

Tuberculosis among children in WHO European region

Dr Ogtay Gozalov

Medical Officer, Tuberculosis and M/XDR-TB Programme

Division of Communicable Diseases, Health Security and Environment

The Regional office for Europe /World Health Organisation

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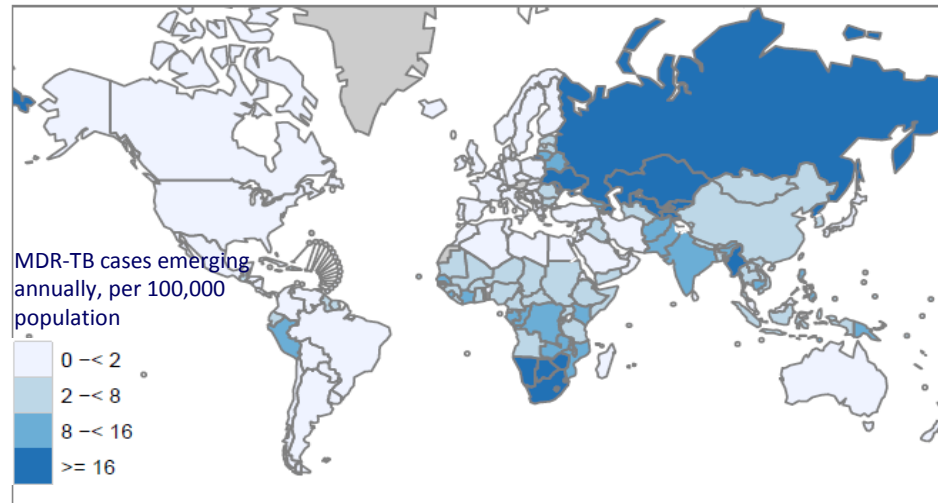


**World Health
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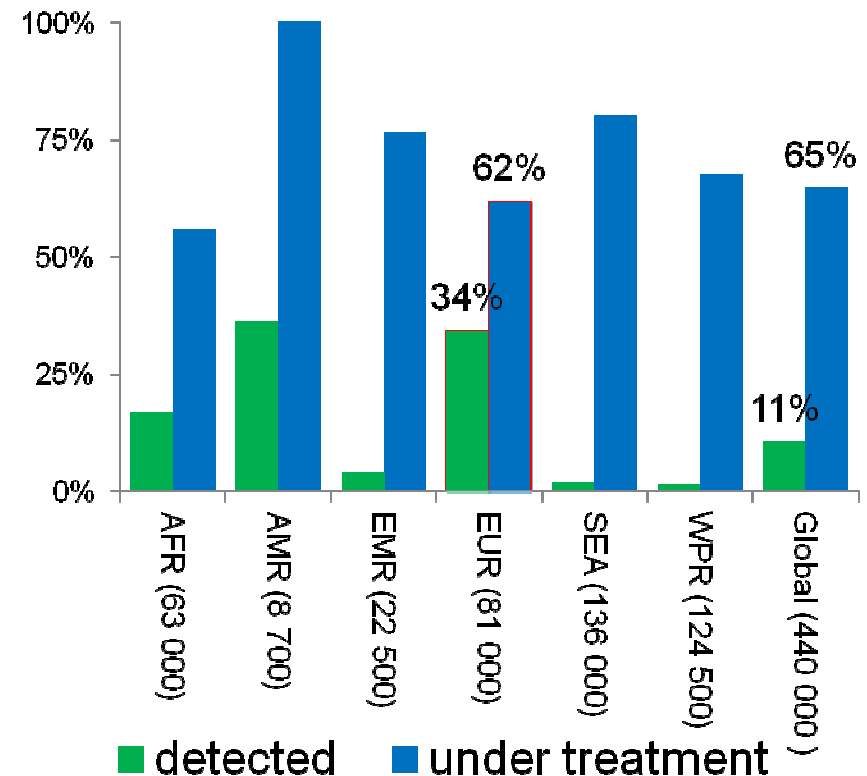
MRD-TB, Global burden and achievements, contribution of European Region

