and order a direct sputum smear at the hospital
   - **Group 2:** Other presumptive TB patients. The doctor concurrently orders standard tests including direct sputum smear for the patients.

**Step 4B Patient classification and test request at other clinical wards**

8. Within 60 minutes after the patient is admitted to the clinical ward, a doctor at the ward should conduct physical exam, ask the patient about the presence of symptoms suggestive of TB (cough ≥ 2 weeks, afternoon fever, weight loss, night sweats) and TB treatment history, and review chest X-ray film if available. The goal is to early detect patients eligible for GeneXpert MTB/RIF or presumptive TB cases as per the national
guideline. The doctor should immediately transfer those patients to the Infectious Disease/TB ward.

**Step 5 Collect and transport specimen, conduct testing and notify of result**

9 When ordering a direct sputum smear microscopy for a patient admitted to clinical wards, a doctor in charge should assess if the patient can produce sputum spontaneously. If the patient is unable to produce sputum spontaneously, the doctor in charge should consider sputum induction, gastric washing, or bronchoalveolar lavage for testing (see Annex 2 - Instruction for induced sputum specimen).

10 The doctor should complete the TB test request form fully and accurately to avoid delays in sputum processing due to returning the form to fill in the missing information.

11 A nurse(s) should be assigned to:
   - Advise patients how and where to produce good sputum and indicate where sputum specimens should be submitted as per the hospital protocol.
   - Check the quality and quantity of specimen before transporting to the laboratory. The responsible nurse should strictly follow sputum collection instruction, as a poor quality sputum sample can affect diagnostic accuracy and lead to delayed treatment and consequently to the further spread of the disease.

12 When receiving the specimen, laboratory personnel should:
   - Check the quality and quantity of specimen and notify a carrier if the sample does not qualify for testing and if another specimen should be recollected and resubmitted.
   - Request the doctor in charge to provide missing information in the TB test request form before processing the sputum specimen.

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14 Patients awaiting diagnostic test should stay in a well-ventilated area.

**Step 6 Act upon receipt of direct sputum smear result**

15 AFB(-): As per the national guidelines on diagnosis of smear (-) pulmonary TB.

16 AFB(+) :
   - The patient is at the Infectious Disease/TB ward: Initiate pulmonary TB treatment for the patient within one day from the result notification.
   - The patient is at other clinical wards: Transfer the patient to the Infectious Disease/TB ward to initiate pulmonary TB treatment within 1-2 days from the result notification.
   - The Infectious Disease/TB ward collects and transports a quality specimen to a GeneXpert MTB/RIF site on every Tuesday and Thursday.

**Step 7 Act upon receipt of GeneXpert MTB/RIF result**

17 Receiving GeneXpert MTB/RIF result: The Infectious Disease/TB ward should actively follow up test results with the testing site if the results are not notified within three days.

18 Test result is MTB(+) and not rifampicin resistance: Continue TB treatment as per the national guidelines.

19 Test result is MTB(+) and rifampicin resistance: Refer the patient to a MDR-TB treatment site within 3-5 days from the result notification.
PART 3. MONITORING AND EVALUATION

Baseline evaluation at the beginning of FAST strategy implementation
Fill in “FAST-TB” and “FAST-MDR-TB” forms when starting implementation to monitor progress of indicators over time.

Appointment of staff responsible for data management
The hospital director should assign staff at the General Planning and Networking Direction Departments to take responsibility for data management and analysis, monitoring, reporting and providing feedback on time indicators and lists of cases.

Data used for monitoring, reporting and evaluation
The hospital should ensure data entry of cases in a complete, accurate and timely manner, check the data quality and conduct data cleaning in the two NTP databases named VITIMES and eTBmanager monthly.

Monitoring, feedback and discussion in monthly hospital review meeting
Time indicators in “FAST-TB” and “FAST-MDR-TB” forms and lists of cases recommended in Annex 4 need to report and review monthly in the hospital review meetings to monitor and improve service quality, timely implement solutions to shorten times from patient presentation to notification of diagnostic results, early initiation on treatment, and complete case registration.

Monthly monitoring, feedback and discussion between facilities at provincial and district level
The hospital directors and staff at Networking Direction Department review list of cases and time indicators with staff from district TB units in monthly review meetings, emails and telephones.

