

THE CAPTHAI PROJECT: TRANSFORMING TUBERCULOSIS CONTROL IN THAILAND THROUGH INNOVATIVE STRATEGIC PUBLIC HEALTH INTERVENTIONS

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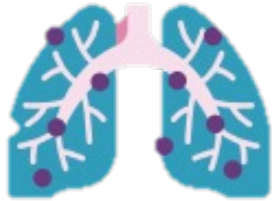
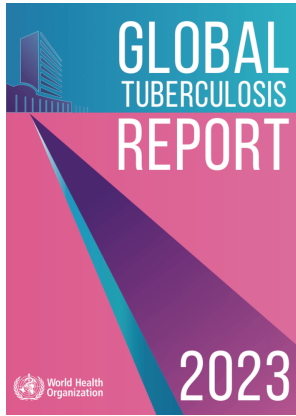
TUBERCULOSIS BURDEN

Global and situation in Thailand

Dr Phalin Kamolwat

Global Tuberculosis Report 2023

TB Incidence **133 / 100,000** pop.



In 2022, an estimated **10.6 Million** people fell ill with TB (9.9-11.4 Million)

Men
5.8 Million
(55%)

Women
3.5 Million
(33%)

Children
1.3 Million
(12%)



TB Mortality

1.30 Million
TB Deaths
(1.18-1.43 Million)

167,000
Deaths among
People with HIV

Drug-resistant TB

410,000 Fell
ill with drug-
resistant TB
(370,000-450,000)

MDR/RR-TB



176.6K Laboratory-confirmed cases
175.7K Patients started on treatment

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TB/HIV

TB/HIV care in new and relapse TB patients

671,000
(600,000-746,000)

