Report of the Annual meeting of the Child and Adolescent TB Working Group

Monday 9 October 2017

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Openings address by Dr Olushayo Oluseun Olu, WR WCO Rwanda

Murakaza neza! (*Welcome in Kinyarwanda*)

Dr Olu, WHO Rwanda, explained that Rwanda is doing quite well in terms of HIV, Malaria and TB but that childhood TB remains an issue to be addressed.

In Rwanda according to WHO estimate, TB notification rate per 100,000 inhabitants among children 0-14 years is 9 cases. 394 TB cases were notified in 2012 among children for a population of 4,311,549 of children aged 0-14 years. From January to December 2016, a total of 151 children aged from 0-14 years were diagnosed with TB.

The figures above show that TB is probably underdiagnosed among children. The Ministry of Health has put in place several measures to address TB among children by augmenting capacity building among health care workers, establishment of a technical working for childhood TB and by involving community health workers in sensitization and screening of TB at community level.

In the absence of sensitive TB diagnostic tools for children to improve early detection and treatment, we can prevent unnecessary deaths and suffering if we act and work together with MCH programme managers, TB and HIV programmes, nutrition programmes, and community representatives. We have to join forces to ensure children are not dying needlessly when we have available tools to diagnose them and cure from TB.

On behalf of WHO (HQ, AFRO, IST ESA and WHO Rwanda), I am very pleased to warmly welcome you to Kigali, Rwanda for both the annual meeting of the Child and Adolescent TB Working Group as well as the childhood TB session during the WHO/AFRO MCH programme managers meeting for countries in East and Southern Africa. In addition to the members of the working group, we are extremely happy to welcome so many national TB and MCH representatives!

Wishing you a fruitful meeting and a pleasant stay in Rwanda!

Objectives and expected outcomes of the meeting by Annemieke Brands (secretariat)

The Child and Adolescent TB working group was established in 2003. It is an entity that belongs to the Stop TB Partnership. The secretariat of the working group is hosted at WHO Global TB Programme (WHO GTB) in Geneva, Switzerland. Today, the working group has nearly 300 members from around the world including, among others, paediatricians, academicians, public health specialists, NTP managers, nurses and community representatives. It is an informal body and everybody with an interest in child and adolescent TB is welcome to join. The mandate of the working group is to decrease childhood TB mortality and morbidity by promoting implementation of policies and guidelines; mobilization of human and financial resources to address childhood TB; establishing and strengthening collaboration between partners working in relevant fields (including maternal and child health, HIV and nutrition programmes as well as the extended programme on immunization). The working group has an annual meeting usually around the end of the year. This meeting in Kigali is the 14th annual meeting.

Today's annual meeting has a focus on Africa and is organized in conjunction with the WHO/AFRO Mother and Child Health Programme managers meeting for countries in East and Southern Africa, 10-13 October 2017. We are therefore joined by members of the WHO Regional Task Force on Childhood TB and many country representatives (NTP and MCH) of countries in East and Southern Africa.

The main purpose of the annual meeting is to share global developments and country experiences in scaling up the response to childhood TB and to discuss next steps to move the agenda forward.

Specific objectives are:

- To provide an update on the activities of the working group since the last annual meeting on Wednesday 26 October 2016 in Liverpool, UK;
- To share country experiences in scaling up childhood TB activities; including collaboration with MCH and other health services at country level;
- To discuss case-finding strategies that could improve early case detection as well as prevention of TB -> through contact investigation and integration of childhood tuberculosis screening into other child health services such as HIV, nutrition and the Integrated Management of Childhood Illness screening programmes;
- To give the WHO AFRO Task Force the opportunity to present their activities in the region;
- To share new initiatives that are being or will be implemented in the African region; and,
- To prepare for session on childhood TB during WHO AFRO MCH managers meeting of Eastern and Southern Africa.

Address on childhood TB in Rwanda on behalf of the Ministry of Health of the Republic of Rwanda, Patrick Migambi, Division Manager of TB and other respiratory communicable diseases, Ministry of Health, Republic of Rwanda

Rwanda has a population of 11,5 million habitants. Life expectancy is 65.7 years. Neonatal mortality is 20/1000 and infant mortality is 32/1000. Under five mortality is 50/1000. HIV prevalence among adults is 3%. There is 1 medical doctor per 17,240 inhabitants; 1 nurse per 1,294 inhabitants; and 1 midwife per 66,749 in habitants. The total fertility rate is 4.2. Maternal mortality rate is 210 per 100,000.

WHO estimated that in 2015, 6600 people fell ill with TB in Rwanda. The incidence rate is 15 per 100,000 population. The incidence rate has gone down since 2000. The notification rate (new and relapse) has peaked in 2006 and is now going down slightly. The incidence of TB in PLHIV has gone down substantially.
More men than women are affected by TB.

About 5-7% of total TB cases in Rwanda are children. Among children 0-14 years, WHO estimates that 840 fell sick with TB in 2015. However, only 331 were reported to WHO. This means that 509 children with TB were missed (either not diagnosed or treatment of unknown quality). Rwanda is aiming to find all children with TB.

Addressing childhood TB in Rwanda

TB contact screening among adults and children was initiated in 2008. In 2009, a chapter on TB in children was added to the national TB guideline. Contact screening is initiated after listing the names of persons who are living with an TB index case. Since 2014, the national guidance recommends to conduct contact investigation before treatment and after the end of treatment. In 2014, a specific national childhood TB guideline was developed. This guideline will be updated before the end of 2017 to include the new child-friendly fixed dose combination.

In 2015, in collaboration with MCH, TB investigation among children under 5 was integrated in the Integrated Management of Childhood Illnesses (IMCI) register. The National TB Programme (NTP) has set up an ambitious target related to childhood TB detection in the extended National Strategic Plan 2018-2020 in order to increase the treatment coverage and the sensitivity of screening among TB contacts.

The Ministry of Health has classified children among the high risk groups for TB. The use of sensitive diagnostic tools like Xpert MTB/RIF is recommended as the initial test for children. Community health care workers are involved in contact tracing.

The National Strategic Plan outlines actions to improve performance and to increase early detection of TB among children (right now the case detection among children is 40%). Rwanda is conducting capacity building aimed at building knowledge, skills and confidence of health workers to screen and diagnose TB in children; implementing a paediatric mentorship programme with support of the Rwanda paediatric association (RPA); and, improving collaboration with maternal child community health division in order to strengthen TB diagnosis. The uptake of preventive therapy is improving.

Rwanda shows an impressive uptake of IPT in eligible children below 5, reaching nearly 96% in 2016. This impressive result raised a lot of interest among other participating countries.

Remaining challenges include: low TB treatment coverage among children (40% in 2015) compared to adults; nurses are not fully confident to implement the diagnostic algorithm; and, lack of knowledge on TB in children among health workers.

Report from the Chair on recent activities of the Child and Adolescent TB Working Group, Farhana Amanullah

Childhood TB main facts that we are facing:

1. **The majority of children with TB are NOT diagnosed** Only 39% of the estimated 1 million children with TB were notified to NTPs in 2015 (WHO Global TB Report 2016).

2. Children die from TB 210,000 children <15 died from TB in 2015 among which 40,000 who were HIV positive (WHO Global TB Report 2016). Children that die are often young and/or never accessed treatment (Jenkins et al. Lancet ID 2017).

3. Children exposed to TB do not access preventive therapy 67 million children with prevalent TB infection in 2014 (Dodd et al. Lancet ID 2016). Of the 1.2 million eligible children, 87,000 or 7% accessed Isoniazid Preventive Therapy (IPT) in 2015 (Global TB report 2016).

Researchers estimate that at least 25,000 children develop multi-drug resistant TB every year (Dodd et al, 2016).

Risk factors for childhood TB include: household or other close contact with a case of pulmonary TB (especially bacteriologically confirmed pulmonary TB); age less than 5 years; HIV-infection or living in household affected by HIV; and, severe malnutrition. Young children are at an increased risk of severe disease, such as TB meningitis or miliary, disseminated TB.

In October 2013, the Child and Adolescent TB Working Group launched the "Childhood TB Roadmap: Towards Zero deaths". The roadmap includes the following 10 key actions to scale up the response to childhood TB:

- Include the needs of children and adolescents in research, policy development and clinical practices
- Collect better data, including data on prevention
- Develop training and reference materials for health workers
- Foster local expertise and leadership
- Do not miss critical opportunities for intervention
- Engage key stakeholders
- Develop integrated family-centred and community-centred strategies
- Address research gaps
- Meet funding needs for childhood TB
- Form coalitions and partnerships to improve tools for diagnosis and treatment

A lot of progress has been made since 2013. Childhood TB is now firmly included on the global agenda; countries are including childhood TB in their national TB strategic plans and budgets; childhood TB is addressed during TB programme reviews in TB High Burden Countries (HBCs); donors are making funding available (Global Fund, USAID, Unitaid, and others); updated guidelines, training materials and assessment tools are available; child-friendly fixed-dose combinations (first line drugs) were launched in December 2015 and are available through the Global Drug Facility (GDF); regional stakeholder meetings on childhood TB have been held inviting both NTP and MHC representatives as well as representatives from national paediatric associations; regional task forces on childhood TB were set up in the WHO regions of Africa, Americas, Europe, and the Western Pacific; a first national childhood TB Roadmap was launched by Ethiopia in July 2015; and, UNICEF organized an integration meeting in June 2016.

The 2016 UNICEF consultation concluded that TB remains invisible on the broader agenda of ending preventable maternal and child deaths; integration is only a means – it is about saving lives of children;

strengthening the community and primary health centre platforms is essential and could avert up to 77% of maternal, newborn and child deaths; the current funding environment contributes to fragmentation and verticalisation; good quality, reliable data are key; and, that clear policies and guidance are needed but that leadership for implementation is crucial. Key actions that were identified during this meeting include: raise awareness and increase demand and care seeking; undertake routine screening of TB contacts at the household/community level; to ensure routine risk management and referral among sick children to improve early case finding; decentralize diagnostic capacity for childhood TB to all facilities that can initiate treatment; ensure that generic training materials and management tools for integrated community case management (iCCM) in high TB and HIV burden settings are available; and, document and share lessons learnt, best practices, cost and impact to inform scale up.

Since the last annual meeting on 26 October 2016 in Liverpool, UK, members of the Child and Adolescent working group have been involved in many activities at global, regional and country levels.

