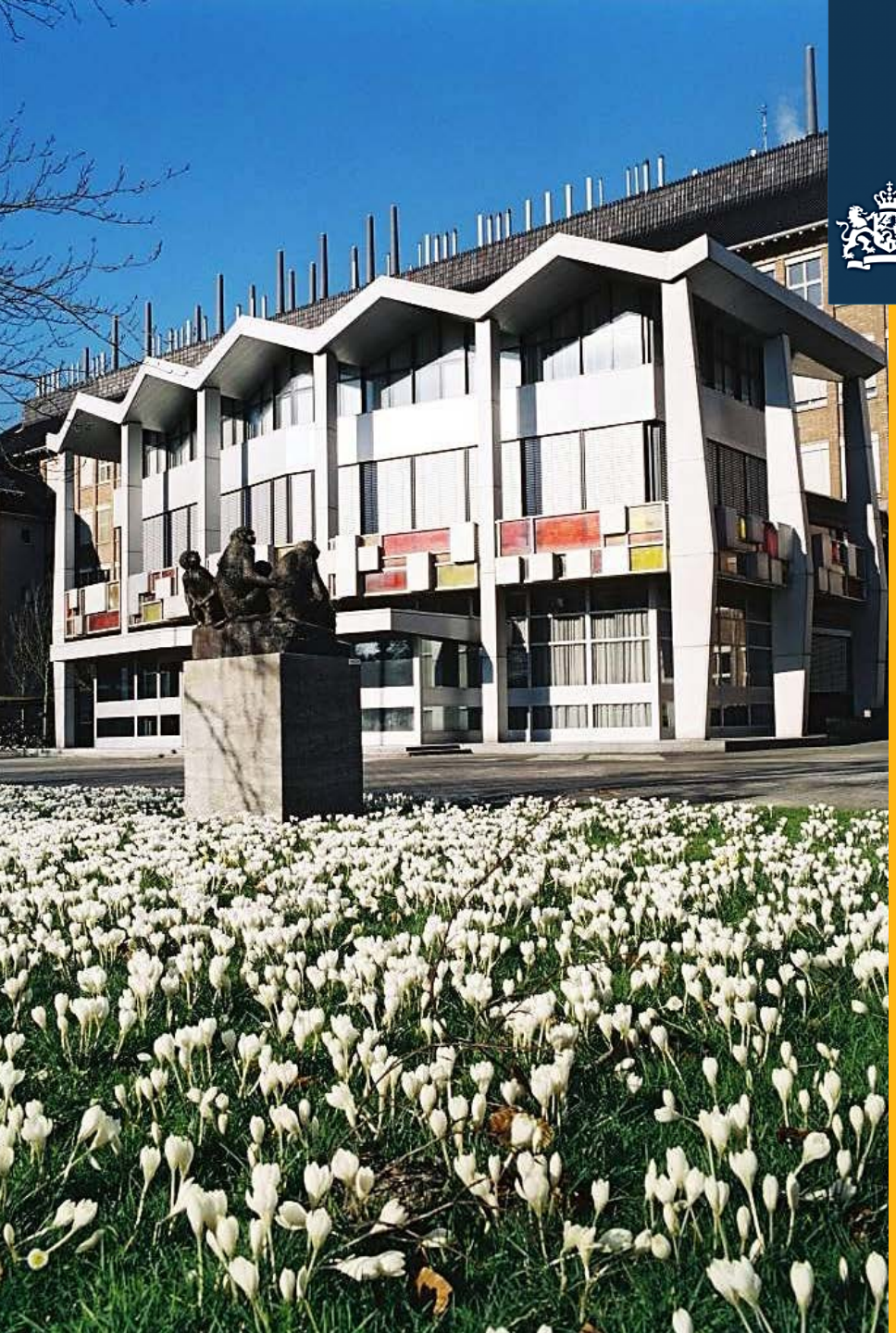
EMRIC +

“Cross-border infectious disease control as an opportunity, rather than a threat”

Dr. Aura Timen

Dieses Projekt wird kofinanziert durch den EFRE - Die Europäische Kommission investiert in Ihre Zukunft
Dit project wordt mogelijk gemaakt door financiële steun van de Europese Unie (EFRO) - De Europese Commissie investeert in uw toekomst
Ce projet est cofinancé par le FEDER - La Commission européenne investit dans votre avenir



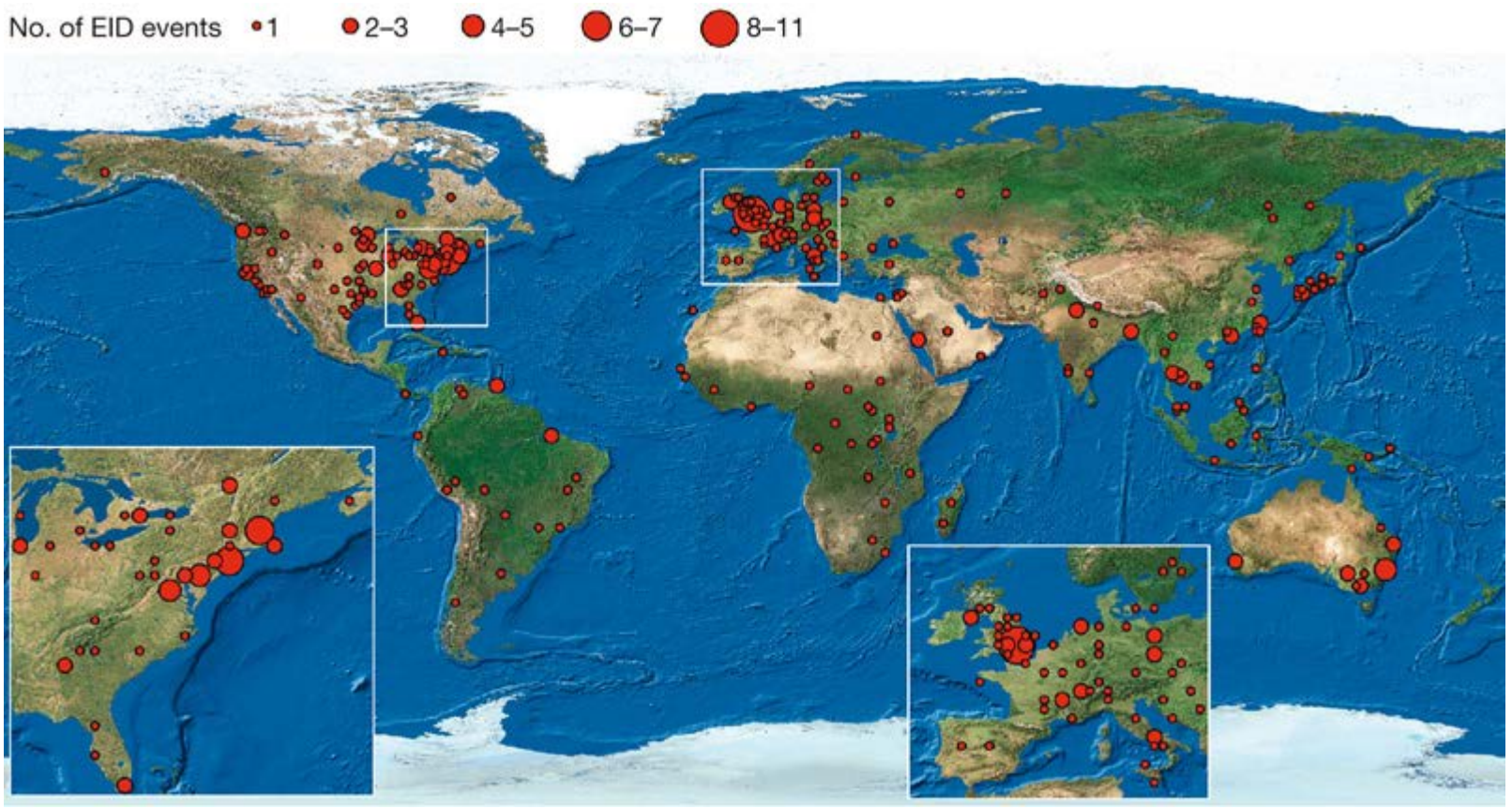
Rijksinstituut voor Volksgezondheid
en Milieu
Ministerie van Volksgezondheid,
Welzijn en Sport

Cross-border communicable disease control: an opportunity or a threat?

