

Integrating TB care with maternal and child health lessons learned in Papua New Guinea

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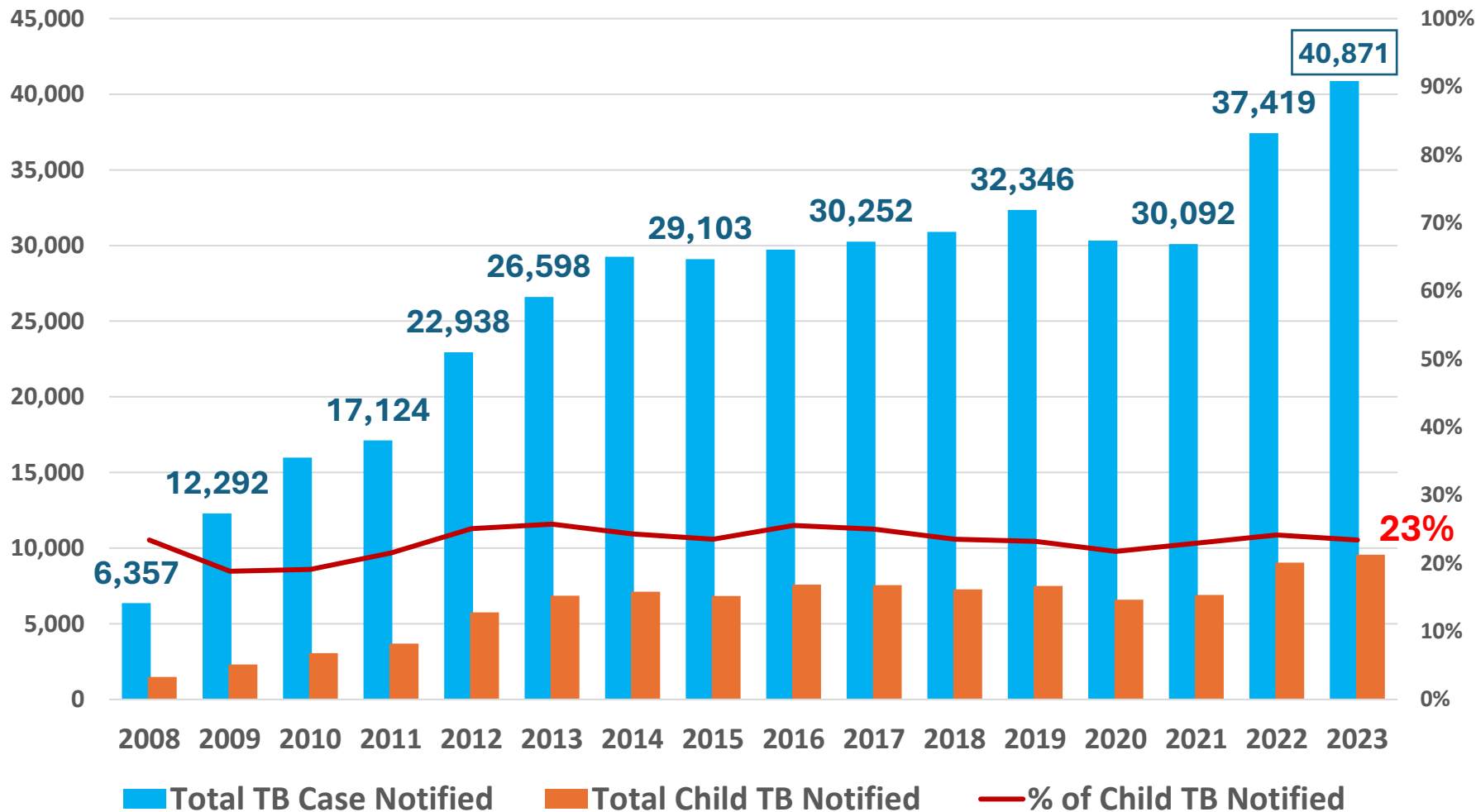
PAPUA NEW GUINEA - BACKGROUND



- Island country north of Australia and shares a land border with Indonesia
- Primarily Melanesian ethnicity
- Total population of approximately 12 million people
- Population largely rural

- TB CNR: (country) 427/100,000
- Capital City: Port Moresby
- TB CNR: (Port Moresby) is 1,117/100,000