At the global level, the group has received full working group status in January 2017 and was tasked to broaden its mandate to also address the specific needs of adolescents. In terms of core team membership, the group now includes representation from Africa, the Americas, Europe and Asia. On the occasion of World TB Day in March 2017, WHO and UNICEF launched a joint statement on the use of the child-friendly FDCs. In addition, UNICEF and the TB Alliance organized a lunchtime event in New York on the occasion of World TB Day 2017. Working group members were represented in the WHO working group to advice SAGE on WHO's position on the use of BCG with meetings in March and August 2017. The Chair of the working group participated in the WHO Guideline Development meeting on the treatment of Isoniazid Resistant TB on 27 April 2017. Members participated in the NAID TB meningitis workshop in May 2017 in Washington DC, USA. A presentation on finding the missing childhood TB cases was made during Challenge TB country directors on 2 June, The Hague, The Netherlands to inform year 4 work plan development. A session on childhood TB was organized during the 17th Strategic and Technical Advisory Group on TB (STAG-TB) to WHO on 12 June 2017 during which WHO has been tasked to update targets and timeline of the roadmap also including adolescents and to further reach out to MCH programmes and child health sector. A Global Fund Brown Bag on childhood TB was organized on 14 June 2017 as countries mention childhood TB in applications but it does not always translate into specific funding requests. Working group members have participated in the third End TB Summit, 15-16 June 2017 during which 32 countries and 40 partner organizations were present. A video statement on paediatric TB and TB/HIV was prepared for a meeting of Caritas Internationalis. The working group also met with the World Council of Churches. Various webinars were conducted, among which the recent UNICEF/CDC webinar on TB along the lifecycle: opportunities for integration of TB, HIV and MCH programmes. The Chair and working group members were participating in the TB infection workshop: building a framework for eradication organized by the NIAID, HMS Center for Global Health Delivery on 27-28 September in Dubai.

At the regional level, working group members participated in the WHO AFRO Childhood TB Task Force meeting, 1-2 March 2017, Kampala, Uganda. The Union organized a workshop on childhood TB national training tools from 10-13 April 2017 in Cotonou, Benin (with other West-African countries including Cameroon, Côte d'Ivoire, Madagascar, Central African Republic, Togo and Senegal). We were represented at regional NTP managers meetings in the Western Pacific region (20-21 March in Tokyo, Japan) and recently also during the WHO AFRO regional meeting with national TB and national AIDS programme managers, 18-22 September, Harare, Zimbabwe. Childhood TB experts participated in the Union-Asia-Pacific Conference, 22-25 March, Tokyo, Japan as well as in the 20th conference of the Union Africa regional meeting, Accra, Ghana, 10-13 July 2017 during which the WHO AFRO Task Force on childhood TB conducted a post-graduate course on childhood TB on 10 July 2017. A regional childhood TB training for the Pacific Island countries, was conducted from 21 July -5 August 2017, in Nadi, Fiji.

At the national level, working group members have actively participated in national TB programme reviews in TB High Burden Countries: the Joint External Monitoring Mission in Indonesia in January 2017; the Kenya TB programme review from 26 Februaty to 10 March; the Swaziland programme review from 1-13 May; the Niger programme review from 19-30 June; and, the Madagascar programme review from 24 July - 5 August 2017. Common observations from participation in these reviews include: there are many "missing" cases; often late diagnosis at higher levels of the health system; treatment outcomes are not available; in general contact management and preventive therapy are not being implemented; access to Xpert MTB/RIF remains limited; and, Nutrition and HIV programmes are not screening children for TB. Technical assistance to scale up the response to childhood TB was provided by working group members to: Mongolia (February); Sudan (March and August). Technical assistance to DPRK will provided in December 2017. A workshop with regional TB champions was conducted in Indonesia in August 2017.

In November 2017, the working group will be represented at the First WHO Global Ministerial Conference Ending Tuberculosis in the Sustainable Development Era: a Multi-sectoral Response, 16-17 November 2017 in Moscow, The Russian Federation. In December 2017, we will be presented at the WHO/EURO regional meeting on childhood TB.

In terms of plans for 2018, we are planning to be represented at the UN General Assembly session on TB. Paediatricians will be participating in upcoming programme reviews in TB high-burden countries. And we will keep addressing requests for technical assistance. We are currently exploring options and suggestions for the annual meeting in 2018. We should organize it in conjunction with the Union conference that will be held in The Hague, the Netherlands in October 2018, however, there may be other meetings with a special focus on Asia to which we could link (to highlight ways to find the missing cases in the private sector/PPM).

At the end of the presentation, the Chair showed some of the available guidelines, training and assessment tools and called on the working group members and country representatives to keep sharing their activities and upcoming events.

Experiences with linking NTP and RMNCAH services in Uganda, Moorine Sekadde, Childhood TB focal point, NTP Uganda & Jesca Nsungwa-Sabiiti, Assistant Commissioner Child Health, Uganda

A baseline assessment of the response to childhood TB was conducted by the NTP in 2014-15 which indicated that there were limited TB services provision across the entire health facility care cascade; centralization of TB services; limited health worker capacity to identify patients with or at risk for TB; and weak referral and linkage mechanisms. Uganda used the findings of this childhood TB assessment as an entry point for linking the NTP with the RMNCAH programme. The findings informed the interventions. The baseline assessment also mapped the different programmes within the MoH/ Program structure that are involved or have a role to play in childhood TB. The structure of the Ministry of Health has changed since the assessment. Inter-programme collaboration and coordination is important for policy and guideline development, planning, implementation as well as resource mobilization.

The National TB and Leprosy Programme (NTLP) led on-site capacity building. On-site capacity building is part of the roll out of the response to childhood TB; childhood TB is now part of the curriculum and training materials have been developed; and, childhood TB has been incorporated into regional and district work plans. The on-site training is supported by the Government of Uganda as well as implementing partners. On-site capacity building has the form of a cascade: national training of trainers (ToT), regional TOT including staff providing MNCH services, and integrated on-site training and mentorship with an emphasis on MNCH care points.

The on-site capacity building has facilitated TB service integration into a wide variety of other health care service points: antenatal clinic, post-natal clinic, in-patient ward (children's ward), out-patient department, nutrition unit, and young child clinic, maternity and mother & baby care points. Training is provided to clinical officers, medical doctors/officers, midwives, nurses and other staff. Recording and reporting tools have also been updated. "TB status" is included in the OPD register, in HIV registers and in the integrated ANC register. "Nutrition status" has been added to the TB register.

As a result, the case notification rate for 0-14 year old children has gone up from 7.5% in 2014 to 8.2% in 2016. However, IPT coverage went slightly down in the same period.

Several projects are being implemented in Uganda that are leading to innovative approaches:
1. DEcentralize Tuberculosis services and Engage Communities to Transform lives of Children with Tuberculosis – DETECT Child TB. This is a project led by the Union in collaboration with the MoH, Baylor Uganda and MildMay-Uganda. It has shown that decentralization of child TB services is feasible and that it leads to an increase in both child and adult TB case finding.
2. The ICCM/TB/HIV – Project implemented by UNICEF in collaboration with WHO and the MoH. The project is in the final stages and provides an opportunity to identify children (< 5 years) with or at risk of TB.
3. The HOP Project led by CDC through Baylor-Uganda in collaboration with the MoH and the Union. This project is ongoing and the purpose is active TB and HIV case finding using an integrated community approach.

There are several challenges in linking TB and RMNCAH services:
Health system related: competing disease programme priorities; not all health facilities are TB diagnostic units (HC IIs); weak referral, linkage, and feedback mechanisms; interrupted supplies; recording and reporting does not fully facilitate tracking of integrated TB services; and, limited resources.
Service Provider related: health worker attitude which impacts on TB screening; limited health worker knowledge, skills/confidence in identifying patients with or at risk for TB; documentation and reporting errors.
Patient/ Caregiver related: limited awareness; health seeking behavior; access to health services.

Opportunities to reinforce interventions:
Policy and guidance: inter-programme collaborations (bi-direction policy adaptation); pre-service training; multi sector collaboration.
Service delivery: IMCI; iCCM; school health; adolescent-friendly services; focused antenatal care; contact tracing; community outreach programmes; and, continuous quality improvement approach.

Summary of discussion:

- Onsite training reduces stigma and creates ownership. Training should not be a one-time event.
- It helps if TB recommendations show up in various programme documents.
- The IMCI is an opportunity to manage our children better at lower level health facilities where health workers can ask about a cough for more than 2 weeks or a history of TB in the family.
- In Uganda, training has reached the lower levels of the health care system where suspecting and referring is now happening. The screening approach is based on the presence of certain symptoms and the history of the child even in the absence of diagnostic tests. It is challenging but the way to go forward.
- Uganda is moving away from "suspecting and referring" to "having confidence in making a clinical diagnosis".
- The NTP is writing up a protocol to evaluate the impact of symptom-based screening in selected sites.

- as a lot of bacteriologically confirmed but asymptomatic child TB cases were found through CXR.

- A lot of bacteriologically confirmed but asymptomatic child TB cases were found through CXR. Currently, CXR is included in many diagnostic algorithms but it is not yet widely available. The Global Fund is willing to provide funding for machines to be placed at various levels of the health system but health workers will need to be trained in how to interpret chest X-ray (CXR).
- The algorithm that Uganda is using for the lower levels of the health care system provides an opportunity to make a decision in absence of CXR and diagnostic tests. We need to look how to best integrate the TB algorithm into the IMCI.
- Uganda has shown that a link between the NTP an MNCH is possible. Now Nutrition programmes need to be included as well. Similar efforts are needed at the global level.

Improving TB diagnosis in children under 5 years of age: a study of paediatric TB diagnostics comparing different specimens, Hannah Kirking, CDC

Children are highly susceptible to TB. They often progress quickly to disease or death. Clinical disease differs from adult-type disease: paucibacillary disease; extrapulmonary disease relatively more common; subtle chest X-ray findings (cavitation rare); and non-specific symptoms.

Diagnosis is challenging as young children are unable to expectorate sputum; alternative specimens are difficult to obtain; microscopy is rarely diagnostic; the "Gold standard" culture is insensitive; and, due to changes in clinical case definition.

The currently recommended specimens in children <5 are induced sputum (IS) and gastric aspirates (GA). These procedures generally require hospitalization, require skilled medical staff and equipment; are invasive; and, are rarely available in TB high burden settings.

Alternative specimens and tests have been studied. Often studies compare 1 test versus another test, e.g. IS versus GA or Stool versus IS and/or GA or blood culture. There is limited to no evidence looking at a broad range of specimens and tests determining which combination would be best.

The main purpose of the prospective cohort study in children under 5 conducted by CDC in collaboration with the Medical Research Institute (KEMRI) and Harvard was to identify the best possible combination of specimen types and diagnostic tests for TB diagnosis.