Estimated MDR-TB incidence rate, 2009



- 15 out of 27 high-MDR-TB burden countries in the WHO European Region (81 000 patients annually out of 440 000 emerged globally)
- In 2009, only 27 765 MDR-TB patients notified, (34% out of estimated) due to limited access to diagnosis (globally-11%)
- 17 169 MDR-TB patients put on treatment in 2009 (62% out of detected) (globally-65%)
- Treatment success rate of MDR-TB cohort in the Region is 57.4% only (global figures - unknown)

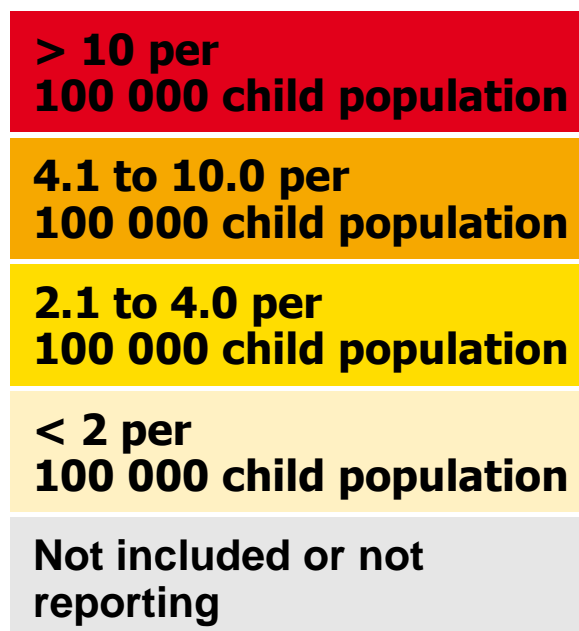
Detection and treatment coverage out of total emerged MDR-TB, 2009



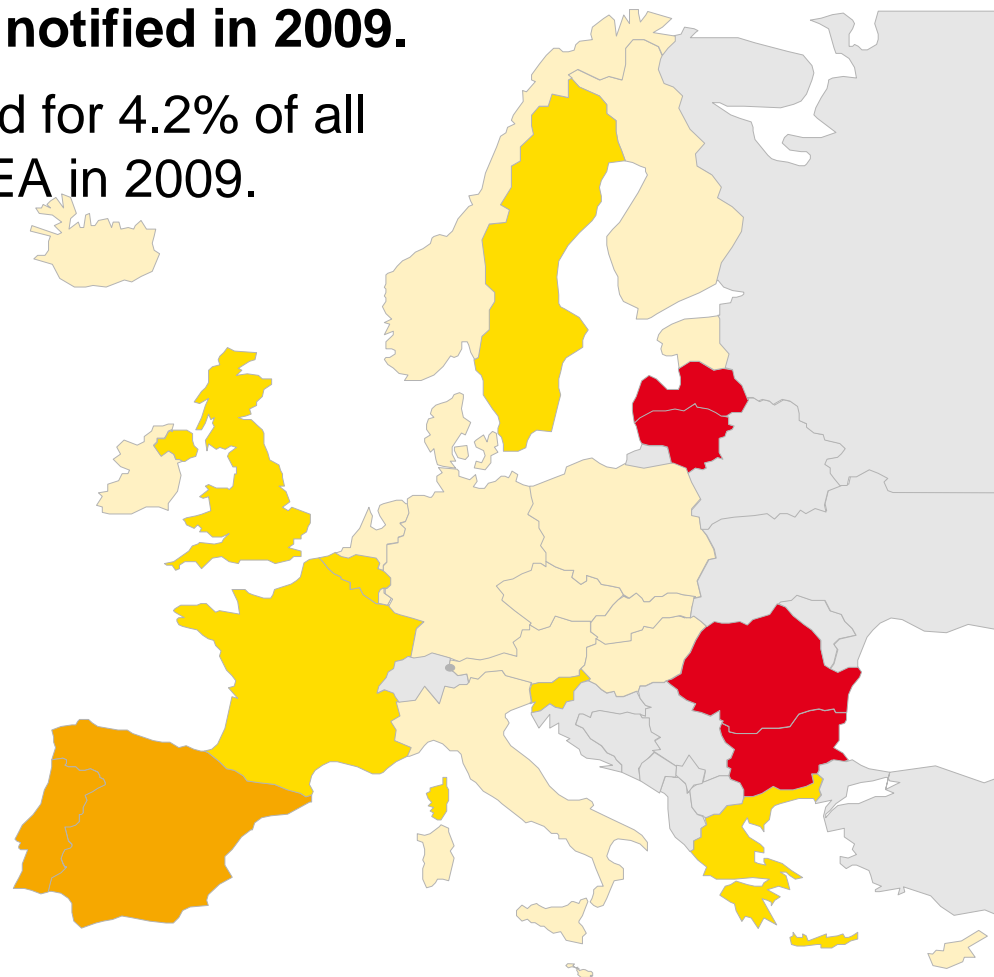
Source: M/XDR-TB: 2011 global report (WHO/HTM/TB/2011.3) and TB surveillance in Europe, report 2009