Reporting and feedback
The hospital submits reports using “FAST-TB” and “FAST-MDR-TB” forms to the NTP along with other reports by the specified deadline. The staff at higher level facility provides feedback on the report to the lower level facility in the same month of the report receipt.

Implementation supervision
The directors and staff of the NTP and PHTBLD conduct advocacy and communication, mobilize support and provide instructions for FAST strategy implementation at lower level facilities in monitoring visits of the NTP with the content recommended in Annex 5.
REPORT on indicators of times to pulmonary TB diagnosis and treatment

Reporting facility: ……………………………… Reporting prepared by: …………………
Province: ………………………………………… Phone: ………………………………………
Quarter: …………… Year: …………… Email: …………………………………………………

Table 1 – Time from patient presentation to diagnostic result date

<table>
<thead>
<tr>
<th>No.</th>
<th>Diagnostic test result</th>
<th>Number of days</th>
<th>Total</th>
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<td></td>
<td></td>
<td>≤ 1 day</td>
<td>2 days</td>
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<tr>
<td></td>
<td></td>
<td>No. of pts (a)</td>
<td>% (a/e)</td>
</tr>
<tr>
<td>1</td>
<td>GeneXpert MTB (+) as initial diagnostic test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Smear (+)* followed by GeneXpert MTB (+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Smear (+), GeneXpert MTB (-)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Smear (+), GeneXpert MTB/RIF error or undetermined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Smear (+), GeneXpert MTB/RIF not performed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Smear (-) followed by GeneXpert MTB/RIF (+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Time indicators will be calculated with the smear (+) date

Table 2 – Time from diagnostic result date to date of pulmonary TB treatment initiation

<table>
<thead>
<tr>
<th>No.</th>
<th>Diagnostic test result</th>
<th>Number of days</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>≤ 1 day</td>
<td>2 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No. of pts (a)</td>
<td>% (a/e)</td>
</tr>
<tr>
<td>1</td>
<td>GeneXpert MTB (+) as initial diagnostic test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Smear (+)* followed by GeneXpert MTB (+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Smear (+), GeneXpert MTB (-)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Smear (+), GeneXpert MTB/RIF error or undetermined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Smear (+), GeneXpert MTB/RIF not performed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Smear (-) followed by GeneXpert MTB/RIF (+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3 – Time from patient presentation to date of pulmonary TB treatment initiation

<table>
<thead>
<tr>
<th>No.</th>
<th>Diagnostic test result</th>
<th>Number of days</th>
<th>Total (e)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>≤ 2 day</td>
<td>3-5 days</td>
</tr>
<tr>
<td>1</td>
<td>GeneXpert MTB (+) as initial diagnostic test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Smear (+)* followed by GeneXpert MTB (+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Smear (+), GeneXpert MTB (-)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Smear (+), GeneXpert MTB/RIF error or undetermined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Smear (+), GeneXpert MTB/RIF not performed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Smear (-) followed by GeneXpert MTB/RIF (+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**How to calculate time indicators:**
- Number of days from patient presentation to diagnostic result date = Confirmatory diagnostic result date - date of patient presentation
- Number of days from diagnostic result date to date of treatment initiation = Date of treatment initiation – confirmatory diagnostic result date
- Number of days from patient presentation to date of treatment initiation = Date of treatment initiation - date of patient presentation
- Only calculate time indicators on patients with confirmatory diagnostic results at the reporting facility

**Receiving facility:**
- NTP
- URC (Reporting)
- Documentation: General Planning Dept., Networking Dept.

Day .......... month .......... year 20....