The children enrolled in the study were sick and had the following prolonged symptoms: cough of more than four weeks, malnutrition of more than 3 weeks, cervical lymphadenopathy of more than 4 weeks, and/or parenchymal abnormalities on CXR. A cohort of healthy controls were enrolled but only underwent non-invasive testing.

The children in the sick cohort were admitted for digital X-ray, physical examination, medical history, and specimen collection. Follow up was provided at 2 weeks, 2 months and 6 months. They received TB treatment and IPT as indicated. The study was implemented in Kusumu in Kenya. Funding came mostly from USAID, but also from CDC, NIH and others.

Specimen collection in the sick cohort consisted of 2 nasopharyngeal aspirates (for culture and Xpert), 2 induced sputum (for culture and Xpert), 2 gastric aspirates (for culture and Xpert), 2 string tests (for culture and Xpert), 2 stool specimens (for culture and Xpert), 2 urine specimens (for culture and Xpert), 1 lymphe node fine needle aspiration (for culture and Xpert), and 1 blood specimen (for culture only).

Study results: A total of 7446 children were screened out of which 300 sick children and 51 healthy children (as controls) were enrolled. Out of the sick children, 96 (32%) were started on treatment and 204 (68%) were not started on treatment. Out of the 96 children started on treatment, 32 (33%) had confirmed TB and 64 (67%) had presumed TB.

The study (to be published soon) looked at the diagnostic yield of the various specimen types in these 32 sick children and compared the yield between reference standard specimens with the minimally invasive and with invasive specimens. The study demonstrated that that more TB is found when using a combination of the more invasive specimens.

The study also took into consideration HIV status and the characteristics of the children with HIV. 28 (9%) out of the 300 children enrolled in the study died. Almost half of these children who died were diagnosed with HIV during study enrolment.

The study also looked at co-infections including malaria, HIV, helminths, viral and bacterial respiratory pathogens. Additional tests including evaluating TST, multiple versions of QFT and nutritional tests were conducted. Emerging diagnostics including breath test and electronic nose were used. Specimens were stored for biomarker testing. All of these were needed as the study has a robust gold standard. Non-invasive specimens were collected from the healthy controls.

The study identified a combination of more easily obtainable specimens (NPA and stool) with yield comparable to the commonly accepted gold standard. Kenya may pilot this approach more broadly. The study identified a combination that may have higher yield than the prior reference standard. The PEPFAR HOP project will evaluate this new approach in a routine programmatic setting. The study evaluated emerging diagnostic and ancillary tests (results pending). The results will be widely disseminated in the hope that they will have a global impact.

Discussion:

- During the discussion that followed the presentation, questions were asked about feasibility in programmatic settings. It would also be interesting to compare cost related to various combinations of specimens. In the future, we may also want to study the combination of 1 digital CXR and 1 NPA. It was asked which procedures were used for gastric aspirates.
- The study results are for individual patients (not related to individual specimens) and will be available in the manuscript. The manuscript will also contain differences between HIV positive and HIV negative children and by level of malnutrition.
- At the time of enrolment, “4 weeks of cough” (as opposed to “2 weeks of cough”) was one of the criteria. The last patients were enrolled in 2016 and clinical criteria have changed over time.
- The yield of the specimens and various tests may also depend on disease severity. The study included very sick children but the children seen at lower levels are probably less sick. The children that were included in this study were very sick. Enrolment of children in the study initially happened in the hospital but later on also in other programmatic sites.
- Nearly half of the children who were HIV positive were only diagnosed with HIV during the study which shows the importance of collaboration and integration between disease programmes. It shows the vulnerability of children who die from TB.
- The study focused on children under 5 as it is within this group that we have the biggest challenges in diagnosing TB.
- The study shows that it remains challenging to make a diagnosis. Despite all the tests and various specimens, only one third of the children were diagnosed. This shows the reality. If involvement of

children coughing less than 4 weeks, then results would probably have been even lower. Xpert MTB/RIF is now recommended as the first test. However, a negative test result does not exclude TB in children! Digital CXR is therefore a very important tool but health care workers need training to be able to interpret the images. Although not yet validated for use in children, we need to work on this.

Highlights from other WHO regions (max 15 min per region followed by 15 min discussion):

Childhood TB and the uptake of new drugs in the European region, Martin van den Boom, WHO/EURO

Since 2011, the approach to drug-resistant TB has been scaled up from small scale projects to nationwide integrated programmes. The TB notification rate has gone down. There are less new cases per year and more people are successfully treated. More drug-resistant TB patients are being diagnosed and the coverage of drug drug-susceptibility testing has increased. There is universal access to treatment and an increase in the drug-resistant TB treatment success rate. There are less drug stock-outs. There is improved electronic and individual data surveillance. Awareness and political commitment have improved. The number of national up-to-date clinical and programmatic childhood TB guidelines has increased as has the number of member states with childhood TB in their national strategic plans and Global Fund concept notes.

The WHO/EURO regional plan to End TB, includes the following key strategic directions: full scale-up of rapid diagnosis; rapid uptake of new medicines; expanding people-centred models of care; shorter and more effective treatment regimens; research for new tools; and, intersectoral approach to address inequities.

In terms of impact, the period 2000-2015, Europe has seen an impressive decline in TB mortality combined with a growing burden of TB/HIV mortality. The WHO European Region has the fastest decline in TB incidence, however, a growing TB/HIV co-infection.

Drug resistance can be found in every country of the WHO European region. Globally, in 2015, there were 480,000 new cases of MDR-TB and an additional 100,000 new cases of rifampicin-resistant TB (RR-TB) in need of MDR-TB treatment. One in 6 new TB cases in the WHO/EURO region are MDR-TB cases. One in 2 retreatment cases in the WHO/EURO region are MDR-TB cases. In 2015, one in four MDR-TB cases had XDR-TB which is extremely difficult to treat.

TB care needs to become more people-centred. For this to happen, the management of TB needs to shift from a hospital-dominated model, where management takes place largely in isolation from the primary care system and the wider community, to one embedded within communities and led by the primary care system. In this way care is nearer and more accessible to the people it serves, meaning that it is more likely to be used and to benefit patients. This requires the preventive, ambulatory, community and home care sectors to enhance their capacity to plan, implement and monitor integrated models of care. Further, hospitals need to be reconsidered as one of many links in a health service delivery network, where patients move seamlessly between different settings based on their needs. Within this network, the role of hospitals is limited to delivering specialized care for particularly complex TB cases.

Recently, 22 regional Green Light Committee (GLC) mission reports from 15 sites (Azerbaijan, Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Serbia (UN AT Kosovo), FYR Macedonia, Moldova, Romania, Moldova/Transnistria, Tajikistan, Turkmenistan, Ukraine and Uzbekistan) were analyzed against elements that need to be addressed before introduction of new TB drugs *(Bedaquiline and Delamanid)*, as per the WHO policy implementation package for new TB drug introduction. Out of the 15 countries assessed, 13 have now introduced Bedaquiline and/or Delamanid. Armenia, Azerbaijan, Belarus, Georgia, Kyrgyzstan, Moldova, Tajikistan and Uzbekistan have national implementation plan for the introduction of new TB drugs. 14 out of the 15 countries assessed meet the minimum requirements for country preparedness and planning. All 15 countries have drug susceptibility testing (DST) for first-line drugs and 13 out of 15 countries have DST testing

capacity for second-line drugs. 9 out of the 15 countries did not report any second-line drug shortages during the last two years.

Registration of Clofazimine (Cfz), Bedaquiline, and Delamanid is problematic in all countries of the WHO European region. Pharmacological companies are not interested to apply for registration, hence, alternative mechanisms should be considered. Bedaquiline and Delamanid are imported based on one-time license, mainly because these drugs are still on a clinical trial. TB drugs procured with the support from the Global Fund are quality assured. However, drugs procured through local budget, do not hold WHO-prequalification. In terms of monitoring and evaluation, all 15 countries use updated WHO definitions for TB (2013 update). Some countries still do not have functional electronic TB database and execute paper-based reporting (Azerbaijan, Tajikistan, Turkmenistan, Uzbekistan, Kyrgyzstan). Supportive supervisions are conducted in the majority of the countries and are performed by the National TB Programs, but are heavily relying on the Global Fund support. Delamanid is used for children with XDR or MDR-TB+ and is showing good treatment results.

Experience from the NTP Belarus and MSF shows that 27 children/adolescents with a median age of 16 (10-17) have been treated with Bedaquiline. 65% were culture positive at the baseline. 67% had presumed or confirmed XDR-TB. Companion drugs used included: Moxifloxacin (22%), Clofazimine (96%), Linezolid (96%), Imipenem (15%). After 24 weeks of treatment with Bedaquiline, all 27 children and adolescents involved, were culture negative. 5 patient had prolonged QTcF but none had to cease Bedaquiline.

With respect to “Early diagnosis of all forms of tuberculosis and universal access to drug-susceptibility testing, including the use of rapid tests”, the WHO regional office for Europe, in collaboration with partners, is preparing a guide on diagnostic algorithms for expanded and accelerated quality-assured new diagnostic technologies (taking into account paediatric tuberculosis and extrapulmonary tuberculosis diagnostics). With respect to the “management of latent tuberculosis infection and preventive treatment of persons at high risk, and vaccination against tuberculosis”, Member States will ensure that WHO policy recommendations on bacillus Calmette-Guérin (BCG) vaccination for infants are implemented and BCG revaccination is discontinued.

With respect to “Equitable access to quality treatment and continuum of care for all people with tuberculosis, including drug-resistant tuberculosis, and patient support to facilitate treatment adherence”, Member States will ensure that their tuberculosis and drug-resistant tuberculosis treatment guidelines, including childhood tuberculosis guidelines, are regularly updated and implemented according to the latest available evidence and WHO recommendations (ongoing activity). They will also develop a plan for achieving universal access to treatment, including the treatment of vulnerable populations and children, and an uninterrupted drug supply (ongoing activity). Member States will ensure the rational, safe and effective introduction of new tuberculosis medicines, including for children, according to the most recent WHO policy guidance. Member States will sustain countrywide use of first-line fixed-dose combination drugs (for adults and children) and paediatric drug formulations in the treatment of drug-susceptible tuberculosis, where possible.

In terms of “Regulatory frameworks for case-based surveillance, strengthening vital registration, quality and rational use of medicines, and pharmacovigilance”, the WHO Regional Office for Europe will assist Member States in the development of procedures for the procurement of medical supplies with an emphasis on quality assurance through strengthened regulatory authorities and particular emphasis including, but not limited to, **paediatric** tuberculosis diagnostics and treatment (drug formulations), and limiting the availability of new drugs on the free market (over the counter) without a tuberculosis indicated prescription sale.

