



馬上洗手／打流感針

洗手呀! 污糟貓!
wash your hands!



疫苗資助計劃 2013/14

Vaccination Subsidy Schemes 2013/14

促進健康齊打針
長者兒童都安心
Getting vaccinated
can give you peace of mind

以下香港居民接種疫苗，可獲得政府資助；請到貼有計劃標記的私家醫生診所接種。

The Government subsidises the following Hong Kong residents to receive vaccinations at private clinics carrying the scheme logos.

長者疫苗資助計劃

65歲或以上的長者

季節性流感疫苗

- 須每年接種
- 資助由2013年10月2日開始

肺炎球菌疫苗

- 年屆65歲或以上只須接種一次
- 資助全年適用



Elderly Vaccination Subsidy Scheme

Elderly persons aged 65 or above

Seasonal influenza vaccine

- Vaccination is needed every year
- Subsidy starts on 2 October 2013

Pneumococcal vaccine

- A one-off vaccination is required for people aged 65 or above
- Subsidy continues throughout the year

由2013年11月1日起，「政府防疫注射計劃」內的合資格人士，可到公營診所免費接種季節性流感疫苗和肺炎球菌疫苗。

From 1 November 2013, eligible persons under the Government Vaccination Programme can receive the seasonal influenza vaccination and the pneumococcal vaccination free of charge at public clinics.

兒童流感疫苗資助計劃

六個月至未滿六歲的兒童

季節性流感疫苗

- 須每年接種
- 資助由2013年10月2日開始



Childhood Influenza Vaccination Subsidy Scheme

Children aged between 6 months and less than 6 years

Seasonal influenza vaccine

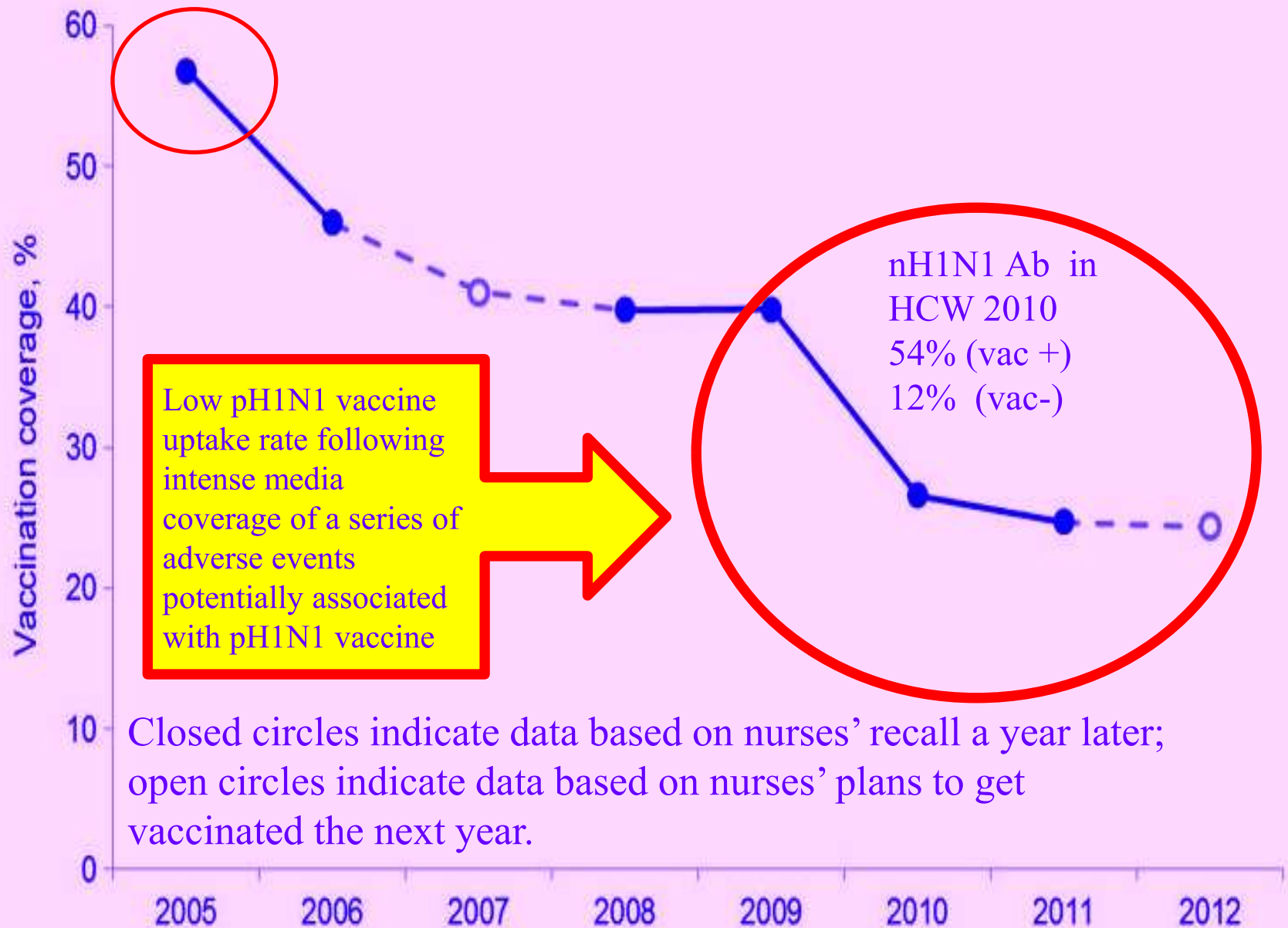
- Vaccination is needed every year
- Subsidy starts on 2 October 2013

查詢 Enquiries: 2125 2125

www.chp.gov.hk



In Hong Kong, free yearly influenza vaccination has been offered to all health care workers in the public service since 2003 after SARS. There is declining uptake rate among HCW especially after 2009.



Declining influenza vaccination coverage among nurses, Hong Kong, 2006-2012. Lee SS, Wong NS, Lee S. Emerg Infect Dis. 2013;19:1660-3.

THE WORLDWIDE SPREAD OF SARS

21 February 2003

SARS PASSED TO TOURIST GUEST ON 9TH FLOOR
WHO RETURNS HOME TO TORONTO, CANADA

DOCTOR WHO TREATED SARS PATIENTS IN
GUANGDONG PROVINCE, CHINA TRAVELS TO
HONG KONG AND STAYS ON 9TH FLOOR OF HOTEL

SARS PASSED TO HONG KONG RESIDENT
WHO VISITED 9TH FLOOR OF HOTEL

SARS PASSED TO FLIGHT ATTENDANT GUEST
ON 9TH FLOOR WHO THEN FLIES TO SINGAPORE

SARS PASSED TO BUSINESSMAN
GUEST ON 9TH FLOOR WHO
THEN TRAVELS TO VIETNAM

299/1755 (17%)

774/8094 (9.56%) 1706 HCW (21%)

SARS 2003

禽流感攻陷中國

列疑似個案日期
確診日期



2004

解圍攻香港 禽流感



2004



疫苗副作用恐慌

- 心臟科醫生郭康泰疑因打針致吉巴氏綜合症。政府作大豬流感禍害，豬流感是小病，「五十後」有抗體。打新流感針後胎死再一宗。一針攞命，慘做白老鼠。孕婦嚇怕：為保胎兒一定不打。
 - 疫苗副作用恐慌入院病人可能「攻陷」各大公院。醫院管理局制訂收症指引幫助前線醫護篩檢出疑似吉巴氏綜合症病人。打針騷無人信，注射人數急跌四成！曾浩輝預計剩大量疫苗。
- 

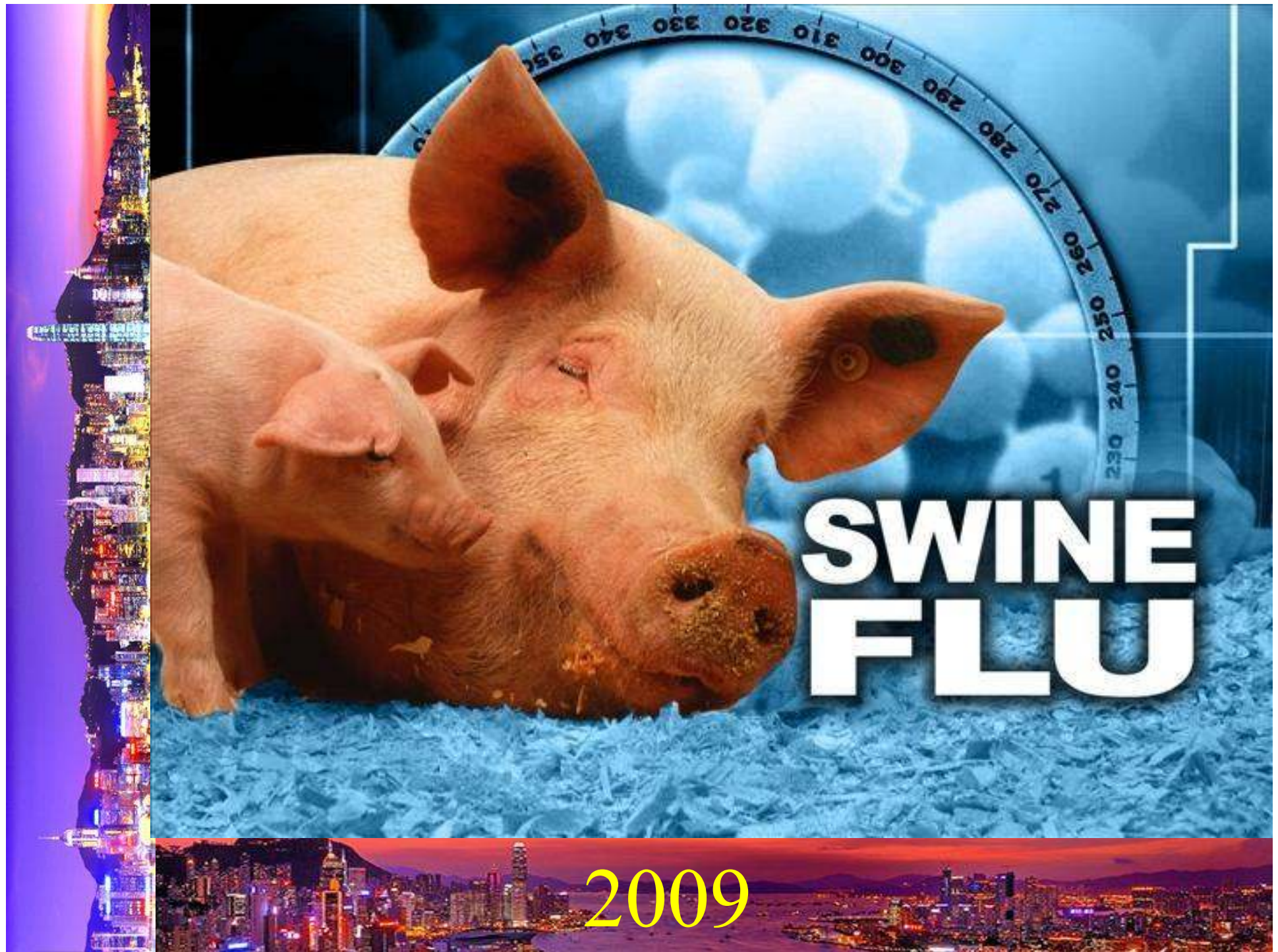


W-shaped mortality



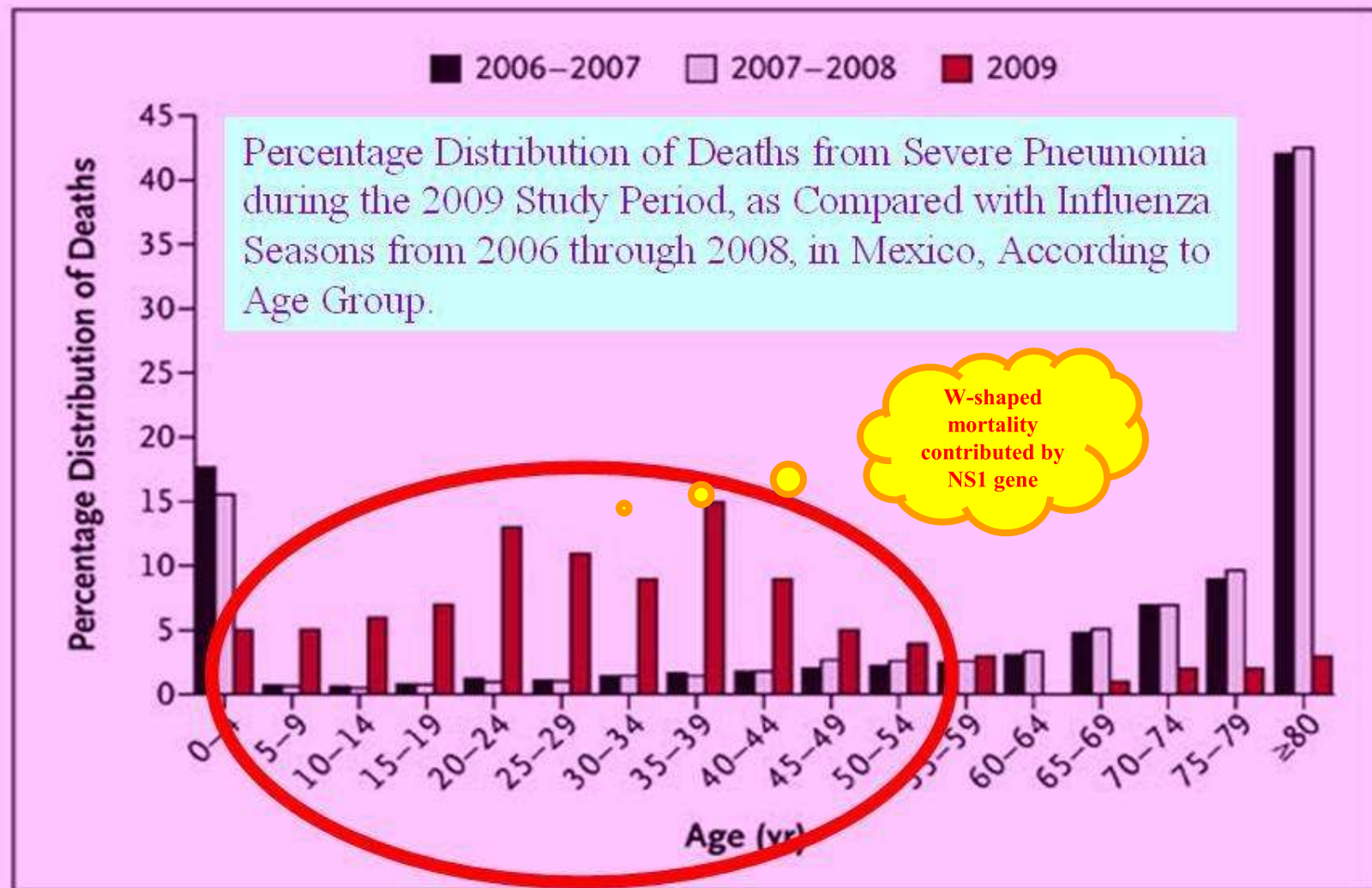
Obamacare March 23, 2010

The Patient Protection and Affordable Care Act



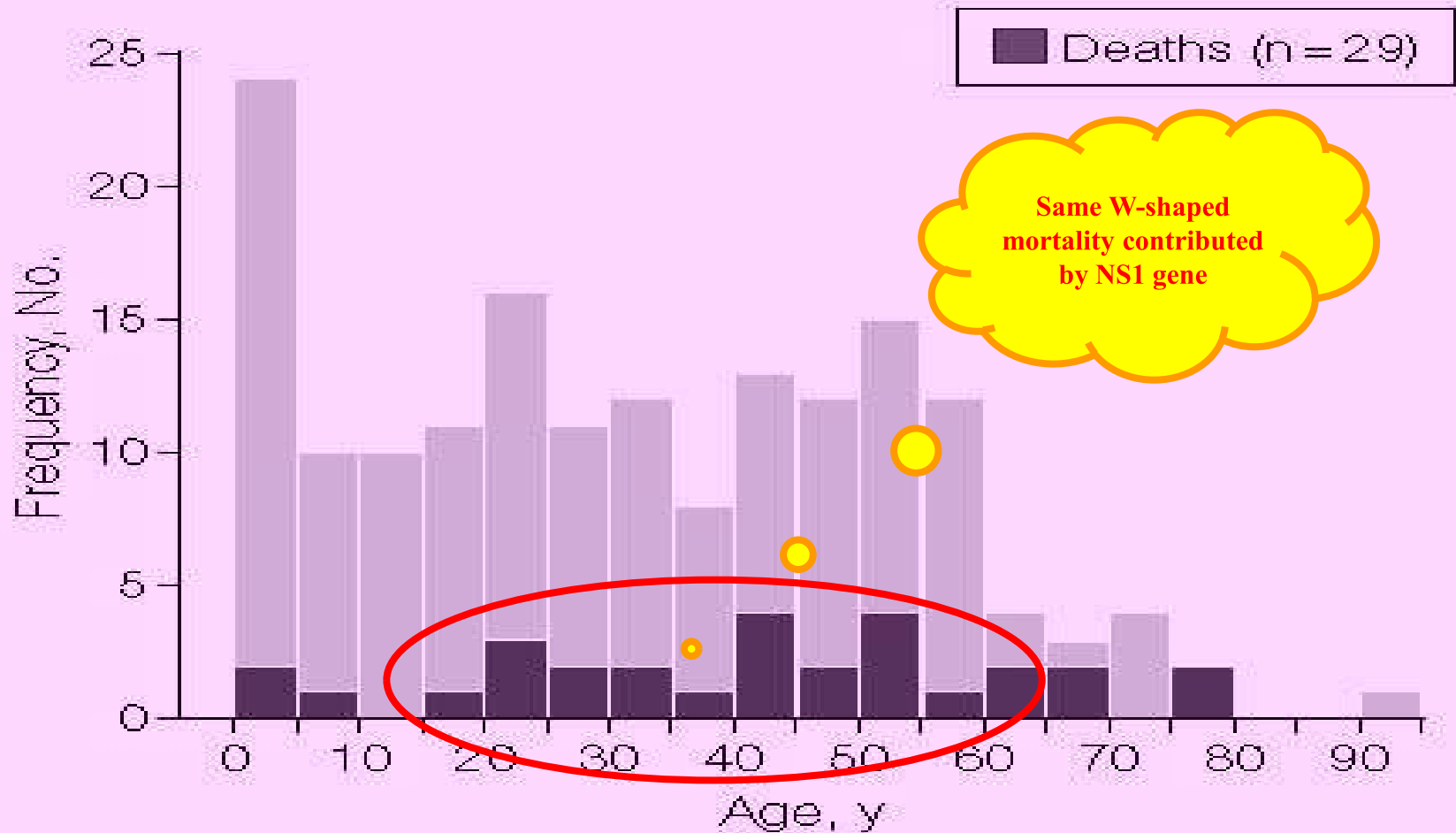
SWINE FLU

2009



March 24 to April 29, 2009, a total of 2155 cases of severe pneumonia, involving 821 hospitalizations and 100 deaths

Severe Respiratory Disease Concurrent with the Circulation of H1N1 Influenza Gerardo Chowell, Ph.D., Stefano M. Bertozzi, NEJM June 29 2009



Intervals on the x-axis are equal to the lower limit and less than the upper limit of that age category.