**Facility director**
(Sign, seal)
MINISTRY OF HEALTH
VIETNAM NATIONAL TB CONTROL PROGRAM

REPORT
on indicators of times to MDR-TB diagnosis and treatment

Reporting facility: ……………………………… Reporting prepared by: ……………………
Province: ………………………………………… Phone: ………………………………………
Quarter: …………… Year: …………… Email: …………………………………………

Table 1 – Time from patient presentation to MDR-TB diagnostic result date with
GeneXpert MTB/RIF

<table>
<thead>
<tr>
<th>No</th>
<th>Patient classification*</th>
<th>Number of days</th>
<th>Total (e)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>≤ 1 day</td>
<td>2 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No. of pts (a)</td>
<td>% (a/e)</td>
</tr>
<tr>
<td>1</td>
<td>Presumptive MDR-TB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Presumptive TB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Patient classification on the MTB test form requesting GeneXpert MTB/RIF

Table 2 – Time from MDR-TB diagnostic result date with GeneXpert MTB/RIF to
date of MDR-TB treatment initiation

<table>
<thead>
<tr>
<th>No</th>
<th>Patient classification*</th>
<th>Number of days</th>
<th>Total (e)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>≤ 1 day</td>
<td>2 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No. of pts (a)</td>
<td>% (a/e)</td>
</tr>
<tr>
<td>1</td>
<td>Presumptive MDR-TB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Presumptive TB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 – Time from patient presentation to date of pulmonary TB treatment initiation

<table>
<thead>
<tr>
<th>No</th>
<th>Patient classification*</th>
<th>Number of days</th>
<th>Total (e)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>≤ 2 day</td>
<td>3-5 days</td>
</tr>
<tr>
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<td></td>
<td>No. of pts (a)</td>
<td>% (a/e)</td>
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<tr>
<td>1</td>
<td>Presumptive MDR-TB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Presumptive TB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How to calculate time indicators:
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- Number of days from diagnostic result date to date of treatment initiation = Date of treatment initiation – confirmatory diagnostic result date
- Number of days from patient presentation to date of treatment initiation = Date of treatment initiation - date of patient presentation
- Only calculate time indicators on patients with confirmatory diagnostic results at the reporting facility

Receiving facility: Day ……… month ………… year 20…. Facility director
- NTP
- URC (Reporting)
- Documentation: General Planning Dept., Networking Dept.

Facility director (Sign, seal)
# ANNEX 1 – FAST STRATEGY IMPLEMENTATION
## READINESS SELF-ASSESSMENT FORM

**Date:** ............................................................................................... ........................................

**Hospital name:** ...................................................................................... ..................................

**Names of evaluators:** ................................................................................. ..............................

<table>
<thead>
<tr>
<th>NO.</th>
<th>CONTENT</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>PROCEDURE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Has the FAST strategy been included in the Infection control plan of the facility?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.</td>
<td>If yes, the infection control plan includes any following points at the outpatient department <em>(Circle the points applied):</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Cough or presumptive TB symptom screening as suggested in FAST algorithms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. TB testing as suggested in FAST algorithms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Conduct patient consultation, specimen collection, transportation and result notification</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. Enroll patients in treatment as suggested in FAST algorithms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e. Monitor time indicators applicable to the facility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.</td>
<td>If yes, the infection control plan includes any following points at clinical wards <em>(Circle the points applied):</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Cough or presumptive TB symptom screening as suggested in FAST algorithms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. TB testing as suggested in FAST algorithms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Conduct patient consultation, specimen collection, transportation and result notification</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. Enroll patients in treatment as suggested in FAST algorithms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e. Monitor time indicators applicable to the facility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Has the hospital developed an agreed time schedule for submitting sputum samples, providing feedback on specimen quality and quantity, and notifying of results among the laboratory, the outpatient department and the clinical wards?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Have the outpatient department and the clinical wards in the hospital developed an agreed time schedule for collecting specimens for outpatients and inpatients during and outside of the normal working hours; classifying patients who can produce sputum spontaneously or need induction; or collecting gastric washing, or bronchoalveolar lavage; taking specific actions upon receiving the test results?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II.</td>
<td>HUMAN RESOURCE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Has the hospital staff been trained on FAST implementation?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Number of health care workers who have been trained:*

