Improving Childhood TB Detection Through Facility-Based Integrated Approaches in Kinshasa, DRC

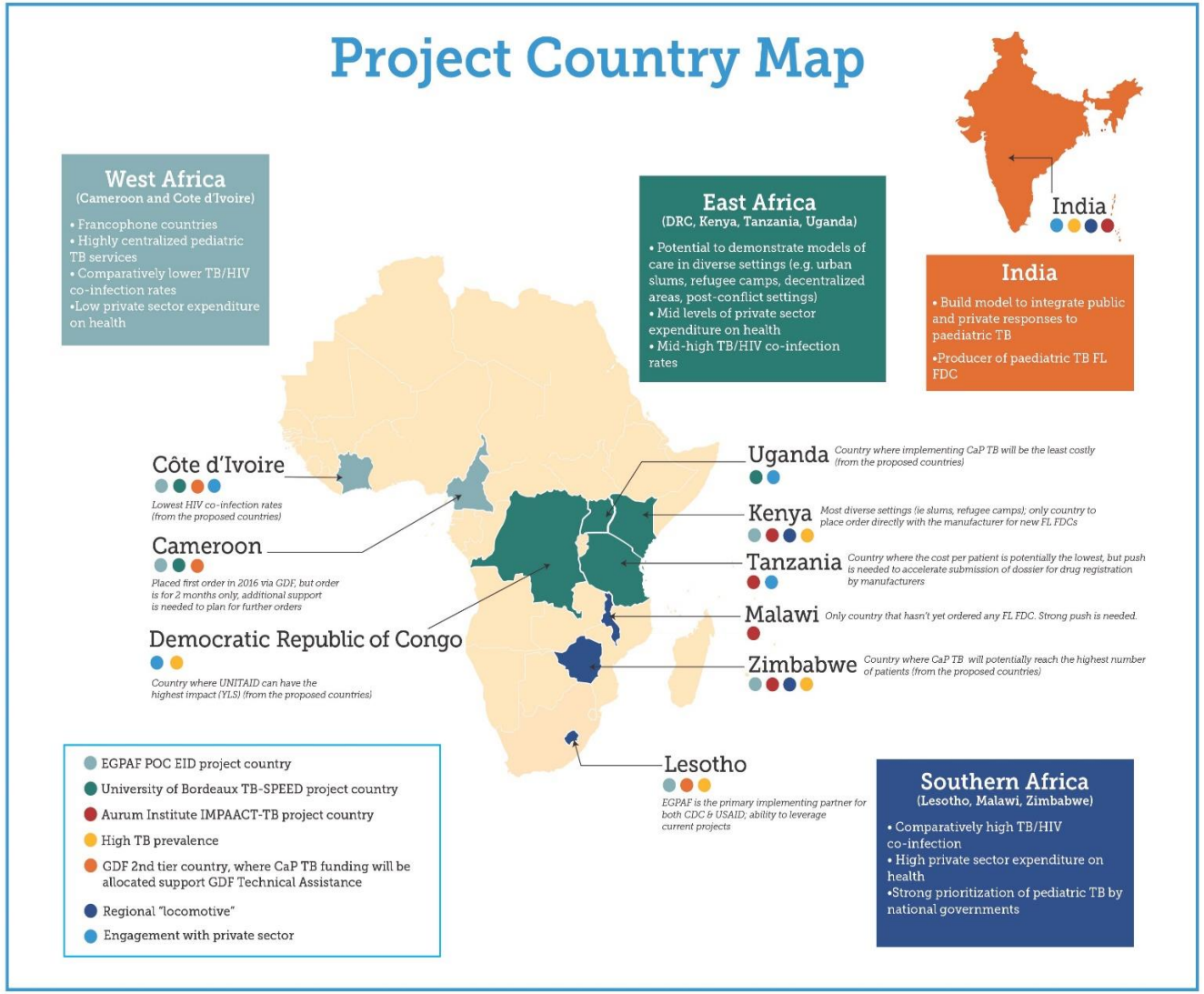
Aimé Loando, MD | 30 October 2019

Outline

- CaP TB Project overview
- Country context
- CaP TB
- Site-level implementation
- Results
- Key lessons learned

