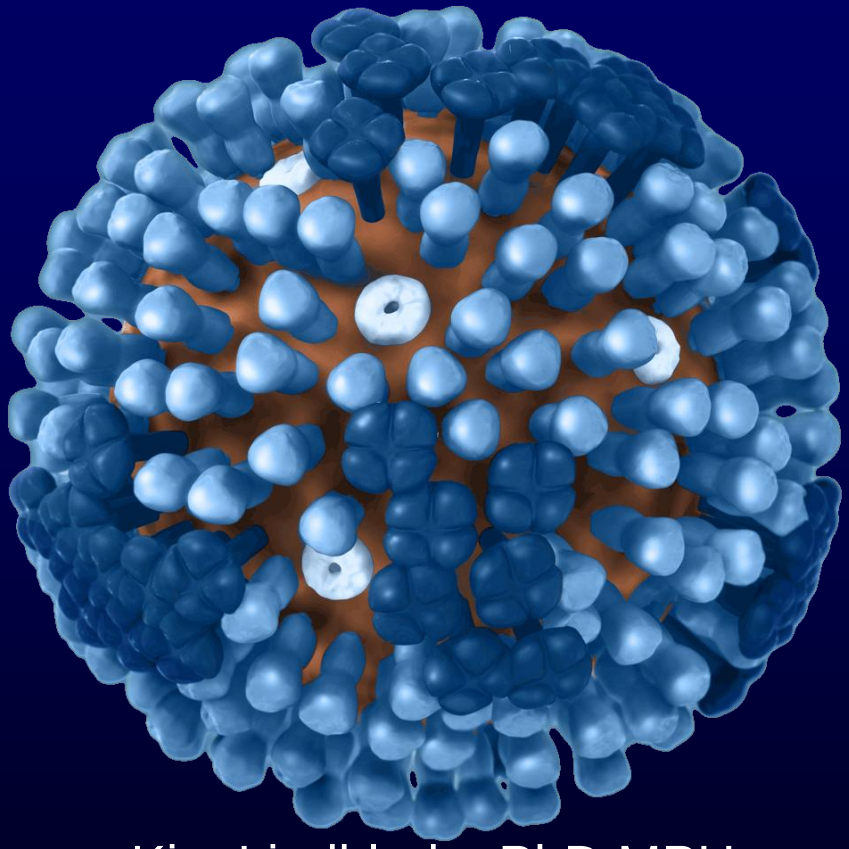
Influenza in Thailand: Future Directions



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23 JAN 2014

NIH Meeting

CDC Country and Regional Influenza Strategy

Overarching Goal: to reduce global morbidity and mortality caused by influenza

Goal 1

Create the global capacity for effective monitoring and the evidence base for influenza control and prevention