Aura Timen, MD, PhD
Head National Coordination Centre for
Communicable Disease Control
(Preparedness and Response) LCI

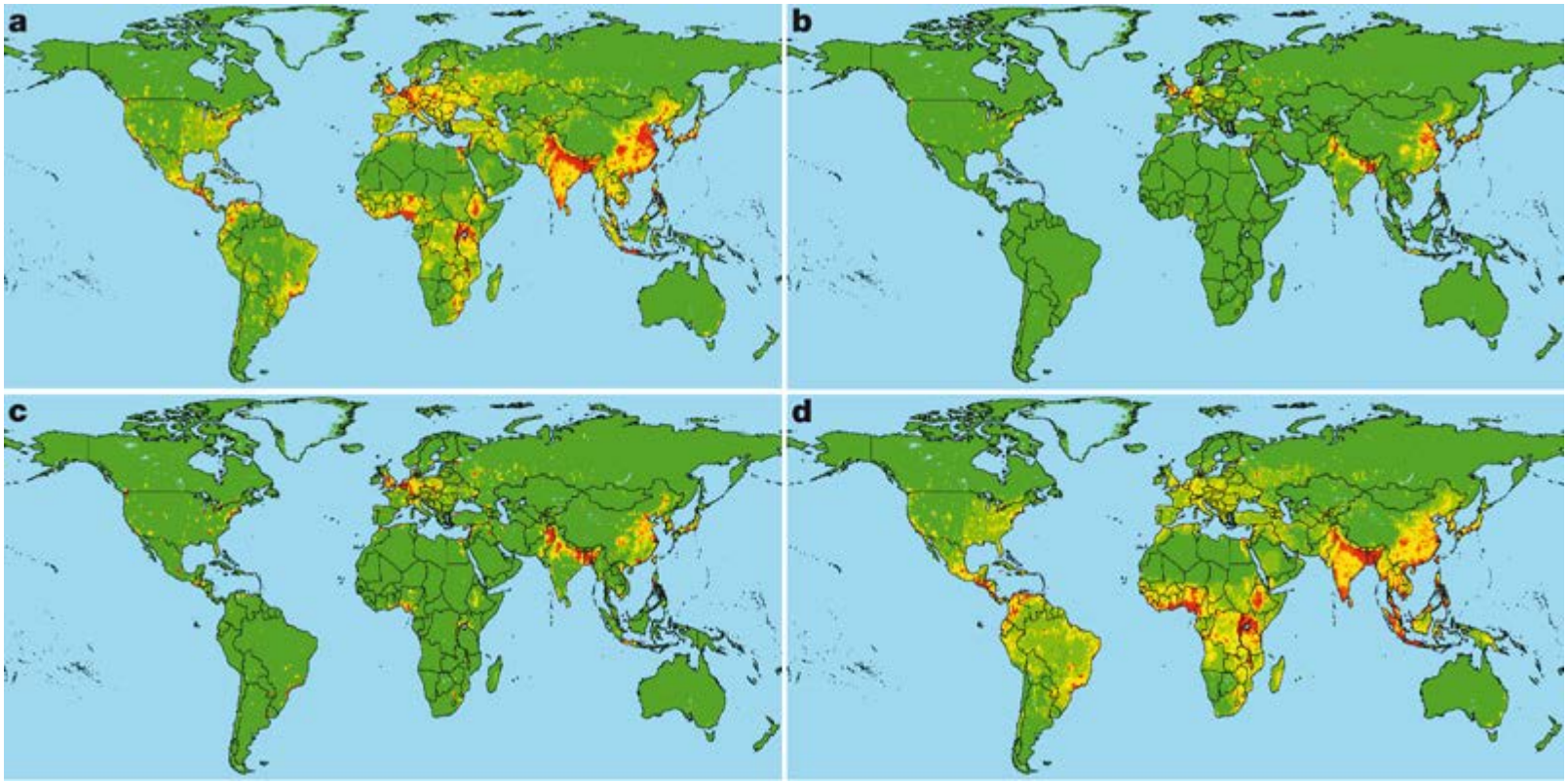
Global trends in emerging infectious diseases

Kate E. Jones et al. Nature 451, 990-993(21 February 2008)



Global trends in emerging infectious diseases
Kate E. Jones et al. Nature 451, 990-993(21 February 2008)

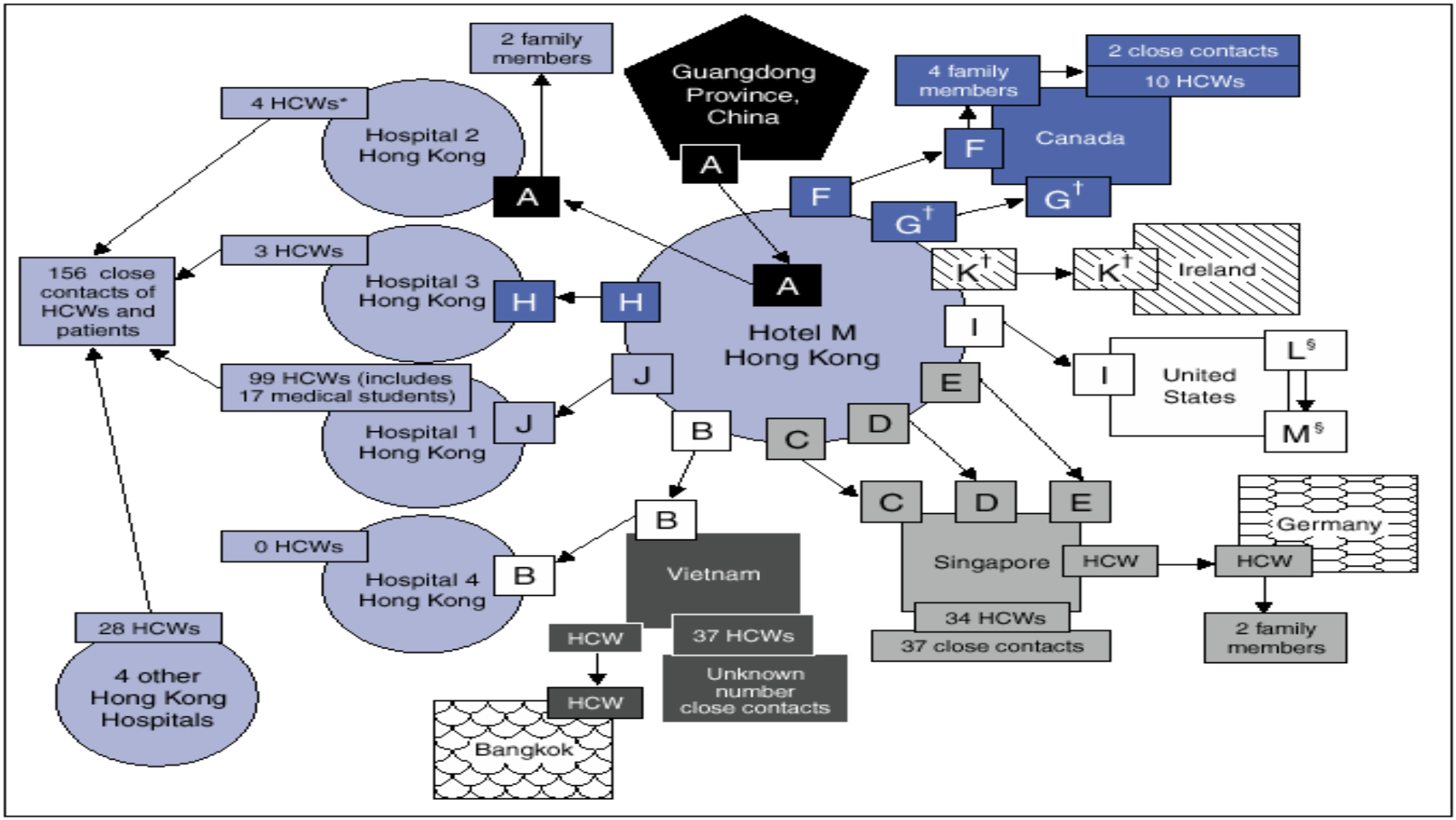
Global distribution of relative risk of an EID event



