



The Burden of Lung Disease in Hong Kong

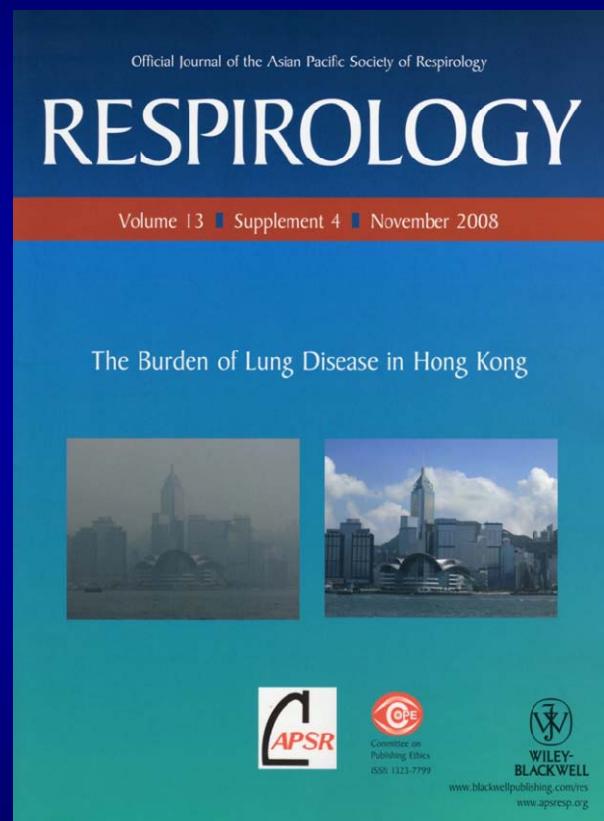
Moira Chan-Yeung on behalf of the Hong
Kong Thoracic Society and
Hong Kong Lung Foundation



Co-authors

KS Chan
HS Chan
Amy Cheung
CM Chu
Alice SS Ho
JC Ho
David Hui
Mary S Ip
WC Yu

Fanny W Ko
Christopher Lai
WK Lam
CY Tam
KS Tsang
PC Wong
Loretta Y Yam
TJ Yao



Specific aims

- To determine mortality and hospitalization rates of lung diseases in 2005 in Hong Kong
- The trend in mortality and hospitalization rates of lung diseases from 1997 to 2005
- To find out the prevalence/incidence of major lung diseases and their risk factors
- To provide comprehensive data of lung diseases to authorities for informed policy making

Respiratory diseases

All respiratory diseases

Specific respiratory diseases

Acute respiratory infections: pneumonia, influenza

Tuberculosis

COPD

Asthma

Respiratory tract cancers

Bronchiectasis

Obstructive sleep apnea

Pneumoconiosis

Defined by ICD code

Local data sources - 1

Census and Statistics Department

- Local population

Department of Health

- Local mortality (ICD-9 before ICD-10 after 2001)
- Notification of tuberculosis

Local data sources-2

Hospital Authority: ICD-9 throughout study period

- Hospitalization (principal diagnosis and head counts)
- In-patient bed-days

Cancer Registry

- Mortality and incidence of respiratory tract cancers

Local research studies

- Prevalence of asthma, COPD

Other data source - 3

World Health Organization:

- Global mortality data – 2002
- World population data - 2002

British Thoracic Society

- Mortality of respiratory diseases in UK- 2004

Hong Kong in 2005

Population:	6.81 M
Mortality:	38,683 (568)
Hospitalization:	568,266* (8341)
Inpatient bed days:	7.78 M* (114,000)

*public hospitals only

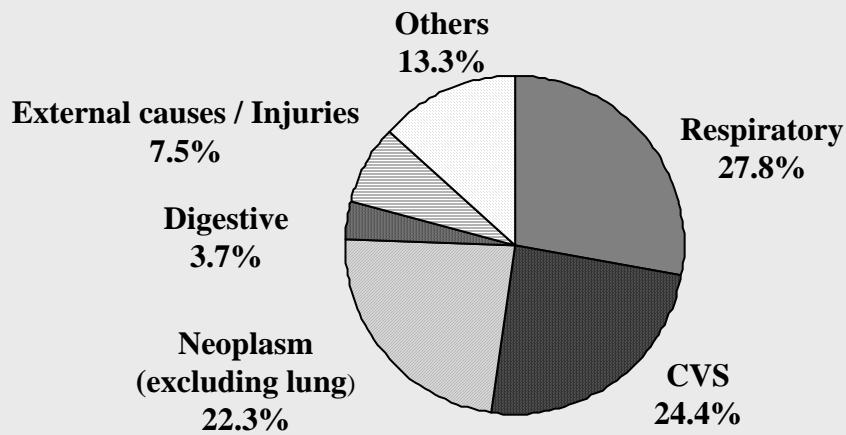
() rate/100,000

Mortality and hospitalization rates of major diseases in 2005 in Hong Kong

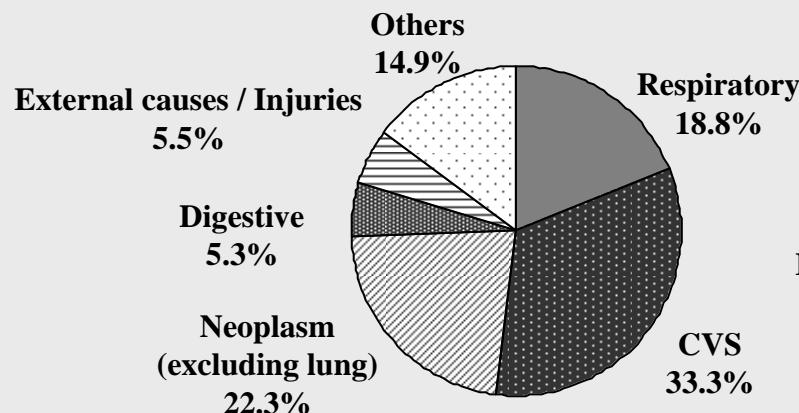
Crude mortality rates of major diseases in 2005 in Hong Kong

	Crude mortality rate (100,000)	%
Respiratory	163	28.7
Cardiovascular	148	26.1
Neoplasm	126	22.3
Digestive	21	3.7
All	568	100.0

