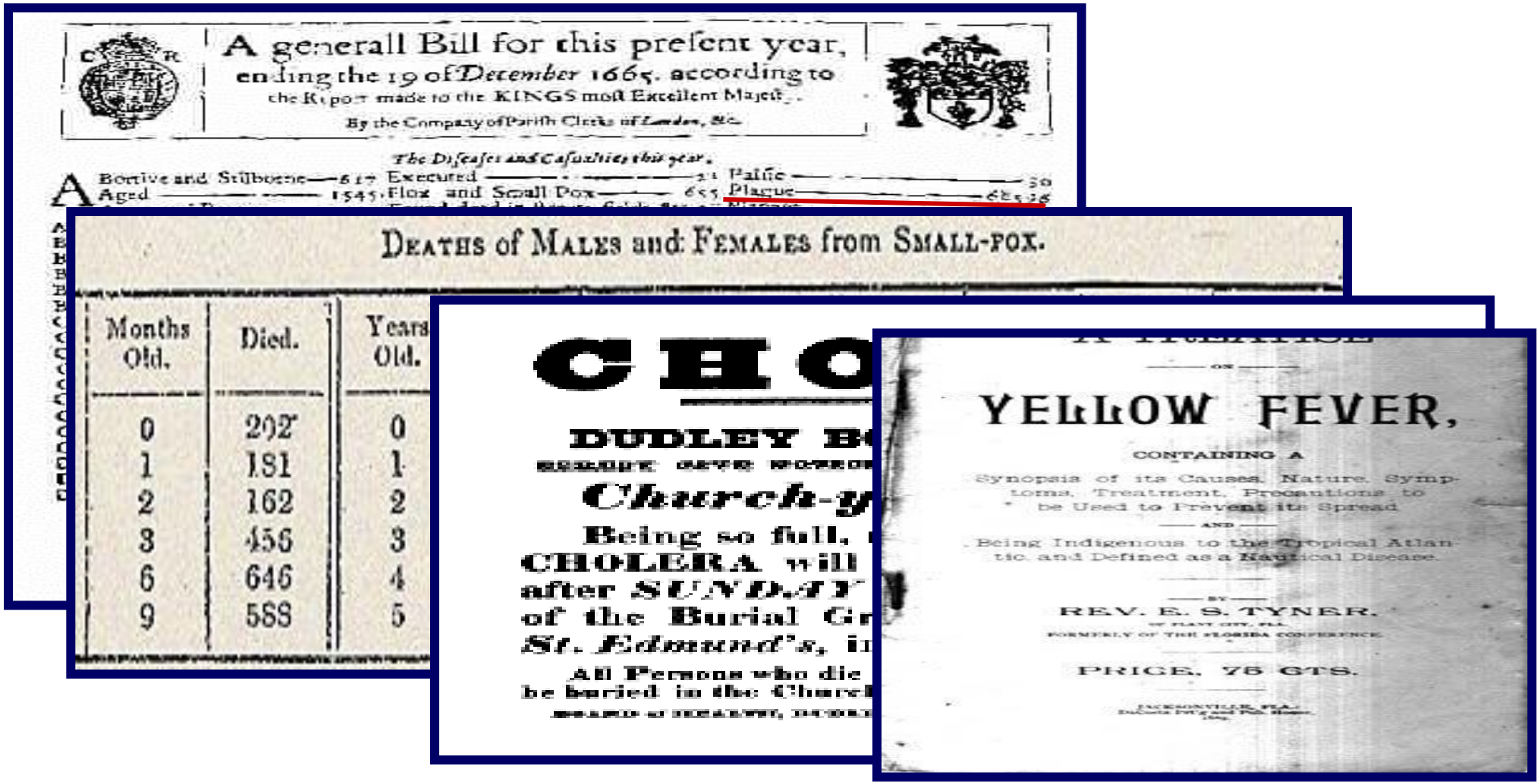
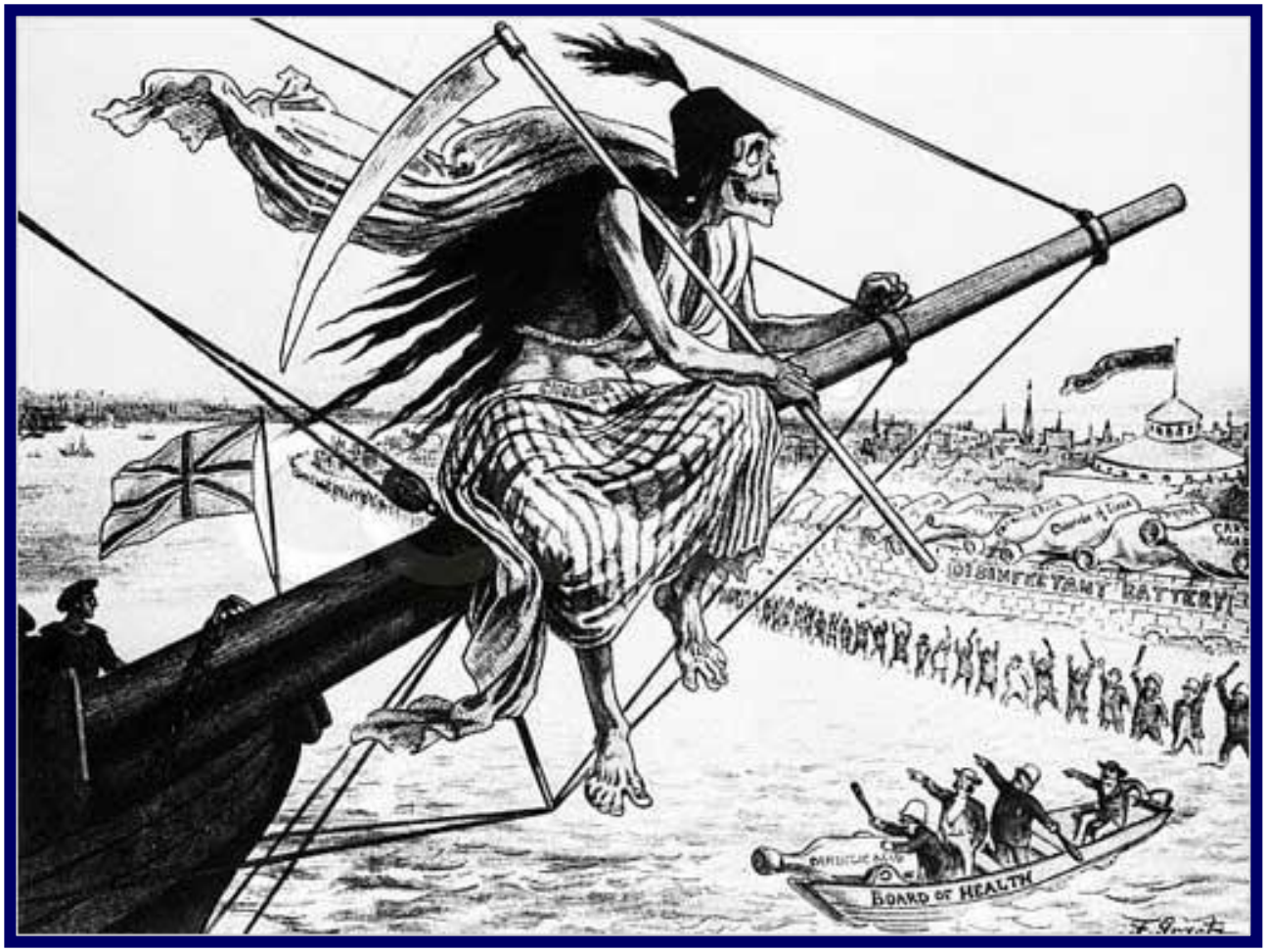
Frameworks for responding to emergency infectious diseases

The International Health Regulations

Global outbreaks in the past: detect, report and act at borders



Quarantine:
action at borders to prevent local outbreaks



Collective response to international spread: plague, cholera, yellow fever and smallpox

1374	Venice	Ship Quarantine for Plague only
1851 - 1902	Europe/Americas	10 International Sanitary Conferences
1920	Geneva	League of Nations Health Organization
1951	Geneva	International Sanitary Regulations
1969	Geneva	International Health Regulations

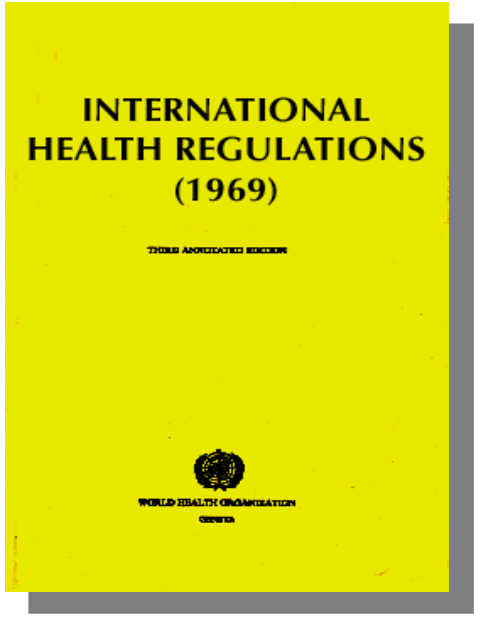
Points for discussion

- Have you heard of the International Health Regulations?
- If so do you know how they came into existence and how they have functioned since agreed in 1969?

International Health Regulations 1969: purpose

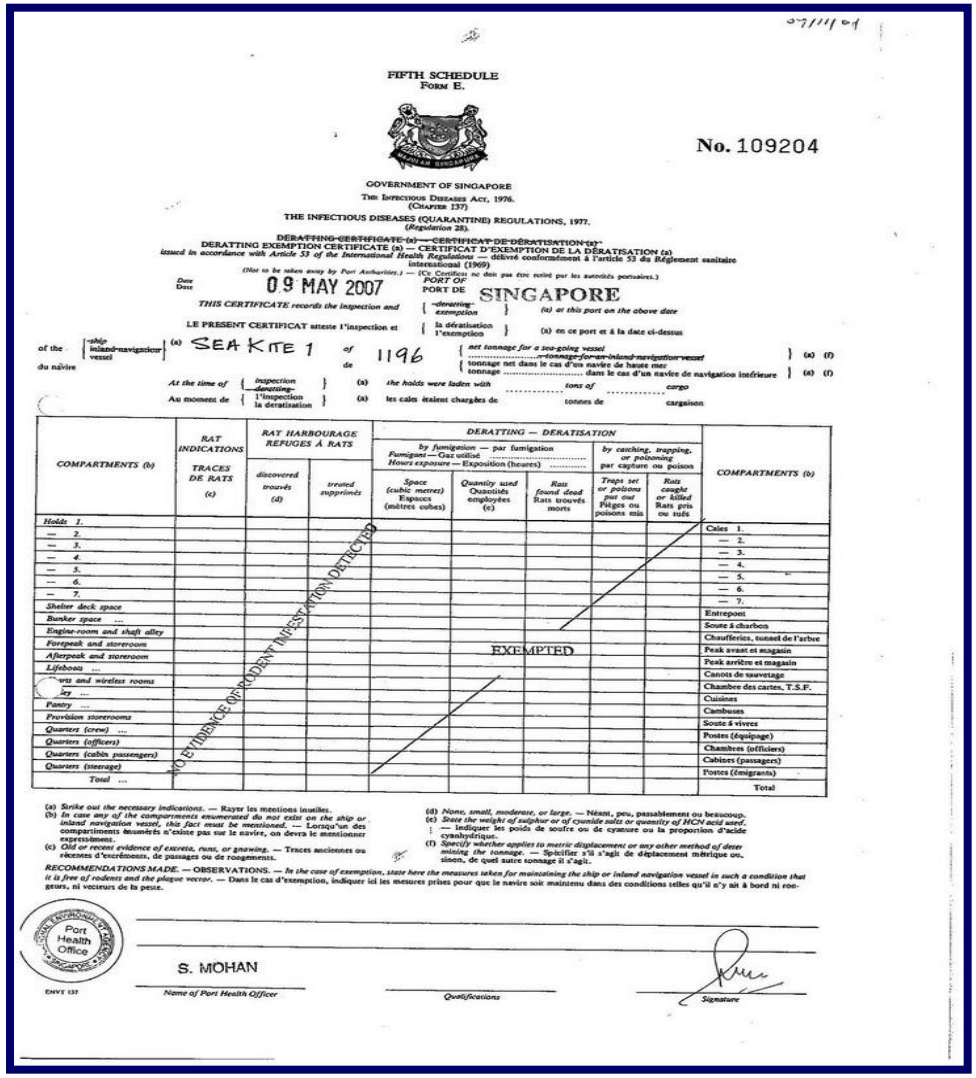
"…ensure the maximum security against the international spread of disease with a minimum interference with world traffic."

Content of International Health Regulations 1969: requirements



- **Notification** to WHO: cholera, plague or yellow fever – reports only accepted from countries where event is occurring
- **Health Measures:** describe maximum measures that a country may require to protect against cholera, plague and yellow fever (e.g. yellow fever vaccination card)
- **Health Organization at borders:** ports, airports and frontier posts adequately equipped to prevent vector proliferation

Application of International Health Regulations: prevention at border posts



FIFTH SCHEDULE
FORM E.

No. 109204

GOVERNMENT OF SINGAPORE
THE INFECTIOUS DISEASES ACT, 1976.
(CHAPTER 137)
THE INFECTIOUS DISEASES (QUARANTINE) REGULATIONS, 1977.
(Regulation 28).

~~DERATTING CERTIFICATE (a) — CERTIFICAT DE DÉRATISATION (a)~~
DERATTING EXEMPTION CERTIFICATE (a) — CERTIFICAT D'EXEMPTION DE LA DÉRATISATION (a)
issued in accordance with Article 53 of the International Health Regulations — délivré conformément à l'article 53 du Règlement sanitaire international (1969)

(Not to be taken away by Port Authorities.) — (Ce Certificat ne doit pas être retiré par les autorités portuaires.)

Date / Date: 09 MAY 2007 — PORT OF / PORT DE: SINGAPORE

THIS CERTIFICATE records the inspection and {~~derating~~ / exemption} (a) at this port on the above date

LE PRÉSENT CERTIFICAT atteste l'inspection et {la dératisation / l'exemption} (a) en ce port et à la date ci-dessus

of the / du navire {~~ship~~ / inland-navigation vessel} (a) SEA KITE 1 of / de 1196 {net tonnage for a sea-going vessel / ~~.....or tonnage for an inland-navigation vessel~~ / tonnage net dans le cas d'un navire de haute mer / tonnage ..... dans le cas d'un navire de navigation intérieure} (a) (f)

At the time of / Au moment de {~~inspection~~ / ~~derating~~ / l'inspection / la dératisation} (a) the holds were laden with / les cales étaient chargées de ..... tons of / tonnes de ..... cargo / cargaison

COMPARTMENTS (b)	RAT INDICATIONS TRACES DE RATS (c)	RAT HARBOURAGE REFUGES À RATS: discovered trouvés (d)	RAT HARBOURAGE REFUGES À RATS: treated supprimés	DERATTING — DÉRATISATION: by fumigation — par fumigation (Fumigant — Gaz utilisé ..... Hours exposure — Exposition (heures) .....): Space (cubic metres) Espaces (mètres cubes)	Quantity used Quantités employées (e)	Rats found dead Rats trouvés morts	by catching, trapping, or poisoning par capture ou poison: Traps set or poisons put out Pièges ou poisons mis	Rats caught or killed Rats pris ou tués	COMPARTMENTS (b)
Holds 1.									Cales 1.
— 2.									— 2.
— 3.									— 3.
— 4.									— 4.
— 5.									— 5.
— 6.									— 6.
— 7.									— 7.
Shelter deck space									Entrepont
Bunker space ...									Soute à charbon
Engine-room and shaft alley									Chaufferies, tunnel de l'arbre
Forepeak and storeroom									Peak avant et magasin
Afterpeak and storeroom									Peak arrière et magasin
Lifeboats ...									Canots de sauvetage
[illegible]rts and wireless rooms									Chambre des cartes, T.S.F.
[illegible]ley ...									Cuisines
Pantry ...									Cambuses
Provision storerooms									Soute à vivres
Quarters (crew) ...									Postes (équipage)
Quarters (officers)									Chambres (officiers)
Quarters (cabin passengers)									Cabines (passagers)
Quarters (steerage)									Postes (émigrants)
Total ...									Total

NO EVIDENCE OF RODENT INFESTATION DETECTED

EXEMPTED

(a) Strike out the necessary indications. — Rayer les mentions inutiles.
(b) In case any of the compartments enumerated do not exist on the ship or inland navigation vessel, this fact must be mentioned. — Lorsqu'un des compartiments énumérés n'existe pas sur le navire, on devra le mentionner expressément.
(c) Old or recent evidence of excreta, runs, or gnawing. — Traces anciennes ou récentes d'excréments, de passages ou de rongements.
(d) None, small, moderate, or large. — Néant, peu, passablement ou beaucoup.
(e) State the weight of sulphur or of cyanide salts or quantity of HCN acid used. — Indiquer les poids de soufre ou de cyanure ou la proportion d'acide cyanhydrique.
(f) Specify whether applies to metric displacement or any other method of determining the tonnage. — Spécifier s'il s'agit de déplacement métrique ou, sinon, de quel autre tonnage il s'agit.

RECOMMENDATIONS MADE. — OBSERVATIONS. — In the case of exemption, state here the measures taken for maintaining the ship or inland navigation vessel in such a condition that it is free of rodents and the plague vector. — Dans le cas d'exemption, indiquer ici les mesures prises pour que le navire soit maintenu dans des conditions telles qu'il n'y ait à bord ni rongeurs, ni vecteurs de la peste.

