Contact investigation in children living with patients treated for DR-TB

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Outline

• Introduction
• Contact evaluation protocol
• Findings
• Challenges
• Strategies to overcome challenges
• Recommendations
The Indus Hospital Pediatric TB program

- Started in 2008
- Separate airborne infection control TB facility - 2010
- Daily pediatric TB clinics - 2011
- IPT program - 2012
Contact evaluation protocol

• Index DR-TB patient registered
• Health worker visits household-
  – identifies HH contacts, demographics etc.
  – advises to bring all children in the HH for a baseline assessment.
  – Inquires about TB symptoms monthly
Contact evaluation protocol

All <5 year olds:
1. H and P
2. Height weight
3. TST
4. CXR
5. CBC/ESR/CRP
6. If clinically indicated then a) gastric aspirate (smear, xpert, culture) other imaging

All 5-14 year olds
1. H and P
2. Height weight
3. TST

5-14 year olds with symptoms
a) CXR/ other imaging
b) sputum/gastric aspirate-smear/xpert and culture
c) CBC/ ESR
Findings (1)

- n=192
- 59% male
- 55% child of index patient
- 42% underweight (<-2 SD)
- 50% BCG scar
Findings (2)

- 33% PPD >= 10mm (n=130)
- 26.6% sx (any of: cough, fever, night sweats, weight loss, adenopathy)
- 55% ESR elevated (n=131)
- 9% TB disease (15/166)
- 40% culture confirmed DR-TB (6/15)
## TB disease and LTBI in child contacts

<table>
<thead>
<tr>
<th>Age groups</th>
<th>TB disease n (%)</th>
<th>LTBI n (%)</th>
<th>No disease n (%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 years</td>
<td>4 (8.5)</td>
<td>3 (6.4)</td>
<td>40 (85)</td>
<td>47</td>
</tr>
<tr>
<td>5-14 years</td>
<td>11 (9.2)</td>
<td>29 (24)</td>
<td>79 (66)</td>
<td>119</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15 (9)</strong></td>
<td><strong>32 (19.2)</strong></td>
<td><strong>119 (72)</strong></td>
<td><strong>166</strong></td>
</tr>
</tbody>
</table>

![Bar chart showing TB disease, LTBI, and No disease by age group]
Households with DR TB patients = 220

Number of children evaluated = 192

Child received TST

No = 62

CXR normal = 30

CXR abnormal = 8

TB disease = 3

Confirmed DR = 1

Yes = 130

CXR normal = 44

CXR abnormal = 15

TB disease = 1

Confirmed DR = 0

CXR normal = 25

TB disease = 2

Confirmed DR = 5

TST neg = 87

TST pos = 43

LTBI = 32

Confirmed DR = 1

TB disease = 9

Confirmed DR = 5
Challenges in implementation

- contacts evaluated
- complete evaluations
Challenges in implementation

• Erratic contact evaluation efforts
  – inconsistent human resources, funding constraints

• Poor turnout for child contact evaluation
  – Bringing well children to the hospital twice - expensive
  – No follow-up after initial evaluation
  – Incomplete evaluation - no TST reads

  – No provision of preventive therapy, for <5 year old contacts or LTBI
  – No funds for preventive regimens
Strategies to overcome some challenges

• TST placement and reading done daily at the TB clinic
• All testing and CXR done in the TB clinic
• Daily pediatric TB clinic as of mid 2011
Strategies to be implemented

• Travel reimbursement for contact evaluation visit
• SMS reminders for contact evaluation and follow-up
• Health worker capacity building in reading TSTs
• Incentives such as:
  – Contacts get a complete pediatric checkup and immunization as part of evaluation package
  – MVI, iron supplements, de-worming, nutrition evaluation and supplements
  – Helpline number for reporting a symptomatic child and a fast track for free workup and treatment of illnesses
Recommendations

• Strategies for replication in other settings
  
  Situation in high burden settings
  
  1. Routine systematic contact management not done apart from few time limited GF projects
  2. PMDT “implemented”- DR-TB in children? Child contact management programs?
  3. Children not included in national strategic plans- as funding needs not known.
Recommendations

• Mandatory notification of all TB including child contact management
• Child TB and child contact management in the context of family centered care to be included in National strategic plans for TB control
  – Funding and human resource for contact management and drugs for treatment of diagnosed cases
• Integration of symptom screens in ANC, MNCH, EPI centers with clear referral systems for further evaluation
• Community programs and NGO strengthening
• Research studies eg. TB CHAMP- outcomes will inform concrete preventive therapy guidance for DR-TB child contacts.
Thank you