The INDEPTH TB network – a research collaboration on TB suspects and risk factors

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History

- 2008: Osman shared a vision that INDEPTH would also contain a vibrant cross-site TB research arm

- 2009: The secretariat facilitated initial consultations and establishment of a TB interest group of sites to meet in Bissau

History

- 2010:
- First meeting of the TB working group, participating sites:
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• Ballabgarh, India	Bandim, Guinea Bissau
• Dodalab, Vietnam	Dodowa, Ghana
• Filabavi, Vietnam	Kanchanaburi, Thailand
• Karonga, Malawi	Kintampo, Ghana
• Kisumu, Kenya	Matlab, Bangladesh
• Navrongo, Ghana	Nouna, Burkina-Faso
• Vadu, India	

History

- 2010: Consultations in Washington with the Gates sponsored CPTR initiative Critical Path to new TB Regimens to develop TB drug trial capacity within an INDEPTH based platform.

- 2010: AGM in Accra, agreement to pursue initial cross site activities within two areas:
  - TB risk factors
  - TB suspects

History

- 2010: Seed money grant from INDEPTH for these two areas

- Participating sites:

  - Risk factors: Vadu, Karonga, Bandim
  - Suspects: Karonga, KEMRI/CDC, Filabavi, Bandim (not funded)

Preliminary report

- Funds transferred spring 2011
- Field work just initiated
- Data collection ongoing

TB risk factors - background

- TB mortality is falling, but still high – 1.45 mil. 2010
- Important risk factors for TB transmission and mortality well known
- Some of these currently addressed, eg ART roll out for HIV
- Other risk factors are thought to be important, but limited data is available.

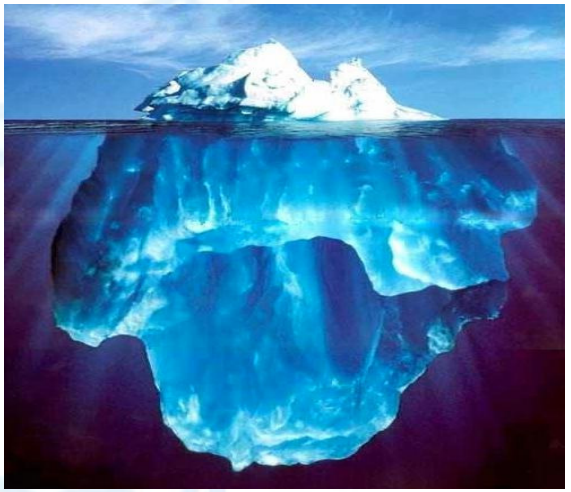
TB risk factors - background

- WHO has identified gaps in knowledge:
  - Neglected risk factors (pollution, mental illness, etc)
  - Strength of association for established risk factors – consistency, reliability
  - Dose-response relationships (e.g. alcohol, smoking)
  - Effects of cumulative exposure, and ceased exposure
  - Interaction between different risk factors, overlapping exposure / clustering of risk factors
  - Effect modification by setting / epidemiological situation
  - SES gradient in different settings
- HDSS' can provide these data!

TB risk factors - objectives

- To collect TB burden data on patients residing in the HDSS using the TB registers
- To collect information on TB risk factors using data collected in the HDSS and link to TB burden and TB treatment outcome data
- To characterize TB patients who seek (and do not seek) TB care
- To compare these data across all participating HDSS sites
- To build capacity in collecting, managing and analyzing tuberculosis surveillance data

TB suspects - background



- TB diagnosis is difficult
- Many are suspected of TB
  - but never diagnosed or treated
- Case definition for a TB suspect is broad (productive cough > 2 weeks, weight loss)
- A study from Bandim showed that 4% of assumed TB negative died within one month after initial consultation, 69% of these had TB as primary cause of death on VA

TB suspects - background

- Through a household visit after one month, 7% of those still symptomatic could be diagnosed with TB.
- Another study in Zimbabwe showed that 18% of initially smear negative TB patients could be diagnosed with TB within one year of follow-up
- Follow-up is difficult in routine TB diagnostic facilities

- HDSS' can provide the needed follow-up!

TB suspects - objectives

- To roll out routines of logging TB suspects in health facility books
- To ensure HDSS ID is captured for new TB suspects in study area
- To register clinical symptoms at first presentation
- To establish follow-up of aTBneg 1 month after initial visit at facility
- To ensure VA of all deceased adults in the study area

TB suspects

- Current study set up:
  - Doctors enroll TB suspects at regular adult consultations at health centres
  - Prompt HIV testing, x-ray and antibiotic treatment for all smear neg
  - Clinical description
  - Risk assessment with Bandim TBscore

TBscore

- ***Symptoms***
- Cough
- Haemoptysis
- Dyspnoea
- Chest pain
- Night sweats
-
- ***Signs***
- Anemia
- Pulse > 90 beats/min
- Positive finding at lung auscultation
- Temperature > 37 (axillary)
- BMI <18
- BMI <16
- MUAC <220 mm
- MUAC <200mm

Wejse C et al. TBscore: Signs and symptoms from tuberculosis patients in a low-resource setting have predictive value and may be used to assess clinical course. Scand J Infect Dis 2008;40(2):111-20.

Status report risk factors

- Protocol in place
- Common database under construction
- Studies conducted: Diabetes prevalence among TB patients and background population (Bandim)

- Planned risk factor associations to be assessed:
  - Pollution
  - Diabetes
  - Crowding
  - Migration
  - SES
  - Smoking
  - Mental health

Site	Karonga	Vadu	Bandim
TB patients	45	322	107
Controls	-	-	700
New pts/year	?	106	100

Status report TB suspectss

- Protocol in place
- Common database established

- Patients identified since 2009:

Site	Karonga	Filabavi	Kisumu	Bandim
TB suspects	162	322	-	506
aTBneg	145		-	470
New pts/year	90	106	100	400

Future plans

- Enrollment of patients throughout 2012
- Additional risk factor association studies to be initiated
- Abstract presentations at ISC 2012
- To expand the network of cross-site TB research
- To conduct multi-site clinical trials

Focus areas

Immediately possible	Long term goals
TB suspects	Compare incidences
Risk factors	Risk of poor outcome
Treatment delay	Prevalence surveys
Health seeking patterns	Access to treatment
TB cause of death (VA)	Rural case detection
TB in HIV, ART effects	Health care system/staff influence on TBepidemic
Effects of TB on household health outcomes (eg. Child mortality)	Multi-site trials: New drugs Vaccine candidates Micronutrients
Time trends	Evaluate new diagnostics
Effects of DOTS	Geographical differences

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  - Hanif Shaikh, Vadu
  - Hoa Nguyen, Filabavi
  - Frauke Rudolf, Bandim

KEMRI/CDC study area Kisumu HDSS, home of Obama's granmother