Finally, political commitment is key. In January 2015, the Economist showed that investing in TB prevention and care is value for money. TB control is the most cost-effective single disease approach investment: 1 USD invested, yields 40 USD return.

In conclusion, more high level advocacy is needed. Also in Europe, Childhood TB should be integrated further within overall TB care and beyond, i.e. PHC, pediatrics, etc. The uptake of new drugs can be further improved and more rapid mechanisms for new drug introductions are needed at country levels. There is a need for more evidence; partnerships are key; and, capacity is crucial and needs to be further build and strengthened. WHO/EURO will be organizing a regional conference on childhood TB in December 2017. One of the key questions to be addressed will be "how to deal with child contacts of patients with MDR or XDR-TB?"

The Americas, Betina Mendes Alcantara Gabardo (Brazil)
The childhood TB working group of the Americas was created in 2014. Three face-to-face meetings have taken place. An email distribution list is used to share information among the members of the group. Complicated TB cases are being discussed via a WhatsApp group.

The Chair of the Childhood TB working group of the Americas reported on activities that have been implemented by, or with involvement of, the members of the working group in the countries of the Americas. She presented the activities by pillar and component of the WHO End TB Strategy.

Pillar 1: Integrated patient-centred TB care and prevention

Component A. Early diagnosis of tuberculosis including universal drug-susceptibility testing, and systematic screening of contacts and high risk groups

Ecuador has decentralized the TB programme to all the primary health care units and has trained all health professionals in the clinical diagnosis and management of TB.
Also in Brazil and Columbia, diagnosis of childhood TB is now possible at Primary Health Care facilities. Children are only referred to specialized care if necessary.
Colombia, Brazil, the Dominican Republic and Honduras have planned and implemented multiple workshops and courses on childhood TB. Some were for paediatricians, others were for health workers in general (medical doctors, nurses, pharmacists, and pediatricians).
The Dominican Republic and El Salvador have organized a symposium on childhood TB during a Congress on Pulmonology.
Peru has developed a guideline on how to address an outbreak of TB in educational settings.
All countries are raising awareness on the importance of treating latent TB infection. Brazil and Peru are also ensuring that treatment of latent TB infection is included in the recording and reporting system.
El Salvador, Brazil, Panama, and the Dominican Republic have expanded access to Xpert MTB/RIF.

Component: Treatment of all people with tuberculosis including drug-resistant tuberculosis, and patient support

Honduras, Brazil, Colombia, El Salvador, and the Dominican Republic have ordered the child-friendly paediatric TB fixed-dose combinations.
Working group members from Colombia, Honduras, the Dominican Republic and Mexico are part of national TB committees to discuss the management of complicated childhood TB cases.
Brazil has a paediatrician who provides online or advice by phone on the management of complicated cases.

Component C: Collaborative tuberculosis/HIV activities, and management of co-morbidities

Brazil, Ecuador, and El Salvador have developed clinical guidelines for the management of TB/HIV co-infection.
Working group members from Colombia, Honduras and the Dominican Republic are participating in the national TB committees to discuss the management of paediatric TB/HIV co-infections.

Pillar 2: Bold policies and supportive systems

All members of the working group are participating in national TB committees.
Ecuador, Brazil, El Salvador, Colombia and the Dominican Republic have up-to-date guidelines on the diagnosis and management of tuberculosis in children.
Honduras has updated the national list of essential drugs.
In collaboration with the International Organization for Migration (IOM), Colombia has conducted a training on the management of tuberculosis in special populations.
El Salvador, Colombia, and the Dominican Republic have included childhood TB in the national strategic plan.
Peru has enforced a law on the prevention and control of Tuberculosis.
Brazil has launched the National Plan to End Tuberculosis as a public health problem 2017-2020.
Childhood TB was the theme of World TB Day in the Paraná State of Brazil, El Salvador, and Ecuador.

Pillar 3: Intensified research and innovation

El Salvador has developed operational research to identify barriers and actions to scale up the response childhood TB. The Dominican Republic is conducting research on "Lost opportunities in the diagnosis and treatment of TB" and is reviewing "10 years of experience in the treatment of drug-resistant TB in children".
Through the REDE TB network, Brazil is conducting research on childhood TB.
Working group members from the Dominican Republic, Brazil, Colombia, and Honduras are providing graduate and postgraduate courses for health students.

Childhood TB in South East Asia, Shakil Ahmed (Bangladesh)

Dodd et al (2017), estimated that 239,000 (194,000-298,000) children die of TB every year. 80% (191,000) of these children were aged <5 years. 182,000, or 70% of these deaths, occur in South East Asia and Africa. 96% of these children died without any anti-TB treatment. TB is one of the top 10 causes of under-five mortality.

About 1.86 billion people (or 26% of the global population) live in the South East Asian countries of which 89% in Bangladesh, India and Indonesia alone; 10% in Thailand, Myanmar, DPRK and Sri Lanka; and, 1% in Bhutan, Maldives and Timor-Leste. South East Asia carries 41% of the global burden of TB.

In adults, more men than women get TB. In children, the ratio is more equal.

In terms of incidence of childhood TB, 40% (400,000) of the total cases are occurring in South East Asia, 31% (310,000) in the African region and 13% (130,000) cases in the Western Pacific. In South East Asia, only 174,316 childhood TB cases get notified (7.1% of total notified TB cases). Only 43% of the estimated childhood TB cases are found (225,684 are left out).

In 2015, Bangladesh 4.4% of all notified TB cases were children (9192/209,438). A second edition of the national childhood TB guideline was launched and training modules for doctors were developed. Already 1300 doctors have been trained. In addition, 12,000 community health care workers have been trained on childhood TB. The child-friendly fixed-dose combination are introduced. Bangladesh has active participation of the national paediatric association. Childhood TB was addressed during two workshops conducted by the Nutrition programme. Childhood TB was also part of an IMCI workshop. Bangladesh has established a national advisory committee on childhood TB. Research is ongoing at institutional level.

TB incidence in Bhutan is 191 per 100,000 population. 12-14% of TB cases are among children. About 49% of children have pulmonary TB and 51% extra pulmonary TB. 40% of childhood TB cases are in children under 5 years of age. There is passive case finding. Bhutan follows the WHO guidance as there are no national childhood TB guidelines.

In DPRK, active case finding is implemented at Ri/Dong level ("household doctors"). The doctor visits the household and refers presumed cases to the county hospital for further investigation. Diagnosis is being made by a paediatrician at the country hospital. Treatment follows the WHO guidance and a national childhood TB guideline is being drafted. There is no training for doctors available.

India launched standards of TB care on World TB Day 2014. Standard 6 is about paediatric TB. India has moved from an intermittent to a daily treatment regimen (4 drugs for all cases) in 2015 using WHO weight bands. In case of relapse, the following drugs are provided: 2SHRZE + 1HRZE + 5HRE. The Indian Academy of Pediatrics is conducting training for doctors since 14 years. "NIKASHAY" is a project to incorporate private health service providers. In the project areas, this has led to a 20% increase in case notification. India is working on integration of the management of childhood TB in INMCI, MCH and nutrition programmes. All child contacts <6 years should be screened for and given preventive therapy, however, 35-65% of child contacts of TB patients eligible are not covered.

Childhood TB is one of the core areas of Indonesia's national TB control strategy: expand TB/HIV collaboration; deal with drug-resistant TB; strengthen TB control in children; and, meet the needs of the poor and vulnerable populations.

Fifty per cent of the population of the Maldives is under 15 years of age. The population is 340,000 inhabitants including 130,000 migrant workers. Childhood TB is about 6% of the total TB cases. National guidelines to address childhood TB are being drafted. There is only one pediatrician trained on childhood TB. Isoniazid preventive therapy (IPT) is being provided to children under 5 contacts of TB patients. Selling of TB drugs is banned since 2001. WHO provided one Xpert MTB/RIF machine in 2016.

In 2009, Nepal developed its first national guidance for TB. Chapter 3 was on childhood TB (10 pages) and childhood TB was also addressed in a chapter on prevention. A national guideline on childhood TB is currently in press and a training module for doctors and health workers has been finalized. There is a plan to include monasteries in the training. Active contact screening and provision of preventive therapy will soon be implemented.

In Myanmar, in 2015, child TB case notification is 26% of total TB cases which is likely to be related to over-diagnosis. A national guideline for childhood TB was developed in 2008. Pediatricians are actively engaged. The importance of tracing and reverse contact tracing has been stressed.

Sri Lanka's National Strategic Plan includes a bold statement on childhood TB. Case detection and treatment follow the WHO global guidance. The National Program for Tuberculosis Control and Chest Diseases (NPTCCD) collaborates with the NCD programme. Childhood TB is included in training for doctors at all levels of the health system. There is no information on whether Sri Lanka will develop a national childhood TB guideline on the management of childhood TB and whether professional bodies are being involved.

In 2015, Thailand had an estimated childhood TB burden of 6600 cases. Data by age group are only collected for smear-positive cases.

Timor-Leste has a school health programme in which tuberculosis has been included. There are "TB nurses" who receive training and refresher training. Provision of preventive therapy has been initiated in three hospitals in Dili. The prevalence of TB is high, 758 per 100,000 population.

To support TB Activities of member states of the South East Asian region, the SAARC TB and AIDS Center was set up in 1994 in Nepal. The centre developed child TB guideline and a training module. One training of trainers was held in August 2017 in Sri Lanka. The centre is publishing a journal since 2004: http://www.saarctb.org/new/saarc-journal-of-tb-lung-diseases-and-hivaids/

The detection of MDR-TB in children in South East Asia is low. Bangladesh finds an estimated 200 childhood MDR-TB cases per year. India an estimated 3000 childhood MDR-TB cases. They are mostly treated by adult physicians with expertise in treating in MDR-TB. In India this happens in paediatric hospitals and clinics. The resistance pattern is changing. Resistance to fluoroquinolones has gone up from 39.1% to 93.7%. Pediatricians need to be sensitized and trained on MDR-TB.

With respect to TB/HIV, in Thailand, 24% of all TB (15-45 years) are living with HIV. In India, it is estimated that 130,000 out of all TB cases are living with HIV. There is scope to further strengthen collaboration between HIV and TB programmes in the South East Asian region.

In the South East Asia region, BCG Coverage is above 90%. TB meningitis is declining.
Prevention is one of the top 10 indicators to monitor the implementation of the WHO End TB Strategy. Globally, only 7.1% of the 87,236 eligible children are provided with preventive therapy. In South East Asia, of the 510,000 eligible children, 11,398 (2.3%) received preventive therapy.

