Prevention and Control of Tuberculosis for Public Health Midwives





National Programme for Tuberculosis Control and Chest Diseases
2022

PHM tasks in TB control

TB case finding

- 1. Identify malnourished paediatric age group through Weighing clinics and nutrition clinics and referral through MOH for screening of TB
- 2. Identify at risk/ symptomatic paediatric and other age groups during field visits and arrange referrals.
- 3. Identification of TB during Antenatal and Postnatal visits and arrange referrals.

Ensure compliance of TB treatment

- Health education and ensure treatment compliance of TB patients among the target population including paediatric age group, mothers and other females etc.
- 2. Provide services as a DOT provider







PHM tasks in TB control cont.

Preventive activities

- 1. Ensure screening of paediatric age group contacts, household contacts and other close contacts
- 2. Health education on TB during field visits etc.
- 3. Include TB as a topic during health talks at clinic sessions, monthly conference, in-service training & PPM sessions etc.
- 4. Assist for contact tracing.

Medical ethics

1. Ethics - Non stigmatization of patients suspected & already diagnosed with TB







NPTCCD

Outline

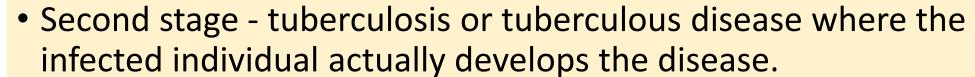
- ENDTB



- Tuberculosis infection/disease
- Epidemiology of TB
- National Programme for Tuberculosis Control and Chest Diseases (NPTCCD)
- Facts to know about TB at field level

Tuberculosis infection and disease

- Tuberculosis develops in two stages.
- First stage when the tubercle bacilli enter the body of an individual but remain dormant without causing disease. This is called tuberculous infection. Not infectious.



- Usually displays symptoms.
- ❖Infectious to others.
- Approximately 10% of people infected with bacillus but not suffering from any other concomitant immunosuppressive condition will develop the active disease during their lifetime.







Risk of progression of infection to disease

- The majority (90%) will not develop the disease and the only evidence of infection in these people may be a positive tuberculin skin test.
- The organisms may remain dormant within the body and the disease can develop at any time.
- The chance of developing the disease is greatest within the first two years of initial diagnosis and lessens as time goes by, but the risk probably remains for the lifetime.
- Weakening of the immune system can cause rapid progress of the infection to the disease status. Examples are HIV infection, diabetes, malnutrition, prolonged steroid therapy, chronic alcoholism, smoking, malignancies & other immunosuppressive status.







Treatment

- Treatment is given usually for 6 months.
- Correct quality drugs, correct dose, daily for 6 months.
- If not properly treated, can lead to drug resistant TB.
- Treatment for DR TB will require a longer duration and has poor outcome.







Common symptoms of pulmonary tuberculosis

Respiratory symptoms:

- Cough usually more than two weeks. However in immunosuppressed and in the presence of any other risk factor, cough of any duration should screen for TB.
- Shortness of breath
- Chest pain
- Haemoptysis (usually blood stained sputum)

Constitutional symptoms:

- Fever and night sweats
- Loss of appetite
- Loss of weight or failure to gain weight in case of children
- Tiredness (fatigue)
- Night sweats







High risk groups

- Contacts of TB patients (Household & other close contacts)
- 2. People Living with HIV (PLHIV)
- 3. Elderly >60years
- 4. Malnourished (poor weight gain/ weight loss in children)
- 5. Patients with DM
- 6. Immune compromised individuals (CKD patients, patients on steroids/immune suppressive drugs, cancer patients on anti cancer treatment, patients undergone transplant surgery- Renal transplant)
- 7. People living in risk environments slums, estates, internally displaced, migrants etc.
- 8. Prison inmates and those who are institutionalized (elders' homes, rehabilitation centres etc.)
- 9. Drug addicts
- 10. Health care workers
- 11. People working in mines -Silica exposure







High risk groups/ pockets in the district/ MOH area

Discussion

Global Trend





TB is still a major public health problem in the globe

- About 1.7 bil. (23%) infected
- •10.0 mln- with active disease
- 1.1mln(11%) Children
- 5.6 mln(56%) -Men
- -3.3mln(33 %) women
- •Only 58% (5.8mln) detected by NTP
- •SEAR nearly 1/4th of population, but 44% of TB caseload (Africa -24%, Western Pacific 18%)

- •One of the top 10 causes of death and the second leading cause from a single infectious agent (other than COVID 19).
- TB is also the leading cause of deaths among people with HIV and a major cause of antimicrobial resistance related deaths
- Around 8% of total TB cases are PLHIV.
- Accounts for 1/5th of HIV deaths

(WHO-TB Global report, 2021)

Sri Lanka - country situation

- Low Burden country for TB
- Second lowest in the region

Estimates (WHO Global Report 2020)

- Estimated Incidence 14000 64/100,000 (2019)
- Estimated Prevalence -99/100,000 (2019)
- Estimated Mortality-3.7 per 100,000 population (2017)

Reported rates -2021 (NPTCCD)