➔ **Critically ill patients with 2009 influenza A(H1N1) infection in Canada.**
Kumar A JAMA. 302(17):1872-9, 2009 Nov



Universal Vaccination in U.S.A.

Second Wave



Wicholson / Page 69





The Goal of Universal Vaccination

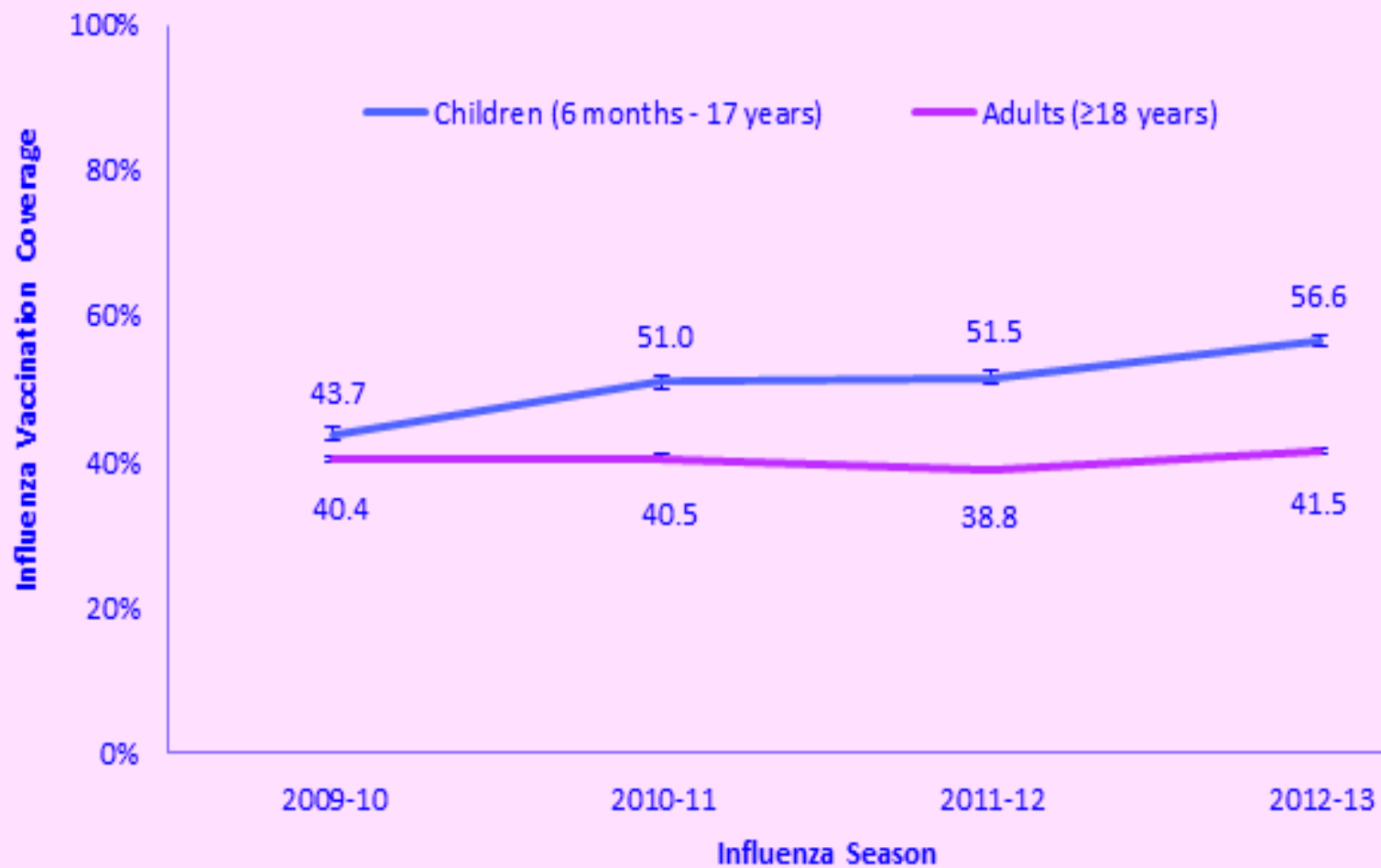
The Association for Professionals in Infection Control and Epidemiology (APIC) recommends that acute-care hospitals, long-term care, and other facilities that employ healthcare personnel, require annual influenza immunization as a condition of employment unless there are compelling medical contraindications.

APIC, 2011

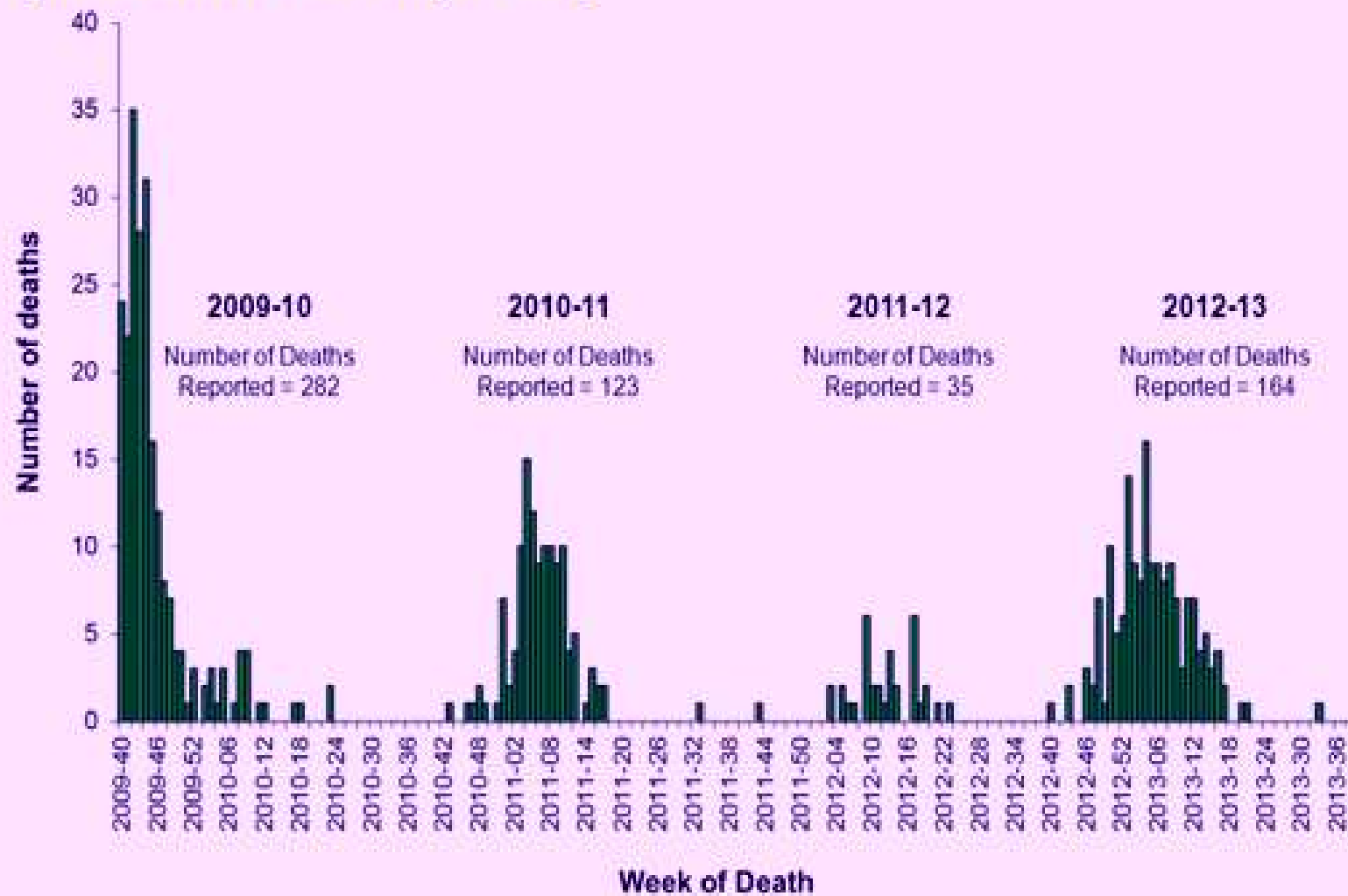
In an effort to reduce the number of deaths from influenza, in 2010 the CDC Advisory Committee on Immunization Practices (ACIP) recommended universal influenza vaccination for all persons at least 6 months of age. Their objectives for 2020 are to reach 80% vaccination coverage in children, pregnant women, and non-institutionalized working-age adults without high-risk conditions and 90% in institutionalized adults, adults with high-risk conditions, the elderly, and healthcare workers (Blank et al., 2012).



Seasonal Flu Vaccination Coverage, by Age Group and Season, United States, 2009-2013



Influenza-Associated Pediatric Deaths by Week of Death (2009–2010 season to present)



疫苗接種計劃 VACCINATION SCHEMES



院舍防疫注射計劃 Residential Care Home Vaccination Programme 2011/12

季節性流感疫苗 Seasonal Influenza Vaccine
肺炎球菌疫苗 Pneumococcal Vaccine

開始日期：
2011年11月1日
Commencement Date:
1st November 2011

殘疾人士院舍
安老院舍

查詢熱線
Enquiry Hotline
2125 2125

計劃對象：
學界及殘疾人士院舍的住戶、員工及員工家屬。
Residents, boarders and workers in residential care homes for the elderly / disabled.

兒童流感疫苗資助計劃 Childhood Influenza Vaccination Subsidy Scheme

接種當日年齡介乎
六個月至未滿六歲的兒童
Children between the age of 6 months and
less than 6 years on the vaccination day

2011/12

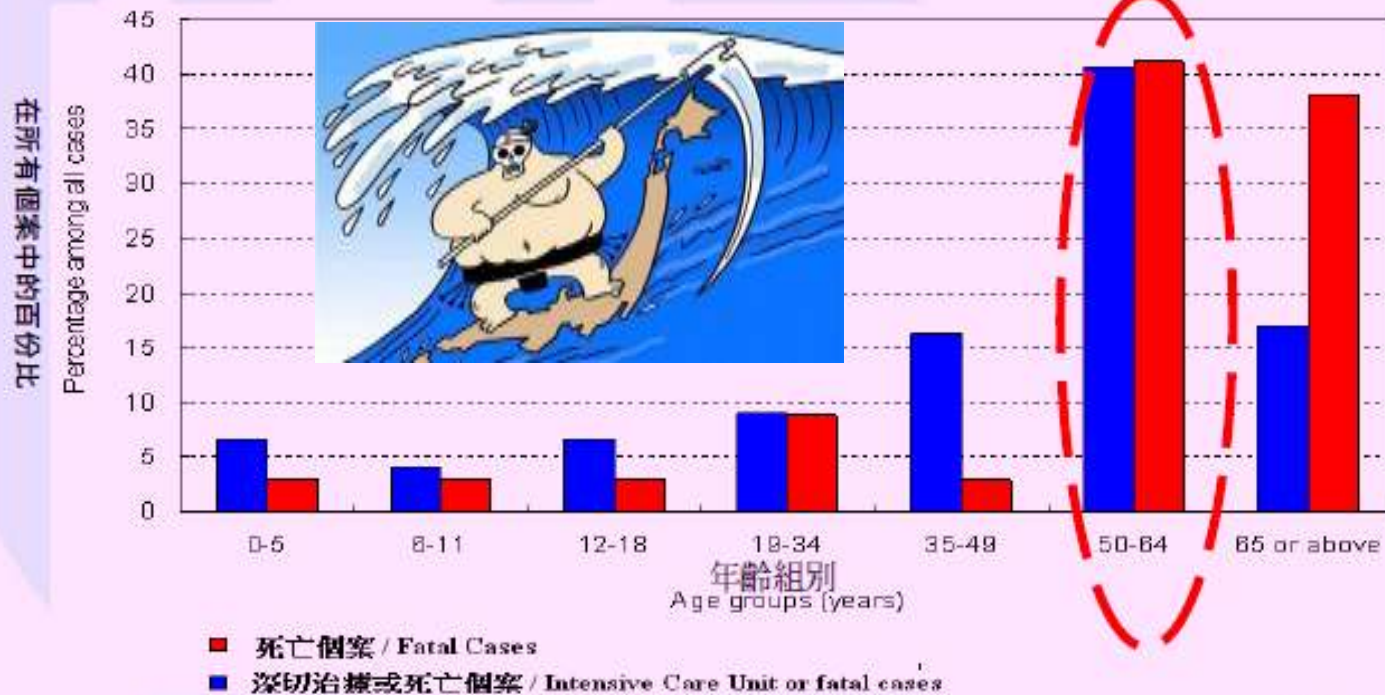
長者疫苗資助計劃 Elderly Vaccination Subsidy Scheme

今年65歲或以上香港居民
Hong Kong residents aged 65 or above
this year

2011/12

2010-2011 and 2011-2012

Age distribution of ICU or fatal influenza cases (January 24, 2011 – March 22, 2011)



ICU: Intensive Care Unit

Second Wave of novel H1N1



Cause of Death	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1. Malignant neoplasms (ICD10: C00-C97)	169.9	172.9	171.0	173.8	180.7	176.4	178.1	179.0	184.1	186.2	187.2	186.4
2. Pneumonia (ICD10: J12-J18)	45.1	47.4	57.6	54.2	63.0	61.3	72.0	78.8	76.2	82.8	87.8	97.3
3. Diseases of heart (ICD10: I00-I09, I11, I13, I20-I51)	70.0	73.7	78.9	86.5	86.1	81.9	92.1	97.4	92.0	94.5	89.6	87.8
4. Cerebrovascular diseases (ICD10: I60-I69)	46.6	47.7	51.4	50.4	50.4	48.2	50.8	53.0	49.4	48.7	47.2	45.8
5. Chronic lower respiratory diseases (ICD10: J40-J47)	31.5	30.8	31.2	31.3	33.2	28.1	30.3	30.2	27.4	29.8	27.8	27.7

Death Rates by Leading Causes of Death, 2001 - 2012
(Number of Deaths per 100000 Population)



BRANCO LegalInsurrection.com
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This is going to hurt



DRINK!

HEALTHCARE.GOV

APPROVED

MAR 23 2010

Barack Obama

Let The Doctor Give You Your Delightful Swine Flu SHOT....

Voluntary (1984 U.S.A. 2003 H.K.)

44.4% (2006-2007 U.S.A.)