a, zoonotic pathogens from wildlife, **b**, zoonotic pathogens from non-wildlife, **c**, drug-resistant pathogens and **d**, vector-borne pathogens.

MMWR March 28, 2003 / Vol. 52 / No. 12
www.cdc.gov

Update: Outbreak of Severe Acute Respiratory Syndrome — Worldwide, 2003



* Health-care workers.
† All guests except G and K stayed on the 9th floor of the hotel. Guest G stayed on the 14th floor, and Guest K stayed on the 11th floor.
§ Guests L and M (spouses) were not at Hotel M during the same time as index Guest A but were at the hotel during the same times as Guests G, H, and I, who were ill during this period.

The aftermath of SARS: international consequences

The International Health Regulations (IHR)

- **to help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide.**
- **entered into force on 15 June 2007**
- **require countries to report certain disease outbreaks and public health events (of international concern: PHEIC) to WHO.**

www.who.int

The aftermath of SARS: consequences for Europe

The European Centre for Disease Prevention and Control (ECDC) (since 2005)

to identify, assess and communicate current and emerging threats to human health posed by infectious diseases.

..... in partnership with national health protection bodies across Europe to strengthen and develop continent-wide disease surveillance and early warning systems

DECISION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on serious cross-border threats to health and repealing Decision No 2119/98/EC

- **communicable diseases**
- **biological or chemical agents**
- **environmental events (including hazards related to climate change)**

- ✓ their scale or severity
- ✓ endanger the health
- ✓ malfunctioning of critical sectors of society and economy
- ✓ jeopardize an individual Member State's capacity to react

The aftermath of SARS: consequences for the Netherlands

Centre for Communicable Diseases of the RIVM (since 2005)

to detect, control and prevent infectious diseases for the benefit of the public health in the Netherlands.

.....in addition to and/or collaboration with international and local control activities

Is there an added value for cross-border initiatives?

Cross-border preparedness

Cross-border surveillance

Cross-border response (outbreaks)

