

# TB-HIV Screening Programme in Closed Settings

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**Dr. B. Venugopalan** *(MBBS, MPH, EIP)*  
**Epidemiologist,**  
**Selangor State Health Department**  
**Ministry of Health,**  
**Malaysia**

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# **Outline**

- **Prison TB epidemiology**
- **Programme challenges & opportunities**
- **TB-HIV co-infection in Malaysia & Selangor state**
- **Effectiveness of HIV screening**
- **Challenges of TB screening**
- **Interim & long term measures**
- **Treatment challenges**
- **New frontiers**

## Closed settings- Definition

Localities & situations where **individual liberties are restricted or removed** e.g. prisons, remand centers, police stations, jails, detention centers, penal colonies and prisoner of war camps



Reyes, H. et al. BMJ 1997;315:1447-1450

## **TB Epidemiology in prisons**

- **8-10 million inmates any one day**
- **Disproportionate bias towards disadvantaged socio-economic group**
- **Ideal conditions for easy spread**
- **TB burden is >100x community levels**

Annual case notification rate for all forms of tuberculosis in prisons in countries with high prevalence of tuberculosis

Author	Location	Year	Rate (per 100 000)
Drobniewski <sup>1</sup>	Siberia, Russia	1993	6500
Wares <sup>2</sup>	Tomsk, Russia	1996	7000
Bollini <sup>*</sup>	Chişinau, Moldova	1996	2640
Coninx <sup>3</sup>	Baku, Azerbaijan	1994	4667
Aerts <sup>4</sup>	Tbilisi, Georgia	1998	6500
Koffi et al <sup>5</sup>	Bouaké, Ivory Coast	1992	7200
Auregan et al <sup>6</sup>	Atananarivo, Madagascar	1993	2400
Nyangulu et al <sup>7</sup>	Zomba, Malawi	1996	5100†

\*Bollini P. HIV/AIDS prevention in prisons: a policy study in four European countries. Joint WHO/UNAIDS European seminar on HIV/AIDS, sexually transmitted diseases, and tuberculosis in prisons. 14-16 Dec, Warsaw, Poland, 1998.

†Prevalence rate.

## Active Tuberculosis Rates among the Prison and General Populations

<i>Area</i>	<i>Year</i>	<i>Prison Cases per 100,000</i>	<i>General Population, Cases per 100,000 (all forms)</i>
<b>Brazil</b>	<b>1992-93</b>	<b>5,714 (pulmonary TB)</b>	<b>55.9 (1992)</b>
<b>Georgia</b>	<b>1997-98</b>	<b>5,995 (BAAR &amp;/or culture +)</b>	<b>155.0 (1997)</b>
<b>Malawi</b>	<b>1996</b>	<b>5,142 (pulmonary TB)</b>	<b>209.5 (1996)</b>
<b>Ruanda</b>	<b>1996-98</b>	<b>3,363 (all forms)</b>	<b>79.3 (1997)</b>
<b>Spain (Madrid)</b>	<b>1993-94</b>	<b>2,283 (all forms)</b>	<b>24.0 (1993)</b>
<b>China (Taiwan)</b>	<b>1997-98</b>	<b>259 (pulmonary TB)</b>	<b>No disponible</b>
<b>USA (New York)</b>	<b>1991</b>	<b>156.2 (all forms)</b>	<b>10.4 (1991)</b>

## **TB Epidemiology in prisons....**

- **Challenges of MDR & XDR-TB**
- **DOTS in prisons**
- **Need for robust screening programmes**
- **Inmate centered health education**
- **After-care on release**

## **TB Epidemiology in prisons....**

- **Movement & contacts of prisoners**
- **Limited impact of DOT on cure rates**
- **Spill-over into the community**
- **Avoid punishing the prisoner twice!**