HCW Influenza Risk (5% → 20%)

Ethics



The Infectious Diseases Society of America (IDSA), the Society for Healthcare Epidemiology of America (SHEA), and the Pediatric Infectious Diseases Society (PIDS) (“Societies”) support 12/2013



The Goal of Universal Vaccination

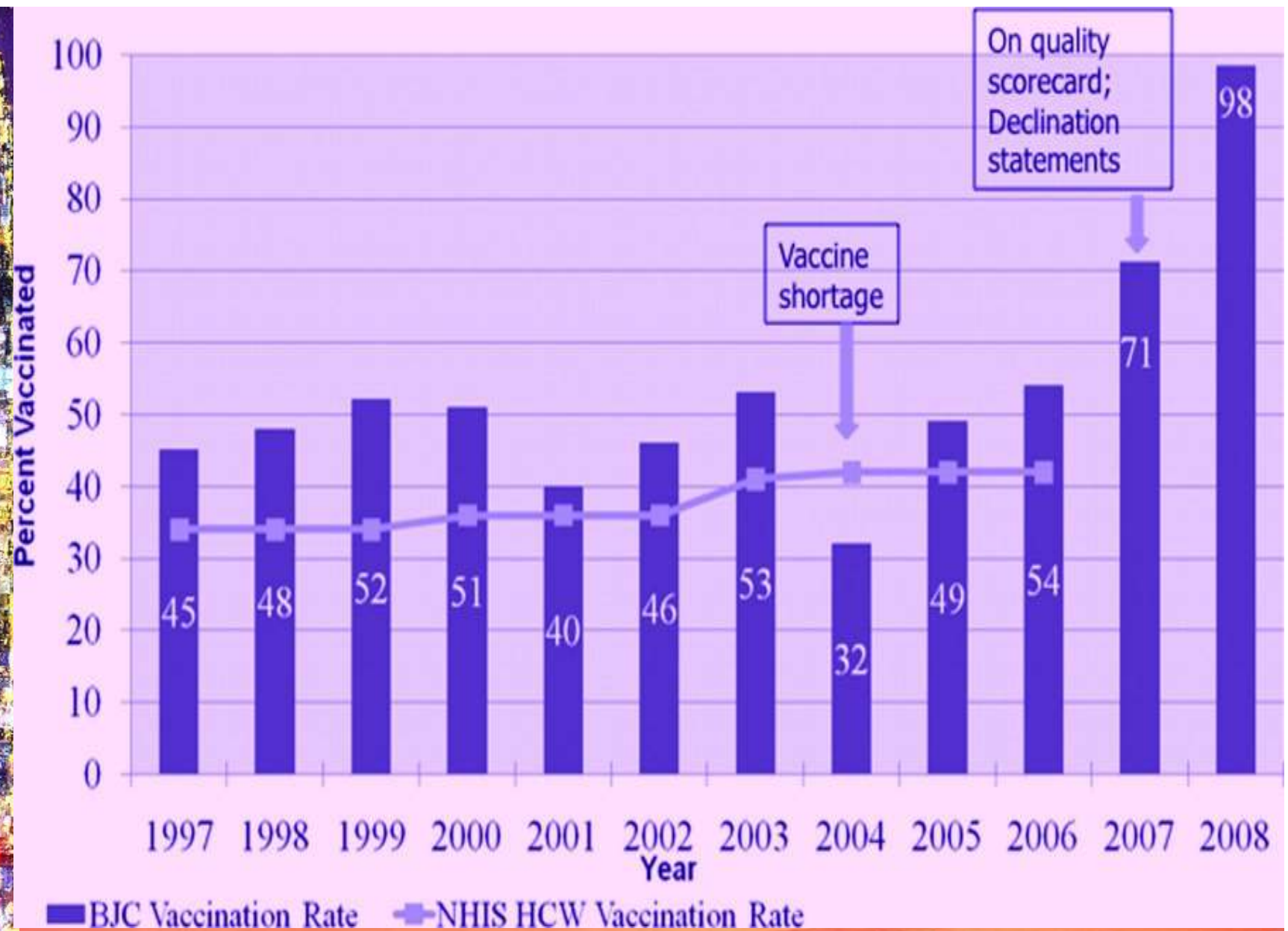
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APIC, 2011

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Compulsary Influenza Vaccination For HCW
New requirements for Obamacare.



Babcock HM, et al. Mandatory influenza vaccination of health care workers: translating policy to practice. Clin Infect Dis. 2010;50:459-64.

Summary of Employee Vaccination Status.

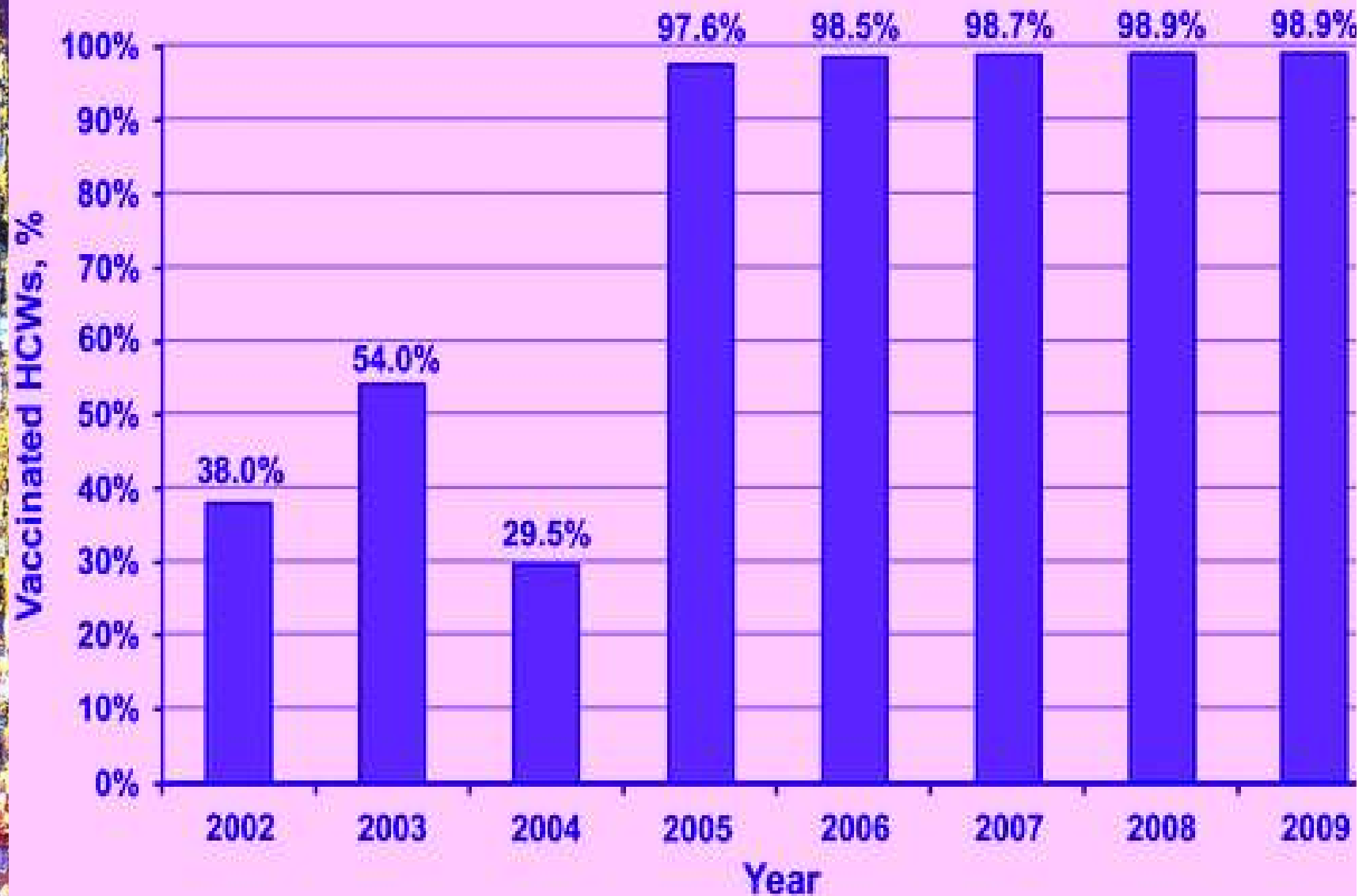
Vaccination status	No. (%) of employees
Vaccinated	25,561 (98.4)
Religious exemption granted	90 (0.35)
Medical exemption granted	321 (1.24)
Egg allergy	107
Prior reaction and/or allergy to other component	83
History of Guillan-Barré syndrome	15
Other	116
Policy compliant (vaccinated or exempt)	25,972 (99.96)
Noncompliant (neither vaccinated or exempt)	8 (0.03)
Total employees	25,980

Babcock H M et al. Clin Infect Dis. 2010;50:459-464

Clinical Infectious Diseases

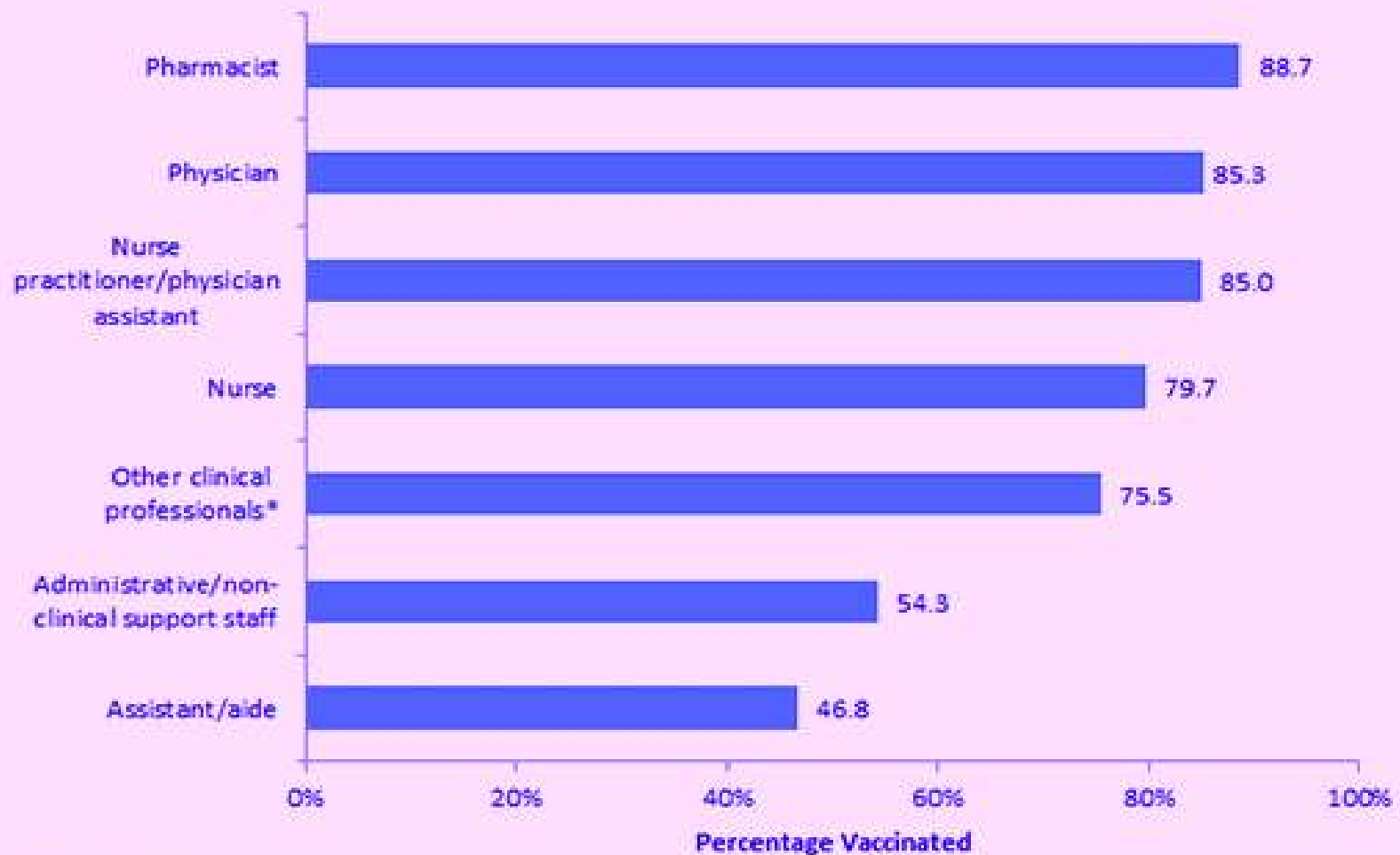


Influenza Vaccination Rates



Rakita RM, et al. Mandatory influenza vaccination of healthcare workers: a 5-year study. *Infect Control Hosp Epidemiol.* 2010;31:881-8

Flu Vaccination Coverage among Health Care Personnel by Occupation, Early-November 2012, United States



Source: CDC, 2012.

解構肺炎數字密碼

2012年肺炎躍升至本港第二號殺手



18% 兒童
死因與肺炎有關

注射疫苗
可預防
發病率達 **80%**

50歲 以上患者
死亡率較
其他患者高 **一倍**

40% 幼童
是肺炎帶菌者

平均每日有
150人
因肺炎而留醫

平均
每日奪
17命

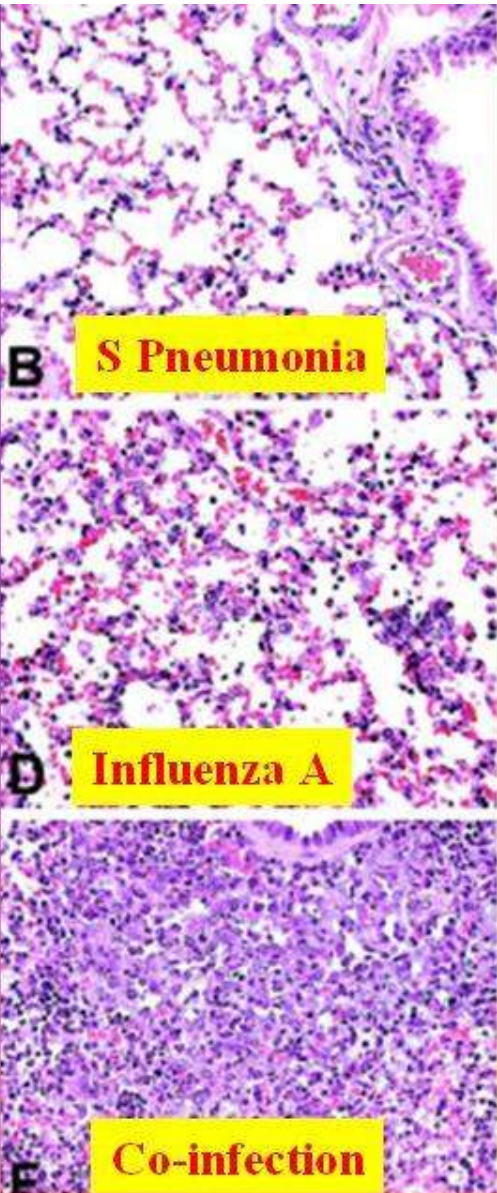
**兒童與長者屬高危人士，
疫苗接種不容忽視！**

康
Coca-Cola Interactive

For more, visit www.cou4.com

Reference: 香港醫學會
衛生防護中心

Streptococcus Pneumoniae Vaccination



B

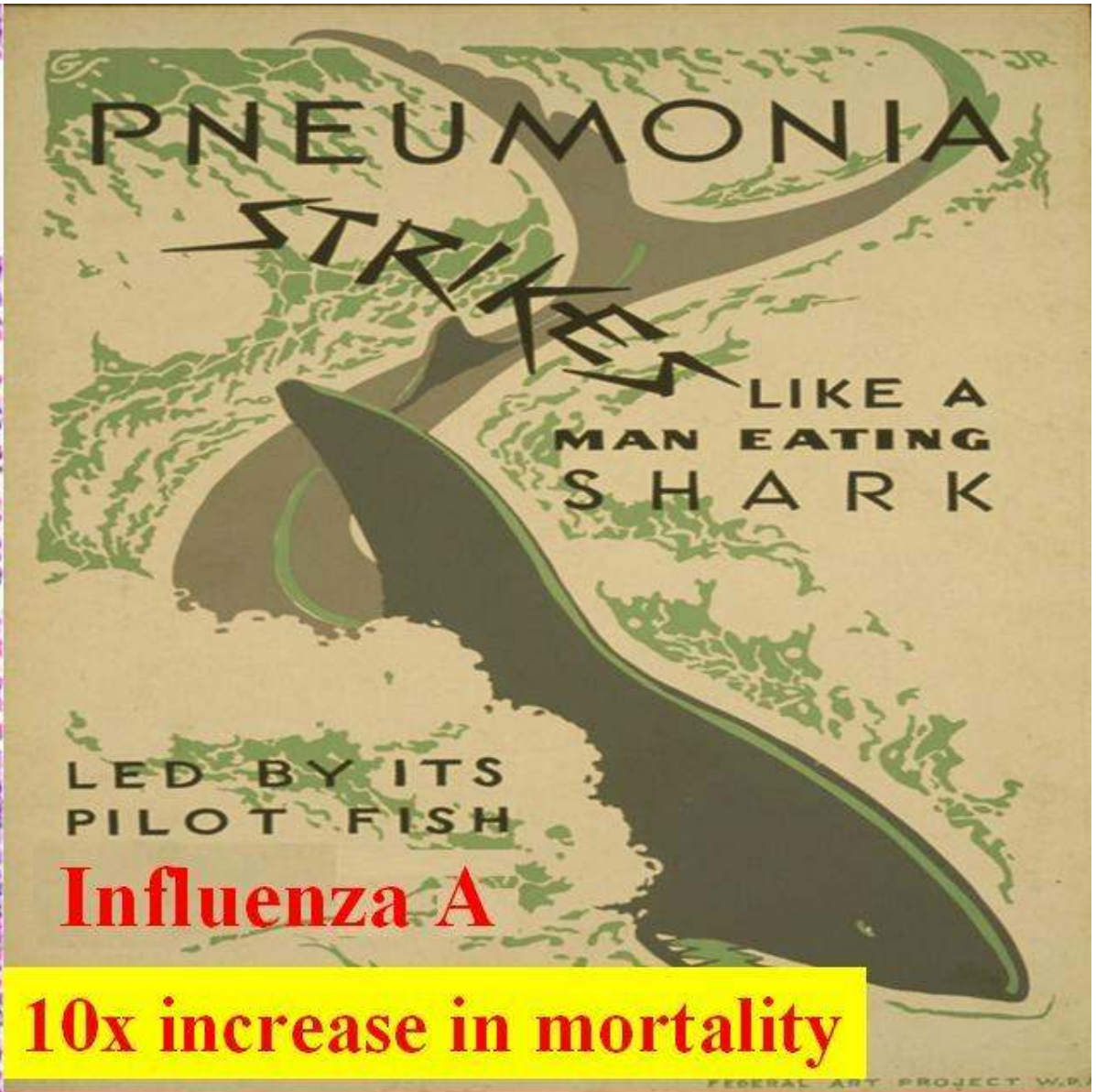
S Pneumonia

D

Influenza A

E

Co-infection



Influenza A

10x increase in mortality



Predominant pathogens responsible for bacterial co-infection during pandemic

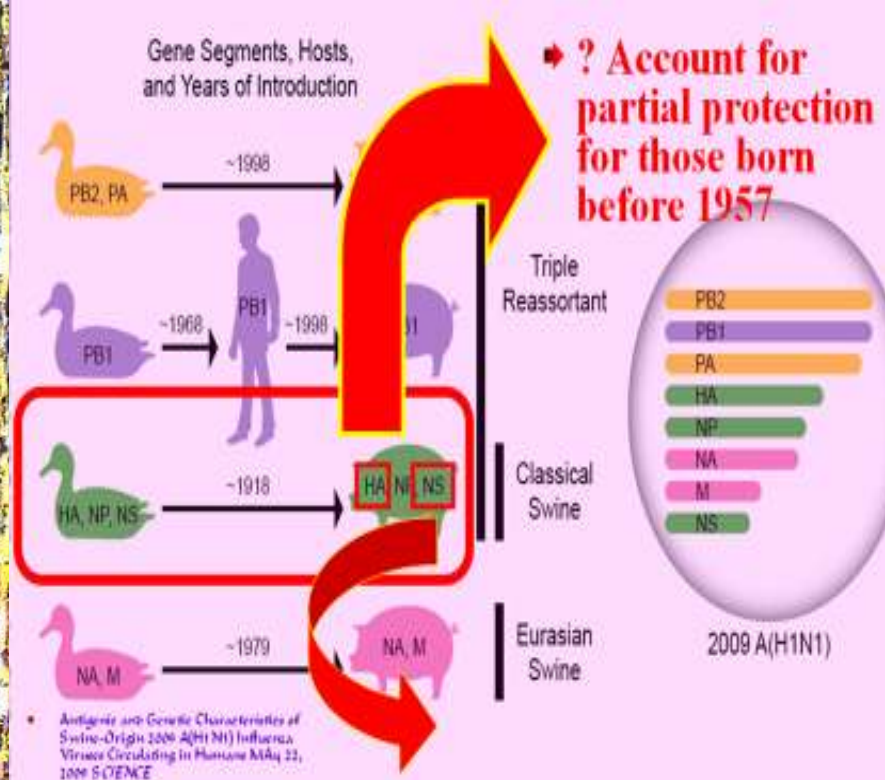
Pandemic	Predominant pathogen for bacterial co-infection
1918	<i>S pneumonia</i> (24%), <i>H. influenza</i> (10%) and <i>S pyogenes</i> (17%)
1957	<i>S. Aureus</i> (69%)
1968	<i>S. Pneumoniae</i> (48%) <i>S. Aureus</i> (26%) <i>H. Influenza</i> (11%)

Pandemic outbreak of Panton-Valentine leukocidin (PVL)-positive penicillin resistant *S. aureus* (Phage Type 80/81) in 1954- 1957 causing a high frequency of skin and soft tissue infections, sepsis and pneumonia in healthy children and young adults.