Cross-border, multidisciplinary research

Added value of cross-border initiatives

Cross-border preparedness

- **Guidelines on contingency planning**

- **Healthcare resources**
  - **Capacity**
  - **Mobilization**

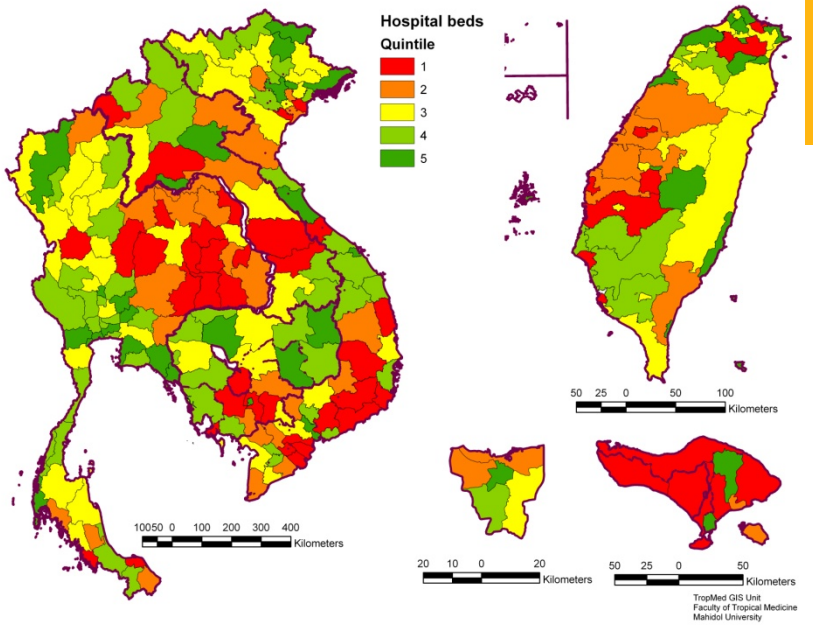
The AsiaFluCAP project

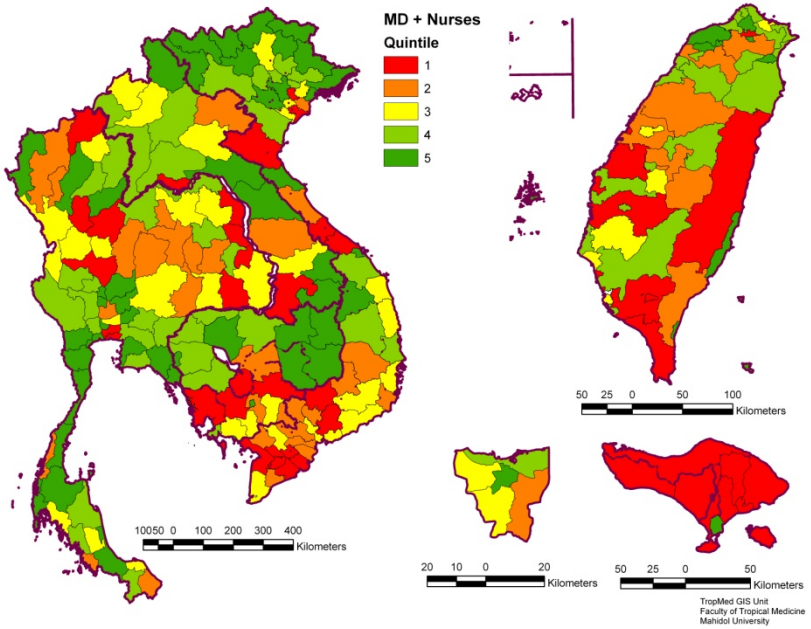
The Asia*FluCap* Project

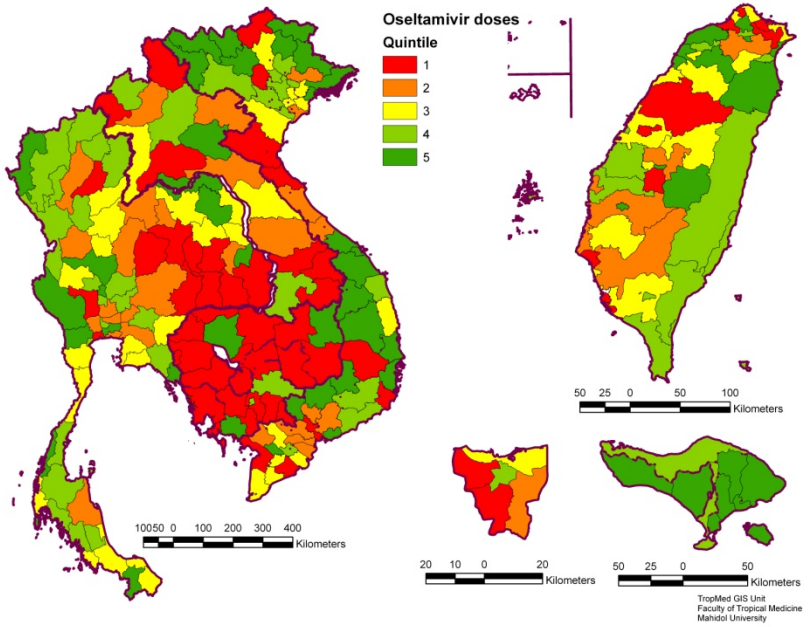
Evaluating health system capacity to respond to pandemic influenza in Thailand, Lao PDR, Cambodia, Indonesia (Jakarta and Bali), Taiwan, Viet Nam

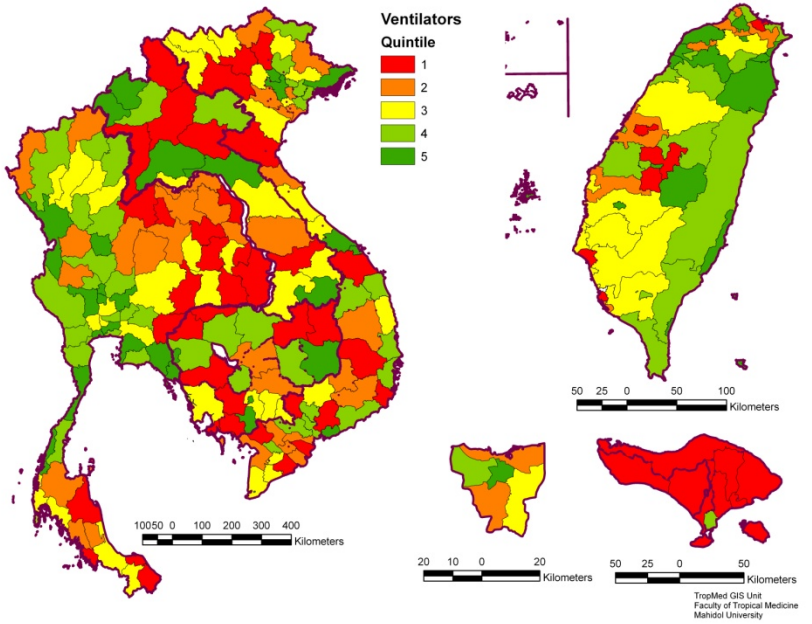
Research consortium led by LSHTM

Country	Name	Institute
Indonesia	Prof. Wiku Adisasmito	University of Indonesia
Vietnam	Dr Le minh Sat	Ministry of Science & Technology, Vietnam
Cambodia	Dr Sok Touch	Ministry of Health, Cambodia
Taiwan, R.O.C.	Dr Steve Kuo	Centers for Disease Control (CDC)
The Netherlands	Dr Aura Timen	National Institute for Public Health and the Environment (RIVM)
Germany	Prof Ralf Reintjes	Hamburg University of Applied Sciences (HAW)
Lao PDR	Dr Bounlay Phommasack	The National Emerging Infectious Diseases Coordination Office (NEIDCO)
Taiwan, R.O.C.	Dr Steve Kuo	Centers for Disease Control (CDC)
United Kingdom	Prof Richard Coker	London School of Hygiene & Tropical Medicine





