Contact Tracing and Prophylaxis: childhood TB considerations

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Propositions

*M. tuberculosis* infection....
- IS relevant disease in young children and recent contacts
- CAN BE effectively contained through the receipt of preventive therapy

The successful delivery of preventive therapy is dependent on the complex interaction of numerous mediators including effective contact investigation.
AT WHAT POINT DOES THE COMPLEX, DYNAMIC RELATIONSHIP BETWEEN THE HOST AND THE INFECTING ORGANISM BECOME RELEVANT?

Host-Organism Balance

modified from Sharma SK (2005) Lancet Infect Dis
Relevant TB disease in children

At what point does the complex, dynamic relationship between the host and the infecting organism become relevant?
Age Related Risk

Disease Progression (Percent)

Age in Years

Time since infection

Immune compromised children

- HIV-infected women have an increased risk of TB

- 10% of 766 HIV-exposed, uninfected infants had contact with a TB source case by age 3-4 months

- HIV-infected children: 6-8 fold increased relative risk
### Population-based incidence rate estimates of culture-confirmed tuberculosis in HIV-infected and uninfected South African infants, Western Cape province, South Africa, 2004-2006 (per 100 000 infant population)*

<table>
<thead>
<tr>
<th></th>
<th>All infants</th>
<th>HIV-uninfected</th>
<th>HIV-infected</th>
<th>Relative risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>All tuberculosis</td>
<td>83.1 (72.9-93.7)</td>
<td>65.9 (56.7-75.3)</td>
<td>1595.9 (1151.3-2131.5)</td>
<td>24.2 (16.9-33.6)</td>
</tr>
<tr>
<td>Pulmonary tuberculosis</td>
<td>78.7 (68.6-89.0)</td>
<td>62.5 (53.3-71.7)</td>
<td>1505.6 (1075.2-2022.8)</td>
<td>24.1 (16.7-33.7)</td>
</tr>
<tr>
<td>Extrapulmonary tuberculosis</td>
<td>28.2 (22.2-34.4)</td>
<td>22.9 (17.5-28.6)</td>
<td>481.8 (257.0-750.8)</td>
<td>21.0 (10.7-35.0)</td>
</tr>
<tr>
<td>Disseminated tuberculosis</td>
<td>16.6 (11.9-21.2)</td>
<td>14.1 (9.7-18.3)</td>
<td>240.9 (86.6-431.7)</td>
<td>17.1 (6.0-33.7)</td>
</tr>
<tr>
<td>Miliary tuberculosis</td>
<td>10.9 (7.2-14.7)</td>
<td>9.3 (5.8-12.7)</td>
<td>150.6 (30.8-301.0)</td>
<td>16.2 (3.4-37.1)</td>
</tr>
<tr>
<td>Tuberculosis meningitis</td>
<td>9.2 (5.8-12.6)</td>
<td>7.9 (4.7-11.1)</td>
<td>120.1 (27.7-257.9)</td>
<td>15.2 (2.9-38.7)</td>
</tr>
</tbody>
</table>

Can *M. Tuberculosis* infection in children be effectively contained through the provision of preventive therapy?
Prevention of experimental tuberculosis with Isoniazid*

- Guinea pigs receiving varying doses of isoniazid were challenged with virulent tubercle bacilli.
- Survival in animals receiving a dosage of at least 5 mg/kg/day was comparable to control animals that were not challenged with bacillus.
- Based on these results, the dose of 5 mg/kg/day was chosen for clinical studies.

Isoniazid for preventing tuberculosis in non-HIV infected persons*

- Eleven randomized control trials of IPT
  - 73,375 patients
  - Mixed exposure risk

- Reduction in active TB over 2+ years
  - Relative risk reduction: 0.40 (95% CI 0.31 to 0.52)
  - Absolute risk reduction: 0.01 ~ NNT 100
  - No significant difference between 6 & 12 month course

- Reduction in TB deaths

- No reduction in all-cause mortality

- INH hepatotoxicity
  - 6 month regimen: 0.36%
  - 12 month regimen: 0.52%

Isoniazid for preventing tuberculosis in non-HIV infected persons*


Analysis 01.01. Comparison 01 Isoniazid versus placebo, Outcome 01 Active tuberculosis