In the three pandemic of the 20th century, bacterial pneumonia was estimated to develop in 15-20% of influenza patients.

Mortality (Age Distribution and Sex Ratio)

Mexico



♦ ? Account for partial protection for those born before 1957

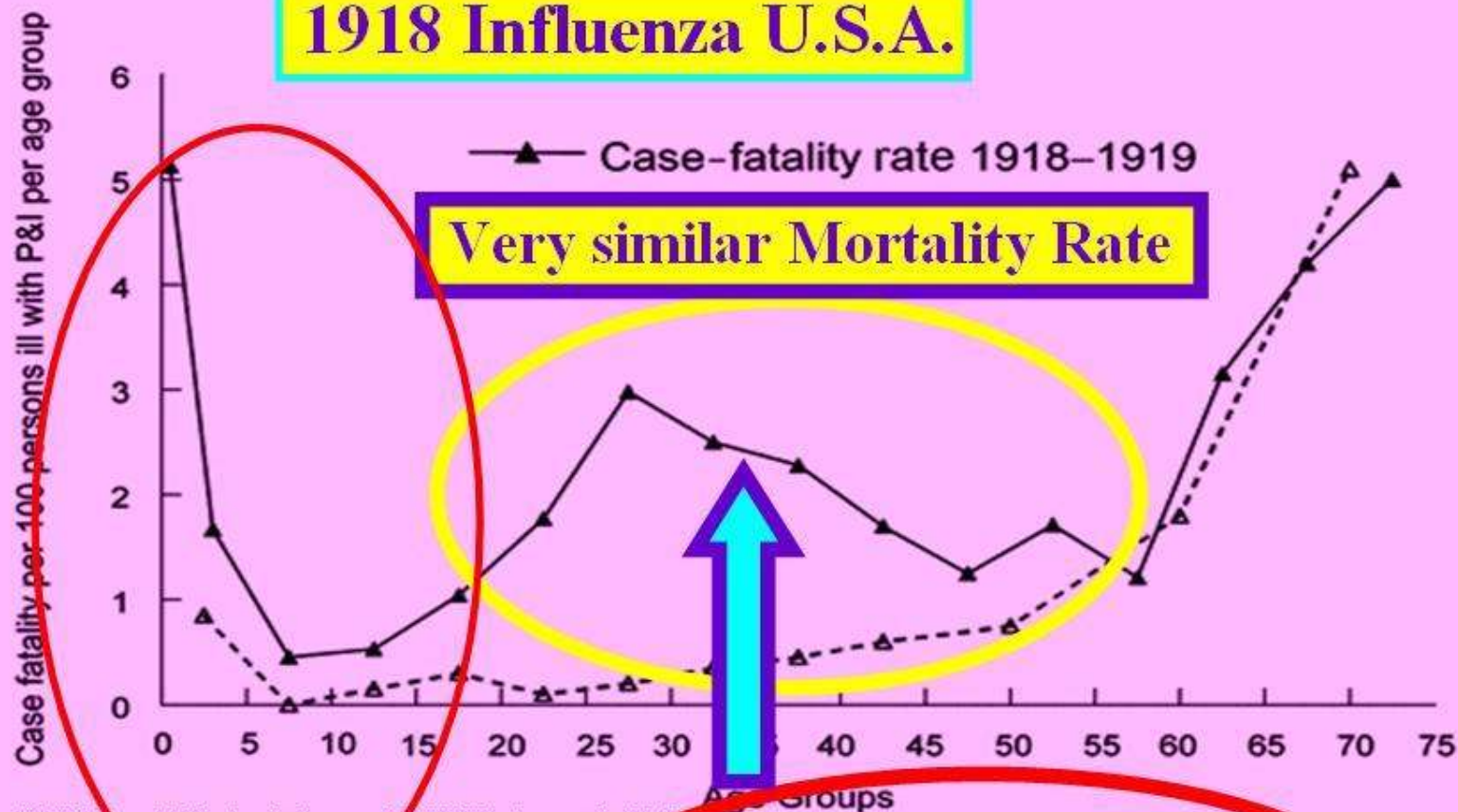
		%
< a 1	2	2.5%
1 a 4	2	2.5%
5 a 9	3	3.8%
10 a 14	3	3.8%
15 a 19	1	1.3%
20 a 24	11	13.8%
25 a 29	12	15.0%
30 a 34	8	10.0%
35 a 39	11	13.8%
40 a 44	6	7.5%
45 a 49	7	8.8%
50 a 54	7	8.8%
55 a 59	3	3.8%
60 a 64	1	1.3%
65 a 69	0	0.0%
70 a 74	1	1.3%
75 y más	2	2.5%
Totales	80	100.0%

77.5%

♦ Suppression of innate immune response leading to initial rapid proliferation of influenza virus and severe mucosal damage

Novel H1N1 Outbreak in Mexico

1918 Influenza U.S.A.



CDC Volume 12, Number 1, January 2006 1918 Influenza: the Mother of All Pandemics Jeffrey K. Taubenberger* and David M. Morens

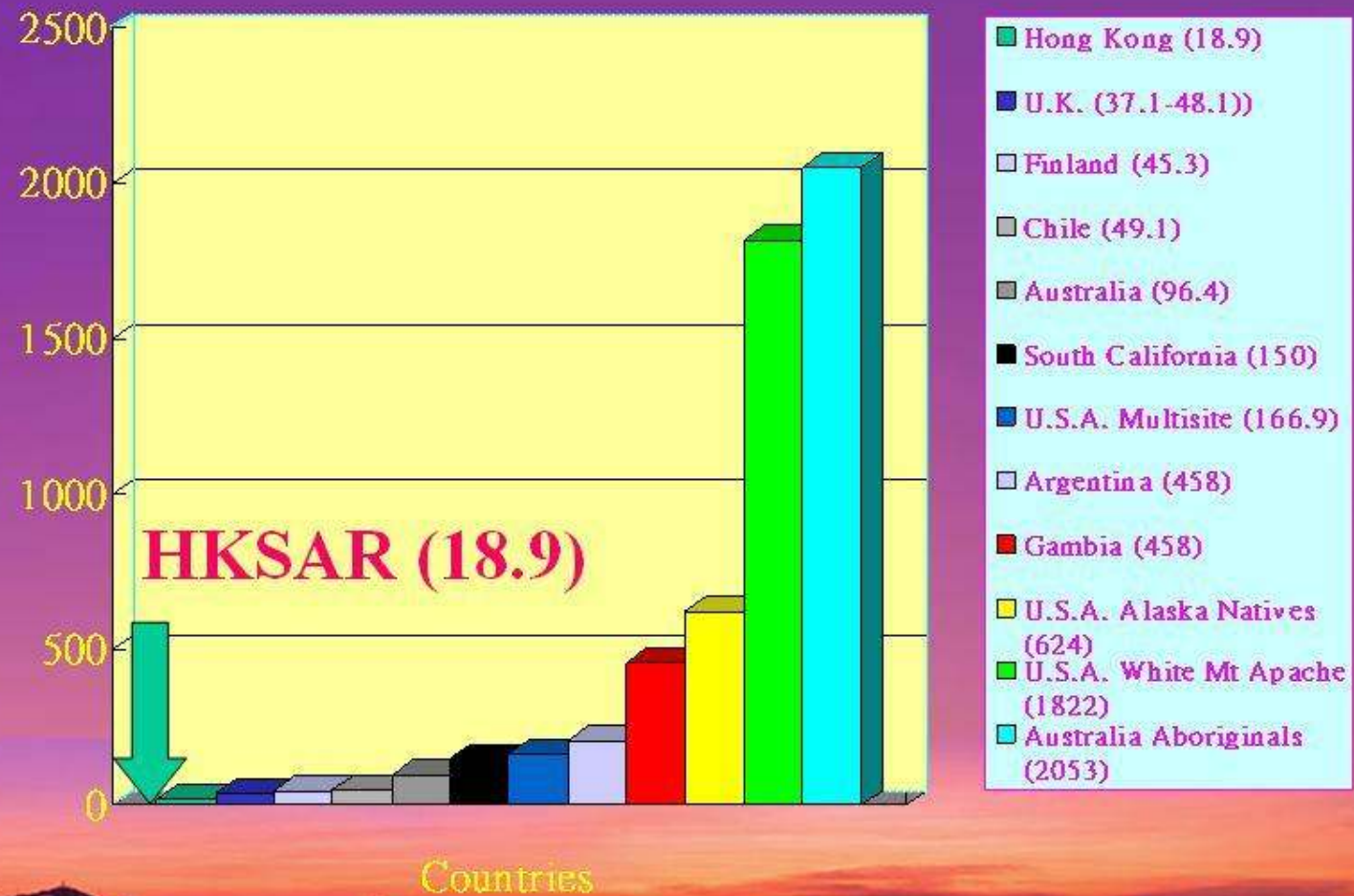
Mexico	0.6%	0.38%	2.74%	4.06%	3.8%	5.0%	5.1%
Age	0-9	10-19	20-29	30-39	40-49	50-59	60+

? Protected by Immunization Program with major reduction in mortality

Born before 1957
Partially protected by previous exposure

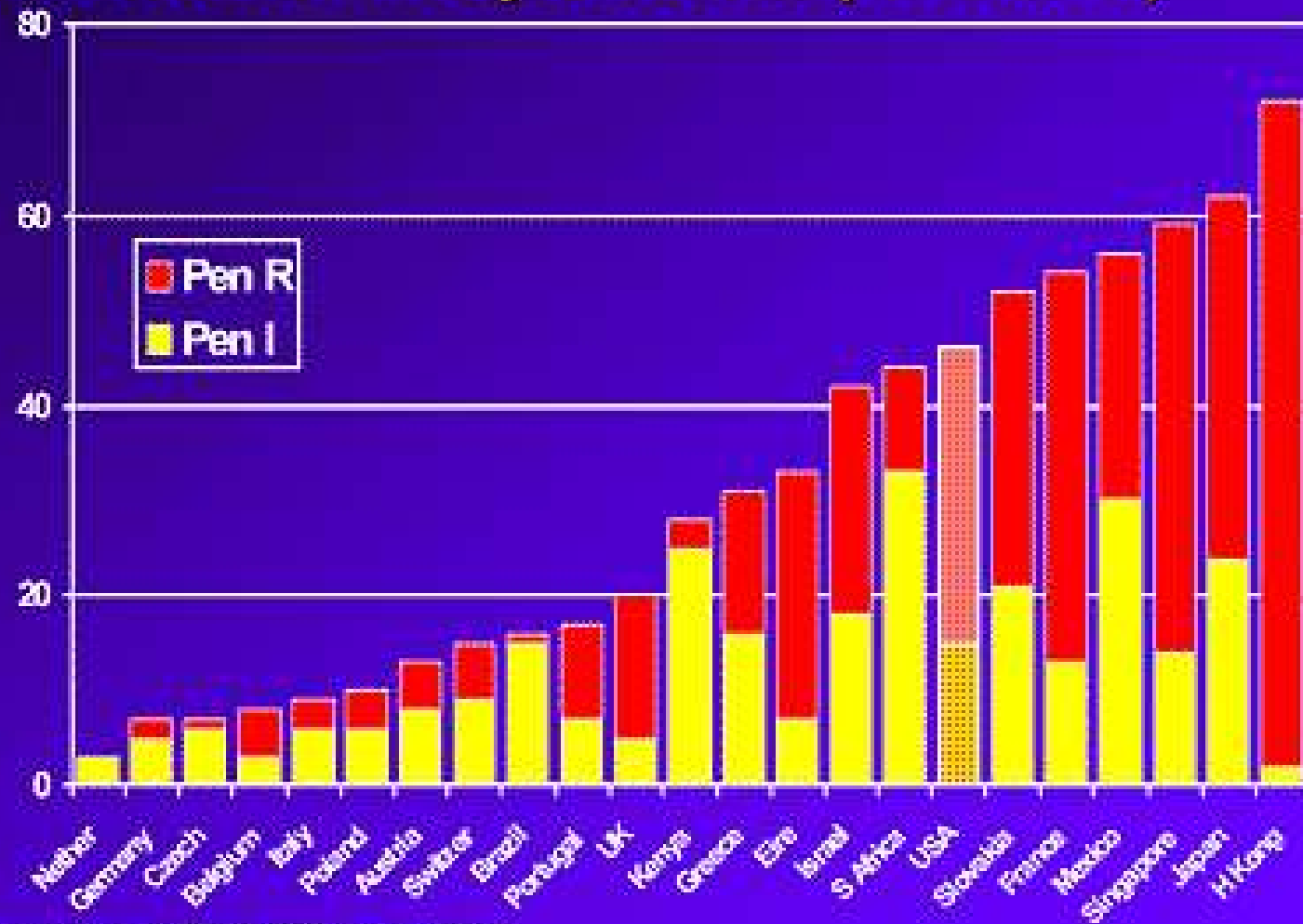
Incidence of Invasive Pneumococcal Disease in children <2 years old

Incidence, cases per one hundred thousand population



Cortese MM *Arch Intern Med* 1992; Eskola J *JAMA* 1992; Davidson M *JID* 1994; Torzillo PF *Med J Austr* 1995; O'Dempsey TJ *PIDJ* 1996; Levine MM *PIDJ* 1998; Robinson KA *JAMA* 2001; Berkley *NEJM* 2005; P. L. Ho, et al, *The Paediatric Infection Disease Journal*, Vol 25 (5) 454-455 May 2006

Penicillin Resistance: *S pneumoniae* Alexander Project 1998 (n = 4017)



Jacobs et al, ICAAC 1999, poster #1044



Time Table	Pneumococcal Vaccination Program in Hong Kong
9/3/2009	PCV7 vaccination for children < 2yr passed in Legco
29/4/2009	WHO raised the influenza <u>pandemic</u> alert from phase 4 to <u>phase 5</u>
3/5/2009	Lobby QEH to provide pneumococcal vaccination to ICU staffs during novel 2009 H1N1 pandemic
4/5/2009	Dr. C.T. Hung → Dr. P.Y. Leung → Dr. Thomas Tsang CHP → Agree to discuss CCIDER
14/5/2009	Task Force on Human Swine Influenza explaining (a) Importance of pneumococcal vaccination in pandemic situation (b) Suboptimal coverage of pneumococcal strains by PCV7 in Hong Kong
18/5/2009	1st letter CHP, HWB, Legco and Exco
24/5/2009	2nd letter CHP, HWB, Legco and Exco Letter to Premier Wen Jiabao (溫家寶) to inform implication to China
31/5/2009	3 rd letter CHP, HWB, Legco and Exco informing we are already in second wave because NS of novel 2009 H1N1 come from Spanish 1918 H1N1 (NEJM 28/5/09 H1 NS and NP from 1918)
9/6/2009	The Exco passed Pneumococcal Vaccination Program for adults
19/6/09	LegCo approved pneumococcal vaccinations program for adults
2/7/2009	Pneumococcal vaccination to at risk staff started
19/10/2009	Pneumococcal vaccination to at risk public

長者接種
肺炎球菌疫苗
Pneumococcal Vaccination for Elders

能保障健康
Protect health
19/10/2009



長者較易因感染肺炎球菌引致嚴重疾病，
例如肺炎、敗血病和腦膜炎等。
故此年屆65歲或以上的長者*
而又從未接種肺炎球菌疫苗，
便應接種疫苗一次，以保障健康！

Elders are at a higher risk of developing severe disease from pneumococcal infection,
e.g. infection of the lungs, blood stream and membranes of the brain, etc.
Hence, elderly persons aged 65 or above*
who have never had pneumococcal vaccination before
should get vaccinated once to protect your health!

