World Health Organization

Epidemic and Pandemic Alert and Response

Alert and Response Operations

Briefing to the Advisory Committee on Blood Safety and Availability on Global Epidemic and Pandemic Surveillance and Response System

Prepared by Emerging and Dangerous Pathogens Team,
EPR/CDS/WHO

For the U. S. Department of Health and Human Services

Thursday, January 5, 2006

Washington, D.C.

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Headquarters

Views: Clusters | **Org Chart** | Alphabetical

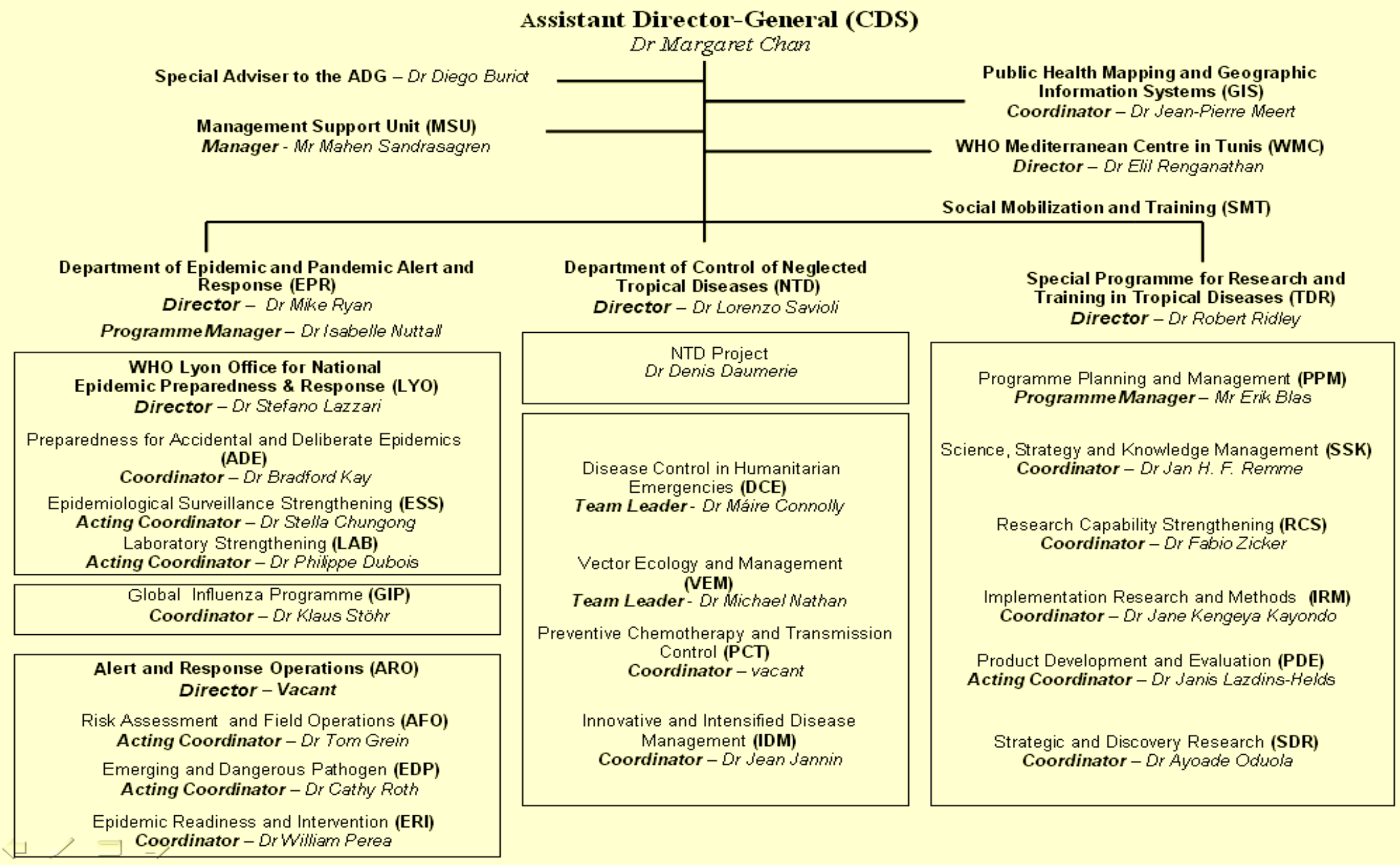
This pages offers an entry point for the homepages of the Director-General, 9 Clusters and the Representatives of the Director-General, Health Action in Crises and the Polio Eradication Initiative, with the possibility of three different views: Clusters, Org Charts and an easy-to-use alphabetical listing system.

	Director-General (DG)	
Representatives of the Director-General (DGR)	**Director-General's Office** (DGO)	**Link to Regional Offices** (Regions)
HIV/AIDS, TB and Malaria (HTM)	**Communicable Diseases** (CDS)	**Noncommunicable Diseases and Mental Health** (NMH)
Sustainable Development and Healthy Environments (SDE)	**Health Technology and Pharmaceuticals** (HTP)	**Family and Community Health** (FCH)
Evidence and Information for Policy (EIP)	**External Relations and Governing Bodies** (EGB)	**General Management** (GMG)