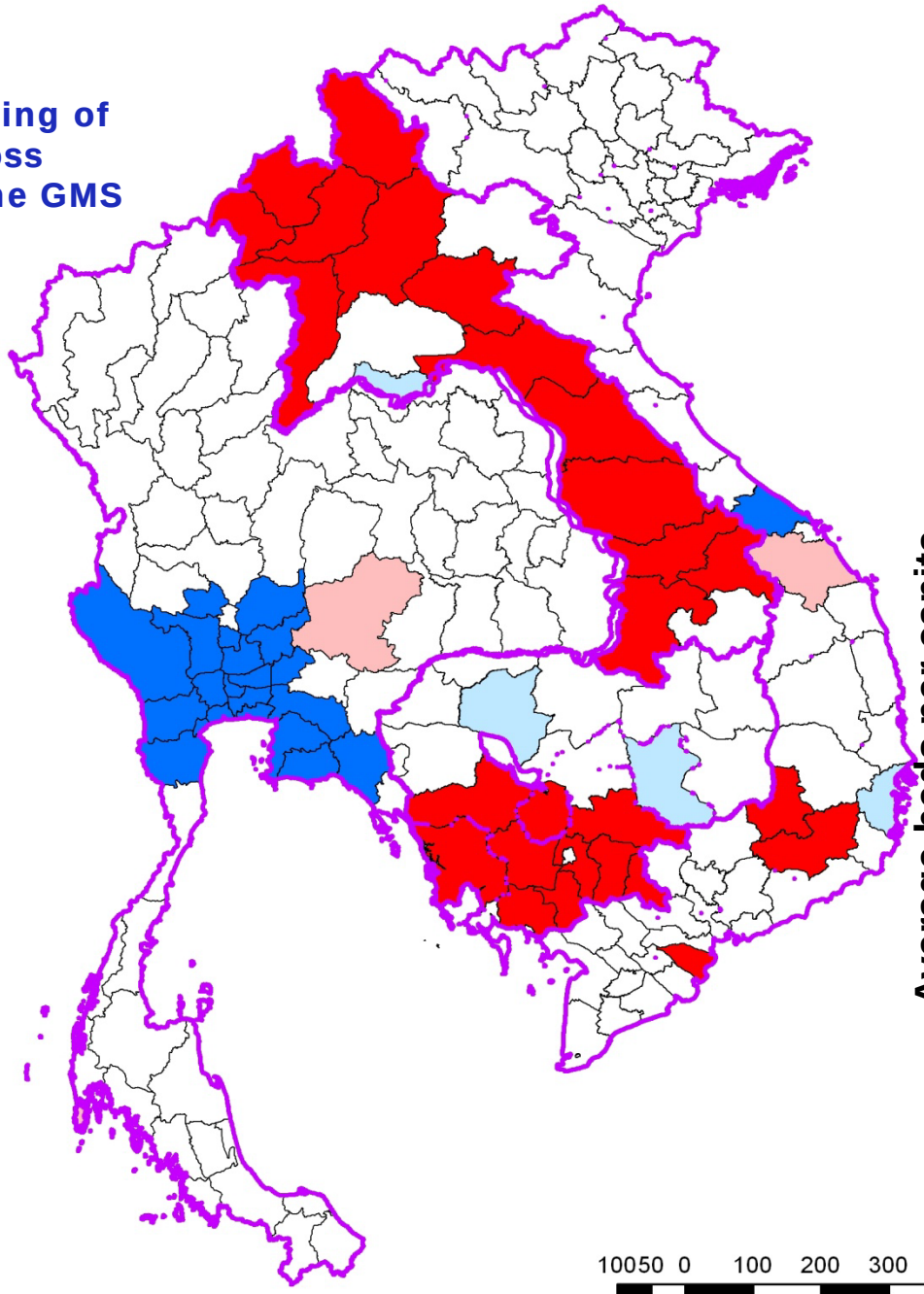




Int J Health Geogr. 2012 Dec 14;11:53. doi: 10.1186/1476-072X-11-53.
An analysis of health system resources in relation to pandemic response capacity in the Greater Mekong Subregion. Hanvoravongchai P et al.

Resource Distribution in the Greater Mekong Subregion: cooperative regional mobilisation across land borders?

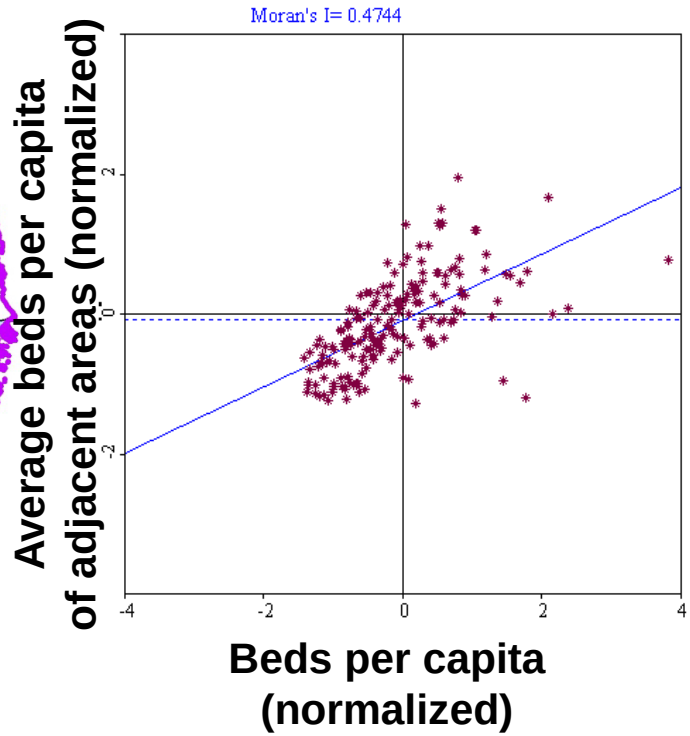
Spatial Clustering of resources across provinces in the GMS



Spatial clusters/outliers

Beds per capita

- Not significant
- High-High
- Low-Low
- Low-High
- High-Low



N

10050 0 100 200 300 400 500 600 Kilometers

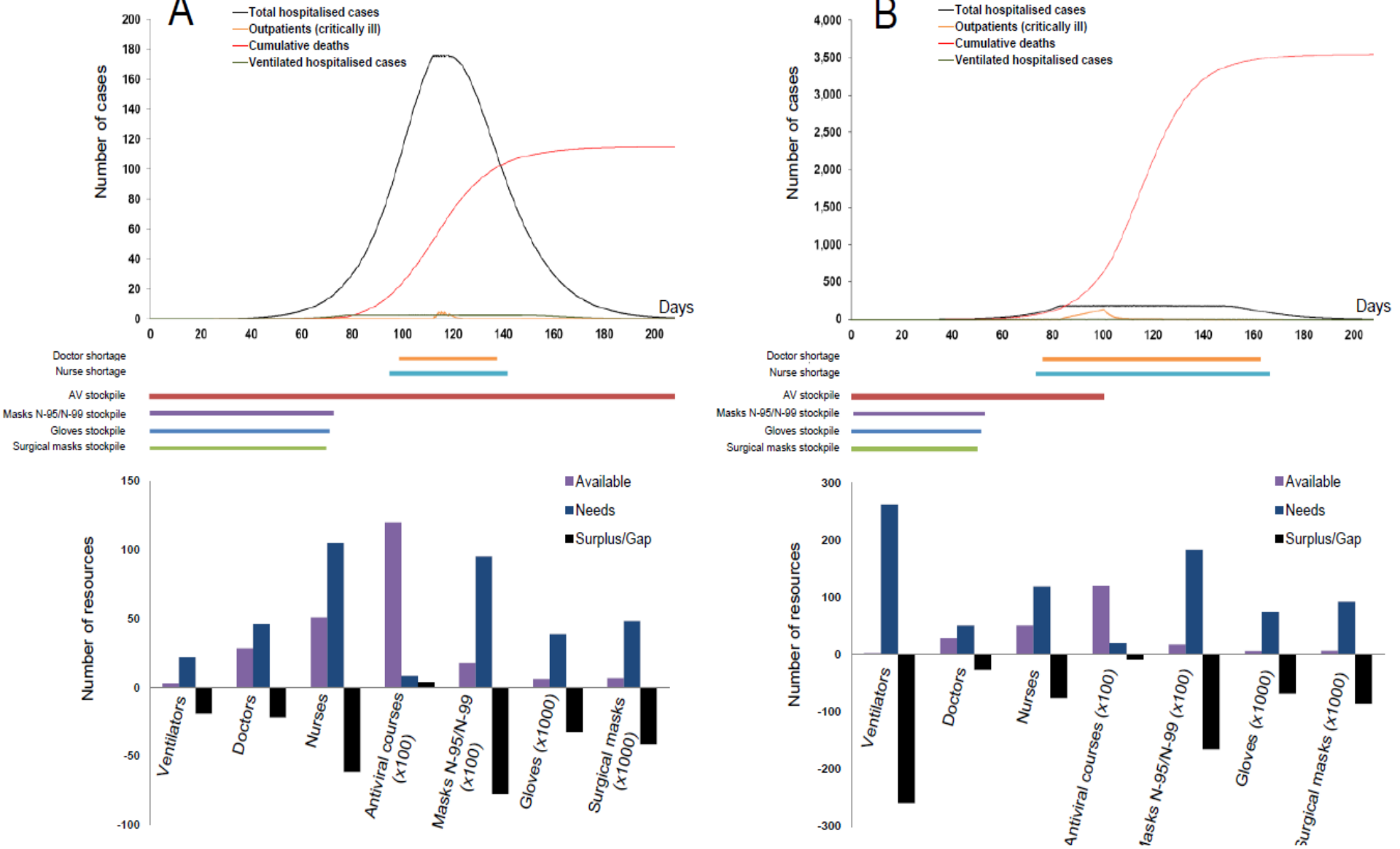
TropMed GIS Unit
Faculty of Tropical Medicine
Mahidol University

Public health implications of a mild/moderate/severe pandemic scenario

-What are the potential consequences of those gaps in terms of the pandemic disease burden (“excess mortalities”)

-How wide is the variation in gaps and disease burden within and across countries?