TB Case notification - including Paediatric TB

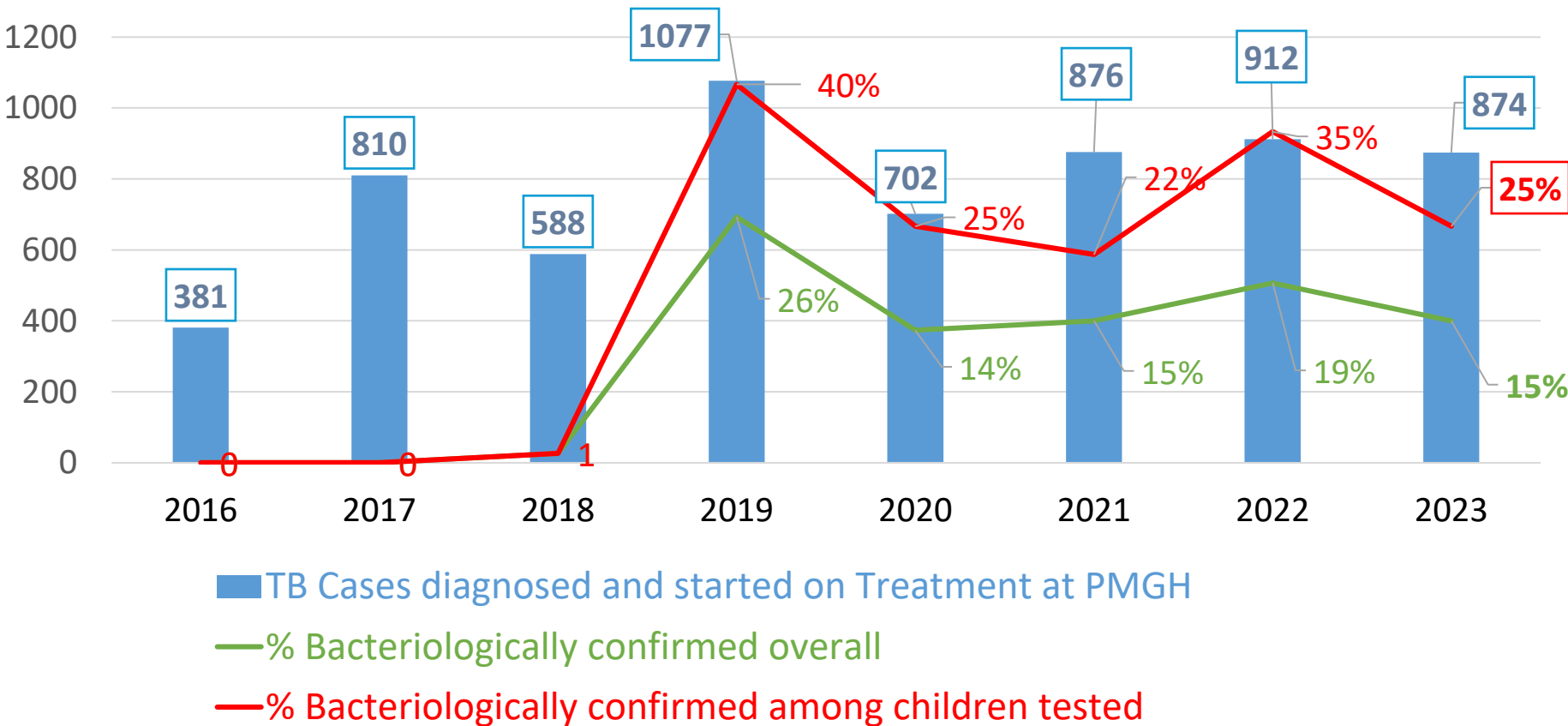


TB Cases increased by 30% in 2024 (not shown)

Children among the highest proportion of TB cases globally in PNG (~22%)

