Addressing the Threat of Drug Resistant TB: A Blueprint for Action

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The Evolution of Drug Resistance

- Drug susceptible TB*
  *or limited resistance
  Manageable with 4 drug regimen - DOTS

- MDR-TB 1990
  Resistance to H&R
treatable with 2nd line drugs

- XDR-TB 2006
  Resistance to 2nd line drugs
  Treatment options seriously restricted

Adapted from Paul Nunn, Global Task Force on XDR TB, Geneva, 2006
Drug Resistance Pattern of XDR TB Isolates

Drug Resistance Patterns in XDR TB Cases by 6 Month Interval

Beyond XDR TB?

• Resistance to additional first-line and second-line drugs (e.g., ethambutol, streptomycin, PAS, cycloserine, ethionamide)

• Among 234 XDR TB isolates in global SRL survey, subset showed additional resistance beyond the “minimum” four drugs in definition

• 118 (50%) isolates resistant to all first-line drugs
  – 57 (48%) with additional resistance to 4, 5, or all 6 second-line drug classes
Implications

- Number of MDR & XDR TB patients continues to increase worldwide

- XDR TB isolates resistant to increasing number of drugs tested

- Diagnostic tests must identify resistance to multiple first- and second-line drugs for accurate diagnosis and treatment

- Diminishing number of available drugs for treatment of XDR TB (and beyond) patients
Plan for Action

• Experience Sharing
  – Across diseases
  – TB Regional Centers of Excellence “Yes we can”
  – In-country, sustained technical assistance

• Health systems-based approach
  – Laboratory scale-up: Facilities, staff, and/or equipment
  – Integrated, patient-centered treatment: MDR-TB and HIV co-management