

Childhood TB Panel

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TB Alliance Stakeholder Association Meeting

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TB ALLIANCE

GLOBAL ALLIANCE FOR TB DRUG DEVELOPMENT

What We've Achieved

TB Alliance, in collaboration with WHO, and UNITAID and other partners bring to market medicines in the correct dosages that simplifies and improves treatment for 1 million children with TB.

INADEQUATE PEDIATRIC TREATMENT		➔	NOW AVAILABLE	
 INCORRECT DOSES	 BROKEN PILLS			
 CRUSHED PILLS	 BAD TASTE			
CORRECT DOSES, DISSOLVABLE IN WATER, TASTES GOOD				

Advancing TB Medicines for Children

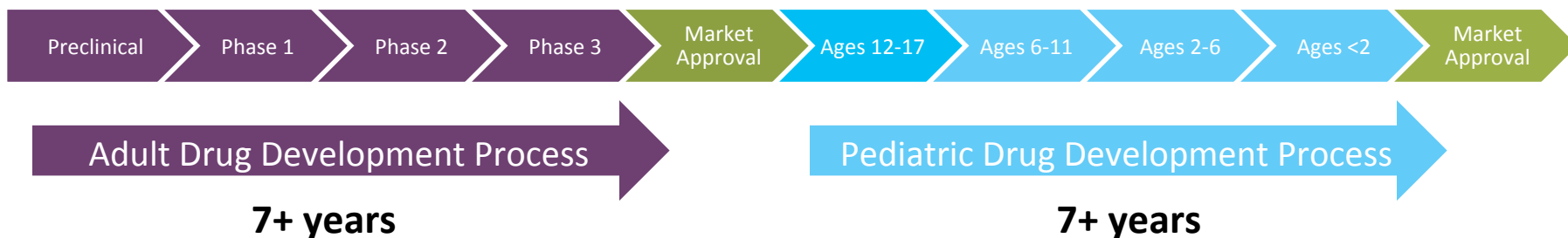
TB Alliance is committed to improving TB treatment for children

- Single drug products—100 mg ethambutol dispersible tablets and 100 mg isoniazid dispersible tablets—in development and likely to be available in 2016
- Expert opinion on use of moxifloxacin (and other fluoroquinolones) in children to pave the way for its further advancement and development in new child-friendly TB regimens
- Working with Janssen on furthering the pediatric development of bedaquiline
- Consideration of children as we advance our pipeline and as safety allows (i.e., inclusion of adolescents in Nix TB)

Accelerating pediatric TB drug development

Getting optimal drugs and regimens to children

TRADITIONAL:



ACCELERATED:



- Juvenile toxicology
- Formulation Work
- BE Studies
- Single- and multiple-dose pK studies simultaneously in ages 0 to 16
- Consider inclusion of children (≥ 10 Y) and adolescents in adult Phase 3 studies

An accelerated pediatric drug development pathway could allow life-saving treatments to reach children sooner than they do today

Question to the Panel

- What are the top 1 to 3 priorities in the **next 36 months** that will be **the best value for money** or **the most impactful** for improving the treatment situation for children affected by TB? Why did you chose these priorities over any other activity that could be done?



TB ALLIANCE PEDIATRIC FDCs: *Thoughts on next steps to maximize our returns*

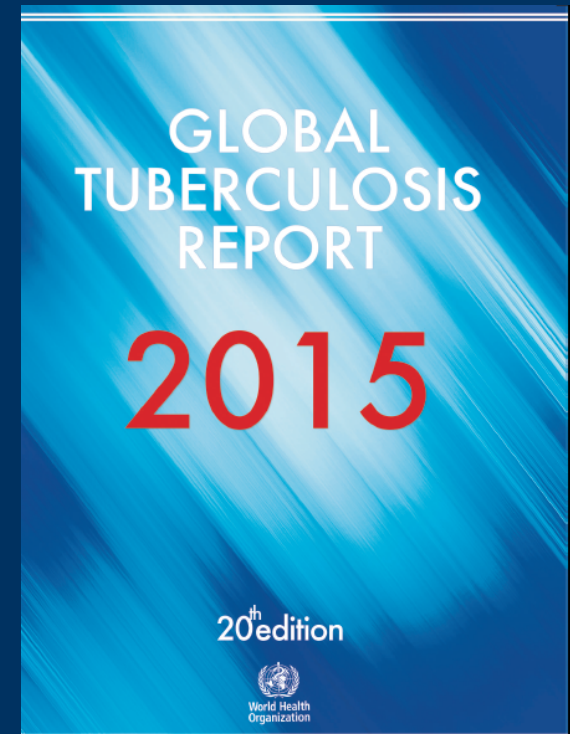
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Recent Global Child TB Estimates (2014 data)

- TB ranks alongside HIV as a leading cause of death worldwide
- TB killed 1.5 million people including 140 000 children
- 9.6 million fallen ill with TB including 1.0 million children.