Data courtesy of the NTP

Paediatric TB cases at Port Moresby General Hospital



Increased Xpert testing and confirmation of child TB

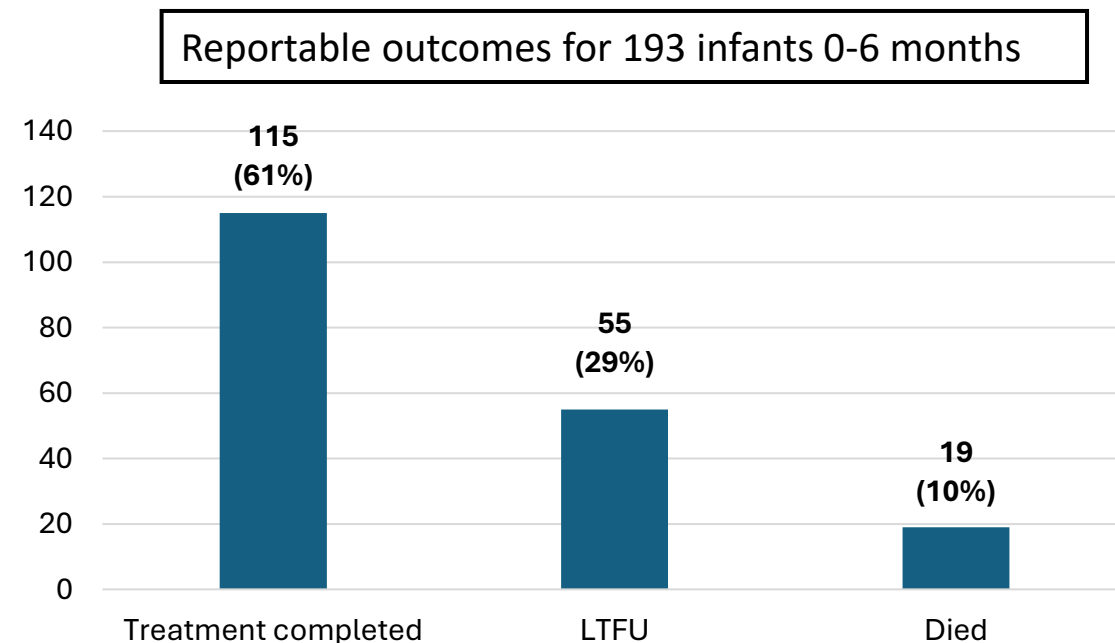
~60% receive Xpert testing

At **best** - paed TB is confirmed ~25-30% among tested

At **worst** - paed TB is confirmed ~15% among tested

A retrospective review of infants 0-6 months of age diagnosed with TB over 8 years 2016 - 2023

- A total of 6,593 child TB cases (824/year) < 15 years old
- 296/6593 (4%) were 0-6 months of age (32/year)
 - 13% HIV positive by HIV DNA PCR
- 134/296 (45%) had a gastric aspirate for Xpert
 - 27/134 (20%) Xpert confirmed (4 with RR)
 - 27/296 (9%) Xpert confirmed overall
- Treatment complete = 61%
- LTFU = 19%
- Died = 7%
- 103 (35%) referred out



How do we break the cycle of transmission from mom(caregiver) to child?

- We know children at risk from getting TB from their mothers
 - Mothers usually at bedside
- We know we have many infants with TB disease
- We know we have many newborns born to mothers with TB
 - How can we manage infants born to mothers with TB?

- What to do?
- Partner with our colleagues in Obstetrics and Gynaecology
- Integrate education into nations medical school and national training hospital



Stop TB Partnership

TB Free PNG:

- Maternal Newborn Child Health (MNCH) TB Program

Activities include:

- Active TB screening + linkage to care for peri-partum women
- Contact (family) screening
- Staff screening
- Advocate for use of contraception and appropriate timing of next pregnancy for women with TB
- Provide TPT to neonates/children who require it
- Funded by TB Reach (Wave 10) – provided critical staffing / equipment to carry out activities.