Port Health Office

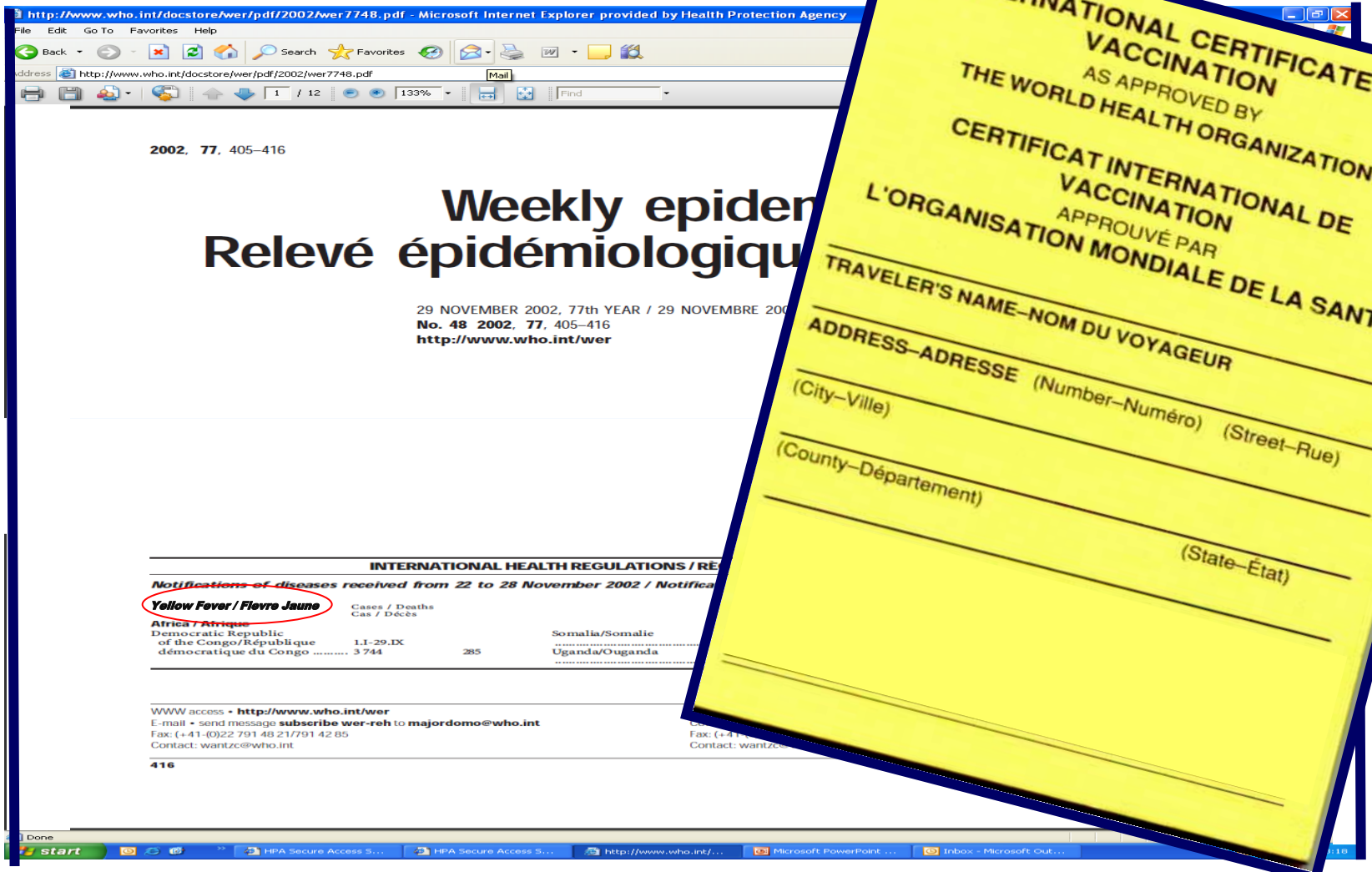
S. MOHAN
Name of Port Health Officer

Qualifications

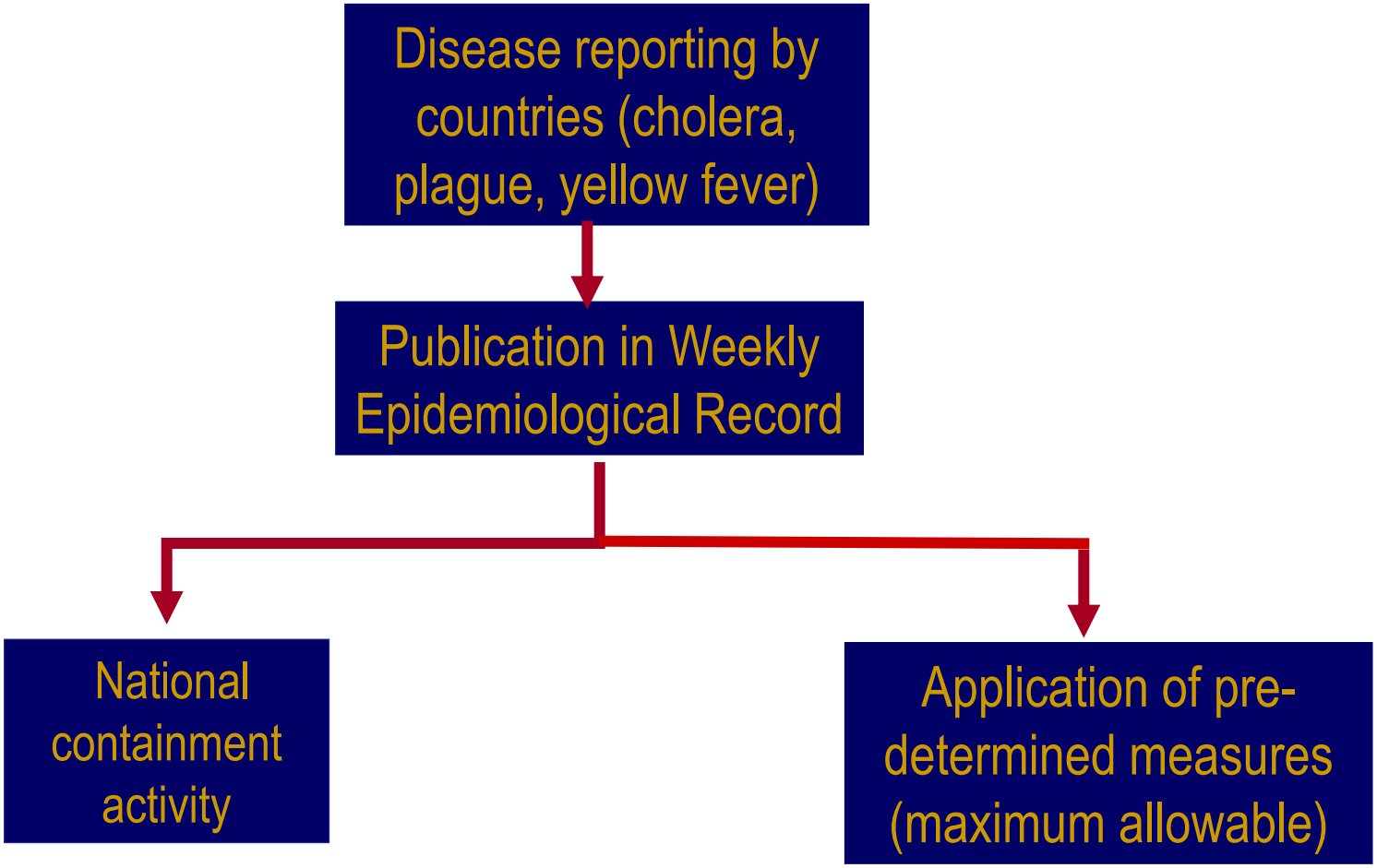
Signature

ENVT 137

Application of International Health Regulations: reporting/prevention



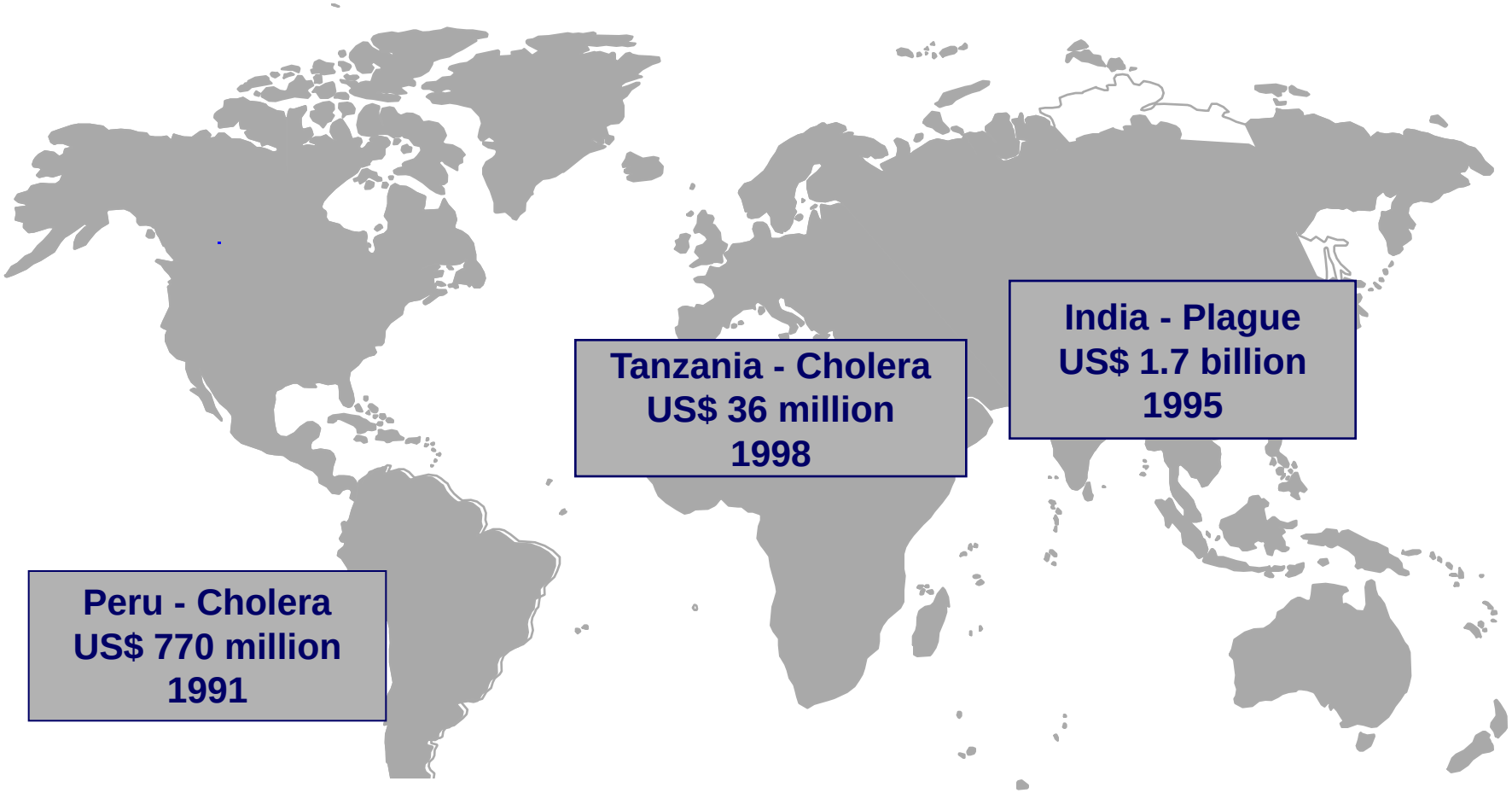
Application of International Health Regulations, 1969



Points for discussion

- Have the International Health Regulations been successful in protecting against the international spread of cholera, plague and yellow fever?
- If so, can you provide evidence?
- If not can you suggest why?

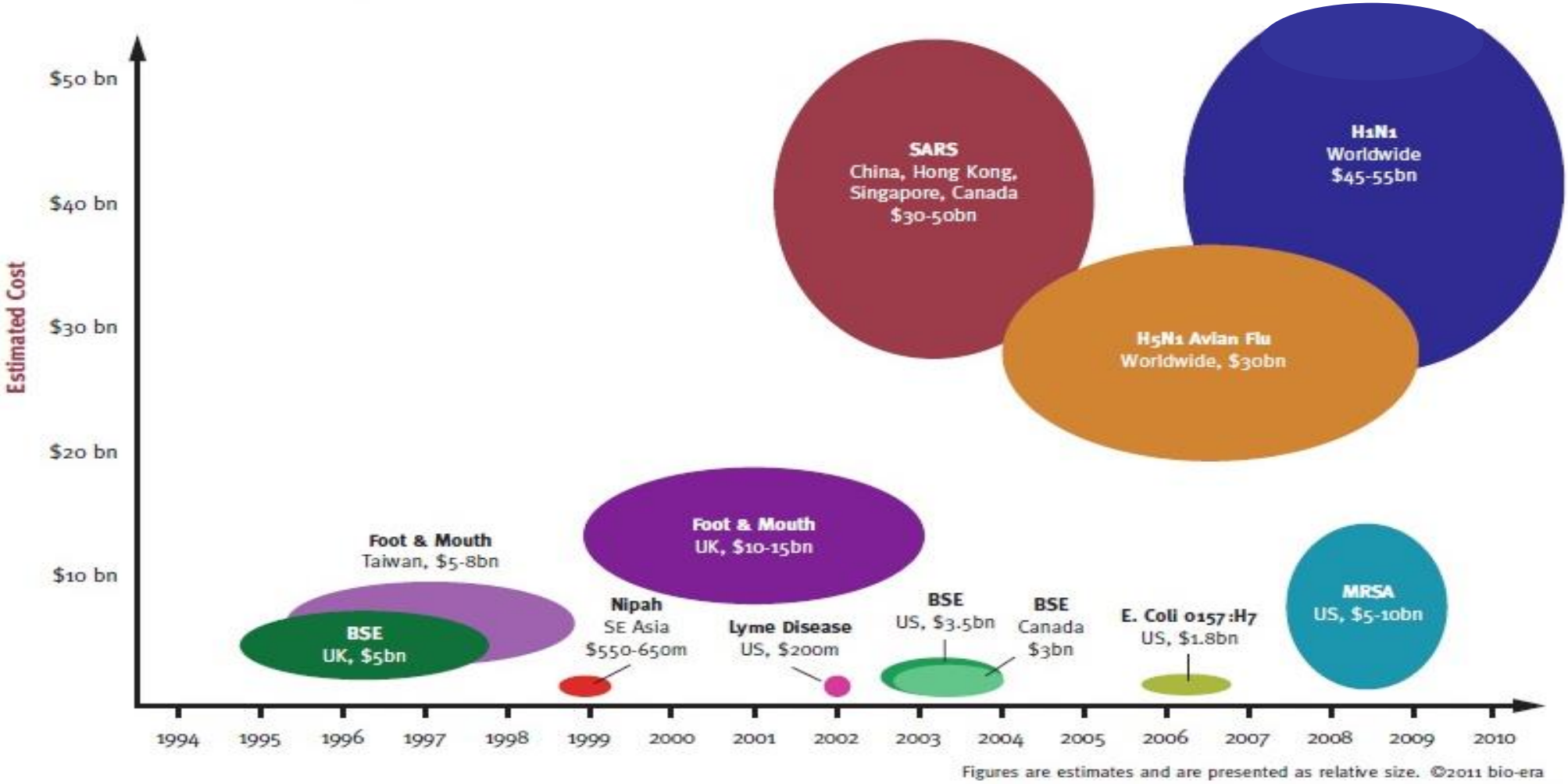
Economic impact, cholera and plague, 1991-1998



Breaches in species barrier: emerging infections in humans

Infection	Animal linked to transmission	Year infection first reported
Ebola virus	Bats	1976
HIV-1	Primates	1981
E. coli O157:H7	Cattle	`1982
Borrelia burgdorferi	Rodents	1982
HIV-2	Primate	1986
Hendra virus	Bats	1994
BSE/vCJD	Cattle	1996
Australian lyssavirus	Bats	1996
Influenza A (H5N1)	Chickens	1997
Nipah virus	Bats	1999
SARS coronavirus	Palm civets	2003
Influenza A (H1N1)	Swine	2009
MERS coronavirus	Bat/ Dromedary	2012
Infnuenza A (H7N9)	Poultry	2013
Zika virus	Monkey	2007

Recent infectious disease outbreaks and their economic impact

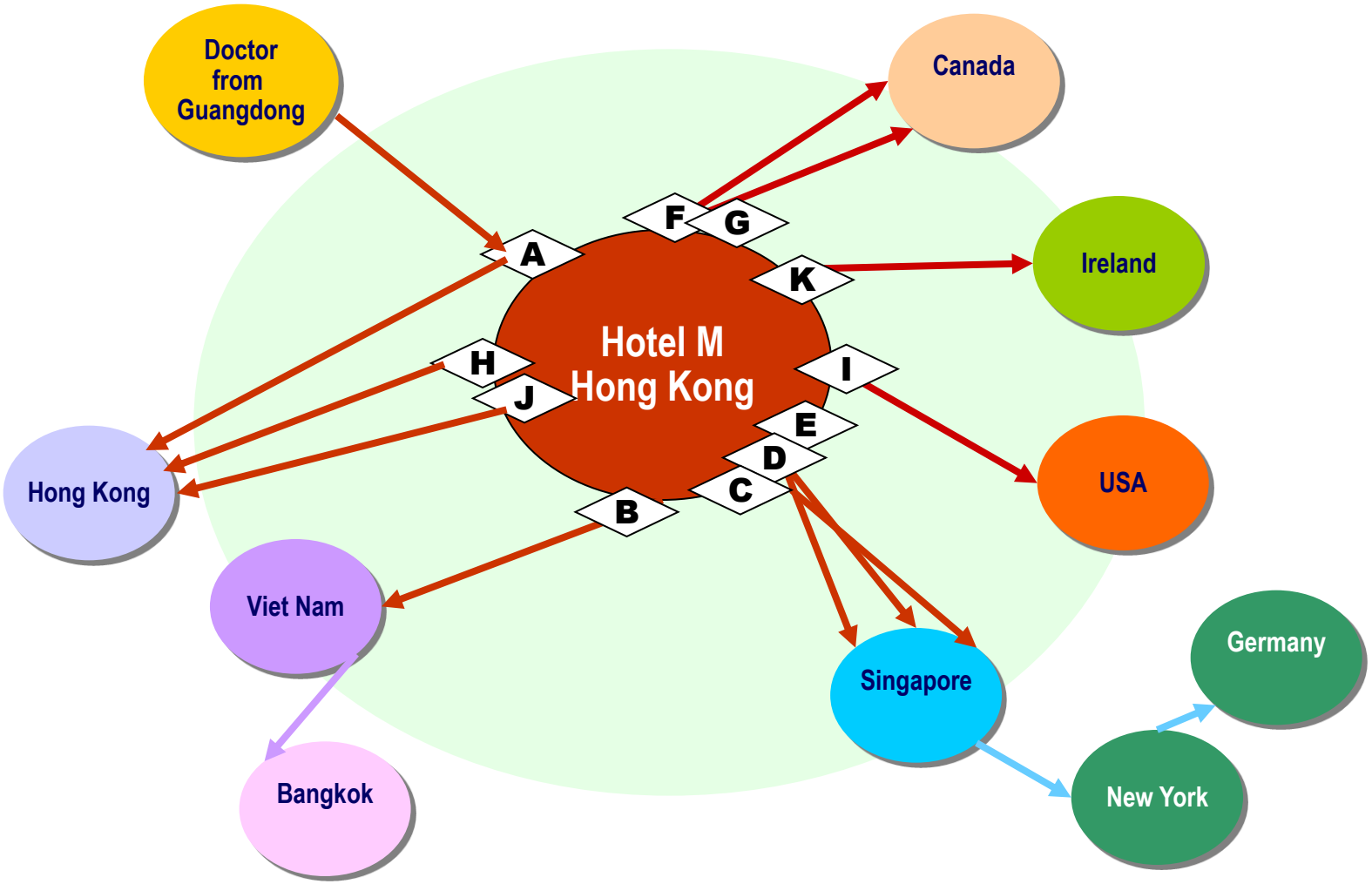


WHO: vision for revision of the International Health Regulations, 1996

- *A world on the alert and able to detect and respond to international infectious disease threats within 24 hours using the most up to date means of global communication and collaboration*

- *A change in the norms surrounding reporting of infectious disease outbreaks, making it expected and respected to report*

SARS: international spread from Hong Kong, 21 February – 12 March, 2003



Source:
WHO/CDC

Revision of the International Health Regulations, 2003 resolution

Severe acute respiratory syndrome (SARS)

All infectious diseases with potential for international spread to be reported

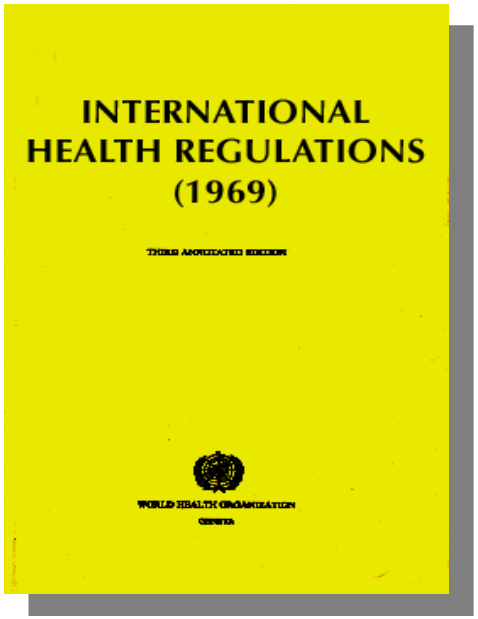
Reporting of infectious diseases from other sources accepted by WHO Member States

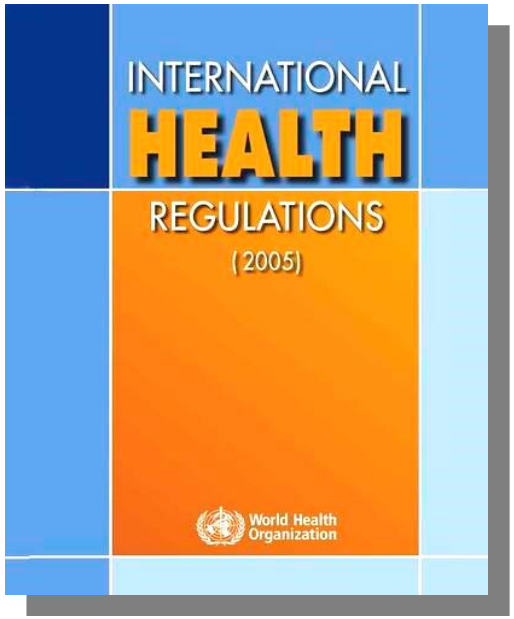
Revised International Health Regulations to serve as a formal framework for pro-active international surveillance and response through national IHR focal points

Points for discussion

- How would you go about revising the International Health Regulations?
- Do you think it will be easy to renegotiate in the world today?