「長者疫苗資助計劃」* 和「政府防疫注射計劃」查詢：
Enquiry on Elderly Vaccination Subsidy Scheme*
and Government Vaccination Programme:

*Hong Kong residents aged 65 or above this year
*今年屆滿65或以上香港居民

2125 2125
www.chp.gov.hk



AGE	Immunisation RECOMMENDED
Newborn	B.C.G. Vaccine Hepatitis B Vaccine - First dose
1 month	Hepatitis B Vaccine - Second dose
2 months	DTaP-IPV Vaccine - First Dose Pneumococcal Vaccine - First Dose
4 months	DTaP-IPV Vaccine - Second Dose Pneumococcal Vaccine - Second Dose
6 months	DTaP-IPV Vaccine - Third Dose Pneumococcal Vaccine - Third Dose Hepatitis B Vaccine - Third Dose
1 year	MMR Vaccine (Measles, Mumps & Rubella) - First Dose Pneumococcal Vaccine - Booster Dose
1 1/2 year	DTaP-IPV Vaccine - Booster Dose
Primary 1	MMR Vaccine (Measles, Mumps & Rubella) - Second Dose DTaP-IPV Vaccine - Booster Dose
Primary 6	dTap-IPV Vaccine - Booster Dose

9/2009

兒童疫苗資助計劃（補種十三價疫苗）
Childhood Vaccination Subsidy Scheme
(PCV13 booster)



年齡介乎兩歲至五歲以下
(即二〇〇八年十一月二十六日或以後出生)
而從未接種十三價肺炎球菌結合疫苗的兒童

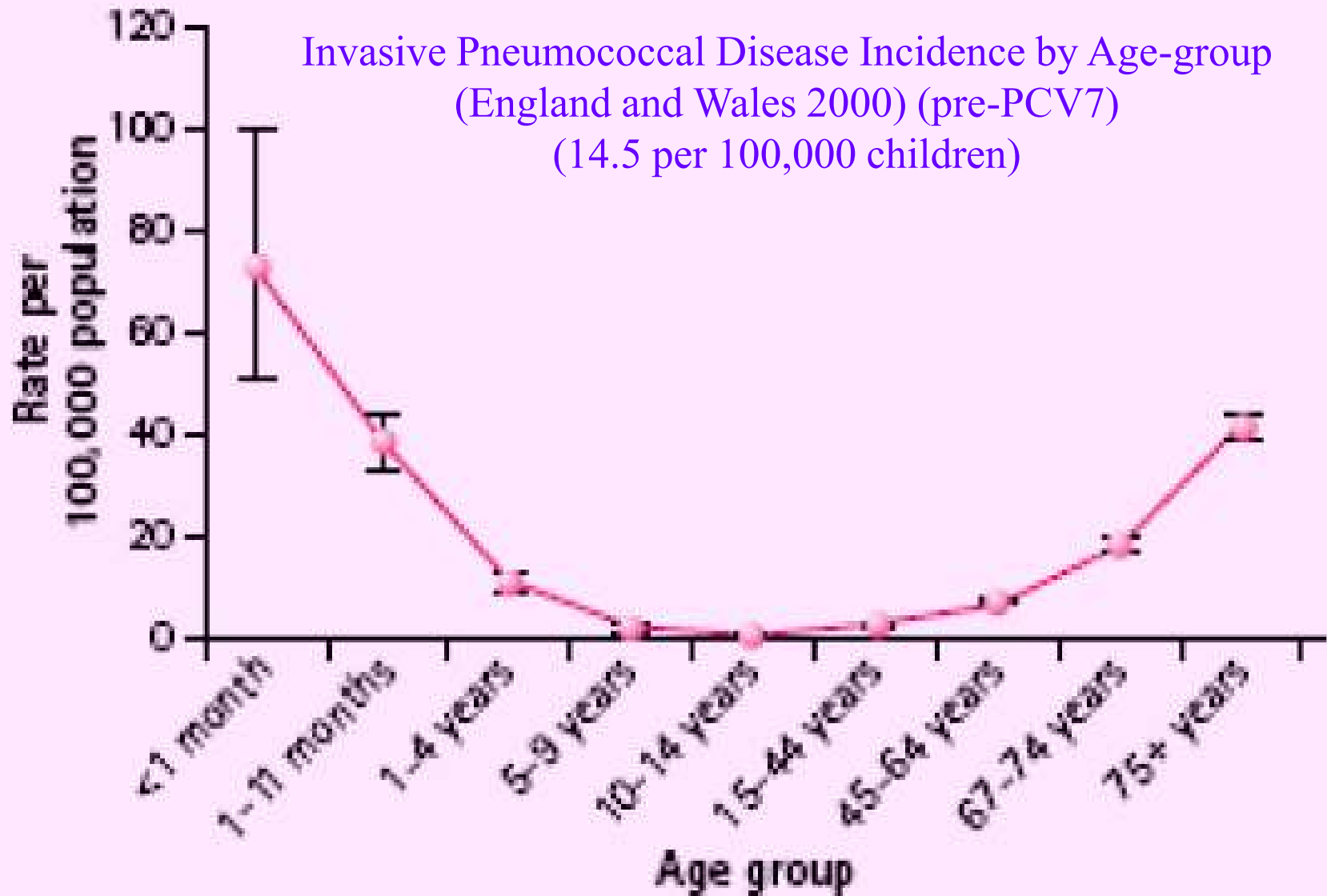
Children aged from 2 to under 5 years old
(born on or after 26 November 2008)
and have never received 13-valent Pneumococcal Conjugate Vaccination

接種日期 : 由即日起至2014年6月30日
Vaccination Period : From now till 30 June 2014

2/12/2013

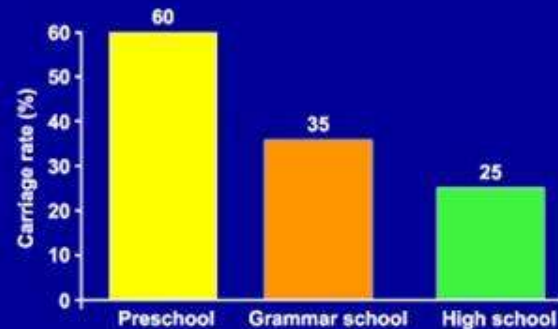
Pneumococcal Immunization Program in Hong Kong

Invasive Pneumococcal Disease Incidence by Age-group
(England and Wales 2000) (pre-PCV7)
(14.5 per 100,000 children)



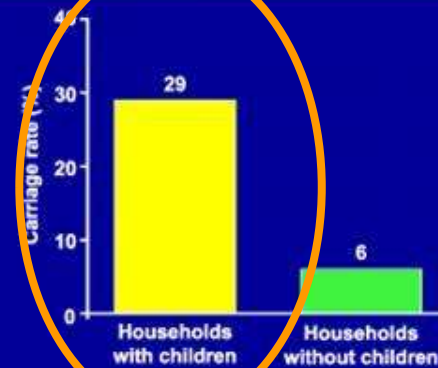
Nasopharyngeal carriage of pneumococcus

Paediatric Carriage Rates



Fedson DS et al. *Vaccine*. 3rd ed. Philadelphia, Pa: WB Saunders; 1999:553-607.

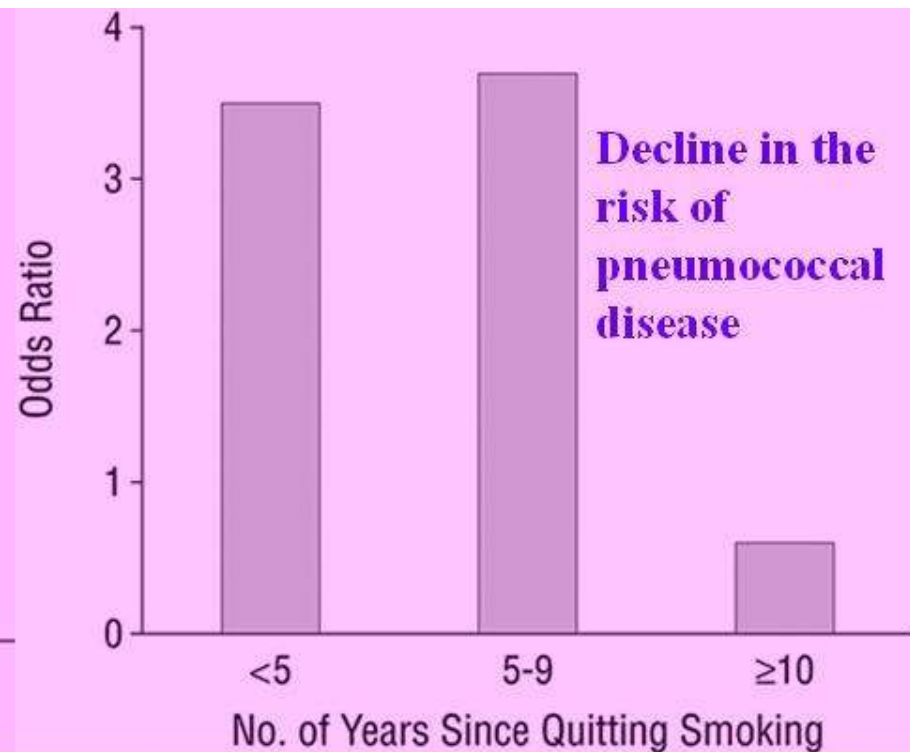
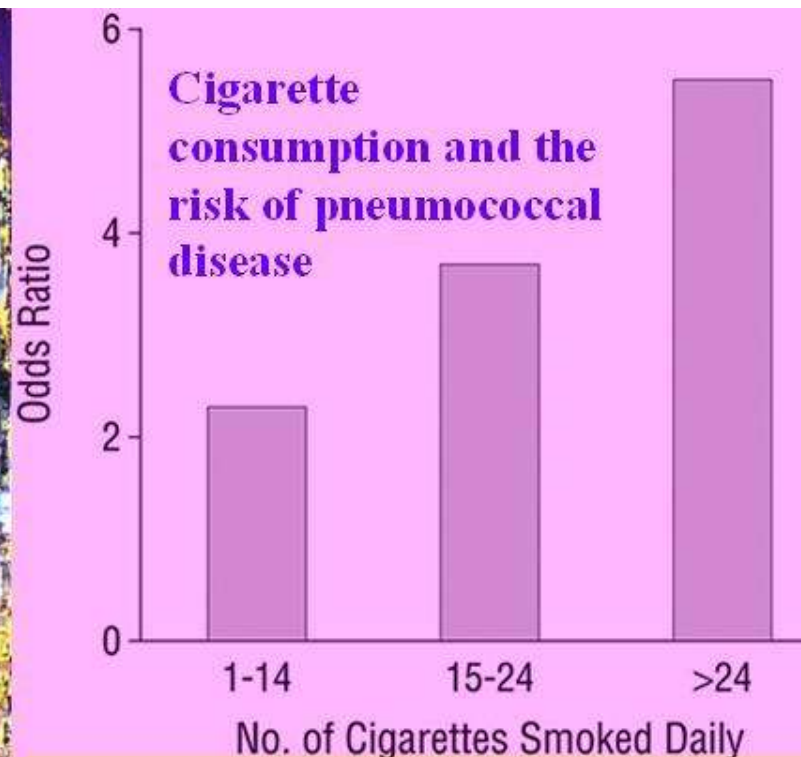
Adult NP Carriage Rate



Fedson DS et al. *Vaccine*. 3rd ed. Philadelphia, Pa: WB Saunders; 1999:553-607.

Patients with high risk of co-infection during pandemic influenza

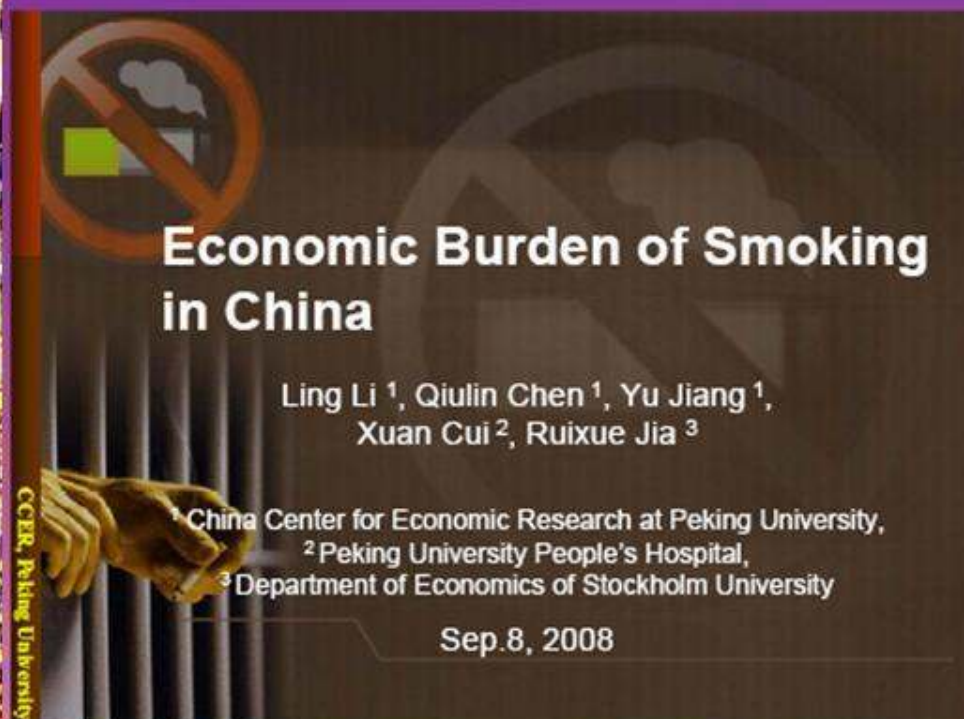
Co-infection would increase mortality 10x



Nuorti JP, Butler JC, Farley MM, et al, Active Bacterial Core Surveillance Team. Cigarette smoking and invasive pneumococcal disease. *N Engl J Med* 2000;342:681-689.

Cigarette smoking cause activation of platelet-activating factor facilitating attachment and invasion of cells by pneumococcal strains. This may contribute to the increased incidence of bacterial superinfection in people who develop influenza.

Implication of Smoker Population in China in Influenza Pandemic



© **Smoker: 350 million,**

♦ **man 320 million**

♦ **woman 30 million**

© **Passive smoking: 540 million**

© **Death of smoking every year:**

♦ **about 1 million**

© **Death of passive smoking every year: 100 thousand**

© **Smoking rate of adult man: 57%**

© **Smoking rate of adult woman: 8%**

- ➡ **China has the largest number of smokers in the world**
- ➡ **Three out of every 10 cigarettes produced globally are smoked in China.**



Smoker Population Statistics

(Smoking Rate Hit 30 Year Low In H. K.)

W.H.O.	Youth (13-15)		Adult (15-60)	
	Male	Female	Male	Female
2008				
China	7.1%	4.1%	57.4%	2.6%
HKSAR	Not Available		19.9% (2010)	3.0% (2010)
U.S.A.	20.7%	16.2%	20.6%	15.5%
Mexico	29.4%	24.8%	21.6%	6.5%



The additive benefits of influenza and pneumococcal vaccine during influenza seasons among elderly persons with chronic lung diseases. Nichol K.L. Vaccine 1999 17:S91-S93

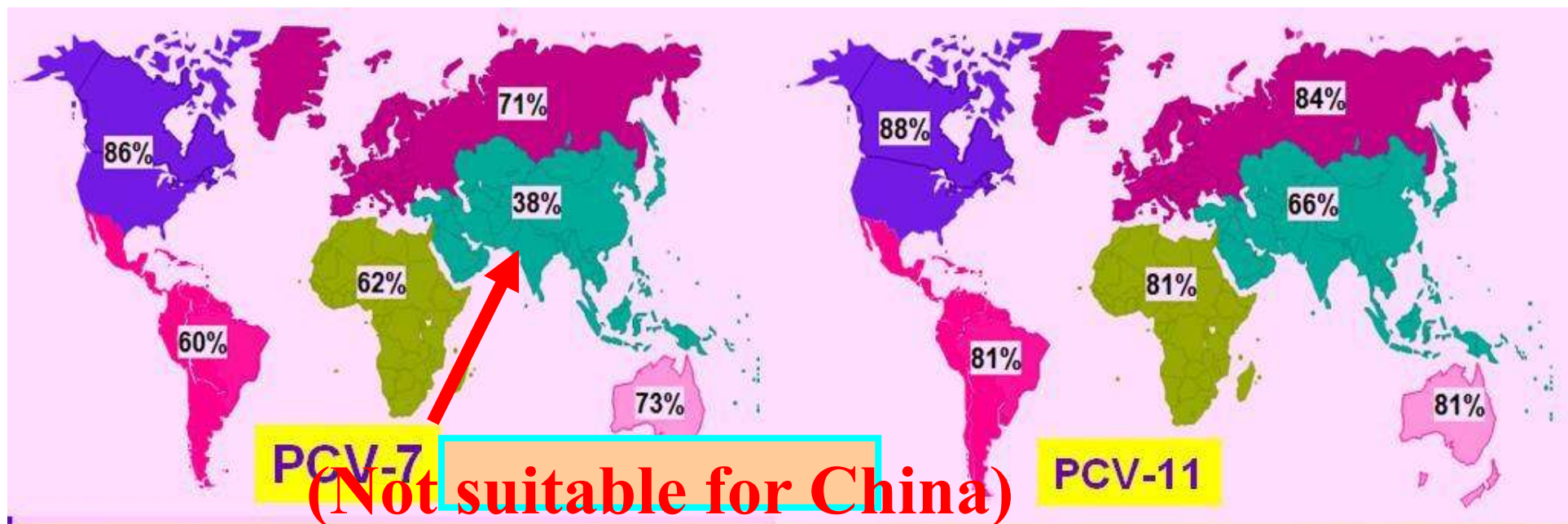
	Hospitalization (% reduction)	Death (% reduction)
Influenza Vaccine alone	52%	70%
Pneumococcal vaccine alone	27%	34%
Influenza + pneumococcal vaccine	64%	81%

You need Pneumococcal vaccination once.
You need Influenza vaccination yearly !

