



ESP CASE DETECTION ALGORITHM

Tuberculosis

Document Version 1.2

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Modification History

Version	Date	Modification	By
1.2	10/11/2017	Added ESP Logo and MDPH branding	DPM
1.1	7/6/2017	Transferred to new algorithm template. Note: This algorithm is currently under review and will be revised to encompass TB infection. ICD-10 codes will be added.	DPM
1.0	8/11/2008	Initial draft	



1. *Overview*

The purpose of this document is to describe the criteria used to identify Tuberculosis in MDPHnet data.

2. *Criteria used to identify cases using ESP data*

I. TIME WINDOW

Applies only to patients who currently do not have and have never previously been flagged for the condition.

II. CASE CRITERIA

Any one of the following:

- Prescription for pyrazinamide or (PZA not CAPZA*)
 - Screen drug generic name for pyrazinamide since some medications are co-formulations that include multiple medications in a single tablet, including pyrazinamide:
 - e.g. RIFATER TABLET PO (RIFAMPIN/INH/PYRAZINAMIDE)
- Order for AFB smear or culture followed by ICD9 code for TB within 60 days
- Order for two or more anti-TB medications followed by an ICD9 code for TB within 60 days

3. *Specifications for reporting diseases/conditions to the Massachusetts Department of Public Health (MDPH)*

I. DATA TO INCLUDE IN REPORTS TO MDPH

Demographic

Name	Last, first, middle
Date of birth	yyyy/mm/dd
Address	Line 1, line 2, city, state, zip, country
Contact Phone	xxx-xxx-xxxx
Sex	Male / Female / Transgender / Unknown
Home Language	
Occupation/Employment	
Race	American Indian or Alaskan Native / Native Hawaiian or Pacific Islander / Asian / White / Black or African American / Other / Unknown ** These are per the TB report form **
Ethnicity	Hispanic / Non-Hispanic / Unknown
Medical record number	
PCP	Name, office address, phone number, email



Facility Information

Facility name	
Facility address	Line 1, line 2, city, state, zip
Facility contact person	
Contact person email	
Contact person phone	XXX-XXX-XXXX
Facility phone	XXX-XXX-XXXX

Encounter data

Test ordering clinician	Name, office address, phone number, email
Treating clinician	Name, office address, phone number, email

Clinical Information

Symptoms	ICD9 code	Report
Chest Pain	786.50 - 786.59	
Fever	780.6A or temperature >100.4	Measured temperature OR fever
Weight Loss	783.2 or 783.21	
Cough	786.2	

Test Results

Test	Result	Further Information
PPD (from anytime in patient's record)	ICD-9 Code 795.5	
Chest X-ray	Full text from chest x-ray closest to time of meeting case definition (not greater than 30 days)	We can report exact ICD-9 (will give indication as to cavitary disease)

Further Clinical Information

1. Site of Disease -- Report all TB relevant ICD9 codes generated on the patient (010.00-018.99)
2. Type of specimen collected, Date collected -- Report full text from all pathology within 30 days of ICD-9 coding
3. Smear result/Culture result -- Report results from the following lab/microbiology tests completed within 60 days of meeting disease definition:

Component Name	CPT	Comp	LOINC	LOINC Name
AFB CULTURE	87116	931	11475-1	Microorganism identified : PrId : Pt : xxx : Nom : Culture
AFB MICROSCOPIC	87116	4694	11545-1	Microscopic observation : PrId : Pt : xxx : Nom : Acid fast stain
AFB STAIN	84460	3838	11545-1	Microscopic observation : PrId : Pt : xxx : Nom : Acid fast stain
AFB STAIN	87116	3838	11545-1	Microscopic observation : PrId : Pt : xxx : Nom : Acid fast stain
AFB STAIN	87206	3761	11545-1	Microscopic observation : PrId : Pt : xxx : Nom : Acid fast stain
CULTURE, AFB	87116	3021	11475-1	Microorganism identified : PrId : Pt : xxx : Nom : Culture



SMEAR, AFB	87116	2785	11545-1	Microscopic observation : PrId : Pt : xxx : Nom : Acid fast stain
MYCOBACTERIA, PRELIM-1	84460	3840	17296-5	Mycobacterium tuberculosis complex DNA : ACnc : Pt : xxx : Ord : Probe
MYCOBACTERIA, PRELIM-1	87116	3840	17269-5	Mycobacterium tuberculosis complex DNA : ACnc : Pt : xxx : Ord : Probe
MYCOBACTERIA, PRELIM-2	84460	3836	17296-5	Mycobacterium tuberculosis complex DNA : ACnc : Pt : xxx : Ord : Probe
MYCOBACTERIA, PRELIM-2	87116	3836	17296-5	Mycobacterium tuberculosis complex DNA : ACnc : Pt : xxx : Ord : Probe
M. TUBERCULOSIS PCR	87556	4598	17296-5	Mycobacterium tuberculosis complex DNA : ACnc : Pt : xxx : Ord : Probe