International Health Regulations 2005



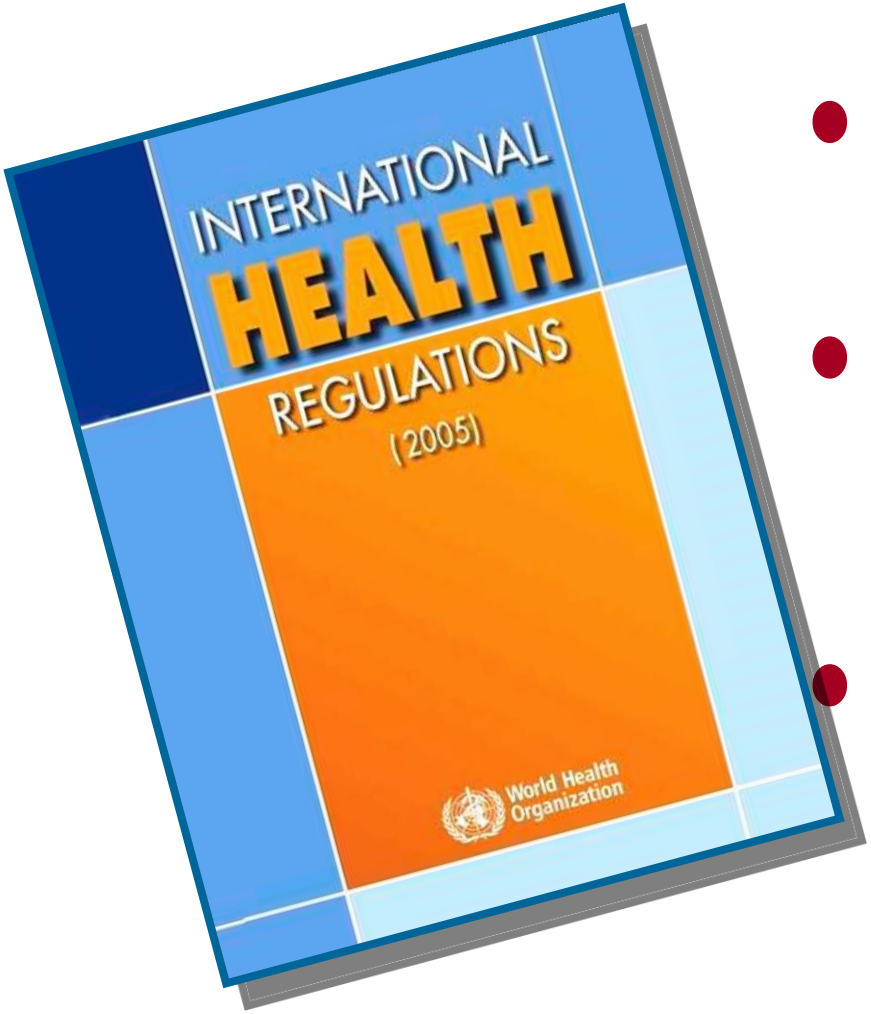


From **three diseases** to **all public health threats**

From **passive to pro-active using real time surveillance/evidence**

From **control at borders** to **detection and containment at source**

Requirements, International Health Regulations



- Strengthened national core capacity for surveillance and control
- Mandatory reporting of possible public health emergency of international importance (PHEIC)
- Emergency Committee to advise DG

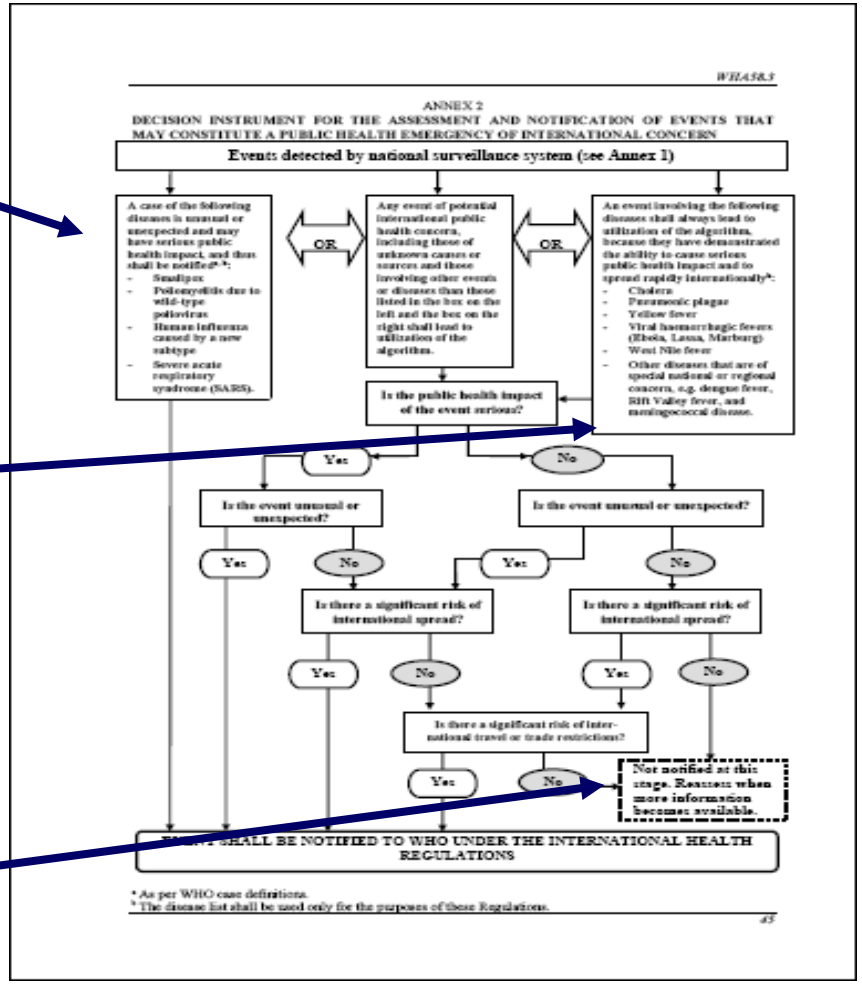
Decision instrument International Health Regulations, PHEIC

4 diseases that shall be always be notified **polio (wild-type polio virus), smallpox, human influenza new subtype, SARS**.

Diseases that shall always lead to utilization of the algorithm: **cholera, pneumonic plague, yellow fever, VHF (Ebola, Lassa, Marburg), WNF, others that are unusual or unexpected and cause:**

serious public health impact
risk of international spread
risk of travel/trade restriction

Insufficient information: reassess as evidence becomes available



WHO event management site, national IHR focal points

:: WHO Event Information for IHR National Focal Points :: - Microsoft Internet Explorer provided by WHO

File Edit View Favorites Tools Help

Address http://www.who.int/csr/alertresponse/ihreventinfo/IHR/CurrentEvents.aspx

عربي | 中文 | English | Français | Русский | Español

World Health Organization

Event Information Site
for IHR National Focal Points

Search

Welcome **Paul Gully [Logout]**

Print Page | Add to favorites | Help

Current Events

- Current Events
- All Events

This site has been developed by WHO to facilitate secure communications with the IHR National Focal Points (NFP) as part of the implementation of the International Health Regulations (2005).

Information on this site is provided by WHO to National Focal Points, in confidence, as specified in Article 11.1 of the IHR (2005).

Current Events

This section lists ongoing events which are currently being assessed against the criteria for public health risks of international importance under the IHR (2005).

Click an event's **Updated** link to see the current risk assessment and most recent updates for the event.

Updated	Country	Hazard	Syndrome	Disease	Initial Information On	IHR Status
2008/03/07	Argentina	Infectious	Acute Haemorrhagic Fever Syndrome	Yellow Fever	2008/02/05	Public Health Risk (PHR)
2008/02/22	Paraguay	Infectious	Acute Haemorrhagic Fever Syndrome	Yellow Fever	2008/01/30	Public Health Risk (PHR)
2008/02/20	Uganda	Infectious	Acute Fever and Rash Syndrome	Ebola Haemorrhagic Fever	2007/11/14	Public Health Risk (PHR)
2008/02/07	Chad	Infectious		Poliomyelitis, acute paralytic, wil...	2007/02/01	Public Health Risk (PHR)
2008/01/31	Norway	Infectious		Influenza due to identified human i...	2008/01/25	Public Health Risk (PHR)
2008/01/22	Sudan	Infectious	Acute Haemorrhagic Fever Syndrome	Rift Valley Fever	2007/10/17	Public Health Risk (PHR)
2008/01/18	Brazil	Infectious	Acute Haemorrhagic Fever Syndrome	Yellow Fever	2008/01/09	Public Health Risk (PHR)
2008/01/11	Pakistan	Infectious	Acute Respiratory Syndrome	Influenza due to identified avian o...	2007/12/11	Public Health Risk (PHR)
2007/11/07	Peru	Product		Adverse effects of viral vaccines	2007/10/16	Public Health Risk (PHR)

Total number of items : 9

Updates to Past Events

This section displays events that no longer represent a risk to international public health, but for which new information or details have been recently received.

Click an event's **Updated** link to see the event's historical details and recent updates.

There are currently no events to show in this list.

Announcements

2008/02/29
Updated list of IHR NFP contact details 29 February 2008

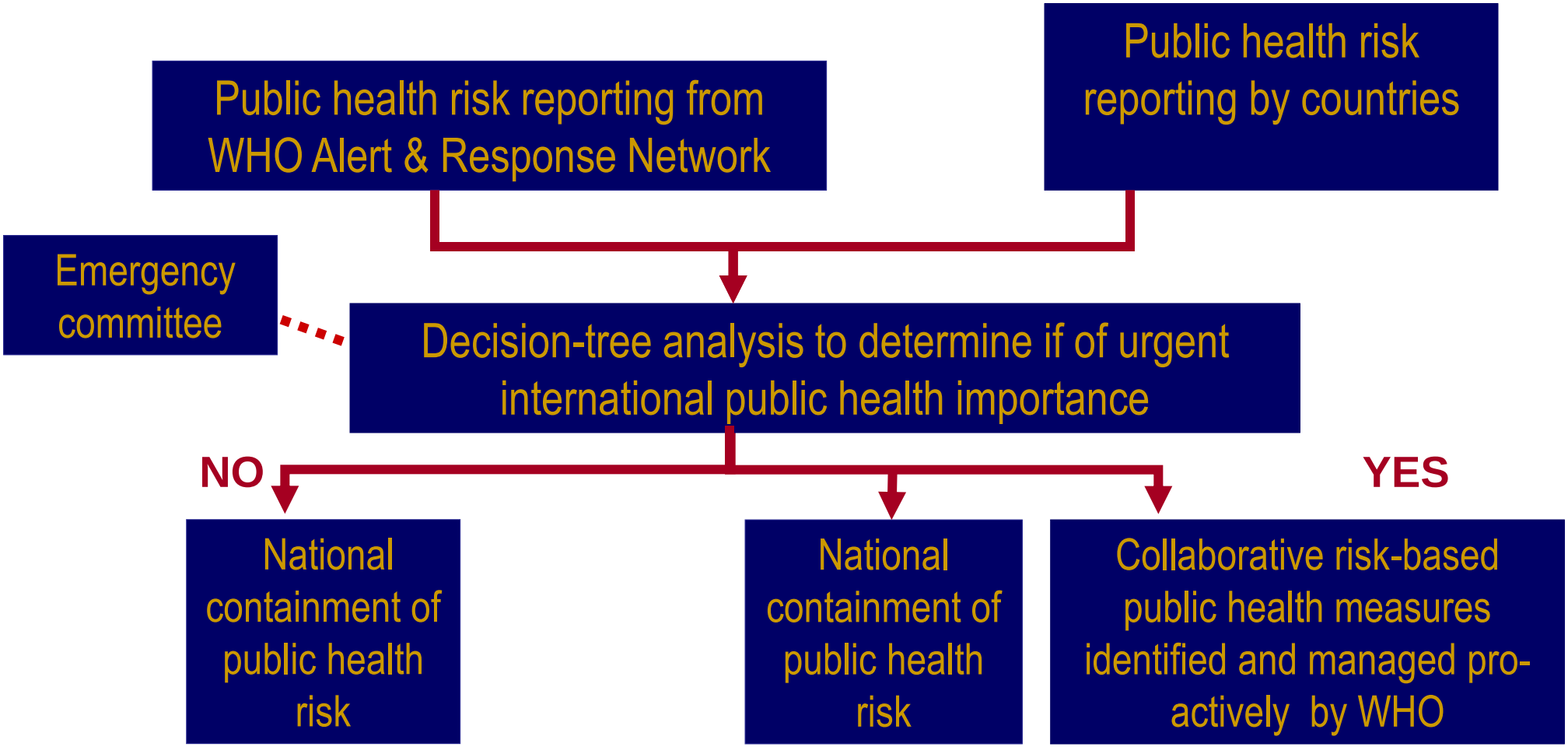
2007/11/23
IHR Event Information Site Alerts

2007/08/28
Links to situation updates on avian influenza

Done | Local intranet

Start | Inbox - Microso... | Disconnected - ... | Matrix Zoonose... | Matrix Zoonose... | One World One... | Microsoft Powe... | :: WHO Event ... | EN | 12:07

Decision making and response and the revised International Health Regulations 2005



Points for discussion

- How will WHO be sure that countries report when possible PHEIC?
- What will happen if countries do not report?
  - Is it possible to force reporting?
  - Is it possible to sanction those countries that do not report?

WHO: vision for revision of the International Health Regulations, 1996

- *A world on the alert and able to detect and respond to international infectious disease threats within 24 hours using the most up to date means of global communication and collaboration*

- *A change in the norms surrounding reporting of infectious disease outbreaks, making it expected and respected to report*

Gro Harlem Brundtland, Director General, WHO 2003

China and reporting of SARS, April 2003

LIVE BBC NEWS CHANNEL

Last Updated: Sunday, 6 April, 2003, 18:50 GMT 19:50 UK

Email this to a friend Printable version

China under fire for virus spread

The head of the World Health Organization has publicly criticised China for its failure to report quickly the first cases of the pneumonia-like illness known as Severe Acute Respiratory Syndrome, or Sars.

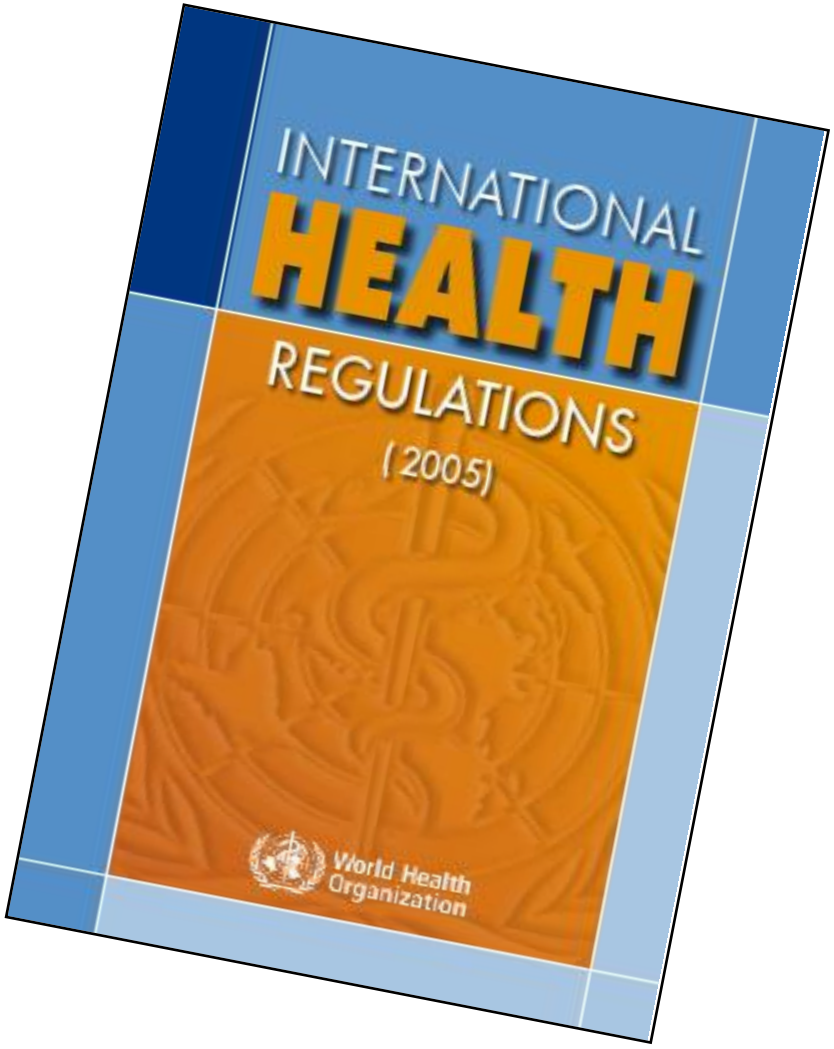
Hong Kong is one of the worst affected areas

Gro Harlem Brundtland also highlighted China's lack of co-operation with the international community in the early stages of the outbreak which has now killed more than 90 people - most of them in China or Hong Kong.

Points for discussion

- Do you think the revised International Health Regulations are effective?
  - Core capacity strengthening
  - Reporting/declaring Public Health Emergencies of International Importance
- Can you support your answer with evidence?

Strengthening core public health capacity under the International Health Regulations



Detections and Containment at source, International Health Regulations 2005

WHO/CDS/EPR/LYO/2006.4

Strengthening national capacities for epidemic preparedness and response in support to national implementation of IHR(2005)

IHR indicators database meeting, 27-29 November 2008, Geneva, Switzerland

In order for WHO to monitor implementation of core capacities for the IHR, a limited number of indicators for measuring progress of country implementation of IHR are being developed in collaboration with the WHO Regional Offices, Member States and partners. This consultation provided a platform for sharing experiences and expertise, for identifying ways to link systems and for designing electronic automated monitoring systems. The meeting included experts from eight WHO programmes and from the US Centers for Disease Control and Prevention.

Workshop on training programmes integrating public health laboratory and applied epidemiology, 3 November 2008, Kuala Lumpur, Malaysia

This event, that took place during the 5th Scientific Global TEPHINET Conference, aimed to describe the diverse models that have been developed to integrate field epidemiology and laboratory issues into existing training programmes. The workshop gathered 30 experts engaged in the implementation of such programmes from all regions of the World. For more information please contact ihrinfo@who.int

International consultation, "Cities and public health crises", 28-30 October 2008, Lyon, France

The WHO Lyon Office for support to IHR implementation, in collaboration with the world competitive cluster Lyonbiopôle (www.lyonbiopole.org), convened the international consultation, "Cities and public health crises" on 29-30 October 2008 in Lyon, France. This technical consultation brought together over 70 experts to identify and address the specific challenges posed by public health emergencies that occur in urban settings, particularly in large and mega cities. The findings will contribute to the development of WHO guidelines for public health and municipal authorities. They will also add to the preparation of the BioVision 2009 conference in Lyon from 8-11 March 2009 entitled "Life in the City: Managing urban epidemics" (www.biovision.org/)

WHO technical consultation on Annex 2 of the IHR, 20-22 October 2008, Geneva, Switzerland

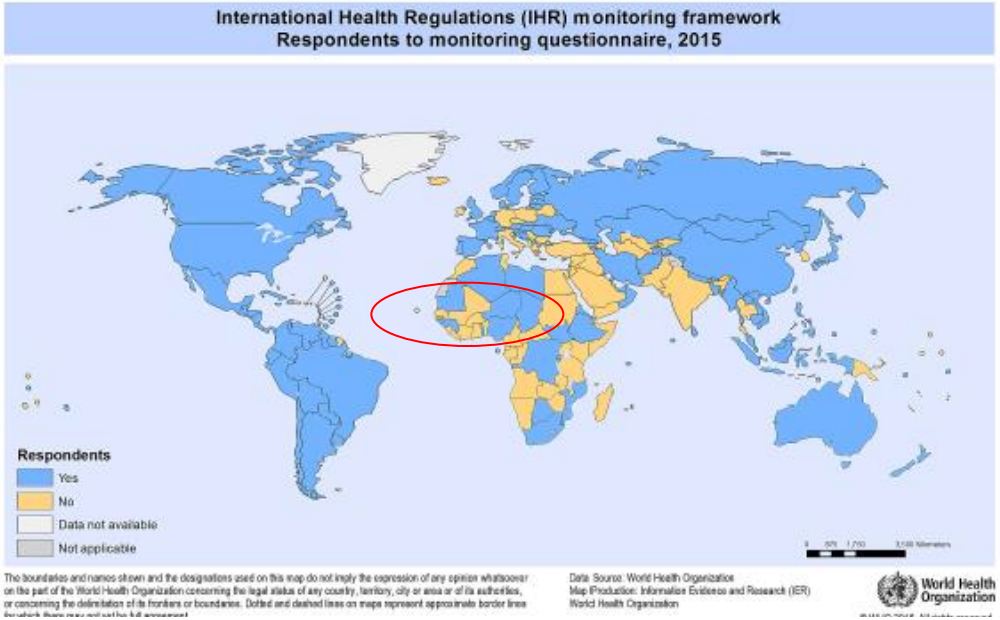
From 20-22 October 2008, WHO convened a technical consultation on the "Implementation and Evaluation of Annex 2 of the IHR (2005)", in Geneva, with participants from all six WHO regions. The objectives of the consultation were to (1) finalize the "Interim Guidance on the use of Annex 2 of the IHR (2005)"; and (2) identify appropriate methodologies for the studies to review and evaluate the functioning of Annex 2. A summary report of the consultation will be posted on the IHR web site at

www.who.int/ihr

Laboratory management skills training course, 13-24 October 2008, Lyon, France

From 13-24 October 2008 the WHO Lyon Office, in collaboration with the WHO Regional Office for

Country core capacity self-assessment reports, International Health Regulations 2005



