




# Pandemic preparedness in Europe

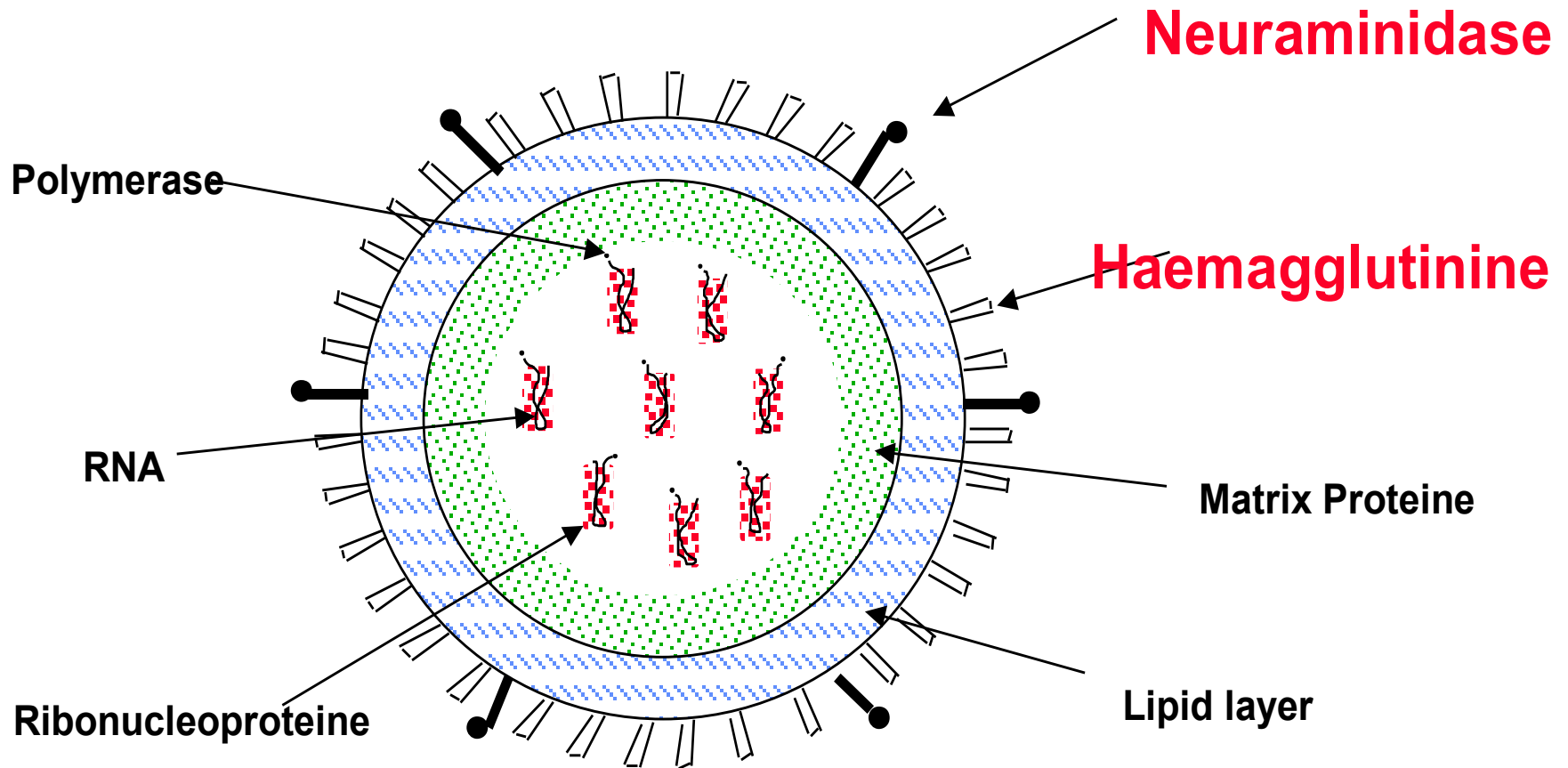
Ted van Essen, University Medical Center Utrecht, The Netherlands