People living
with HIV
Fell ill with TB



427,000

Patients with known HIV status
who are HIV-positive

365,000

HIV-positive TB patients on ART

WHO global lists of high TB burden countries

2016 - 2020



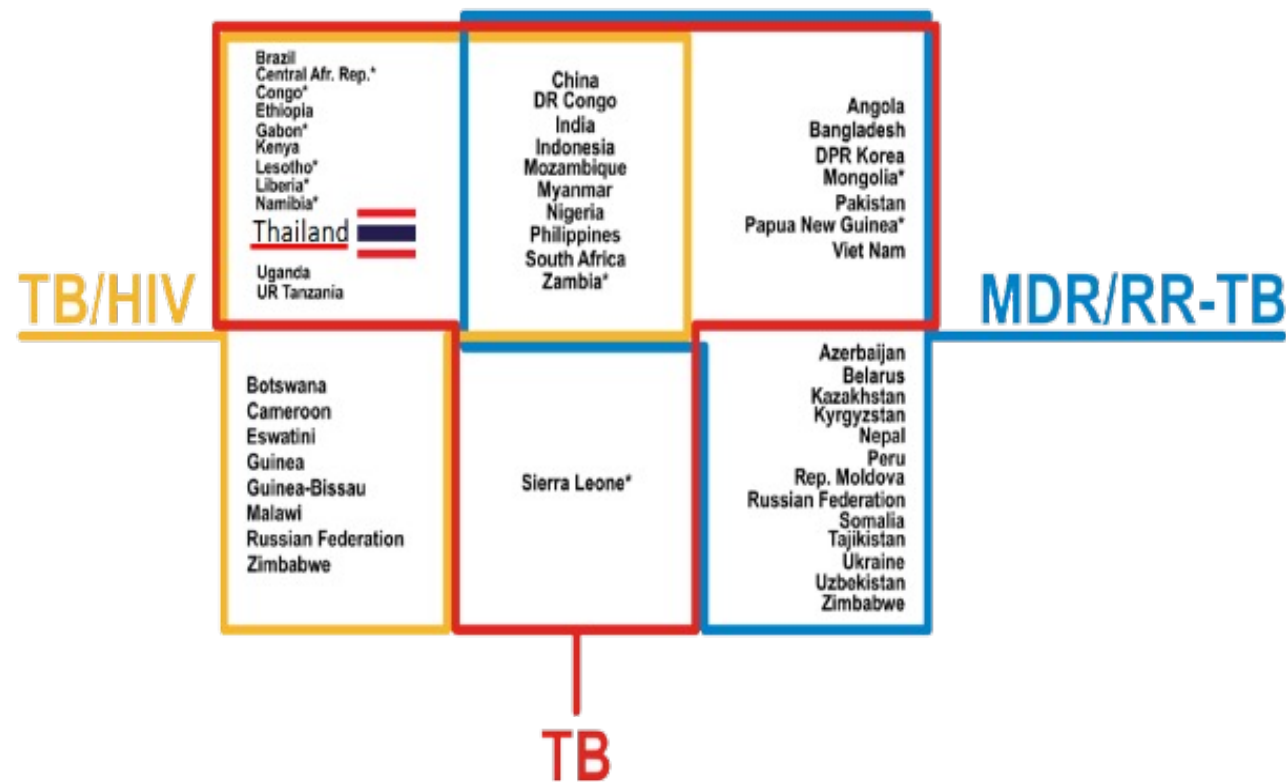
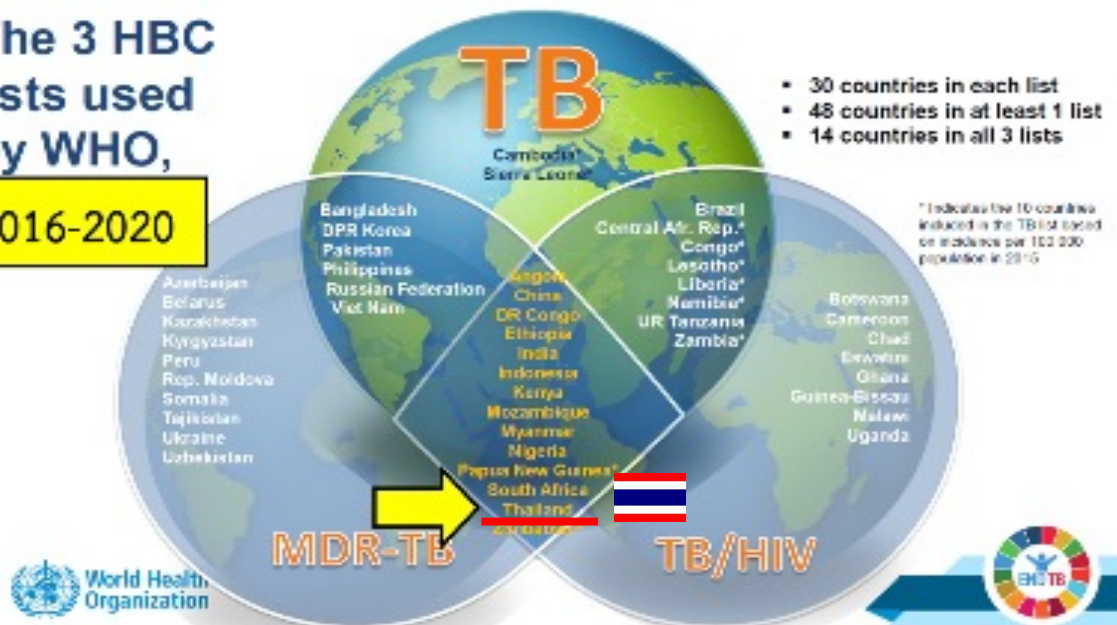
2021 - 2025

The 3 HBC lists used by WHO,

2016-2020

- 30 countries in each list
- 48 countries in at least 1 list
- 14 countries in all 3 lists

* Indicates the 10 countries included in the TB list based on incidence per 100 000 population in 2016



In year 2021 – 2025: Thailand was removed from the list of the 30 high MDR/RR-TB burden countries.

Sustainable Development Goals: SDGs

SDG3: Good Health and Well-being

THAILAND: SDGs Global rank 41 of 166



Indicator	Green	Yellow	Orange	Red	Thailand
Incidence of tuberculosis (per 100,000 pop.)	≤ 10	10 < x ≤ 42.5	42.5 < x ≤ 75	> 75	153 (2018)
Traffic death (per 100,000 pop.)	≤ 8.4	8.4 < x ≤ 12.6	12.6 < x ≤ 16.8	> 16.8	32.7 (2016)
Adolescent fertility rate (birth per 1,000 adolescent females aged 15-19)	≤ 25	25 < x ≤ 37.5	37.5 < x ≤ 50	> 50	44.9 (2017)
Age-standardized death rate attributable to household air pollution and ambient air pollution (per 100,000 pop.)	≤ 18	18 < x ≤ 84	84 < x ≤ 150	> 150	61 (2016)
Life expectancy at birth (years)	≤ 80	80 < x ≤ 75	75 < x ≤ 70	> 70	75.5 (2016)