CaP TB Project Overview

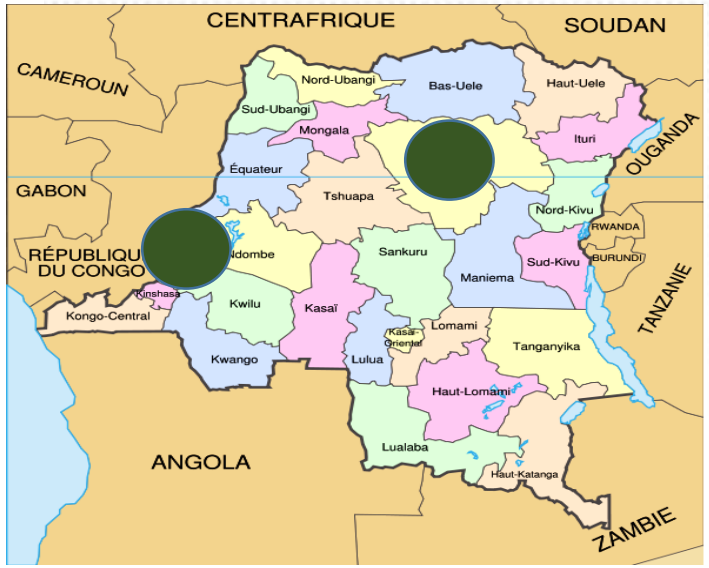
- **GOAL**: Contribute to reduction in morbidity and mortality due to pediatric TB
- **OUTCOME**: Critical access barriers removed to facilitate scale-up of pediatric TB
- Pilot phase (Year 1 and 2): Small number of sites/proof of concept
- Expanded implementation Phase (Year 3 and 4): Implementation in a larger number of sites with an aim to be catalytic for national uptake
- Key collaborators: GDF, IRD, TAG, Univ of Sheffield, SAATHII
- 4 years project (Sept 2021)



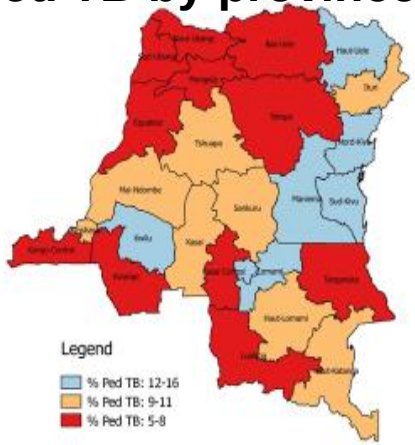
Context: Democratic Republic of Congo

- Population: Approx. 90 million
- TB incidence: 322 per 10,000 persons
- Number of notified TB cases in 2018: 18,453
- Percentage Pediatric TB: 11%
- TB treatment coverage: 57%
- Among the top 30 countries with the highest TB burden