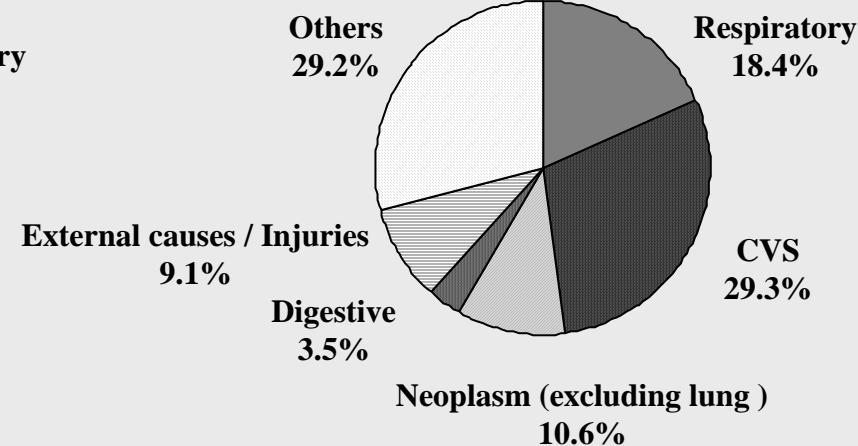
Proportion of Deaths from Different Diseases –age-standardized



Hong Kong



UK



Global

Utilization of hospital beds and cost in 2005 in Hong Kong

	%	Bed-days	Cost (HKD)
Respiratory	16.0	1242×10^3	$4,075 \times 10^6$
CVS	11.6	903	2,961
Neoplasm	7.2	560	1,838
Digestive	5.1	396	1,298
Others		4679	15,344
Total	100.0	$7,780 \times 10^3$	$25,517 \times 10^6$

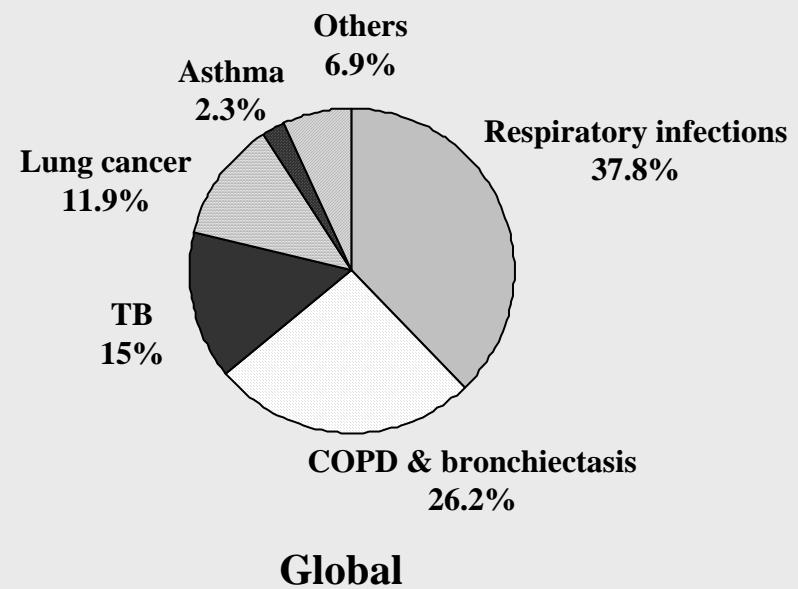
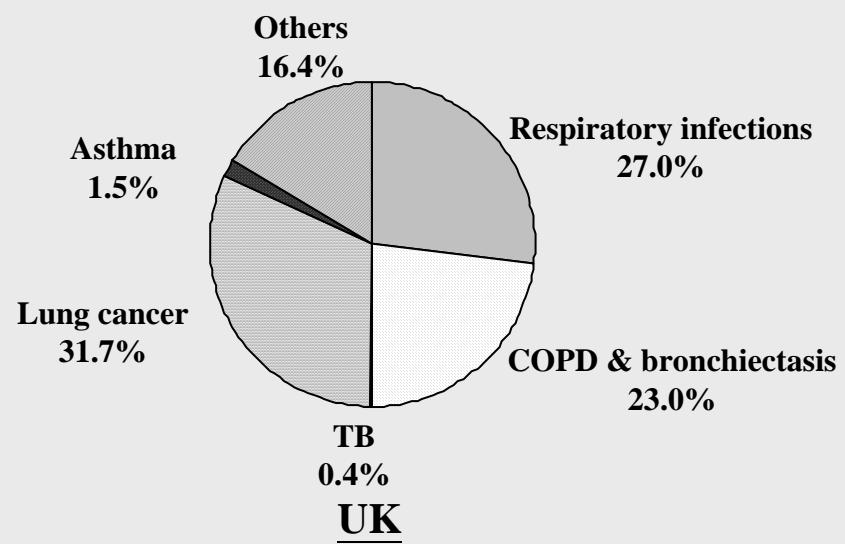
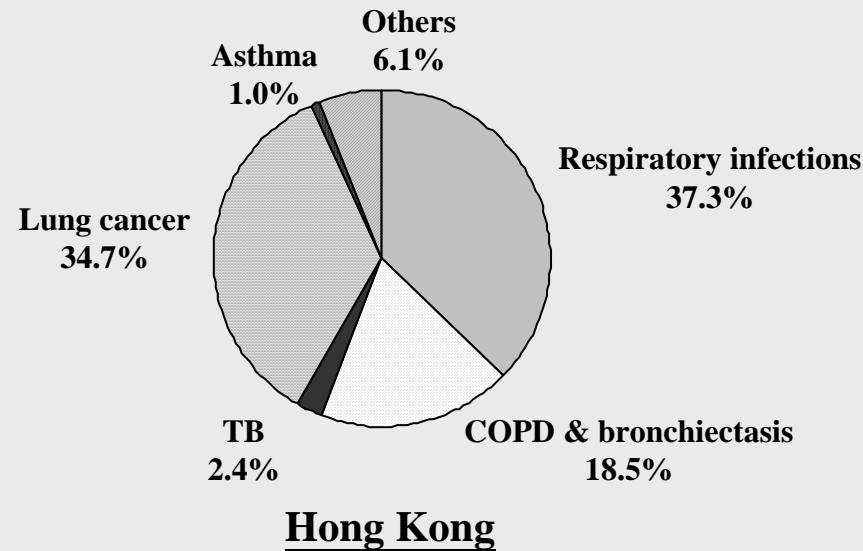
Based on \$3280/day (HA) for public hospitals