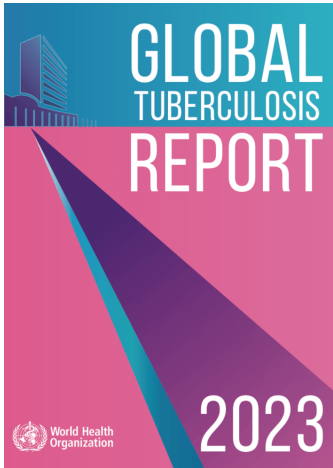
SDGs index In Thailand

SDG3 – Good Health and Well-Being

Maternal mortality rate (per 100,000 live births)	37	2017	●	↑
Neonatal mortality rate (per 1,000 live births)	5.3	2019	●	↑
Mortality rate, under-5 (per 1,000 live births)	9.0	2019	●	↑
Incidence of tuberculosis (per 100,000 population)	150.0	2019	●	→
New HIV infections (per 1,000 uninfected population)	0.1	2019	●	↑
Age-standardized death rate due to cardiovascular disease, cancer, diabetes, or chronic respiratory disease in adults aged 30–70 years (%)	14.5	2016	●	↑
Age-standardized death rate attributable to household air pollution and ambient air pollution (per 100,000 population)	61	2016	●	●
Traffic deaths (per 100,000 population)	32.2	2019	●	→
Life expectancy at birth (years)	77.7	2019	●	→
Adolescent fertility rate (births per 1,000 females aged 15 to 19)	44.7	2018	●	↗
Births attended by skilled health personnel (%)	99.1	2016	●	↑
Surviving infants who received 2 WHO-recommended vaccines (%)	96	2019	●	↑
Universal health coverage (UHC) index of service coverage (worst 0–100 best)	80	2017	●	↑
Subjective well-being (average ladder score, worst 0–10 best)	6.0	2019	●	↑

Thailand Tuberculosis Situation 2022

TB Incidence 155 / 100,000 pop.



111,000 Fell ILL with TB
(87,000-138,000)

72,274

People with TB notified
(new and relapse)



38,726

People not notified
Or not diagnosed



Men
68%



Women
31%



Children
1%

TB Mortality

13,700
TB Deaths

(11,400-16,200)



2,100
Death among

People with HIV

TB Treatment

TB Treatment coverage

65%

2025

90%

End TB
Operational
target

Treatment success rate

85%

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Diagnosis

Use of WHO-recommended rapid diagnostics



60%

People newly diagnosed
with TB using
WHO-recommended rapid
diagnostics

Thailand Tuberculosis Situation 2022

Drug-resistant TB

2,700 Fell ill with drug-resistant TB

(1,500-3,800)



MDR/RR-TB

875 Laboratory-confirmed cases
874 Patients started on second-line treatment

TB/HIV

9,200
(6,200-13,000)
People living with HIV
Fell ill with TB



TB test for people living with HIV

5,340



Notified among **9200** people living with HIV

4,689


Notified and Put on antiretroviral treatment

TB preventive treatment

 **15%**

Household contacts of bacteriologically-confirmed TB case on preventive treatment

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 **4,934**

People (age \geq 5 years) household contacts of bacteriologically-confirmed TB cases on TB preventive treatment

 **11,511**

Children (age $<$ 5 years) household contacts of bacteriologically-confirmed TB cases on TB preventive treatment

