

TB in Singapore - 2007

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Fig. 1. Incidence of tuberculosis among Singapore residents, 1960–2001

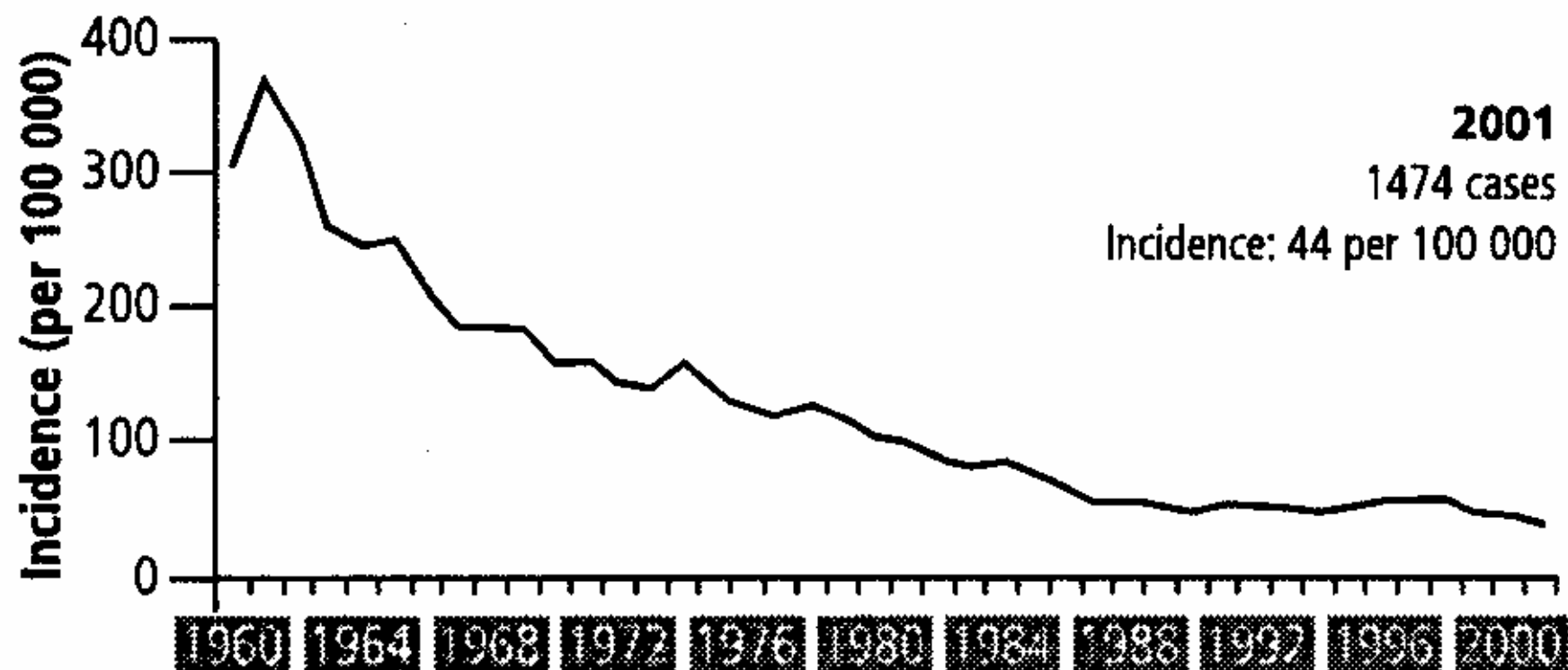
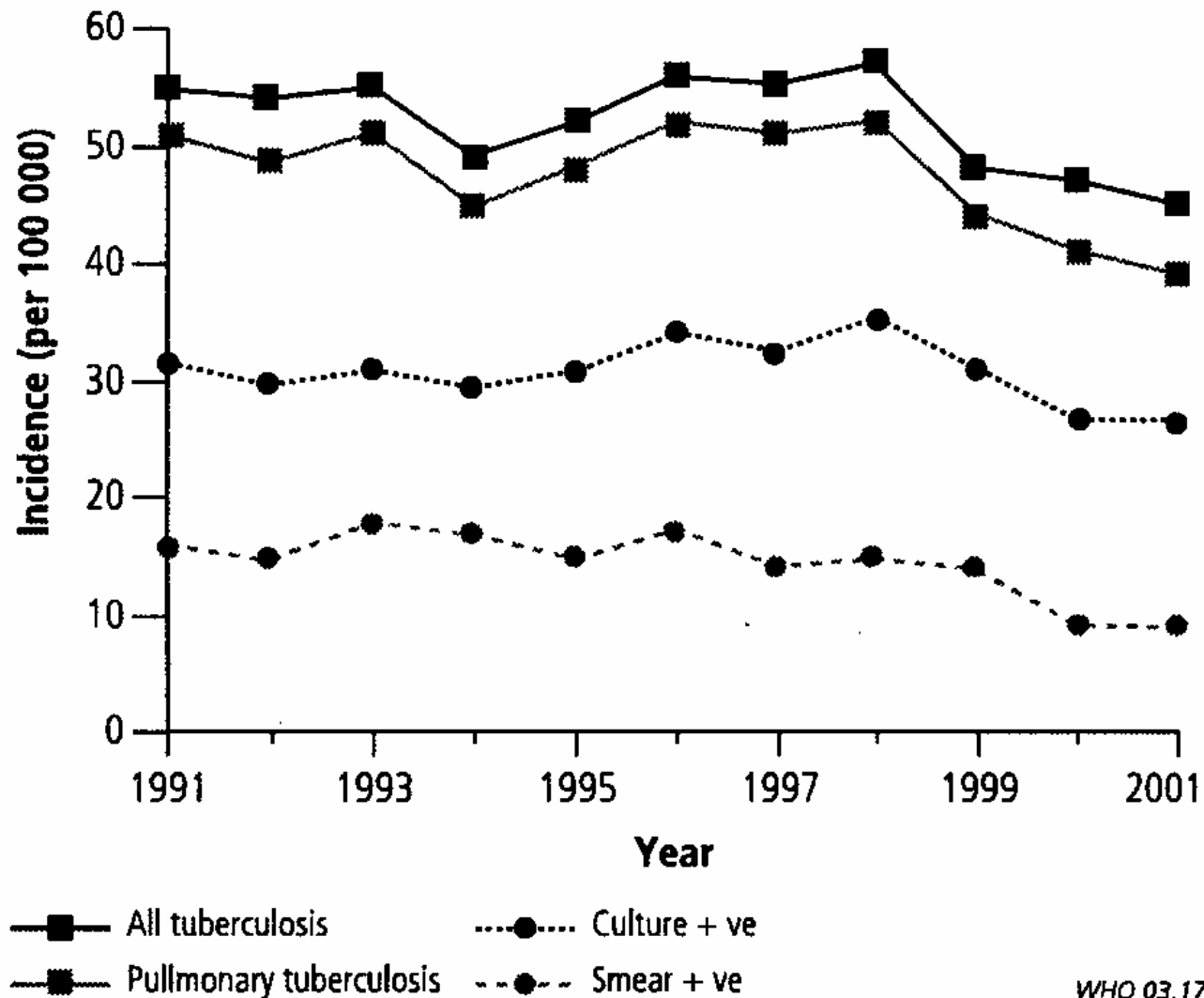