CaP TB sites

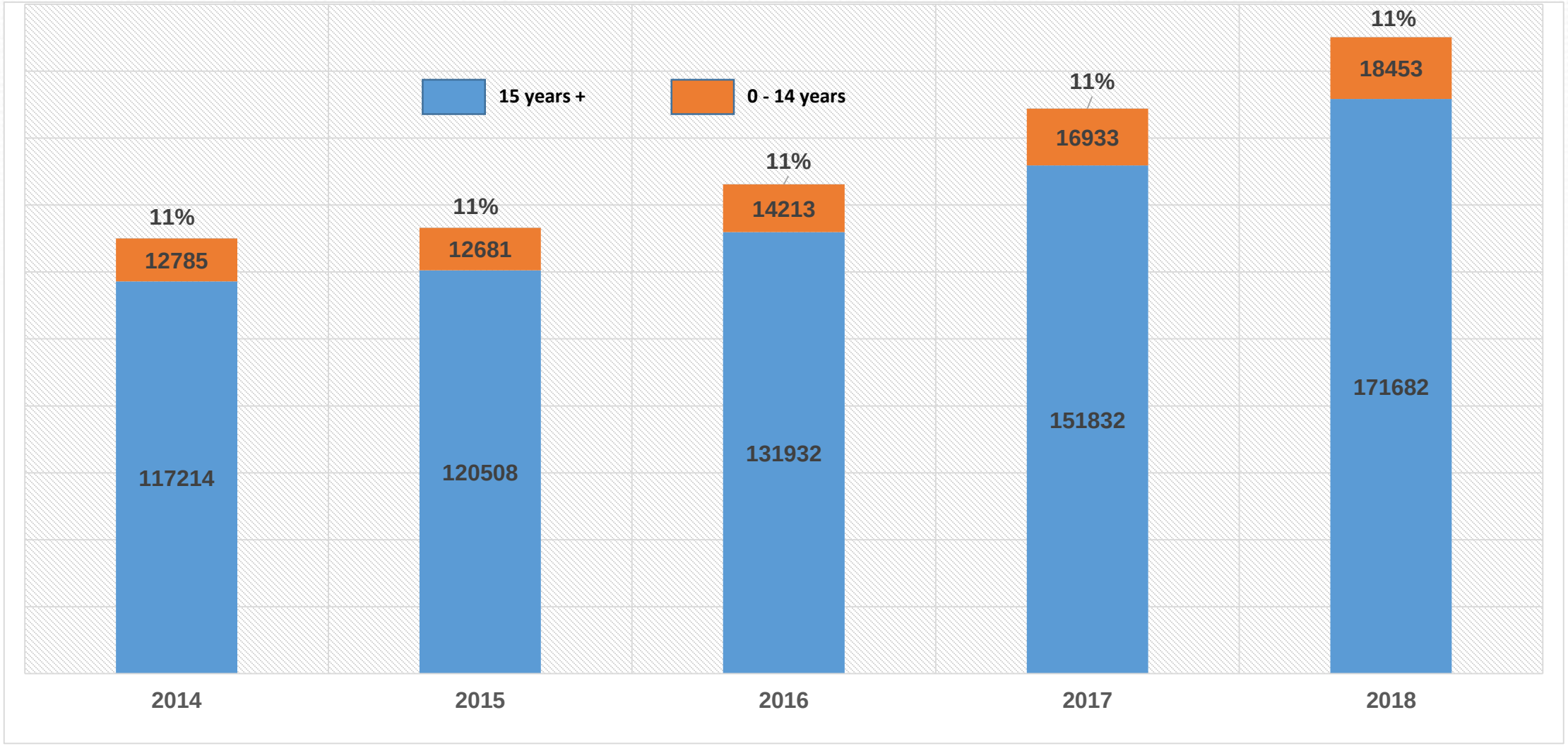


Percentage Ped TB by province, 2018



Source : Global report 2018

Pediatric TB Notification (all forms)