In summary, in the countries of the South East Asian region, policies and activities are in place and there is momentum for addressing childhood TB. Integration with other programmes needs to happen. Case detection in children under 5 needs to be intensified and paediatricians need to be actively engaged. In order to eliminate TB, WHO and partners should also focus on the needs of smaller countries not part of the 30 TB high burden countries.

Short report on the activities of the WHO AFRO Task Force on childhood TB, Anthony Enimil, Chair WHO AFRO Childhood TB Task Force & WHO AFRO

Dr Anthony Enimil, Chair of the WHO AFRO Task Force on Childhood TB, provided an overview of activities of the Task Force since it was set up by the Regional Director of WHO/AFRO.

The Task Force consists of 8 members among whom paediatricians, academia, researchers, UNICEF global and regional representatives, NGOs and donors.

An inaugural meeting was organized on 1-2 March 2017 in Kampala, Uganda. For 2017/2018, the theme that the Task Force has selected is “bridging the policy/practice gap in the African region.” Thematic areas include: Comprehensive training strategy; improving case-finding, diagnosis, prevention and treatment; Programming and budgeting; Integration; Data collection and information sharing; and, Cross-cutting issues.

After the meeting, the Task Force members has sent a letter to WHO/AFRO to request them to encourage member states to include life-saving activities for women, children and adolescents into applications to the Global Fund.

On 10 July 2017, the Task Force organized a very well attended post-graduate course on childhood TB during the Union regional conference for Africa in Accra, Ghana.

The Task Force requested WHO/AFRO to set up a secretariat to coordinate communications and activities of the Task Force members.

Seasonal Malaria Prophylaxis and role of community health workers and community health volunteers in screening for TB in Ghana, Yaw Adusi Poku, NTP representative Ghana

In Ghana, the community health workers (CHWs), a cadre of district and sub-district health staff including district health office, district medical officer, physician assistant, community health worker, public health nurse, health information officer, nutrition officer and treatment control officer, are complemented by community health volunteers (CHVs). CHVs live in the community, know the language and culture, and are influential. They are a kind of gatekeepers of the community. They have basic education and are often farmers or petty traders. They are selected by the community to provide support (e.g. malaria dosing, registration of children, etc.).

Basic TB services by the CHWs and CHVs include: provision of information on TB; identification of presumed TB cases, registration of presumed TB cases in the community registers and ensure referral; conduct contact tracing; tracing of TB patients who are lost to follow up; and, provision of treatment support.

Since 3 years, Ghana is implementing Seasonal Malaria Chemoprevention (SMC). It is a service under the national Malaria Control Programme during the rainy season (August – November). Anti-malaria prophylaxis for under-fives is given in high burden areas. CHWs and CHV's are involved in providing SMC from house to house.

In Ghana, only 5% of the total notified TB cases are children while it is estimated that children are at least 8-10% of total TB cases. In addition, the notification rate among children is decreasing. There is only limited health worker capacity to diagnose TB in children and children are often missed at facility level.

In order to address these missed opportunities, Ghana decided to pilot integration of TB screening into the Seasonal Malaria Chemoprophylaxis (SMC) campaign for potential TB case detection among children under five years of age. The purpose was to study the feasibility and acceptability in the communities. The pilot was done through a cross-sectional study in all 11 districts of the Upper West region of Ghana where children under five are representing 19.7% of the population. Inclusion criteria were: children under 5 years in households of anyone with a chronic cough; children with a swelling in the neck; children with poor growth; children with symptoms (very ill children); and, any other person coughing.

The following stakeholders participated in the pilot project: Regional Director of Health Services; Deputy Directors of Public Health, Clinical Care & Nursing Services; District Directors of Health Services; Medical Superintendents of District Hospitals; Medical Doctors; Physician Assistants; District Disease Control Officers (Focal Persons for TB & Malaria); District Nutrition Officers; and the CHV's.

The CHVs had the following duties: malaria dosing; TB screening by using the 3 questions; registration of children meeting eligibility criteria for TB; making appointments for diagnosis; and follow up to diagnosis.

The CHWs were responsible for: district supervision of SMC; supervision of volunteers; data collection; giving appointments dates; and ensuring caregivers and children go to the laboratory for TB diagnosis.

To make a diagnosis, clinicians were trained and CXR, Xpert MTB/RIF were available. Capacity was also prepared among the community health volunteers.

Jointly, the stakeholders revised the symptom-based screening tool. CHVs had to ask the following questions while going from household to household for SMC: (i) Is there any child sick in this household?; (ii) Is there any child not growing as expected in this household? (Check MUAC); and, (iii) Is there any child or adult coughing in this household?

Children under five years of age with at least one symptom, got a chest X-ray and CAD4 TB. The images were reviewed by specialists.

Results of this pilot study: there was a high participation rate and a high household coverage. The same resources were used with minimal additional cost.

In only one week, 117,490 children under five years of age were screened using the symptom based screening tool. 652 had presumed TB and got a chest X-ray (CRX) and CAD4 TB. 202 children had abnormal CXR and CAD4 TB reading. Out of these children, 18 children were diagnosed with TB by clinicians and put on treatment. An additional 12 children >5-<15 were diagnosed as well as 20 adults. Out of the 30 children 0-14 years of age, 26 were malnourished. 397 sputum samples were collected.

Challenges encountered during the study include: some equipment and vehicles broke down; travel distances to the health facilities were long; there was no child-friendly entertainment during chest X-ray; and lack of protective shields for care providers and children.

Successes included: All cases notified had never been diagnosed for TB by the national TB programme prior to the project. In 2015, only 1 case of TB in a child under 5 years of age was notified to the TB programme in one year. In 2016, 20 cases under 5 were notified, 90% or 18 children in only one week through the TB-SMC pilot project. Engagement of large numbers of health staff including volunteers has built capacity. Even some adult TB cases were found during the pilot project.

In conclusion, integration of SMC and TB screening in Ghana is feasible and acceptable. A full analysis of results will soon be available including an analysis of cost. Ghana is likely to scale up the TB-SMC project to other regions. Through the West African Research Network (WARN-TB), Guinea has decided to also pilot this project starting before the end of 2017. Burkina Faso is planning to implement a pilot project in 2018.

It is recommended to scale this project up to national level. Funding will need to be mobilized to this extent. The lessons from the pilot study need to be used for proper planning and implementation of the scale up.

Lessons learned from integrating at the frontline, Anne Detjen, UNICEF

Update on training and available tools

The childhood TB online training, hosted at the Union Childhood TB portal (https://childhoodtb.theunion.org/) is now available in English, French and Spanish. It can be done independently but has also been used by some countries for refresher training of community health workers (CHWs).
The online child-MDR training is available in English and hopefully soon in French.
A facilitator guide and toolkit for the childhood TB online training were recently pilot-tested in Uganda and are now available on the Childhood TB portal and the Challenge TB website. The facilitator guide allows for targeted training of CHWs, IT support and discussions around application of the lessons learnt to local context. With the help of a group of volunteers from the Child and Adolescent TB Working Group and the Union Mother and Child Health working group, the resource section of the portal has been updated and now includes almost 50 resources as well as a search function to search by topic, target audience, type of tool, etc. Anyone is welcome to submit additional resources. They will be checked and launched.

Lessons learned from integration at the frontline

There are ample gaps along the TB pathway of a child, from being exposed, accessing care, preventive therapy, diagnosis, treatment to being cured. A lot of the challenges lie close to where the child lives - in a community affected by TB, where the first entry point to care are community health workers of primary level health facilities and the general child health services offered there. There is a need to increase awareness in communities and at this level of health care around TB and its specific risk to children, to decentralize diagnostic, treatment and prevention services, and to better integrate these services with existing delivery platforms. The Integrated TB/HIV community case management (iCCM) is one such delivery strategy, aimed to deliver care to children younger than five years of age. The iCCM is delivered by community health workers (CHWs) in an algorithmic approach. Children are either treated at the community level or referred to the next level. The key interventions target pneumonia, diarrhea and malaria. In 2014, WHO and UNICEF and other partners adapted the generic iCCM training and management tools for TB and HIV high burden settings, including one question on risk of HIV and one on current TB exposure. Save the Children piloted the revised TB/HIV iCCM in Malawi, UNICEF in Uganda and Nigeria. Full results will be shared in the near future. Early lessons learned include: CHWs and other stakeholders strongly embrace the TB/HIV adaptation, recognizing the impact of TB and HIV on their communities and seeing this as an opportunity to increase awareness at community level and for CHWs on the risks to children. CHWs can apply the questions as included in the iCCM package and identify children at risk of TB and HIV. However, the definition of HIV risk is not very specific and might lead to over-identification of children, and impact uptake of HIV counseling and testing at referral facilities. For TB, the current adaptation of the iCCM will only lead to an identification of children with known exposure. Given many countries under-diagnose adult TB, children without known exposure will be missed. There are many challenges around uptake of referral as well as capacity at referral facilities, especially for childhood TB. Only if these challenges are being addressed, it will have an impact on TB/HIV case finding and access to treatment and prevention.

Finding the missing cases: optimizing strategies to enhance case finding in high HIV burden settings, Malgosia Grzemska, Coordinator, WHO GTB/TSC