Fig. 3. Incidence of all notified tuberculosis, pulmonary tuberculosis, sputum-culture positive and smear-positive tuberculosis among Singapore residents, 1991–2001



The Singapore Tuberculosis Elimination Programme: the first five years

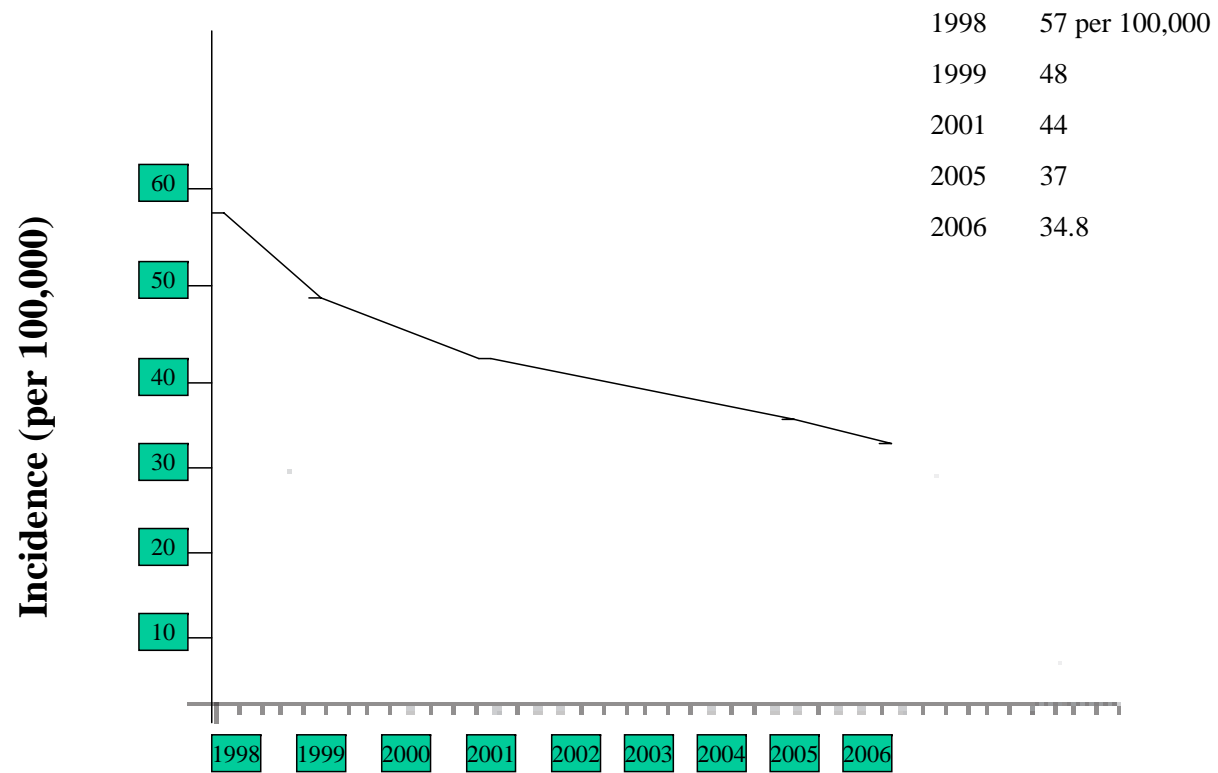
Cynthia B.E. Chee¹ & Lyn James²

Abstract The Singapore Tuberculosis Elimination Programme (STEP) was launched in 1997 because the incidence of the disease had remained between 49 and 56 per 100 000 resident population for the preceding 10 years. STEP involves the following key interventions: directly observed therapy (DOT) in public primary health care clinics; monitoring of treatment progress and outcome for all cases by means of a National Treatment Surveillance Registry; and preventive therapy for recently infected close contacts of infectious tuberculosis cases. Among other activities are the revamping of the National Tuberculosis Notification Registry, the discontinuation of BCG revaccination for schoolchildren, the tightening up of defaulter tracing, and the education of the medical community and the public. Future plans include an outreach programme for specific groups of patients who are unable to attend their nearest public primary care clinics for DOT, the detention of infectious recalcitrant defaulters for treatment under the Infectious Diseases Act, the molecular fingerprinting of tuberculosis isolates, and targeted screening of high-risk groups. The incidence of tuberculosis fell from 57 per 100 000 population in 1998 to 48 per 100 000 in 1999 and continued to decline to 44 per 100 000 in 2001. With political will and commitment and the support of the medical community and the public it is hoped that STEP will achieve further progress towards the elimination of tuberculosis in Singapore.

Keywords Tuberculosis, Pulmonary/epidemiology/prevention and control/drug therapy; Patient compliance; Disease notification/methods; BCG vaccine/administration and dosage; Health education; Program evaluation; Singapore (*source: MeSH, NLM*).

Mots clés Tuberculose pulmonaire/épidémiologie/prévention et contrôle/chimiothérapie; Observance prescription; Notification maladie/méthodes; Vaccin BCG/administration et posologie; Education sanitaire; Evaluation programme; Singapour (*MeSH, INSERM*).

