Early and improved Tuberculosis case detection through the use of GeneXpert (GX) instrument in the Eastern and Central Development Regions of Nepal

(application for TB REACH)

Olga Gorbacheva, MD
Geneva, 08 April 2011
Nepal: context (2009)

- Population: 27,383,773
- Topographic zones (North to South): Mountain, Hill, Terai (plain)
- Administrative division (West to East): 5 Development Regions, 14 Zones, 75 Districts
- Per capita GNI – USD 1.2 per day
- Adult literacy: male – 65.5%, female – 42.8%
TB in Nepal

- WHO 2010: Prevalence, all forms – 240 per 100,000
- IOM, 2010 (active case detection, use of cultures): Prevalence, bacteriologically confirmed forms – 700 per 100,000
- DOT coverage – 100%
- Laboratory services:
  - Microscopy centers – 471
  - Culture and DST laboratories – 2
- Case finding:
  - Target (National Strategic Plan, 2011-2015) – 82%
  - Actual – 75%
  - Project catchment area: median – 40% (range 20–87%)
- MDR TB – 2.9% of new cases
GeneXpert deployment plan

- Eastern Development Region (EDR): 7 instruments
  - Diagnostic centers in 3 hill districts ← referrals from 3 mountain and 6 hill districts (total population – 2,375,581)
    - Facility type: laboratories of district hospitals
  - Diagnostic centers in 4 terai district ← referrals from 5 terai districts (total population – 3,911,264)
    - Facility type: large microscopy centers
- Central Development Region (CDR) (2 instruments)
  - NTP laboratory
  - Diagnostic center in one terai district
GeneXpert deployment in EDR
Potential challenges/barriers

- Low referral rate: limited road access (mountain and hill districts), poverty, low literacy level, low TB awareness
- Power outages up to 16 hrs/day
- Difficulties in obtaining technical support
Mitigation strategies

- Information campaign in 6 mountain and hill districts → increased health care seeking behaviour
- Workshops with primary health care providers in 18 districts → increased referral for sputum testing
- Consultations with decision makers: NTP, WHO and district public health officers → established algorithms and referral system for GX testing
- Provision of power back up equipment (generators, UPS) → uninterrupted power supply
- Technical support by IOM → quick problem solving
Who will be tested?

- Patients with suspected TB and 3 negative sputum smears with or without CXR
- People living with HIV
- Patients in need of re-treatment
Outcomes: 9 months of testing (model based on optimal performance)

- 2217 additional GX-positive cases
- 137 additional R-resistant cases
- Trained technical personnel (at least 2 per site)
- Recommendations on further roll out of GX in Nepal