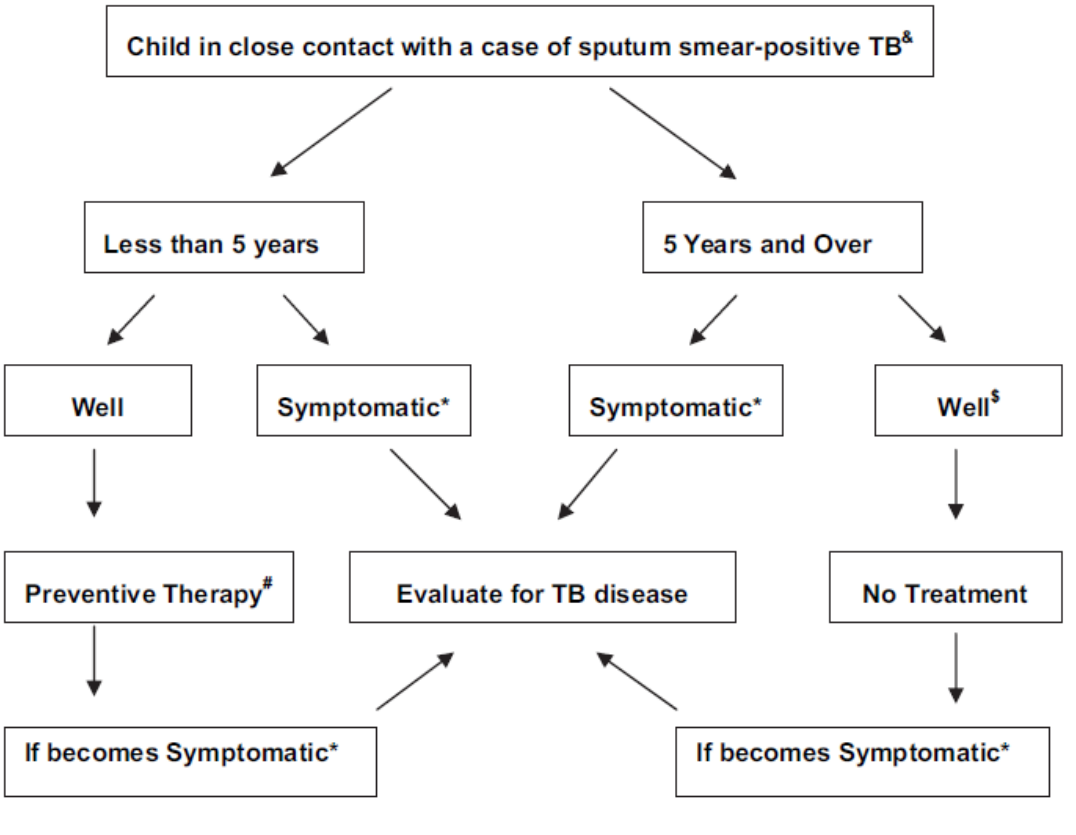
TB is transmitted via aerosolized particles from an infectious patient to those sharing the same air. Of those exposed, some 10-15 persons (in 1 year) will get infected. About 1/3 of the global population is infected. Of those infected up to 10% will develop TB during their life. In 2015, 10.4 million people got TB out of which 6.1 million cases were notified. This means that 4.3 million cases were missed, including 600,000 children. 27% of the missed cases are assumed to be in India; 9-10% in Indonesia and China (each); and, 5% in Nigeria, Pakistan and South Africa (each). It is important to find these missing cases to minimize individual suffering and death and in the interest of public health (to interrupt transmission). Finding the missing cases is key to attain the targets of the WHO End TB Strategy (Pillar 1, component A: Early diagnosis of TB including universal drug susceptibility testing, and systematic screening of contacts and high risk groups) and consistent with the SDG Universal Health Coverage (UHC) agenda.

There are missing cases in all age groups. Most missed cases are within the age group 15-44, however, there are also quite a number of missing child and elderly TB cases. Among the missing cases, there is preponderance of males.

Reasons for missing cases include: under-diagnosis especially in countries with major geographic or financial barriers; under-reporting of detected cases especially in countries with large private sector; inadequate access to health services especially among vulnerable populations; health systems and surveillance gaps and weaknesses; inadequate linkages with private practitioners, hospitals, laboratories, or NGO services; and, absence of mandatory case notification, or lack of its enforcement.

Children might be missed due to inadequate community health workers (CHW) capacity to suspect and diagnose child TB cases; to limited access to diagnostic services (children mostly seen in hospitals); and, to a lack of sensitive diagnostic tools for children. Often TB is missed or diagnosed very late. In addition, contact tracing is not routinely implemented and there are inadequate integration or linkages with other programmes such as Maternal and Child Health service platforms, HIV and nutrition programmes.

The following algorithm has been adapted from the WHO 2006 guidance. Since then, children living with HIV that are contacts and without any evidence of active disease should receive preventive therapy irrespective of their age.



&Also consider if the mother or primary caregiver has sputum smear-negative pulmonary TB
*Symptomatic: If TB is suspected, refer to local guidelines on diagnosis of childhood TB
Isoniazid 10/mg/kg daily for 6 months
$ Unless the child is HIV-infected (in which case isoniazid 10/mg/kg daily for 6 months is indicated)

Enhancing case detection in high HIV burden settings

TB accounts for approximately 40% of HIV/AIDS-related adult deaths. Almost half of this disease remains undiagnosed at the time of death *Rishi K. Gupta et al. AIDS. 2015 Sep 24; 29(15): 1987–2002. Published online 2015 Sep 24. doi: 10.1097/QAD.0000000000000802*. From the 2015 global estimates, close to 60% of estimated TB cases living with HIV worldwide, did not reach TB care. In 2015, almost 239,000 children died

from TB worldwide, 80% in children younger than 5 years. About 39,000 paediatric TB deaths were children living with HIV infections, of which 31,000 (80%) in Africa. More than 96% of all TB deaths occurred in children not receiving TB treatment (*Peter J. Dodd et al. Lancet Glob Health 2017, doi:* http://dx.doi.org/10.1016/S2214-109X(17)30289-9)

The main gaps and barriers that need to be addressed to find missing cases in settings with a high burden of HIV include: poor implementation and reporting of TB screening among people attending HIV care, including children; a mismatch between ART and TB diagnostic services using Xpert MTB/RIF; outdated algorithms for the diagnosis and management of HIV-associated TB; and a lack of data on the diagnostic pathway from TB screening to diagnosis among people newly enrolled in HIV care.

In order to find the missing cases, countries need to:
(i) Know the epidemic: Who is being missed and where?; What does the patient-pathway look like?;
(ii) Develop a robust case finding strategy including an appropriate screening strategy including selection of relevant screening/diagnostic algorithm; active case finding among specific risk groups; contact tracing (door-to-door); intensified case finding (child care services, HIV clinics, nutrition clinics); and, community engagement (ENGAGE-TB approach);
(iii) Greater engagement of the private sector (screening diagnosis and reporting);
(iv) Address health services barriers (reaching vulnerable populations; intensifying childhood TB detection in general health care services);
(v) Address recording and reporting gaps (strengthening of M&E using standards and benchmarks; implement inventory studies; enforce mandatory notification); and,
(vi) Adequately plan to find the missing cases (adequate targeting of population to be screened).

The Global Fund catalytic investment 2017-2019 is one of the opportunities to boost efforts to find the missing cases. Matching funding is given to the following countries: Bangladesh, DRC, Indonesia, India, Myanmar, Nigeria, Pakistan, Philippines, South Africa, Tanzania, Ukraine, Kenya, and Mozambique. It is estimated that these countries account for 3,267,440 missing cases, among which 195,900 among children (nearly 130,000 in the African region).

The Global Fund has given funding to WHO and Stop TB Partnership (TBP) to support countries during planning, implementation and monitoring of their plans to find missed people with TB. WHO and the Stop TB Partnership will work with partners to this extent. Targeted interventions to catalyze country efforts to find missing people with TB, TB/HIV and DR-TB (adults and children) include: assist countries baseline assessment/mapping to identify bottlenecks and opportunities in finding missing TB cases; support development of national action plans (which would incorporate a package of targeted interventions to find missing cases and disseminate tools to support implementation); build and strengthen country capacity to effectively implement developed action plans; support countries to accelerate scale up of and access to new diagnostic tools and approaches to increase case finding; support strengthening of monitoring and evaluation systems, including introduction and expansion of digital health technologies and innovative mechanisms for data collection and reporting; and, assess and document progress in reaching missed cases, promoting successes and lessons learned to support scale up and replication.

Leveraging Global Fund investments in Resilient and Sustainable Systems for Health (RSSH) for childhood and adolescent TB, Erin Ferenchick, RSSH/RMCAH Team, Integrated Service Delivery Focal Point, The Global Fund to Fight AIDS, TB and Malaria

The Global Fund Strategy 2017-2022 "Investing to End Epidemics" aims to: maximize impact against HIV, TB and Malaria; promote and protect human rights and gender equality; mobilize increased resources; and, build resilient and sustainable systems for health (RSSH). By challenging barriers and embracing innovative approaches, the Global Fund partnership strives for maximum impact, as evidenced in its new strategy. The four objectives are synergistic and represent a comprehensive strategy of investing to end epidemics. Mutually accountable partnerships will help drive the new strategy forward.

Within the new strategy, building resilient and sustainable systems for health is a core objective of the organization. Strengthening systems for health is critical to attain universal health coverage and to accelerate the end of the epidemics. Based on experience, lessons learned from successes and failures of the past dozen years, the Global Fund's contributions to supporting countries in building resilient and sustainable systems for health are now focused on seven main approaches: (i) strengthen community responses and systems; (ii) support reproductive, women's, children's, and adolescent health, and platforms for integrated service delivery; (iii) strengthen global and in-country procurement and supply chain systems; (iv) leverage critical investments in human resources for health; (v) strengthen data systems for health and countries' capacities for analysis and use; (vi) strengthen and align to robust national health strategies and national disease-specific strategic plans; and, (vii) strengthen financial management and oversight. All seven RSSH sub-objectives are critical to supporting the TB response but, in particular, strengthening community systems, supporting integrated service delivery and investing in human resources for health are essential to supporting key steps in the pathway of prevention and care in childhood and adolescent TB.

The Global Fund provides support for Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) and platforms for integrated service delivery. TB programming should be part of integrated, people-centred care for mothers and children. The new Global Fund strategy emphasizes importance of evidence-based integrated services for women, newborns, children and adolescents. The Global has prioritized four platforms of integrated service delivery for co-investment: (i) antenatal care (ANC), (ii) integrated community case management (iCCM), (iii) integrated Sexual and Reproductive health (SRH)-HIV services, and (iv) adolescent health. Each of these is made up of a package of preventive and curative interventions and represents an excellent opportunity to maximize the impact of Global Fund support for the health of women, newborns, children and adolescents. Countries must critically evaluate which packages of services and models of delivery are most appropriate and feasible. Three important opportunities in MNCH service delivery where TB-related activities should be included: during ANC/PNC; during child immunizations, during well child visits and growth monitoring events; and during the case management of sick children, including IMCI and iCCM. Investments should also support integration in policies and build capacity of national Ministries of Health to align separate financial, management and institutional processes. The focus on discrete packages like iCCM and adolescent health, for example, carries the risk of "vertical" implementation unless Global Fund investments also support technical strategies for integration in policy dialogues and documents, and build capacity of national Ministries of Health to align separate management and institutional processes. Countries have to decide which services make sense in their context.

There are multiple opportunities to make use of Global Fund investments for Resilient and Sustainable Systems for Health (RSSH) for RMNCAH, as well as the opportunity and need to leverage co-financing:

Country allocation: For the 2017-2019 allocation period, the Global Fund adopted a refined allocation methodology to deliver the aims of its 2017-2022 strategy and to increase the impact of country programs that

prevent, treat and care for people affected by HIV, TB and malaria and build resilient and sustainable systems for health;

Catalytic Investments: Catalytic investments aim to catalyze the use of country allocations to achieve the aims of the Global Fund's 2017-2022 Strategy and global partner plans. Catalytic investments are comprised of matching funds to incentivize the programming of country allocations for priority areas; critical multi-country approaches; and strategic initiatives (such as the Emergency Fund) that are needed to support the success of country allocations but cannot be funded through country grants; and,

Co-financing: Increasing domestic investment in health systems and HIV, TB, and malaria disease programs is crucial to addressing the full cost of the response to the three diseases. To increase country ownership and build the sustainability of programs, our funding model includes a requirement that countries commit to co-financing the response to HIV, TB and malaria.