TB Catastrophic costs

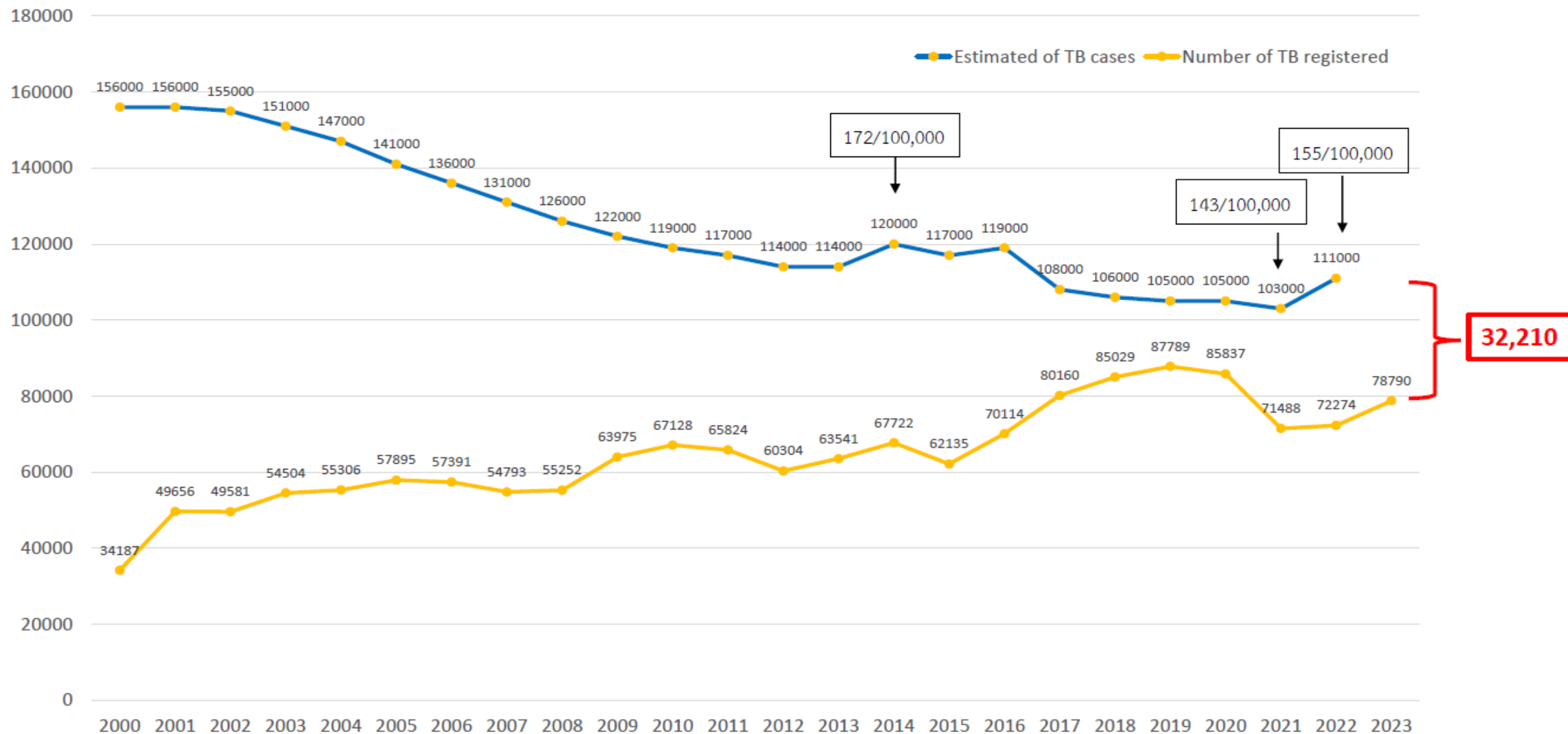
30%

(26-34)



TB patients facing catastrophic total costs year of survey: 2020

Estimated and number of TB cases, 2000-2023



Tuberculosis disease: Only the tip of the Iceberg

People with TB disease have symptoms and spread TB germs to others.

Millions of people in the world have latent TB infection.