Mortality and hospitalization rates of major respiratory diseases in 2005 in Hong Kong

Mortality (%) of different respiratory diseases in 2005 in Hong Kong

	All	Male	Female
Respiratory infections	39.0	33.2	48.5
Respiratory tract cancer	33.2	36.3	28.2
COPD	17.9	21.6	11.7
TB	2.4		
Bronchiectasis		1.7	
Asthma		0.9	
Others		4.9	
Total	100.0		

Proportion of deaths from major respiratory diseases – age standardized



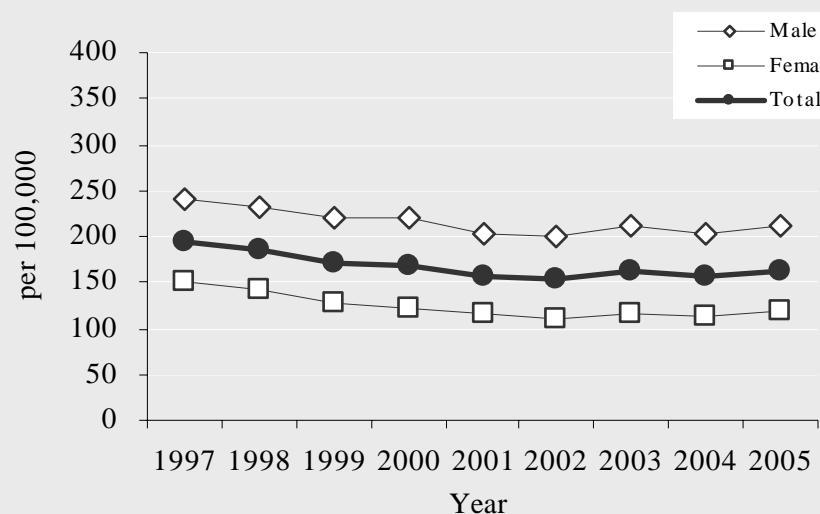
Utilization of hospital beds and cost in 2005 in Hong Kong

	<u>Bed days</u>	<u>Cost (HKD)</u>
Respiratory infections	462.5x10 ³	1,517x10 ⁶
COPD	254.1	833.6
Respiratory tract cancer	114.6	375.8
TB	88.8	291.2
Asthma	32.4	106.1
Bronchiectasis	21.7	71.1
Others	259.5	851.2
Total	1242.4	4,075.0

Trends in mortality, hospitalization and incidence/prevalence of major respiratory diseases in Hong Kong, 1997-2005

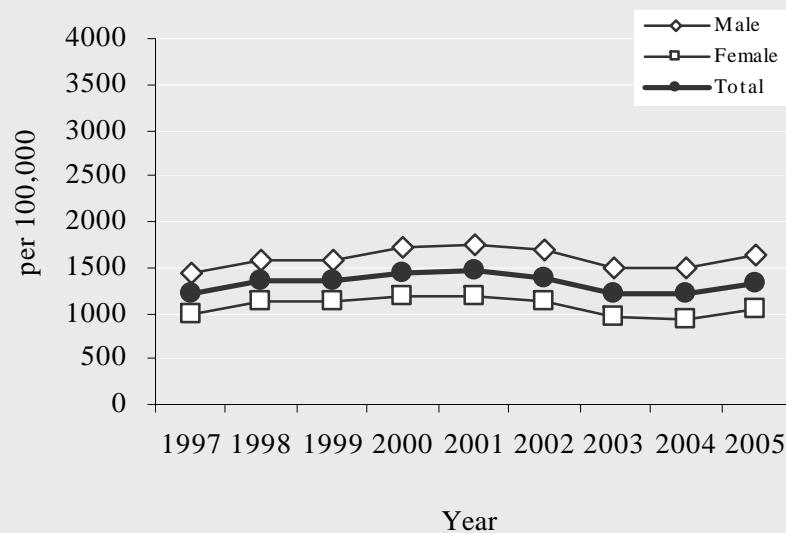
ALL RESPIRATORY DISEASES in HONG KONG (Age Standardized Rate/100,000) 1997-2005