Ebola outbreak, 2014-2015

28,637

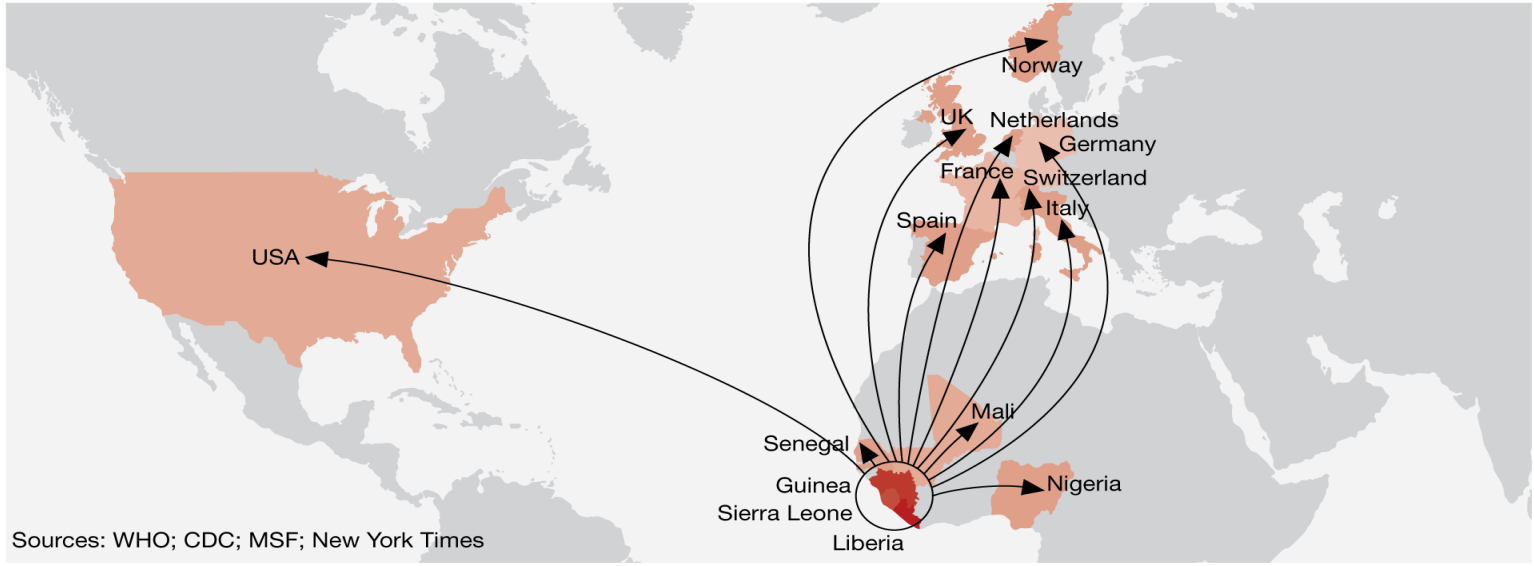
Infected people from 12 countries

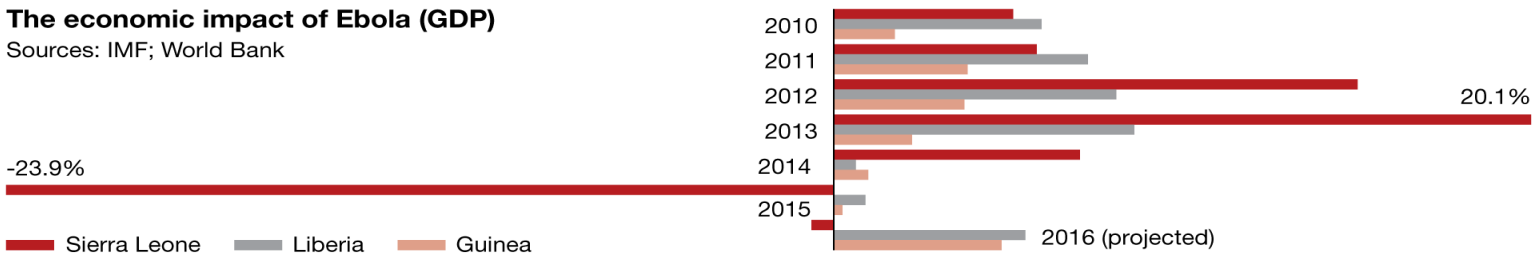
11,315

Deaths in Liberia, Guinea, Sierra Leone, Nigeria, USA, Mali, Spain and Germany

$4.3bn

Cumulative pledges to Guinea, Liberia and Sierra Leone

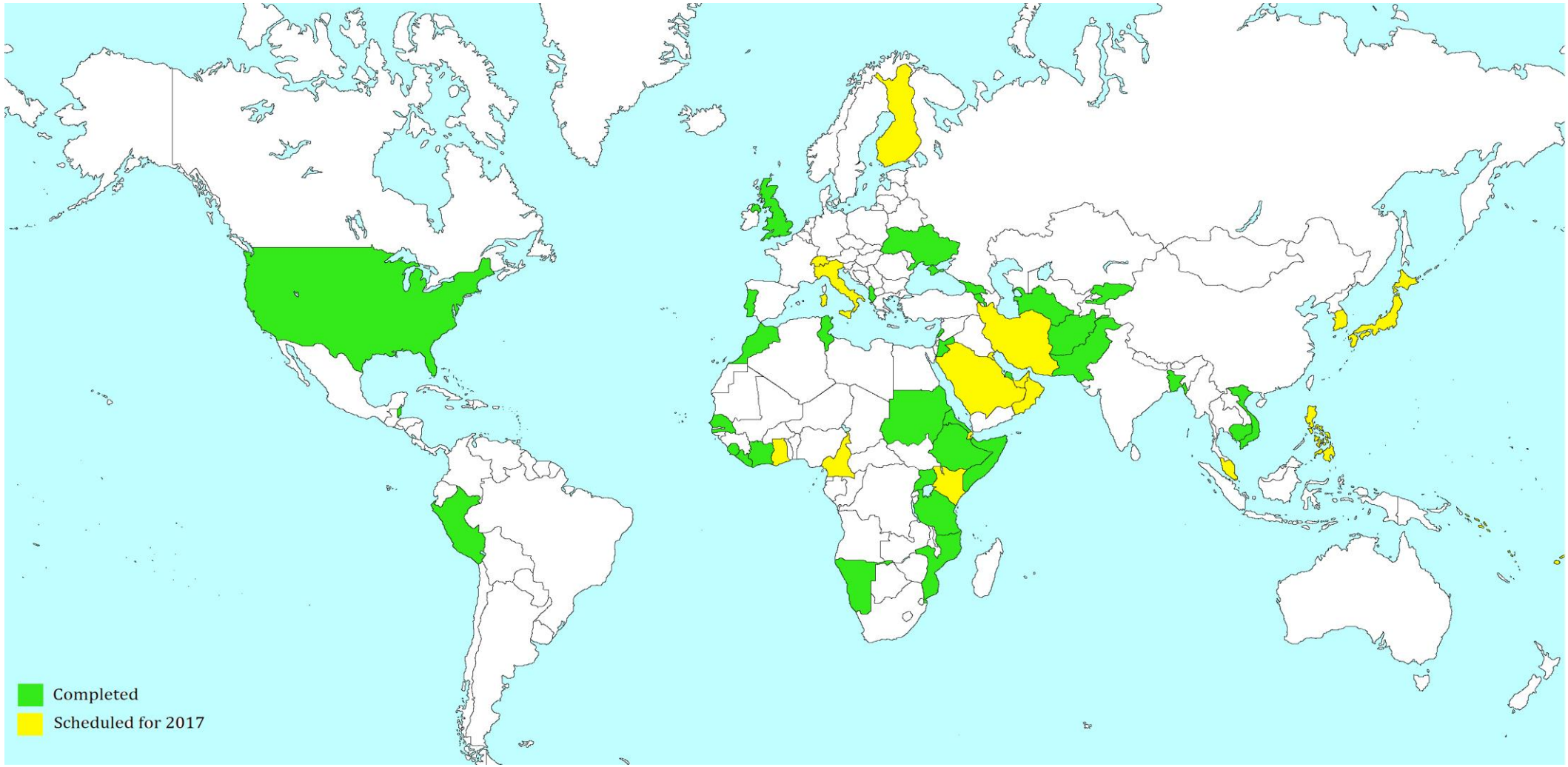




Points for discussion

- How can core public health capacity strengthening be enforced?
- What has happened that might increase capacity development since the Ebola outbreak in West Africa?

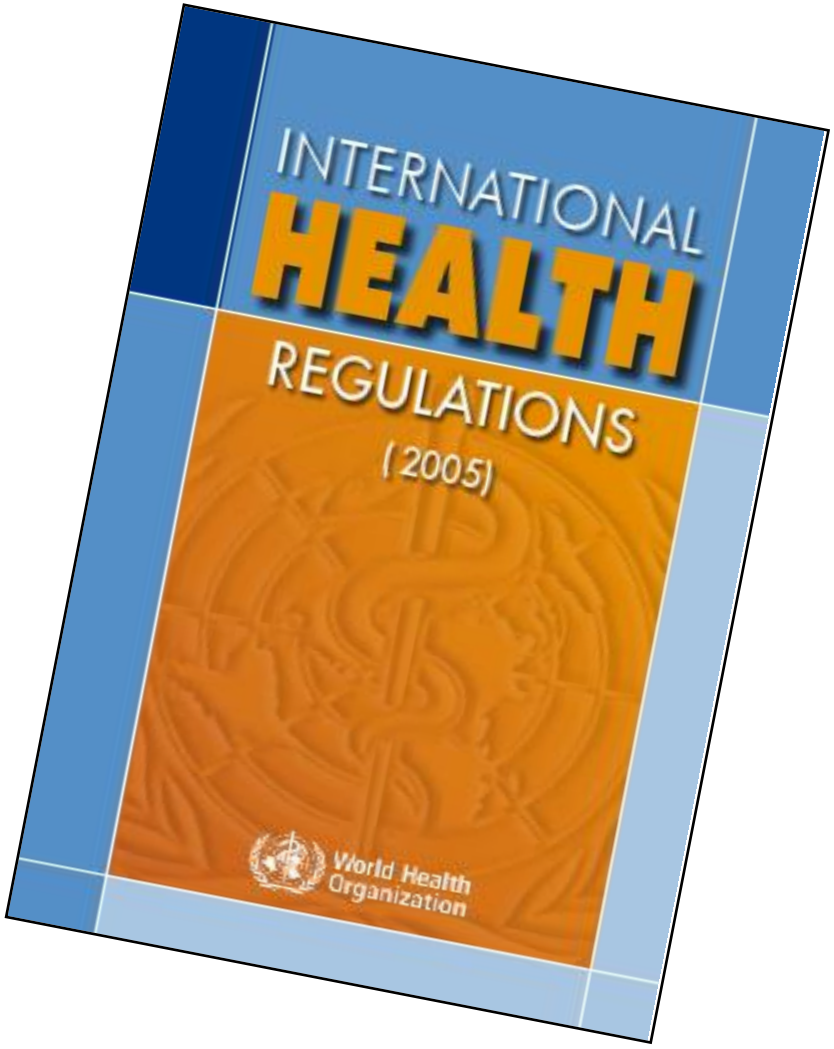
Global Health Security Agenda, countries participating as of 1 January 2017



Points for discussion

- Has the Emergency Committee of the International Health Regulations been effective in supporting the Director General of WHO?
- Has it resulted in recommendations that have led to an effective response to emerging infections?
  - Support your answer with examples/evidence

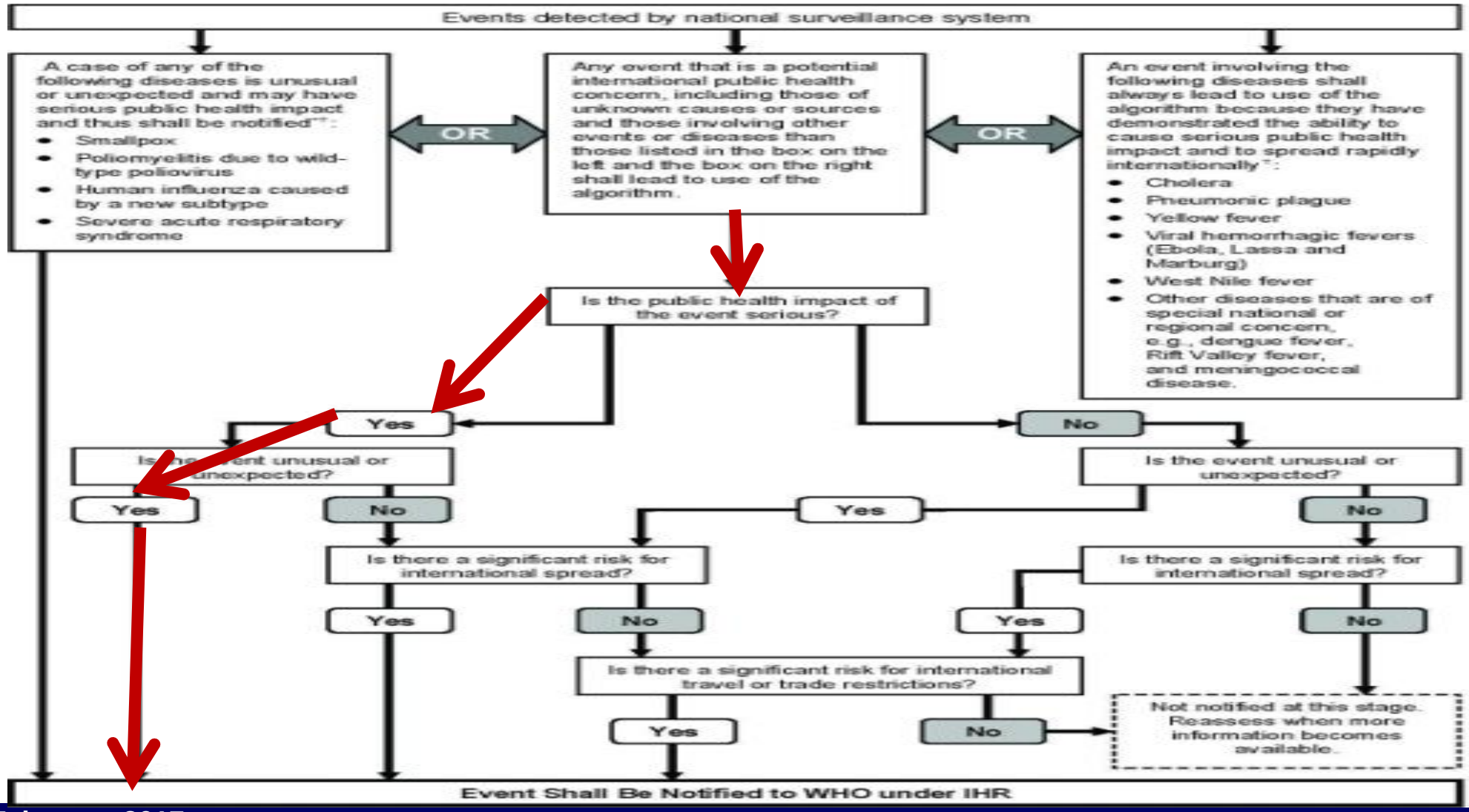
Zika infection and microcephaly under the International Health Regulations



Zika, neurological disorders and microcephaly: is this a PHEIC?

If a Pregnant Woman Gets Zika, What's the Risk of Microcephaly for the Baby?

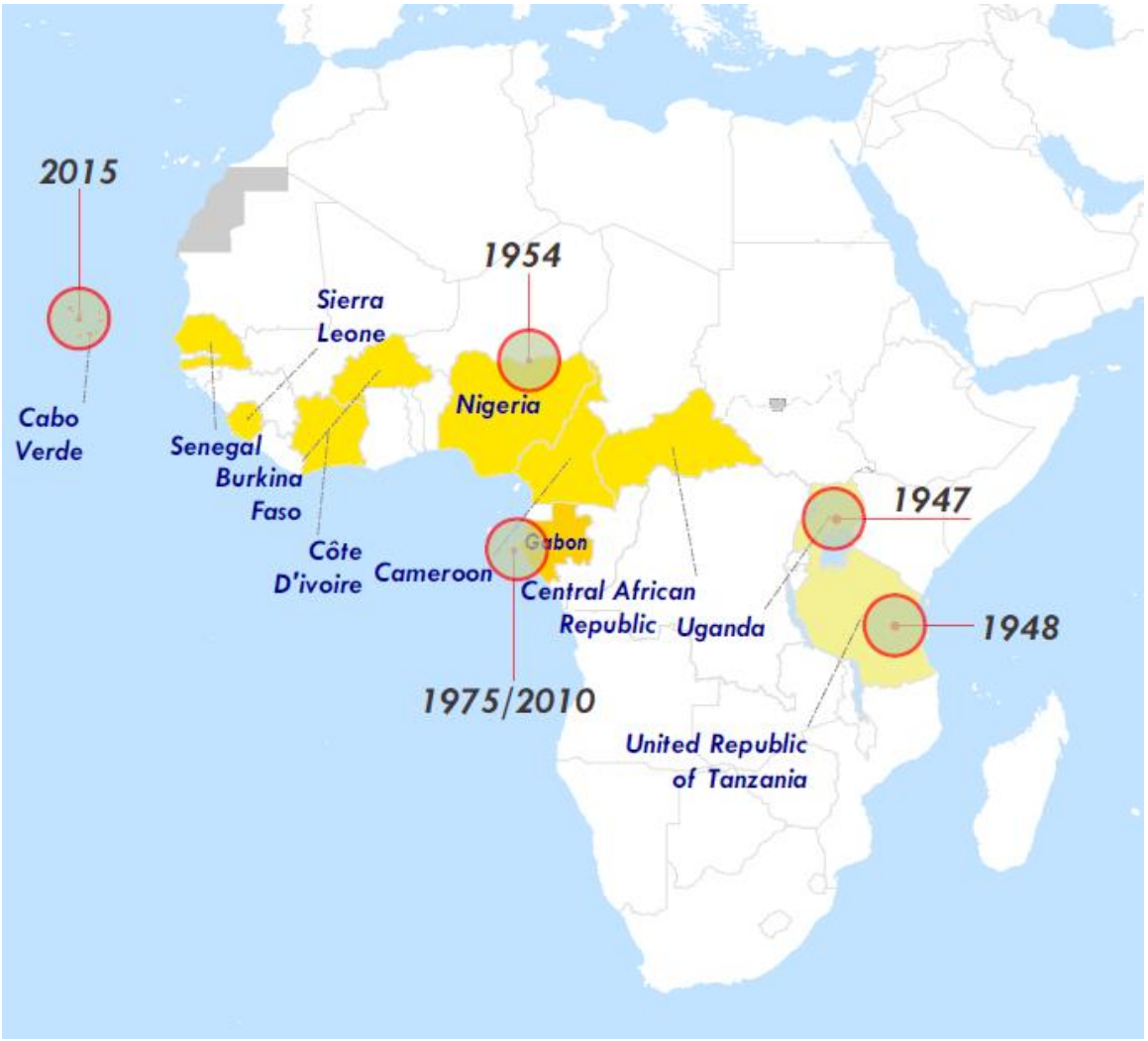
Decision instrument International Health Regulations, PHEIC



Emergency Committee, Zika, microcephaly and other neurological disorders, 2016

WHO Strategic Health Operations Centre SHOC)

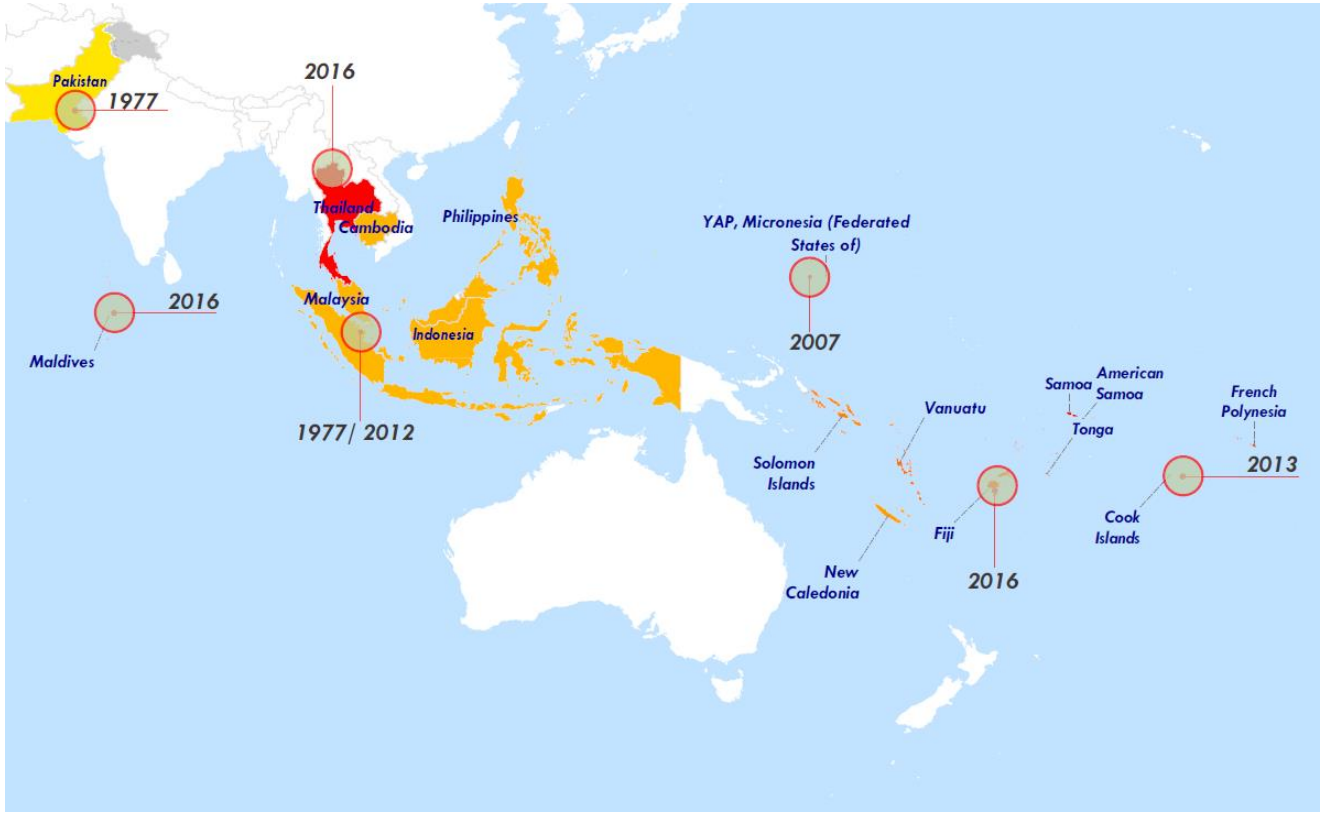
Zika virus outbreaks, Africa



- Initially identified in Ugandan monkeys, 1947
- First human cases detected in Nigeria, 1954