Recent Global Child TB Estimates (2010 data)

Jenkins et al. Lancet 2014: 383; 1572-79

- **Systematic review**

- Includes modeling that adjusts for under-diagnosis

- **1 million child TB cases**

- twice WHO estimate
- thrice notified number

- **32,000 had MDR-TB**

- no previous estimate

Dodd et al. Lancet 2014: ePub 9 July

- **Mathematical model**

- Adjusts for BCG efficacy, community transmission, population age distribution and HIV infection

- **651K child TB cases**

- **7 600 000 with incident LTBI**

- **53million with prevalent LTBI**

- no previous estimate

BIPIA Overview: Centers of Excellence (COE) and International Project Offices (IPO)



- Gaborone, Botswana (COE opened 2003)
- Maseru, Lesotho (COE opened 2005)
- Mbabane, Swaziland (COE opened 2006)
- Lilongwe, Malawi (COE opened 2006)
- Kampala, Uganda (project started in 2004; COE opened 2008)
- Dar es Salaam, Tanzania (IPO)
- Mbeya, Tanzania (COE opened 2011)
- Mwanza, Tanzania (COE opened 2011)
- Kisumu, Kenya (COE pending)
- Gondar, Ethiopia (IPO)
- Constanta, Romania (COE opened 2001)
- Luanda, Angola (IPO)
- Monrovia, Liberia (IPO)
- Port Moresby, Papua new Guinea (IPO)

Lessons learned supporting BIPAI...

2012 BIPAI COE Clinic Data	Range	Median	Total
Total children (< 15yrs old) followed in clinic in 2012	457 – 5,388	2,200	13,936
# of that total with confirmed HIV	357 – 4,391	2,300	11,679 (~84%)
# of children with suspected/confirmed TB	63 - 123	112	485 (~3.5%)
# of children with pulmonary TB	55 - 114	103	447 (~92%)
# of children with extrapulmonary TB	0 - 11	9	38 (~8%)
# of cases of TB disease in HIV-infected children	59 - 112	94	448 (~92%)
Number of MDR-TB cases in past 3 years	0 - 10	*	10

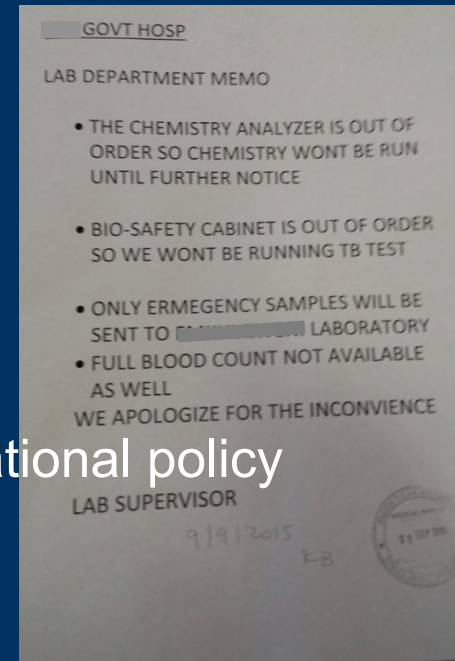


- Behavioral change requires education and persistence
 - *“We already have FDCs. Why do we need new ones?”*
- The vast majority of childhood TB continues to be clinically diagnosed and requires astute clinicians.
- There are many barriers resulting in <10% of child contacts receiving preventive therapy in most settings.

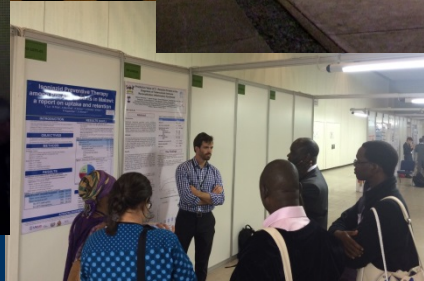


Suggested priorities

- Broad childhood TB educational campaign
 - reaching peripheral and non-traditional TB providers
 - introducing FDCs and advocating for inclusions in national policy
 - raising awareness of childhood TB
 - improving providers clinical diagnostic skills
- Continued development of child friendly INH formulation and promotion of contact tracing and preventive therapy
- Continued development of child friendly MDR formulations



THANK YOU



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WWW.GLOBALTBPROGRAM.ORG

Childhood TB Panel

Jennifer Furin

Case Western Reserve University

Sentinel Project

Priority 1: Family Centered Approach to TB

- TB is always a disease of the family, with household clustering of infection and disease and devastating household consequences even if only 1 family member is sick
- TB care generally provided in “adult” or “pediatric” settings causing problems for families, missed diagnostic and treatment opportunities, and no functional care for adolescents
- Solution: Implement family clinics using models from other diseases (i.e. HIV) and provide care in the community



Priority 2: Efficiently Integrating Affected Children back into the Community

- Children with all forms of TB are deprived of educational, recreational, and financial opportunities
- Much of this is due to strict policies regarding clinic-based DOT or hospitalization
- Ungrounded fears about infection control also lead to stigma, frank discrimination, and isolation of the child and family
- Solutions: child-friendly materials on TB, flexible policies for drug administration, evidence-based infection control



Priority 3: Avoiding the Pitfall of Cost-Driven Approaches to TB in Children

- Public health approach to TB resulted in children being ignored, and cost driven approaches are having the same results
- Pediatric TB—especially MDR-TB—will never be a profitable enterprise, no matter how “big” the estimates.
- “Cost effectiveness” thinking leaves pediatric TB out of major funding and child health initiatives
- Solution: Creative incentive structures for companies, researchers and programs to include children