Mortality



% annual change: **-2.3 (-3.5 to -1.2)***

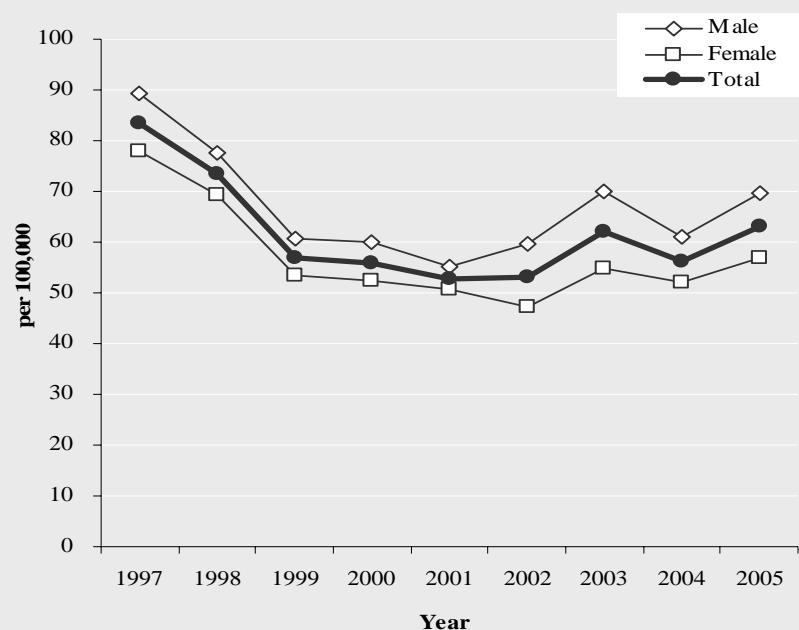
Hospitalization



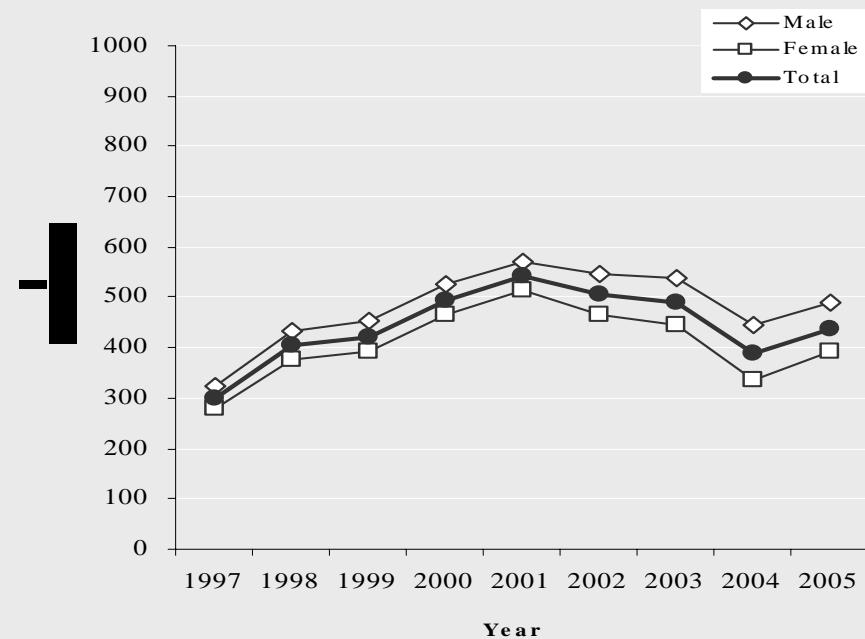
-0.3 (-2.3 to 1.7)

PNEUMONIA (age standardized rates/100,000) 1997-2005

Mortality



Hospitalization

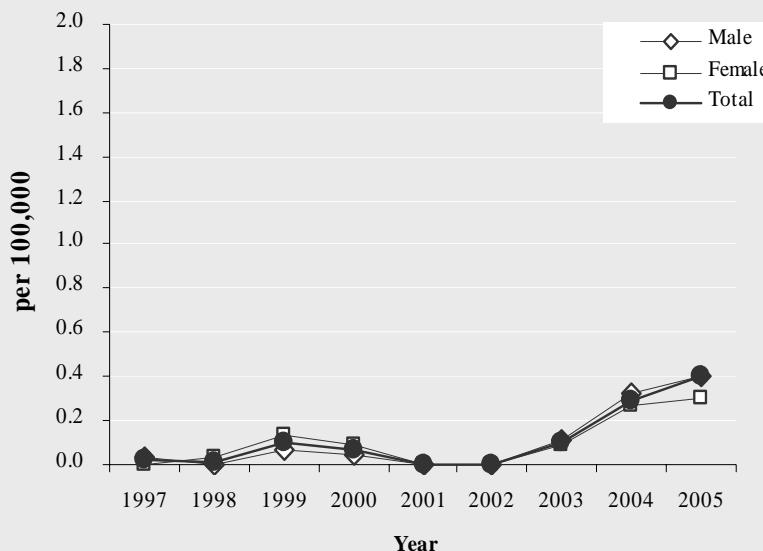


% annual change: 1997-2005 -3 (-6.3 to 0.3)
 1997-2001 -13.5 (-18.4 to -8.2) *
 2001-2005 4.1 (0.3 to 8.2) *

2.8 (-1.8 to 7.7)
 16.7 (9.1 to 24.9) *
 -6.5 (-11.2 to -1.5) *

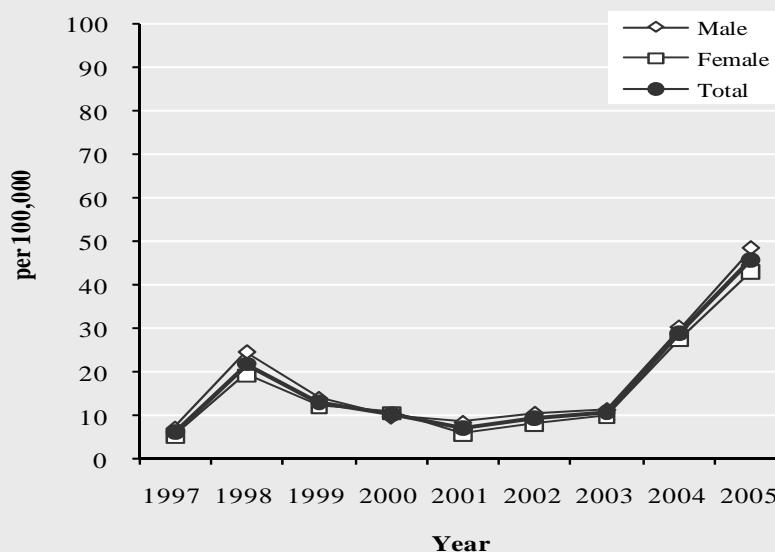
INFLUENZA (age standardized rates/100,000) 1999-2005