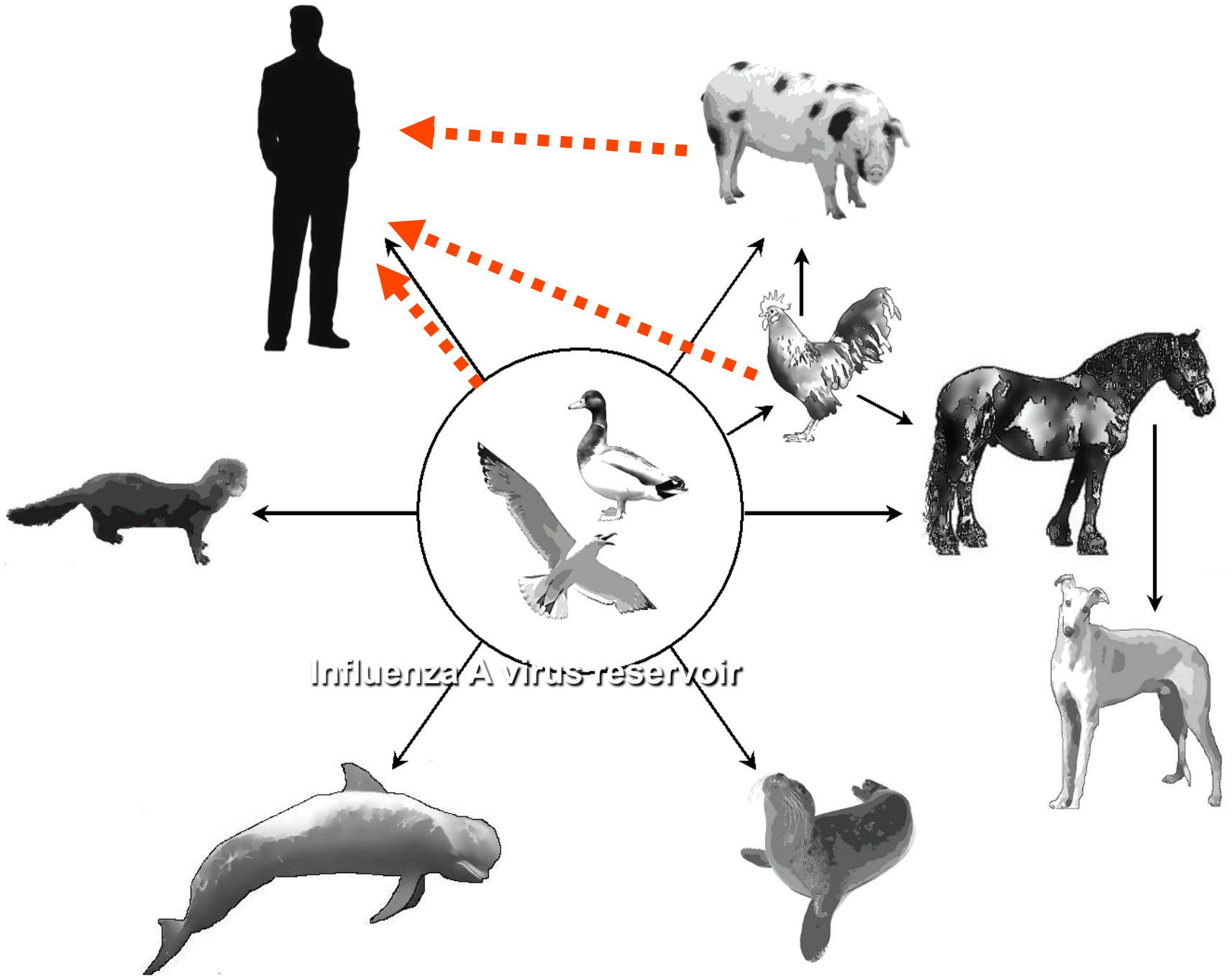
Science Policy Flu Summit, Brussels, 30 September 2015



Recent avian influenza virus outbreaks are a strong reminder of the fact that flu viruses are unpredictable and constantly changing