-What impact could reallocation/mobilisation of resources have on the disease burden?

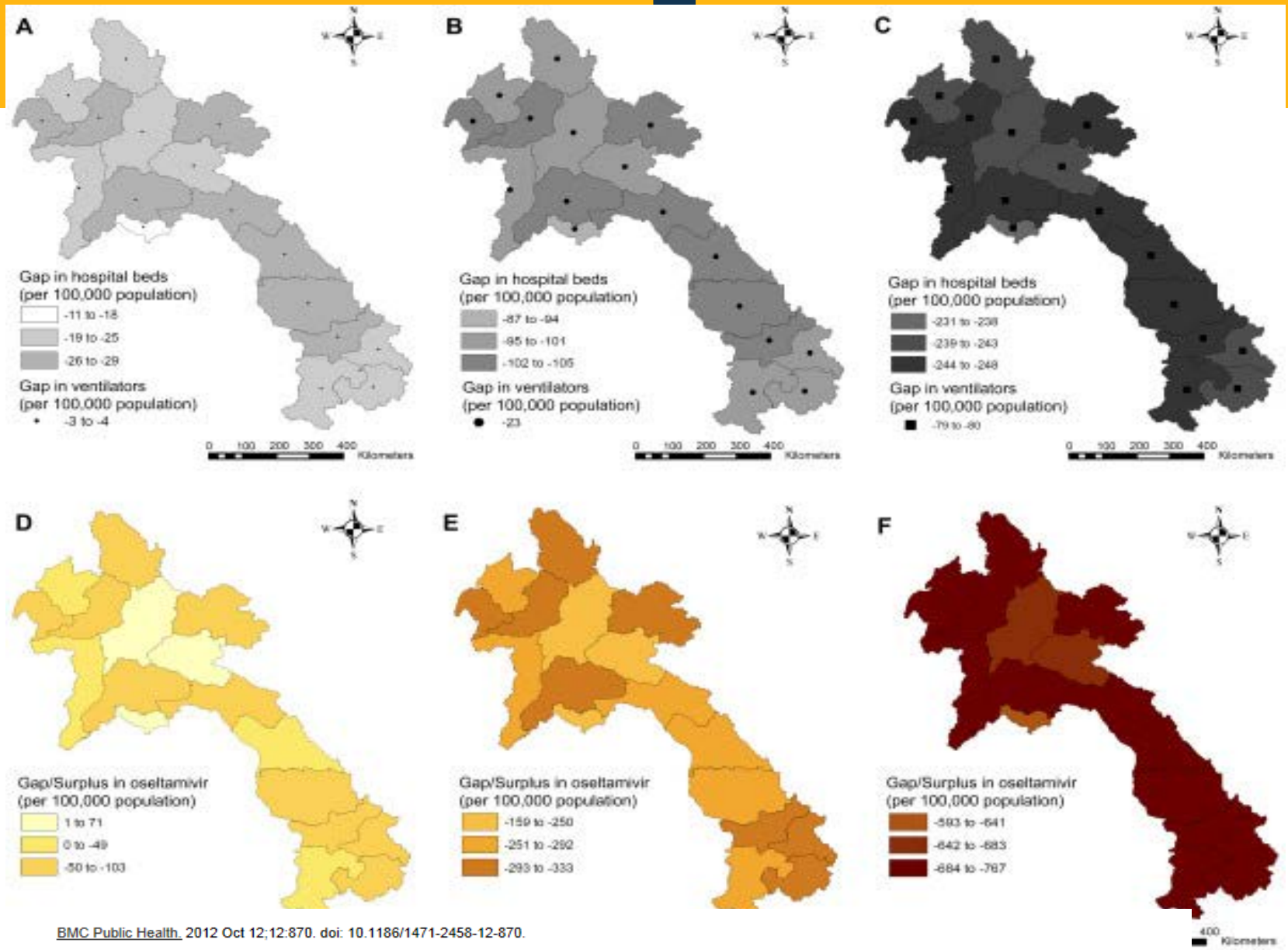


BMC Public Health. 2012 Oct 12;12:870. doi: 10.1186/1471-2458-12-870.

Development of a resource modelling tool to support decision makers in pandemic influenza preparedness: The AsiaFluCap Simulator.

Stein ML, Rudge JW, Coker R, van der Weijden C, Krumkamp R, Hanvoravongchai P, Chavez I, Putthasri W, Phommasack B, Adisasmito W, Touch S, Sat le M, Hsu YC, Kretzschmar M, Timen A.

National Institute for Public Health and the Environment, Centre for Infectious Disease Control, Bilthoven, 3720, BA, The Netherlands. mart.stein@rivm.nl



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National Institute for Public Health and the Environment, Centre for Infectious Disease Control, Bilthoven, 3720, BA, The Netherlands. mart.stein@rivm.nl

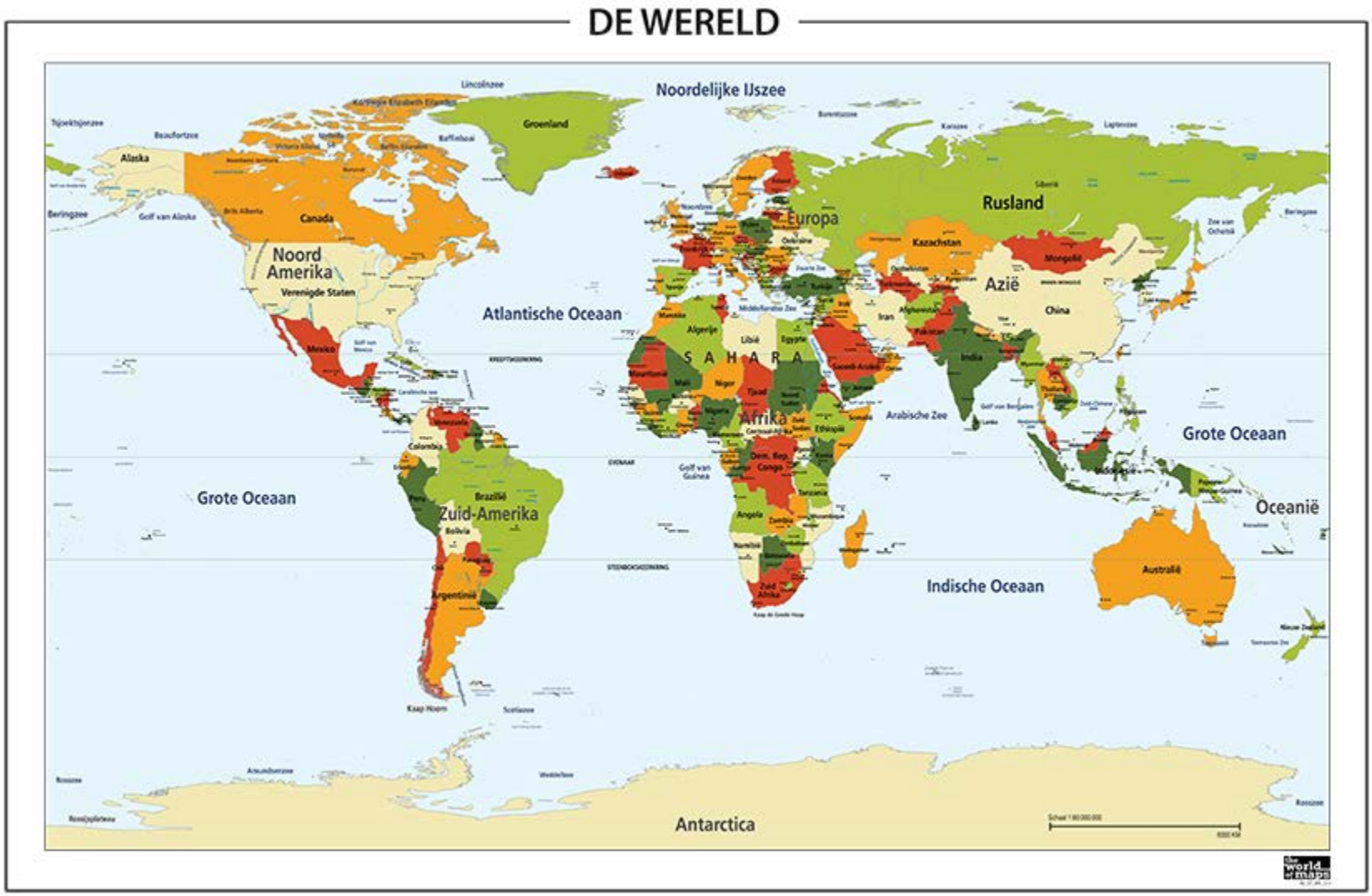
Key messages from resource mapping/modelling