Mortality



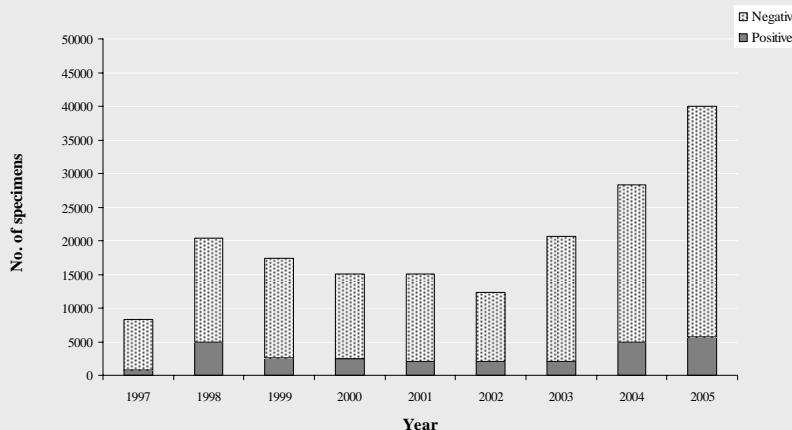
% annual change: 39 (2.9 to 87.9)*

Hospitalization



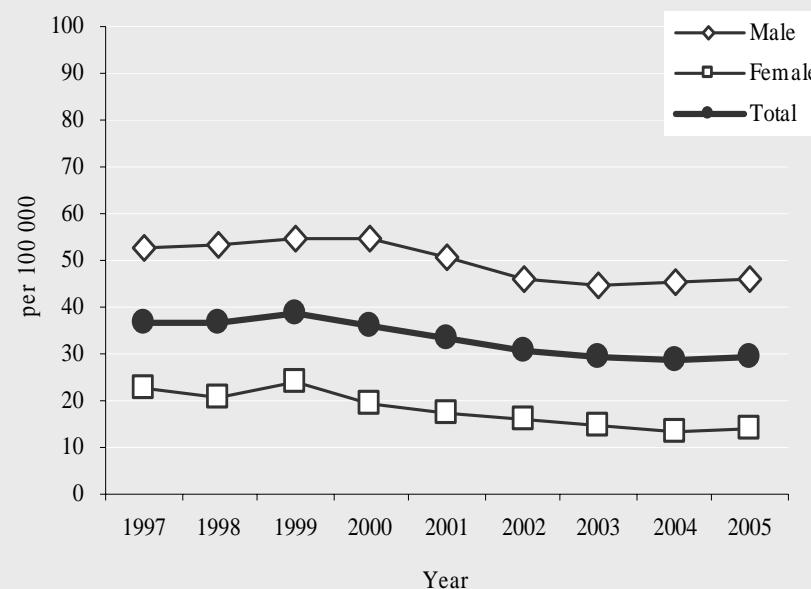
14.6 (0.2 to 31.1)*

No. of specimens submitted for viral culture and no positive

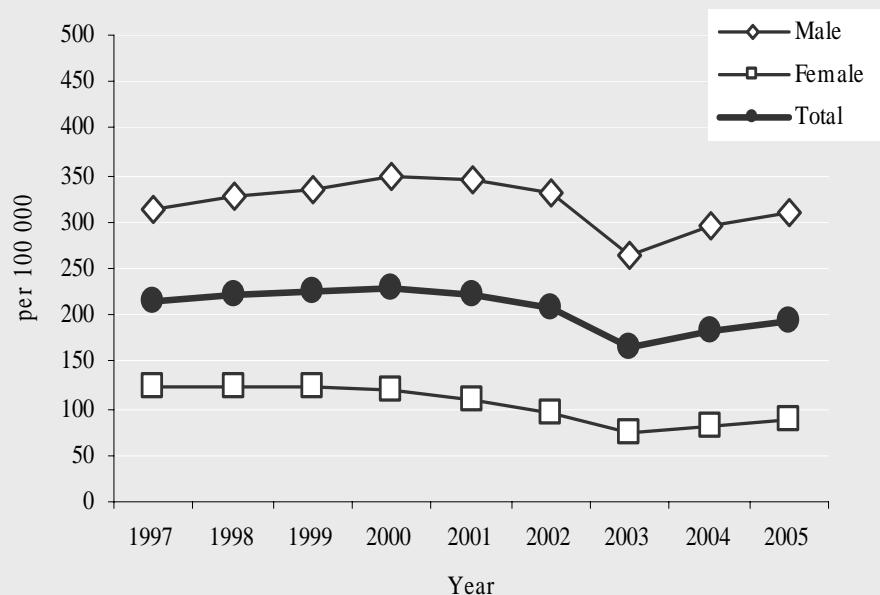


COPD (age standardized rates /100,000) 1997-2005

Mortality



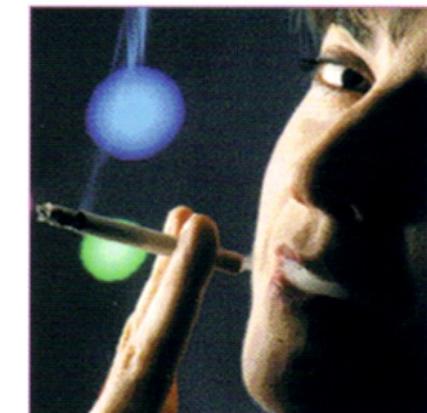
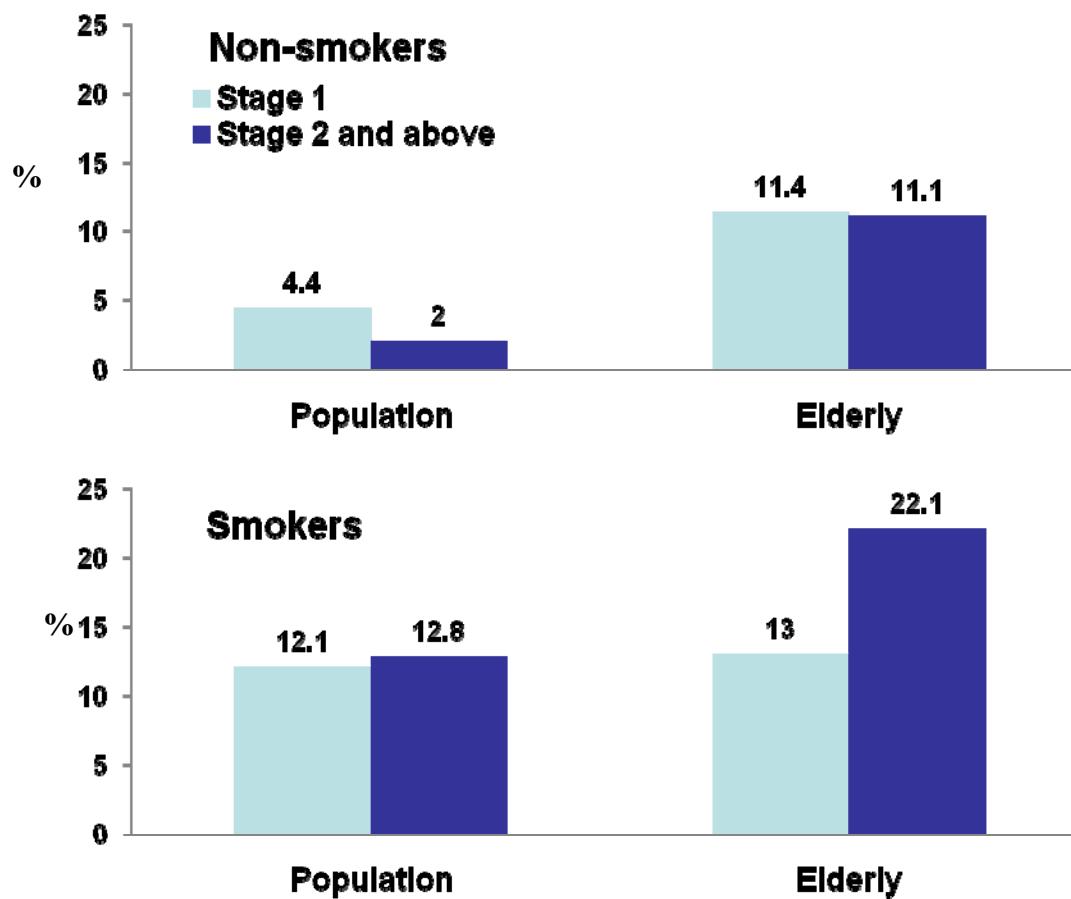
Hospitalization