Incidence of tuberculosis among Singapore residents



Singapore TB Elimination Program

- Started 1997
- Aim to eliminate TB in Singapore by detecting and diagnosing all infectious cases (smear positive), curing all cases, detecting and treating all infected contacts and preventing emergence of MDR –TB
- About 85% of TB cases treated by public sector

TB in Singapore – 1) DOTS

- Before 1997, < 10%
- Use of primary care clinics to administer free DOTS in partnership with care providers
- In 2001, DOTS utilisation was 40%

TB in Singapore – 2) National Surveillance Registry

- Data submitted for every patient visit
- Computerised reminder to physicians for those who default/not started on treatment promptly
- Aggregated data sent to institutions regularly
- Notification of new cases within 72 hrs
- Data on follow up cases within a month of follow date



Ministry of Health
Singapore

NOTIFICATION OF TUBERCULOSIS (MD 532-92)

1. Notification date (dd/mm/yy)

This notification form must be completed promptly for all cases of active Tuberculosis. Completed form is to be posted or faxed to:

STEP REGISTRY
c/o Head
Department of Clinical Epidemiology
142 Moulmein Road
Singapore 309087
Tel: 258-4369
Fax: 254-1616

PERSONAL PARTICULARS

2. Name (as in NRIC/Passport/other document)		7. Marital Status <input type="checkbox"/> Single <input type="checkbox"/> Widowed <input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Separated <input type="checkbox"/> Unknown	
3. NRIC/Passport/Foreign Identification No.			
4. Gender <input type="checkbox"/> Male <input type="checkbox"/> Female			
5. Ethnic group <input type="checkbox"/> Chinese <input type="checkbox"/> Indian <input type="checkbox"/> Caucasian <input type="checkbox"/> Malay <input type="checkbox"/> Eurasian <input type="checkbox"/> Others (please specify) _____		8. Occupation	
6. Date of birth (dd/mm/yy) / (if unknown please specify age) _____ <small>(or stick patient label here)</small>			
9. Residence		10. Housing type	
Name (If place of residence is long-term care facility)		<input type="checkbox"/> HDB 1&2 rm <input type="checkbox"/> HDB 3 rm <input type="checkbox"/> HDB 4 rm <input type="checkbox"/> HDB 5 rm & above <input type="checkbox"/> HUDC <input type="checkbox"/> Private condominium/apartment <input type="checkbox"/> Landed property <input type="checkbox"/> Others (specify) _____	
House / Blk no.	Unit no. # -	Contact no. (H) (Pg/HP)	Postal Code
Street name		Postal Code	
11. Workplace/School (if applicable)		Name	
House / Blk no.	Unit no. # -	Contact no.	Ext.
Street name		Postal Code	
12a. Residential status		13. Country of Citizenship	
<input type="checkbox"/> Singapore citizen (pink NRIC) <input type="checkbox"/> Permanent resident (blue NRIC) <input type="checkbox"/> Short-term social visitor <input type="checkbox"/> Illegal immigrant <input type="checkbox"/> Others (please specify) _____		14. Country of Birth	
Holder# Applicant# <input type="checkbox"/> <input type="checkbox"/> Work permit ¹ <input type="checkbox"/> <input type="checkbox"/> Employment pass ² <input type="checkbox"/> <input type="checkbox"/> Student pass <input type="checkbox"/> <input type="checkbox"/> Dependant pass <input type="checkbox"/> <input type="checkbox"/> Long-term social visit pass <input type="checkbox"/> <input type="checkbox"/> Professional visit pass <small>(* pass types R1 & R2 * pass types P1, P2, Q1 & Q2)</small>		15. When first arrived in Singapore (if not born in Singapore)	
12b. If PR applicant, tick here <input type="checkbox"/> #Please indicate pass no. _____		16. Type of long-term care facility (if applicable) <input type="checkbox"/> Home for the aged/aged sick <input type="checkbox"/> Psychiatric hospital <input type="checkbox"/> Prison or other correctional facility <input type="checkbox"/> Others (please specify) _____ <input type="checkbox"/> Unknown	

DIAGNOSIS

17a. Patient category*		18. Case diagnosed through		19a. Status at diagnosis	
<input type="checkbox"/> New case <input type="checkbox"/> Relapse (state year previously treated) _____ <input type="checkbox"/> Reinstatement <input type="checkbox"/> Uncertain		<input type="checkbox"/> Symptoms of disease <input type="checkbox"/> Incidental finding <input type="checkbox"/> Screening of contacts <input type="checkbox"/> Mobile CXR <input type="checkbox"/> Pass application/renewal <input type="checkbox"/> Others #		<input type="checkbox"/> Alive <input type="checkbox"/> Dead	
17b. If transferred from overseas, tick here <input type="checkbox"/>		# Please specify _____		19b. If patient died, please indicate date (dd/mm/yy) _____	

*DEFINITIONS

Patient category:

New: Patient who never previously received treatment for more than 1 month.