**“Individuals are sent to prisons AS  
punishment and NOT for punishment”**

## Unique Challenge of Prisons

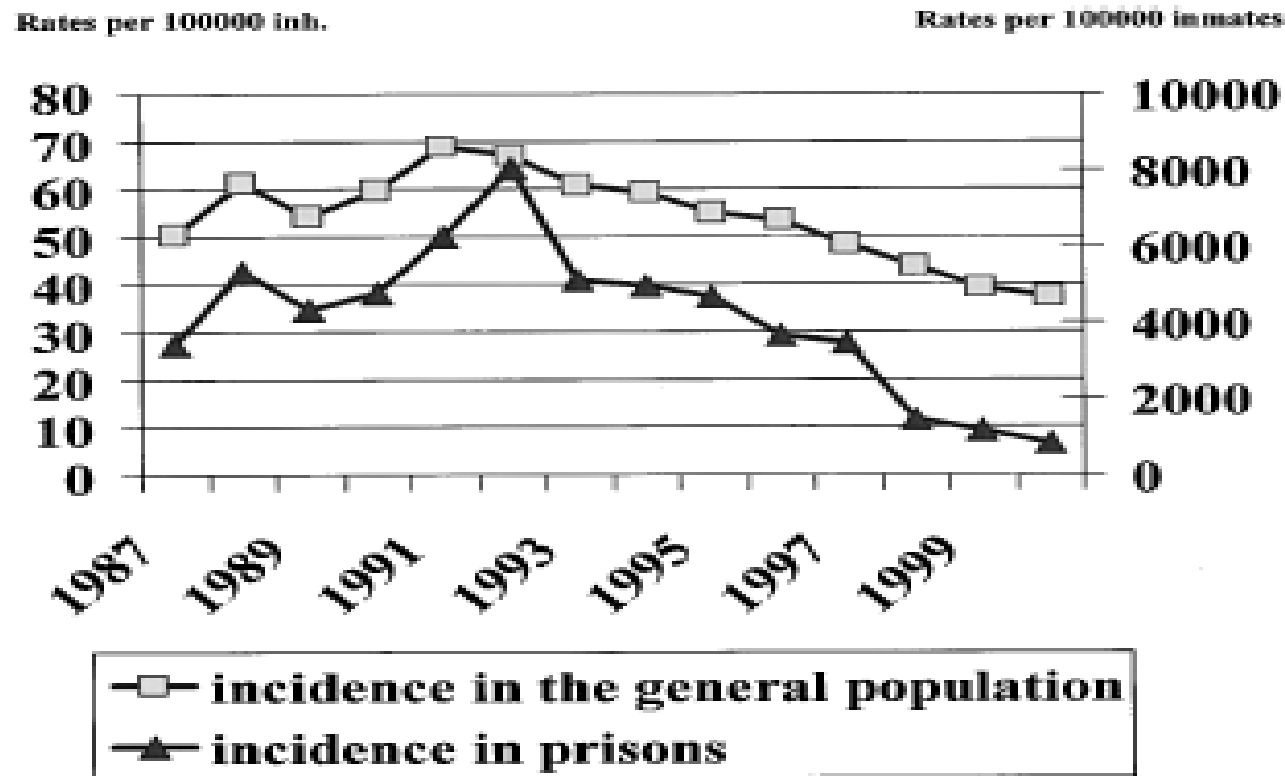
- **Inmates from high-risk communities**
- **Overcrowding & poor ventilation**
- **Prison sub-culture & violence**
- **Internal drug distribution/ power-play/  
money  
politics**
- **Not linked to the National TB Control  
Programme**
- **Stigmatization**

## Unique Challenge of Prisons....

- **Lack of resources & priority**
- **Lack of access to primary health care servic**
- **DOT & sputum collection**
- **Challenges of remand prisoners**
- **Tailored health education & counseling**

