Contact investigation and prevention in Indonesia

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Outline

• Child TB situation in Indonesia

• What has been done to enhance contact investigation and IPT provision

• Studies related to contact investigation & IPT
  – ACT4 study Bandung
  – Timika study
Area: 5 million Km² / 17,800 islands
Provinces: 34
Population: 257,516,167
Children aged < 15 yrs accounts for 29% population
# TB in Indonesia

## ESTIMATES OF TB BURDEN,¹ 2017

<table>
<thead>
<tr>
<th></th>
<th>NUMBER (THOUSANDS)</th>
<th>RATE (PER 100 000 POPULATION)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality (excludes HIV+TB)</td>
<td>107 (100–114)</td>
<td>40 (38–43)</td>
</tr>
<tr>
<td>Mortality (HIV+TB only)</td>
<td>9.4 (5–15)</td>
<td>3.6 (1.9–5.8)</td>
</tr>
<tr>
<td>Incidence (includes HIV+TB)</td>
<td>842 (767–919)</td>
<td>319 (291–348)</td>
</tr>
<tr>
<td>Incidence (HIV+TB only)</td>
<td>36 (20–57)</td>
<td>14 (7.7–21)</td>
</tr>
<tr>
<td>Incidence (MDR/RR-TB)ᵇ</td>
<td>23 (16–31)</td>
<td>8.8 (6.2–12)</td>
</tr>
</tbody>
</table>

## ESTIMATED TB INCIDENCE BY AGE AND SEX (THOUSANDS),¹ 2017

<table>
<thead>
<tr>
<th></th>
<th>0–14 YEARS</th>
<th>&gt; 14 YEARS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td>23 (23–23)</td>
<td>326 (308–345)</td>
<td>349 (329–370)</td>
</tr>
<tr>
<td>Males</td>
<td>26 (26–27)</td>
<td>466 (435–497)</td>
<td>492 (458–526)</td>
</tr>
<tr>
<td>Total</td>
<td>49 (48–50)</td>
<td>792 (723–862)</td>
<td>842 (767–919)</td>
</tr>
</tbody>
</table>
Situation of child TB in Indonesia

• A child TB working group (2005), consists of:
  ▪ NTP
  ▪ The Indonesian Pediatric Society
  ▪ National Child Health Program
  ▪ Partners

• A national guideline of child TB
  ▪ Available since 2006
  ▪ Separated from the adult guideline
  ▪ Revised: 2013, 2016

• TOT on the management of child TB for health workers at national level

• Technical assistance from international experts
Childhood TB - Situation

Children as a percentage of all TB cases reported in Indonesia

![Graph showing the percentage of TB cases in children from 1999 to 2014. The percentage ranges from 0.6% to 11.2%, with a sharp increase in 2007.]}
% Childhood TB cases per province (2017)

Courtesy NTP Indonesia
# Childhood TB- Situation (2014-2015)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smear + pulmonary TB</td>
<td>1731 (8%)</td>
<td>1,702 (6%)</td>
</tr>
<tr>
<td>Smear - pulmonary TB</td>
<td>17,409</td>
<td>23,053</td>
</tr>
<tr>
<td>EPTB</td>
<td>2,723 (12%)</td>
<td>3,657 (13%)</td>
</tr>
<tr>
<td>MDR TB</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Indicators</th>
<th>2014- 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB Treatment outcomes</td>
<td>Unknown</td>
</tr>
<tr>
<td>TB/HIV</td>
<td>Unknown</td>
</tr>
<tr>
<td>Number of child contact investigated</td>
<td>Unknown</td>
</tr>
<tr>
<td>IPT uptake/outcomes</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

*Child TB benchmarking tool Indonesia: December 2016*
What has been done to enhance contact investigation and IPT provision?
Enhance contact investigation & IPT provision

- Develop forms for recording and reporting of contact investigation & IPT
- Pilot implementation in 7 provinces
- Studies and innovations
- Develop a national guideline on contact investigation and IPT
- In preparation: HP for preventive therapy
Recording and reporting

Index case

TB.16

List of contacts

TB.15

Register for child contact started IPT

TB.01 IPT

District

Province
ACT4 - Enhancing LTBI management:
A cluster randomized trial

• PI: Dick Menzies (McGill, University, Montreal Canada)
• Funded by: CIHR, Canada
• 6 countries: Benin, Brazil, Canada, Ghana, Indonesia, Vietnam
The ACT4 study

- A pragmatic cluster randomized trial

- The trial tests a two phase programmatic public health package:
  1. A standardized public health evaluation and analysis
  2. Implementation of appropriate solutions and strengthening of the LTBI program

- Objectives:
  1. To estimate the increase number of household contacts initiating IPT per newly diagnosed index patient
  2. To evaluate the cost effectiveness of this two phase intervention.
ACT4 study Bandung

Team: Centre of TB/HIV study, Fac of Medicine, Padjajaran University
- Principal investigator: Prof. Dr. Rovina Ruslami
- Investigators: Dr. Bachti Alisjahbana, dr. Panji Hadisoemarto

**Intervention group:** 7 PHCs (shaded green)
**Control group:** 7 PHCs (shaded blue)
- Outpatient services/DOTS clinics
- Some have sputum microscopy
- No x-ray machine available