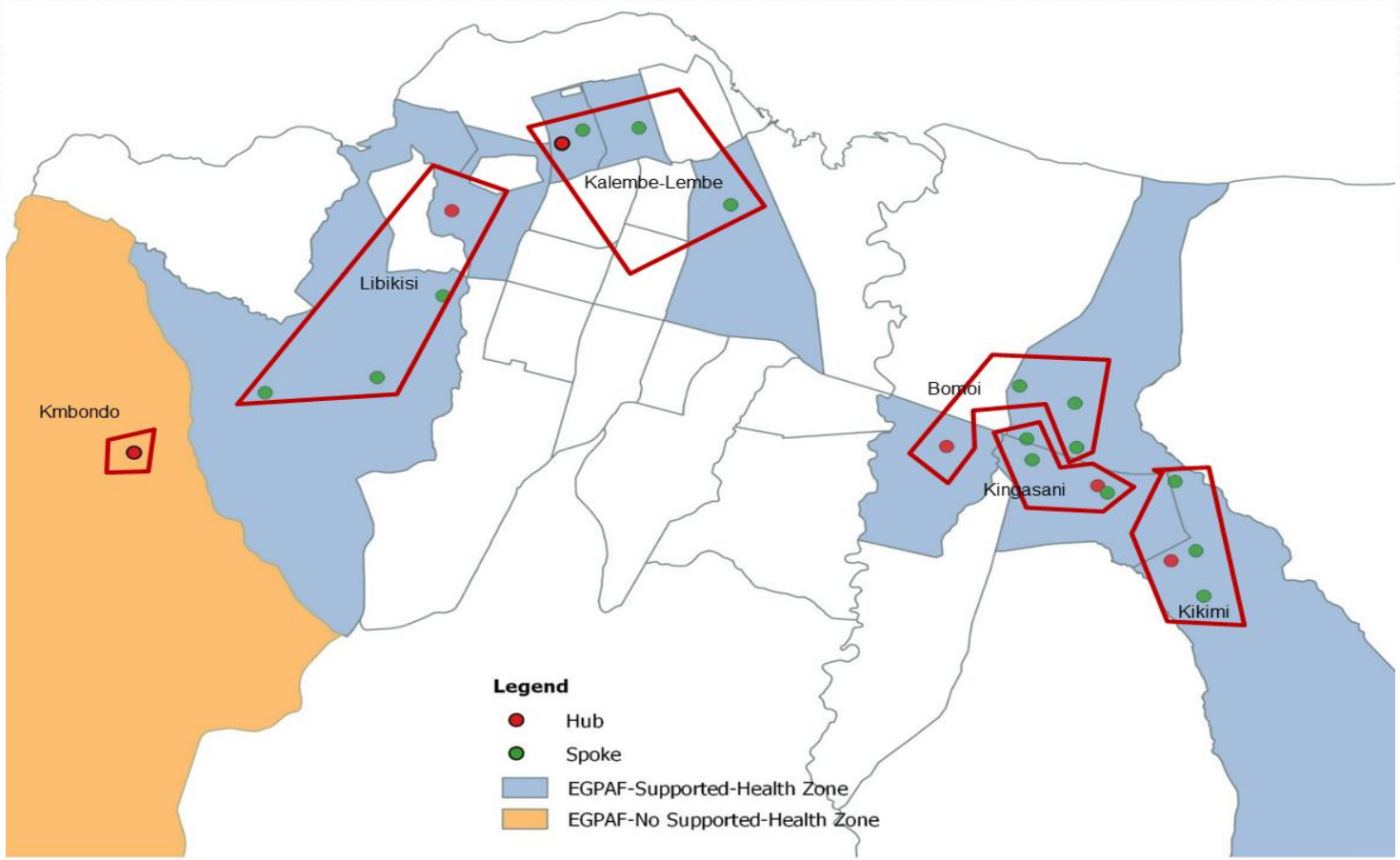
Source : DRC-NTP reports

CaP-TB in DRC

Catalyzing Pediatric TB Innovations

- Funded by Unitaid
- **Pilot phase:** January 2018 – December 2019, 21 pilot sites in Kinshasa
- **Scale-up phase:** January 2020 – September 2021, 50 sites in Kinshasa and Tshopo provinces
- Hub and spokes model
- Strong collaboration with NTP

Kinshasa : CaP pilot sites (21)

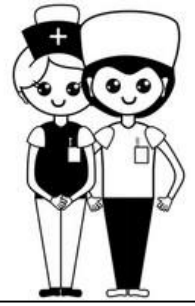


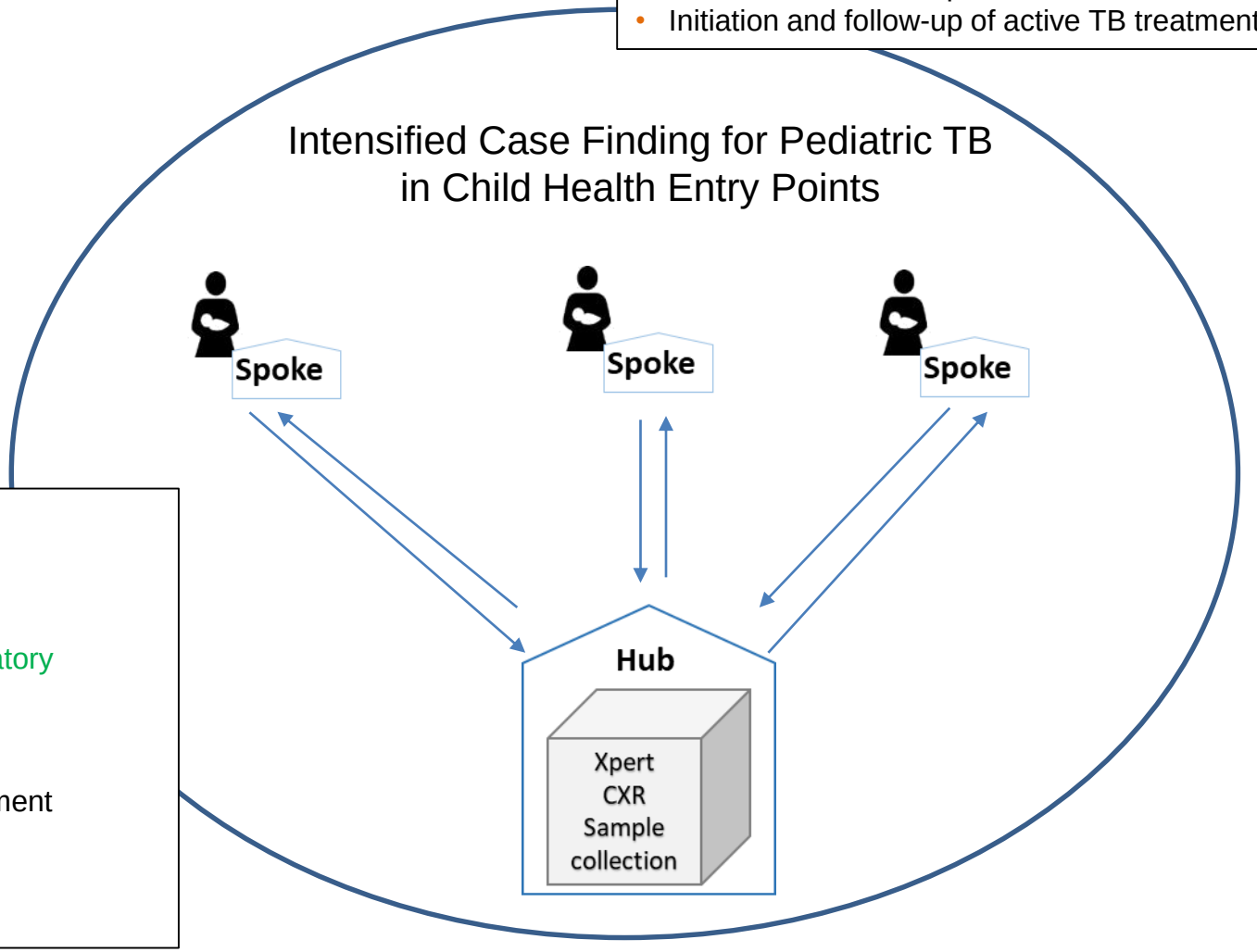
Hub and Spokes Model

Spoke activities:

- TB screening and investigation
- Contact investigation
- Sample collection and transportation to Xpert service
- Initiation and follow-up of latent TB infection treatment
- Initiation and follow-up of active TB treatment

Contact Investigation
Community Volunteers





Hub activities:

- TB screening and investigation
- Contact investigation
- Collection procedures for respiratory e non respiratory samples
- GeneXpert
- CXR
- Initiation and follow-up of latent TB infection treatment
- Initiation and follow-up of active TB treatment
- Hospitalization
- One-site training

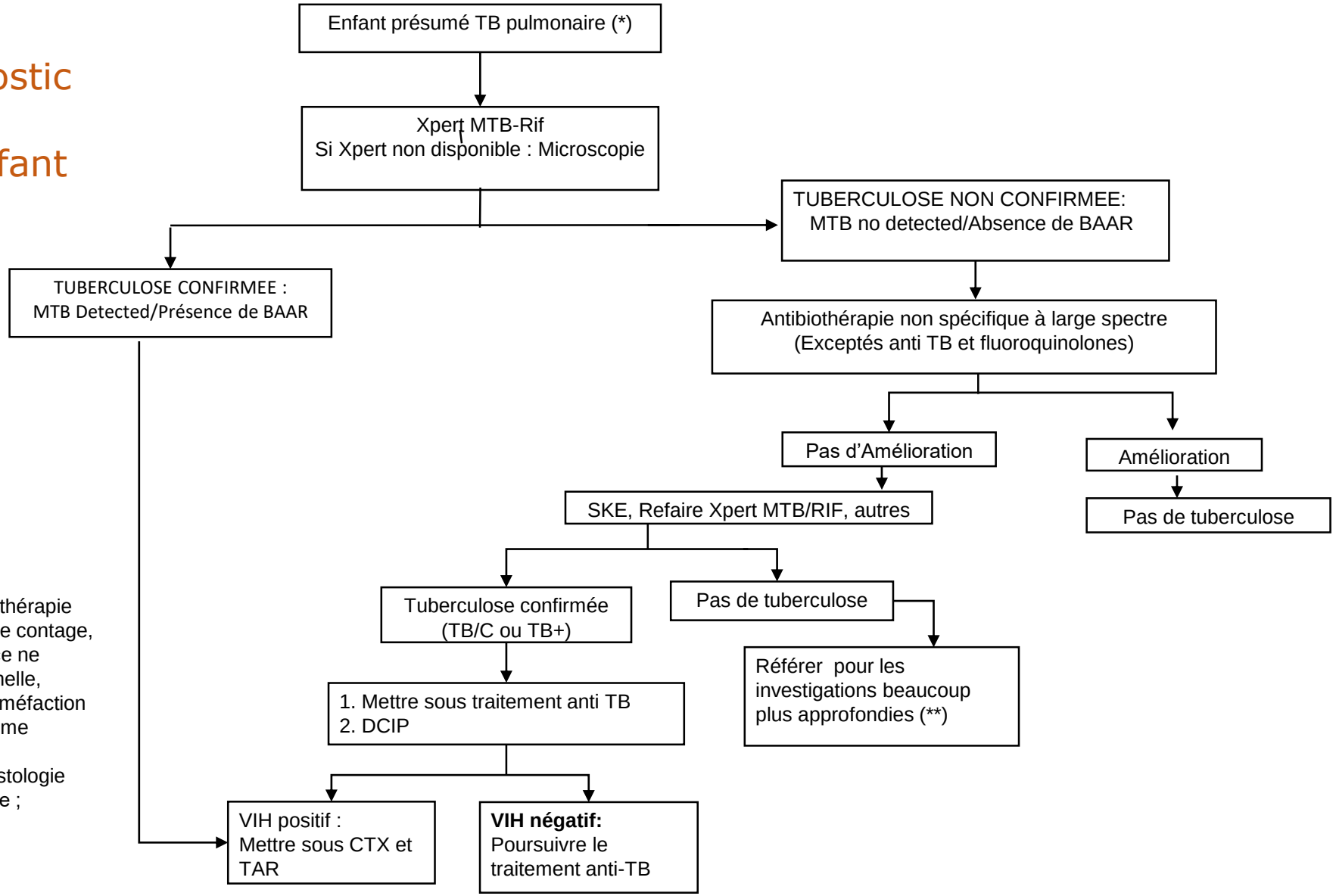
CaP-TB Site Assessment

Barriers to child detection:

- TB services are not integrated with other entry points including maternal and child health (MCH) and nutrition settings
- Health care workers are not trained in pediatric TB.
- Lack of materials for sample collection procedures , i.e. sputum induction, gastric aspiration (GA), nasopharyngeal aspiration (NPA), fine needle aspiration (FNA)
- Systematic contact tracing at community and facility level are not implemented
- Lack of sample collection and transportation system
- Xpert limited to presumptive DR-TB and coinfected TB-HIV patients
- Limited access to CXR investigations for pediatric TB diagnosis

National Algorithm for Pediatric TB Diagnosis

Algorithme de diagnostic de la tuberculose pulmonaire chez l'enfant



(*) : Toux, persistante avec ou sans antibiothérapie non spécifique, Fièvre persistante, Notion de contage, Perte de poids ou insuffisance de croissance ne répondant pas à une réhabilitation nutritionnelle, Signes physiques (épanchement pleural, tuméfaction ganglionnaire, tuméfaction osseuse, syndrome méningé).
(**) : Faire la Culture et Antibiogramme ; Histologie (biopsie d'organe) ; l'Endoscopie bronchique ; l'Echographie/Scanner au niveau tertiaire

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Site-Level Implementation

Key activities

- Integration of TB screening and identification of children with presumptive TB in all child health entry points: MCH, nutrition, out-patient department (OPD), in-patient department (IPD), and HIV
- Introduction of CaP TB form to record presumptive TB case information and to allow prospective follow up till treatment initiation (clinical symptoms, diagnosis and treatment)
- Pediatric TB training provided to health care providers from all key entry points (TB screening with intensified case finding tool (ICF), clinical management of paediatric TB, sample collection procedures)
- Intense programme for on site support and supervision (Week 0-2-4 –schedule, Check list)
- Training of Community Health care workers to support sample and patient referral
- Provision of consumables and implementation of sample collection procedures (GA for the time being)
- Using Xpert as first TB test for pediatric presumptive TB patients

Intensified Case Finding (ICF)

To be used in all entry points

PROGRAMME NATIONAL DE LUTTE CONTRE LA TUBERCULOSE
PNLT - RDC

For triage/waiting area use only

Pediatric TB Intensified Case Finding Screening Tool

Date: ____ / ____ / _____ Age: _____ years old Sex: ☐ M ☐ F

DOES THE CHILD CURRENTLY HAVE THE FOLLOWING:

SYMPTOMS	YES	NO
Cough?		
Wheeze?		
Fever?		
Night sweats?		
Fatigue / reduce playfulness / lethargy?		
Loss of appetite/Eating less (or failure to thrive)?		
Neck swelling?		
A household contact currently on TB treatment?		

Color Coding Legend: White= MCH/PMTCT; Blue= OPD; Pink= Nutrition; Yellow= Pediatric Ward

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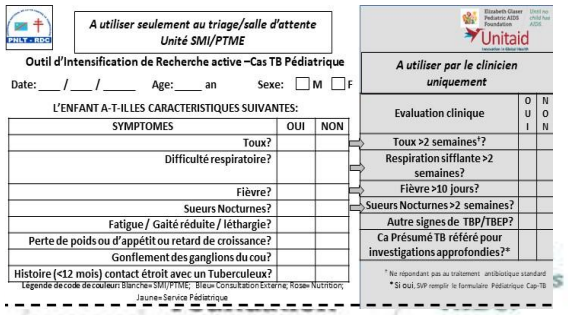
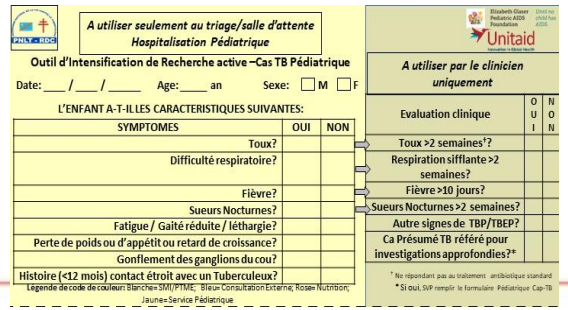
For clinician use only

Clinical Assessment	YES	NO
>2 weeks?		
>2 weeks?		
>10 days?		
>2 weeks?		
Presumptive TB case referred for further investigations?*		