世事有得有失 香港以身証之

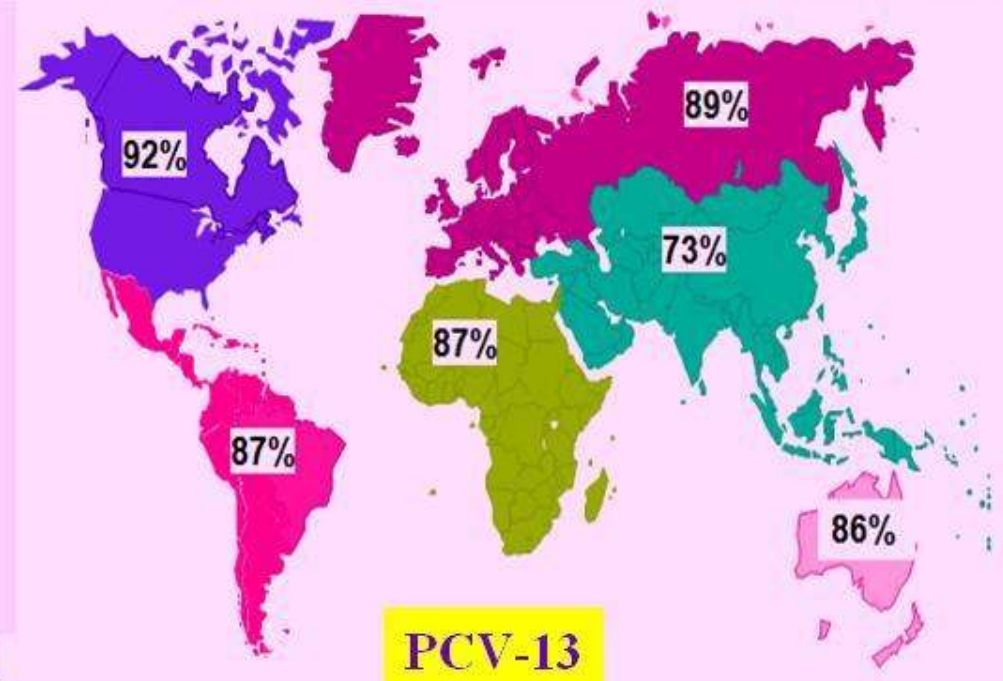
The incidence of invasive
pneumococcal disease and
penicillin resistant pneumococcus





➤ Proportion of pediatric pneumococcal disease prevented by PCV

- There are 90 serotypes of the pneumococcus each of which has a different polysaccharide capsule. Even though there are a total of 90 serotypes, **88% of global disease is caused by 23 serotypes**, and **only 11 serotypes account for greater than 80% of disease in children under five.**



Impact of Conjugate Vaccine on Pneumococcal Epidemiology

summary

- Large decline in invasive disease rates in young children
- Reduction in Nasal Carriage
-  Herd benefit in unvaccinated children and adults
- Indirect benefit in older children and adults
- Fewer antibiotic resistant infections



Table 1. Proportion of IPD caused by serotypes covered by different PCVs for all ages (2007 to November 2013).

All ages	2007	2008	2009	2010	2011	2012	2013 (till 10 Nov)
PCV7	45%	53%	52%	47%	40%	28%	29%
PCV10	51%	58%	53%	49%	43%	30%	29%
PCV13	74%	77%	79%	78%	81%	71%	63%

PCV 7 covers serotypes 4, 6B, 9V, 14, 18C, 19F and 23F.

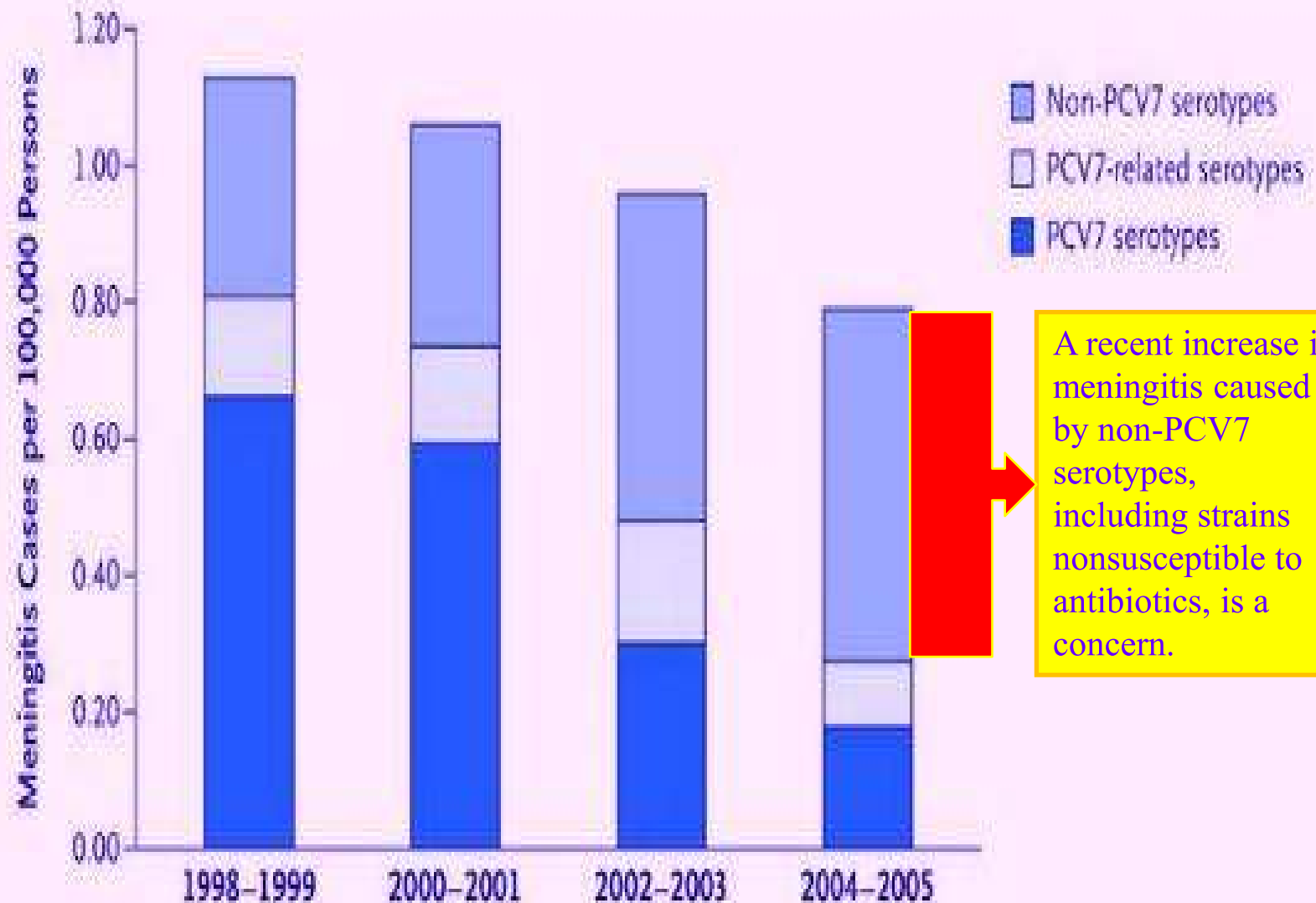
PCV10 contains all PCV7 serotypes and serotypes 1, 5 and 7F.

PCV13 covers all serotypes in PCV10 and serotypes 3, 6A and 19A.

Table 2. Proportion of IPD caused by serotypes covered by different PCVs for under 5 years old (2007 to November 2013).

Under 5 years old	2007	2008	2009	2010	2011	2012	2013 (till 10 Nov)
PCV7	58%	74%	70%	47%	38%	8%	18%
PCV10	68%	74%	70%	47%	38%	8%	18%
PCV13	79%	95%	100%	93%	90%	54%	73%

Serotype Replacement – T cell Vs B cell response

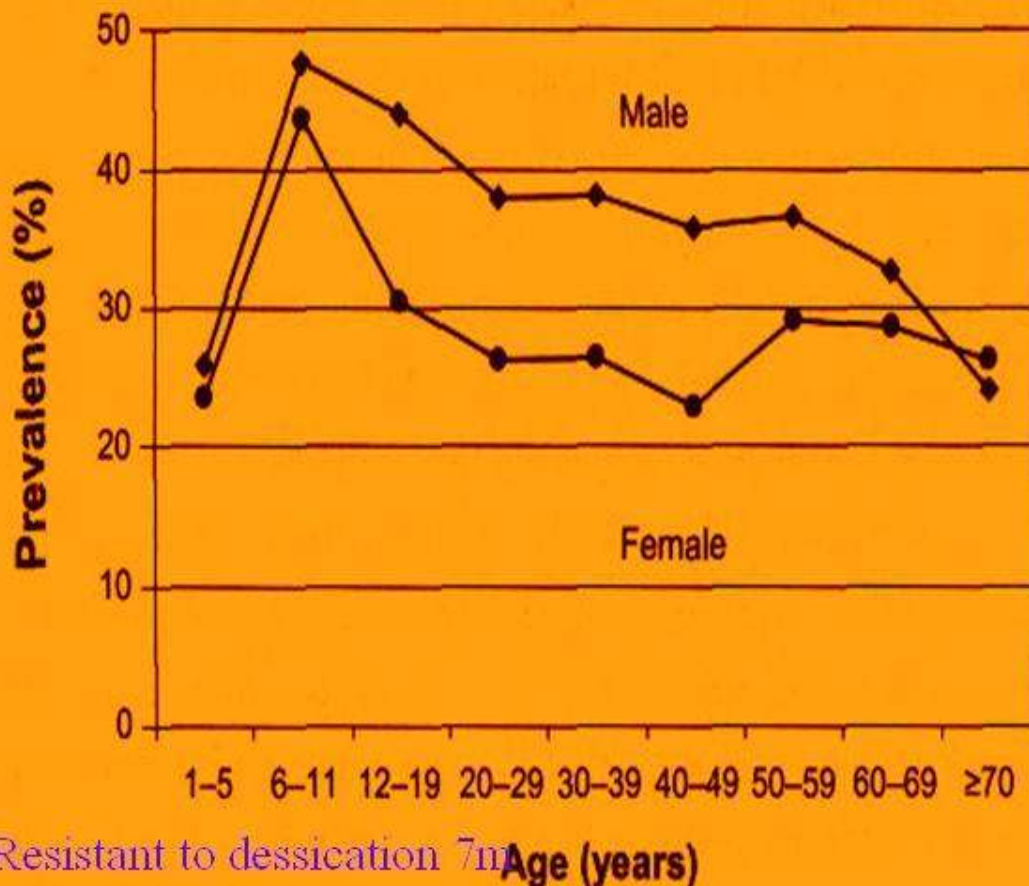


Hsu HE, et al. Effect of pneumococcal conjugate vaccine on pneumococcal meningitis. N Engl J Med. 2009 ;360(3):244-56.

Prevalence of Staphylococcus aureus nasal colonization, by age and sex

National Health and Nutrition Examination Survey, 2001-2002.

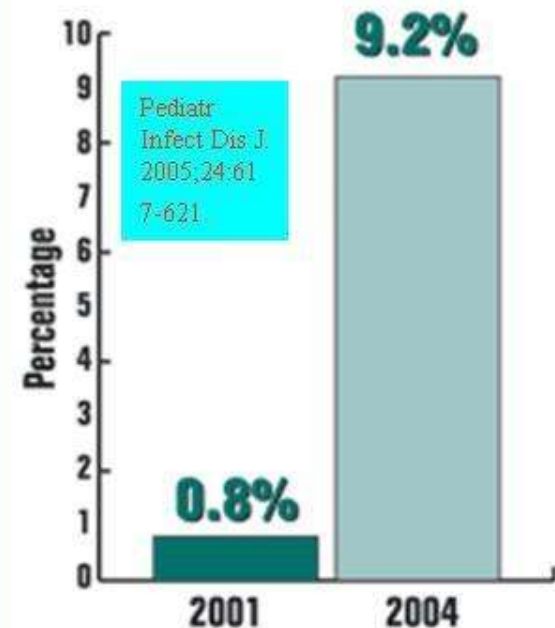
75/10000 (0.8% of the total) harbored MRSA



Resistant to dessication 7m

DM, chronic skin conditions, IV addict and dialysis patients

Nasal Carriage of MRSA in Nashville

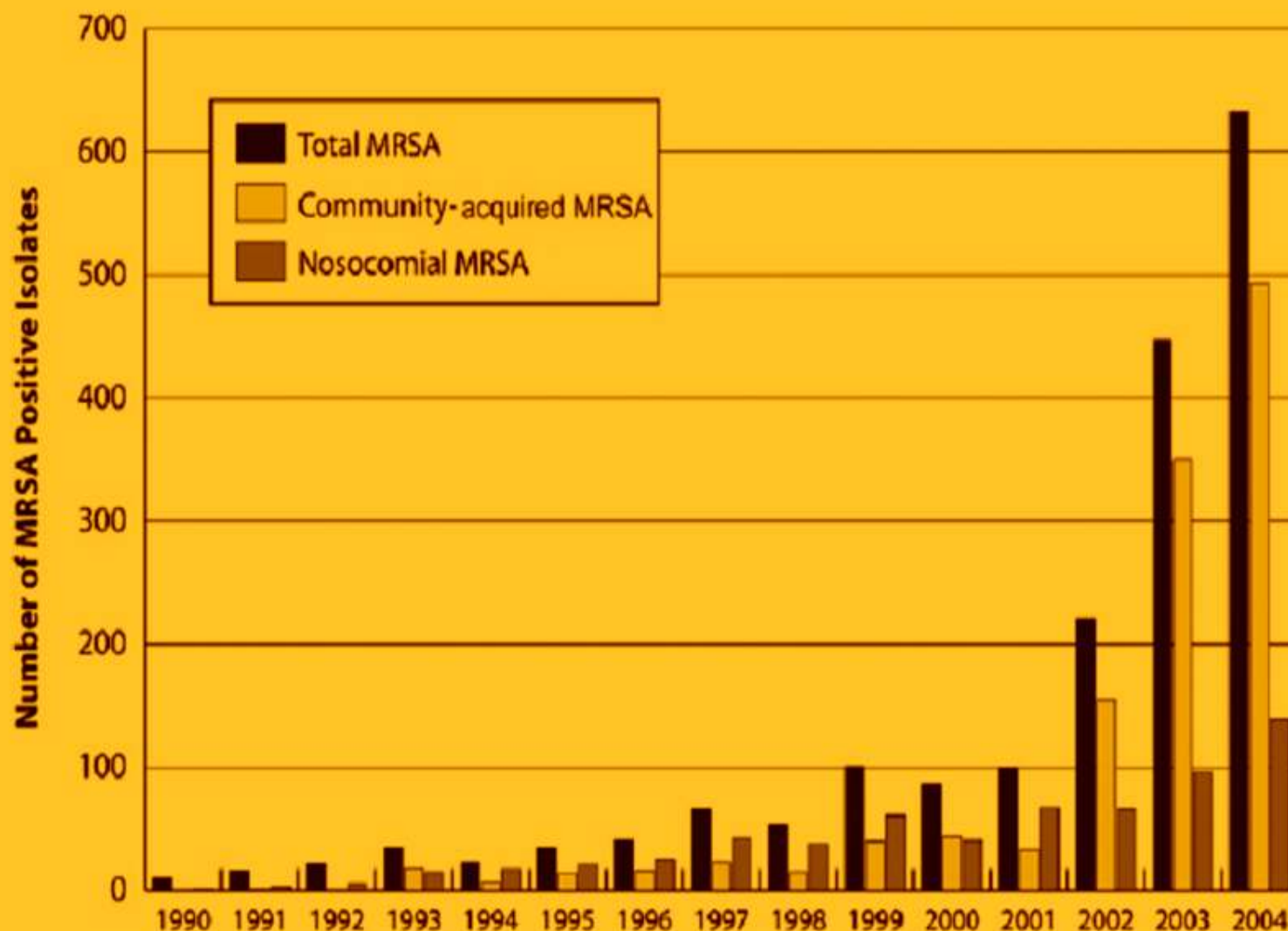


In the 2001 study, the researchers demonstrated that the nasal carriage rate of MRSA in children in Nashville was 0.8%. The follow-up study conducted three years later found that the pediatric carriage rate of MRSA in Nashville to be 9.2%, a tenfold increase since 2001.



Changing Epidemiology of MRSA /

Crum et al. Am. J. Med 2006





Location of death ($n = 823^b$)	
Admitted to hospital	537 (65)
Emergency department	151 (18)
Outside hospital	135 (16)
Duration of illness, median (IQR) ($n = 798^b$), d	5 (3–12)
≤3 days	266 (33)
≤7 days	500 (63)
One or more bacterial pathogen identified from normally sterile site ($n = 387^b$)	154 (40)
<i>Staphylococcus aureus</i> ($n = 154^c$)	76 (49)
Methicillin-resistant <i>S aureus</i>	48 (31)
Methicillin-sensitive <i>S aureus</i>	23 (15)
Sensitivity testing not performed	5 (3)
<i>Streptococcus pneumoniae</i>	22 (14)
Complications during acute illness ($n = 769^b$)	
Pneumonia	389 (51)
Acute respiratory distress syndrome	235 (31)
Seizures	83 (11)
Encephalopathy/encephalitis	68 (9)
Viral coinfection	39 (5)

Wong KK, Jain S, Blanton L, et al. Influenza-associated pediatric deaths in the United States, 2004-2012. *Pediatrics*. 2013 Nov;132(5):796-804.

Staphylococcus aureus

Penicillin G introduced
in the 1940s.



Acquisition of a **plasmid gene** carrying the
enzyme **penicillinase** which hydrolyses and
destroys Penicillin G.