Source: World Health Organization
Updated: 9 February 2016

ZIKA virus outbreaks, Southeast Asia



- Pakistan, Malaysia, 1977
- Yap, Micronesia, 2007
- French Polynesia, 2013

Source: World Health Organization
Updated: 9 February 2016

ZIKA virus outbreaks, Latin America and Caribbean

- Brazil, 2014
- Rapidly spreading through the Americas

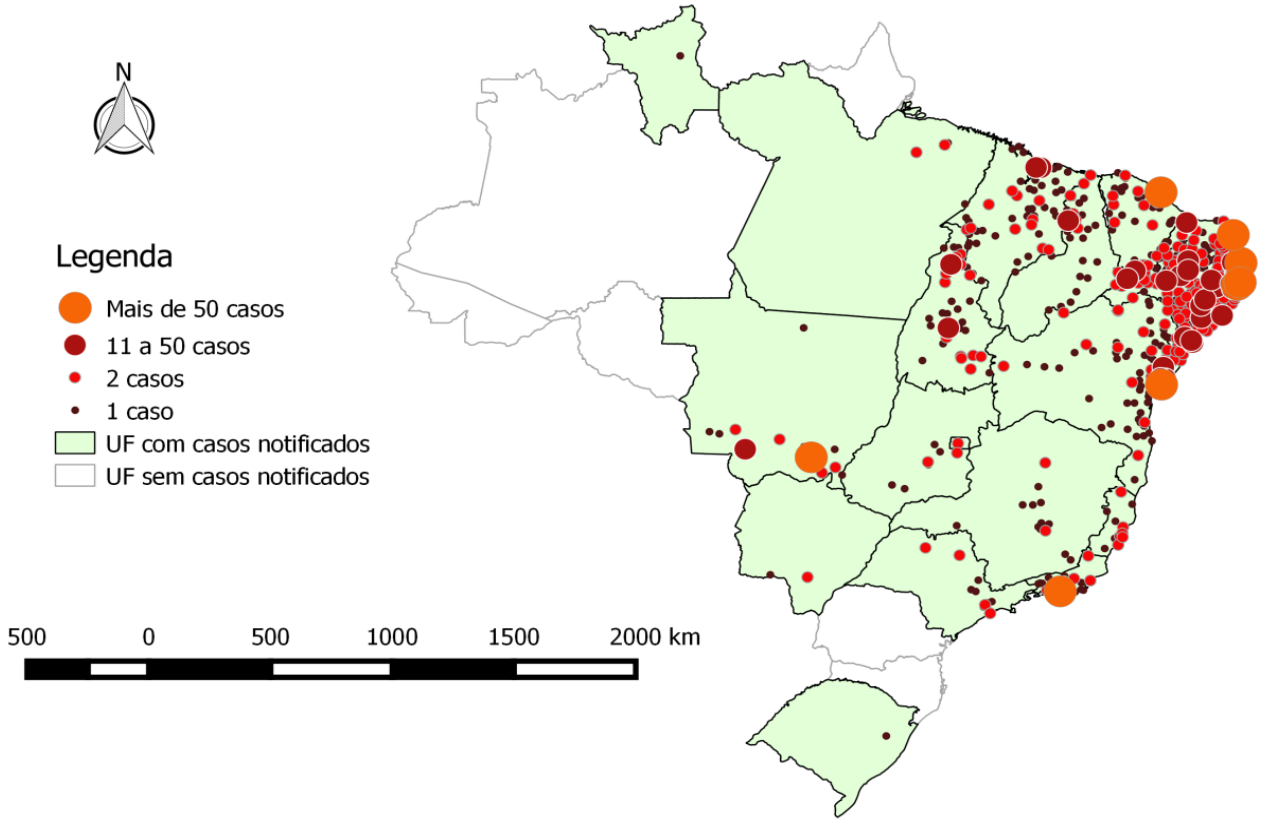
Source: World Health Organization
Updated: 9 February 2016

Observations in Brazil, 2015 – 2016, first emergency committee meeting

- Zika outbreaks confirmed:
  - Infection generally causes mild disease compared to Dengue and Chkiungunya
- Clusters of microcephaly:
  - Case definition for macrocephaly after birth is not standardized: some authors use 2 standard deviations below the mean for age and sex. other authors use 3 standard deviations
- Serological diagnosis a challenge:
  - PCR used in post mortem examination brain and spinal fluid: 8 infants with microcephaly positive
- Guillain-Barré syndrome occurring in areas of Zika outbreaks

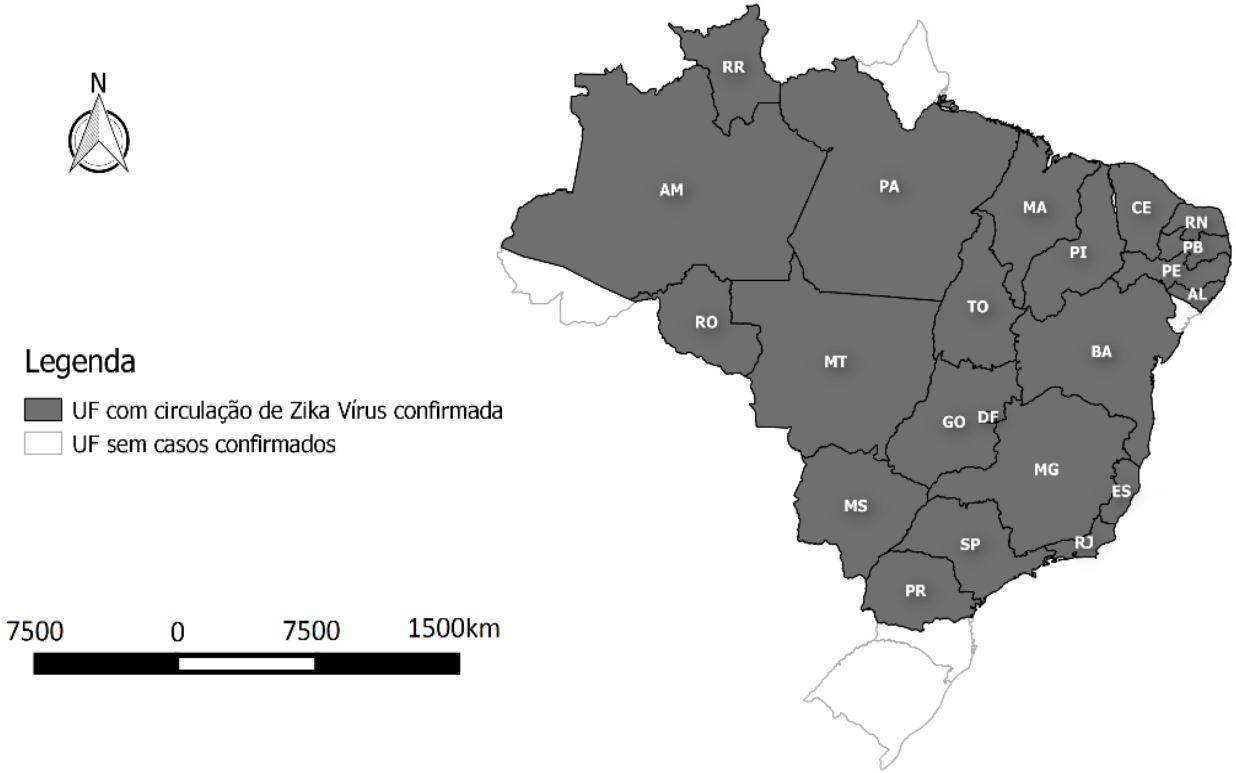
Source:: *EpiSUS/CGVR/DEVIT/SVS/MS and Secretariat of Health of Pernambuco Update November 28, 2015.*

Reported Microcephaly, Brazil, to February 2016



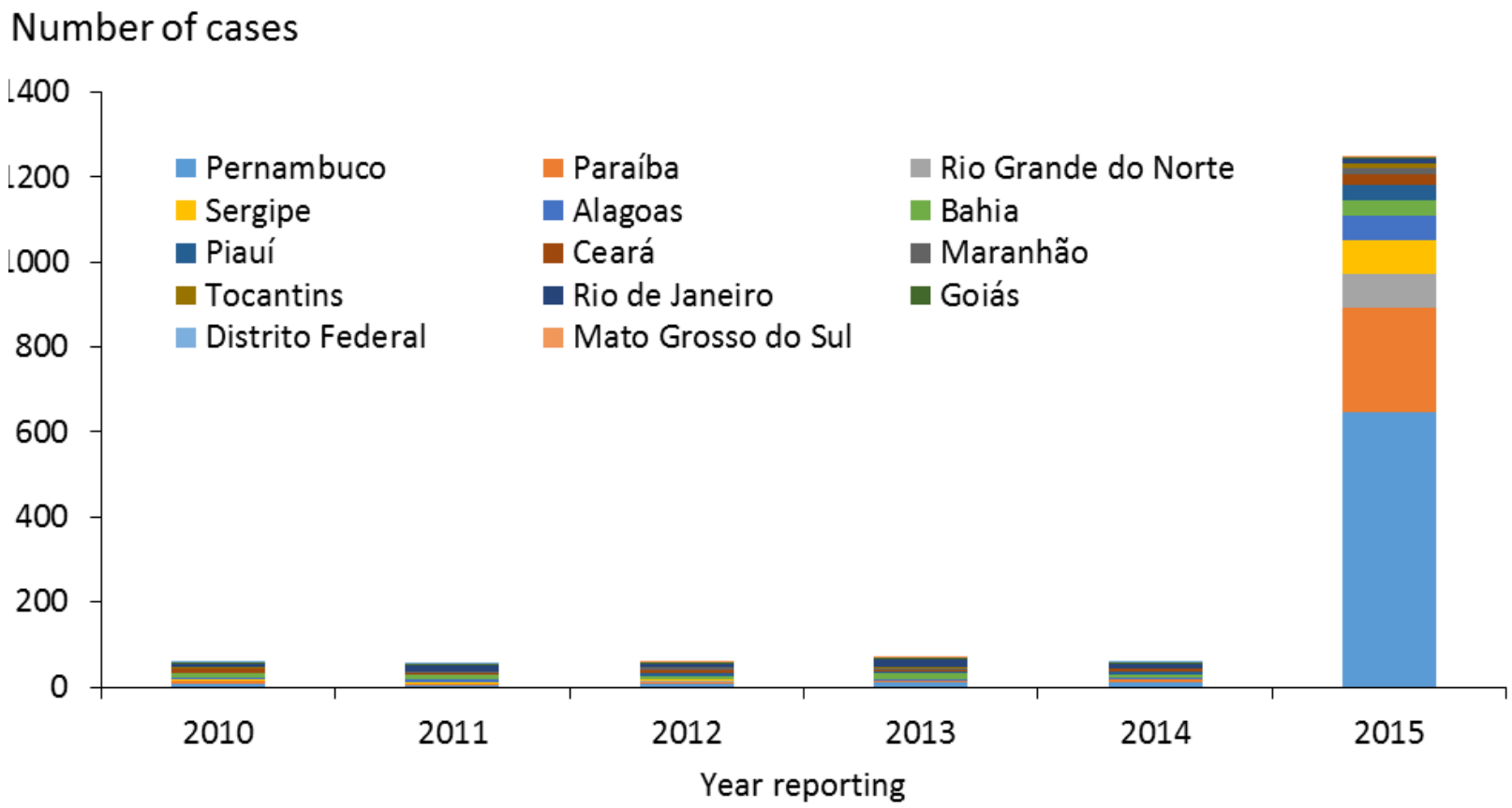
Source: Brazilian Ministry of Health and States Secreatriats of Health
Update: January, 27, 2016

Zika-infected Regions, Brazil



Source: Brazilian Ministry of Health and States Secreatriats of Health
Update: January, 27, 2016

Microcephaly in Brazil, 2010-2015



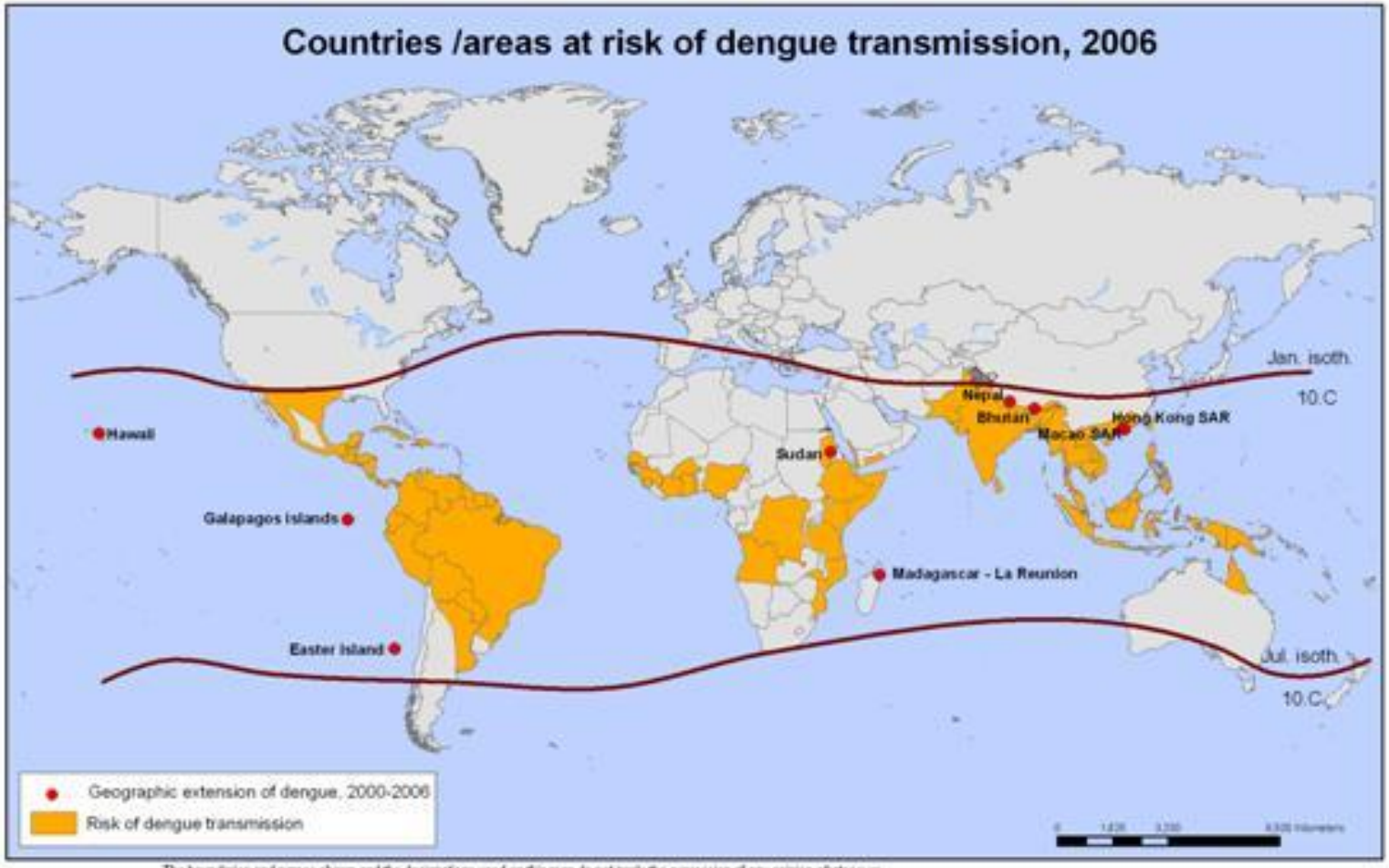
Source: ECDC Rapid Risk Assessment
Updated: December 2015

Retrospective/prospective data collection, France, 2016

- Zika virus outbreak 2014 (retrospective):
  - estimated 8,700 infections
  - 13 foetal/infant CNS malformations : 13 (3 microcephaly)
  - Guillain-Barré syndrome : 42
- Zika virus outbreaks French Caribbean (prospective):
  - Guillain-Barré : 167 reported
    - Martinique : 61
    - Guadeloupe : 63
    - St Martin : 6
    - Guyane : 37

Source: Government of France

Dengue risk worldwide, 2016



World Health Organization

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Data Source: WHO
Map Production: Public Health Mapping and GIS
Communicable Diseases (CDS) World Health Organization

WHO Emergency Committee of the IHR

- First task to decide whether there was a Public Health Emergency of International Concern (PHEIC)
  - Discern which of the two independent events was the PHEIC: Zika or microcephaly and other neurological disorders
- Second task to make recommendations for the PHEIC
  - Coordinated and standardised surveillance of microcephaly
  - Collaborative research to confirm/disprove the linkage with Zika virus
- Additional precautionary recommendations made for Zika – to continue while PHEIC recommendations implemented
  - Strengthen vector control
  - Determine potential for vaccine production

WHO activities since PHEIC declaration

- Development of over 15 consensus guidelines on prevention and patient management
- Regular review of research in Brazil and elsewhere and conclusion of epidemiological linkage Zika and microcephaly/other neurological disorders
- Meetings with approximately 30 vaccine developers
- Development of diagnostic algorithms and diagnostic test needs with diagnostic manufacturers
- Regular convenining of Emergency Committee

Zika vaccine development

http://vaccinenewsdaily.com/stories/510662204-ge GenScript accelerates Zika v...

File Edit View Favorites Tools Help

GenScript accelerates Zika virus vaccine development

Published on Monday, Feb 8, 2016 @ 3:09pm by Vaccine News Reports

The Zika virus is spread through bites from infected Aedes mosquitoes. | File photo

GenScript, a global supplier of gene-synthesis services, is rushing to develop and deliver DNA constructs as part of the response against the recent outbreak of Zika virus.

These DNA constructs, which will be sent to research institutions and governmental agencies, will be part of vaccine development to prevent the virus.

The virus is spread through bites from infected Aedes mosquitoes. The virus has been steadily increasing in infection rates since 2015, and the latest outbreak involves the Americas.

- New HIV infections in the US down, but well short of national goals
- MIT develops new paper-based Zika virus test

News Archives

2016:

Nov. Oct. Sep. Aug. Jul. Jun. May. Apr. Mar. Feb. Jan.

2015:

Dec. Nov. Oct. Sep. Aug. Jul. Jun. May. Apr. Mar. Feb. Jan.

2014:

Dec. Nov. Oct. Sep. Aug. Jul. Jun. May. Apr. Mar. Feb. Jan.

2013:

Dec. Nov. Oct. Sep. Aug. Jul. Jun. May. Apr. Mar. Feb. Jan.

2012:

Dec. Nov. Oct. Sep. Aug. Jul. Jun. May. Apr. Mar. Feb. Jan.

2011:

Dec. Nov. Oct. Sep. Aug. Jul. Jun. May. Apr. Mar. Feb. Jan.