# Structure of influenza A or B





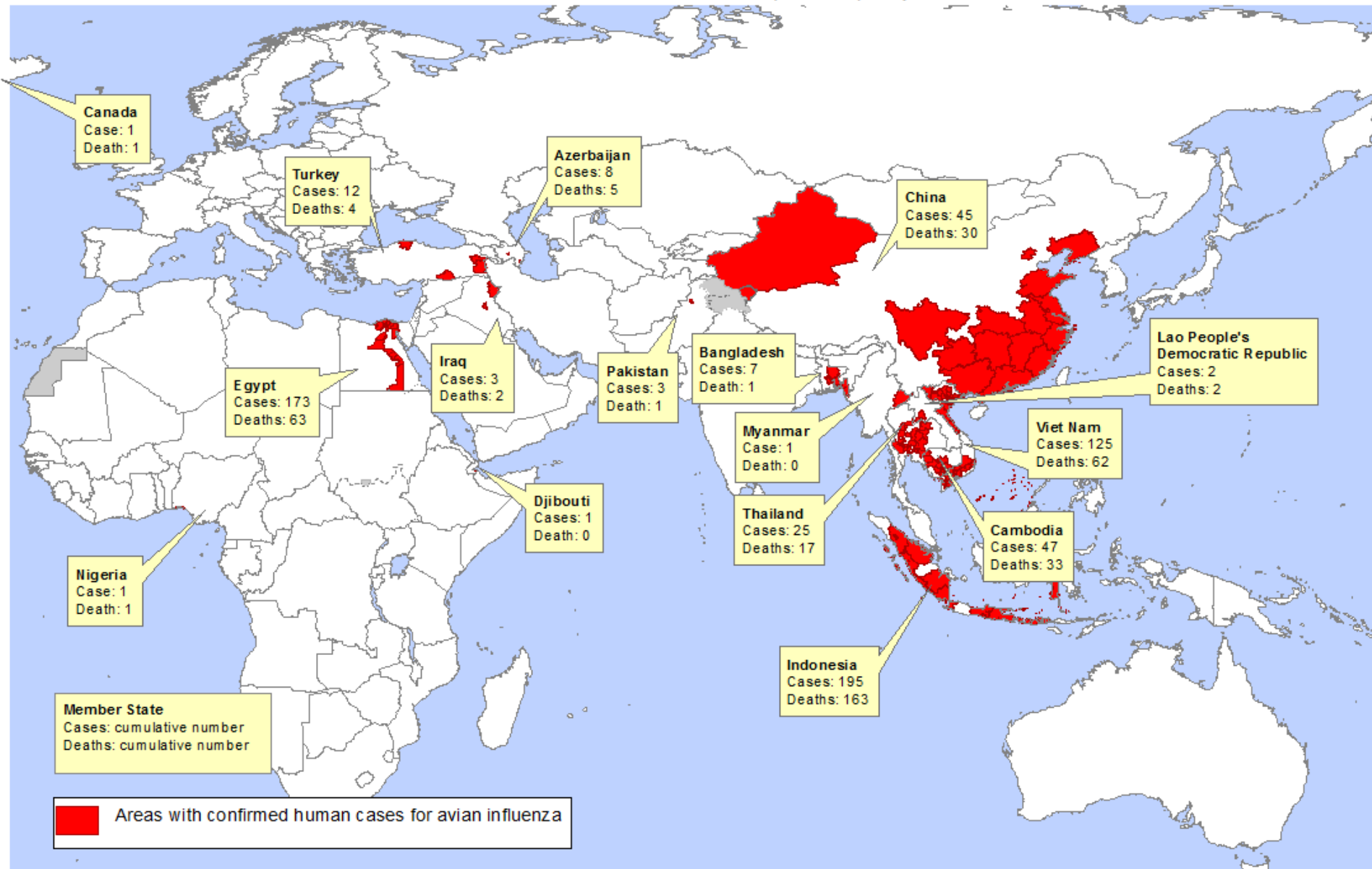
# Influenza

## - Zoonotic events -

Subtype	Year, country	Confirmed cases (fatalities)	Illness
H5N1	1997/2003-present, Asia, Europe, Africa	667 (393)	ILI, pneumonia, encephalitis
H6N1	2013, Taiwan	1 (0)	ILI
H7N2	2003, USA	1 (0)	ILI
	2007, UK	4 (0)	Conjunctivitis, ILI
H7N3	2004, Canada	2 (0)	Conjunctivitis, ILI
	2006, UK	1 (0)	Conjunctivitis
	2012, Mexico	2 (0)	Conjunctivitis
H7N7	1996, UK	1 (0)	Conjunctivitis
	2003, Netherlands	89 (1)	Conjunctivitis, ILI, pneumonia
	2013, Italy	3 (0)	Conjunctivitis
H7N9	2013, China, Taiwan, Hong Kong	450 (165) (27 June, 2014)	ILI
H9N2	1999 - present, Hong Kong	7 (0)	ILI
H10N7	2004, Egypt	2 (0)	ILI
	2010, Australia	2 (0)	Conjunctivitis
H10N8	2013, China	3 (2)	Pneumonia