Many children still suffer from TB in the WHO European region

- More than 3 300 cases were notified in 2009.
- Childhood TB cases accounted for 4.2% of all notified TB cases in the EU/EEA in 2009.



Country-specific childhood TB notification rates in children (0–14 years), 2009



Challenges of TB in children

- Children (0-14 years) account for up to one-third of all TB cases
- Most cases are pulmonary TB (PTB) cases
- Extrapulmonary TB (EPTB) is also common and presentation varies with age
- Risk factors for TB infection: history of contact with a TB patient
- Risk factors for TB disease: young age, HIV-infected, malnourished,
- recent measles
- Most TB cases occur in children less than 5 years of age
- The younger the child, the more likely to identify a close contact with TB
- disease
- TB disease can be more severe and of rapid onset in infants and young children



Consolidated Action Plan to Prevent and Combat M/XDR – TB in WHO European region, 2011 - 2015

3. *Scale up access to effective treatment of all forms of DR TB*

- Activity 3.4.1: need to develop a joint technical assistance plan for Member States in reaching universal access to treatment (including treatment of children) by 2012.

7. *Address the needs of special populations*

- Activity 7.3.1: need to develop a special response for diagnosis and treatment of TB in children and accelerate the adoption of updated childhood TB guidelines by mid 2012.



Clinical recommendations of WHO

High HIV prevalence / “H” resistance

- 2 HRZE / 4 HR
- No intermittent regimen

H – 10 mg/kg (range 10–15 mg/kg);
maximum dose 300 mg/day
R – 15 mg/kg (range 10–20 mg/kg);
maximum dose 600 mg/day
Z – 35 mg/kg (30–40 mg/kg)
E – 20 mg/kg (15–25 mg/kg)

Low HIV prevalence / “H” resistance

- 2 HRZE / 4 HR (if extensive) or 2 HRZ / 4 HR
- Possibility for intermittent



Recommendations (continue)

- No Streptomycin for PTB / Peripheral lymphadenitis
- Meningitis: 2 (HRZE) / 10 (HR)
- Bones TB: 2 (HRZE) / 10 (HR)
- MDR TB: FQ could be used if M/XDR TB program is strong and appropriate regimen is prescribed