*Circle positions or working places of the hospital staff trained:*

- a. Directors
- b. Outpatient department
- c. Clinical wards
- d. Para-clinical department
- e. General Planning department
- f. Networking Direction department
- g. Staff in charge of the hospital software
- h. Pharmacy
<table>
<thead>
<tr>
<th>NO.</th>
<th>CONTENT</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Is a health care worker assigned to conduct TB screening of patients with cough and presumptive DR-TB patients at a reception area?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Name and position of the responsible staff:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Is there a staff assigned to oversee FAST strategy implementation at the facility?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Name and position of the responsible staff:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Is there a staff assigned to monitor, analyze and report FAST indicators at the facility?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Name and position of the responsible staff:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III.</td>
<td>LAB DIAGNOSTIC AND IMAGING TEST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Is there a functional TB microscopy at this facility?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>If the answer to the above question is “Yes”, continue with questions 8.1 to 8.5</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>If the answer to the above question is “No”, skip questions from 8.1 to 8.5 and continue with questions 8.6 and 8.7</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.1.</td>
<td>Frequency of TB microscopy utility (circle all applied options):</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. All working days from Monday to Friday</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. A number of specific days every week</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specify (e.g.: Every Wednesday):</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Weekend</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. Holidays</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.2.</td>
<td>How to submit specimen (Choose all applied options):</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Outpatient:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Health care worker from test requesting ward submits specimen</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Number of submissions/ day:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Submission times:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ The patient/ family member directly submits specimen</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Inpatient:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Health care worker from test requesting ward submits specimen</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Number of submissions/ day:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Submission times:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ The patient/ family member directly submits specimen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.3.</td>
<td>How long does it take to notify of the result (specify unit e.g. hours, days):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.4.</td>
<td>How to notify of the result (circle all applied options):</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Outpatient:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Deliver “Test result form” between health care workers:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Number of deliveries/ day:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Time of deliveries:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Delivery of the forms at the test requesting wards</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Delivery of the forms at the laboratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ The patient/ family member directly receives result at the laboratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Result notification on the hospital software</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Result notification over phone</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Others, specify:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO.</td>
<td>CONTENT</td>
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<td></td>
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<tr>
<td>20</td>
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<tr>
<td>264</td>
<td>Yes</td>
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</tr>
<tr>
<td>346</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. Inpatient:
  + Deliver “Test result form” between health care workers:
    o Number of deliveries/ day:
    o Time of deliveries:
    o Delivery of the forms at the test requesting wards
    o Delivery of the forms at the laboratory
  + The patient/ family member directly receives result at the laboratory
  + Result notification on the hospital software
  + Result notification over phone
  + Others, specify:

8.5. The average number of microscopy specimens in one month:

8.6. If there is no TB microscopy functional at the facility, please indicate name and address of the nearest TB laboratory which a specimen can be sent to or the patient can be referred to for testing:

8.7. The average number of days for the laboratory to notify of the result of received specimens:

9. Is there a functional GeneXpert MTB/RIF machine at this facility?

*If the answer to the above question is “Yes”, continue with questions 9.1 to 9.7*

*If the answer to the above question is “No”, skip questions from 9.1 to 9.7 and continue with questions 9.8 and 9.9*

9.1. Operating frequency of GeneXpert MTB/RIF machine (*circle all applied options)*:
  a. All working days from Monday to Friday
  b. A number of specific days every week
     Specify (*e.g.: Every Wednesday*):
  c. Weekend
  d. Holidays

9.2. Circle all the subject tested with GeneXpert MTB/RIF at the facility:
  a. Presumptive DR-TB patients
  b. Presumptive TB among HIV positive people
  c. Children with presumptive TB
  d. Children with presumptive TB meningitis
  e. Others, specify:

9.3. Circle types of specimens tested with GeneXpert MTB/RIF at the facility:
  a. Sputum
  b. Bronchoalveolar lavage
  c. Gastric washing
  d. Cerebral fluid
  e. Others, specify:

9.4. How to submit specimen (*Choose all applied options)*:
  a. Outpatient:
     + Health care worker from test requesting ward submits specimen
       o Number of submissions/ day:
       o Submission times:
     + The patient/ family member directly submits specimen
<table>
<thead>
<tr>
<th>NO.</th>
<th>CONTENT</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Inpatient:</td>
<td>+ Health care worker from test requesting ward submits specimen</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Number of submissions/ day:</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9.5.</td>
<td>How long does it take to notify of the result (specify unit e.g. hours, days):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.6.</td>
<td>How to notify of the result (circle all applied options):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Outpatient:</td>
<td>+ Deliver “Test result form” between health care workers:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Number of deliveries/ day:</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>o Time of deliveries:</td>
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<td>+ The patient/ family member directly receives result at the laboratory</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>+ Result notification on the hospital software</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Result notification over phone</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Others, specify:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Inpatient:</td>
<td>+ Deliver “Test result form” between health care workers:</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td>o Time of deliveries:</td>
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<td></td>
<td>o Delivery of the forms at the test requesting wards</td>
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<tr>
<td></td>
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<td>+ Result notification on the hospital software</td>
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<tr>
<td></td>
<td>+ Result notification over phone</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>+ Others, specify:</td>
<td></td>
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<tr>
<td>9.7.</td>
<td>The average number of GeneXpert MTB/RIF tests in one month:</td>
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<td>9.8.</td>
<td>If GeneXpert MTB/RIF test is not functional at the facility, please indicate name and address of the nearest laboratory which a specimen can be sent to or a patient can be referred to for testing:</td>
<td></td>
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<tr>
<td>9.9.</td>
<td>The average number of days for the laboratory to notify of the result of received specimens:</td>
<td></td>
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<tr>
<td>10.</td>
<td>Is there a functional chest X-ray machine at this facility?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.1.</td>
<td>If the answer to the above question is “Yes”, operation frequency of chest X-ray machine (circle all applied options):</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>a. All working days from Monday to Friday</td>
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<tr>
<td></td>
<td>b. A number of specific days every week Specify (e.g.: Every Wednesday):</td>
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<td></td>
<td>c. Weekend</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>d. Holidays</td>
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<tr>
<td>10.2.</td>
<td>How long does it take from submission of the X-ray request form to delivery of chest X-ray film (specify unit e.g. minutes, hours, days):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO.</td>
<td>CONTENT</td>
<td></td>
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<td>-----</td>
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</tbody>
</table>
| 10.3. | How to notify of the result *(circle all applied options)*:  
   a. Outpatient:  
   + Deliver “Test result form” between health care workers:  
     o Number of deliveries/ day:  
     o Time of deliveries:  
     o Delivery of the forms at the test requesting wards  
     o Delivery of the forms at the laboratory  
   + The patient/ family member directly receives result at the laboratory  
   + Result notification on the hospital software  
   + Result notification over phone  
   + Others, specify:  
   b. Inpatient:  
   + Deliver “Test result form” between health care workers:  
     o Number of deliveries/ day:  
     o Time of deliveries:  
     o Delivery of the forms at the test requesting wards  
     o Delivery of the forms at the laboratory  
   + The patient/ family member directly receives result at the laboratory  
   + Result notification on the hospital software  
   + Result notification over phone  
   + Others, specify: |

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

10.4. If the answer to the above question is “No”, please indicate name and address of a health care facility which the patient can be referred to for chest X-ray:  

IV. INFRASTRUCTURE  

11. Is there a well-ventilated area/ward available to separate the patient with cough?  

12. Is there a well-ventilated area/ward available to separate the patient with presumptive DR-TB while waiting for diagnosis and treatment initiation?  

V. DIAGNOSIS PRACTICE  

13. Describe the procedure to detect, diagnose and initiate treatment for presumptive TB and MDR-TB patients *(e.g.: order diagnostic test, ward transfer, hospital admission …)*  
   + Outpatient department:  
   + Pulmonary TB or Infectious Disease ward:  
   + Other clinical wards:  