% annual change: **-3.9 (-5.2 to -2.7)***

-2.8 (-4.8 to -0.7)*

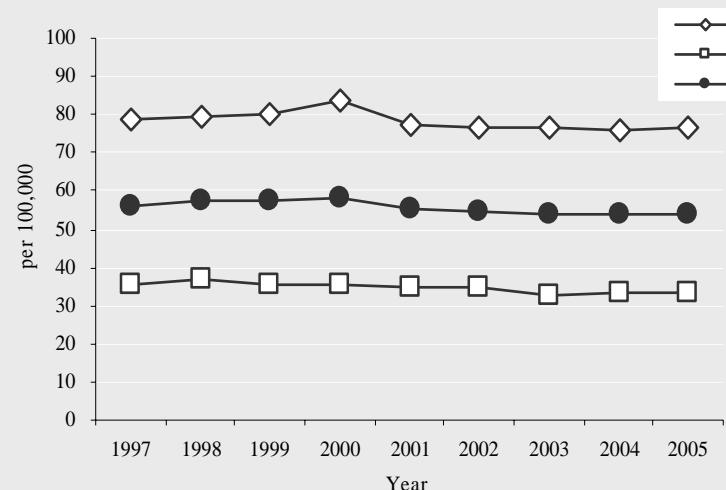
Prevalence of COPD according to GOLD criteria in Hong Kong



Stage 1: $\text{FEV1}/\text{FVC} < 70\%$; $\text{FEV1} \% \text{ predicted} > 80\%$

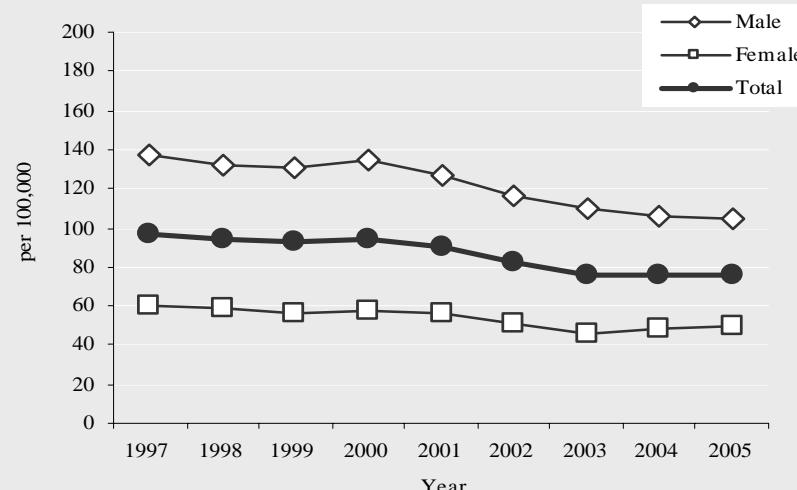
Respiratory Tract Cancers (age standardized rate/100,000) 1997-2005

Mortality



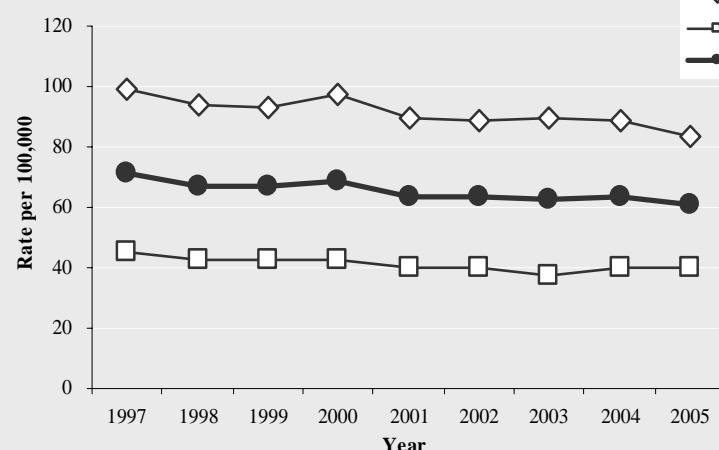
% annual change: **-0.91 (-1.4 to -0.4)***