1 / 4 of the global population is infected with latent TB



10-15% will develop to active TB

PRIORITY RISK GROUPS


CHILD CONTACTS UNDER 5 YEARS


RECEIVING ORGAN OR HAEMATOLOGICAL TRANSPLANTATION


PEOPLE LIVING WITH HIV


RECEIVING ANTI-TNF TREATMENT


RECEIVING DIALYSIS


HAVE SILICOSIS

SETTING/CONTEXT


CONTACTS 5 YEARS OLD AND OLDER


HOMELESS

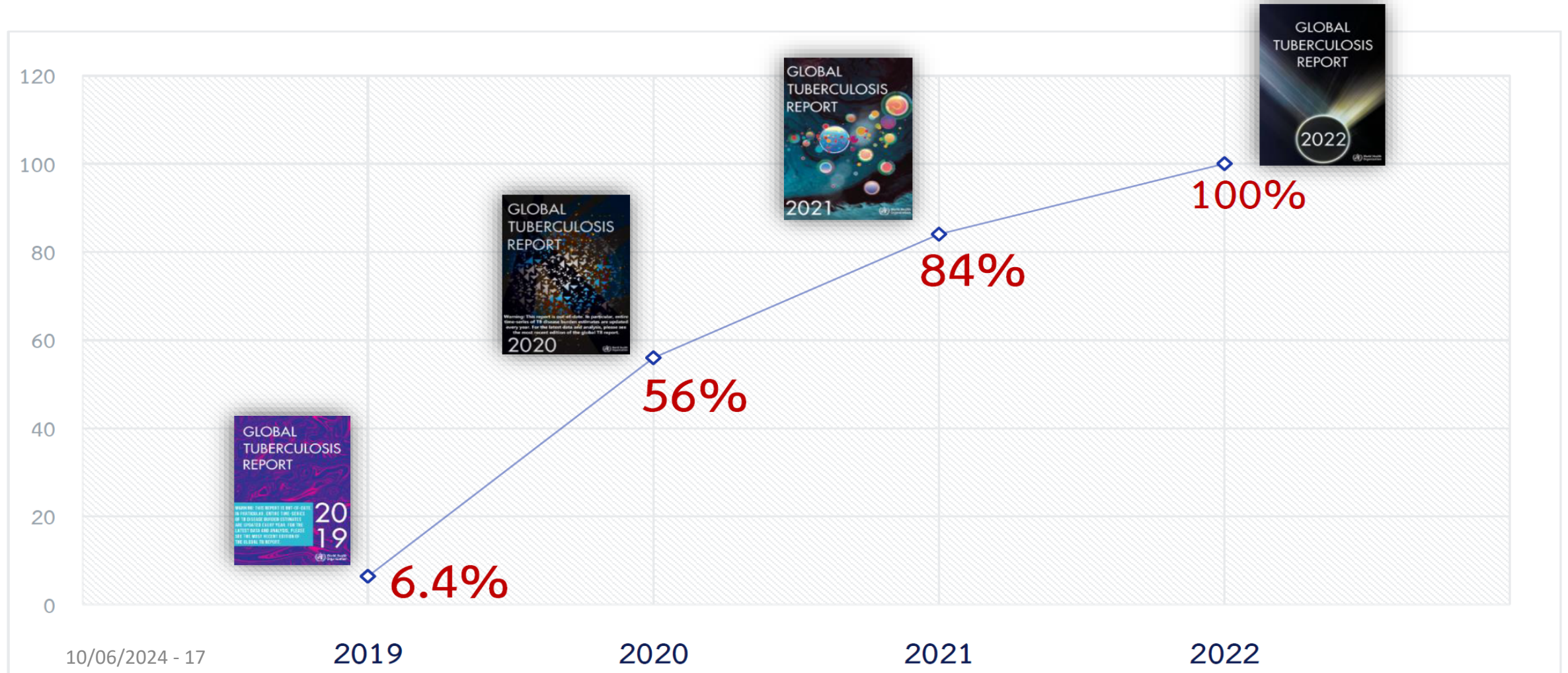

HEALTH-CARE WORKERS


PEOPLE WHO USE DRUGS

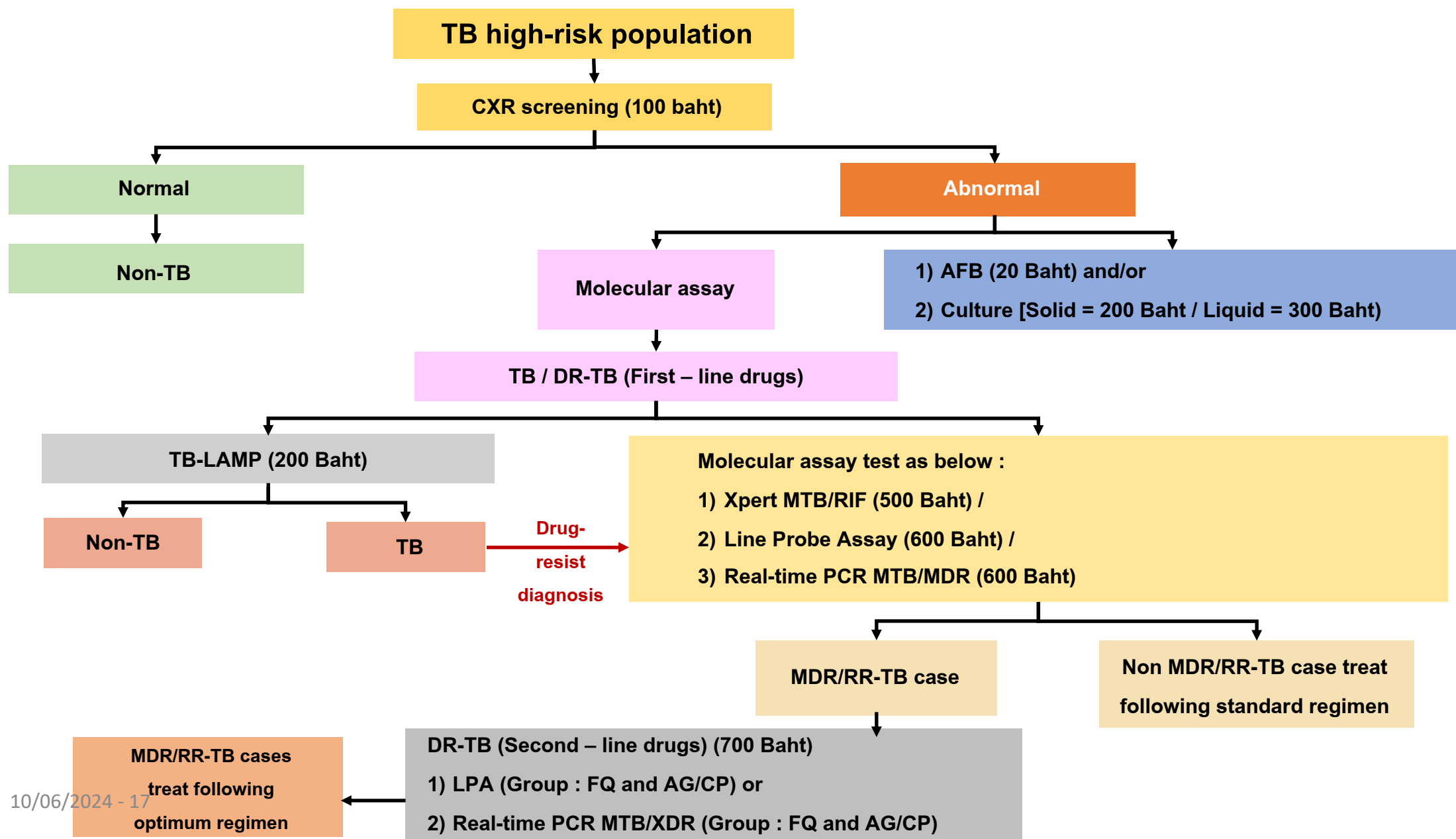

IN PRISON

Global TB Report: TPT Thailand

Percentage of household contacts among children aged < 5 years old of bacteriologically confirmed TB cases on preventive treatment