Relapse: Patient who previously completed treatment or was treated and declared cured prior to developing active TB again.

Reinstatement: Patient who previously had not completed treatment and now returns after one year of last being on medication.

Treatment delivery mode:

DOT: Directly Observed Treatment, i.e. a health care worker watches as the patient swallows each dose of TB medication.

FHS DOT: DOT carried out by the nurses at the government Family Health Services polyclinics.

Institutionalised DOT: DOT carried out by health care workers at hospitals, nursing or community homes or correctional facilities.

Domiciliary DOT: DOT carried out by a health care worker at the patient's home.

SAT: Self Administered Treatment.



Ministry of Health
Singapore

**TREATMENT PROGRESS REPORT
(MD 117)**

1. Date (dd/mm/yy):

Completed form is to be posted or faxed monthly to:
STEP REGISTRY
c/o Head
Department of Clinical Epidemiology
142 Moulmein Road
Singapore 308087
Tel : 6258-4369
Fax : 6252-4051

A. Patient Particulars

2. Name

4. Name and Signature of Attending Doctor:

3. NRIC/Passport/FIN no.

5. MCR No.

B. Treatment Centre

6. Current treatment centre

Name & Address of Treatment Centre (#please specify)

TBCU TTSH CGH AH

SGH NUH SATA Others #

Department/Ward

Telephone

Fax

C. Treatment Progress

If patient data not available, please state reason and give details of arrangements for follow-up of TB treatment (e.g. if admitted to hospital for cause other than TB)

7. Is patient compliant*?

If No, please indicate action(s) taken:

Yes

Reinforced compliance

Changed from SAT to DOT

Others _____

No

Changed regimen

Transferred to TBCU

(please specify)

8. Latest smear results : Not done / Negative / + / ++ / +++ / ++++ / Contaminated (circle one)

Lab No: _____

Date (dd/mm/yy): _____

Management Decision

9a. Continue previous regimen 9b. Start or change regimen

Intended regimen

(e.g. 2HRZ/4H₃R₃)

Intended duration (months)

10. Treatment delivery mode (each visit) *

Polyclinic DOT

SAT

Outreach DOT

Institutionalised DOT

11. Temporarily cease treatment (if applicable):

Reason:

Drug reaction

Refusal of treatment

Others (specify) _____

12. Duration to next TCU:

 weeks

13. Transfer Centre - Follow Up

If patient is transferred to another treatment centre for TB treatment, please indicate:

a. Appointment date (dd/mm/yy)

b. Treatment centre/hospital:

TBCU TTSH CGH AH

SGH NUH SATA Others #

(# please specify)

c. Name and Address

Telephone _____ Fax _____

14. Final Outcome

Completed treatment*

Cured * ? Yes No

Final regimen used (e.g. 2HRZ/4H₃R₃) _____

Drug reaction, decided no further action

Left country

Diagnosis revised (not TB, specify diagnosis) _____

Lost to follow-up after refusing treatment

Lost to follow-up after starting treatment (Defaulted)

Died

Cause: _____

Date: _____

Others (specify) _____

* See reverse for definitions.

***DEFINITIONS**

Compliant to Treatment

Patient who has consumed at least 80% of prescribed medications in the judgement of the attending physician.

Completed Treatment

Patient who has been compliant with at least 80% of medications for the total length of treatment, in the judgement of the attending physician.

Cured

Sputum smear or culture positive patient who has completed treatment, and who had at least 2 negative sputum smears and/or cultures during the continuation phase, one of which was at the end of treatment.

Treatment delivery mode:

DOT: Directly Observed Treatment, ie. a health care worker watches as the patient swallows each dose of TB medication.

Polyclinic DOT: DOT carried out by the nurses at the government polyclinics.

Institutionalised DOT: DOT carried out by health care workers at hospitals, nursing or community homes or correctional facilities.

Outreach DOT: DOT carried out by STEP designated health care workers at the patient's home or workplace.

SAT: Self Administered Treatment.