Hospitalization

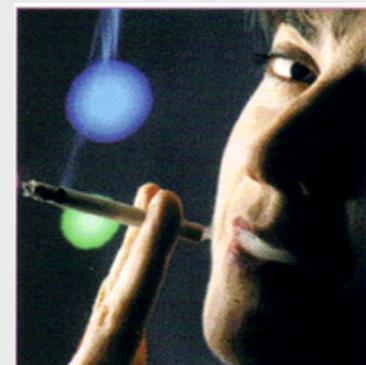


-3.4 (-4.3 to -2.6)*

Incidence

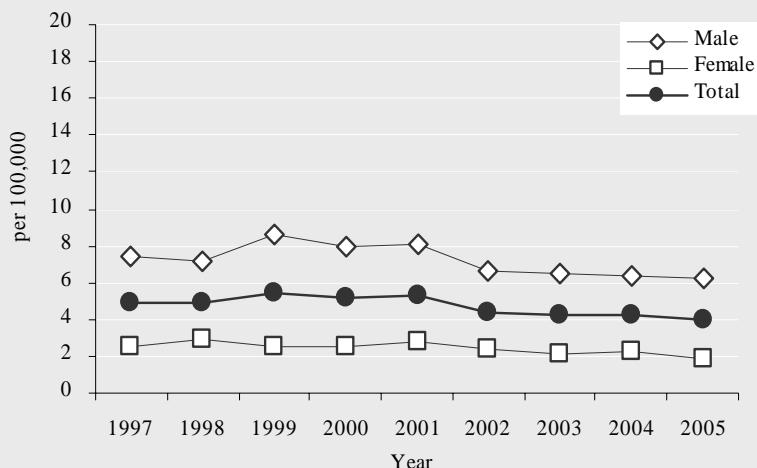


-1.7 (-2.3 to -1.1)*



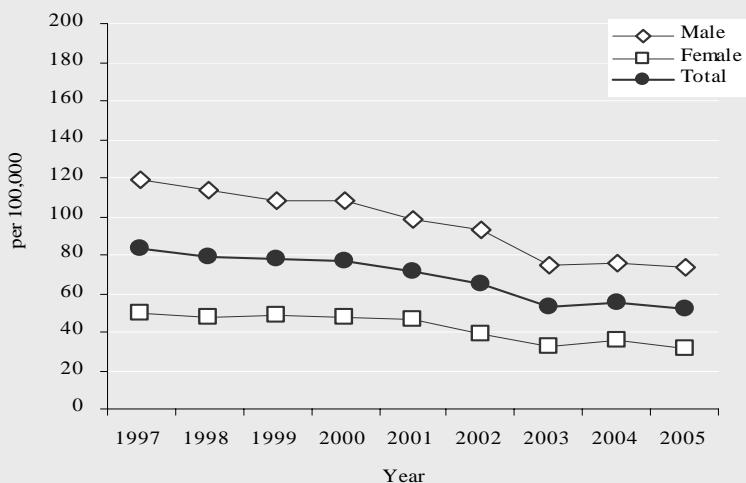
Tuberculosis (age standardized rates /100,000) 1997- 2005

Mortality



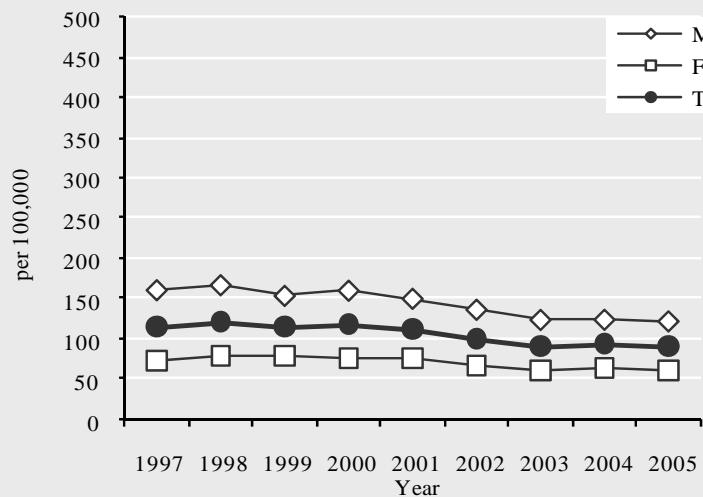
% annual change: **-2.9 (-4.8 to -1.0)***