Benefit of health security system for TB high-risk population in 2023



Laboratory network for TB diagnostic

1. Culture 56 Units

2. Phenotypic DST

FLD 35 Units, SLD 14 Units

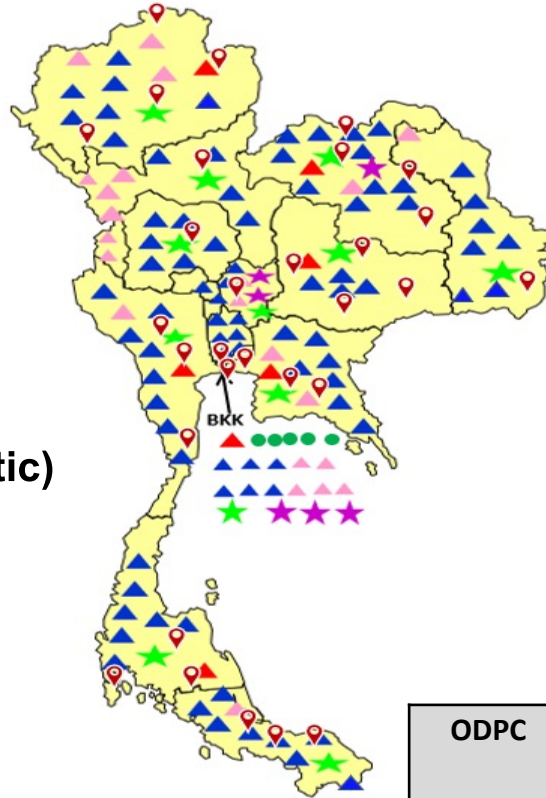
3. Xpert 77 Provinces

160 Units, 236 Machines (TB diagnostic)

4. LPA 19 Units (FL&SL DST)



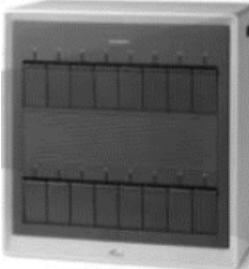
19 LPA
GF 12 , non GF 7



236 Xpert Assay
GF 174, non GF 62

227 machines,
4 module

9 machines,
16 module



191 Xpert 6-color

45 Xpert 10-color



ODPC	Xpert MTB/RIF Ultra	Xpert MTB/XDR	LPA
ODPC 1	17	5	1
ODPC 2	15	1	1
ODPC 3	7	1	1
ODPC 4	20	3	3
ODPC 5	16	3	1
ODPC 6	14	3	1