**Richard et al.,  
Future Virology, 2014**

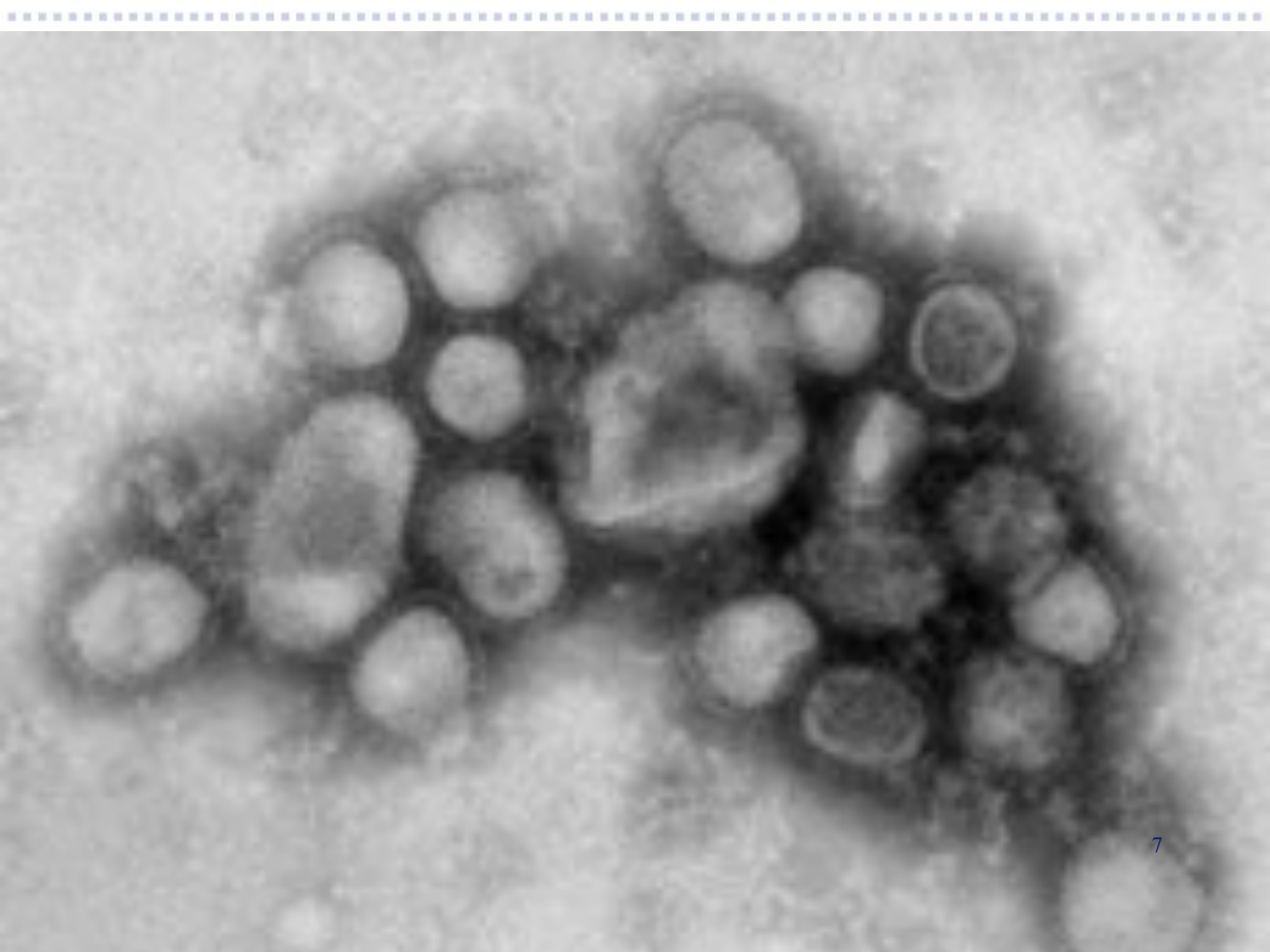
# Areas with confirmed human cases for avian influenza A(H5N1) reported to WHO, 2003-2013\*



\*All dates refer to onset of illness  
Data as of 24 January 2014  
Source: WHO/GIP

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not be full agreement.  
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# Pandemic preparedness: five pillars

- **Surveillance and detection**
- **Antiviral stockpiling**
- **Vaccination**
- **Non-medical measures**
- **Communication**

# ESWI FluQuest Survey

- Comparative analysis of pre and post pandemic plans in nine European countries: Austria, Belgium, the Czech Republic, Finland, France, Germany, the Netherlands, the UK and Turkey
- Data collection August 2012 until August 2013
- Purpose: to learn about Europe's level of pandemic preparedness and enhance European preparedness for the next influenza pandemic
- General trends and conclusions widely disseminated