2010:

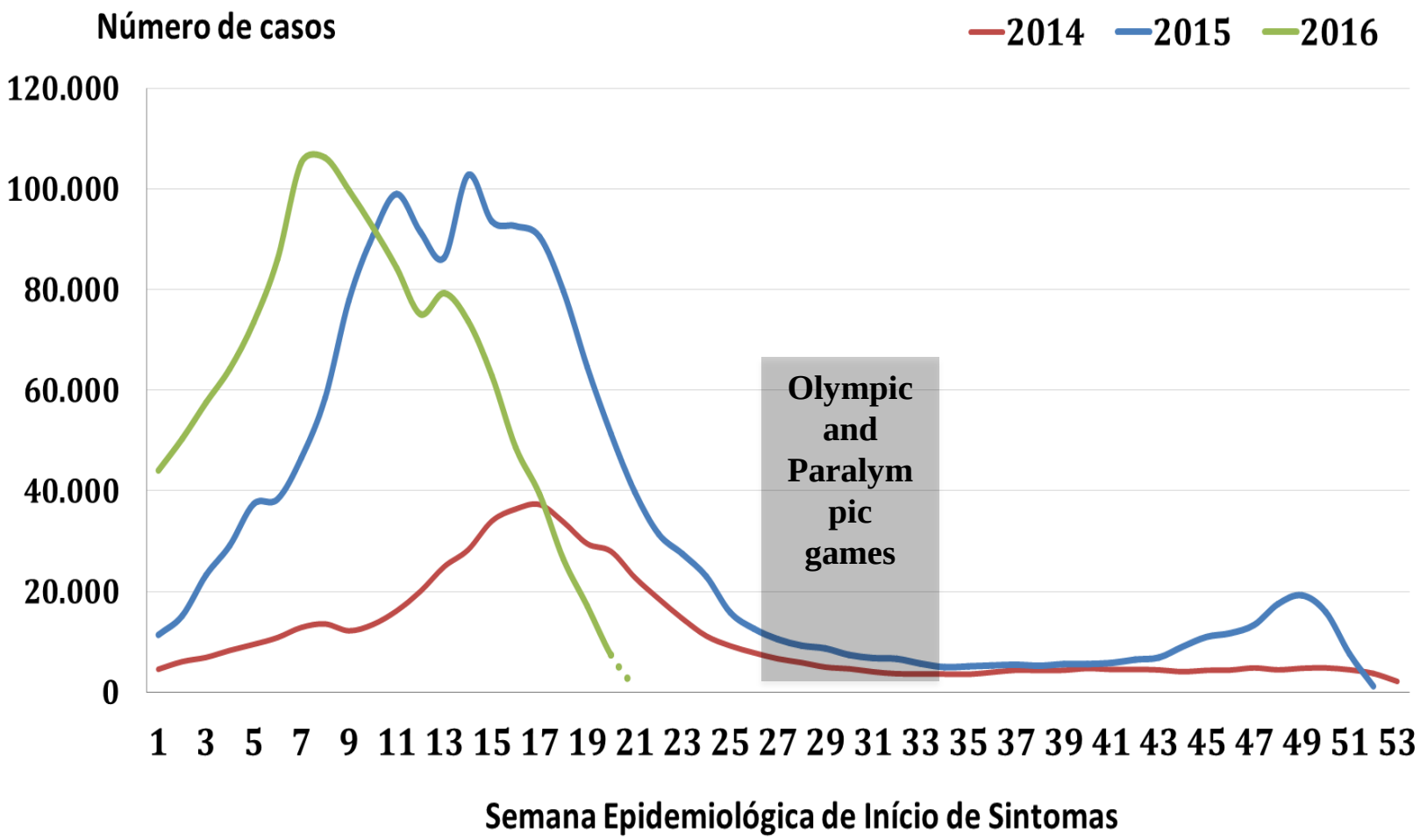
Dec. Nov. Oct. Sep. Aug. Jul. Jun. May. Apr. Mar. Feb. Jan.

2009:

Dec. Nov. Oct.

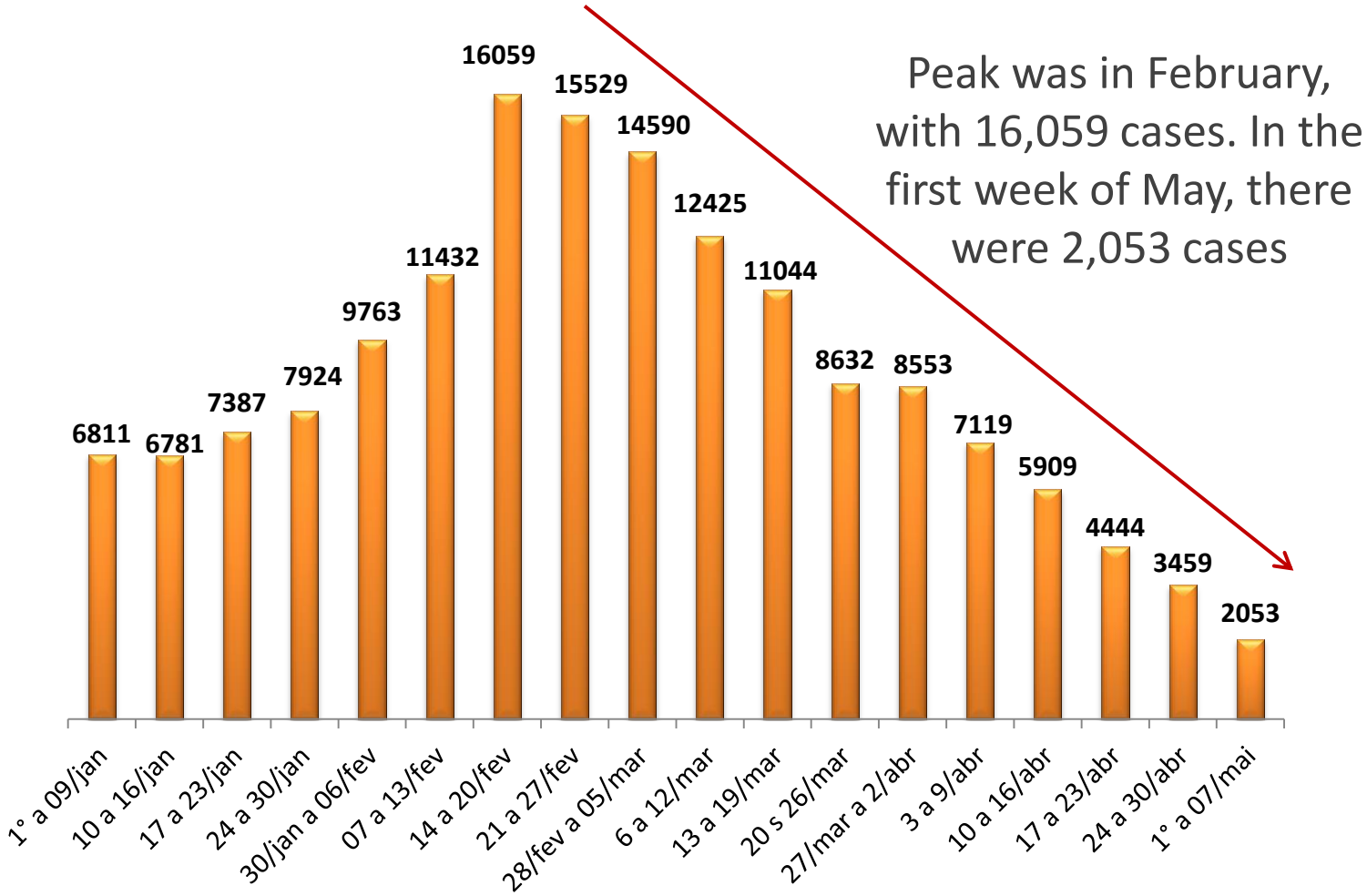
100%

Reported dengue, Brazil 2014 - 2016

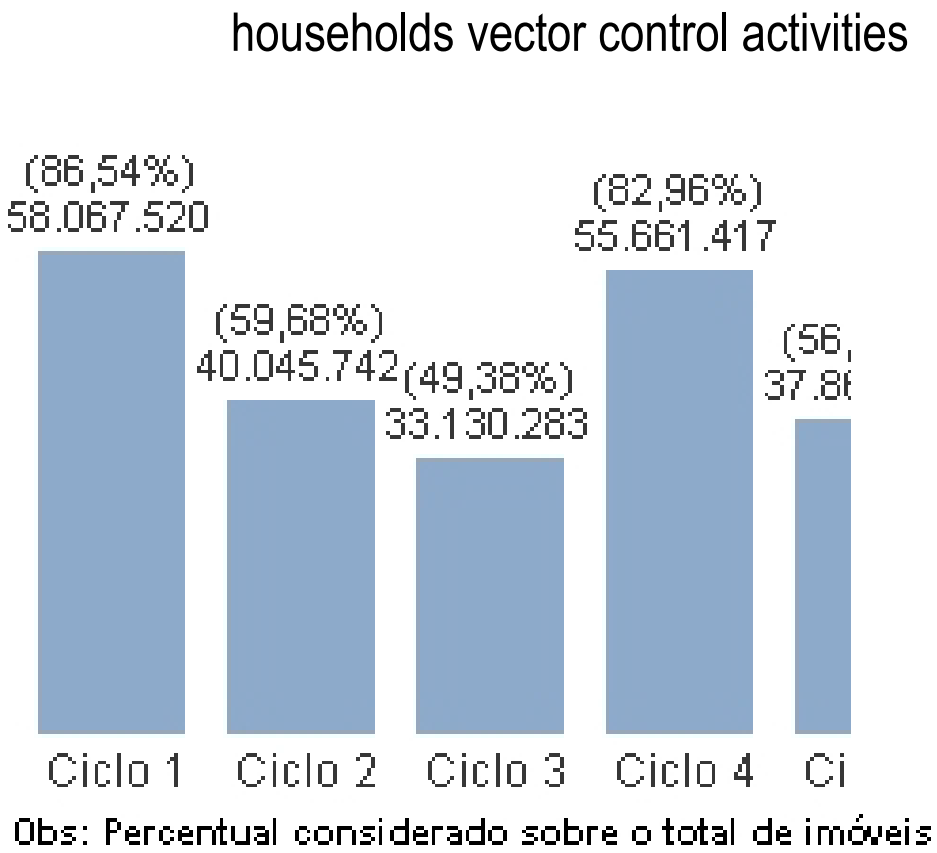


Source: Sinan online

Reported Zika, Brazil, 2016, presented to 3rd Emergency Committee meeting



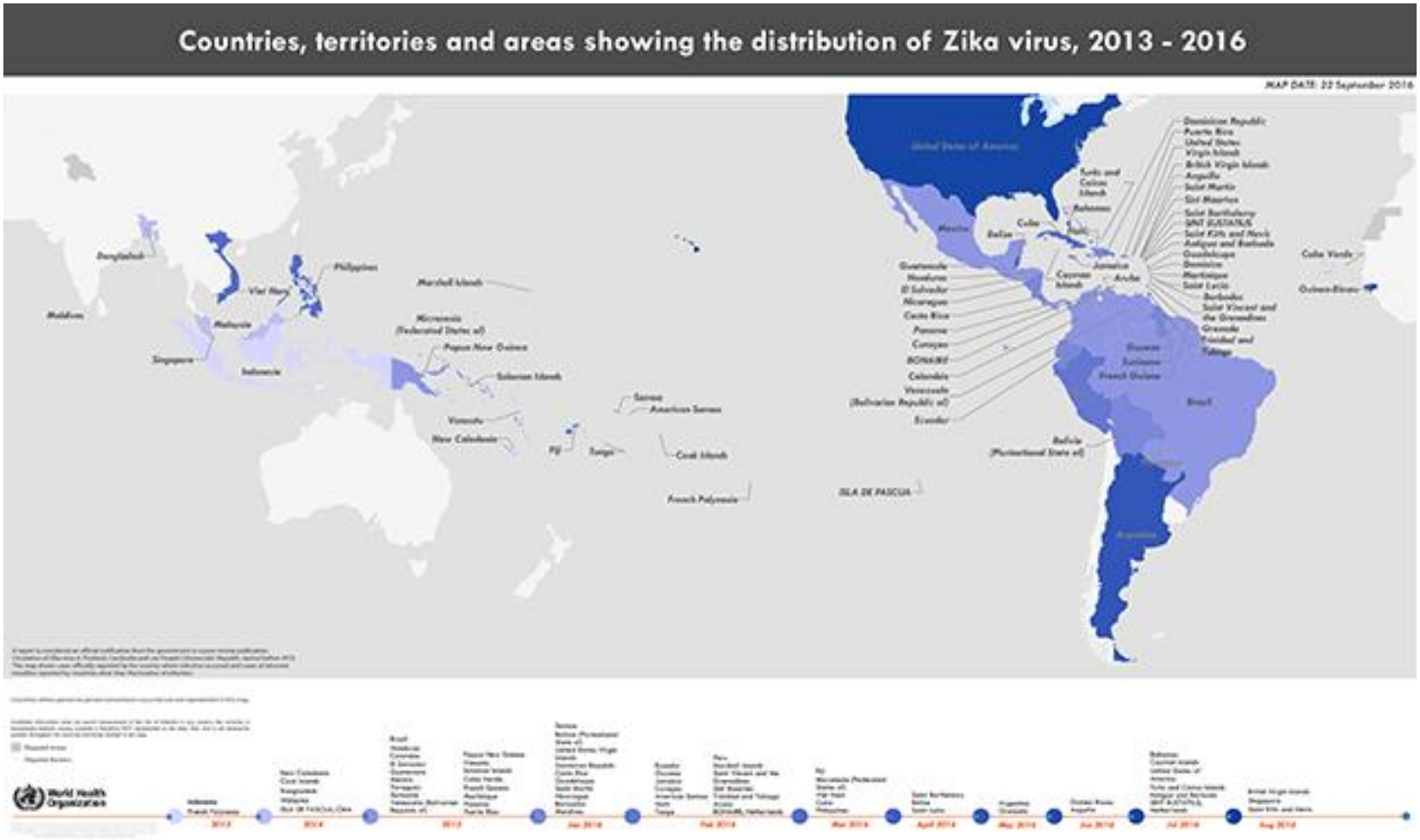
Vector Control activities, Brazil, 2016



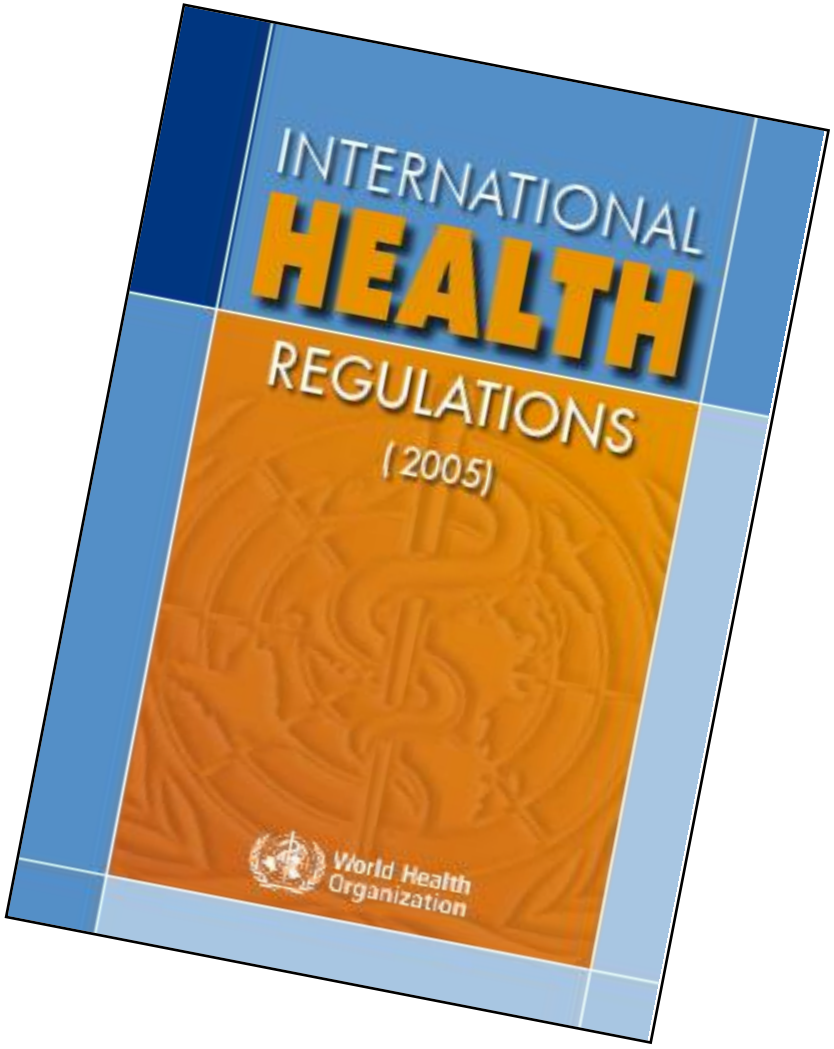
Post-Olympic Zika analysis, Brazil, 2016

- 350,000 to 500,000 foreign tourists
- 6 cities: Population 35 million
- 10.900 athletes from 206 countries
- 0.03% of foreigners required some health care service
- No athletes or other tourists with diagnosis of Zika, dengue or Chikungunya

Zika virus outbreaks, 2013 - 2016



Middle East Respiratory Syndrome under the International Health Regulations



SARS-like respiratory syndrome, Saudi Arabia, 2012

Coronavirus: is this the next pandemic?

Last September a doctor in a Saudi hospital was fired for reporting a new, deadly strain of the coronavirus. Now, with half of all confirmed cases ending in death, the World Health Organisation has issued a global alert and scientists are preparing for the worst

• Coronavirus victim's widow tells of grief

Ian Sample
The Guardian, Friday 15 March 2013 20.06 GMT
Jump to comments (186)

Professor Ali Mohamed Zaki, who diagnosed the first patient with a strain of the coronavirus in Saudi Arabia, stands in his office in Cairo. Photograph: David Degner/Getty Images

ProMED mail

February 2017

SARS-like respiratory syndrome, London, September 2012

Patient with SARS-like respiratory syndrome, St Thomas', London

49 year-old previously well Qatari male

Exposures

Travel to Mecca with family and friends	31 Jul - 18 Aug
Possible mild respiratory illnesses in family during	18 Aug - 3 Sep
Visit to own farm in Qatar (camel, sheep)	18 Aug - 3 Sep

Course of illness

Severe respiratory illness requiring hospitalisation	9 Sep
Intubation and ventilation required	11 Sep

Microbiology

Common causes of viral and bacterial pneumonia not detected

Novel coronavirus **detected** nasal swab	13 Sep

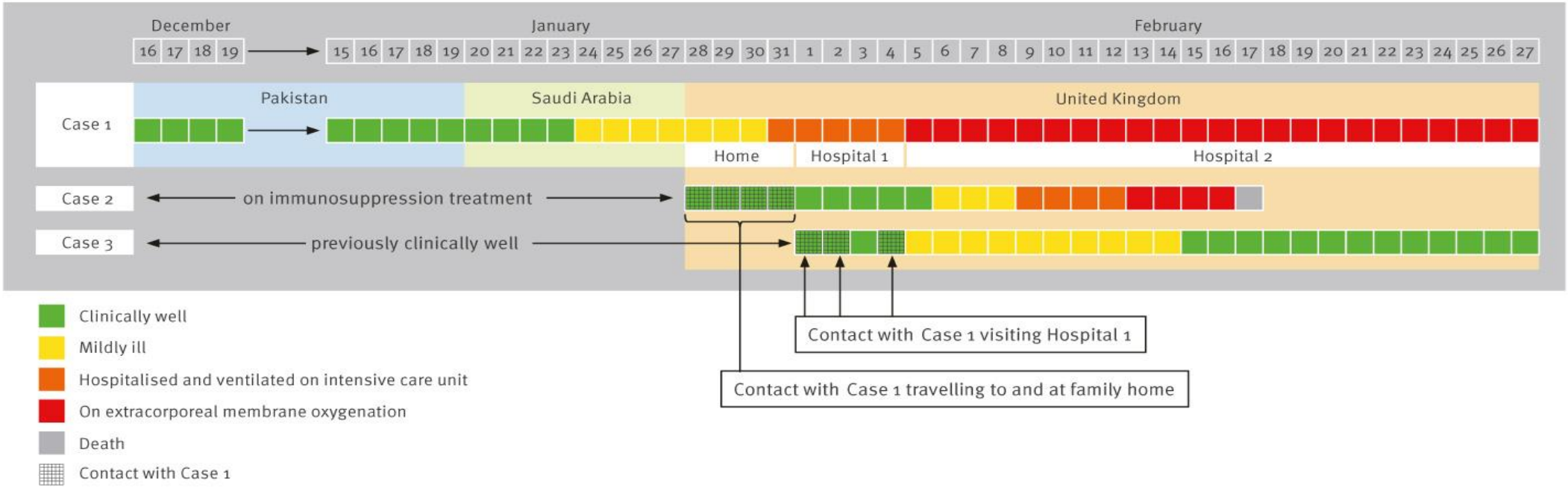
Confirmed novel coronavirus 2012 (later named MERS coronavirus)