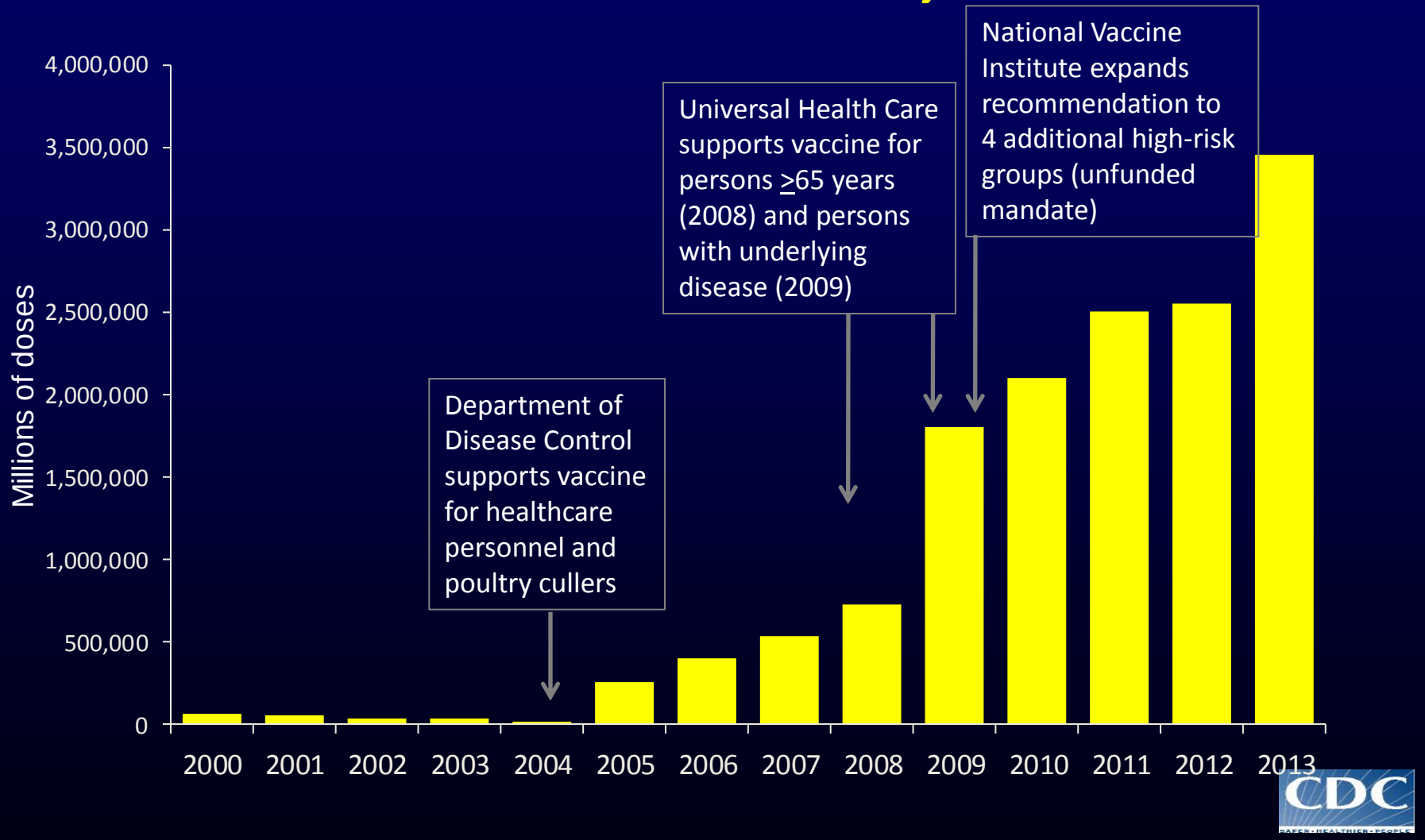
Goal 2

Decrease the global impact of seasonal, novel and pandemic influenza viruses

Working Collaboratively to Collect and Communicate Flu Data in Thailand

	2001	2011
Burden	Not known	Leading viral cause of hospitalized pneumonia patients
Cost	Not known	USD $23-62 million/year
Risk groups	Not known	Young, old, those with underlying disease
Seasonality	Rainy season	Virus occurs year round - Largest peak in Jul-Sep - Second peak in Feb-Mar
Vaccine use	<100,000 doses/year	2.8 million doses/year
Vaccine recommendations	None	2008, elderly with underlying disease 2009, expanded recs

Doses of Seasonal Influenza Vaccine in Public Sector, Thailand



In-Country Vaccine Production

- **Thailand one of six developing countries chosen to join WHO's influenza vaccine development scheme (LAIV)**
  - Received (~$4million, funding from HHS)
  - Host is state-run drug maker Government Pharmaceutical Organization (GPO)
  - Pilot plant in Saraburi Province to make vaccine
- **Locally produced pandemic LAIV licensed for pandemic use by Thai FDA, July 2011**
  - Focus on H5 vaccine
- **Building industrial scale vaccine plant for IIV**
  - Large investment from Royal Thai Government

Vaccine introduced into Thailand: What Now?

- Programmatic questions
  - What is vaccine acceptance?
  - What is vaccine coverage?
  - What is vaccine effectiveness in different risk groups?
  - What is vaccine effectiveness for different outcomes?
  - How does locally produced vaccine compare to others on the market?
- Policy questions
  - Should high risk groups be expanded?
  - How to increase vaccine coverage?
  - What is the health systems savings due to vaccination program?
- Research questions

Vaccine effectiveness in elderly

- Study in Sa Kaeo and Nakhon Phanom in 2010 and 2011 found vaccines reduced hospitalization with influenza-associated ARI among persons aged ≥50 years by 47% (Dawood, in Inf Other Resp Dis)
- VE may be different among non-hospitalized population
- More cases of influenza/ARI and higher vaccine coverage needed to confirm VE results
- Potential to pilot strategies to increase coverage, to be followed by an additional VE study

Vaccine effectiveness against severe outcomes for COPD

- Can influenza vaccine reduce influenza-related exacerbations?
- Retrospective study to compare vaccination rates between cases of severe outcomes among COPD patients to non-severe COPD controls
- Pilot studies needed to estimate key parameters
  - Frequency of severe outcomes among COPD patients
  - Vaccine coverage among COPD patients

Vaccine acceptance and effectiveness in pregnant women and newborns

- Influenza in pregnancy is a risk factor for severe outcomes
- Influenza vaccination has been shown to benefit mother and newborn
  - Reduced risk of low birth weight
  - Reduced risk of prematurity
  - Reduced risk of stillbirth
- What data are needed to promote the implementation of this policy?

Maintaining Surveillance is Essential

- Monitor influenza activity
  - Inform clinicians and public health professionals
- Monitor viruses
  - Resistance
  - Strains
- Monitor seasonality
- Identify new risk groups
  - Obese a new risk group for pdmH1N1

Must Remain Vigilant for Novel Influenza Viruses in Humans

- H5N1
  - Continues to occur (40 cases since Jan 2013)
  - One case imported to Canada from China
- H7N9
  - 219 confirmed cases
  - 84 new cases since Oct 2013
- H9N2
  - Two cases in China (Hong Kong and Hunan)
  - Only one with poultry exposure
- H10N8
  - First case in human in Jiangxi, China
  - Visited live-poultry market

Summary

- Thailand's influenza program is robust
- Continued importance of surveillance
- Growing vaccine program demands evaluation
  - Effectiveness
  - Cost
  - Promotion of vaccination in other risk groups