# Has European pandemic preparedness improved since FluQuest?

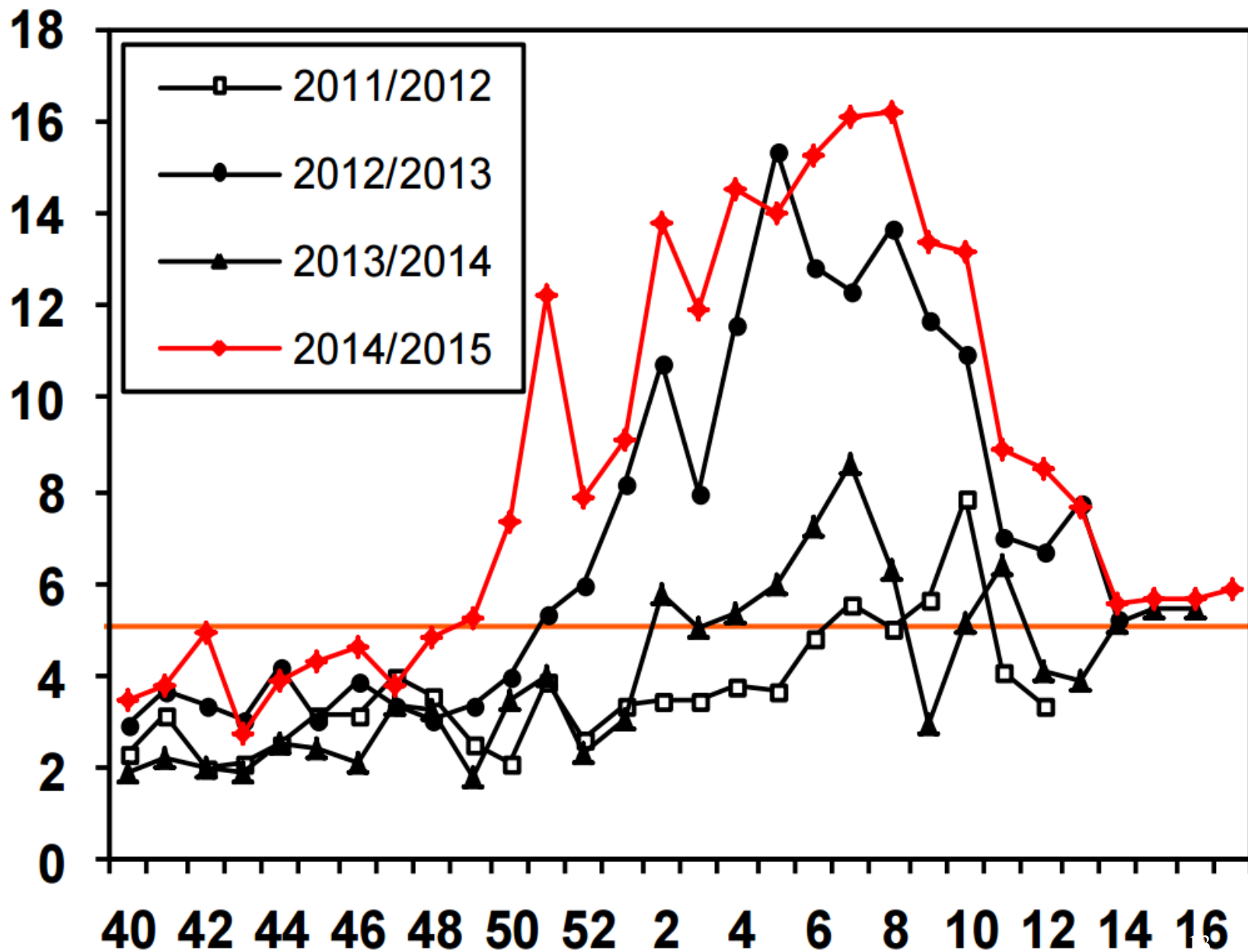
# Preparedness plan updates are often postponed

- Still, a minority of 8 out of 28 EU countries has updated its pre-pandemic preparedness plan
- Many countries lack the urgency to revise their plans, for a variety of reasons:
  - Lack of political interest
  - Lack of scientific consensus over pandemic evaluation
  - Waiting for coordinated response by international community (WHO/ECDC)

## Revised pandemic preparedness plans based on lessons learned:

- Flexibility built in, response is dependent on actual circumstances
- WHO pandemic phasing largely abandoned
- New WHO Pandemic Influenza Risk Management Guidance issued in 2013
- Countries now strongly advised to develop their own national risk assessments based on local circumstances