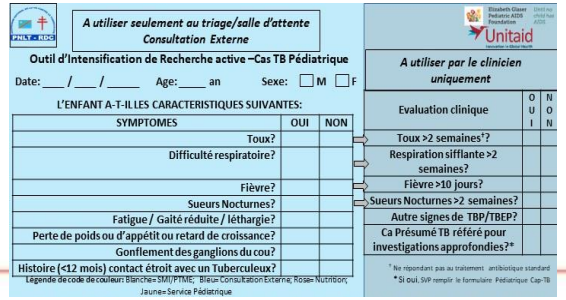
* If yes, please fill the Cap-TB Pediatric TB Form



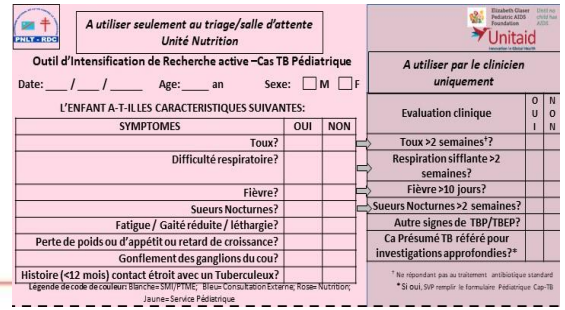
MCH/PMTCT Unit



Nutrition Unit



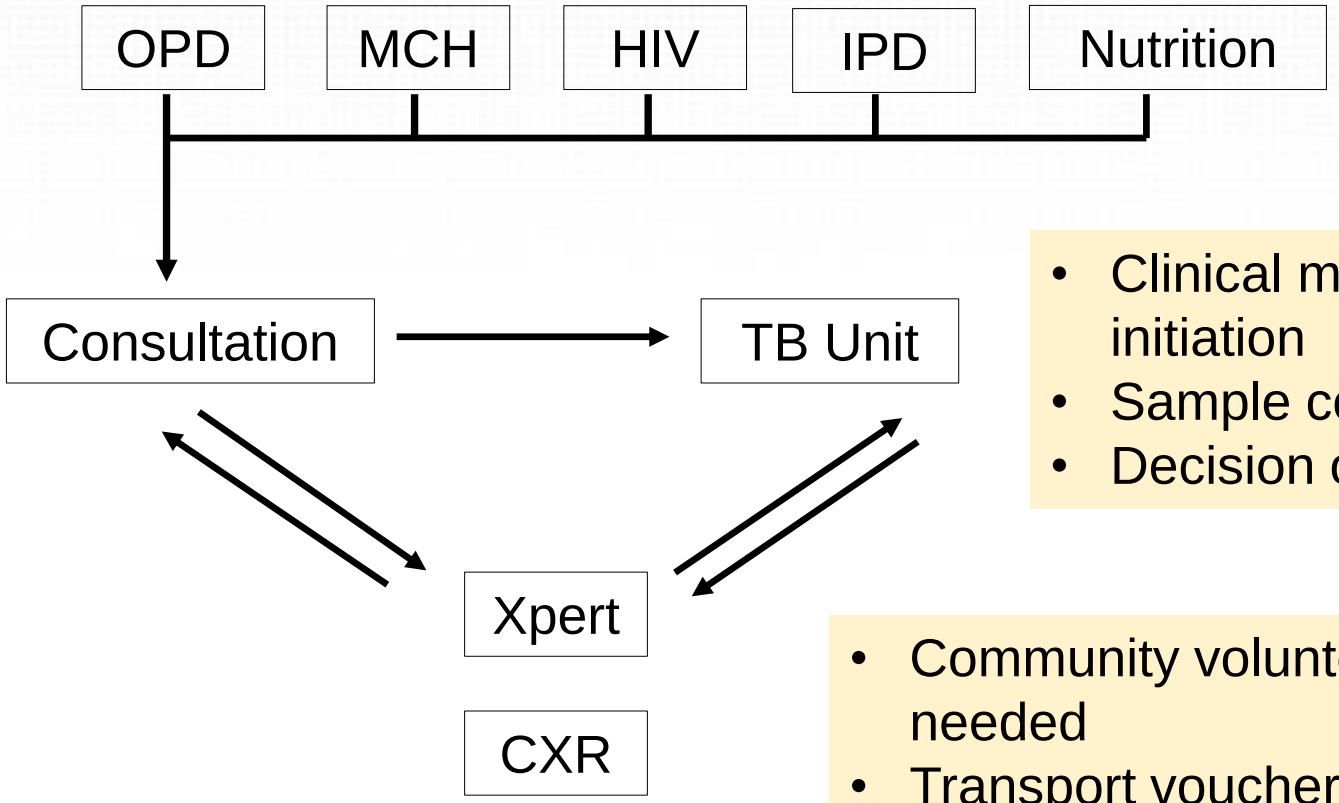
OPD Unit



Pediatric Ward

Model of Care/Patient Flow

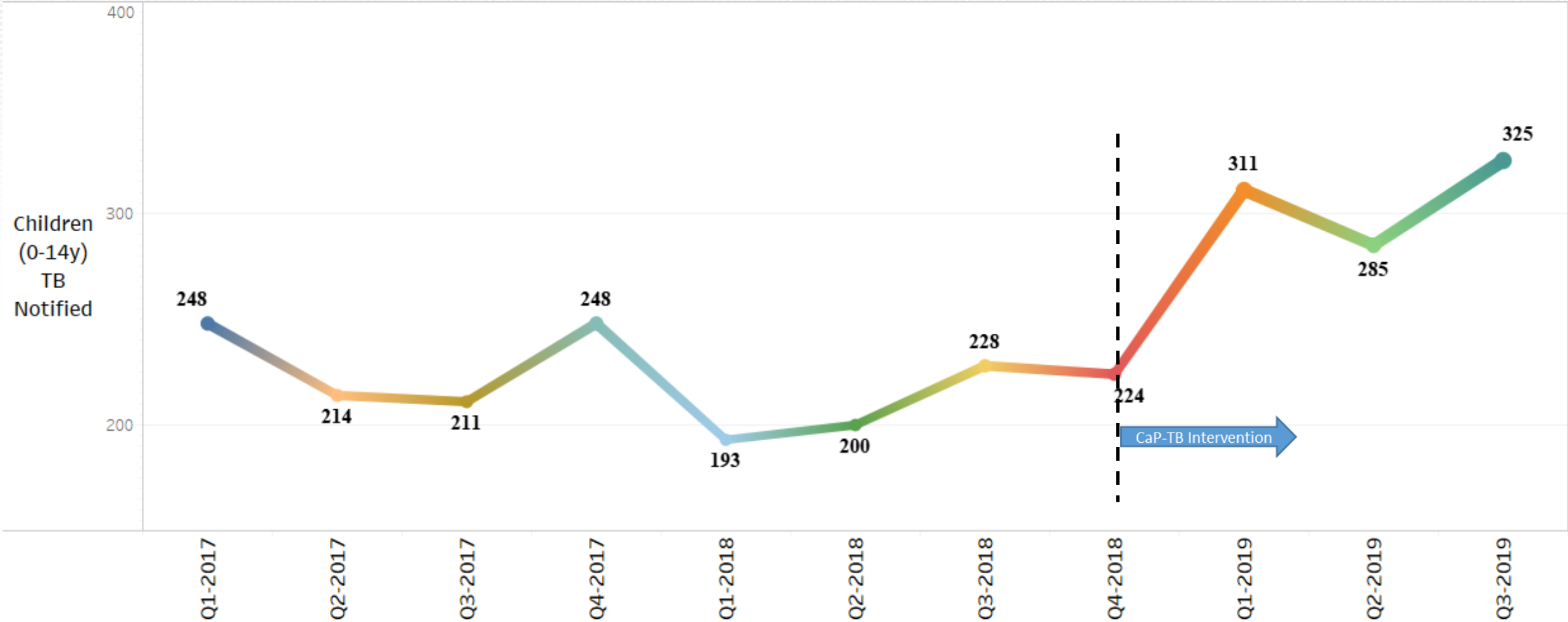
Systematic TB Screening in Children



- Clinical management and decision on Tx initiation
- Sample collection
- Decision on treatment initiation

- Community volunteers escort patients if referral is needed
- Transport vouchers
- CXR vouchers

TB Detection in Children



(21 Sites in Kinshasa)

Preliminary Results: Number Needed to Screen by Entry Points

Number Needed to Screen to Identify One Pediatric TB Case (NNS)
Period: Feb-Aug 2019

Entry Point	0-14y screened (#)	0-14 y diagnosed with TB (#)	Needed to screen to identify one TB case (NNS)
OPD	**12,137**	**436**	**28**
IPD	**809**	**17**	**48**
Nutrition	**192**	**36**	**5**
MCH	**16,318**	**5**	**3,264**
Contact investigation (household)	**2,564**	**89**	**29**
Contact investigation (facility)	**155**	**31**	**5**

IMPORTANT:

- In the DRC health system, MCH services provide immunization and regular growth check for children <5 years old
- Sick children access care through OPD

Lessons Learned

- Building health care workers capacity to manage pediatric TB: key to deploy on-site training and intense monitoring and supervision
- Integration of TB services in all pediatric entry points is critical
- Ensuring strong patient and sample referral system is key:
  -Sample transportation system (hub and spoke model)
  - Support for patients referral to sample collection sites and CXR sites
- Preliminary results show pediatric TB case finding might be higher in the following entry points in DRC: Nutrition, Contact Investigation, OPD
- Collaboration with national TB program

Thank You

The CAP TB project is made possible thanks to Unitaid's funding and support.
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