Community case finding for TB: Approaches and Outcomes

Helen Ayles
ZAMBART Project
On behalf of ZAMSTAR Study Team
Overview

• Why do community case finding?
• Can community case finding prevent TB?
• How can we do community case finding?
  – ZAMSTAR
  – DetecTB
• What do we still need to know?
Why should we try and find cases in the community?

• 1930’s-1950’s mass case detection with x-ray screening was part of the standard TB control programme

• 1960s decision to base most case finding on “passive case finding”
  – Cost
  – Most patients symptomatic
  – Over half had previously sought care at health facility
Burden of Undiagnosed TB

HIV prevalence 26%, TB prevalence 960/100,000
Clinic with DOTS programme
Can case finding prevent TB?

- Historically, case finding with mass x-rays reduced incidence of TB
  - Linked to better treatment +/- prevention
- Diminishing returns in areas where TB incidence decreasing and well-functioning health systems
- What about areas with high prevalence of TB, over-burdened health systems?
- What about high HIV co-infection

Golub et al, IJTLD 2005 9(11) 1183-1203
Missed

Diagnosed

One year

Several years

Consortium to Respond Effectively to the AIDS-TB Epidemic
Missed

Diagnosed

One year

Several years

Consortium to Respond Effectively to the AIDS TB Epidemic
Modelling

- Simple compartmental model
- Increasing case detection (50% to 67%)
- Reducing duration before detection from 6 to 4 months. Those not detected are infectious for 30 months
- Assumptions
  - Notification rate/CDR = True incidence
  - Once detected no longer infectious
  - Number of effective contacts (resulting in infections) = Number of incident cases per month/(lifetime risk of disease*prevalence of infectious individuals)
  - Of those infected 10% develop disease, 80% of those who develop disease do so within 6-24 months of being infected, the rest do so at a constant rate over 30 years
Modelling

Number of cases per year

Year

Prevalence (%)
ZAMSTAR

A community randomized trial of two interventions delivered to ~1,200,000 people while strengthening the existing health systems
Enhanced Case Finding

• 3 linked strategies
  – Community mobilisation intervention: information, education and sputum collection points
  – Schools intervention: education so that message can be disseminated from children to community
  – Open Access sputum collection points at the clinic

• 2 guiding principles
  – Every person in the community should be able to give a sputum sample within 30 minute walk of their home
  – Results should be available within 48 hours
Burden of Undiagnosed TB

Community interventions

Open access

- TB suspect
- Sought help
- Asked for sputum
- Gave sample
- Got result
- TB
- Started on TB treatment
Community Mobilisation

> 1000 Drama performances
> 60,000 IEC materials distributed per year
Sports events
Megaphones, door-to-door leafleting
ECF – Open Access/fast Track

- Visible spot or advertising within health centre
- Avoids queuing and waiting rooms
  - Additional benefit as triage for infection control
- Anecdotal switch from community to open access
ECF - Schools

• 71 schools involved in programme
• Raise TB awareness in schools
  – Making use of drama and educational theatre
  – Drawing/colouring, quizzes,
  – Debates, competitions
  – Anti TB (AIDS) Clubs
• Encourage children to take message to community about sputum collection points in the community and at clinic
Can Children be useful in Community case finding?

- Rapid participatory approach
- 10 days in 3 Zambian ECF sites

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<th>Age</th>
<th>Grade</th>
<th>Stay with parents</th>
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<td>4-9</td>
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<td>Girls</td>
<td>76</td>
<td>10-16</td>
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Participatory exercises in 6 schools (2 per site) with boys & girls (drawing, narratives, dice game, role plays, KII with parents & teachers)
Key Findings

• Knowledge of TB symptoms
  – Detailed knowledge of symptoms – most commonly mentioned: coughing (prolonged, with blood); chest pains; loss of weight; loss of appetite; night sweats. Occasionally used term ‘TB suspect’.

• Knowledge of TB transmission

• Knowledge of TB diagnosis
  – Familiar with: community referral to clinic if someone is coughing & sputum testing (detail of process – sputum bottles, lab technician, ZAMBART “sputum man”)

• Knowledge of TB treatment
Findings contd

• Faith in TB treatment
  – “If you are taking TB medication, [you will] start feeling better. You stop, you won’t get better or cured”, 8-12 year old children, workshop.

• Knowledge of TB-HIV link
  – Strong emphasis on difference between TB & HIV (e.g. HIV not associated with airborne transmission, coughing, being curable but associated with transmission through blood, sex, from mother-to-child, sharp instruments & considered more severe & incurable with more symptoms)
  – Not much emphasis on link between TB & HIV; some confusion about this and about ART (e.g. about length of treatment, whether a cure for HIV)
  – Children confused about ART e.g. “ARVs are a virus that causes disease – if ARVs enters you, you get HIV”, 8-12 year old children, workshop.
Response at Home

- “I also told my aunt…She complains that when she coughs there is blood in the sputum. When I was taught about TB and HIV, I knew my aunt was suffering from TB. I advised her to go to the clinic so her sputum can be examined. I also told her about the symptoms of TB” (15 year old boy, Shampanede Basic)

- “When I tell my brother about TB, he shouts at me and tells me he doesn’t want me to tell him anything about TB. He shouts at me in anger” (Girl, 12 years, Ngungu). She then goes to tell her mother who listened and said it was good she was learning about this.
Boy, 14 years, Shampande

Linkage between home, health post (where sputum collected) and the clinic
The man telling the lady who is coughing to go to the clinic. At the clinic there is a laboratory. The table shows the DOTS corner. She is given sputum containers to take to the laboratory.

Girl, 14 years, Shampande
From top left clockwise:

• A lab taking blood found mixed HIV with AIDS.

• Taking TB drugs for a long time – chest paining.

• TB patient being given a bottle by a doctor.

• A doctor telling someone with HIV that they have HIV. Feeling weakness.

Girl, 14 years, Ngungu
ECF – Overall Strategy Finds cases

- Impact will be ascertained by prevalence surveys 2009/2010
- Community/health services role for taking over case finding is increasing

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<th>Zambia</th>
<th>SA</th>
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<tr>
<td>All sputa</td>
<td>31458</td>
<td>18558</td>
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<tr>
<td>Pos</td>
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<td>2756</td>
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<td>% found by ECF</td>
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<td>% Pos found by ECF</td>
<td>25.22</td>
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DETECTB

- Cluster-randomised trial
  - 2 periodic intensified case-finding strategies

- Set in Western high density suburbs of Harare

Satellite map of one cluster

Door-to-door vs mobile van enquiry for chronic cough
- sputum microscopy
- Clusters visited every 6 mos x 6 rounds

ISRCTN 84352452
What Do we still need to know?

- Feasible
- Identify suspects
  - ? Replacement of clinic activity
  - ? Find earlier
- Costs
- Which method?
- Linkage with case finding of HIV
- Impact?
  - Does ECF reduce the prevalence or transmission of TB at community level?
Acknowledgements

- ZAMSTAR Team
- Ginny Bond and Jean Hunleth
- Liz Corbett
- Emilia Vynnyky
- CREATE Consortium

This study is supported by a subcontract from Johns Hopkins University with funds provided by Grant No. 19790.01 from the Bill and Melinda Gates Foundation.

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