<table>
<thead>
<tr>
<th>Study</th>
<th>Treatment n/N</th>
<th>Control n/N</th>
<th>Relative Risk (Random)</th>
<th>Weight (%)</th>
<th>Relative Risk (Random)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comstock 1962</td>
<td>50/2480</td>
<td>128/2406</td>
<td>15.8</td>
<td>0.38</td>
<td>0.38 [0.27, 0.52]</td>
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<tr>
<td>Del Castillo 1965</td>
<td>16/126</td>
<td>22/167</td>
<td>9.6</td>
<td>0.96</td>
<td>0.96 [0.53, 1.76]</td>
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<tr>
<td>Eggenose 1965</td>
<td>7/325</td>
<td>18/301</td>
<td>6.1</td>
<td>0.36</td>
<td>0.36 [0.15, 0.85]</td>
</tr>
<tr>
<td>Falk 1978</td>
<td>5/889</td>
<td>15/772</td>
<td>4.8</td>
<td>0.39</td>
<td>0.39 [0.11, 0.79]</td>
</tr>
<tr>
<td>Ferebee 1962</td>
<td>8/8478</td>
<td>36/8311</td>
<td>7.2</td>
<td>0.22</td>
<td>0.22 [0.10, 0.47]</td>
</tr>
<tr>
<td>Ferebee 1963</td>
<td>6/12339</td>
<td>173/12499</td>
<td>18.8</td>
<td>0.38</td>
<td>0.38 [0.27, 0.58]</td>
</tr>
<tr>
<td>Galing 1992</td>
<td>20/100</td>
<td>34999</td>
<td>12.1</td>
<td>0.58</td>
<td>0.58 [0.36, 0.94]</td>
</tr>
<tr>
<td>John 1994</td>
<td>7/192</td>
<td>1092</td>
<td>5.5</td>
<td>0.79</td>
<td>0.79 [0.38, 1.76]</td>
</tr>
<tr>
<td>Mount 1962</td>
<td>6/1462</td>
<td>12/1348</td>
<td>5.1</td>
<td>0.46</td>
<td>0.46 [0.17, 1.22]</td>
</tr>
<tr>
<td>Thompson 1982</td>
<td>58/13838</td>
<td>97/6990</td>
<td>13.7</td>
<td>0.30</td>
<td>0.30 [0.22, 0.42]</td>
</tr>
<tr>
<td>Vening 1980</td>
<td>14/133</td>
<td>12/128</td>
<td>1.1</td>
<td>0.03</td>
<td>0.03 [0.01, 0.61]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>40262</strong></td>
<td><strong>33113</strong></td>
<td><strong>100.0</strong></td>
<td><strong>0.40</strong></td>
<td><strong>0.40 [0.31, 0.52]</strong></td>
</tr>
</tbody>
</table>

Total events: 239 (Treatment), 557 (Control)
Test for heterogeneity chi-square=20.94 df=10 p=0.02 P =52.3%
Test for overall effect z=7.06 p=0.000001
Thirty years after INH.
Its impact on tuberculosis in children & adolescents. *

- 30 year observational study of IPT
  - 2,494 children WHO COMPLETED TREATMENT
  - 15,943 patient-years; mean 6.1 years
  - 1953-1960: INH(6-10 mg/kg/d) & PAS(200mg/kg/d)18months
  - After 1961: INH (10-20 mg/kg/day) for 12 months
  - Age at Rx: 0 –15 years
  - Age at follow-up: 2 – 23+ years

- 8 children developed disease (4.2 per 1000)

- IPT most effective in children < 4 years of age
  - None experienced overt disease

How much isoniazid is needed for prevention of tuberculosis among immunocompetent adults?*

- Secondary analysis of 2 PHS hhc studies
- Plotted TB case rates against the estimated intake of isoniazid
- A simple curve suggests that isoniazid therapy continued beyond 9-10 months offers no additional benefit
- Consistent other studies showing that second year of isoniazid therapy produced no demonstrable benefit beyond that conferred by the first year

Efficacy of various durations of INH preventive therapy for TB: 5 years of follow-up in the IUAT trial.*

- Prospective, randomized trial
  - Placebo vs INH (3, 6, and 12 months)
- Adults with fibrotic pulmonary lesions
- 5-year incidence rates
  - 65% and 75% effectiveness for 6 and 12-month regimens respectively (ITT analysis)
  - 69% and 93% efficacy for the 6 and 12-month regimens respectively (>80% of treatment)
- Generalizability to children is unknown