Hospitalization

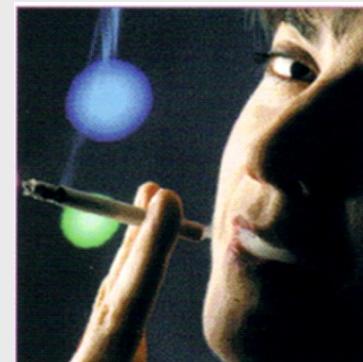


% annual change: **-6.4 (-7.8 to -5.0)***

Incidence

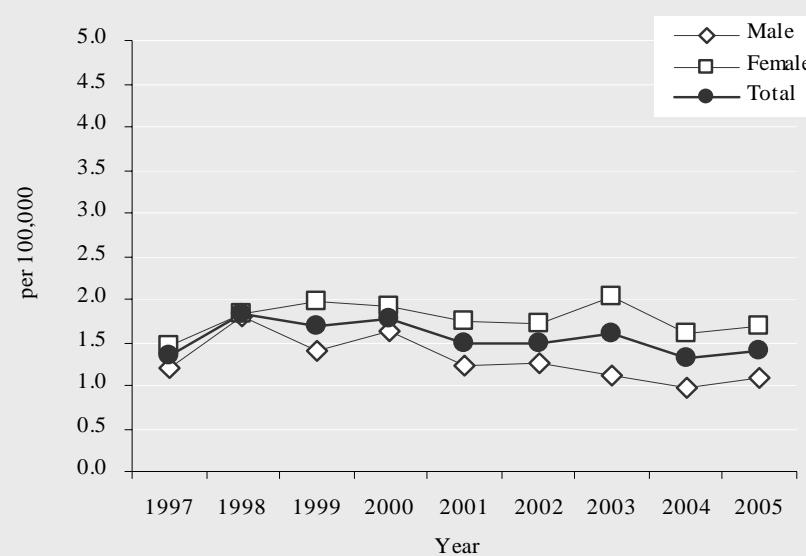


% annual change: **-3.8 (-5 to -2.6)***

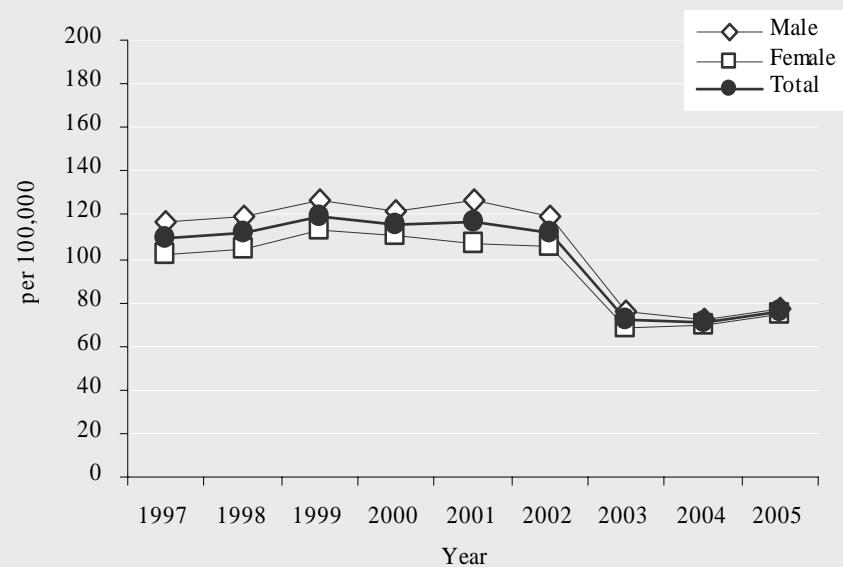


Asthma – age standardized rates/100,000 1997-2005

Mortality



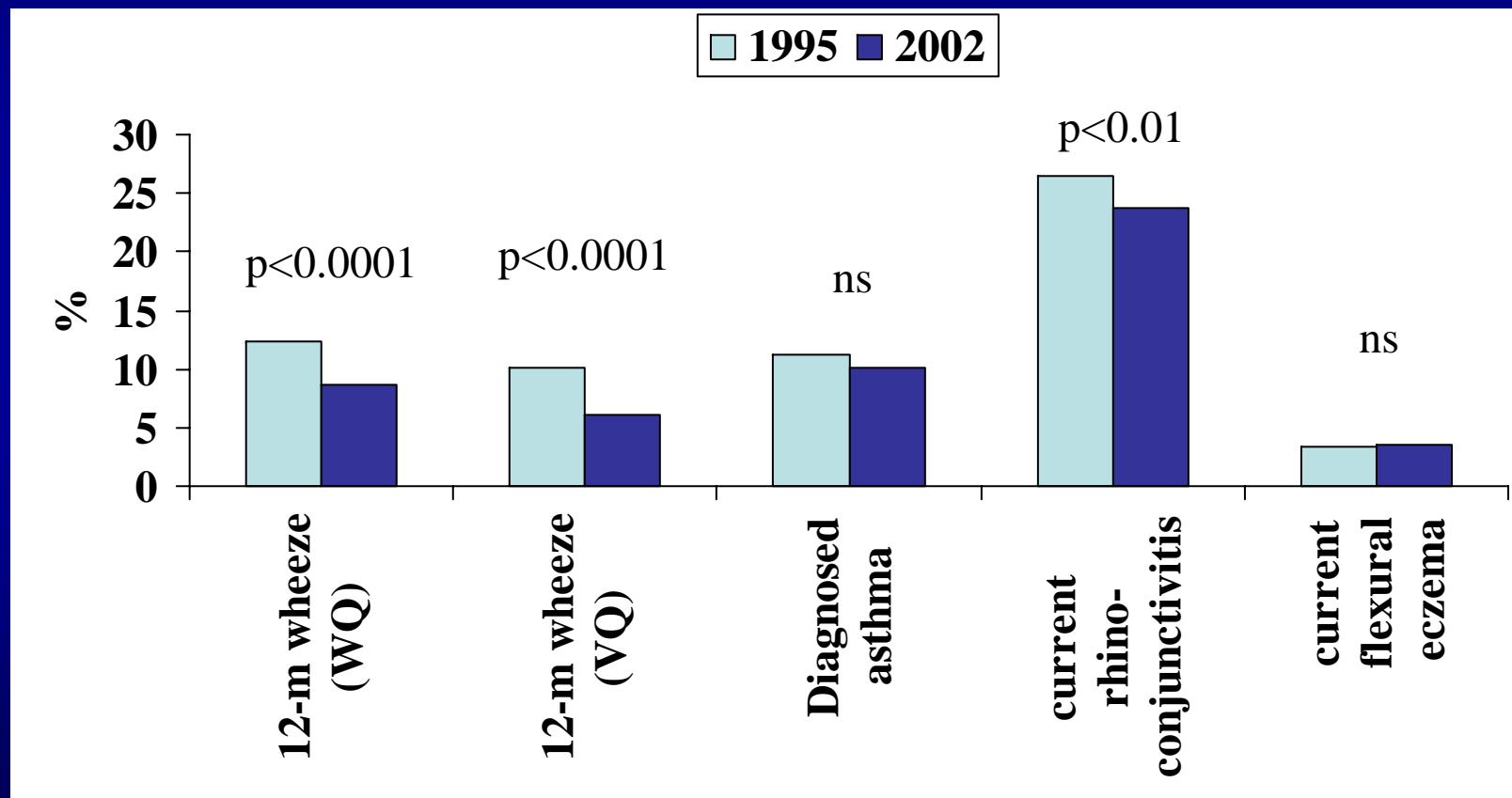
Hospitalization



% annual change: **-2.0 (-4.8 to 1.0)**

-6.2 (-9.9 to -2.4)*

Time trends of asthma in 13/14 years old schoolchildren in HK



Summary -1

- Respiratory diseases ranked first as a cause of mortality, and hospital utilization in Hong Kong in 2005;
- There was a significant reduction in respiratory mortality but not in hospital utilization in the past decade;
- Respiratory diseases are responsible for the largest share of health care cost

Summary and recommendations-2

- Respiratory infection was the most common cause of respiratory mortality and hospital utilization in 2005
- No reduction in mortality and hospital utilization from respiratory infection in the past decade
- Influenza vaccination program provided by the government should be supported and promoted
- Pneumococcal vaccination should be considered

Summary and recommendations-3

- COPD ranked 3rd as a cause of respiratory mortality but 2nd in hospital utilization
- Respiratory tract cancer ranked 2nd as a cause of respiratory mortality and 3rd in hospital utilization
- TB ranked 4th as a cause of respiratory mortality and hospital utilization
- The major risk factor of the above diseases is tobacco smoking.
- Primary prevention of these diseases lies in tobacco control, anti-smoking, and smoke cessation





Summary - 4

- Air pollution is a major risk factor for acute exacerbations of asthma and COPD locally and hospitalization for these 2 diseases

Recommendation

- Tighter air pollution control to reduce acute exacerbations and the cost of hospitalization



Summary and recommendations - 5

- Ideal respiratory specialist /population = 1/69,000
- Hong Kong 1/95,000
 - 72 in active practice: 43 in acute
 - 29 in non-acute
- Need altogether 100
 - especially in acute care

Acknowledgements

Hospital Authority – Dr. Vivian Wong

Dr. S.V. Lo

Edwina Shung

PK Mak

David Wong

Department of Health – Dr. CM Tam

Wally Tse