14. How is the result notified to a doctor who orders the test? *(circle all applied options)*:  
   a. A nurse of the clinical ward notifies the doctor  
   b. The doctor has to look for the test result form in the receiving box of the ward by himself  
   c. The doctor actively looks for and reviews the test result attached to the patient medical record  
   d. The doctor actively looks for and reviews the test result in the hospital software  
   e. Others:
<table>
<thead>
<tr>
<th>NO.</th>
<th>CONTENT</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.</td>
<td>Steps and time required for the doctor in charge to make a diagnosis conclusion of bacteriological-confirmed pulmonary TB to initiate treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Steps and time required for the doctor in charge and the hospital treatment review committee to approve MDR-TB treatment</td>
<td></td>
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</tr>
<tr>
<td>VI.</td>
<td>ACCESS TO TREATMENT SERVICES</td>
<td></td>
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<tr>
<td>17.</td>
<td>If a patient is diagnosed with bacteriological-confirmed pulmonary TB, is the patient treated at the facility?</td>
<td></td>
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<tr>
<td>17.1.</td>
<td>Please indicate any reasons which may prevent TB treatment initiation right after diagnosis:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.2.</td>
<td>If TB treatment is unable to initiate at this facility, please indicate name and address of the nearest facility which the patient can be referred to for treatment:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.3.</td>
<td>The average number of days from the diagnostic test result date to treatment initiation of bacteriological-confirmed pulmonary TB:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>If a patient is diagnosed with MDR-TB, is the patient treated at the facility?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.1.</td>
<td>Please indicate any reasons which may prevent MDR-TB treatment initiation right after diagnosis:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.2.</td>
<td>If MDR-TB treatment is unable to initiate at this facility, please indicate name and address of the nearest facility which the patient can be referred to for treatment:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.3.</td>
<td>The average number of days from the diagnostic test result date to MDR-TB treatment initiation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VII.</td>
<td>RECORDING, MONITORING AND REPORTING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Has the facility entered case based data and aggregate reports into VITIMES?</td>
<td></td>
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<tr>
<td></td>
<td>Name and position of the responsible staff:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Has the facility entered case based data and aggregate reports into eTBmanager?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Name and position of the responsible staff:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Have FAST indicators been reviewed and solutions to improve indicators been discussed in review meetings of the facility?</td>
<td></td>
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<tr>
<td></td>
<td>Circle the frequency of review meeting which include review of FAST indicators:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Every week</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Every month</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Every quarter</td>
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</tbody>
</table>
ANNEX 2 – INSTRUCTION FOR INDUCED SPUTUM SPECIMEN

1. Rationale for sputum induction:

About 80% of pulmonary TB patients have cough with sputum symptom. Many patients can produce sputum but the quantity and quality of sputum could be inadequate or they are unable to expectorate a sputum sample. Inability to produce sputum may be related to a patient’s conditions (e.g., asthenia, dehydration, weakness). There are, however, several patients without those above mentioned conditions who are still unable to expectorate sputum. Several methods have been used to increase possibility of bacteria detection such as gastric washing, bronchoalveolar lavage, or patting on the patient’s back to collect sputum specimen. The method of sputum induction with hypertonic saline nebulization has been studied and showed effectiveness in diagnosis and cost.

Indication and contraindication

Indication: Sputum induction is used for patients who are unable to spontaneously expectorate quality sputum for testing.

Contraindications and precautions:

- Acute respiratory distress
- Unstable cardiovascular status, (arrhythmias, angina)
- Hypoxia (SaO2 less than 90% on room air)
- Lung function impairment (FEV1 less than 1.0 Litre)
- Pneumothorax
- Fractured ribs or other chest trauma
- Patients who are unable to follow instructions

As hypertonic saline causes bronchoconstriction, the procedure should only be performed after pre-medication with salbutamol and under medical supervision in patients with asthma, suspected asthma, or severely impaired lung function (FEV1< 1 Liter).

2. Assessment of patients’ conditions relating to difficult coughing (unable to produce quality sputum spontaneously)

- Age
- Dehydration conditions: proper hydration, mild dehydration, moderate dehydration.
- Asthenic condition: normal, mild, serious
- Serious medical condition
- Dry cough
- No coughing
- Cough out blood
- Difficult breathing
- Chest pain
- Obesity

3. Patient classification for sputum induction (make classification when a health care worker first encounters the patient)

Patients in critical conditions who are unable to expectorate sputum could be assessed through the following alternative methods:

+ Through stomach sonde: Test gastric washing
+ Suction sputum (patients in critical conditions use breathing machines)
Patients have difficulty to produce sputum, consider conducting sputum induction with:
+ Nebulization
+ Combining nebulization and patting on the patient’s back (more likely to obtain a better sputum specimen)

4. Equipment used for nebulization and execution steps

Equipments used for nebulization
Nebulizer machine
5% hypertonic saline will be prepared as following: A tube of 5-mL 10% sodium chloride is mixed with 5-mL distilled water. 5-mL of the resulting solution will be used for nebulization.
A nurse will prepare a nebulizer and 5% hypertonic saline.
The use of a nebulizer is explained to the patient.