TB in Singapore – 3) Aggressive contact tracing & Screening for Infected Contacts

- Prioritisation based on infectivity
- Contacts in household +/- workplace and high risk abodes receive tuberculin skin test +/- CXR
- Infected contacts receive preventive therapy

TB in Singapore – 4) Education of Health Care Workers

TB

What you should know

A General Practitioner's Guide



Singapore
Tuberculosis
Elimination
Programme



TAN TOCK SENG
HOSPITAL



MINISTRY OF HEALTH

TB in Singapore – 5) Public Advocacy

Stop TB Partnership

WORLD TB DAY 2007

INVEST * RESEARCH * ACT

TB is preventable and curable. FUND THE GLOBAL PLAN TO STOP TB.

TB ANYWHERE IS EVERYWHERE



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The Stop TB Challenge Facility for Civil Society

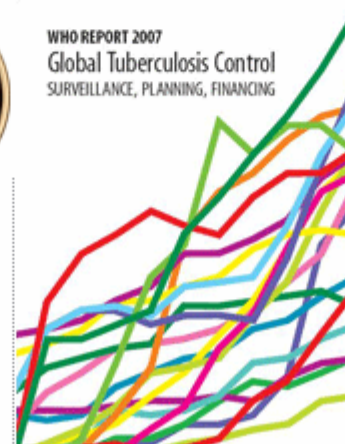
is a mechanism for funding advocacy and social mobilization activities by civil society groups seeking to shape policy-making at local and national levels.

Stop TB Partnership 2007 Kochon Prize



The 2007 Stop TB Kochon Prize We invite nominations of a person or persons, institution or institutions, or organization or organizations, who have made a major contribution to stopping tuberculosis.

WHO REPORT 2007 Global Tuberculosis Control SURVEILLANCE, PLANNING, FINANCING





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News

Press Releases

Decline in Tuberculosis incidence in Singapore

20 Mar 2007

World Tuberculosis (TB) Day, on 24th March 2007, recognizes the global fight against tuberculosis. While TB remains a major health problem around the world, Singapore has continued to see a drop in the number of TB cases.

Over the past ten years, Singapore has seen a steady decline in the number of TB cases. There were 1,256 cases in 2006, compared to 1,712 cases in 1997. In 2006, the incidence rate of TB declined to 34.8 new cases per 100,000 resident population, from 37.0 per 100,000 in 2005 and 54.9 per 100,000 in 1997. In 2006, men accounted for 863 (69% percent) of new TB cases in Singapore, and more than half (55%) of the patients were aged 50 years and above.

The concerted efforts carried out under the Singapore Tuberculosis Elimination Programme (STEP) and by the medical community have contributed to the decline in TB cases in Singapore. Singapore Tuberculosis Elimination Programme

To combat the problem of TB, the Ministry of Health embarked on the Singapore Tuberculosis Elimination Programme (STEP) in 1997. The key component of the STEP is early diagnosis and proper treatment of patients with TB. This will cure and prevent further transmission of the disease and emergence of drug-resistant TB.

Transmission of Tuberculosis from Patient to Healthcare Workers in the Anaesthesia Context

DTW Teo,¹MBBS, TW Lim,²FAMS, MMed, MBBS

Abstract

Introduction: Pulmonary tuberculosis (PTB) is prevalent in our population. We report an incident of healthcare workers (HCWs) suspected of being infected by a patient with undiagnosed active PTB in the operating theatre. **Clinical Picture:** A 60-year-old patient admitted for intestinal obstruction, underwent an emergency laparotomy. Preoperative chest X-ray (CXR) showed diffuse reticular-nodular shadowing and postoperative sputum was positive for acid-fast bacilli. **Treatment:** The patient was isolated and treated for active tuberculosis. The anaesthetist and her assistants in the operating theatre that day were referred to the infectious disease physician and some were started on tuberculosis prophylaxis. **Outcome:** The patient and the HCWs involved recovered. **Conclusion:** Thus, all PTB-susceptible patients with suggestive CXR should be treated as potentially infective. Adequate personnel protection should include highly efficient facemasks and shields. Risk of patient-to-patient transmission of tuberculosis through the anaesthetic circuit is low if effective bacterial/viral filters are used.

Ann Acad Med Singapore 2004;33:95-9

Key words: Breathing circuit, Immunocompromised, Mycobacteria, Prophylaxis, Reticular-nodular shadows

Thank you