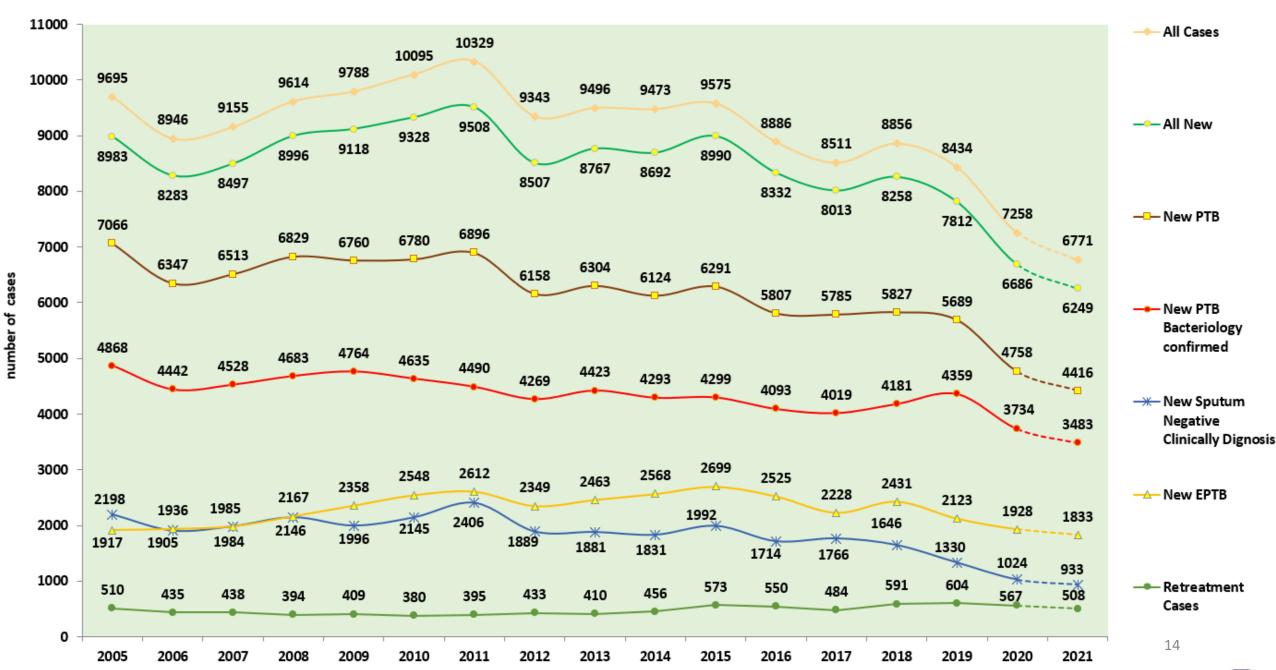
- Notification rate –30.7/ 100,000
- Incidence rate- 29.7/100,000
- Case Detection Rate 46.4%
- Mortality Rate 7.6%





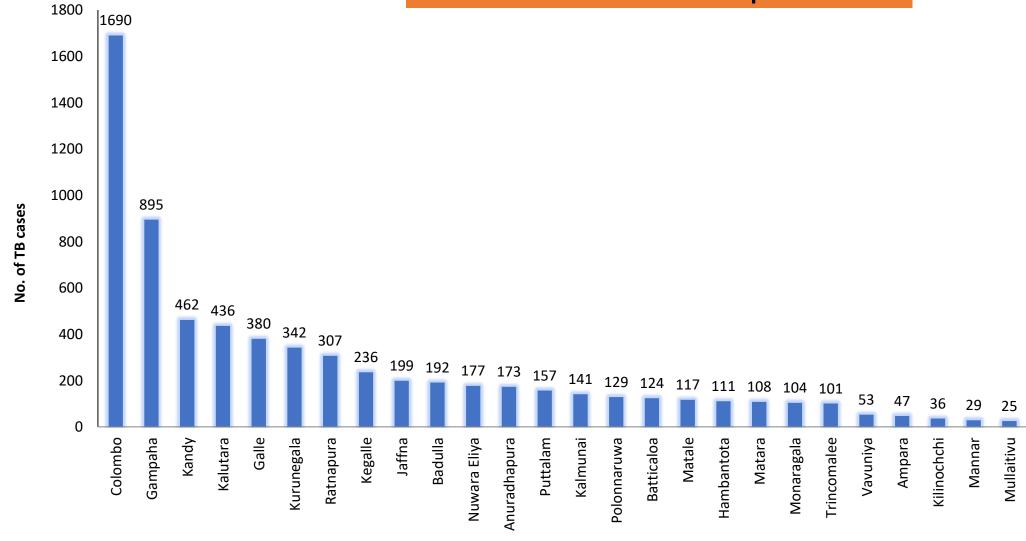


Case Detection of Tuberculosis - 2005 - 2021



District wise distribution of TB patients: 2021





NPTCCD

Low case detection compared to WHO estimates. Undetected 5000-6000 cases in the community???