-**Results are *not accurate quantitative predictions* of gaps or mortalities that are expected to occur in a pandemic scenario**

-**Rather, they highlight the *relative extent* of health system inequalities within and across countries, and the impact such inequalities *could* have on the pandemic disease burden**

-**Tools derived from this study offer useful information to guide national and regional simulation exercises and inform preparedness plans**

Cross-border response



Outbreaks, *the real world* - *emerging infectious diseases*

2003

2003

2007

2008

2009

1982 A patient with **Lassa fever** from the Upper Volta, diagnosed in the Netherlands.

Van der Heide RM, NTvG 1982;126:566-9.

2000 A man with fatal **Lassa fever** following a stay in Sierra Leone.

Schmitz H, Microbes Infect. 2002; 4(1):43-50.
Veldkamp PJ et al., NTvG 2002;146:2201-4.
Swaan CM, et al., J Hosp Infect. 2003; 55:234-5.

2008 A patient with Marburg hemorrhagic fever, infected during a holiday in Uganda,

Timen A et al, EID, 2009.

Cross-border response

Lancet. 1978 Dec 9;2(8102):1248.

Viral and epidemiological links between poliomyelitis outbreaks in unprotected communities in Canada and the Netherlands.

Furesz J, Armstrong RE, Contreras G.

PMID: 82746 [PubMed - indexed for MEDLINE]

Appl Environ Microbiol. 1997 February; 63(2): 519–523. PMCID: PMC168343

Molecular detection of an importation of type 3 wild poliovirus into Canada from The Netherlands in 1993.

M A Drebot, M N Mulders, J J Campbell, O M Kew, K Fonseca, D Strong, and S H Lee

Author information ► Copyright and License information ►

ABSTRACT

During the fall and winter of 1992-1993 an outbreak of wild poliovirus type 3-associated poliomyelitis involving 71 patients occurred in The Netherlands. Almost all of the individuals involved in the outbreak belonged to an orthodox religious denomination that prohibits vaccination. A surveillance was initiated to

SURVEILLANCE AND OUTBREAK REPORTS

Mumps epidemic in orthodox religious low-vaccination communities in the Netherlands and Canada, 2007 to 2009

C C Wielders[1,2], R S van Binnendijk[1], B E Snijders[1,2], G A Tipples[3], J Cremer[1], E Fanoy[1,4], S Dolman[5], W L Ruijs[1,6], H J Boot[1], H E de Melker[1], S J Hahné (Susan.Hahne@rivm.nl)[1]

FIGURE 1.

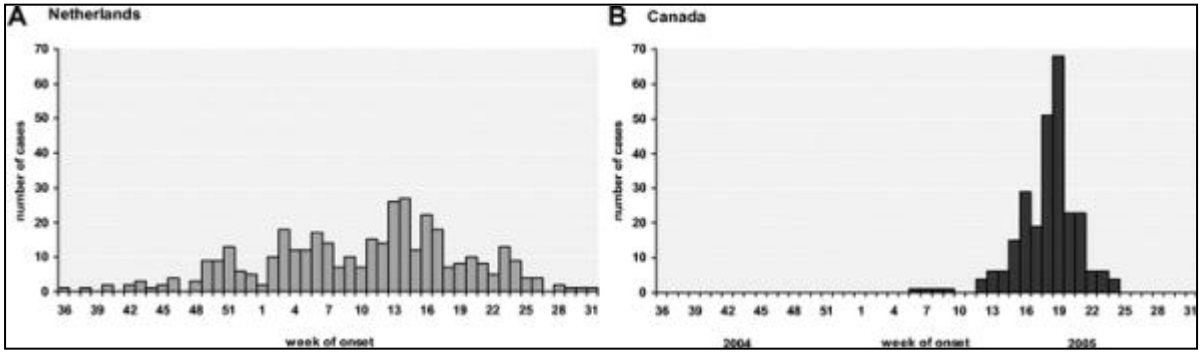


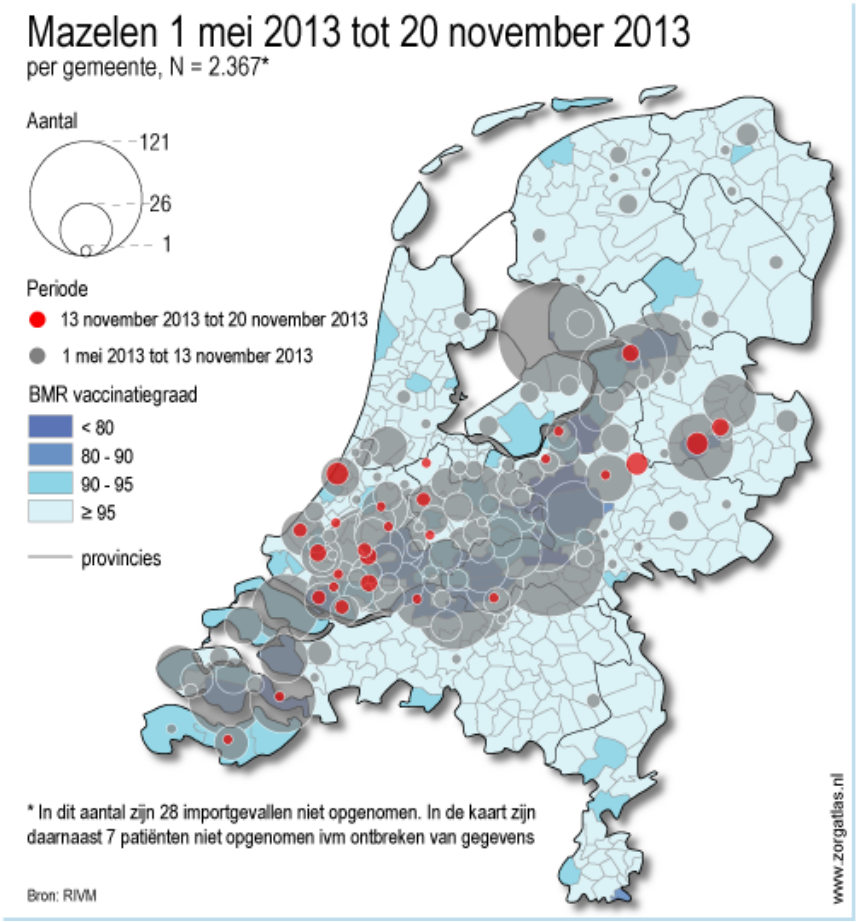
FIGURE 1. Cases of post-natal rubella by week of onset, (A) the Netherlands (n = 377)* and (B) Canada (n = 264)*, September 1, 2004-July 31, 2005. Source Dutch data: Osiris; source Canadian data: OMHLTC. *Note: Case definitions for Canada and The Netherlands differ (see methods). Cases excluded as a result of missing information on date of onset: Canada: 45; Netherlands: 10.