## TB Programme Opportunities

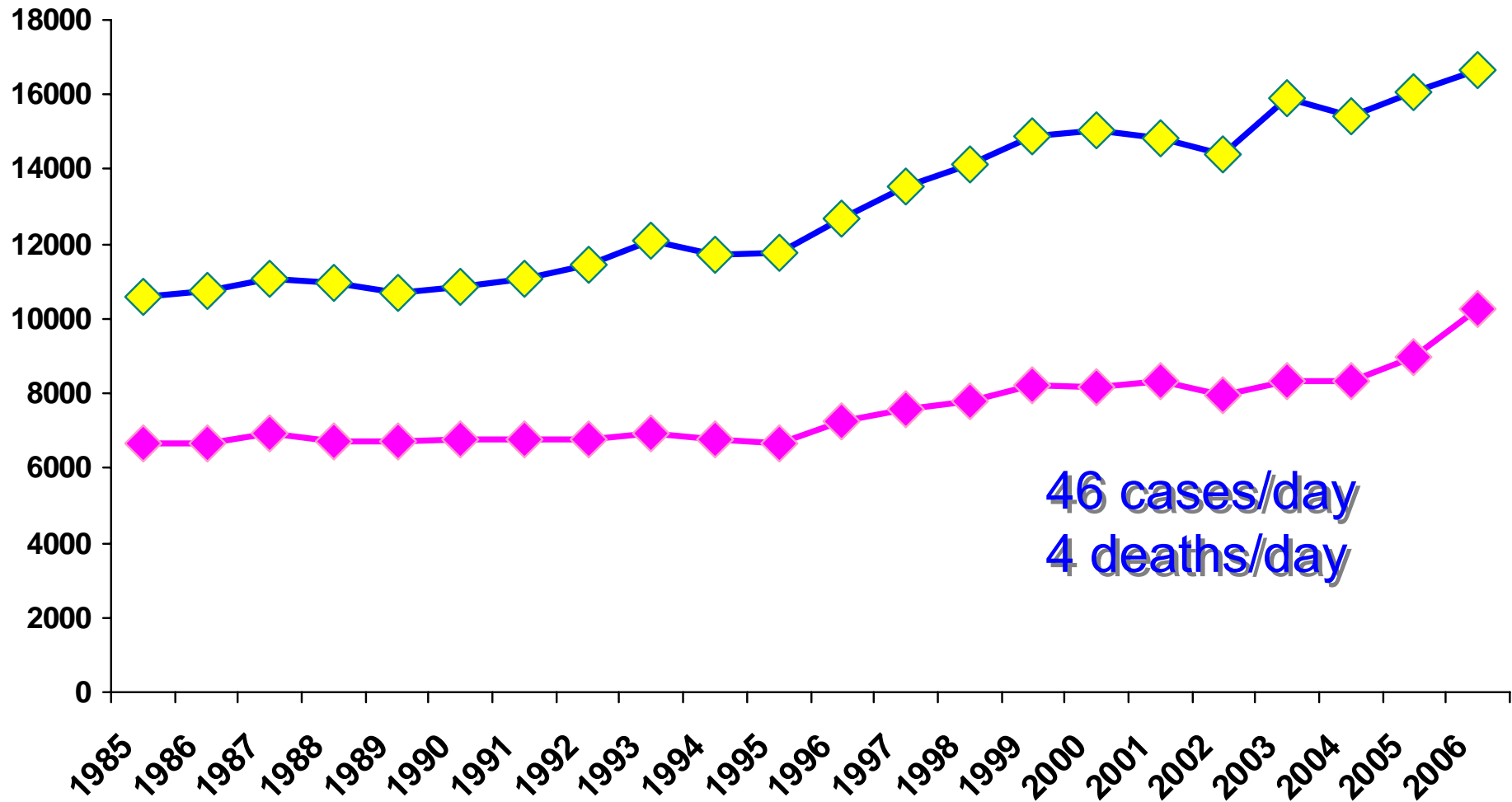
- **Captive stable population**
- **Personalized health education &**  
**DOT**
- **Point of entry for other health**  
**services**
- **Advocacy tool**
- **Model for development of DOTS-**  
**plus**



**Figure 1** Evolution of tuberculosis incidence in prisons in relation to tuberculosis incidence in the general population, Barcelona 1987–2000.