In the TB free PNG project

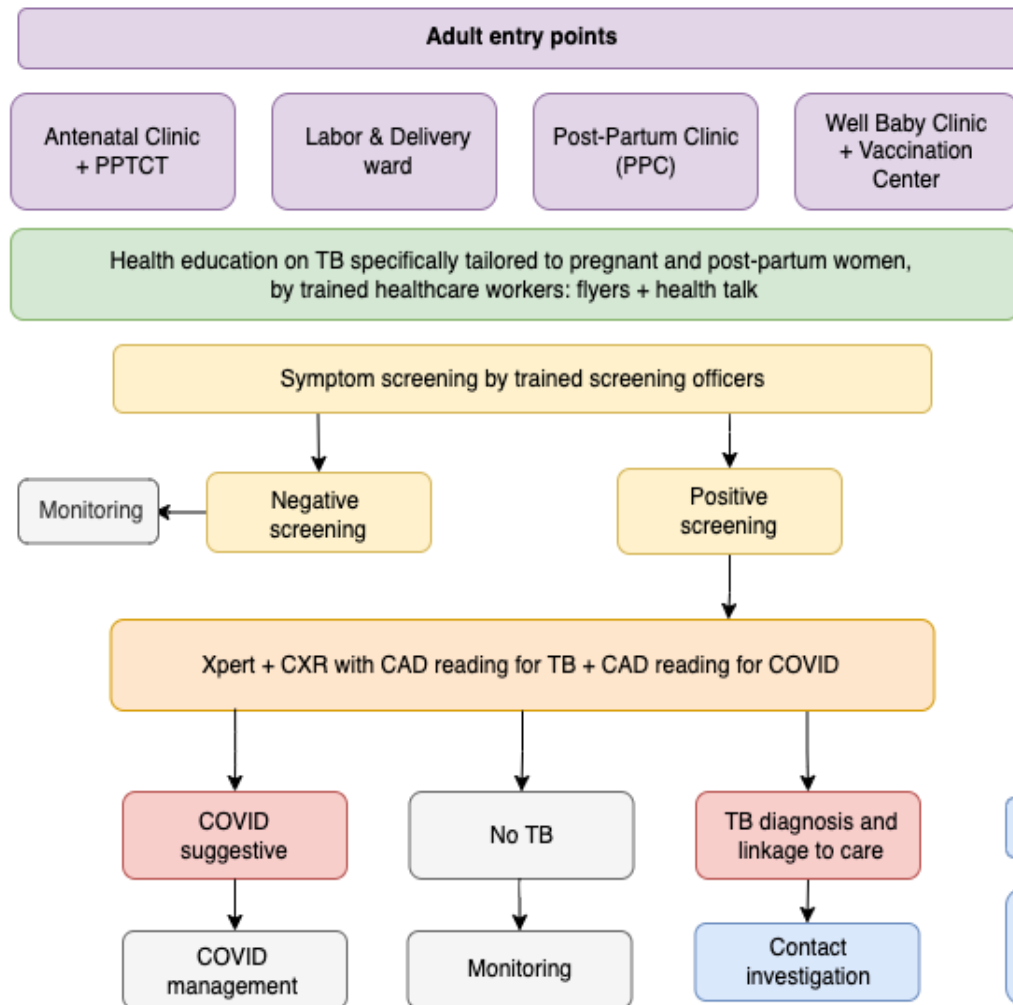
- 43 neonates have been started on TPT
 - 1 died
 - 1 interrupted treatment (clinician's decision)
 - 41 ongoing/completed treatment
- 3 neonates have been diagnosed with TB
 - Linked to care and TB treatment initiation
 - 3 TB cases in neonates/4280 of screened pregnant women (0.7%)

Port Moresby General Hospital Maternity Unit



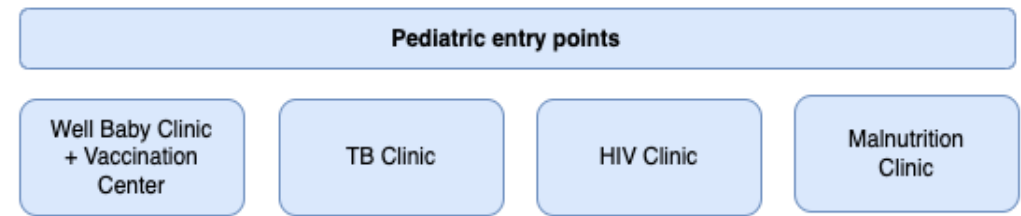
- Care for ~16,000 delivers annually
- Only public L&D center in a city of 1 million people
- With **passive TB case finding** we manage **~50 cases of TB** amongst peripartum women who attended the facility every year
- 2023 hospital data shows 9 out of 21 (43%) maternal deaths in hospital were secondary/related to TB
 - TB is the 2nd leading cause of maternal deaths
- Historically, doing referrals and investigations for peri-partum women who are suspected or diagnosed with TB has been difficult

Patient Flow Diagram



Recruitment of healthcare workers

1. SMO – O&G
2. Medical Officer
3. Nursing Officer/Midwife
4. CHW #1
5. CHW #2
6. CHW #3
7. Radiology technician
8. Program Manager