Preventive therapy with isoniazid. Cost-effectiveness of different durations of therapy.*

- CEA assessing alternative isoniazid regimens
  - 12, 24 and 52 weeks duration
- Wide range of assumptions
- A regimen of 24 weeks’ duration is more cost-effective than either the 12- or 52-week regimen
- Did not consider the savings resulting from the prevention of secondary cases

INH toxicity (observational)

- Rare in children
  - Hepatitis (can progress to hepatic failure)
  - Gastrointestinal disturbances
  - Neurologic complaints (B6 associated peripheral neuropathy)
- Mount-Ferrebee (1955-1957): 4-6 mg/kg/day (N=2750)
  - 0.14% (2/1394) nausea & vomiting (no LFTS done)
- Hsu: 6-10 mg/kg/day OR 10-20 mg/kg/day (N=394 and 1487)
  - 4 Adverse events (rash, vomiting, diarrhea)
  - no clinical hepatitis
Hepatotoxicity and transaminase measurement during INH chemoprophylaxis in children*

- **Pooled analysis (N=965)**
  - 8% (95% CI 0-13.6%) transient elevations in LFTS
  - 0.4% discontinued INH
  - No cases of hepatic failure

- **Pooled analysis (N=4473)**
  - 1.3% LFT’s obtained due to symptoms of clinical hepatitis
  - 0.07% had elevated LFTS

• 11,141 patient on INH Preventive Therapy
  ○ 1989 – 1995, Seattle, King Co, Public Health Clinic

• Hepatotoxic reactions
  ○ Symptoms, elevated LFTs, improvement when INH stopped
  ○ 0.10% of patients starting IPT
  ○ 0.15% of patients completing IPT
  ○ Trends of association with increasing age, females, whites
    ○ Hepatotoxic subjects aged 27-67 years (mean 34 years)
    ○ 1468 subjects aged 0-14 years
Isoniazid-related hepatic failure in children: a survey of liver transplantation centers

• 7 year survey of all US transplant center
• Probability of non-fatal hepatitis in children receiving IPT = 0.0032

Short course regimens – experimental studies

- INH compared to (i) rifampin, (ii) rifampin and pyrazinamide, and (iii) isoniazid, rifampin and pyrazinamide (Lecoeur, Truffot-Pernot et al. 1989)
- Sterilization of lung and spleen tissues
  - (i) within 4 months
  - (ii) within 2 months
  - (i) and (ii) superior (iii)
- Isoniazid - no sterilization within six months
- Rifabutin alone (daily) and rifabutin-isoniazid, (twice weekly) may effectively treat LTBI in 3 months (Jabes, Della Bruna et al. 1994)


21 cases of hepatotoxicity
5 liver failure deaths
Rifampin preventive therapy for tuberculosis infection: experience with 157 adolescents.*

- Adverse effects and acceptability of rifampin preventive therapy (10 mg/kg/day for 24 weeks)
  - 26% - one or more adverse effects
  - 2.5% - ALT elevations >2x upper limit of normal
  - 3.8% - self-discontinued therapy

- Telephone follow-up at 18-24 months
  - 240 person-years
  - None reported having illness compatible with TB since completion of therapy

- Review of TB registry
  - No names of enrolled subjects

Rifampicin and isoniazid prophylactic chemotherapy for tuberculosis*

- Observational study reporting programmatic data
  - Blackburn Health District, England
- Pediatric HHC’s and immigrants from HBCs
- LTBI Rx regimen: Rif(10 mg/kg/d) & INH(10 mg/kg/day)
  - Duration decreased over 15 year period
    - 1981 – 1983: 9 months
    - 1984 – 1986: 6 months
    - 1987 – 1988: 4 months
    - 1989 – 1996: 3 months
- No change in the proportion of Pediatric TB cases
- No significant toxicity with 3-4 mos regimens (N =266)

The effectiveness of a 9-month regimen of INH alone versus 3- and 4-month regimens of INH plus rifampin for treatment of LTBI in children: results of an 11-year randomized study*

**Methods**

**Sample sizes**

<table>
<thead>
<tr>
<th></th>
<th>INH 9/12</th>
<th>INH/Rif 4/12</th>
<th>INH/Rif 3/12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995-1998</td>
<td>232</td>
<td>238</td>
<td></td>
</tr>
<tr>
<td>1999-2000</td>
<td></td>
<td>236</td>
<td>220</td>
</tr>
</tbody>
</table>