IAZ/10.000 inwoners



# Antiviral stockpiling: current antiviral drugs for influenza

## ***Class/Antiviral drug***

## ***Brand name***

## ***Route***

### M2-channel inhibitors

➤ Amantadine

Symmetrel

Oral

➤ Rimantadine

Flumadine

Oral

### Neuraminidase inhibitors

➤ Oseltamivir

Tamiflu

Oral

➤ Zanamivir

Relenza

Inhaled

➤ Peramivir \*

Peramiflu

IV

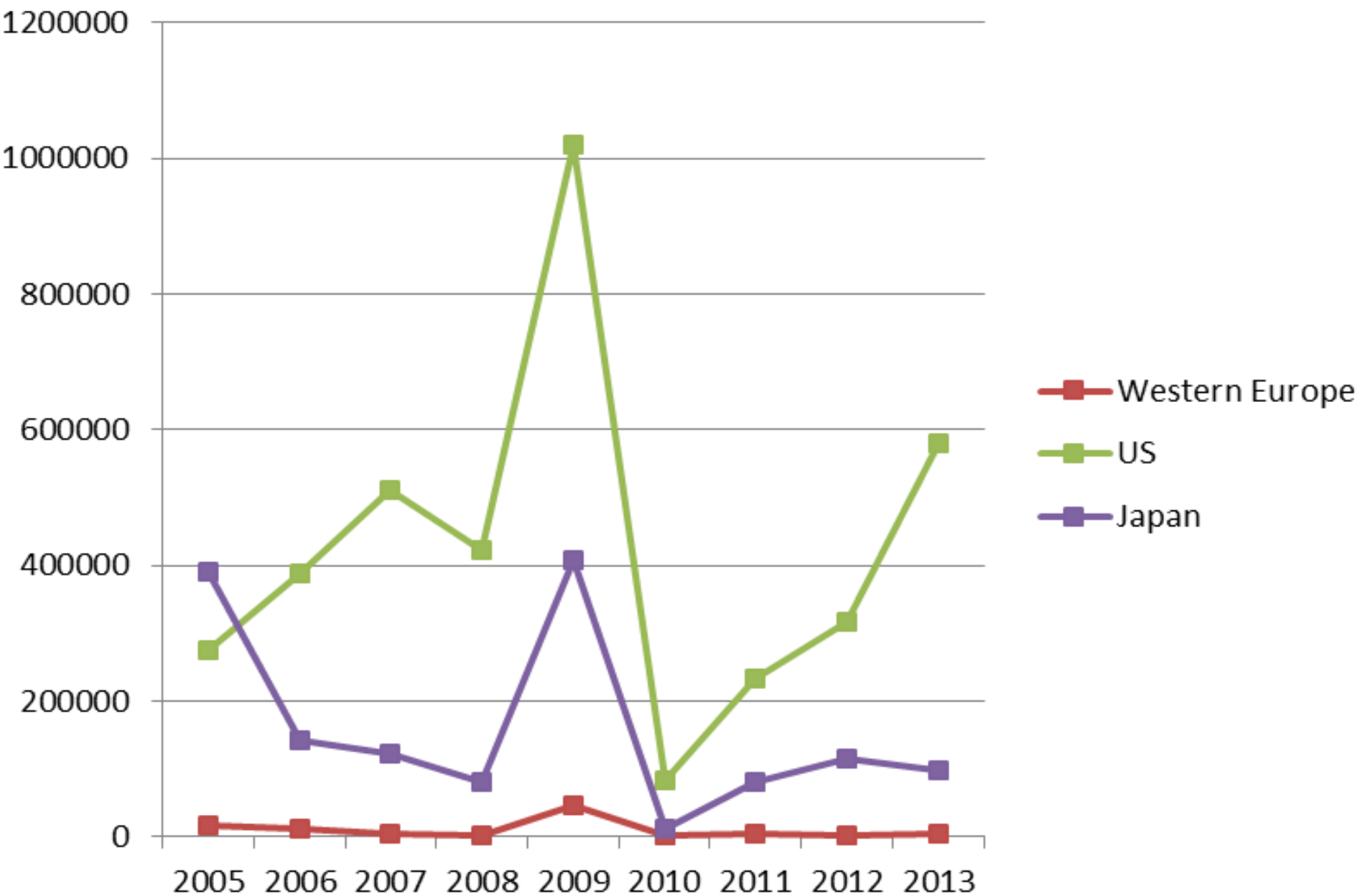
➤ Laninamivir \*

Inavir

Inhaled

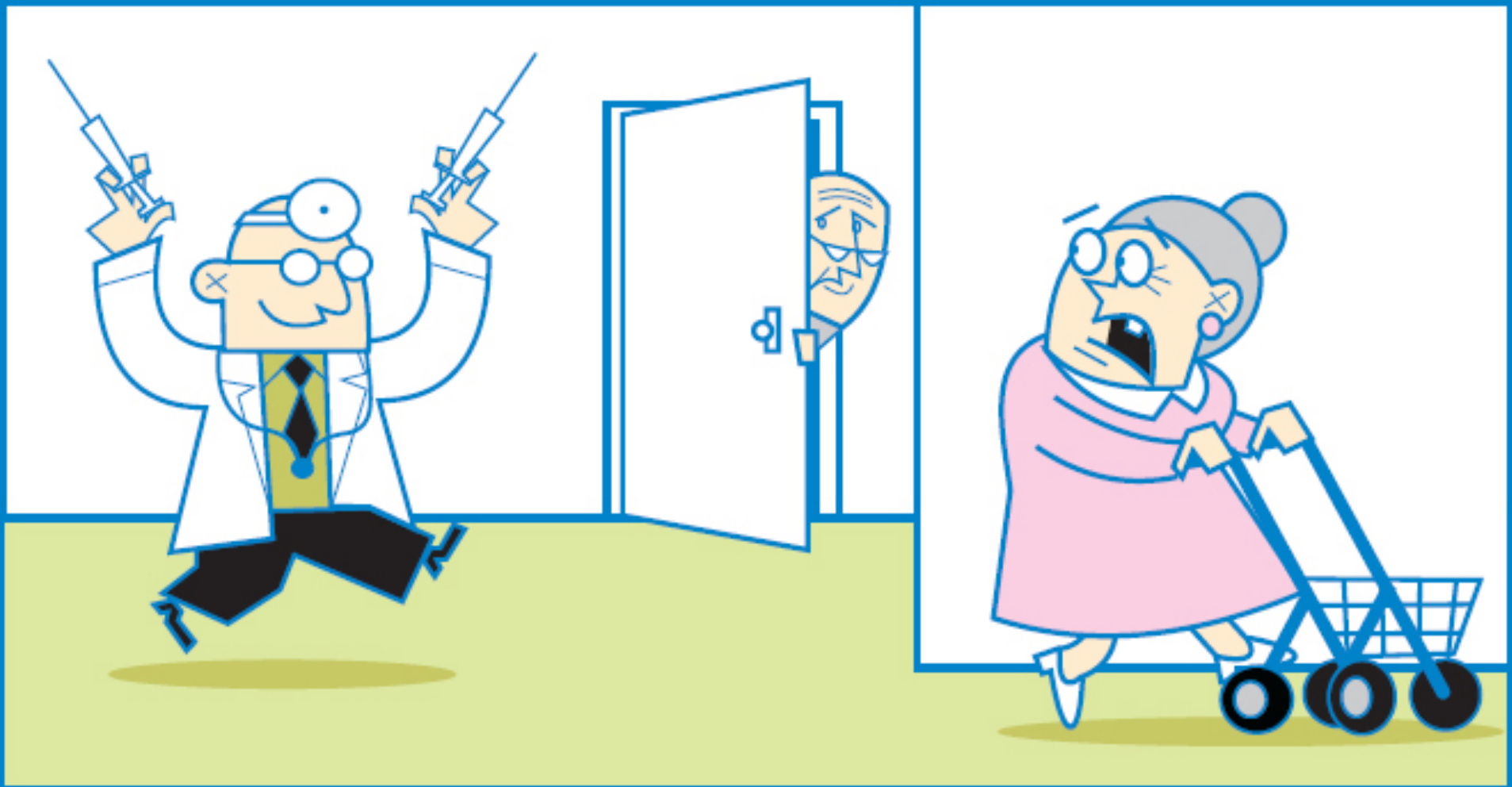
*\* Not licensed in Europe*

# oseltamivir



# Antiviral stockpiling

- Large-scale antiviral stockpiling since 2005 due to intense fears of an imminent H5N1 avian influenza pandemic
- Controversy has arisen due to:
  - ‘mild’ course of 2009 H1N1 pandemic
  - questions of effectiveness
- It is now unclear whether individual countries are maintaining stockpile level to ensure continued preparedness



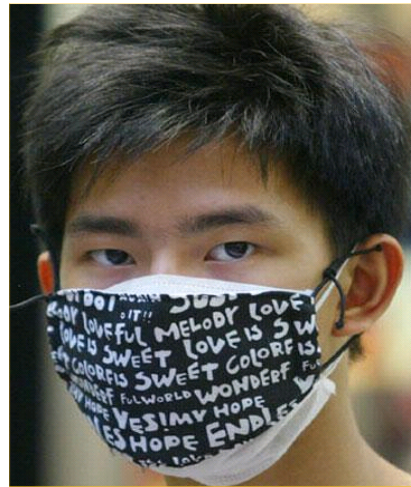
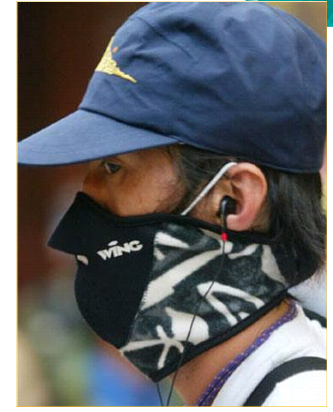
# Pandemic Influenza Vaccine Procurement

- Some countries currently have Advanced Purchase Agreements in place with vaccine producing companies.
- In post-pandemic era, governments are hesitant to openly communicate about agreements with vaccine producing companies
- Joint Procurement Agreement in place since 20 June 2014
  - On 22 September 2015, France became the 22nd EU country to sign the agreement



# Health Care Capacity

- Although primary care and hospital care systems were able to cope with all patients during this relatively mild pandemic, it is estimated that many countries were close to 100% occupation of hospital capacities
- Consequently, hospital capacity would have been overstretched if pandemic would have been worse
- Triage?
- Lack of hospital capacity in case of severe pandemic is not addressed in pandemic preparedness plans



# Pandemic Influenza Communication

- Several European countries chose not to install a single flu spokesperson to inform the public at large
- Trial and error communication during pandemic left room for confusing messages on social media
- There was a clear need for concerted communication on an international level in order to spread uniform messages (question of leadership)