NPTCCD

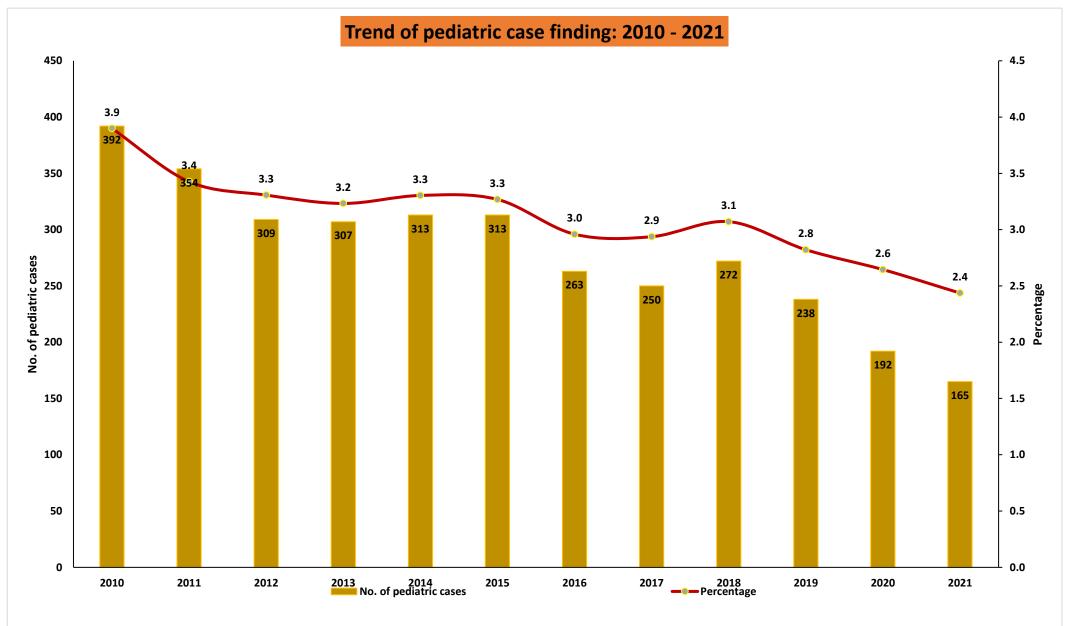
Reasons for low case detection....???

- Awareness Vs empowerment
- Health priority Vs other priority (Covid -19, Dengue like episodic events masking the importance of TB)
- Difficult to reach populations- elderly/ estate population, Urban poor population
- Patients missing in private sector
- Mismanagement of presumptive cases Antibiotics Eg. Ciprofloxacin
- Lack of intersectoral collaboration at each level
- Lack of awareness among health and other stakeholders (application to improve case detection and follow up is not optimum)
- Lack of health education by Health staff to the community (To address stigma)
- Presumptive cases screening at OPD set up is not prioritized
 - Some Teaching hospitals do not have microscopic centers
 - Least attention by OPD doctors although nearly 2% of OPD attendees are having respiratory symptoms
 - Microscopy Centers are not easily accessible











Considerations as a MOH to improve paediatric case detection.

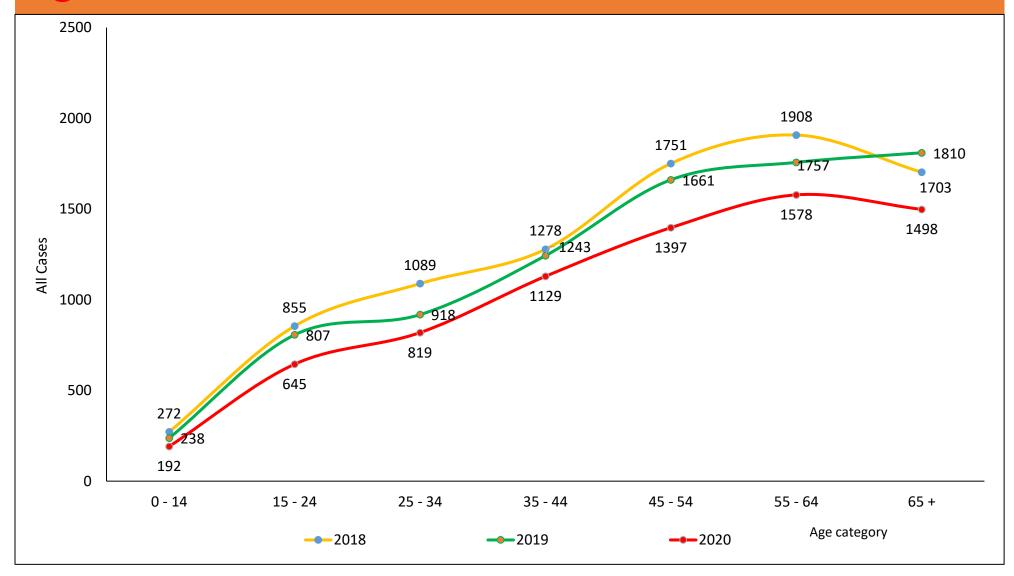
- Presentation of TB among children is not straight forward
 - Not always present with cough
 - Continuous weight loss (loss of 5% in 3m) / no wt gain in past 3 months or Poor weight gain despite nutritional rehabilitation in children with SAM
 - PUO
 - Recurrent respiratory tract infections not responding to treatment
 - Contact history during past two years
- Contact screening is comparatively less
- Cross programmatic link is not satisfactory- FHB/School health
- DD by pediatricians, Nutrition Specialist not adequate
- Improve case detection through grassroot level involvement (through MOH, PHMM, PHI ...)







Age distribution for all TB cases: 2018 - 2020







Why???

- Presentation of TB among children is not straight forward
 - Not always present with cough
 - Continuous weight loss (loss of 5% in 3m) / no wt gain in past 3 months or Poor weight gain despite nutritional rehabilitation in children with SAM
 - Pyrexia of Unknown Origin (PUO)
 - Recurrent respiratory tract infections not responding to treatment
 - Contact history during past two years
- Contact screening is comparatively less
- Cross programmatic link is not satisfactory- FHB/School health
- Lack of focus in differential diagnosis by pediatricians, Nutrition Specialist
- Lack of health education by staff in the community for TB
- Lack of reach to grassroot level for TB control activities (through MOH, PHMM ...)