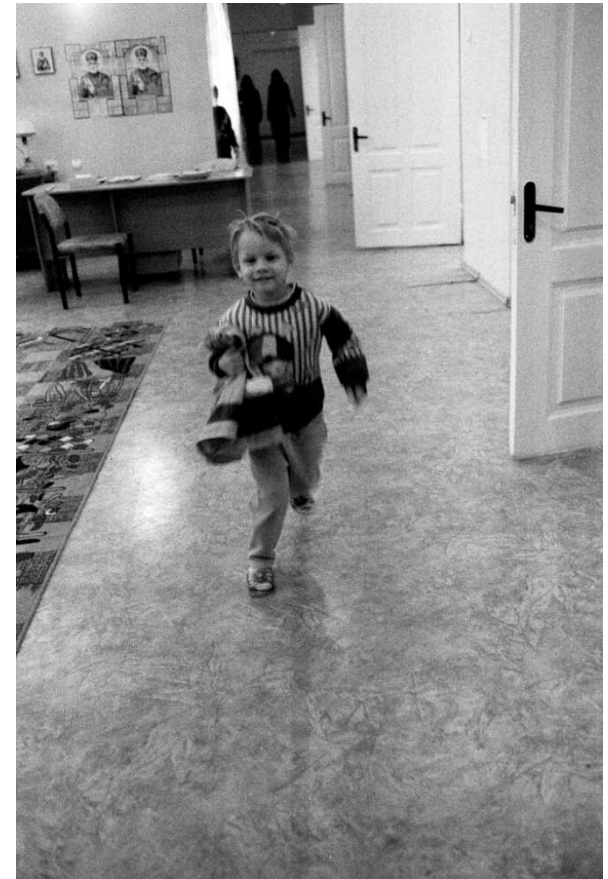


Recommendation 7

Streptomycin should not be used as part of first-line treatment regimens for children with pulmonary tuberculosis or tuberculosis peripheral lymphadenitis.

Remarks

The panel noted the low-to-moderate-quality evidence of the efficacy of streptomycin in children and took into account the risk of toxicity associated with the use of streptomycin. Also considered were problems with injection-based treatment regimens and the availability of safer, more effective and oral alternatives. Streptomycin should be reserved for the treatment of multi-drug resistant tuberculosis in children with known drug susceptibility to this medicine.



Recommendation 8

Children with suspected or confirmed tuberculous meningitis should be treated with a four-drug regimen (HRZE) for 2 months, followed by a two-drug regimen (HR) for 10 months; the total duration of treatment being 12 months. The dosages recommended for the treatment of tuberculous meningitis are the same as those described for pulmonary tuberculosis.

Remarks

- there are many observational studies of the treatment of tuberculosis meningitis in children, but these are of very low quality; the existence of a number of treatment guidelines recommending longer durations of treatment (between 9 months and 2 years);
- high mortality and morbidity associated with tuberculosis meningitis (in particular grade 2 and grade 3 tuberculous meningitis);
- that 30% of children with a miliary picture on chest radiography have central nervous system involvement and should be treated with a 12-month regimen. The panel recommended that the upper end of the recommended dosage range should be considered, given the uncertain penetration of antituberculosis medicines into the central nervous system.