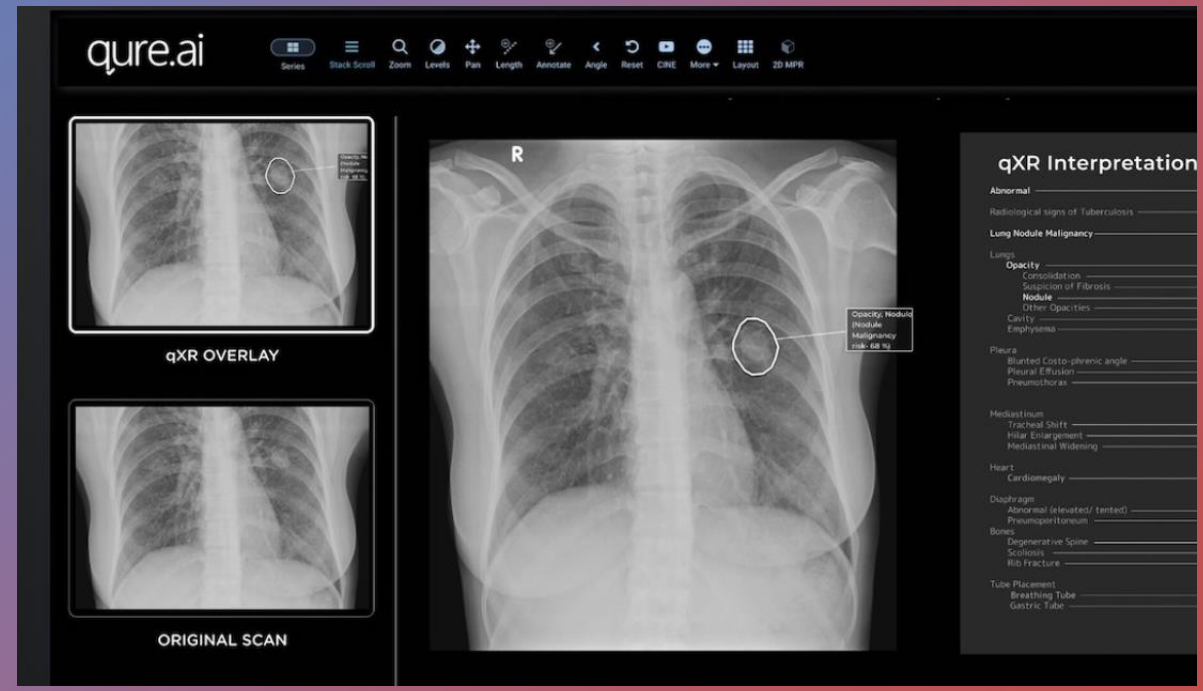


Health education on TB exposure and TPT management: flyers + health talk

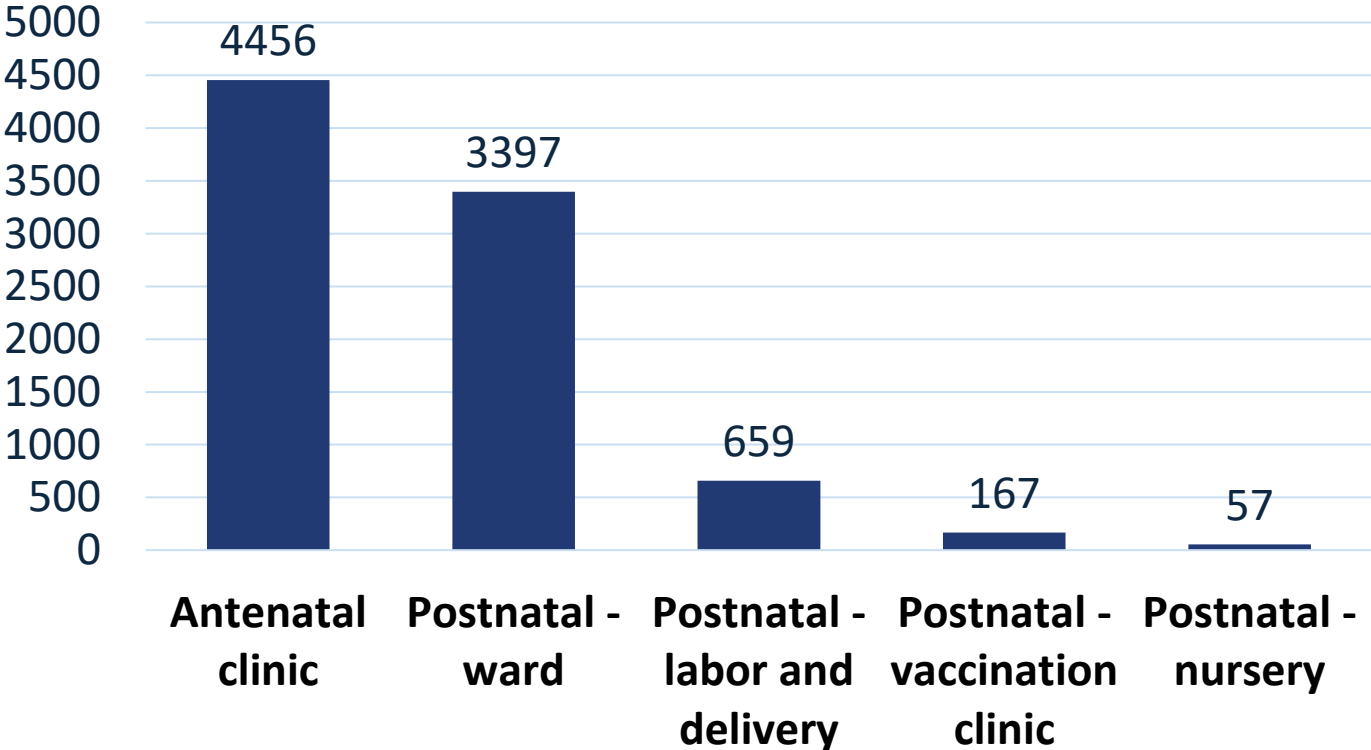
See TPT Screening Algorithm

Introduction of radiology access to maternity unit (MinXray) in March, 2024

- Qure AI – software to detect TB in peri-partum women
- CAD/AI for PMGH hospital (~25,000 chest xrays annually)
- On-site radiology access - critical



MATERNAL SCREENING POINTS



Total of **8736** women screened

- 4456 before giving birth
- 4280 after giving birth

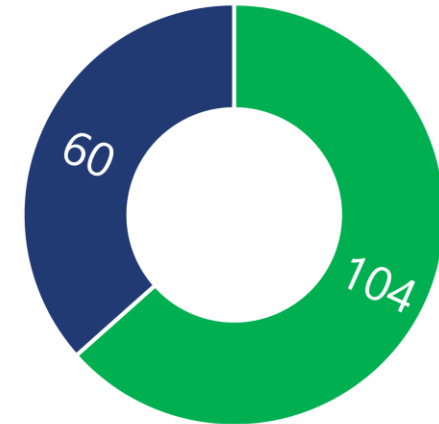


TB DIAGNOSIS AMONG WOMEN

164/8736 women diagnosed with TB

- 1.9% of screened women
- 1877 TB cases/100000 population
 - 4.5 higher than the national estimate
 - 1.5 higher than the NCD estimate
- 3 X more TB cases than passive case finding in the same setting

- Microbiologically confirmed
- Clinically diagnosed



Type of TB	N
Pulmonary TB	69 (42%)
Extrapulmonary TB	79 (48%)
Both PTB and EPTB	16 (10%)
TOTAL	164
<i>Total PTB</i>	<i>85 (52%)</i>