The commonest opportunistic infectious association with TB is HIV.

ENDTB

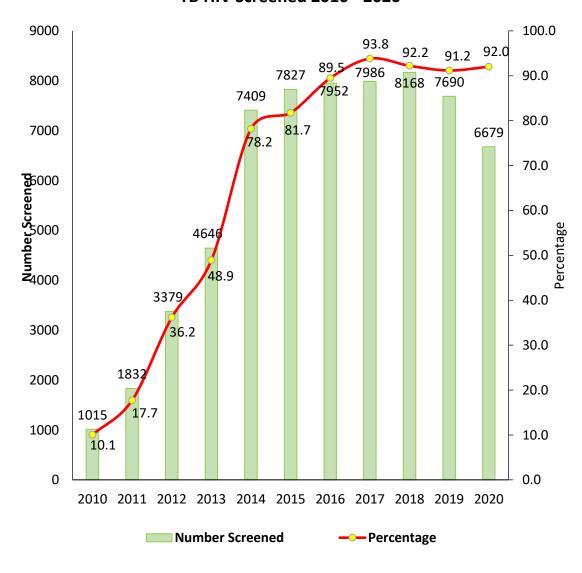
- 1. Pay special attention if HIV positive patient is found in the area;
- 2. Pay special attention to screen for TB
- 3. However, ensure stigma free, ethical approach promoting their treatment seeking and compliance behavior



TB HIV Screened 2010 - 2020

Year	Number Registered	Number Screened	Percentage		
2010	10095	1015	10.1		
2011	10329	1832	17.7		
2012	9343	3379	36.2		
2013	9496	4646	48.9		
2014	9473	7409	78.2		
2015	9575	7827	81.7		
2016	8886	7952	89.5		
2017	8511	7986	93.8		
2018	8856	8168	92.2		
2019	8434	7690	91.2		
2020	7258	6679	92.0		

TB HIV Screened 2010 - 2020



TB - HIV Coinfection By District - 2020

District	TB Patients found positive through screening for HIV	Referred from NSACP	No. of total Coinfection cases		
Anuradhapura	0	1	1		
Batticaloa	0	1	1		
Colombo	0	5	5		
Galle	0	1	1		
Gampaha	6	3	9		
Kegalle	0	1	1		
Kurunegala	0	1	1		
Nuwara Eliya	0	3	3		
Puttalum	0	3	3		
Ratnapura	0	1	1		
Hambantota	2	0	2		
Jaffna	1	0	1		
Kalutara	1	0	1		
Monaragala	1	0	1		
Polonnaruwa	1	0	1		
Trincomalee	1	0	1		
Total	13	20	33		

TB - HIV Coinfection By District - Up to Q2 2021

District	TB Patients found positive through screening for HIV	HIV Positive Patients Referred from NSACP	No. of total Coinfection cases		
Colombo	olombo 1 7		8		
Galle	Galle 0 1				
Gampaha	3	3	6		
Kalutara	3	0	3		
Kurunegala	0	2	2		
Matara	2 1		3		
Total	9	14	23		

Who is a contact?

Household contact:

A person who shared the same enclosed living space as the index patient for one or more nights or for frequent or extended daytime periods during the 3 months before commencement of the current treatment episode.

Non household close contact:

A person who is not in the household but shared an enclosed space, such as a social gathering, work place or facility, for an extended period during the day with the index case during the 3 months before commencement of the current treatment episode.

e.g., children kept with grand parents during day -time/ nursery

Households in close proximity, children visiting neighbouring houses frequently





Contact screening

- Screening of all close contacts irrespective of the index case Pulmonary TB (PTB)/Extra-pulmonary TB (EPTB)
- Chest X ray for all contacts
- Sputum AFB for those who can produce sputum
- Children <15years & adults of more than 50 years after exclusion of active disease can start on INAH prophylaxis for a period of 6 months
- Follow up the contacts for 2years at 6 months interval







Contact screening- Responsibilities of MOH staff

 Screening of all close contacts irrespective of the index case (PTB/EPTB) is the National Policy.