*Ref: T.Rodrigo et al. Effectiveness of tuberculosis control in prisons, Barcelona 1987-2000. Int J Tuberc Lung Dis 6(12) 1091-1097@2002 IUATLD*

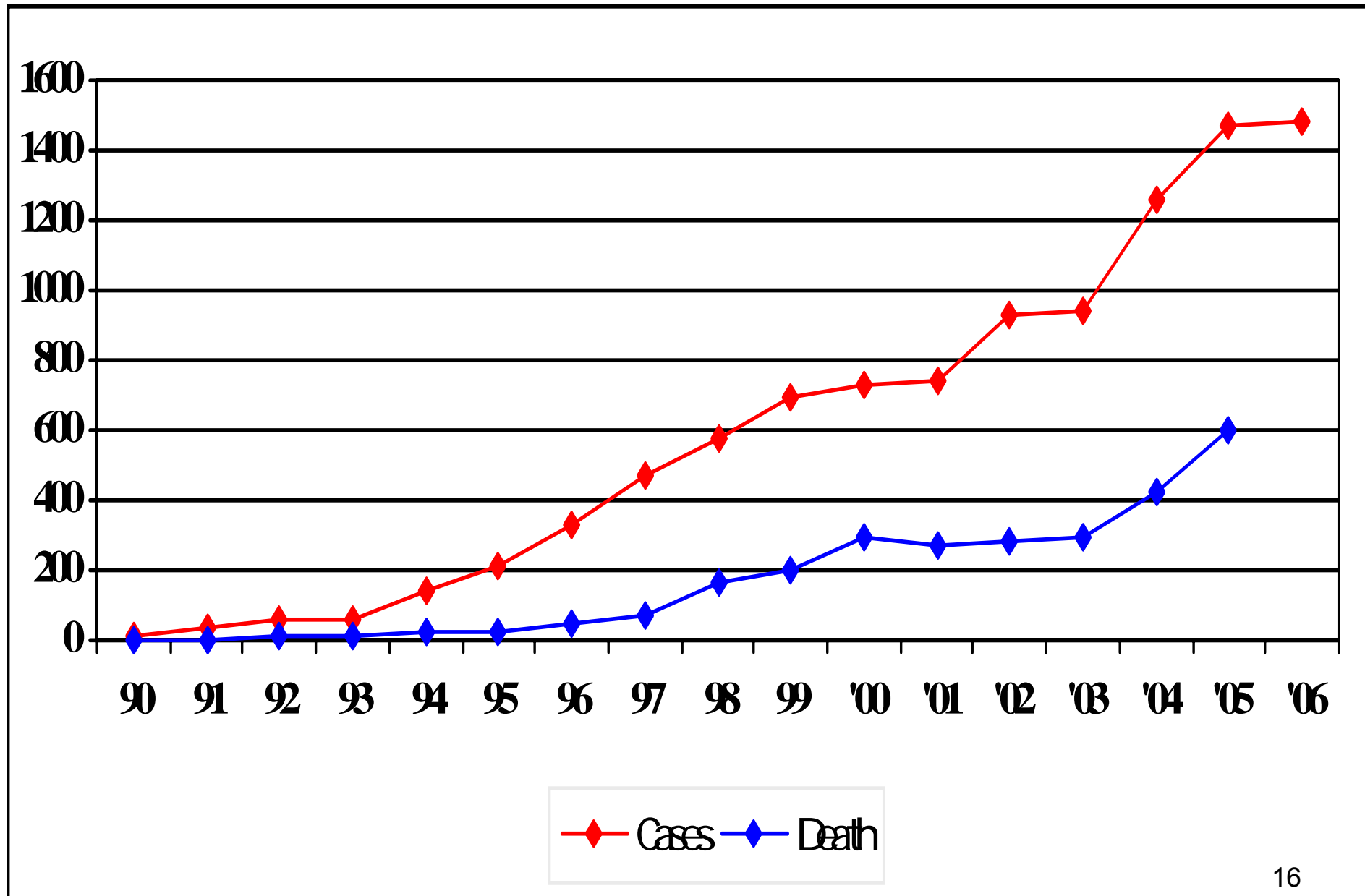