**Results**

**Possible active disease on CXR**

<table>
<thead>
<tr>
<th></th>
<th>INH 9/12</th>
<th>INH/Rif 4/12</th>
<th>INH/Rif 3/12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995-1998</td>
<td>24%</td>
<td>11.8%</td>
<td></td>
</tr>
<tr>
<td>1999-2000</td>
<td>13.6%</td>
<td>11%</td>
<td></td>
</tr>
</tbody>
</table>

P=0.001

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Directly Observed Preventive Therapy

- 161 high school students with LTBI (Kohn, et al. 1996)
  - 65% enrolled a school-based clinic DOPT program
  - 14% referred to Health Dept for daily therapy
  - Completion of therapy in DOPT group (88%) was significantly greater than that in the daily therapy group (50%) and that reported in the literature for programs other than DOPT (30 – 70 %)

- 209 adolescent students with LTBI (Sass, et al. 1996)
  - Significantly higher compliance rate of DOPT (54%) than that for traditional daily therapy (26%)
Treatment of latent tuberculosis infection in HIV infected persons (Review)*

- Eleven randomized control trials of PT
  - 8,130 patients
  - Mixed exposure risk

- Reduction in active TB over
  - Relative risk reduction: 0.64 (95% CI 0.51 to 0.81)
  - Absolute risk reduction: 0.02 ~ NNT 50
  - TST +ve: RR = 0.38 (95% CI 0.25 to 0.57), ARR 5%, NNT 20
  - No significant difference in efficacy between regimens

- Limited data suggests protective effect declines over time
- No reduction in all-cause mortality
- Short-course, multidrug regimens were more likely to be discontinued due to adverse events

Effect of isoniazid prophylaxis on mortality and incidence of tuberculosis in children with HIV: randomized control trial.*

- Prospective double blind placebo controlled trial
  - 263 HIV-infected children ≥ 8 weeks (median 25 months)
  - Advanced HIV disease (90% stage B or C)
  - INH or placebo given with co-trimoxazole (daily or thrice/week)
  - Median follow-up 5.7 months
  - Intent to treat analysis

- Reduced mortality by 50%
  - Significant reduction in all age groups, categories of disease and for varying degrees of immune suppression

- Reduced TB incidence by 70%

- NO difference between treatment regimens

Randomized control trial of INH pre-exposure prophylaxis
- 1300 HIV-exposed, uninfected & infected infants
- 3 South African sites starting 2005
- 3-4 months of age at enrolment
- No history of TB exposure at baseline
- Longitudinal assessment for active TB & M. TB infection
  - Q12 weeks until week 96, and weeks 144 and 192

No significant difference in the development of TB
- Stopped early by safety monitoring board
- Futility analysis

*ClinicalTrials.gov ; NCT00080119
Challenging unanswered questions

- Repeat exposure – repeat screening – repeat RX??
  - Re-infection with a new strain of *M.tb* may occur, but is variable.
  - How long does the protective effect of IPT last?
- Risk of relapse/reinfection in children with previous PTB: compound risk?
- Preventive therapy in the context of MDR/XDR?
- Is the preventive therapy risk-benefit ratio altered in HIV co-infected children?
  - Is risk of RX increased in children receiving HAART?
  - Is the benefit of RX decreased in children with high CD4 counts or viral loads lower than detectable limits?
  - Repeat RX following repeat exposure VS long-term IPT?
# Screening & Treatment Guidelines

<table>
<thead>
<tr>
<th>Source</th>
<th>Who to screen</th>
<th>TST Interpretation</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO (2006)</td>
<td>HHC &lt;5yrs HHC HIV+</td>
<td>≥ 10 mm</td>
<td>6/12 INH @ 5 mg/kg/day**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 5 mm</td>
<td></td>
</tr>
<tr>
<td>ATS/CDC/IDSA (2000)*</td>
<td>Targeted tuberculin testing</td>
<td>≥ 5, 10, 15 mm According to risk profile, age &amp; immune status</td>
<td>9/12 INH @ 10-15mg/kg/day</td>
</tr>
<tr>
<td>NICE (2000)*</td>
<td>Detailed tiered approach</td>
<td>≥ 6mm (BCG -ve) ≥15mm (BCG +ve)</td>
<td>6/12 INH @ 5 mg/kg/day</td>
</tr>
</tbody>
</table>