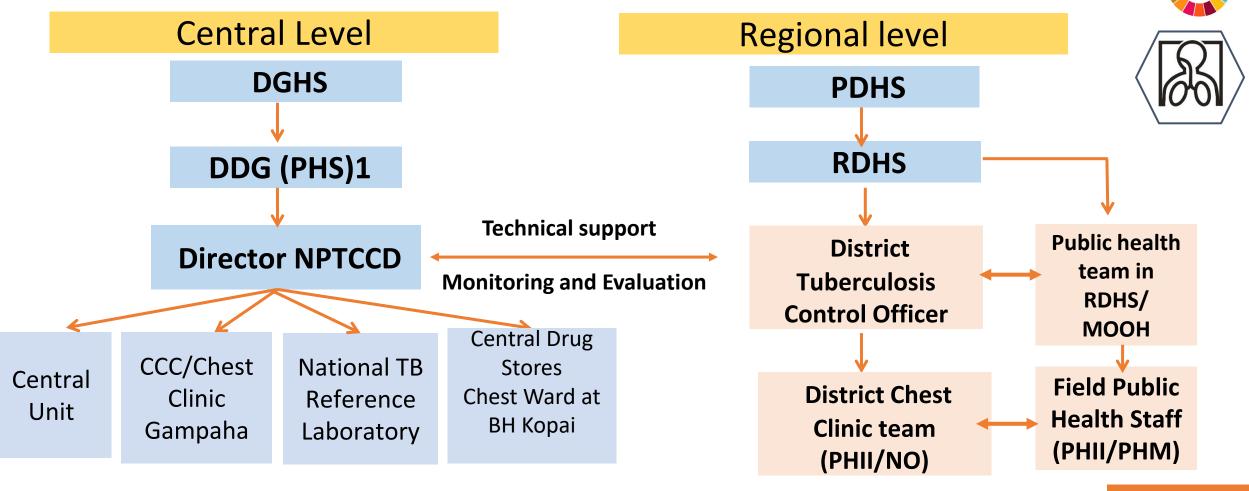


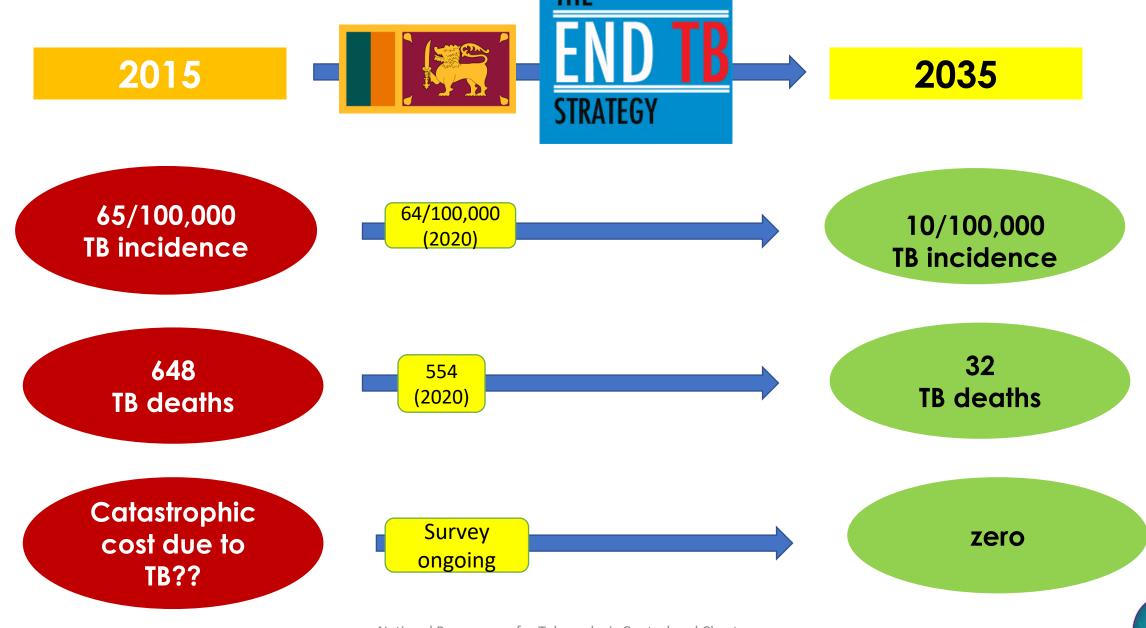
Ensure contact tracing by the range PHI when necessary.

- Follow up of TB contacts 06 monthly for two (02) years;
 - 1st 2 years bears highest risk of developing disease among the contacts.

• Include Loss to follow up/ interrupters by the MOH level......

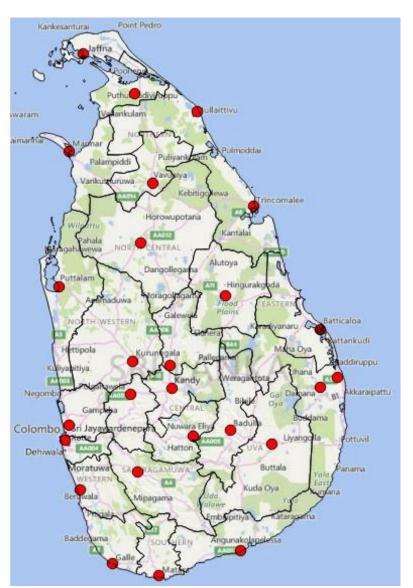
National programme for tuberculosis control and chest diseases (NPTCCD)