Preparation for sputum induction procedure:
Assess the patient’s conditions prior to execution of the procedure

The following points should be explained to the patient prior to the procedure:
- Purpose of the procedure
- Need for deep inhalation followed by huffing and coughing
- Patient should rinse their mouth and gargle with water (to prevent specimen contamination)
- Patient should sit upright, place the mouthpiece of a nebulizer in the patient’s mouth and turn the nebulizer on
- Patient should be encouraged to produce a deep cough sputum specimen
- Explain the procedure and salty taste of the hypertonic saline, possible side-effects to the patient (e.g., coughing, dry mouth, chest tightness, nausea and excess salivation)

Induction steps:
The patient is nebulized with 5-mL 5% hypertonic saline within 10-15 minutes until the patient expectorate sputum.
During the nebulization, if the patient has difficult breathing, is coughing out blood, or has distress, terminate the procedure.
When the patient wants to expectorate, stop nebulization and start patting on the patient’s back to obtain adequate quality and quantity of sputum specimen. Sputum testing will be conducted right after collecting the specimen.
The specimen meets the requirements when sputum comes from lower respiratory tract (not saliva) and the quantity is at least 2-mL.
5. Sputum induction room

A room with negative pressure should be used for sputum induction to prevent infectious particles from escaping to other areas of the facility. Air in rooms used for sputum induction should not be re-circulated unless it is via a well-maintained HEPA filtration unit. The air should be vented externally and external vents should not be in proximity to other patient areas (i.e. placement of vents needs to be done in consideration of the impact on the hospital population).

The procedure produces coughing so it is likely that infectious droplets, if present, will be expelled into the room air. Strict airborne respiratory precautions should be observed whenever sputum induction is performed.
ANNEX 3 – SAMPLE TIME SCHEDULE FOR REQUESTING SPECIMENS AND NOTIFYING OF TEST RESULTS

Algorithm 3A – Time schedule for requesting and receiving specimens and notifying of direct sputum smear results

**SPECIMEN QUALITY ASSURANCE**

Patient admitted during working hour

Patient admitted outside of normal working hour

Between 6:00-15:00

Between 15:00-6:00

1st specimen right after admission

1st specimen on the next morning

2nd specimen two hours later

Before 10 a.m.: Notify of a result before 14:00PM in the same day

After 10 a.m.: Notify of a result before 9:00AM the next morning

Algorithm 3B – Time schedule for receiving specimens and notifying of GeneXpert MTB/RIF test results

For patients at high risk of DR-TB, send specimen for GeneXpert MTB/RIF testing

Sputum collection

If sputum not produced spontaneously, consider induction

Notify of the results within the shortest time interval, ideally within 2.5 hours

**Receive specimen**

8:30

10:30

14:00

**Notify of result**

11:00

14:00

16:30

Immediately notify of results with MTB or MTB with rifampicin

Organize case review meeting and make decision on putting patient on treatment before transferring to an appropriate ward
## ANNEX 4 – LISTS OF CASES RECOMMENDED FOR MONTHLY MONITORING AND DISCUSSION