4 RR-TB cases

60/85 (71%) PTB cases Xpert confirmed

150/164 (91.4%) initiated treatment



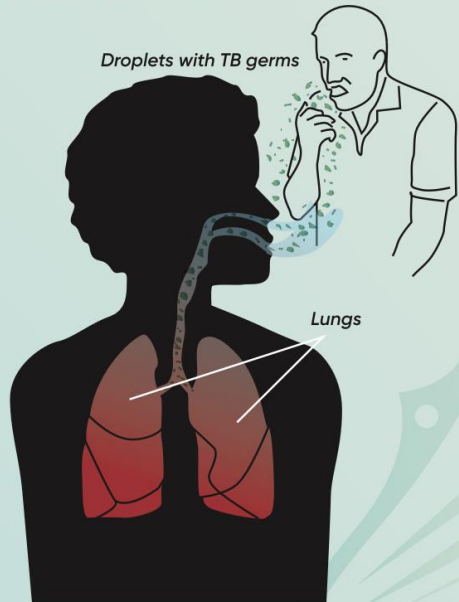
TUBERCULOSIS AND PREGNANCY

SIK TB

Sik TB i wanpla bikpla sik weh i ken bagarapim kain kain hap blo bodi, tasol planti taim em i save bagarapim rot blo pulim win. Sik TB bai pinis sapos yu dring olgeta TB marasin blo yu. Sapos yu no pinisim TB marasin gud, sik TB bai kam bek gen, na em i ken kilim yu.

Ol manmeri save kisim sik TB olsem wanem?

Ol binatang blo sik TB save kam aut lo win taim wanpla wantem sik TB i kus. Dlspele binatang i stap lo win, ol narapela ken pulim win na i ken go insait lo bodi blo ol.



Tok Skul lo Sick TB igo long ol Bel Mama lan

Wanem ol makmak blo sik TB?

- Strongpla kus aburusim tuple wik, na ino orait wantem marasin.
- Kus wantem blut.
- Skin hat planti taim/ tuwat planti lo nait.
- Lus weit nating (o sapos yu no putim skin gud lo taim yu skelim bel lo klinik).
- Ol pikinini i gat wankain ol makmak, na sampla taim ol no inap pilai planti olsem bipo.
- Sik TB ken bagarapim kain kain hap blo bodi, sampla taim i ken wokim bel solap wantem wara, na i ken wokim ol glen lo neck i ken solap tu.

Hao ba ol dokta save sapos mi gat sik TB?

- Ol i bai kisim stori blong sik
- Ol i bai sekim boros na ol narapla hap blo bodi
- Test blo Sekim kus
- Piksa blo boros
- Nidel blo sekim ol glans

Sapos mi bel, mi ken kisim sek blo sik TB? YES!

Marasin blo sik TB i save pinis behainim 6-pela mun. Stongpla sik TB, marasin i ken abrusim 1-pla krismas. I gutpla sapos yu kisim marasin gud, na pinism olgeta, bai sik TB nonap bagarapim yu na bebi blong yu. Sapos yu ino kisim marasin gud, sik TB i ken kam bek, na yu ken dai.



Mi ken stopim bebi blo mi lan em stap insait lo bel? Yes!!

Yu i ken lukautim bebi blo yu na...

- Bebi blo yu mas susu long 6-mama i save banisim bebi long...
- Taim yu statim marasin, yu ken wa...
- Taim yu laik kus i go inap 2-pela...
- Haitim maus na nus taim yu laik...
- Sapos yu gat narapla pikinini na...

Gutpla pasin weh bel mama wan wokim:

- Kaikai ol gutpla kaikai blo gaga...
- vegetable
- Mas silip gut lo nait, bodi i nidim...
- Noken simuk, dring bia na pulim...

Femili Plenin:

- Igat planti marasin weh yu i...
- karim pikinini blo yu, long banisim...
- Kisim bel taim yu stap lo TB na...
- na bebi blo yu stap lo bikpla...
- kisim bel long taim yu gat bikpla...
- Sapos yu kisim femili plenin...
- blo Sik TB wantaim, bai yu...
- nurse blo yu lo stretim dose b...
- asin.

Education for patients & staff

• Pamphlets for patients on TB in pregnancy and family planning

• Don't forget the extra depo-provera shot!

• Pamphlets for HCW on TB in pregnancy and family planning

• Lecture on TB in pregnancy (for nurses, medical students, doctors) – at the medical school

Sapos yu igat narapla askim, yu i ken askim nurse o dokta weh i stap klostu long

Intergrating TB care with Maternal care (and family planning into TB care)

- O&G staff are more aware of TB and its risks for peri-partum women and the need for active TB screening in pregnant/postnatal women
- TB clinic (s) are more aware of the need for antenatal care in pregnant women diagnosed with TB and need for appropriate contraceptives in women of child-bearing age who are on TB treatment
- Acceptance of Xrays among staff and patients still a challenge
- Acceptance of TB diagnosis among patients can be a challenge
- Addition of additional staff critical given high volume / workload
 - Multiple discussions with NTP and Dept of Health
- Integration of education component for undergraduate students for long term impact

Thank you