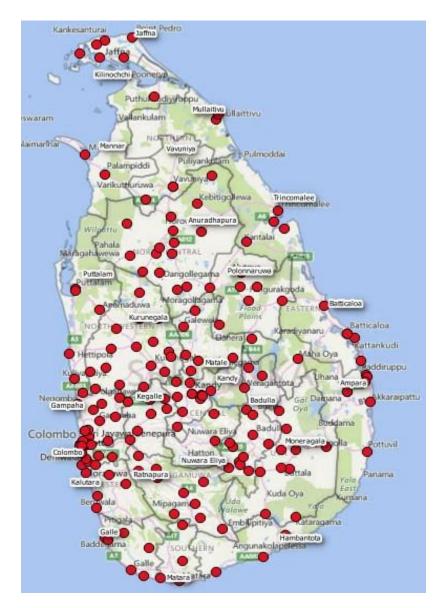






- 26 District
 Chest Clinics
- 108 branch clinics
- 164
 microscopic
 centres







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Curative	 District Chest clinics- 26 Provide ambulatory care for TB patients Provision of anti-TB drugs Free of charge. (After registering at DCC) Inward care for in need patients at hospitals with Chest wards and NHRD-Welisara
Diagnostic	 Microbiology Microscopy services at DCC labs and Microscopy centres (>150 island-wide) TB culture facilities – 4 labs (ITLs- Intermediate Culture Labs) (Galle, Jaffna, Ratnapura & Kandy) GeneXpert: 31 locations (every district) NTRL- Culture & DST, Second line testing. X ray facilities Available at DCC & local hospitals Consider x ray as an initial test for TB identification (All services are provided Free of Charge)
Preventive	 BCG vaccination: EPI provides at birth Provide BCG for those who do not show the scar by DCC (Below 5 yrs.) Latent TB Infection (LTBI) management Early diagnosis & Treatment: Active case finding, awareness & screening, targeted high risk approach, contact screening etc. Notification







Strategy- Directly Observed Treatment Short-course (DOTS)

ENDTB

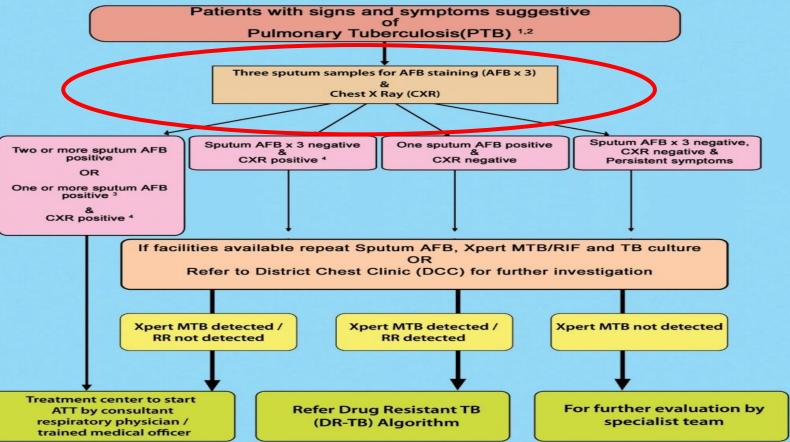
- DOT- Directly Observed Treatment is a component of DOTS strategy
 - Each and every drug dose is received under direct observation of a DOT provider.
- Very important for treatment sustainability through compliance
- Health Care Workers including field health staff (MOH, AMOH, PHNS, SPHI, PHI, PHM etc...
 can serve as DOT providers)



Algorithm for Adults

Diagnostic Algorithm for Tuberculosis





- 1. Key symptoms of TB are cough of 2 weeks or more and/or chest pain, shorness of breath, haemoptysis. In immunosuppressed individuals and in elderly people (60 years or more of age) cough of any duration should be considered.
- Other symptoms of TB are loss of appetite, tiredness, loss of weight or failure to gain weight in children, low grade fever, night sweats.
- 2. Pulmonary tuberculosis suspects with high risk should be referred urgently / early to District Chest Clinics or situation where no other diagnosis to be consider. These **High-risk categories** include Health care workers (HCW), Patients living with HIV (PLHIV), prisoners, drug addicts, close contacts of **Bacteriologically confirmed PTB** patients and patients with past tuberculosis or immunosuppression.
- 3. If two or more sputum samples are positive without chest x- ray , the patient should be referred for treatment
- 4. Positive chest X-ray is defined as any abnormality that could be consistent with TB

Abbreviations

AFB - Acid Fast Bacilli , Xpert - Gene Xpert , MTB - Mycobacterium Tuberculosis, RR - Rifampicine Resistance, ATT - Anti Tuberculosis Treatment