Clinical Course

Remained on ECMO 12 months - deceased

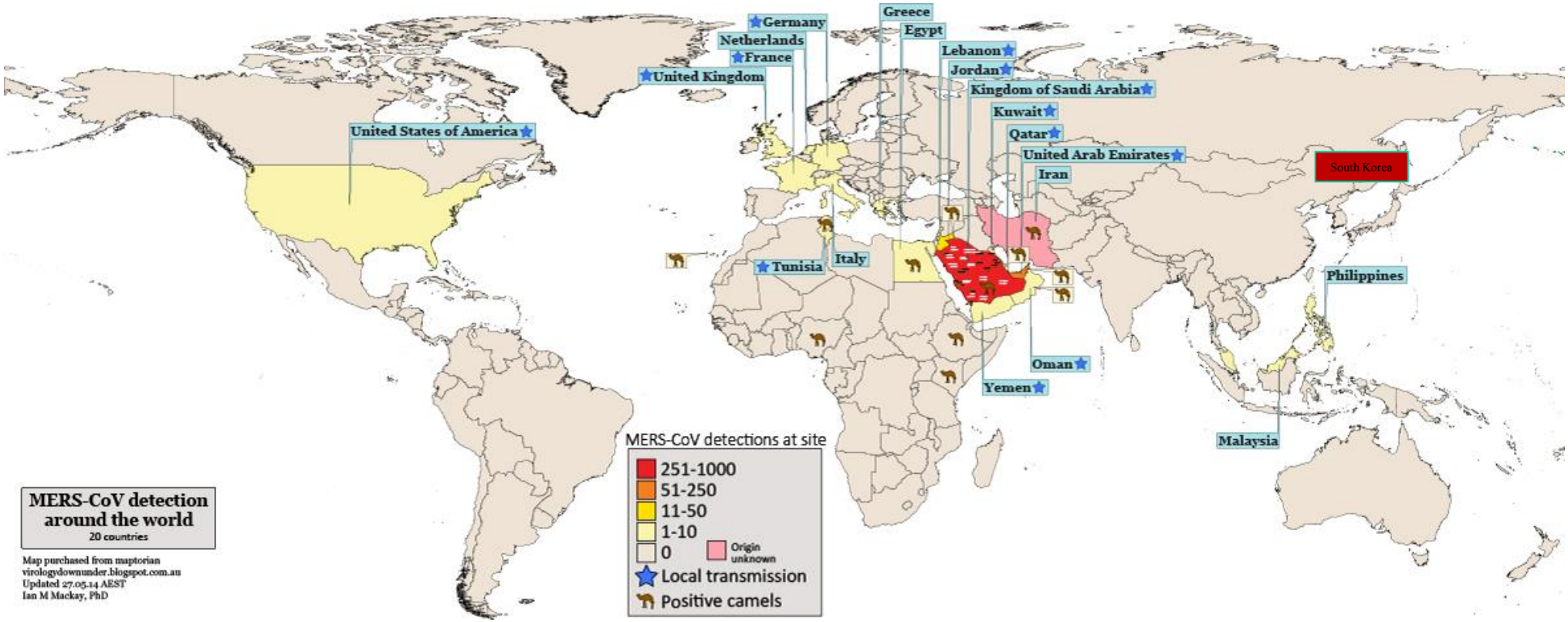
Health Protection Agency

Cluster of nCoV cases, UK, December 2012 – February 2013



Source: Eurosurveillance, Volume 18, Issue 11, 14 March 2013

MERS coronavirus: international spread, 2012 - 2015



MERS Co-V after almost three years, February 2016

Lack of communication and collaboration: valid case control studies not yet completed:

- Learning has been piecemeal, something new with every case/cluster – not s
- Source

  Geneti aviruses

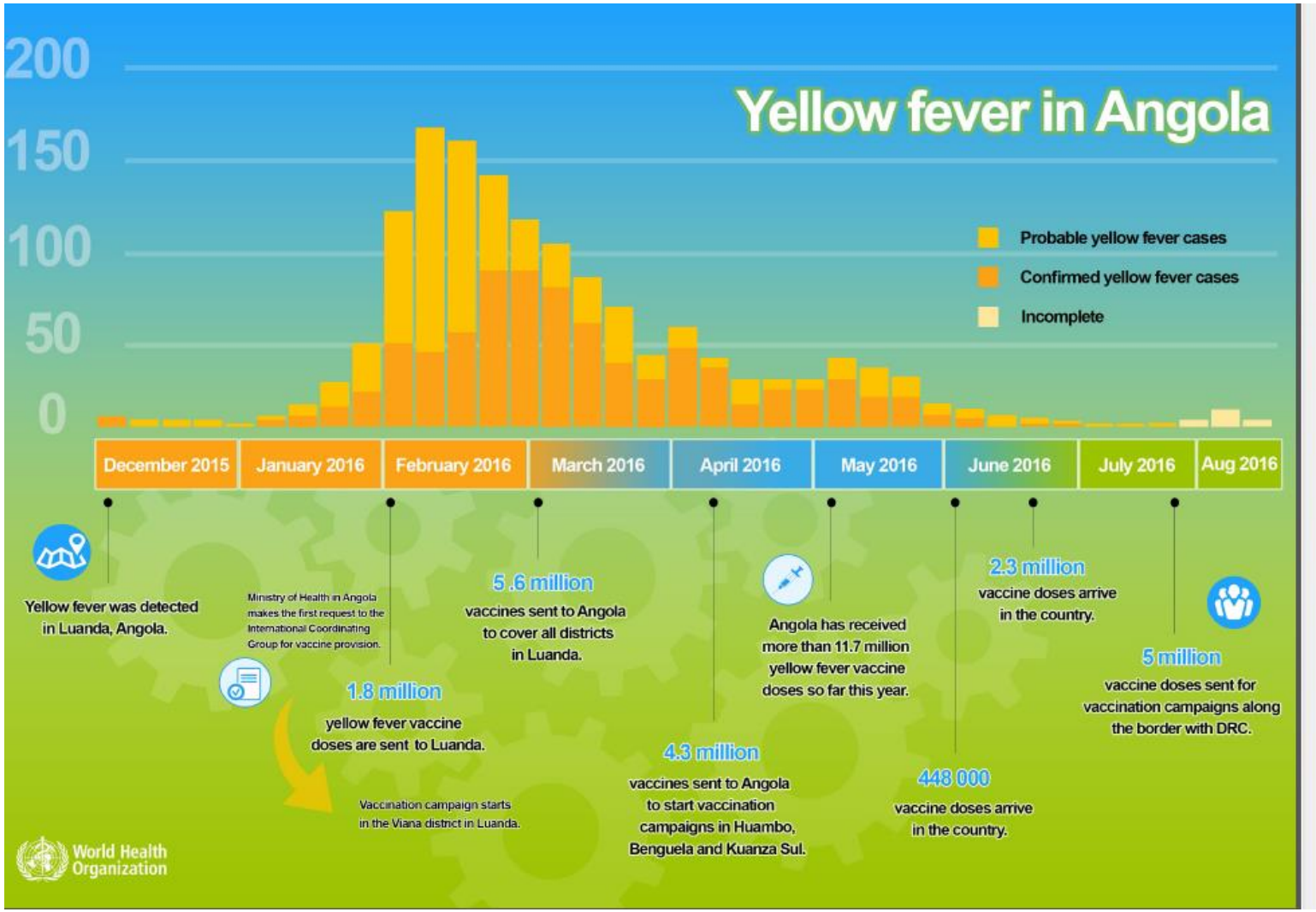
  e infected

  uman spread

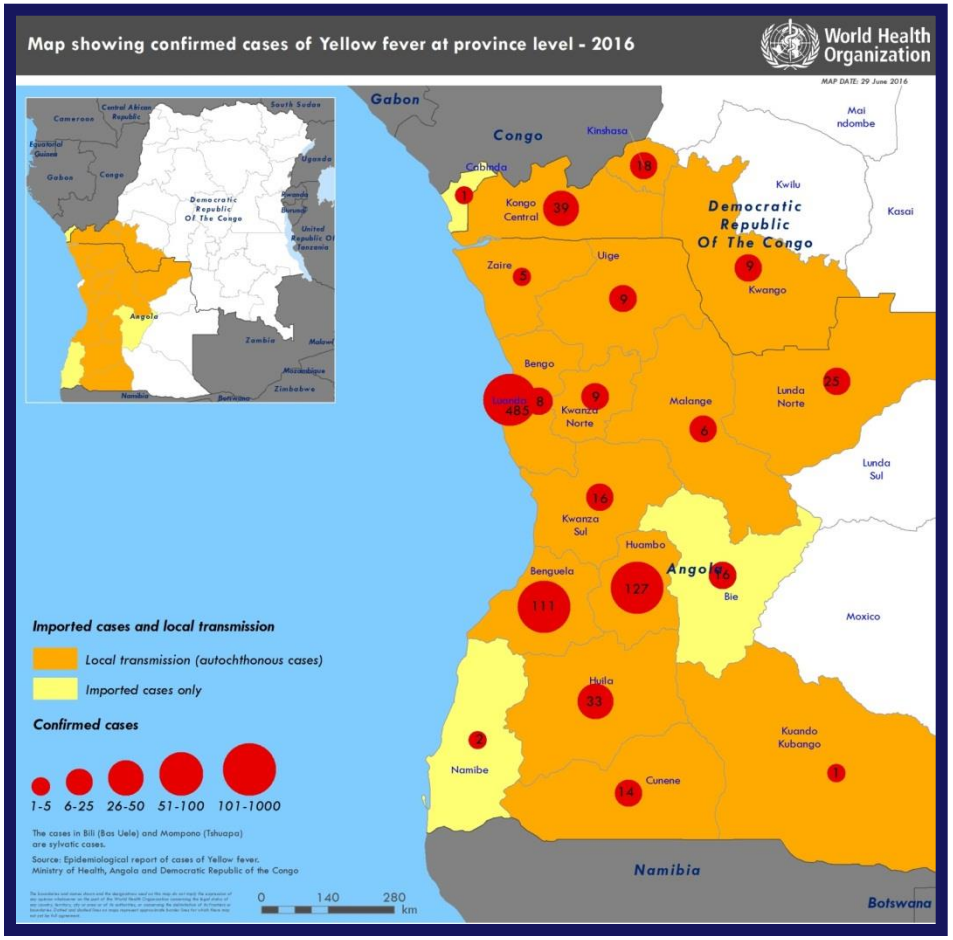
  ce of non-sustained transmission

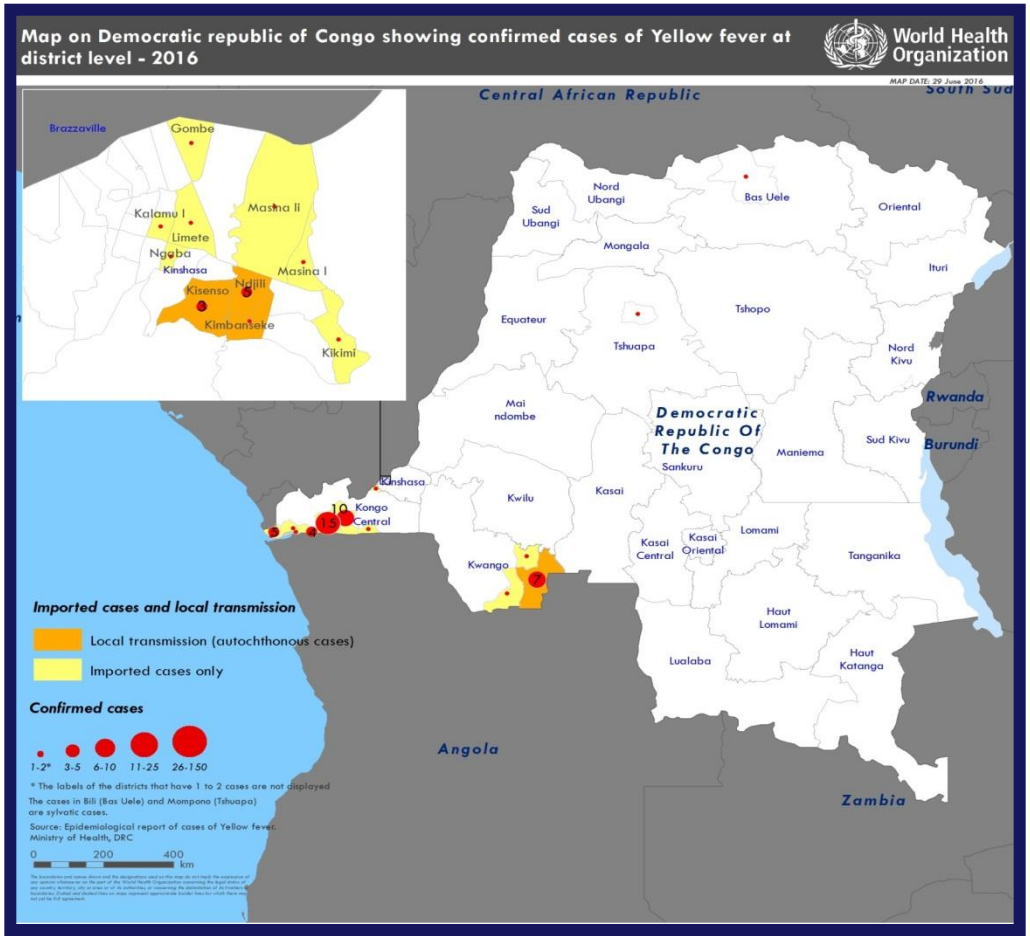
  Nosocomial spread in hospitals, households, workplace….

Yellow Fever outbreak, Angola, 2015 - 2016



Yellow Fever outbreak, Angola, spread to DRC 2015 - 2016

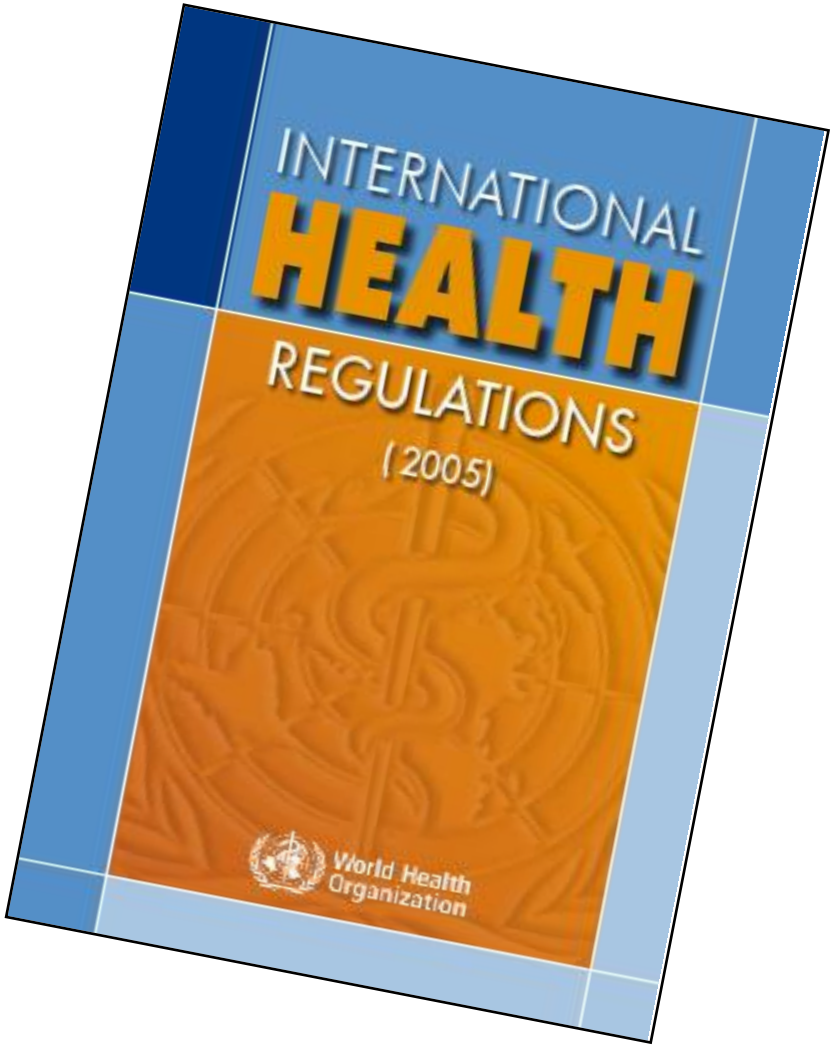




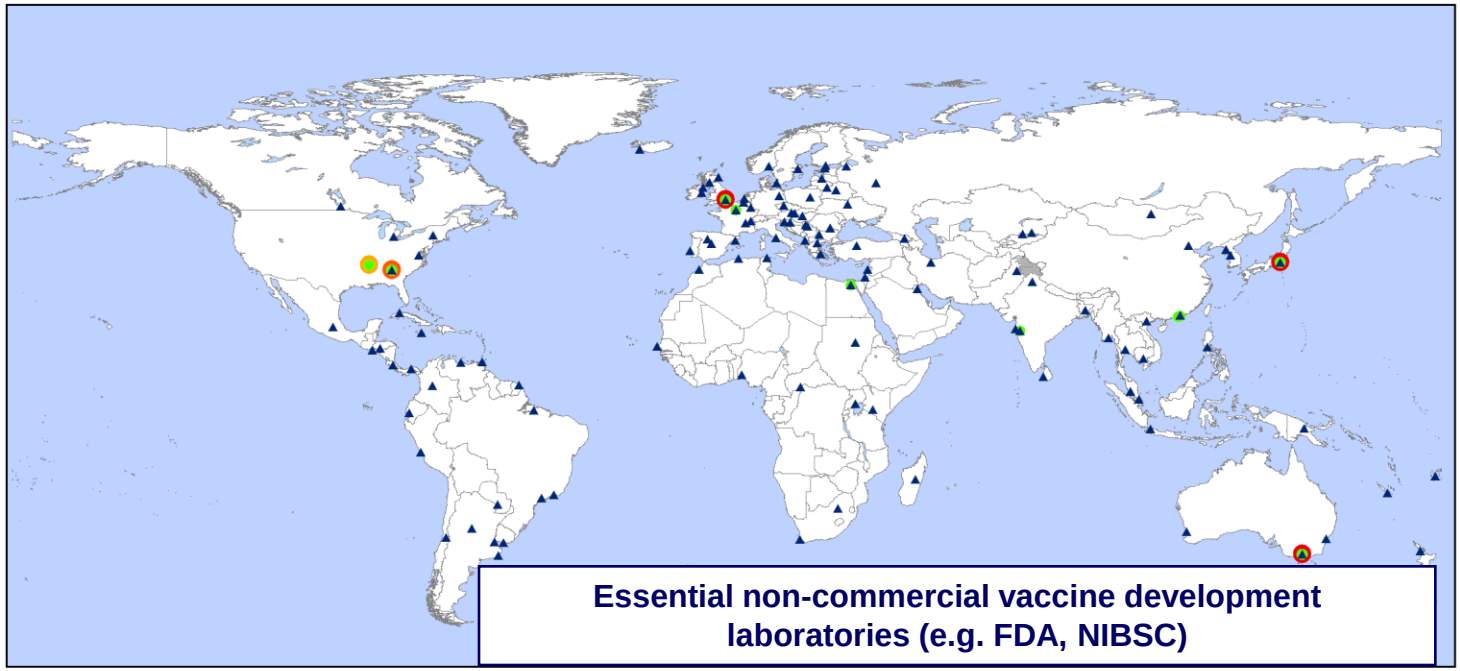
Points for discussion

- Was this Yellow Fever outbreak declared a Public Health Emergency of International Concern?
  - Defend your answer

Influenza under the International Health Regulations



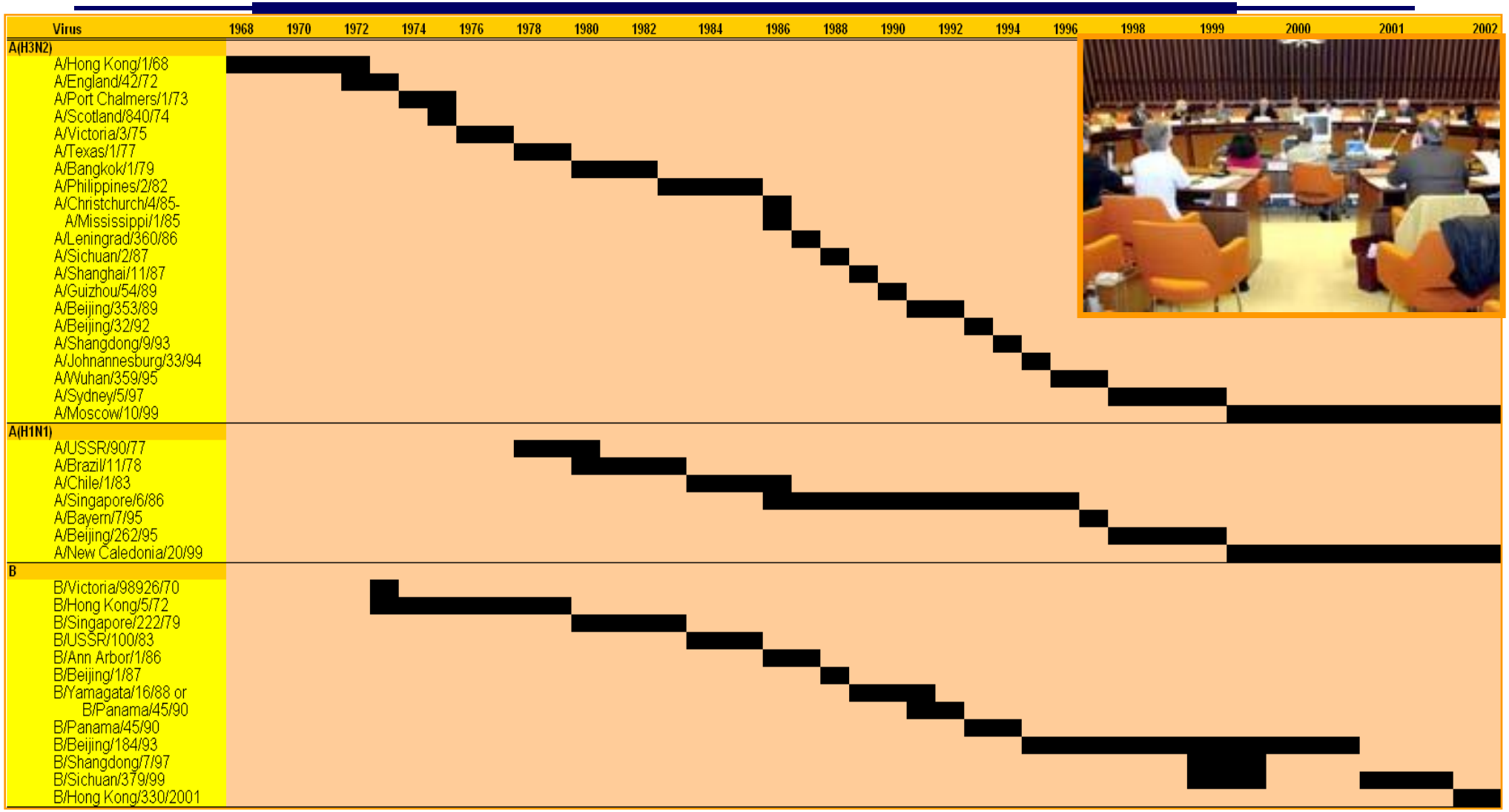
WHO global influenza surveillance network