# NOTIFIED TB CASES, MALAYSIA 1985-2006



All Forms = 16,665  
Infectious = 10,274

all forms infectious forms

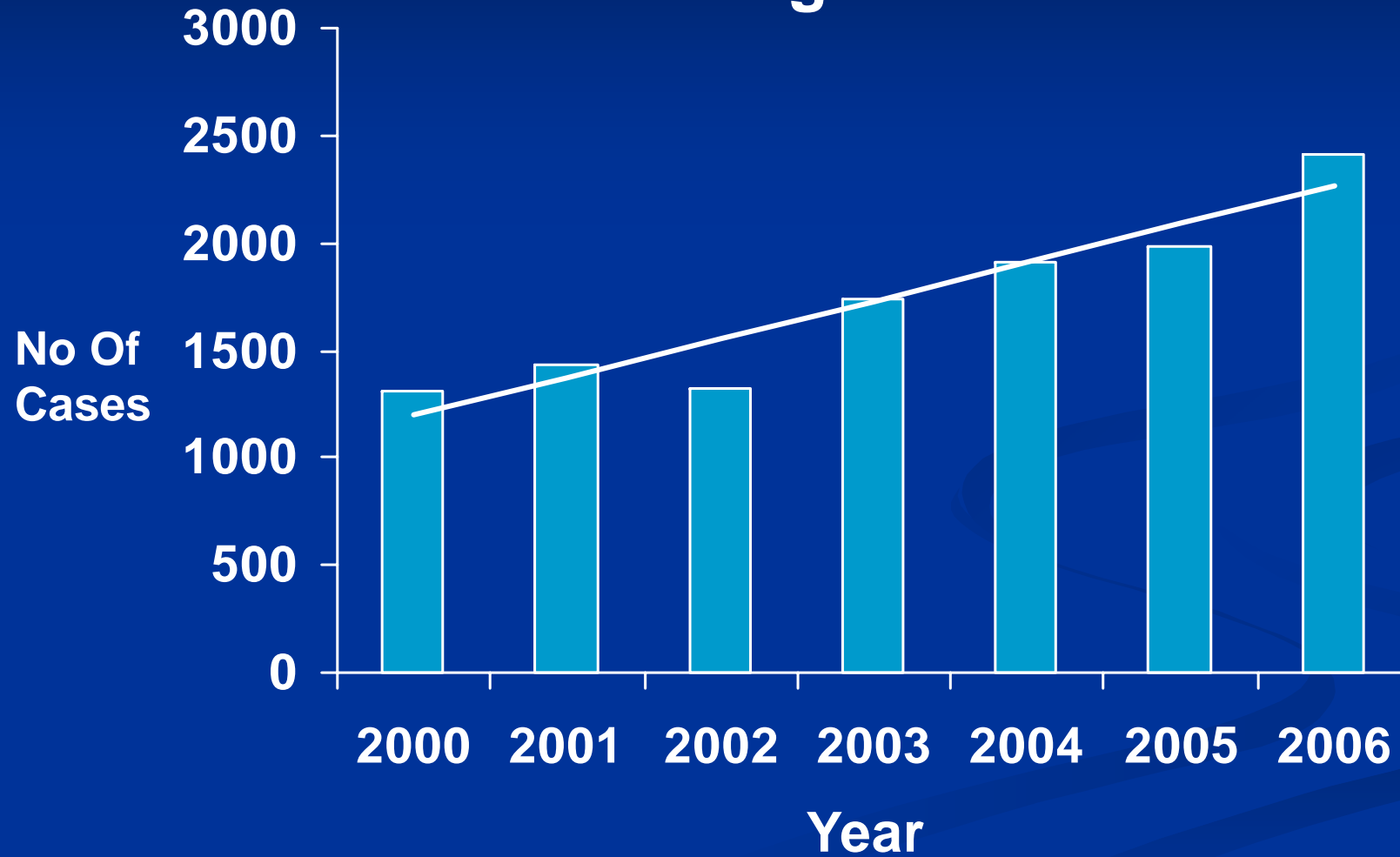
# TB/HIV Cases and Death, Malaysia 1990-2006