TUBERCULOSIS is completely cured with proper treatment



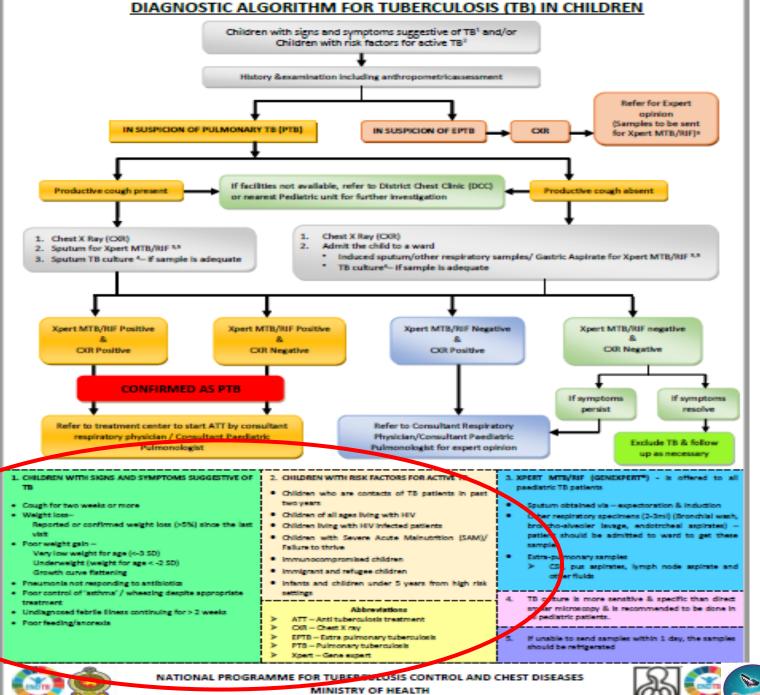








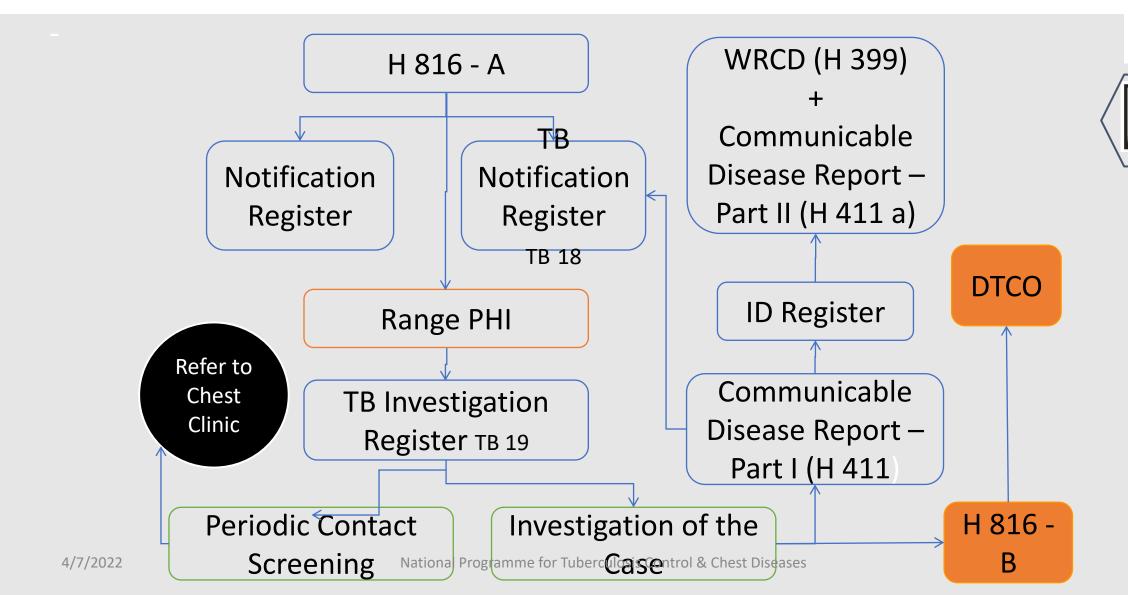
Algorithm for pediatric age group





TB NOTIFICATION





TB notification register (TB 18)

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No	Date Received	District TB Registration No	Name and Address of the Patient	Age	Sex	Occupation	PHI Division	Type of TB	Date Investigated	Treatment Outcome	Remarks

Disease Type: PTB SS+; Sputum smear positive pulmonary tuberculosis; PTB SS-: Sputum smear negative pulmonary tuberculosis; EPTB: Extrapulmonary tuberculosis
Treatment outcome: Cured; Treatment completed; Failure; Defaulted; Died; Transferred out



TB investigation register (TB 19)

	Date Received	District TB Registration Number	Name and Address of the Patient	Type of TB Treatment Outcome	Date Investigated	Details of Contacts*					Follow-up of contacts					
No						Name	Age	Sex	Address	Relation ship to the Patient	Symptoms (Present Absent)	At 6 month	At1 year	At 18 months	End of 2 years	Remarks

Disease Type: PTB SS±.; Sputum smear positive pulmonary tuberculosis; PTB SS-: Sputum smear negative pulmonary tuberculosis; EPTB: Extrapulmonary tuberculosis; Treatment outcome: Cured; Treatment completed; Failure; Defaulted; Died; Transferred out

NPTCCD

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Nº 036045

TUBERCULOSIS - NOTIFICATION FORM

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දිනගැ தි ස ුන්/Date	ಅಲಿදಶ ವಿ@ಮಿರ್ / வைத்திய உத்தியோகத்தர்/ Medical Officer
If this form is filled by	තනතුර / பதவி / Designation
a. DTCO 1. Keep one copy at the District Chest Clinic 2. Send one copy to D/NPTCCD 3. Send one copy to the relevant MOH c. General Wards	b. Chest ward Send all 3 copies to District Chest Clinic
1. Keep one copy in the institute	d. Private hospital
Send two copies to the D/NPTCCD	Keep one copy in the institute Two Copies to the D/NPTCCD
Director / NPTCCD National Public Health Complex	s, 555/5, Elvitigala Mawatha, Colombo 05





Nº 027904

RESPONSE TO NOTIFICATION OF TUBERCULOSIS PATIENTS H 816 - B

To be filled up by the investiga	ating PHI and r	returned t	to the DTCO through MOH
MOH area:			
Name of the patient:			
Address:			
Central TB Reg. No. :	D	istrict TE	3 Reg. No.:
DOT centre			
Date of receiving the notification:			
Date investigated :			
Outcome of the investigation;			
Patient living at the given address	Yes No	7 0	omments
Complying with treatment:	Yes No	7 6	omments
complying with deathlent.	les No		Offinents
No. of household contacts			
Maggrees taken to trace the metions if not	f		
Measures taken to trace the patient if not			
			······································
PHI			МОН
Date			Date







Role of MOH in TB care

- Be aware of the TB status in the MOH region (High risk pockets identification)
- Discussing TB situation at monthly conference.
- Make sure that each H 816A notified patient should be investigated within 2 weeks and H 816 B is returned to the DCC on time.
 - Notification can reach the MOH through paper based/ ePIMS system.
 - Therefore pay attention to the both.
 - Maintain and ensure completeness of TB 18 & 19 registers.
- Take timely action once a request is received from the DCC for contact tracing and/or defaulter tracing.
- Health education programmes for community by the MOH staff.
- Opportunistic identification of presumptive TB cases and referrals by the MOH staff.
- Consider TB whenever applicable in antenatal and well baby clinics and refer to a relevant specialist; VOG, CRP, Paediatrician.
- Provision of nutritional advise for needy TB patients.
- Take measures and empower the community and MOH staff to minimize stigma on TB.