For example, Zambia is very keen to scale-up the capacity of Community Health Assistants to work on HIV, TB, malaria, diarrhea, and pneumonia. This type of investment would build on an existing work, experience, and systems. Zambia has two training schools and over 1,000 community health assistants who have already been trained but need further training. The Ministry of Health would like to cover the entire country with a focus on high burden areas. The Ministry of Health has highlighted CHAs as a priority should savings from the current grant become available. However, savings have already been put to other priorities, including health commodities. During the 2017-2019 allocation period, Zambia could therefore apply for matching funding for Human Resources for Health (HRH) and service delivery. The investment would also build on GF investment in iCCM during the current implementation phase. Given prior work to date, information and unit costs are readily available for the funding application and grant making. There is also good scope to plan for transition of salaries to the Ministry of Health during the implementation period.

The Global Fund is making catalytic investments in Human Resources for Health (HRH) and service delivery through strategic Initiatives 1.1 (*Sustainability,* USD15 million) and 1.3 (*Technical Support*, USD 14 million). The Global Fund is currently working with technical partners to design strategic initiatives focused on: strengthening cross-program integration governance and practice; integrated care for adolescent girls and young women; strengthening implementation of HIV, TB and malaria interventions during Antenatal and Postnatal (ANC/PNC) care; development of additional Human Resources for Health (HRH) guidance on role community health workers in relation to the three diseases; and, supporting countries to develop well-costed and prioritized national health strategies and national disease-specific strategic plans.

The ANC/PNC platforms are a unique entry point that integrates evidence based interventions critical for eliminating all three diseases, HIV, TB and Malaria all along the continuum of care for mothers and babies. The goal is to improve the quality of integrated HIV, TB and malaria services in antenatal and postnatal care. The rationale is that pregnant women and children represent the highest number of users of health services and also are the most vulnerable group for HIV, TB and malaria. ANC and PNC are established entry points for delivery of integrated HIV, TB and malaria prevention, screening and treatment to address gaps in coverage and quality of services. ANC and PNC represent a great model on how data can be used to improve program quality and the efficiency of service delivery.

Coordination at country level is needed to enable integration and leverage funding opportunities. Therefore, programmes should: engage in discussions on national health sector plans and disease strategies; advocate for the integration of RMNCAH and disease specific policies; reach out to Country Coordinating Mechanism (CCM) to participate in the country dialogue process and preparation of Global Fund funding request and/or program revision; advocate that funding requests include – and prioritize – evidence-based interventions for RMNCAH and integrated service delivery; and, encourage increased domestic financing to complement investments.

In order to successfully mobilize funding for integrated quality services, National TB Programmes should leverage and advocate with the Country Coordination Mechanism (CCM), take a systems approach, and build the evidence base that supports this.

Announcing Unitaid investiments in paediatric TB

In the period 2013-2017, Unitaid invested in the STEP-TB project led by the Global Alliance for TB Drug Development (TB Alliance) with WHO. The STEP-TB project helped to improve burden estimates, develop a market for paediatric TB medicines, and, assisted countries to prepare for uptake of child-friendly TB fixed-dose combinations through changes in policies and practices. Through active collaboration with pharmaceutical partners, the child-friendly TB fixed-dose combinations were launched in December 2015. As of September 2017, 62 countries had ordered approximately 400,000 treatment courses. But as we have seen today , we need to find the missing cases to maximize impact of the child TB FDCs, improve outcomes and reduce mortality. It would make a huge difference, if we had a more sensitive diagnostic tool easy to use at decentralized level of health care. However, in the meantime, what could make a difference is implementation of active case finding to diagnose children early through contact investigation & integration of tuberculosis screening, diagnosis and treatment into other child health services such as HIV, nutrition and IMCI screening programmes; promotion of clinical diagnosis and empirical treatment when required; and, provision of preventive therapy to young children exposed to or infected with tuberculosis (*Source: Jenkins et al. The Lancet, March 2017).*

Unitaid is currently investing in the following two new paediatric TB projects:
(i) **Catalyzing Paediatric TB Innovation (CAP TB) led by the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF)** looking at different strategies for case detection and optimizing service delivery/models of care to improve child TB case detection and management. CaP TB will also be working to accelerate the introduction and uptake of new paediatric formulations such as the first line dispersible FDC and new regimens and formulations for LTBI. Cap TB will support the development of a longitudinal cohort of paediatric TB as well as two stringent studies looking at contact tracing and integration of care into MNCH.
(ii) Strengthening Paediatric TB services for Enhanced Early Detection (TB-SPEED) – University of Bordeaux and TB-SPEED consortium. This project aims to reduce childhood TB mortality through cost-effective and decentralized childhood TB diagnostic approaches to enhance case finding and access to treatment. This will include: optimizing TB diagnosis in children living with HIV and in malnourished children; diagnosis of TB in children with severe pneumonia; development of a package that will allow for decentralized lab-based diagnosis (including Omni/Ultra; and using nasopharyngeal aspirates and stool samples).

Unitaid is also investing in a project on latent TB infection "**IMPACT4TB" led by the Aurum Institute.** The aim is to reduce TB incidence among PLHIV and child contacts <5 living in low and middle income countries by contributing to sustainable scale up of 3HP (Isoniazid/Rifapentin). The paediatric component in this grant consists of optimizing contact tracing strategies and trial to assess 3HP in children younger than 2 years (<10kgs).

Finally, Unitaid is investing in MDR-TB. Currently, Unitaid is funding the **MDR-TB – End TB project led by PIH, USA (and MSF and IRD).** This project aims to develop better, shorter MDR-TB treatment to enable and accelerate uptake of new or optimized MDR-TB regimens. Bedaquiline and Delamanid are being used to help improve treatment outcomes for MDR-TB in 15 countries. A multi-country clinical trial (750 patients) to find shorter, simpler, less toxic, more effective ways to treat MDR-TB. In addition, Unitaid recently released a call for additional applications in the area of MDR-TB. These future project may have a paediatric TB component as well.

The following table shows in which countries the new Unitaid projects will be implemented (in bold those countries in the African region). The table also includes the number of missing childhood TB cases in 2015 in these countries.

Project countries EGPAF (CaP-TB)	Project countries UNIVERSITY OF BORDEAUX (TB-SPEED)	Proposed project countries AURUM INSTITUTE (IMPAACT4TB)	Project countries of the End TB MDR-TB grant	Missed child TB cases (0-14y) in 2015
			Armenia	86
			Bangladesh	28,927
			Belarus	312
		Brazil		5926
	Cambodia	Cambodia		-785
Cameroon	**Cameroon**			6200
Côte d'Ivoire	**Côte d'Ivoire**			3208
			DPRK	4461
DRC				29,938
		Ethiopia	**Ethiopia**	-444
			Georgia	201
		Ghana		3481
		Haiti (tbc)		706
India		India		150,867
		Indonesia	Indonesia	46,588
			Kazakhstan	808
Kenya		**Kenya**	**Kenya**	1600
			Kyrgyzstan	343
Lesotho			**Lesotho**	956
Malawi		**Malawi**		2538
	Mozambique	**Mozambique**		15,000
			Myanmar	-20,930
			Pakistan	11630
			Peru	1841
	Sierra Leone			2500
		South Africa	**South Africa**	3863
Tanzania		**Tanzania**		12,297
Uganda	**Uganda**			4085
	Zambia			3724
Zimbabwe		**Zimbabwe**		3180
				323107

A session to provide more in-depth information on the new Unitaid paediatric TB project was organized by EGPAF (CAP-TB) and the consortium led by the University of Bordeaux (TB SPEED) for country representatives present in the annual meeting (Ethiopia, Ghana, Malawi, Mozambique, Swaziland, Tanzania, Uganda, Zambia, and, Zimbabwe).

The impact of research on tuberculosis control: The West African Research Network for TB (WARN-TB), Oumou Sow, Guinea Conakry

The WARN-TB region includes a total population of about 340 million inhabitants. The region comprises Anglophone, Francophone and Portuguese speaking countries. Total notified TB cases per year are about 250,000.

Members of WARN-TB include all national TB programmes of the West African Region (16 countries). There are two co-chairs: Dr F. Bonsu, NTP Ghana and Prof O. Sow, former NTP manager of Guinea Conakry. The secretariat is hosted by the NTP of Benin. Collaborators include: The Union, Damien Foundation, West African

Health Organization, the Global Fund, WHO at all levels, UNICEF and the Special Programme for Research and Training in Tropical Diseases (TDR housed at WHO) as well as some former NTP managers as resource persons.

The objectives of WARN-TB are to: create a platform for partnership collaboration and exchange of best practices among national TB programmes; promote harmonization of strategies and practice for the control of TB within the region; promote embedded operational/implementation research for TB control; and, support high level advocacy and resource mobilization for TB control.

During the annual meeting of the WARN-TB countries, an action plan is being developed including regional and national activities. Multidisciplinary national committees for the development of the national TB research plan & its monitoring have been established in 15 out of 16 countries with seed funding from TDR for 2016-2017. Funding for 2018-2020 has been secured by countries through their Global Fund grants.

In collaboration with the Global Fund and the WHO Global TB Programme, two regional workshops were conducted to review the available TB data and identify research priorities. Three common areas for research were identified: (i) intensify case finding in adults and children; (ii) reduce TB lethality; and, (iii) reduce numbers of patients stopping TB treatment. The funding from TDR for 2016-2017 covered 1 operational research project in each country as well as mentoring support.

Examples of implementation research projects that were conducted are: integrating screening in other public health actions/other care; testing various screening activities in prison; increasing the role of communities; increasing the role of the private sector; decentralization of TB diagnosis and care. As all countries were also facing issues with their TB surveillance systems, with assistance from WHO/GTB, the project also provided simultaneously support to strengthen surveillance systems.

During the workshops NTP research capacity and training needs for conducting operational research/implementation research were identified (in October 2015 with all NTPs of the WARN-TB countries and in December 2015 with the co-chairs and executive secretariat of the WARN-TB). A 2016-2017 research training programme was established as well as a plan for “on-the-job” training through mentorship.