<table>
<thead>
<tr>
<th>No.</th>
<th>List of cases</th>
<th>Discuss at hospital review meetings (Frequency, objective)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.</td>
<td><strong>Pulmonary TB cases diagnosed with positive smear or GeneXpert MTB/RIF</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Lists of cases with missing data, duplicate records and typo errors</td>
<td>Monthly To clean data</td>
</tr>
<tr>
<td>2.</td>
<td>List of cases with number of days from notification of diagnostic result to treatment initiation &gt; 5 days</td>
<td>Monthly To review the cases and find solutions to shorten times from the patient presentation to treatment initiation and from notification of diagnostic result to treatment initiation</td>
</tr>
<tr>
<td>3.</td>
<td>List of cases with number of days from patient presentation to treatment initiation &gt; 10 days</td>
<td>Monthly To review the cases and find solutions to shorten times from the patient presentation to treatment initiation and from notification of diagnostic result to treatment initiation</td>
</tr>
<tr>
<td>4.</td>
<td>List of cases with number of days from patient presentation to notification of diagnostic result &gt; 10 days</td>
<td>Monthly To review the cases and find solutions to improve patient classification, specimen quality, shorten times from specimen collection and transport, and result follow-up</td>
</tr>
<tr>
<td>5.</td>
<td>List of cases who have not yet registered for treatment and reasons for not registration</td>
<td>Monthly To enhance early treatment initiation and complete case registration</td>
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<tr>
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<tr>
<td>II.</td>
<td><strong>Drug-resistant TB cases diagnosed with GeneXpert MTB/RIF</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Lists of cases with missing data, duplicate records and typo errors</td>
<td>Monthly To clean data</td>
</tr>
<tr>
<td>2.</td>
<td>List of cases with number of days from GeneXpert MTB positive and rifampicin resistance to treatment initiation &gt; 5 days</td>
<td>Monthly To review the cases and find solutions to shorten times from the patient presentation to treatment initiation and from notification of GeneXpert MTB positive and rifampicin resistance to treatment initiation</td>
</tr>
<tr>
<td>3.</td>
<td>List of cases with number of days from patient presentation to treatment initiation &gt; 10 days</td>
<td>Monthly To review the cases and find solutions to improve patient classification, specimen quality, shorten times from specimen collection and transport, and result follow-up</td>
</tr>
<tr>
<td>4.</td>
<td>List of cases with number of days from patient presentation to notification of GeneXpert MTB positive and rifampicin resistance &gt; 10 days</td>
<td>Monthly To review the cases and find solutions to improve patient classification, specimen quality, shorten times from specimen collection and transport, and result follow-up</td>
</tr>
<tr>
<td>5.</td>
<td>List of cases who have not yet registered for treatment</td>
<td>Monthly To enhance early treatment initiation and complete case registration</td>
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</table>
ANNEX 5 – MONITORING AND TECHNICAL ASSISTANCE FOR
FAST STRATEGY IMPLEMENTATION

- Rationales for development of FAST strategy include:
  - Prevalence of latent TB infection and incidence of TB disease in healthcare workers in low and middle income countries are relatively high.
  - The main transmission source at the hospital is a TB patient who is underdiagnosed or not on effective treatment.
  - Scientific evidence indicates that effective treatment regimen would rapidly reduce the patient's infectiousness prior to negative results of direct smear and culture.

- The objective of FAST strategy is to shorten the time from the patient presentation to TB diagnosis and the initiation of effective TB treatment to reduce TB transmission.

- Directors of the healthcare facilities provide direct instructions on FAST strategy implementation based on reviewing lists of cases and time indicators in monthly review meetings of the hospitals and include those indicators in criteria for evaluation of the hospital technical activities.

- Discuss and explain algorithms and descriptions for steps of FAST strategy implementation.

- Check and explain process indicators to be monitored and reported routinely.

- Discuss necessity and benefits of complete and accurate data entry in a timely manner and routinely monitoring data quality and conducting data cleaning in VITIMES and eTBmanager.

- Discuss benefits and effectiveness of monitoring and reviewing lists of cases recommended in Annex 4.

- Recommend healthcare facilities to use the existing service delivery structure, health personnel and resources available to implement FAST strategy in compliance with national guidelines.

- Work with the health care facility to conduct FAST strategy implementation readiness self-assessment, visit departments/wards, review and discuss current practices, internal procedures and protocols at wards and at the facility, indicators and lists of cases to agree solutions to improve performance and service quality and recommend application of good practices.

- Recommend combining with other simple and effective administrative, environment and personal protection infection control measures.

- Supervision staff from the NTP and PHTBLD evaluates FAST strategy implementation at healthcare facilities at the lower levels, using the NTP activity monitoring visit form.

- Monitoring and Evaluation team and Information Technology and Data Management team of the NTP will provide technical assistance to FAST strategy implementation and evaluation of time indicators as requested by healthcare facilities at the lower levels.
ANNEX 6 – RELEVANT GUIDELINES


2. National Tuberculosis Control Programme of Viet Nam. Standard Operating Procedure for diagnosis and treatment of drug-resistant TB patients. 2017


5. National Tuberculosis Control Programme of Viet Nam. Standard Operating Procedure for management of drug-resistant TB patients at National Lung Hospital, Pham Ngoc Thach Hospital and non-NTP facilities (SOP No: PMDT 09). 2016
USAID TB CARE II Project

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