25 July 2008

- National Influenza Centres
- H5 Reference Laboratories
- WHO Collaborating Centre for Studies on the Ecology of Influenza in Animals
- WHO Collaborating Centre for the Surveillance, Epidemiology and Control of Influenza
- WHO Collaborating Centres for Reference and Research on Influenza

Antigenic shift and drift of seasonal influenza virus: vaccine composition



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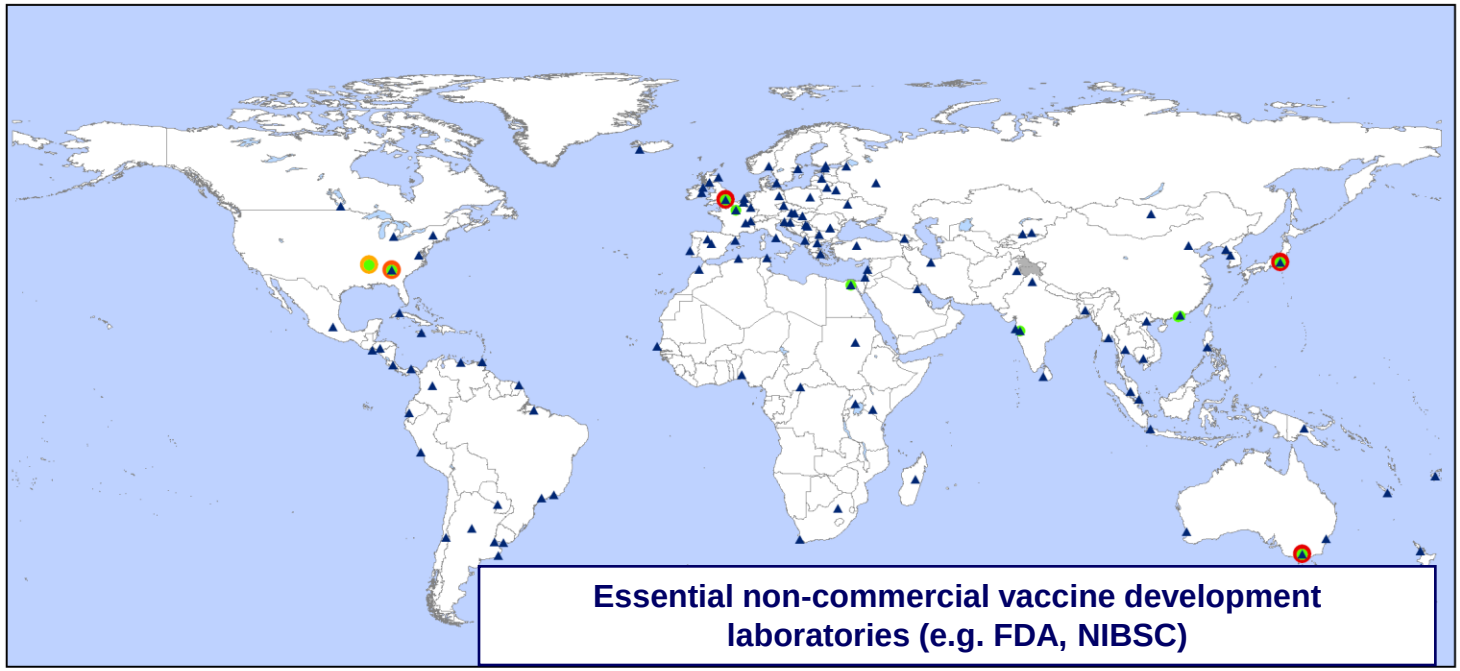

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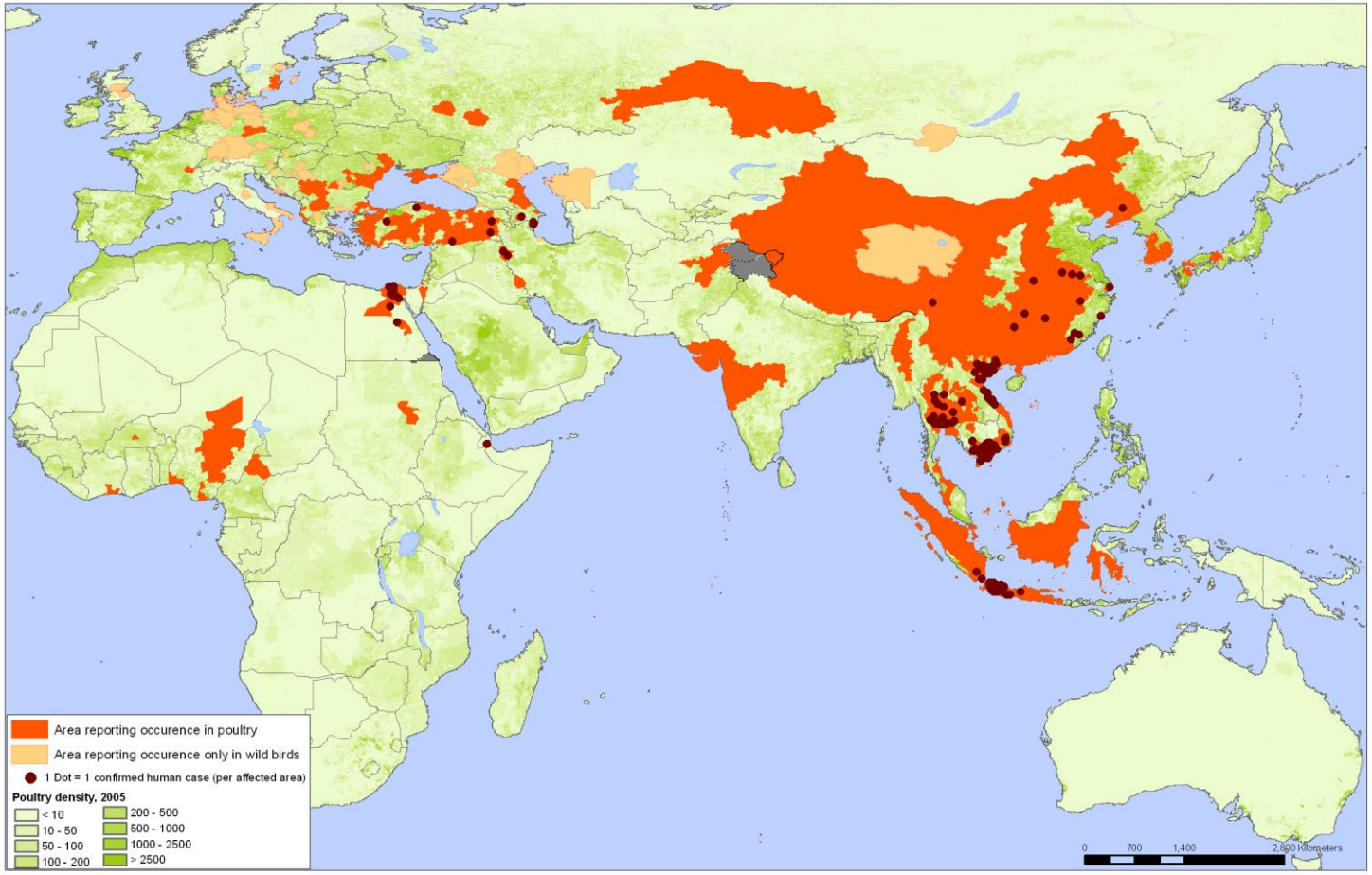
Confirmed Human and Poultry, H5N1 Infections since 2003



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Data source: World Organisation for Animal Health (OIE) and national governments/WHO/EPR/FAO
Map Production: Public Health Mapping and GIS
Communicable Diseases (CDS) World Health Organization

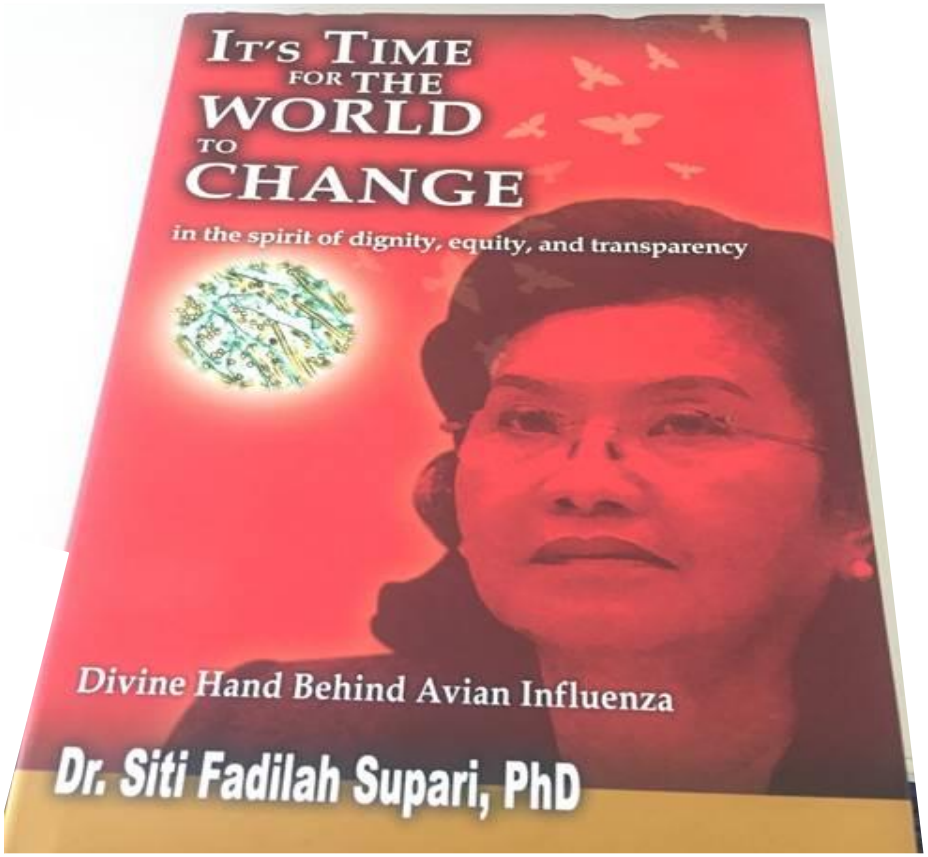
Tools to control an influenza pandemic

Oseltamivir and Zanamivir

Pandemic vaccine

Minister of Health, Indonesia and H5N1 virus sharing: link sharing to more equitable benefits

It's time for the world to change



Jakarta meeting on sharing in the benefits of virus sharing, March 2007

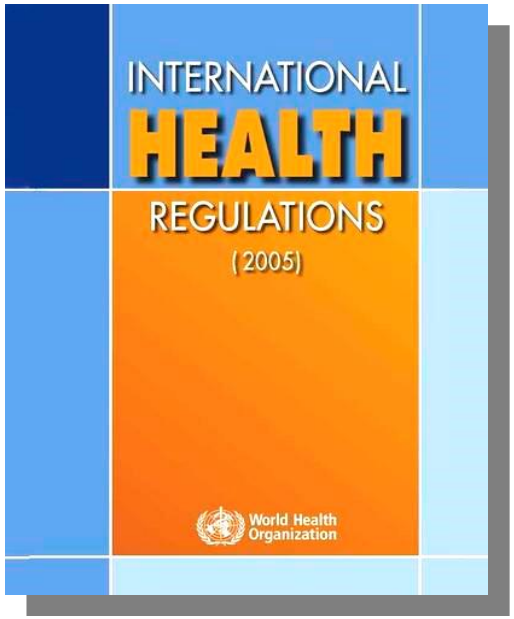
Types of benefits anticipated, developing countries:

- Strengthened laboratory capacities to qualify for WHO Collaborating Centre designation
- More transparent virus handling within WHO
- Sustained access to H5N1 and pandemic influenza vaccines
- Linkage of virus sharing and vaccine production to sustained benefits

Points for discussion

- Is the minister of health justified in her demands?
- How would you address the situation under the International Health Regulations?

International Health Regulations 2005 and H5N1



Article 2:

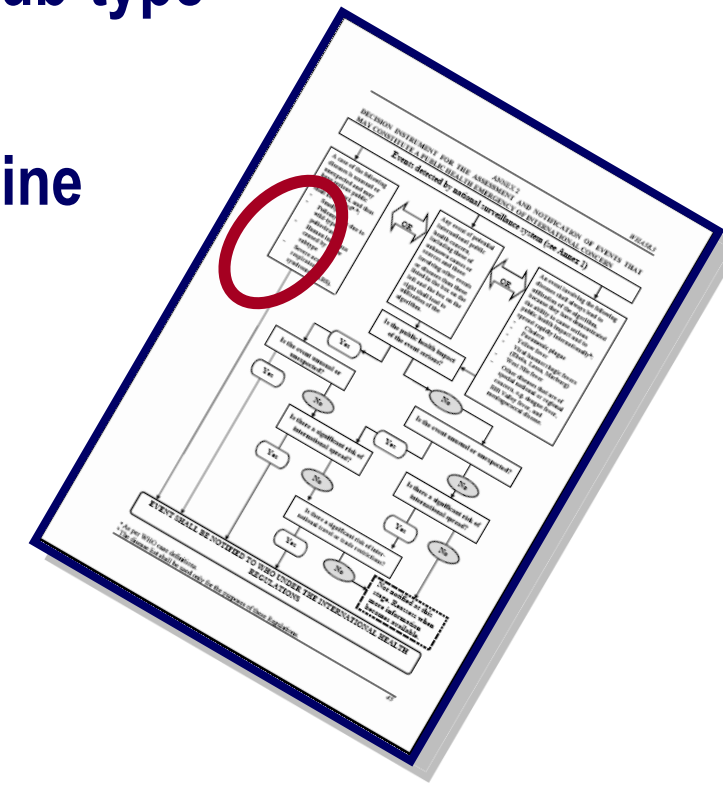
Prevent, protect against, control and provide a public health response to the international spread of disease commensurate with public health risks

Sharing of avian influenza viruses under the International Health Regulations

Annex 2: helps determine if an event constitutes a public health emergency of international concern (PHEIC), and requires reporting of any human infection with a new influenza sub-type

Article 6; requires joint risk assessment to examine if the threat posed by the reported event constitutes a PHEIC

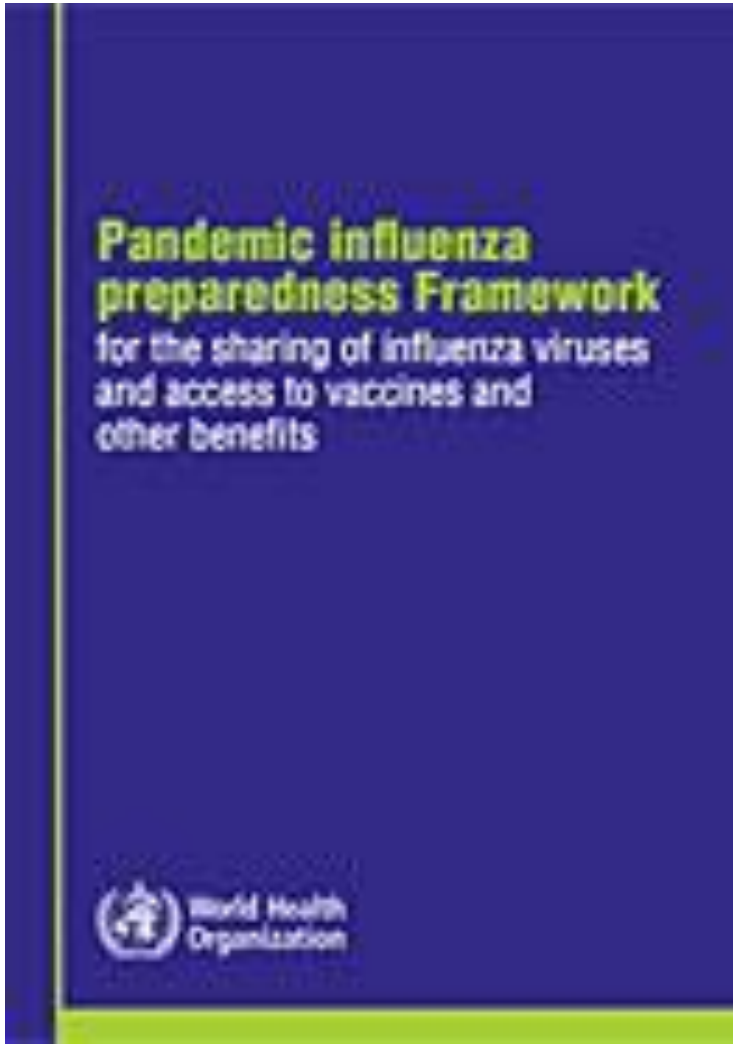
to conduct risk assessment for influenza, epidemiological information and virus strains are required



WHO resolution on influenza virus sharing (WHA 60.28): May 2007

- Intergovernmental meeting on virus sharing, November 2007
- Open-ended working group meeting on virus sharing, April 2008
- Intergovernmental meeting on virus sharing December 2008, May 2009, April 2010 and April 2011
- Non-binding Pandemic Influenza Preparedness Framework developed

Pandemic Influenza Preparedness Framework, 2011



Objective: to improve pandemic influenza preparedness and response and strengthen the protection against the pandemic influenza with a fair, transparent, equitable, efficient, and effective system for:

a) the sharing of H5N1 and other influenza viruses with human pandemic potential; and
b) access to vaccines and sharing of other benefits.

GSH agreement, Pandemic Influenza Preparedness

Article 5. Obligations of the Company

5.1 The Company agrees to comply with the commitments below ('the Commitments'), in accordance with the terms set out hereunder and in the Term Sheets Annexed to this Agreement and forming an integral part thereof, including with respect to timetables established thereunder.

5.1.1 The Company, as a manufacturer of vaccines and antivirals, commits to the following subject to and in accordance with the respective Term Sheet with regard to each influenza pandemic during the term of this Agreement:

1. Donate 7.5 %(seven point five per cent) of real time pandemic vaccine production to WHO (see Annex 1).

2. Reserve 2.5 % (two point five per cent) of real time pandemic vaccine production at affordable prices to WHO (see Annex 2).

3. Donate 2 (two) million treatment courses of needed antiviral medicine for the pandemic to WHO (see Annex 3).

4. Reserve 8 (eight) million treatment courses of needed antiviral medicine for the pandemic at affordable prices (see Annex 4).

5.2 The Company shall ensure that the Materials are handled in accordance with applicable WHO guidelines and national bio-safety standards.

5.3 If applicable, the Company shall appropriately acknowledge in presentations and publications

Done

Breaches in species barrier: emerging infections in humans

Infection	Animal linked to transmission	Year infection first reported
Ebola virus	Bats	1976
HIV-1	Primates	1981
E. coli O157:H7	Cattle	`1982
Borrelia burgdorferi	Rodents	1982
HIV-2	Primate	1986
Hendra virus	Bats	1994
BSE/vCJD	Cattle	1996
Australian lyssavirus	Bats	1996
Influenza A (H5N1)	Chickens	1997
Nipah virus	Bats	1999
SARS coronavirus	Palm civets	2003
Influenza A (H1N1)	Swine	2009
MERS coronavirus	Bat/ Dromedary	2012
Infnuenza A (H7N9)	Poultry	2013
Zika virus	Monkey	2007