*in neonates & young children in HHC, recommend 3/12 Primary Prophylaxis followed by TST

** RECENT recommendation to increased to 10 mg/kg/day
CAN WE EFFECTIVELY IDENTIFY CHILDREN IN LOW AND INTERMEDIATE BURDEN SETTINGS WHO MIGHT BENEFIT FROM PREVENTIVE THERAPY?
MISSED OPPORTUNITIES

- **Simon Schaaf**, et al. *BMC Infectious Diseases* 2007, 7:140
doi:10.1186/1471-2334-7-140

  - 2003-2005: 596 children with culture-confirmed TB, hospital-based surveillance data (22.3% HIV +ve)
  - 49.6% history of close contact with adult pulmonary TB case(s)
  - 41% source case was a parent
  - Missed opportunities for children <5 years occurred in 64.3% of children

- **Mark N. Lobato**, et al. *Pediatrics* 2000;106;75-

  - “improvements in contact investigations may have prevented TB in 40% of these children”
Goals of Investigations

- **Contact**: identify persons exposed to patients with infectious TB, evaluate contacts and treat accordingly (TB or *M.tb* infection)
- **Source-case***: identify individuals who may have infected a child who now has active TB
- **Associate***: identify individuals who may have infected a child who now has *M.tb* infection
- **Targeted skin testing**: the selective use of the TST for screening in children and adolescents with identified risk factors elicited thru a screening questionnaire

*NB: used interchangeably in some source*
Source-case (Associate) Investigations

• Seeks the source of recent TB disease (*M.tb* infection)
  ○ Assumption: disease (infection) in children <5 years is recent
• Yield *
  ○ <50% on average for children with TB disease
  ○ Very low yield for children >2 years with *M.tb* infection
• Should begin with closest contacts and expand
  ○ 1\textsuperscript{st}: Household members for children
  ○ 2\textsuperscript{nd}: Childcare centers, pre-schools
  ○ Rarely indicated in primary, or higher-level schools

*MMWR.Dec 2005; 54(rr15);1-37.*
Guidelines for the Investigation of Contacts of Persons with Infectious Tuberculosis

NB: 1) Conservative guidelines with the goal of TB elimination
2) Inherent assumption that a positive TST is a good surrogate for recent infection

Although the recommendations pertain to the US, they might be adaptable for use in other countries that adhere to guidelines issued by the WHO, IUATLD, and NTPs?
Contact investigations are complicated undertakings that typically require hundreds of interdependent decisions, the majority of which are made on the basis of incomplete data, and dozens of time-consuming interventions.
Risk of \( M.tb \) infection \[=\] Infectivity x Duration x Proximity

Setting (ie..air circulation)

? Infective burden

? Previous exposure & infection

? Virulence of \( M.tb \) strain

? Contact’s intrinsic predisposition
### Contact investigations

<table>
<thead>
<tr>
<th>IDEAL GOAL</th>
<th>DIRECT BENEFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Distinguish all recently infected contacts from those who are not infected and prevent TB disease by treating those with infection <em>(and likely to progress to disease)</em></td>
<td>- Identify additional TB cases</td>
</tr>
<tr>
<td></td>
<td>- Identify persons with <em>M.tb</em> infection</td>
</tr>
<tr>
<td></td>
<td>- Treat <em>M.tb</em> infected persons to prevent disease progression</td>
</tr>
<tr>
<td></td>
<td>- US 2010 GOAL: 85% LTBI Rx completion rates</td>
</tr>
</tbody>
</table>
Essential Components of a Contact Investigation

- Decision to initiate CI
- Investigation of index case & sites
- Assigning priorities to contacts
- Evaluation of contacts
- Medical Rx of contacts
- Expansion of CI
- Media communication
- Data management & evaluation of CI

- Confidentiality & consent
- Staffing & training
- CIs in special circumstances
- Source case investigations
- Other
  - Cultural competency
  - Social Network Analysis
  - IGRAs
Investigating the Index Patient

• Long list of factors
  – TB history
  – Symptom history
  – CXR & other imaging studies
  – Diagnostic specimens
  – Current TB Rx history

<table>
<thead>
<tr>
<th>TABLE 2. Guidelines for estimating the beginning of the period of infectiousness of persons with tuberculosis (TB), by index case characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Characteristic</strong></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>TB symptoms</td>
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<td></td>
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</tbody>
</table>