Each catchment area:
- 30,000 – 150,000 people
- > 40 AFB + cases/year

Number of AFB positive treated in puskesmas Bandung, 3-year average (2013-2015)

Courtesy Rovina Ruslami
Evaluating the current cascade of care in LTBI

Interview to index case, contacts, parents of child contact, health worker

Identify problems and solution

Intervention

Monitoring progress

Phase 1

Phase 2

August 2016 – on going

- Retrospective review of TB patient registry
- Period: Sept 2015 to Nov 2016
Number of contacts aged < 5 years completing each step of cascade

- Expected contacts
- Identified contacts (STEP 1)
- Started initial assessment (STEP 2)
- Completed Initial Assessment (STEP 3)
- Needing med eval
- Started med eval (STEP 4)
- Completed med eval (STEP 5)
- Recommended LTBI TX (STEP 6)
- Started LTBI Tx (STEP &)

Loss rates:
- 52% loss
- 49% loss
- 71% loss
- 94% loss
Why they lost?

Methods
98 structured interviews:
▪ Index cases (n = 20)
▪ Household contacts (n = 38)
▪ Parents of child contacts (n = 20)
▪ Healthcare workers (n = 20)

MAIN FINDINGS
▪ Index cases and contacts/parents
  Did not consider medical evaluation/treatment of asymptomatic contacts necessary
▪ Healthcare workers
  Lack of time as a perceived barrier (more time spent for non TB related activities (incl. administrative work))
▪ Both
  Lack of knowledge & information

Courtesy Rovina Ruslami
1. In-service training
   - Every week for the 1st two months
   - Every 2 weeks for 2 months
   - Monthly for the last 2 months
2. Electronic reminder for patient
3. Educational material using flip chart
4. “Gift” for child contact
Number of contacts aged < 5 years completing each step of cascade: after interventions

- **expected contacts**: 35
- **Identified contacts (STEP 1)**: 30
- **Started initial assessment (STEP 2)**: 25
- **Completed Initial Assessment (STEP 3)**: 20
- **Needing med eval**: 15
- **Started med eval (STEP 4)**: 10
- **Completed med eval (STEP 5)**: 5
- **Recommended LTBI TX (STEP 6)**: 0
- **Started LTBI Tx (STEP 6)**: 0

Losses:
- **0% loss** for expected contacts
- **25% loss** for identified contacts
- **45% loss** for started initial assessment
- **25% loss** for completed initial assessment
- **25% loss** for needing med eval
- **25% loss** for started med eval
- **25% loss** for completed med eval
- **25% loss** for recommended LTBI TX
- **25% loss** for started LTBI Tx
Number of contacts aged < 5 years completing each step of cascade: before & after interventions

- Expected contacts
- Identified contacts (STEP 1)
- Started initial assessment (STEP 2)
- Completed initial assessment (STEP 3)
- Needing med eval
- Started med eval (STEP 4)
- Completed med eval (STEP 5)
- Recommended LTBI TX (STEP 6)
- Started LTBI Tx (STEP 7)

Loss percentages:
- Before intervention: 52% loss
- After intervention: 94% loss

- None loss

Chart indicates a significant reduction in loss from before to after interventions.
Is that sustained?

• The response is good
  – From the health care worker
  – From the parents of the children

• It’s sustain; it stays after the intervention was stop.
  – Screening and recruitment still going on at the intervention sites AFTER the intervention is stop
Strengthening health systems to improve contact investigation and treatment for tuberculosis contacts in Timika, Indonesia
Tropical Disease Research Regional Collaboration Initiative (TDRRCI) on Tuberculosis and Malaria

Indonesia team:
PI: dr. Trisasi Lestari
- Universitas Gadjah Mada
- Yayasan Pengembangan Kesehatan Masyarakat Papua

Courtesy Trisasi Lestari
Study sites: 3 PHCs, 2 hospitals

1. Child TB Management Training
2. Regular CQI meeting
3. Educational Brochure for Patient
4. TB forms
5. Regular feedbacks and evaluation
Training for health workers
Gift for child contact initiated IPT
Contact Investigation Coverage

Target: >90%

Proportion of index cases with contact investigated
Primary Health Centre (PUSKESMAS): Contact Investigation Coverage 48.4%

Number of all TB cases
Number of TB cases with contact investigated

Courtesy Trisasi Lestari
HOSPITAL:
Contact Investigation Coverage 3.2%

Number of all TB cases
Number of TB cases with contact investigated

Courtesy Trisasi Lestari
IPT uptake

Target : >90%

Baseline (before Sept 2017)

Nov-17: 1% all facilities, 1% Puskesmas

Apr-18: 70.9% all facilities, 68.8% Puskesmas

Aug-18: 63.4% all facilities, 59.0% Puskesmas
Reasons for no IPT

- Index case has finished treatment: 4%
- Child has not come to the clinic: 30%
- Observation: 4%
- Child did not stay in the house: 11%
- Age > 5 years: 7%
- Parent refused IPT: 18%
- Patient moving out: 22%
- Have TB Symptoms: 4%

Courtesy Trisasi Lestari
Summary

There has been improvement in contact investigation and IPT provision in Indonesia

More efforts and innovations are required to enhance the coverage of contact investigation and IPT
Thank you