ODPC	Xpert MTB/RIF Ultra	Xpert MTB/XDR	LPA
ODPC 7	11	3	1
ODPC 8	11	3	2
ODPC 9	12	3	1
ODPC 10	8	3	1
ODPC 11	9	3	1
ODPC 12	11	2	1
BKK	41	13	4

IGRA Center 9 site

ODPC 1 **Chaing Mai**

ODPC 2 **Phitsanalok**

ODPC 5 **Ratchaburi**

ODPC 7 **Khon Kaen (ODPC 7+8)**

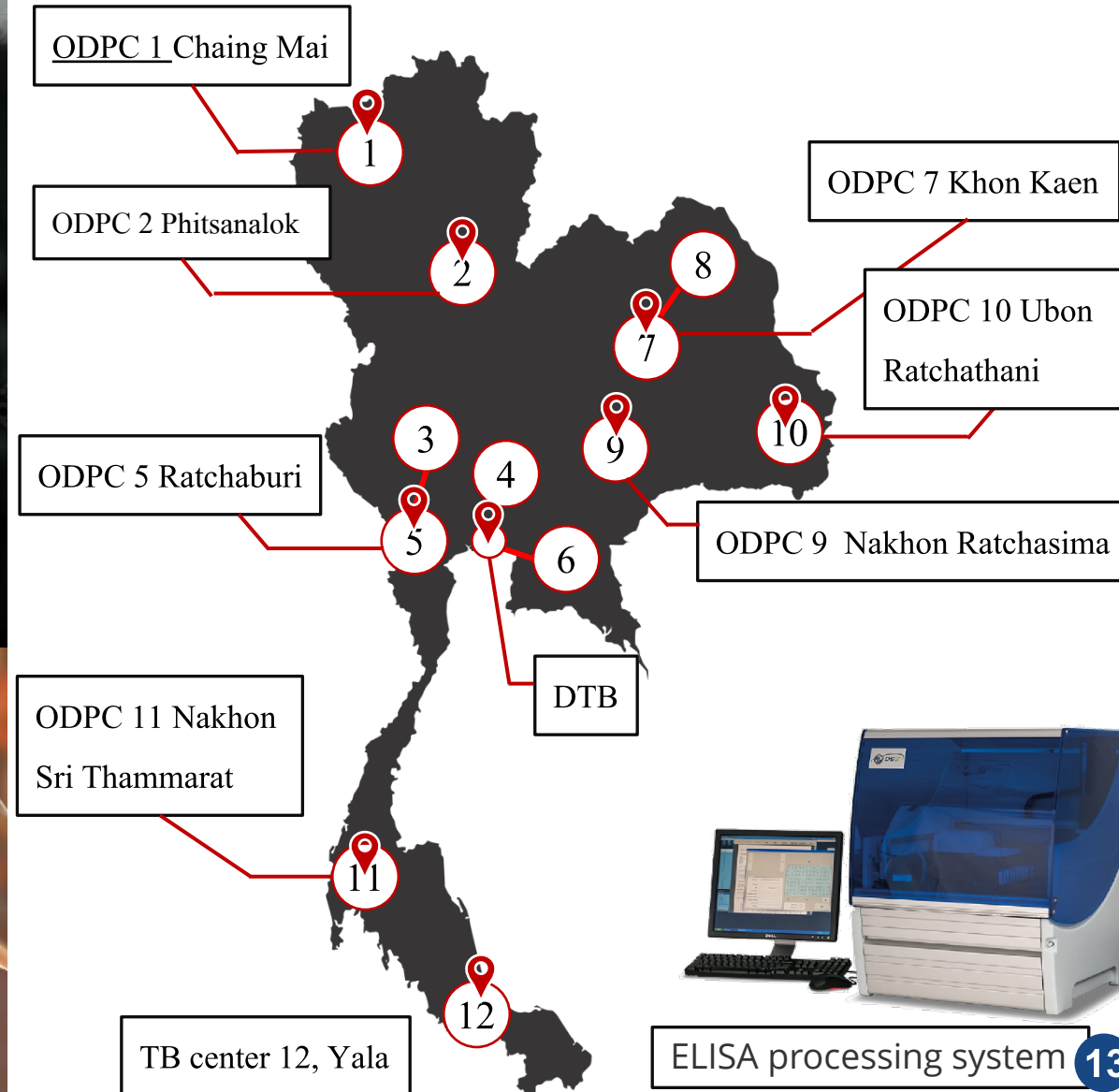
ODPC 9 **Nakhon Ratchasima**

ODPC 10 **Ubon Ratchathani**

ODPC 11 **Nakhon Sri Thammarat**

ODPC 12 **Songkhla (TB center 12, Yala)**

DTB **(ODPC 3, 4, 6, Bangkok)**





RESEARCH PROJECT

The method and the strategic pack

Dr Tamara Tovar Sanchez

International collaboration of CaPThai project

A research grant from : 



Signature of a MOU for the CaPThai project



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10/06/2024 - 17



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RESEARCH PROJECT



Objective: To evaluate whether a public health intervention package focusing on increased active case-finding and uptake of TB preventive therapy in households of newly detected TB cases in Thailand can be efficient in improving TB control.

METHODOLOGY

PRAGMATIC PHASE IV RANDOMIZED CONTROLLED TRIAL

Design:

Stepped-Wedge Cluster-Randomized Trial (SW-CRT)

Population:

Households (HH) contacts of newly bacteriologically confirmed TB case living in the same household for the last 3 months

Cluster:

20 provincial hospitals with TB notification >150 cases/year

Sequence:

4 clusters (5 hospitals) switching from control to intervention every 3 months

Analysis:

Effectiveness, adherence and safety in intervention (Active Case-Finding strategies and TPT shortest courses) vs control phase (Current Standard of Care)

	month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Facility #	Sequence	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1																			
2																			
3																			
4																			
5	1																		
6																			
