Global seasonal influenza disease burden and implementation of WHA 56.19

N Shindo
Global Influenza Programme

Impact of seasonal influenza - Temperate countries -

- United States\(^1\) (annual estimates)
  - 20-40 million outpatient visits
  - 330,000 hospitalized; 40,000 deaths
  - US$ 87.1 billion/year for influenza-related costs

- England\(^2\) (1996-2003, annual estimates)
  - 779,000 - 1,164,000 general practice consultations
  - 19,000 - 31,200 hospital admissions
  - 18,500 - 24,800 deaths

- World-wide (annual estimates)\(^3\)
  - 250,000-500,000 deaths; extrapolation from industrialized world in 2002

\(^1\)Molinari et al. 2007; \(^2\)Pitman et al. 2007; \(^3\)WHO 2005
Global influenza burden estimate

Constraints

- Lack of influenza surveillance in many countries
- Limited laboratory capacity to diagnose influenza
- Non-recognition of virus as cause for hospitalization and death
- Lack of access to control measures (vaccine/antiviral)

Impact of seasonal influenza
- Tropical countries

- A(H3N2) outbreak in Papua New Guinea, 1982-83\(^1\)
  - 10% attack rate
  - 300% increase in ILI visits during January
  - 100% increase in adult P&I hosp during February

- A(H1N1) outbreak in remote jungle highland in Indonesia, 1995-96\(^2\)
  - URI episodes doubled and pneumonia tripled during peak months
  - Attack rates among adults 20-50 estimated at 20.2%
  - Case fatality rate 15.1%
  - Nutrition and access to health care: role in morbidity and mortality

\(^1\)Kanil et al. 1984, \(^2\)Corwin et al. 1998

World Health Organization
Impact of seasonal influenza
- East and SE Asia -

- Influenza-associated hospitalization and mortality\(^1\)
  - Hong Kong SAR, China
    Major impact on hospitalization and deaths, in children and elderly, mortality rates similar to the United States
  - Singapore
    Influenza A had significant and robust effects on monthly all-cause deaths

- Thailand\(^2\)
  - An important cause of hospitalized pneumonia
    10.4% of pneumonia patients of all ages
  - Young children and the elderly are most affected
    - 52% of influenza pneumonia patients were less than 15 years of age
    - Annual incidence of influenza pneumonia was greatest in children less than 5 years (236 per 100,000) and 75 or older (375 per 100,000).
  - During 2005-2008, influenza pneumonia resulted in an estimated annual average 36,413 hospital admissions and 322 in-hospital pneumonia deaths in Thailand.

\(^1\)Simmerman, Uyeki 2008, \(^2\)Simmerman et al.2009

Influenza outbreaks in Africa

- Madagascar, July-August 2002*\
  - Ikongo District: ARI attack rate of 67%
  - Estimated case-fatality ratio (CFR): 2%
  - 54% of deaths attributed to ARI in children aged < 5 years
  - Highest mortality rate among persons aged \(\geq\) 60 years

- Congo, Democratic Republic of, November-December 2002**\
  - Bosobolo District: ILI attack rate of 47.4%
  - CFR: 1.5%
  - CFR higher in children < 5 years (3.5%) and adults over 65 years (3.2%)

Both outbreaks attributed to circulating H3N2 virus

Systematic review of seasonal influenza in Sub-Saharan Africa (in press)

- Studies published between 1980-2009 in English/French
- 48 articles
- 1-25% of outpatient ARI visits were due to influenza (n=11)
- 0.6-15.6% of children hospitalized for ARI had influenza identified (n=15)
- Influenza was highly seasonal in southern Africa
- Other data were lacking, particularly directly measured influenza incidence values for all ages, patient settings, and countries
- Current level of data in sub-Saharan Africa is insufficient to allow the countries to prioritize the importance of influenza control

Seasonal influenza burden in children < 5 years of age

- Systematic review by WHO's Child Health Epidemiology Reference Group (CHERG)

- Background
  - Annual influenza incidence is highest in children <5 years old
  - Co-circulates with other respiratory viruses
  - Complications most common in youngest children
  - Secondary bacterial infections common (S. aureus, S. pneumoniae & H. influenzae)
  - Increased severity in children with underlying medical conditions

- Studies published 1980 – 2010 (36 articles)

Data courtesy of Dr Valerie Evans, CHERG
WHA 56.19

- Prevention and control of influenza pandemics and annual epidemics, adopted in 2003
- Based on Global agenda on influenza surveillance and control
- Tasked countries
  - With national influenza vaccine policies to achieve 75% coverage of the elderly population by 2010
  - Without national influenza vaccine policies to assess influenza disease burden
  - Pandemic preparedness and capacity building
  - Support research and development on vaccines and antivirals for controlling influenza

WHA 56.19 follow up activities

- Internal Working Group for prevention of influenza
- Report by the Secretariat planned for WHA 64, 2011
  - Seasonal vaccine coverage survey
  - Disease impact / burden snapshot
  - Other updates
    - Pandemic preparedness and capacity
    - Vaccines and antivirals (policies, availability, research)