Methicillin (1959) Sensitive *Staphylococcus aureus*

Introduction of cloxacillin in
1960s



Pandemic outbreak of Panton-Valentine leukocidin
(PVL)-positive penicillin resistant *S. aureus* (Phage
Type 80/81) in 1954- 1957 causing a high
frequency of skin and soft tissue infections, sepsis
and pneumonia in healthy children and young adults.

Methicillin Resistance *Staphylococcus aureus*

(1961 U.K. 1968 U.S.A.)

Acquisition of **staphylococcal
cassette chromosomal mobile
gene SCC mecA in type I-III** that
encodes a **transpeptidase PBP2a**
(role in bacterial cell wall
synthesis) with poor affinity for
all beta-lactam antibiotics
including methicillin or cloxacillin.

HA-MRSA

(30% MRSA
rate in HA
Hospitals)

Vancomycin (1958)



Vancomycin Resistance *Staphylococcus aureus* (2002)

1993 Aborigines of
Western Australia
USA 1997
Europe 1999
HKSAR 2004

CA-MRSA

Genes carrying a virulent factor called
Panton Valentine Leukocidin (PVL)
and the gene cassettes called **SCCmec
type IV and type V7**.

► **Necrotizing pneumonia during
H1N1 2009 pneumonia**

CDC

Patient Safety

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES

CLEAN HANDS SAVE LIVES

Protect patients, protect yourself



Alcohol-rub or wash
before and after *EVERY* contact.



Clean Hand Habit Save Our Lives
During H7N9 Pandemic!!

Hand Hygiene Technique:

1



Palm to palm

2



Right palm over left
dorsum with interlaced
finger & vice versa

3



Palm to palm with
fingers interlaced

4



Backs of fingers to
opposing palm with
fingers interlocked

5



Rotational rubbing of right
thumb clasped over left
palm & vice versa

6



Rotational rubbing
backwards and forwards
with clasped fingers of right
hand in left palm & vice versa

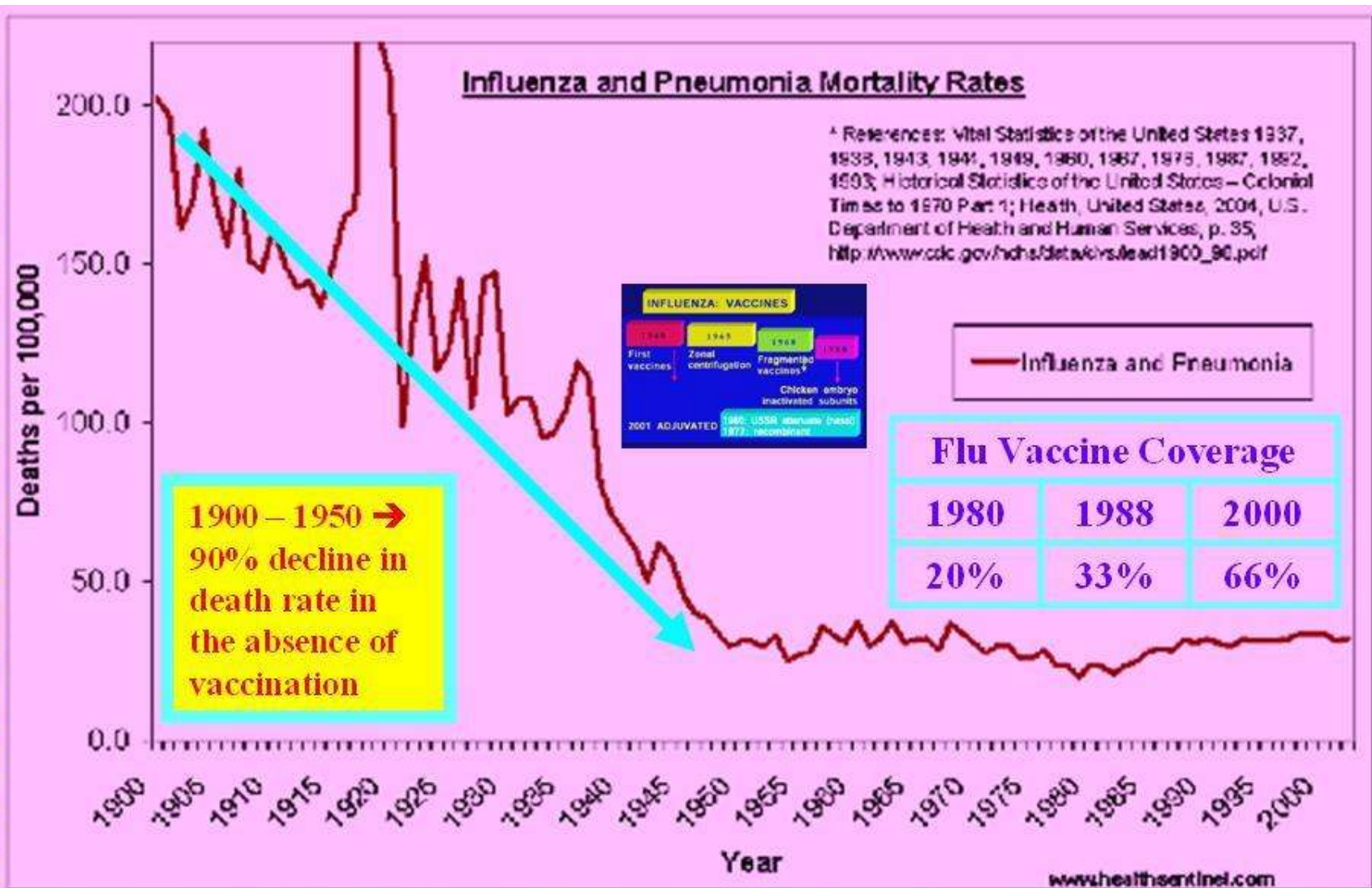
7



Wrists are rubbed



Clean Hands Reduce Transmission of Influenza
Transmission via fomites serve as an important
mechanism for spread of influenza in Hong Kong !



Major reduction in flu deaths depends on sanitation, nutrition and basic healthcare

Last But Most Important of ALL

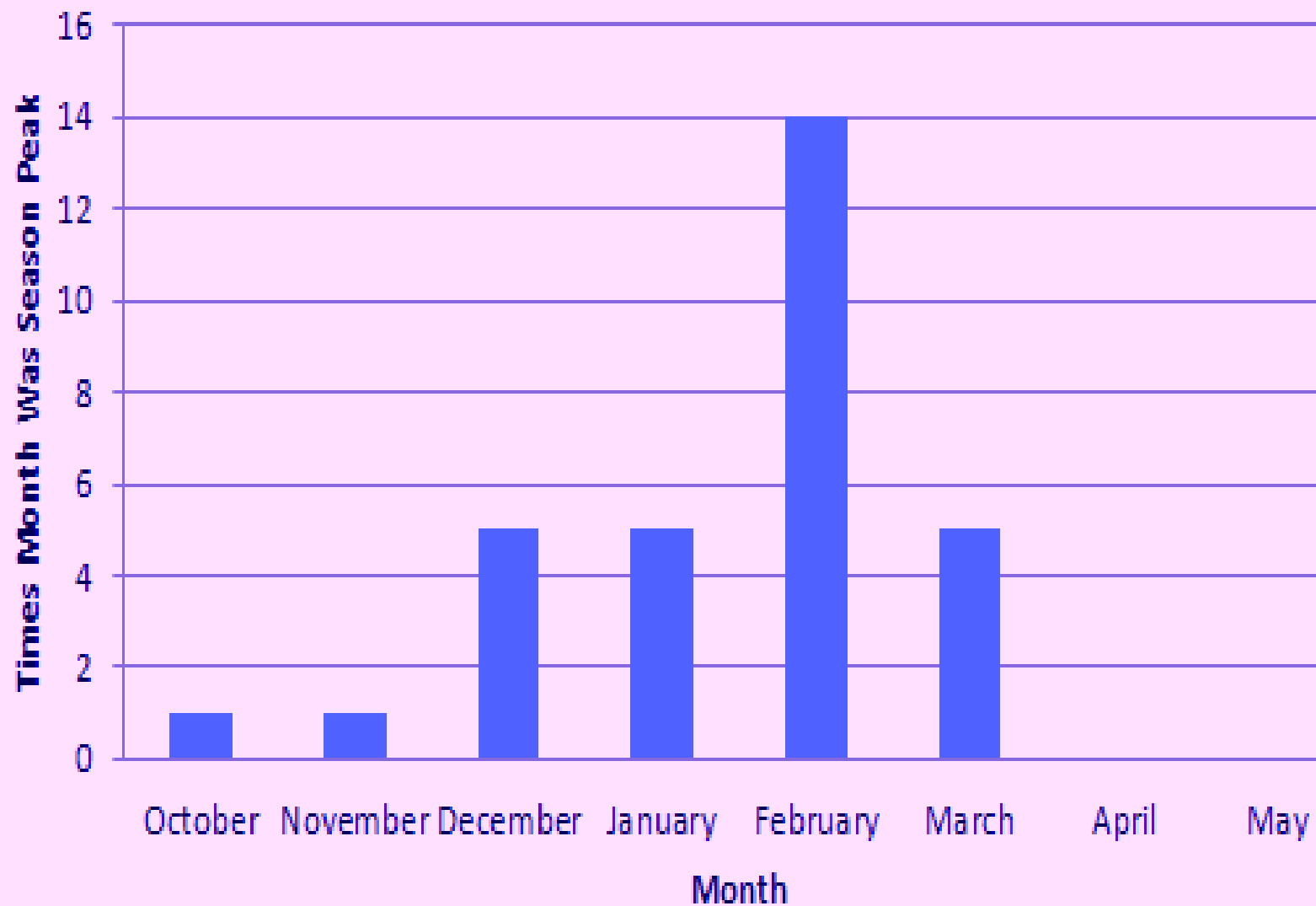
- In temperate region influenza spread by aerosols (dry and cool winter)



- In tropical region influenza spread by contact or formites

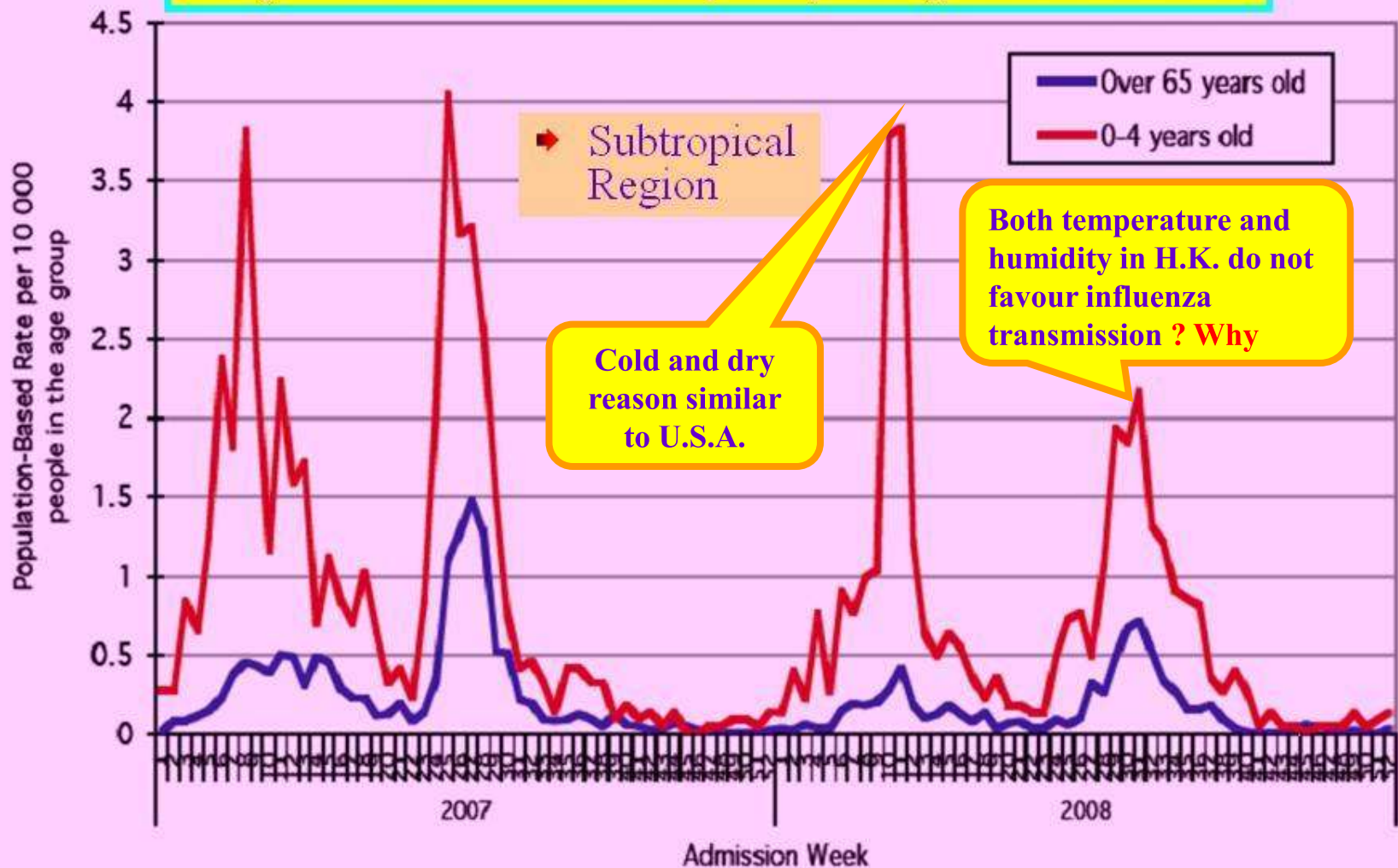
- Predominant mode of influenza virus spread differs between temperate and tropical regions: aerosol transmission plays a major role in temperate climates, while contact or close-range spread are more important in the tropics.
- Transmission by the aerosol route is sensitive to RH and temperature, contributing to increased influenza virus activity during the winter months in temperate zones; conversely, transmission by the contact route is insensitive to RH and temperature, with the result that influenza in the tropics may occur throughout the year or in sporadic outbreaks with no clearly defined seasonality.

Peak Month of Influenza Activity (1982-1983 through 2011-2012)



Influenza Season in U.S.A. → Single Peak

Hospital admission rate with principal diagnosis of influenza



- In Hong Kong, a subtropical area, influenza usually displays biannual seasonality, consisting of a winter peak typically between January and March and a summer peak in June and July, often with an elevated plateau in April and May between the winter and summer peaks.

Confirmed HSI cases staying in ICU
(from 27 Apr to 31 Oct 2009)

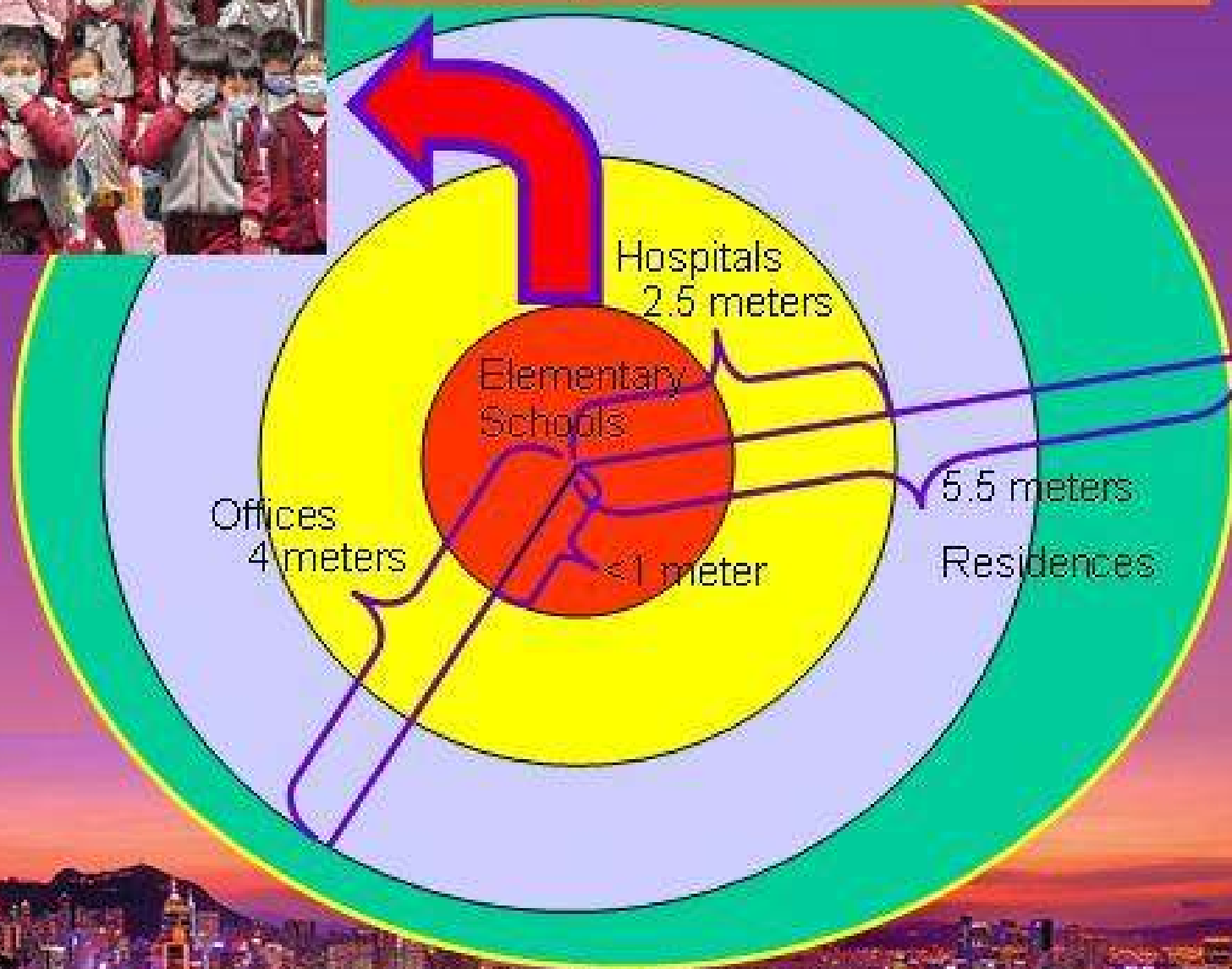
ICU admission closely follow HSI case load except with a **phase lag**.