7																			
8																			
9																			
10	2																		
11																			
12																			
13																			
14																			
15	3																		
16																			
17																			
18																			
19																			
20	4																		

- 1. Nakornping hospital ODPC 1
- 2. Chiangrai Prachanukroh hospital
- 3. Lampang hospital hospital
- 4. Phra Nakhon Si Ayutthaya hospital ODPC 4
- 5. Ratchaburi hospital ODPC 5
- 6. Samutsakhon hospital
- 7. Samutprakarn hospital ODPC 6
- 8. Chonburi hospital
- 9. Banglamung hospital



- 10. Khon kaen hospital ODPC 7
- 11. Kalasin hospital
- 12. Buriram hospital ODPC 9
- 13. Surin hospital
- 14. Sunpasitthiprasong hospital ODPC 10
- 15. Sisaket hospital
- 16. Maharaj Nakhon Si Thammarat hospital
- 17. Surattani hospital ODPC 11
- 18. Hatyai hospital ODPC 12
- 19. Songkhla hospital
- 20. Trang hospital



CONCLUSION

Public Health Impact

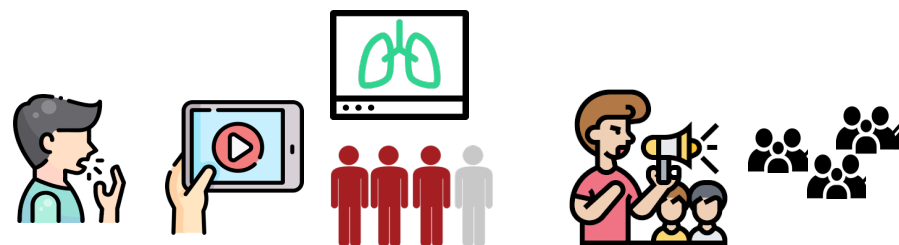
Project current status

TB PREVENTION MODEL FOR THAILAND AND BEYOND

The present study protocol incorporates pragmatic design features and includes patient-centred care outcomes, whilst respecting the rigor of clinical research, to support the decision-making to implement a public health strategic pack.

The long-term benefits and scale-up at national level of ACF strategies and TPT shortest regimens, directly benefiting all HHC of active TB cases detected within the frame of the study amongst nationals and migrant populations, PLWHIV, adults and children.

HEALTH SYSTEM CAPACITY-BUILDING



Site Assessment visits



Pilot Phase



Trial initiation
May 7th 2024





Department of Disease Control
Division of Tuberculosis



CaPThai

TB Case-Finding, Treatment and Prevention
Intervention in Thailand



LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE



Thank you

For your attention