*Acid-fast bacilli.
Decision to initiate Contact Investigation

**NB:**

1) Recommend against initiating for disease in children <10 years of age (transmission has been reported in children with adult-type disease)

2) Do NOT delay initiation due to pending lab results

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**TABLE 1. Characteristics of the index patient and behaviors associated with increased risk for tuberculosis (TB) transmission**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary, laryngeal, or pleural TB</td>
<td>Frequent coughing</td>
</tr>
<tr>
<td>AFB* positive sputum smear</td>
<td>Sneezing</td>
</tr>
<tr>
<td>Cavitation on chest radiograph</td>
<td>Singing</td>
</tr>
<tr>
<td>Adolescent or adult patient</td>
<td>Close social network</td>
</tr>
<tr>
<td>No or ineffective treatment of TB disease</td>
<td></td>
</tr>
</tbody>
</table>

* Acid-fast bacilli.
Assigning priorities to contacts

- **Characteristics of Index Patient**
- **Characteristics of Contacts**
  - Age < 5 years and immune status
- **Immune status of Contacts**
  - HIV and immune suppressive drugs
- **Other medical conditions**
  - Silicosis, diabetes, GI surgery
  - Disregard “underweight”
- **Characteristics of Exposure**
  - Discourage use of the terms “close” and “casual” contact
FIGURE 2. Prioritization of contacts exposed to persons with acid-fast bacilli (AFB) sputum smear-positive or cavitary tuberculosis (TB) cases

ASSIGNMENTS:
• High priority
• Moderate priority
• Lo priority
Contact list

- 3 days
- 7 days
- 14 days

Contact histories

Follow for Sx

HI priority

Mod priority

Lo priority

TST

+/- CXR*

≥5 mm

<5 mm

POSITIVE R/O disease & Rx accordingly

NEGATIVE Consider Primary Prophylaxis* and follow

*children <5 years of age OR immune compromised

Follow for Sx
Primary (Window-period) Prophylaxis

Exposure STOPS

FINAL TST

12 weeks preferable for children
Directly Observed Preventive Therapy

Prioritize contacts who are
- <5 years of age
- HIV-infected OR immune compromised
- TST converters
- Likely defaulters due to social or behavioral impediments

NB: Use of incentive & enablers recommended
When to Expand Contact Investigations?

If contacts with greatest exposure have an infection rate greater than community baseline, contacts with progressively less exposure are sought.
Disadvantages of concentric circles model

- Exposure surrogates often have poor predictive value
- Does NOT consider susceptibility and vulnerability of contacts
- Community TST rates are frequently unknown
When to Expand Contact Investigations?

- DOPT
- Improve Adherence to Contact Rx
- Expand Contact Investigation
CAN WE EFFECTIVELY DELIVER PREVENTIVE THERAPY TO CHILDREN WITH *M. TUBERCULOSIS* INFECTION?
No test  Test  Treat

Probability of the Diagnosis

0%  100%
What do we know about IGRAs in kids in HHC?

- More specific
- UNKNOWN Sensitivity
- UNKNOWN Monitoring Utility
- UNKNOWN Predictive utility

NB: My opinion

Treat 100%
NICE: children 4 weeks to 2 years

Is it operationally preferable to use a blanket decision rather than a complex algorithm employing step-wise testing...

Should TB contact be equally weighted to a positive TST in terms of risk...Hence, all children in recent HHC receive preventive therapy with no testing completed???
“As I thought about our conversation, I remembered that under Dr. Blinkhorn's direction we treated more cautiously than recommended by CDC - used primary prophylaxis more liberally than was recommended. However, during the time I worked at the TB Clinic (1993 through early 2006), the number of cases went from about 100 per year to about 40-50 per year. The decision to use primary prophylaxis was based on many factors, including the infectiousness of the case, the consistency of contact, the risk factors of the exposed person, etc. Other TB programs in the country may be less likely to use primary prophylaxis.”

Karen Seidman, RN
TB Control Nurse, Cuyahoga County, Ohio
Mediators of Successful PT Delivery

POLICY
- Political Will

ADVOCACY

INFRASTRUCTURE

RESOURCES

ADHERENCE
- New Rx & diagnostics
- destigmatization
- education
- empowerment

UPTAKE
THANK YOU

Rainbow Babies & Children’s Hospital

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