Contact details of DCC/ DTCOs/ NPTCCD







• Discussion on identified issues and future plans.....



Facts to know as PHM cont.







Responsibilities of PHM

- ✓ Be vigilant on symptoms of TB in pregnant mother
- √ Family members/ contacts with TB
 - refer for screening
 - address risk of infection
 - health education
 - review by MOH during clinic visits
- ✓ Family member/ contact suspicious of having TB refer for screening
- ✓ HIV +ve mother -→ increased risk, TB screening is a MUST

Managed by the experts (Consultant Respiratory Physician, VOG....)

- 5. Anti-TB treatment should be started as soon as the diagnosis is made, and the full course of treatment is given.
- 6. Most anti-TB drugs are safe to use during pregnancy.
- 10. Pregnant mothers should be treated with pyridoxine 10 mg daily along with Isoniazid (INH).

Facts to know as PHM cont.

- ☐ TB in post partum period & during breast feeding
 - 1. Breast feeding mothers with TB should receive the full course of anti-TB treatment.
 - 2. Proper treatment is the best way of preventing transmission of TB to the baby.
 - 3. All anti-TB drugs are compatible with breast-feeding.
 - 4. Breast feeding can be continued in the normal manner while the mother is taking anti-TB treatments.
 - 5. Breastfeeding is generally not indicated where the mother has TB/HIV co-infection.







Management of a new-born child of a mother with active TB

• Neonates born to mothers on rifampicin should be administered Vitamin K at birth to prevent the risk of post-natal haemorrhage.

Issues that need consideration are:

a) Exclusion of congenital TB

If the infant is ill at birth and congenital TB is suspected;

BCG vaccination should not be given.

A full course of anti-TB treatment should be started.

b) Safety in breast feeding – Breast feeding can be safely continued during lactation.

Recently diagnosed sputum smear-positive mothers should be advised to wear a face mask during breast feeding and avoid coughing on to the infant's face. They should breast feed in an adequately ventilated place, minimizing sharing common breathing space with the infant.





Management of a new-born child of a mother with active TB cont.

- ➤ If the mother has bacteriologically confirmed PTB at the time of delivery,
- a) The infant should be carefully examined for evidence of active disease and should be regularly followed up for development of the disease.
- If the child is well, TPT of INAH 10mg/kg body weight, daily for three months.
- BCG vaccination is withheld.





Management of a new-born child of a mother with active TB cont.

- b) After three months, the infant is carefully evaluated for active disease with physical examination, chest X-ray, and a Mantoux test is performed.
- If the Mantoux test is negative and the infant is well, prophylactic treatment with INAH is stopped and the child will be given the BCG vaccination.
- If the Mantoux test is positive and the infant is diagnosed with active TB disease, a full course of anti- TB treatment is given. No BCG is given until completion of treatment.
- If the Mantoux test is positive, and the physical examination and the Chest X-ray findings are normal, INAH prophylaxis is continued up to six months. No BCG vaccination is given until completion of prophylaxis treatment.





Management of a new-born child of a mother with active TB cont.

> If the mother has clinically diagnosed PTB at the time of delivery

If the infant has no evidence of congenital TB,

- a) BCG is given to the infant after evaluation
- b) TPT is not given
- c) Even if the mother is non-infectious, the infant should be regularly screened for TB to ensure that TB disease does not develop, and if TB disease is suspected, a full course of ATT should be considered.





TB and Nutrition in pregnancy & lactation

- Currently, National TB Programme provides "Thriposha" as a nutrition supplementation to all the patients diagnosed with TB.
- All pregnant women with active TB should receive multiple micronutrient supplements that contain iron ,folic acid and other vitamins and minerals, according to the United Nations Multiple Micronutrient Preparation, to complement their maternal micronutrient needs.
- For pregnant women with active TB, whose calcium intake is low, calcium supplementation as part of antenatal care is recommended for the prevention of pre-eclampsia, particularly among those pregnant women at higher risk of developing hypertension.
- ➤ All lactating women with active TB should be provided with iron and folic acid and other vitamins and minerals, according to the United Nations Multiple Micronutrient Preparation, to complement their maternal micronutrient needs.
- Anti TB drugs can be safely given to lactating mothers.





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දූරකථන : 011-2368276

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 மேலும் தகவல்களுக்கு, உங்கள் அருகிலுள்ள மாவட்ட மார்பு மருத்துவமனை அல்லது தேசிய காச நோய் கட்டுப்பாடு மற்றும் மார்பு நோய்த் திட்டத்தைப் பார்வையிடவும்.

காசநோய் கட்டுப்பாடு மற்றும் மார்பு நோய்க்கான தேசிய திட்டம், எண்: 555/5, பொது சுகாதார வளாகம், எல்விட்டிகல மாவத்தை கொழும்பு 05

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