Workshops were provided on: research principles and study design; on project, risk and data management; health economics, qualitative and quantitative analysis of data; and, on communication of results and report writing. TDR provided training materials and tools for operational/implementation research (SORT IT, IR tool kit). The workshops were facilitated by facilitators from universities of Benin, Burkina Faso, France, Ghana, Guinea, Nigeria, Senegal, and the UK.

Although it is too early to see impact, research capacity has been built and strengthened in the region. There are more robust TB surveillance system to define priority issues and to monitor TB control progress; increased capacities of the NTP for designing and conducting TB research; increased partnership with local researchers or other MOH programs due to the national TB task forces; and, NTP managers consider research as one of their routine programme activities and secured funding for this activity for 2018-2020.

So far, 8 countries out of 16 have already drafted or finalised their first national TB research agendas for the next 5 years. 16 implementation research/operational research (IR/OR) projects were developed. There are interesting research results from Ghana and Senegal pilot studies for intensifying TB case finding in children. The same pilot research projects will be conducted in Guinea (to be initiated before the end of 2017) and in Burkina Faso (2018). Results of the other research projects will be available and shared Q1 2018. The regional approach has created a regional dynamic for enhancing TB research, particularly beneficial for the French

speaking West African countries. For example, in Guinea, two years ago, research led by the NTP was almost non-existent. Since then, a national TB task force is established and is functioning, a national TB research agenda is developed, a person was appointed at the NTP for TB IR/OR, 3 implementation research projects were developed and funding has been secured, and another project to replicate TB screening by community health volunteers during seasonal malaria chemoprevention as implemented in Ghana is under development and a source of funding has been identified.

Wrap up, next steps and closure

The 2017 annual meeting provided a unique opportunity to share global developments to address child and adolescent TB. It also provided an opportunity to share lessons learned from strengthening collaboration between various programmes in order to find the missing child TB cases. In the morning, after the report from the chair, we learned how Rwanda is addressing childhood TB. Experiences with linking NTP and RMNCAH services were shared by the childhood TB focal point of the Ministry of Health of Uganda. Preliminary results from a study conducted by CDC and the Kenya Medical Research Institute showed the diagnostic yield of combining various specimens including less invasive specimens. Preliminary results show that previously missed children and adults with TB were found and that many of them are not aware of their HIV status. Highlights were shared from the WHO regions of the Americas, Europe and South East Asia.

In the afternoon, new initiatives in the African region were presented. The Chair of the WHO/AFRO Task Force on childhood TB provided a short report on the activities of the task force. Ghana shared exciting results from a pilot project on the role of community workers screening for TB during Seasonal Malaria Chemoprevention. UNICEF gave an update on available online training tools and shared lessons learned of pilot testing of the Integrated community case management service delivery strategy of which the key interventions target pneumonia, diarrhoea and malaria, however, during which interventions for TB screening and HIV were also included. For TB, preliminary results show that the iCCM will only lead to identification of children with known TB exposure. There are also challenges with referral as capacity needs to be built at referral facilities to diagnose and manage childhood TB. Only if these challenges are addressed, the iCCM will have an impact on TB/HIV case finding and access to treatment and prevention. The Global Fund Strategic Initiative on finding missing cases was presented as well as funding possibilities for strengthening human resources and service delivery for RMNCAH through the Global Fund Resilient and Sustainable Systems for Health strategic initiatives. Unitaid is currently investing in new paediatric TB grants as well as in other areas, including latent TB infection and MDR-TB, which have/may have paediatric components. Many of the project countries under these new Unitaid grants are in the African region. The annual meeting ended with information on the establishment and the activities of the West African Research Network for TB (WARN-TB). The meeting was attended by over 70 participants representing core team members, regional working groups, technical and financial partners as well as representatives of national TB programmes. As the meeting was organized in conjunction with the WHO/AFRO annual review and planning meeting of Reproductive, Maternal, Newborn, Child and Adolescent Health and Nutrition Programme Managers in the East and Southern African Region, 10-13 October 2017, we were joined by several RMNCAH & Nutrition programme managers and WHO MCH and/or TB staff from the WHO country offices of Ethiopia, Ghana, Malawi, Mozambique, Swaziland, Tanzania, Uganda, Zambia, and, Zimbabwe. It has been a rich exchange of experiences from the many initiatives that are being conducted in the African region in order to find the missing child TB cases and in order improve the quality of diagnosis and care. The outcome of the meeting was used to prepare for the session on childhood TB during the WHO/AFRO annual review and planning meeting of Reproductive, Maternal, Newborn, Child and Adolescent Health and Nutrition Programme Managers in the East and Southern African Region on Tuesday 10 October 2017. The secretariat and core team of the Child and Adolescent TB working group will discuss how we can replicate a similar meeting in Asia, probably with a focus on the private sector, and explore funding to this extent. We will also prepare for an annual meeting linked to the Union conference in The Hague, The Netherlands in October 2018. The Chair, Secretariat and core team would like to acknowledge USAID for the financial support,

WHO/AFRO, the Intercountry Support Team for countries in East and Southern Africa as well as WHO Rwanda for enabling this meeting to take place in Rwanda in conjunction with the WHO/AFRO meeting for RMNCAH managers of countries from East and Southern Africa, and to warmly thank the presenters and participants for their interesting contributions to the meeting.

Annex 1 : Agenda

Annual meeting of the Child and Adolescent TB working group
9 -10 October 2017

Ubumwe Grande Hotel, KN 67 Street, Kiyovu, Kigali, Rwanda

Purpose of the meeting
The annual meeting of the Child and Adolescent TB working group will be organized on 9 -10 October 2017 in Kigali, Rwanda with a focus on Africa Child and Adolescent TB.

The meeting will be open to all members of the working group representing a broad range of stakeholders including paediatricians, NTP managers and childhood TB focal points in the NTP, MCH representatives, technical and financial partners, community TB representatives and WHO staff from headquarters, regional and country offices. Members of the AFRO Regional Childhood TB Task Force are invited to join the Working group meeting as special guests with the view to build their capacity in contemporary global childhood TB issues including latest epidemiology and ways to build linkages with Maternal and Child programmes.

The main purpose of the annual meeting is to share country experiences in scaling up the response to childhood TB and to discuss next steps to move the agenda forward.

More specifically, the objectives are to:

- To provide an update on the activities of the working group since the last annual meeting on Wednesday 26 October 2016 in Liverpool, UK;
- To give the WHO AFRO Task Force the opportunity to present their activities in the region;
- To share country experiences in scaling up childhood TB activities; including collaboration with MCH and other health services at country level
- To discuss case-finding strategies that could improve early case detection as well as prevention of TB including contact investigation and integration of childhood tuberculosis screening into other child health services such as HIV, nutrition and the Integrated Management of Childhood Illness screening programmes;
- To give an update on new initiatives that will be implemented in the region;
- To provide an update on ongoing and planned research as well as investments to this extent; and,
- To prepare for session on childhood TB during WHO AFRO MCH managers meeting of Eastern and Southern Africa.

AGENDA

Annual meeting Child and Adolescent TB working group **Chair: Dr Farhana Amanullah**		**09:00 – 18:00**
08:30 - 09:00	Registration	
09:00 – 09:15	Welcome/Openings address	Olushayo Oluseun Olu, WR Rwanda
09:15 – 09:30	Security briefing	UNDSS Rwanda
09:30 – 09:40	Objectives and expected outcomes of the meeting	Annemieke Brands, secretariat of the Child and Adolescent TB Working Group
09:40 – 10:00	Report from the Chair of the Child and Adolescent TB working group on recent activities	Farhana Amanullah, Chair, Child and Adolescent TB Working Group
10:00 – 10:20	Address on behalf of the Ministry of Health of the Republic of Rwanda	Patrick Migambi, Division Manager of TB and other respiratory communicable diseases, Ministry of Health, Republic of Rwanda
10:20 – 10:30 10:30 -11:00	Group photo Coffee/Tea break	
Developments in childhood TB: improving case finding, linking with RMNCAH, diagnosing TB using a variety of specimens, and uptake of new drugs		
11:00 -11:20	Experiences with linking NTP and RMNCAH services in Uganda	Moorine Sekadde, Childhood TB focal point, NTP Uganda & Uganda MCH representative
11:20 – 11:40	Improving case finding in paediatric TB: study of paediatric TB diagnostics comparing different specimens	Hannah Kirking, CDC
11:40 – 12:00	Discussion	
12:00 – 13:00	Highlights from other WHO regions (max 15 min per region followed by 15 min discussion): Europe: Uptake of new drugs The Americas	 Martin van den Boom, WHO/EURO Betina Mendes Alcantara Gabardo (Brazil)

	South East Asia	Shakil Ahmed (Bangladesh)
13:00 – 14:00 Lunch		
New initiatives in the African region		
14:00- 14:20	Short report on the activities of the WHO AFRO Task Force on childhood TB	Anthony Enimil, Chair WHO AFRO Childhood TB Task Force & WHO AFRO
14:20 – 14:40	Seasonal Malaria Prophylaxis and role of community health workers in screening for TB in Ghana	Yaw Adusi Poku, NTP representative Ghana
14:40 – 15:00	Lessons learned from integrating at the frontline	Anne Detjen, UNICEF
15:00 - 15:45	Discussion on challenges in case finding and linkages with MCH and other sectors	
15:45 - 16:00	Coffee/Tea	
16:00 – 16:20	The Global Fund Strategic Initiative on finding the missing cases	Malgosia Grzemska, Coordinator, WHO GTB/TSC
16:20 - 16:40	The Global Fund RSSH strategic initiatives	Erin Ferenchick, RSSH/RMCAH Team, Integrated Service Delivery Focal Point, The Global Fund to Fight AIDS, TB and Malaria
16:40 - 17:00	Announcing the Unitaid paediatric TB grants (with a more in-depth briefing for country representatives in the evening)	Annemieke Brands, WHO/GTB Introduction Jen Cohn, EGPAF, CAP TB Olivier Marcy, University of Bordeaux, TB SPEED
17:00 – 17:20	WARN-TB	Oumou Sow, Guinee
17:20 – 17:40	Discussion	
17:40 - 18:00	Wrap up, next steps and closure	Chair and Secretariat

Monday evening parallel meetings		
18:00 - 19:00	Core team meeting	Core team members
18:00 - 19:00	Briefing on Unitaid paediatric grants for country representatives	Jen Cohn, EGPAF & Olivier Marcy, University of Bordeaux
18:00 - 19:00	WHO/AFRO Task Force on Childhood TB	Anthony Enimil

Tuesday 10 October 2017	**Joint session with the MCH managers meeting**	
1 hour at the end of the morning session	Report from the Child and Adolescent TB meeting to MCH managers	Farhana Amanullah, Chair, Child and Adolescent TB Working Group
	Discussion	

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