## **TB-HIV Co Infection (Malaysia)**

- **TB-HIV screening for all new inmates**
- **New TB cases with HIV (2006): 1,488 cases**
- **Incidence rate new TB-HIV : 5.6/100 000 population**
- **TB- HIV coinfection rate: 9%**
- **41% of deaths due to TB-HIV co-infection (2005)**

## Total No of TB Cases Notified Selangor In 2006



## TB-HIV Screening Programme in Selangor State-2006

Institution	New Inmates	New Inmates Screened for HIV	HIV+	HIV+ screened for TB*	TB cases detected*
Prisons (x2)	39 418	37 657 (96%)	1 429 (4%)	359	135 (38%)
Drug Rehab Centers (X3)	666	653 (98%)	56 (9%)	83	5 (6%)

## **Effectiveness of HIV Screening**

- **Mandatory screening**
- **Initiated and modified since 1996**
- **User friendly rapid test kits**
- **Advocacy and support of key officials**

## **Challenges of TB Screening**

- **Initiated in stages since 2000**
- **Lack of in-house laboratory services**
- **No established prison health programme**
- **Logistic and security issues in screening inmates at MOH facilities**
- **Awareness among prison officials**

## **Interim Measures**

- **Emphasis on sputum screening based on HIV status/ history of cough > 2/52 or previous TB treatment**
- **Sputum collected biweekly and read at government clinics**
- **Scheduling of chest x-rays at government facilities**
- **Information & advocacy campaign for key stakeholders**

## **Interim Measures.....**

- **Anti-TB drug stocks in prisons**
- **Initiation/ continuation of TB treatment for sputum smear positive inmates**
- **DOT based on psychiatric treatment module**
- **Pre-discharge counselling**
- **“Survival kit” on discharge**

## **Interim Measures.....**

- **Cohorting of TB patients**
- **Improved notification and TB information management system**
- **Laboratory surveillance for drug-resistance**
- **Linkage to MDR-TB treatment facilities**
- **Linkage with anti-retroviral (ARV) treatment**
- **Linkage with NGOs for supervision after release**

## **Long-Term Measures**

- **Portable X-ray machines in prisons**
- **Management of latent TB infection**
- **Establishment of a Prison Health system**

## **Treatment Challenges**

- **DOTS/ linking with ARV treatment**
- **Initiation of TB treatment**
- **Supply of anti-TB drugs**
- **Surveillance for drug resistance**
- **Linkage with national TB information system**
- **Support after release**

## **New Frontiers**

- **Rapid field test kits**
- **Latent TB identification & treatment**
- **Shorter TB treatment regime**

## **Acknowledgement**

- **National TB/Leprosy Control Unit, Ministry of Health, Malaysia**
- **Selangor State AIDS/ STD Unit**

## Drug Rehabilitation Centers (DRC), Malaysia, 2004

	DRC	Prisons
No. of HIV cases	2,170	2,805
No. of HIV cases screened for TB (%)	1,157 (53.3)	1,828 (65.1)
No. of TB diagnosed	154	149
% of HIV cases diagnosed to have TB	13.3	8.2

*Source: AIDS/STD Section, Ministry of Health*

# Drug Resistance

- Result of sensitivity test on MTB isolates done by National PHL, Sg Buloh

	2004	2005	2006
<b>No. of isolates tested</b>	4,147	5,493	6,386
<b>No. of monoresistant</b>	NA	472	539 (8.4%)
<b>No. of MDR-TB</b>	13 (0.3%)	17 (0.3%)	42 (0.7%)