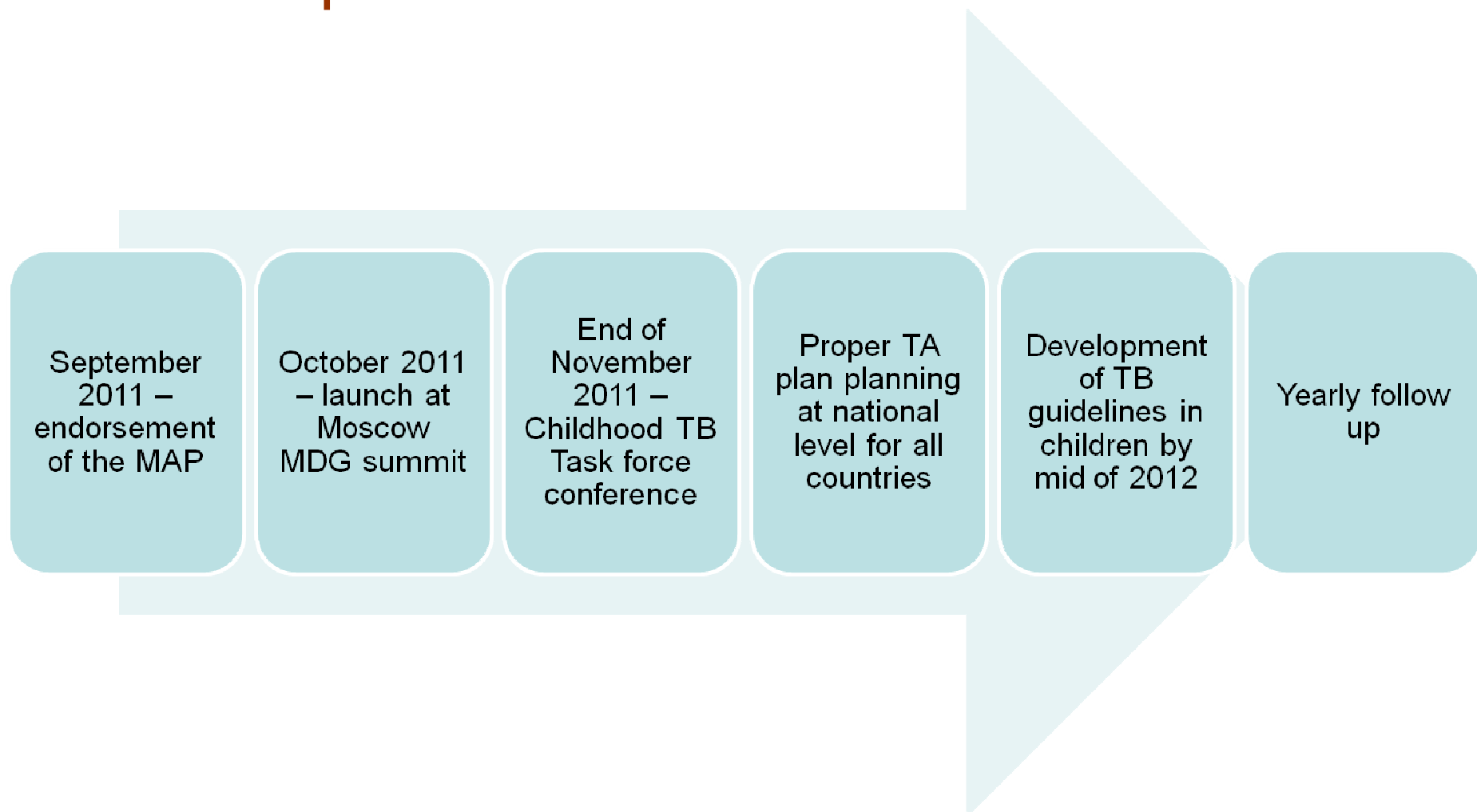
Recommendation 10

Children with proven or suspected pulmonary tuberculosis or tuberculous meningitis caused by multiple drug-resistant bacilli can be treated with a fluoroquinolone in the context of a well-functioning MDR-TB control programme and within an appropriate MDR-TB regimen. The decision to treat should be taken by a clinician experienced in managing paediatric tuberculosis.

The panel noted the lack of long-term safety data for the use of fluoroquinolones in children and the paucity of evidence for their use in the treatment of tuberculosis in children. The panel considered indirect evidence from the treatment of cystic fibrosis and osteomyelitis, which indicated that longer-term use was not associated with an increased risk of joint abnormalities in children. Where arthralgia has been described in studies, it has been completely reversible. The panel took into account the pharmacological arguments for the use of fluoroquinolones, such as their good penetration of tissue and oral bioavailability and predictable pharmacokinetics in children. The panel reached a consensus that in the context of multi-drug resistant tuberculosis, the benefits of treatment outweighed the risks.



Next steps



Useful links

- The Roadmap to prevent and combat drugs resistant tuberculosis:
http://www.euro.who.int/_data/assets/pdf_file/0014/152015/e95786.pdf
- The RC61 documents in English:
http://www.euro.who.int/_data/assets/pdf_file/0007/147832/wd15E_TB_ActionPlan_111388.pdf
- The RC 61 document on M/XDR TB in Russian:
- http://www.euro.who.int/_data/assets/pdf_file/0003/147738/wd15R_TB_111391_lko.pdf
- Rapid advice on TB in children:
http://whqlibdoc.who.int/publications/2010/9789241500449_eng.pdf