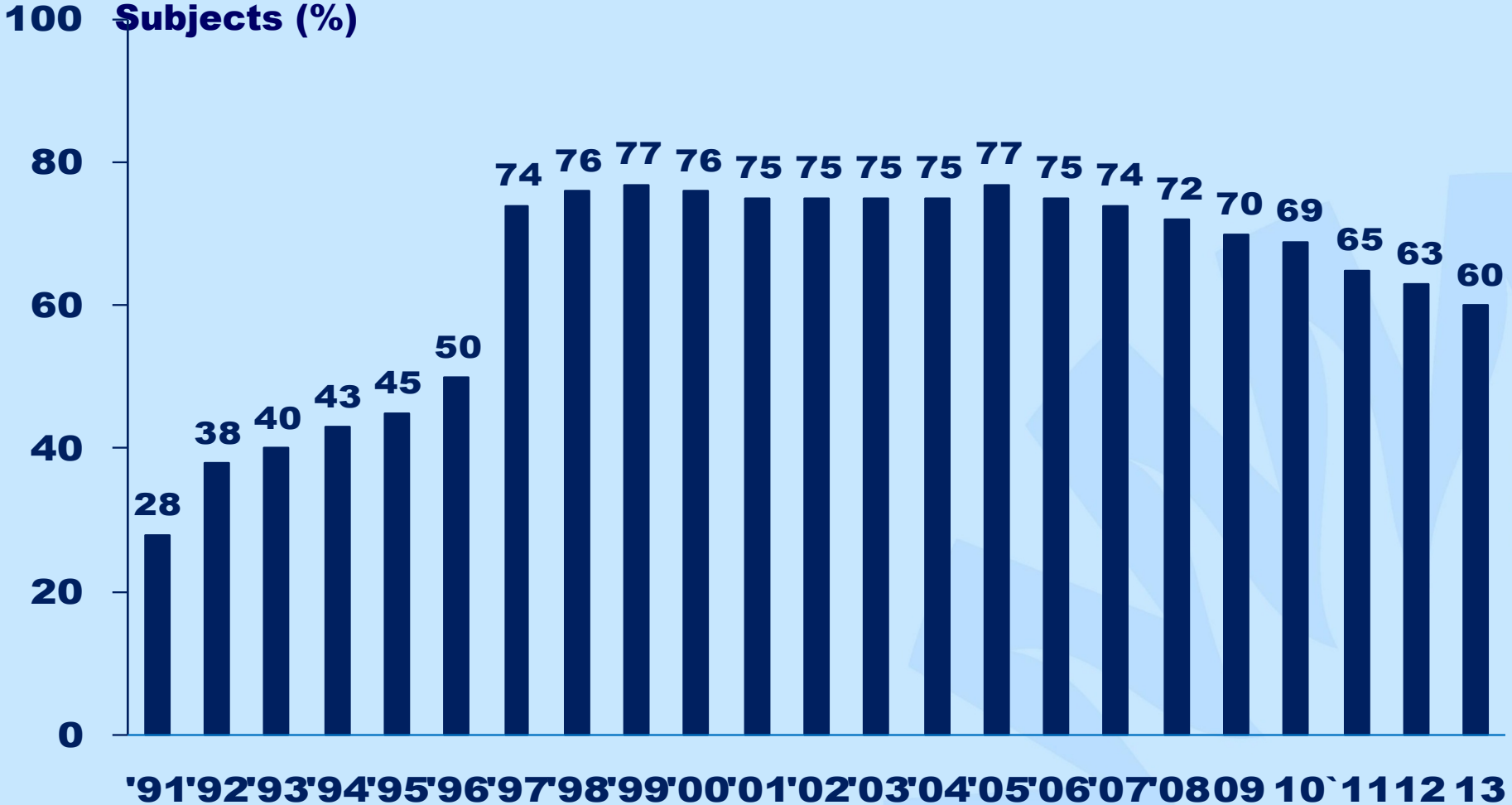
## Where are we now?



# Conclusions

- Flu viruses are unpredictable and are constantly changing
- European policy makers are, in general, complacent to develop decisive pandemic response plans, based on lessons learned during the 2009 pandemic
- Revised pandemic preparedness plans are often extremely flexible: *“The most appropriate course of action would depend on the particular circumstances.”*
- EU countries await actions by WHO (revision pandemic phases), ECDC and DG SANTE (vaccine procurement initiative)
- Challenges lie ahead in terms of vaccine/antiviral stockpiles, vaccine procurement (APA’s in place) and healthcare capacity (lack of emergency response plans)

# Influenza vaccination rate in at-risk groups The Netherlands, 1991-2013



# **General lessons learned**

- **Make one professional accountable:**
  - **GP with a list-based system**
- **Electronic medical records with selection software (age, risk code, medication)**
- **Postcard invitation with flyer from GP**
- **Special vaccination hours, also to the evening**
- **Vaccine distribution to the surgery**
- **Discipline-specific guidelines**
  - **GPs, pulmonologists, cardiologists, paediatricians**

# **General lessons learned (cont)**

- **Vaccination free for at-risk patients**
- **Fee for service (for invitation/reminder)**
- **Central contract for vaccines**
- **Simple paper work**
- **Feedback results to GP**
- **'Academic detailing'; CME (ethics)**
- **Seasonal vaccination organisation is best preparation for a pandemic situation**