Three situations where you may encounter a child with TB

General pediatric care of healthy children

Child Contacts of Adults with active tuberculosis

Children with signs, symptoms or radiographic findings suggestive of TB disease
Pediatric TB Pearls

Case 1

3 month old female
Identified as part of contact investigation

Lives with parents & maternal uncle (source case)

Source case:
>2 months fevers, cough, weight loss,
pulmonary tuberculosis, cavitary lesion
sputum smear 4+ AFB, culture +MTb
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Case 1

Parents report infant has been well, no health concerns

PE: afebrile, WNWD, CTA, No LAD, unremarkable

CXR: WNL
Pediatric TB Pearls

Case 1

Imp: Infant household contact to infectious pulmonary TB case

Plan: 1) TST (infant and parents)
   2) INH 70 mg daily (10mg/kg/day)
      Window Prophylaxis
Pediatric TB Pearls

Case 1

RTC 48 hours

TST 12x13 mm (both parents also TST+)

Nurse who read the TST noted the infant was warm: Rectal Temp 39.5°C

Parents report infant has had intermittent fevers for >1 week
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Case 1

Imp: Disseminated TB Disease

Plan: Initiate 4 TB medications
- Sepsis work/up to rule out additional source of fevers (negative)

Parents sent for CXR prior to hospitalization of infant
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Case 1

Infant’s fevers resolved, gained 2 kg in first month

Repeat CXR: adenopathy with RUL infiltrate (collapse-consolidation)
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Case 1

Source case TB isolate fully sensitive to first line drugs (I/R/Z/E)

Infant’s ethambutol was stopped

Patient completed 6 month regimen w/o incident
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Cases 2&3

5 year old Haitian girl in US <2 weeks
Family lost home in earthquake

TST  16x16mm performed as part of targeted screening prior to starting school

Referred for CXR
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**Cases 2&3**

Mother reports child has had a cough since earthquake, child is otherwise well

No known exposure to active TB case

PE: afebrile, WDWN 5 yr old

CTA, no adenopathy
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Cases 2&3

Imp: Primary TB in 5 yr old

Plan: 1) hospitalize for gastric aspirates (parents refused)
   2) start treatment: INH, Rifampin, Ethambutol, Pyrazinamide
Screening of other household members:

2 year old sister, born in US, has lived in Haiti in same household since age 3 months

CXR: WNL

PE: afebrile, WNWD, unremarkable exam
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Cases 2&3

Imp: ? TB exposure - infant

Plan: TST now

INH 150mg daily (10 mg/kg/day)
window prophylaxis
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Cases 2&3

RTC 48 hours: TST 12mm x 12mm

Imp: Tuberculosis Infection (LTBI)

Plan: Continue INH treatment for 9 months
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Cases 2&3

Mother   TST+ (by hx), CXR neg
Father   TST 24 x 27mm, CXR neg

Both started on INH for LTBI treatment
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Three Major Stages of TB

Exposure
Infection
Disease
Pediatric TB Pearls

Exposure

Contact to an infected case

TST negative, CXR negative, asymptomatic

Don’t know:

Whether the child inhaled droplet nuclei infected with MTB
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Exposure

Do Know:

<5 yrs old likely has intimate exposure with infectious case in household

It can take up to 3 months to develop delayed hypersensitivity response to TST

Can develop disease before response to TST impaired cellular immunity poor TH1 response to MTb
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Exposure - Window Prophylaxis

Child < 5 years exposed to infectious TB case:
- CXR, PE, before TST
- If no TB disease start INH independent of TST

8-10 weeks after exposure ended - repeat TST
- If TST+ full 9 months INH
- If TST negative may stop INH

Child >5 years individualize use of window prophylaxis
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Three Major Stages of TB

Exposure

Infection

Disease
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Infection

Individual inhales droplet nuclei containing MTb which becomes established intercellularly in lung and lymphatics.

TST Positive
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**Infection**

**Do know:** All infected children should be treated

High risk of progression to disease

recent conversion by definition!

First two years of life 40-50% chance of developing disease once infected

Children tolerate INH well

Reservoir of future disease
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Infection

Don't know:

In many cases who the source case is

TB infection in child should prompt screening of household members to identify source case and/or other infected individuals.
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Three Stages of TB

Exposure

Infection

Disease
Pediatric TB Pearls

Disease

Signs or symptoms or radiographic manifestations caused by MTb apparent

High index of suspicion:
  Can be radiographically apparent but clinically silent

Young children are not infectious
  can’t produce sputum/lack tussive force

Paucibacillary disease – sputum smear neg

Treat according to source case susceptibility
Three situations where you might encounter a child with TB

General care of healthy children
Targeted Testing
Child Contacts of Adults with active TB
Window Prophylaxis
Children with signs, symptoms or radiographic findings suggestive of TB

793-2433 RISE Nurse Line
WHO TO REFER TO RISE TB CLINIC
1) All patients with newly diagnosed and suspect tuberculosis disease
2) Household contacts to active tuberculosis patients
3) Individuals with Class B (B related) immigration status
4) Refugees and asylum seekers
5) Evaluation for Immigration
6) Household members of patients treated at RISE clinic
7) LTBI in pregnant women
8) High risk LTBI patients: substance abuse, steroid use, HIV infected
   viral hepatitis, immunocompromised, TNF α antagonist, diabetes
   conversions in health care workers
9) LTBI children under 12 years old
10) LTBI in patients without a PCP or without health insurance
11) LTBI in patients referred by a federally qualified health center that
    either have or do not have insurance
12) Patients with LTBI who have complicated management issues; i.e.
    adherence, side effect.
13) Patients, who do not fit above criteria, referred to clinic through
    provider-to-provider consultation.