Rubella Outbreak in the Netherlands, 2004-2005: High Burden of Congenital Infection and Spread to Canada.

Hahne, Susan; Macey, Jeannette; van Binnendijk, Rob; Kohl, Robert; Dolman, Sharon; MSc, RN; van der Veen, Ytje; Tipples, Graham; Ruijs, Helma; Mazzulli, Tony; Timen, Aura; van Loon, Anton; de Melker, Hester

Pediatric Infectious Disease Journal. 28(9):795-800, September 2009.
DOI: 10.1097/INF.0b013e3181a3e2d5

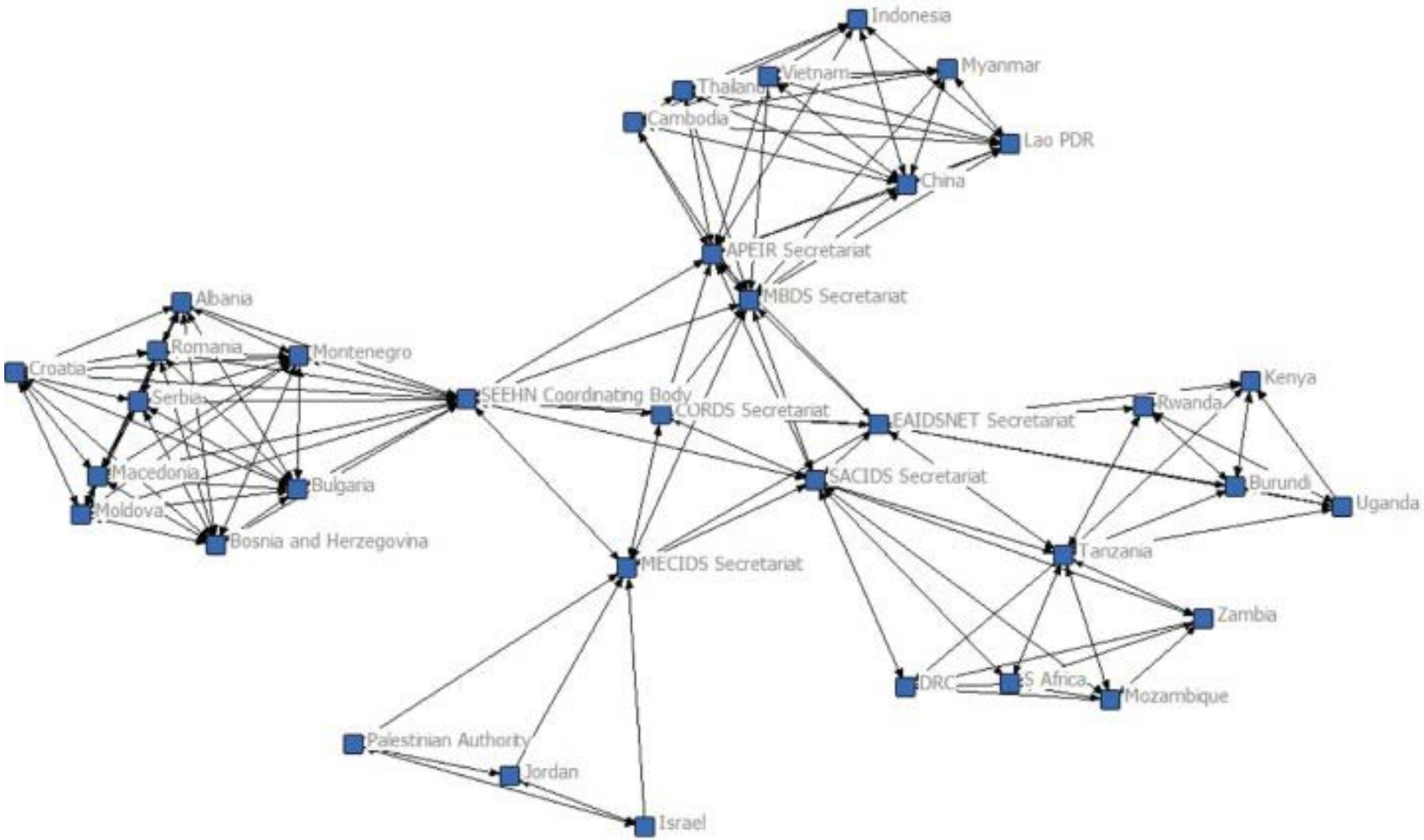
Measles: 2013



Dear IHR National Focal Point for the Netherlands: In accordance with the International Health Regulations (IHR 2005), Article 44 on "collaboration and assistance," the Public Health Agency of Canada would like to report a case of measles in a Canadian, exposed during travel to the Netherlands. This case is an unimmunized adolescent female, and is associated with a religious group known to object to immunization. This same religious group is also currently experiencing an outbreak of measles in the Netherlands.

Cross-border (surveillance) networks

A social network graph illustrating the connections among countries and regional networks in CORDS
(Connecting Organizations for Regional Disease Surveillance)



Emerg Health Threats J. 2013; 6: 10.3402/ehtj.v6i0.19913.
Published online 2013 January 25

Source: C. Bond

The example of EpiSouth

Cross-border epidemic intelligence, vaccine preventable diseases, migrants, emerging zoonoses , networking, training

http://www.episouthnetwork.org/
Eurosurveillance, Volume 14, Issue 5, 05 February 2009

Advantages

- ✓ **based on countries and regional needs**
- ✓ **a live trusted network**
- ✓ **environment where experiences can be shared and capacities built**
- ✓ **bilaterality**
- ✓ **concrete and useful feedback to the countries**

Challenges

- ✓ **critical role of a moderator**
- ✓ **interoperability with EWRS (no duplication)**
- ✓ **bilateral sharing with EU countries (added value for non-EU countries)**

(acknolwedgements: Sylvia Declich, Episouth)

Is there a need for cross-border communicable disease control?

In addition to national and international communicable disease control activities

Not to replace formal structures for preparedness, response, surveillance, but rather complement them

Cross-border initiatives require a different mind set

Specific cross-border issues

- **Demographics**
- **Risk groups**
- **Risk patterns**
- **Resource sharing**
- **Tailored communication**

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