4. Medications begun -- List first prescription date, dose, and frequency for the following:

Isoniazid or (INH not INHAL* not INHIB*)
Ethambutol
Rifampin
Rifabutin
Rifapentine
Pyrazinamide or PZA
Streptomycin
Para-aminosalicylic acid
Kanamycin
Capreomycin
Cycloserine
Ethionamide
Levofloxacin
Ciprofloxacin
Moxifloxacin
Gatifloxacin
Azithromycin

4. Codes, laboratory tests, and medications used to identify criteria listed in Sections 2 and 3.

I. DIAGNOSIS CODES USED TO IDENTIFY TUBERCULOSIS

Tuberculosis	ICD-9	010.00-018.99
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II. MEDICATIONS

Medication Name
Isoniazid or (INH not INHAL* not INHIB*)
Ethambutol
Rifampin
Rifabutin



Rifapentine
Pyrazinamide or (PZA not CAPZA*)
Streptomycin
Para-aminosalicylic acid
Kanamycin
Capreomycin
Cycloserine
Ethionamide
Moxifloxacin

Note that some medications are co-formulations of multiple TB meds, hence a single prescription for one of these meds is adequate to fulfill this criteria. As such, must screen med generic name for more than one medication. Examples:

- RIFATER TABLET PO (RIFAMPIN/INH/PYRAZINAMIDE)
- RIFAMATE CAPSULE 300-150MG PO (RIFAMPIN/ISONIAZID)
- ISONARIF CAPSULE 300-150MG PO (RIFAMPIN/ISONIAZID)

III. LAB TESTS

Component Name	CPT	Comp	LOINC	LOINC Name
AFB CULTURE	87116	931	11475-1	Microorganism identified : PrId : Pt : xxx : Nom : Culture
AFB MICROSCOPIC	87116	4694	11545-1	Microscopic observation : PrId : Pt : xxx : Nom : Acid fast stain
AFB STAIN	84460	3838	11545-1	Microscopic observation : PrId : Pt : xxx : Nom : Acid fast stain
AFB STAIN	87116	3838	11545-1	Microscopic observation : PrId : Pt : xxx : Nom : Acid fast stain
AFB STAIN	87206	3761	11545-1	Microscopic observation : PrId : Pt : xxx : Nom : Acid fast stain
CULTURE, AFB	87116	3021	11475-1	Microorganism identified : PrId : Pt : xxx : Nom : Culture
SMEAR, AFB	87116	2785	11545-1	Microscopic observation : PrId : Pt : xxx : Nom : Acid fast stain
MYCOBACTERIA, PRELIM-1	84460	3840	17296-5	Mycobacterium tuberculosis complex DNA : ACnc : Pt : xxx : Ord : Probe
MYCOBACTERIA, PRELIM-1	87116	3840	17269-5	Mycobacterium tuberculosis complex DNA : ACnc : Pt : xxx : Ord : Probe
MYCOBACTERIA, PRELIM-2	84460	3836	17296-5	Mycobacterium tuberculosis complex DNA : ACnc : Pt : xxx : Ord : Probe
MYCOBACTERIA, PRELIM-2	87116	3836	17296-5	Mycobacterium tuberculosis complex DNA : ACnc : Pt : xxx : Ord : Probe
M. TUBERCULOSIS PCR	87556	4598	17296-5	Mycobacterium tuberculosis complex DNA : ACnc : Pt : xxx : Ord : Probe

IV. CODE MAINTENANCE STRATEGY



Continuously screen all incoming Lx_Component_Name fields for the text strings: “MYCO” or “MYCOBACTERIA” or “TUBERCULOSIS” or “TB” or “AFB”. If the CPT and component combination does not appear in the following table then alert case managers (M Klompas, X Hou, R Lazarus).

CPT	Component	Component Name	Include?
80299	4846	MYCOPHENOLIC ACID	0
84460	3836	MYCOBACTERIA PRELIM-2	1
84460	3837	MYCOBACTERIUM CULT MISC	1
84460	3839	MYCOBACTERIUM CONC. MISC	1
84460	3840	MYCOBACTERIA PRELIM-1	1
86635	917	COCCIDIOMYCOSIS AB	0
86738	4053	MYCOPLASMA PNEUMONIAE ANTIBODY, IGG, SER	0
86738	682	MYCOPLASMA PNEUMONIAE AB, IGM	0
87109	4326	MYCOPLASMA HOMINIS CULTURE	0
87116	3836	MYCOBACTERIA PRELIM-2	1
87116	3837	MYCOBACTERIUM CULT MISC	1
87116	3839	MYCOBACTERIUM CONC. MISC	1
87116	3840	MYCOBACTERIA PRELIM-1	1
87556	4598	M.TUBERCULOSIS,PCR	1
86318	2907	H. PYLORI ATB	0
84460	3838	AFB STAIN	1
87116	2785	SMEAR, AFB	1
87116	3021	CULTURE, AFB	1
87116	3838	AFB STAIN	1
87116	4694	AFB MICROSCOPIC	1
87116	931	AFB CULTURE	1
87206	3761	AFB STAIN	1