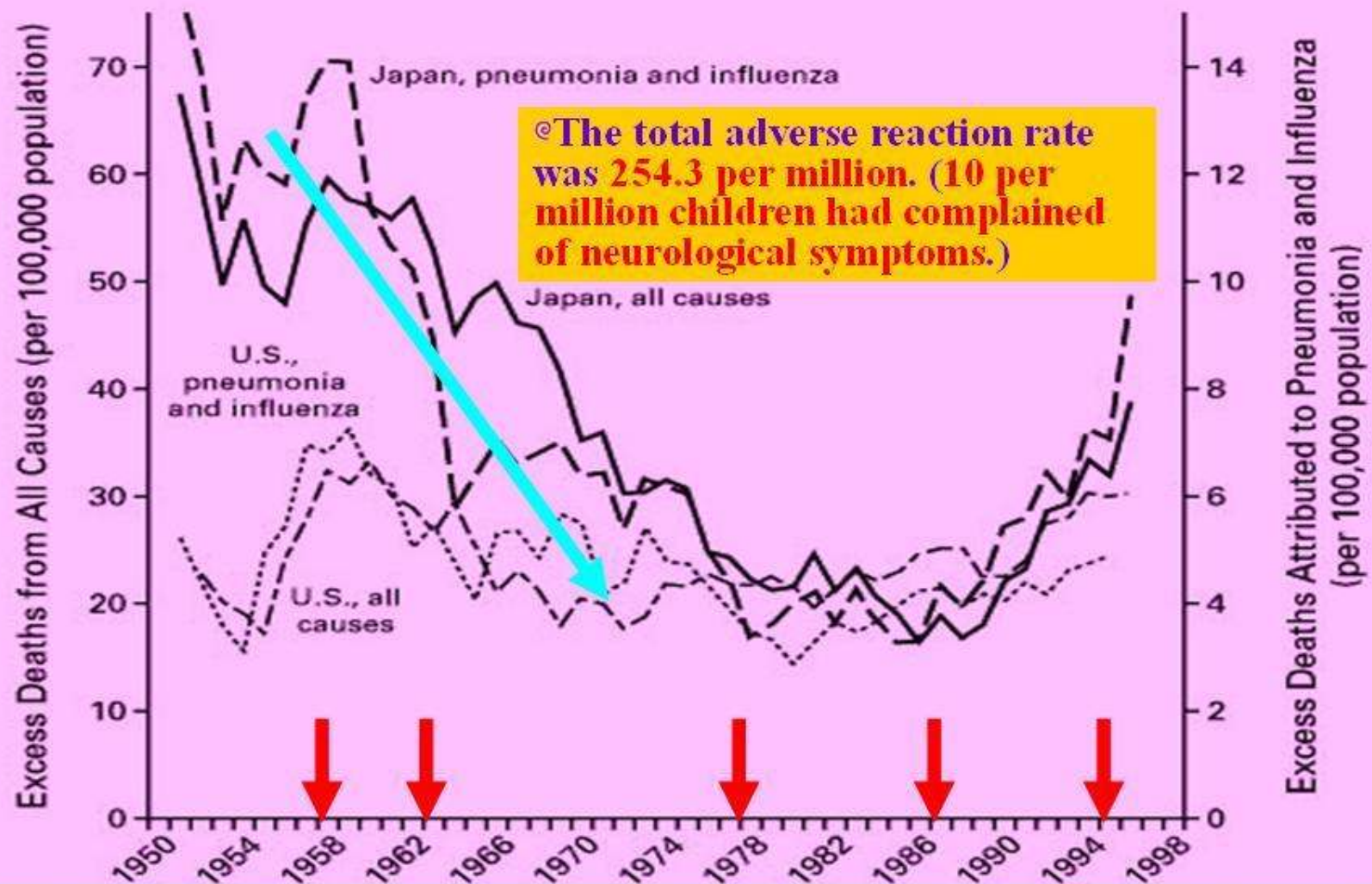


Disease Burden of novel H1N1 2009 to Hong Kong
First Wave → Poor Mitigation Beyond Control of Government

Workplace / Classroom Social Density

◆ Importance of closing schools





The Japanese Experience with Vaccinating Schoolchildren against Influenza N Engl J Med 344:889, March 22, 2001

**1957 Asian
Influenza
Epidemic
claimed
8,000 lives**

**Program to
vaccinate
children
begins in
1962**

**Influenza
vaccination
mandatory
1977**

**Parents
allow to
refuse
vaccination
1987**

**The
government
lost the case
in the court
1992**

**Program
terminated
in 1994**



An easily overlook source of formite transmission

When nasopharyngeal secretions of naturally infected children were used, influenza virus survived for at least 48 h in one-third of the cases. **Large inoculum in the presence of respiratory mucus can survive up to 17 days.** The unexpected stability of influenza virus in this nonbiological environment suggests that unusual environmental contamination should be considered in the setting of pandemic preparedness.

Journal of Virology, 2000, 74(10):2500-2504. DOI: 10.1128/JVI.74.10.2500-2504.2000

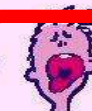


Wash your hands

WHY ... because during the day when you

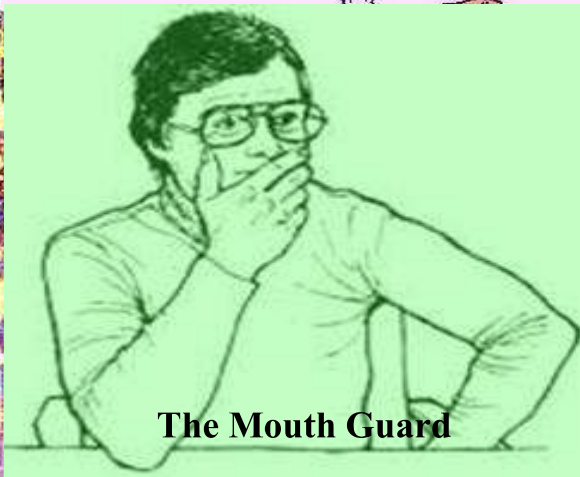
or  or go to the  you can get  and dirt has  which are so small you can only see them under a .

Your hand can transfer these germs to your body

through your  or your  or your  and they can make you very ill.

Washing your  will get rid of the germs and help keep you healthy.

WHEN ... should you wash your  s? Always after using the , before you .



The Mouth Guard



The nose touch



The eye rub



VRE	MRSA
Influenza	MDRA
All these organisms can survive in dry environment and can be transmitted by fomites. Good hand hygiene can prevent the nosocomial transmission of these organisms.	

All these organisms can survive in dry environment and can be transmitted by fomites. Good hand hygiene can prevent the nosocomial transmission of these organisms.



fight the flu



use soap and water for 15-20 seconds

wash your hands





The Perspective of H5N1/H7N9 Avian Influenza Pandemic

- ④ In the event of a human H7N9/H5N1 avian influenza pandemic that carries a mortality of over 30%, more than 85% of the world's population will not have meaningful access to pandemic vaccines or antiviral agents.
- ④ From the experience of the novel H1N1 pandemic, pandemic vaccines are unlikely to be available for effective prevention during the first wave of a pandemic , and non-pharmaceutical interventions such as quarantine and containment failed to contain the pandemic in the initial mitigation phase even in developed countries.
- ④ The number of casualty will overwhelm the medical system and other essential medications and supportive equipment (e.g. ECMO accessories) may not be available during pandemic.



*Our survival is
dependent on
each other.*

Human H7N9 Pandemic
**We May Be Facing A Total Disintegration of
Global Economy and Collapse of Civilization**

*Without the string,
the necklace will
fall apart.*



Our Preparedness and Response Plan for Avian Influenza Pandemic Are Too Hospital Focused

Our public antiviral and vaccine stockpile program has no effective delivery program to the public!

Tamiflu®
Oseltamivir
75 mg

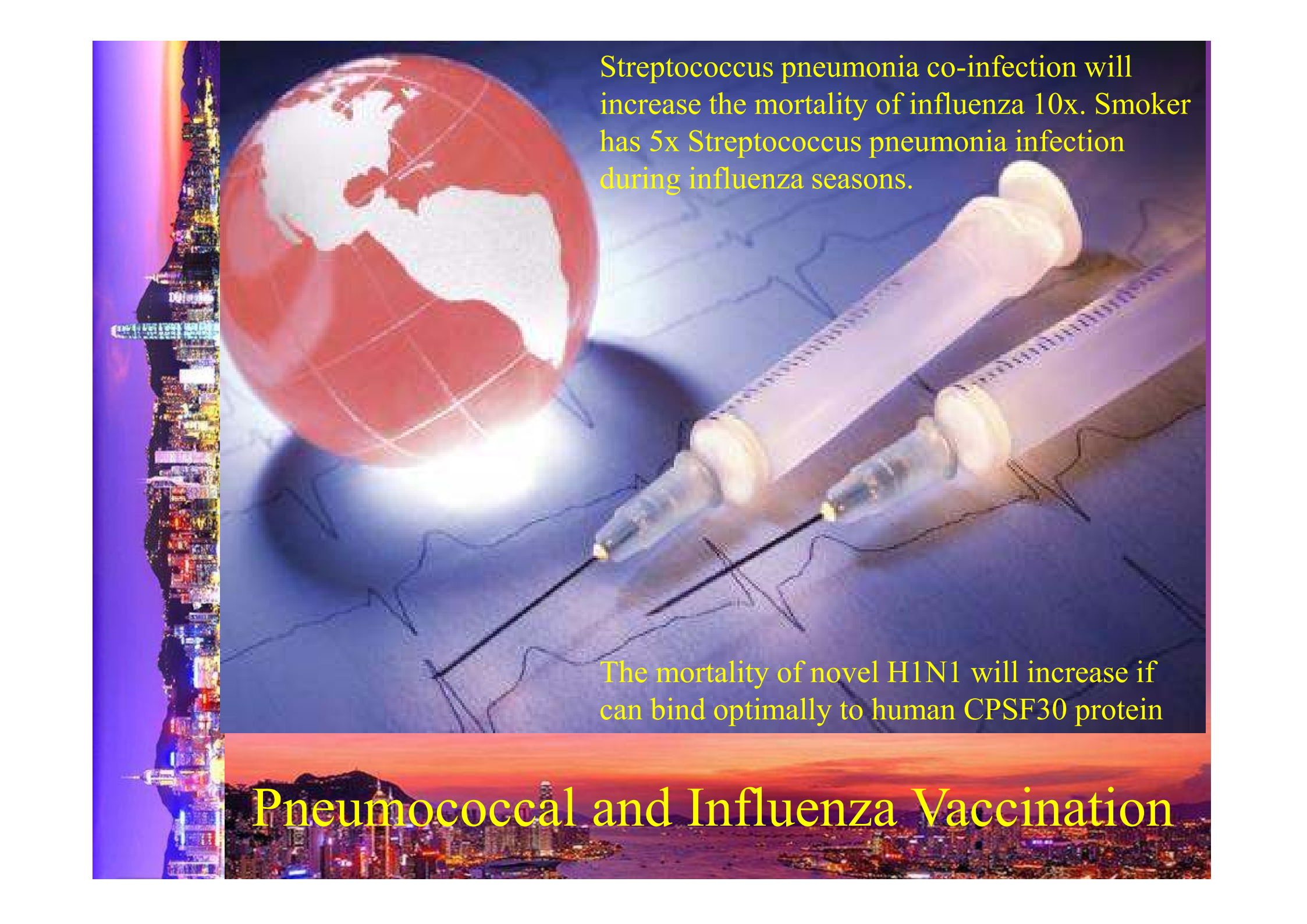
RELEZA
(ZANAMIVIR FOR INHALATION)
DISKHALER®
INHALATION
DEVICE
FOR USE WITH RELEZA POWDER

*Logistics Aspects of H5N1/H7N9
Avian Influenza Pandemic in Hong Kong*



Preparation for H7N9 Pandemic

- © Keep a good personal hygiene and infection control measures
- © Pneumococcal vaccination
- © Since the mortality of novel H1N1 may escalate if it acquires the optimal structure for binding to human CPSF30 protein, yearly influenza vaccination is advisable.
- © Avoid visiting poultry market or crowded area
- © Hoard Soap/surgical mask at home
- © Check Your First Aid Kit: A thermometer and acetaminophen/high dose Vit C/NAC/Tamiflu/Augmentin/Klacid. Start Rx as early as possible.
- © Purchase Dried Grains/Procure Non-Perishable Proteins (dry bean/peanut butter)/Canned vegetables
- © Test Your Portable Radio with working battery
- © Make an Emergency Contact List (on Paper)
- © Stash Away Extra Prescriptions (1-3 month supply)

The image is a composite. The top half features a red globe with white continents, positioned on the left. To its right are two medical syringes, one in front of the other, pointing towards the bottom right. The background is a dark blue with faint white lines resembling a heartbeat or ECG. On the far left, a vertical strip shows a city skyline at night with lights. The bottom half of the image shows a city skyline at sunset or sunrise, with a warm orange and red sky.

Streptococcus pneumonia co-infection will increase the mortality of influenza 10x. Smoker has 5x Streptococcus pneumonia infection during influenza seasons.

The mortality of novel H1N1 will increase if can bind optimally to human CPSF30 protein

Pneumococcal and Influenza Vaccination



Pneumococcal Vaccination Beyond Current Indication
In Preparation of H7N9 Avian Influenza Pandemic



Wash Your Hands.
Tell your friends to do the same.

「疫情令人揪心。」

「千祈千祈千祈，洗手洗手洗手。」



Hong Kong has only
a reserve of rice for 15 days

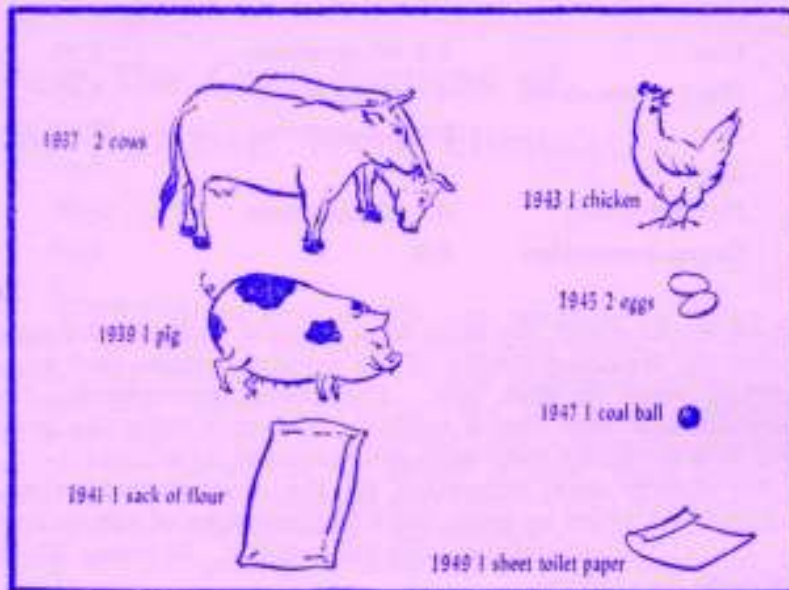
"All animals are equal, but some animals are more
equal than others". George Orwell (1903 - 1950).

Have an adequate reserve of food for 6 months
Before H7N9 pandemic

Joseph and the Famine Genesis 47: 13-26

First Year	All the money
Second Year	All the livestock
Third Year	All the land
Fourth Year	Reduced the people to servitude
Fifth Year	Give a fifth of the crop to Pharaoh This is the beginning of taxation .

Decline of the Purchasing Power of 100 yuan
in Kuomintang Currency Before the Liberation



GERMANY

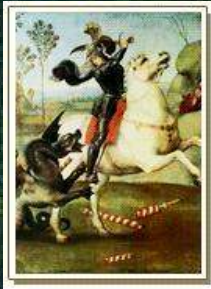
In the early years after 1870 some of the States retained their own currencies. Figures quoted here are for the mark of 100 pfennigs

	MARKS TO £1	MARKS TO \$1
Pre-war parity	20,429	4,198
1915 - Jan	-	4.59
1916 - Jan	-	5.36
1917 - Jan	-	5.53
1920 - Feb	340	100.5
Apr	240	60.5
Jun	160	40.25
Oct	240	70.45
1921 - Jan	215 - 262	57 - 74
Jun	245 - 280	63 - 75
Oct	463 - 712	124 - 180
1922 - Jan	790 - 862	186 - 201
Feb	873 - 1009	204 - 227
Mar	1022 - 1485	250 - 338
Jul	1770 - 2975	402 - 670
Aug	2860 - 8850	644 - 1975
Oct	7925 - 20,350	1815 - 4500
Dec	31,000 - 39,000	6750 - 8470
1923 - Jan	32,000 - 225,000	6890 - 48,390
Jun	265,000 - 900,000	57,000 - 193,500
Aug	4.5 million - 52 million	900,000 - 11.4 million
Oct	1 milliard - 800 milliard	250 million - 170 milliard
Dec	15 billion - 25 billion	3.43 billion - 5.72 billion
1924 - Jan	19 billion	4.47 billion
	<i>New currency introduced</i>	
1925 - Jan	20	4.22

Happy Chinese New Year of The Horse 2014

Aerial view of the 3000 year old White Horse of Uffington

The Vale of White horse (Dragon Hill)



聖喬治大戰惡龍 (1505)
St. George and the Dragon
(Raphael 拉斐爾 1483-1520)



尤芬頓白馬是英國最古老的
山麓雕刻[青銅器時代(約1200BC-800BC)]

Thank You For Your Attention !