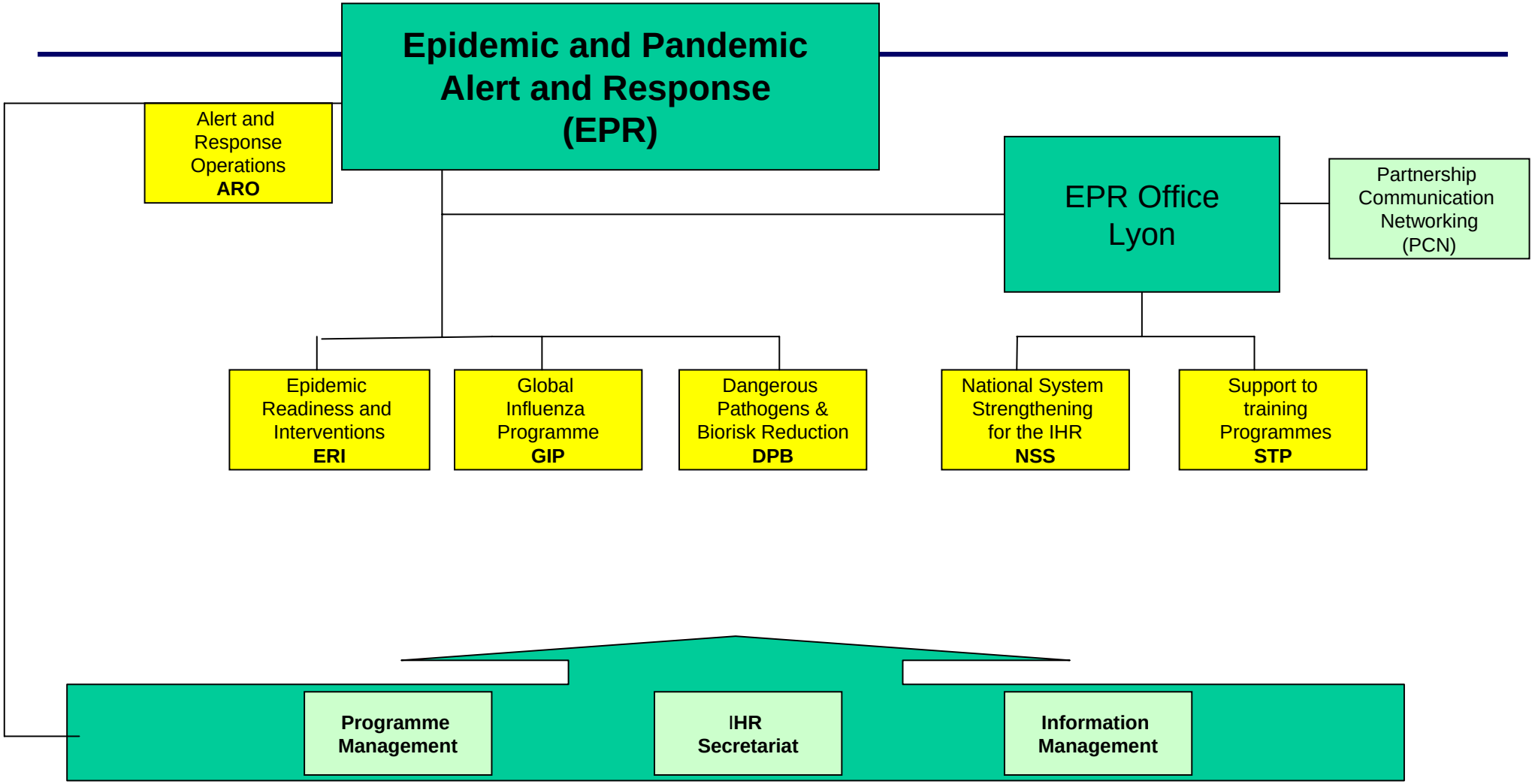
Local intranet

Start | Inbox - Microsof... | Briefing slides fo... | 2005 07 14 Influ... | WHO Intranet ... | EN | 12:28

Communicable Diseases Cluster as of 28 October 2005



EPIDEMIC AND PANDEMIC ALERT AND RESPONSE (EPR)



International Health Regulations

The Framework for Surveillance, Investigation, Notification and Control of Outbreaks of International Importance

Highlights of the 2005 Revisions

Revision of International Health Regulations (WHA58.3) Adopted 23 May 2005

Five key changes from the 1969 regulations

1. Scope – notification, response
2. National Focal Points for communications
3. Obligation to establish core capacities
4. Recommended measures for response
5. External advice regarding actions under IHR

IHR Timeframe

May 2005: World Health Assembly approves the revised IHR

2007: Entry into force

2010: All countries have reached a minimum required level of core capacities

Revision of International Health Regulations (WHA58.3) Adopted 23 May 2005

- Annex 1 defines national core capacity
- Annex 2 decision tree
- 2 years (2007) to assess and improve core surveillance and reporting systems
- 5 years (2010) to implement core surveillance and reporting systems
- Member state to create an IHR national focal point to monitor and notify authorities (72 hours in-country, 24 hours to WHO)
- Creates an expert panel and a review panel
- Article 12 defines an international emergency
- Article 14 defines cooperation with intergovernmental organizations and international bodies
- Article 15 defines the period of emergency

Epidemic/Pandemic Control requires

1. Strong national public health systems and capacity
2. Specific preparedness for key priority disease threats (e.g. diagnostics, therapies, vaccines, containment measures)
3. An effective international system and partnership for co-ordinated alert and response

Annual influenza outbreaks

Estimated annual >0.5 million death in developed countries only + hospitalization + disease

Developing countries

(also in tropical and subtropical zones)

- Frequent reports of severe outbreaks which affect large parts of the population
- equally hard hit
  - very few studies

Influenza Pandemics: Why are we concerned?

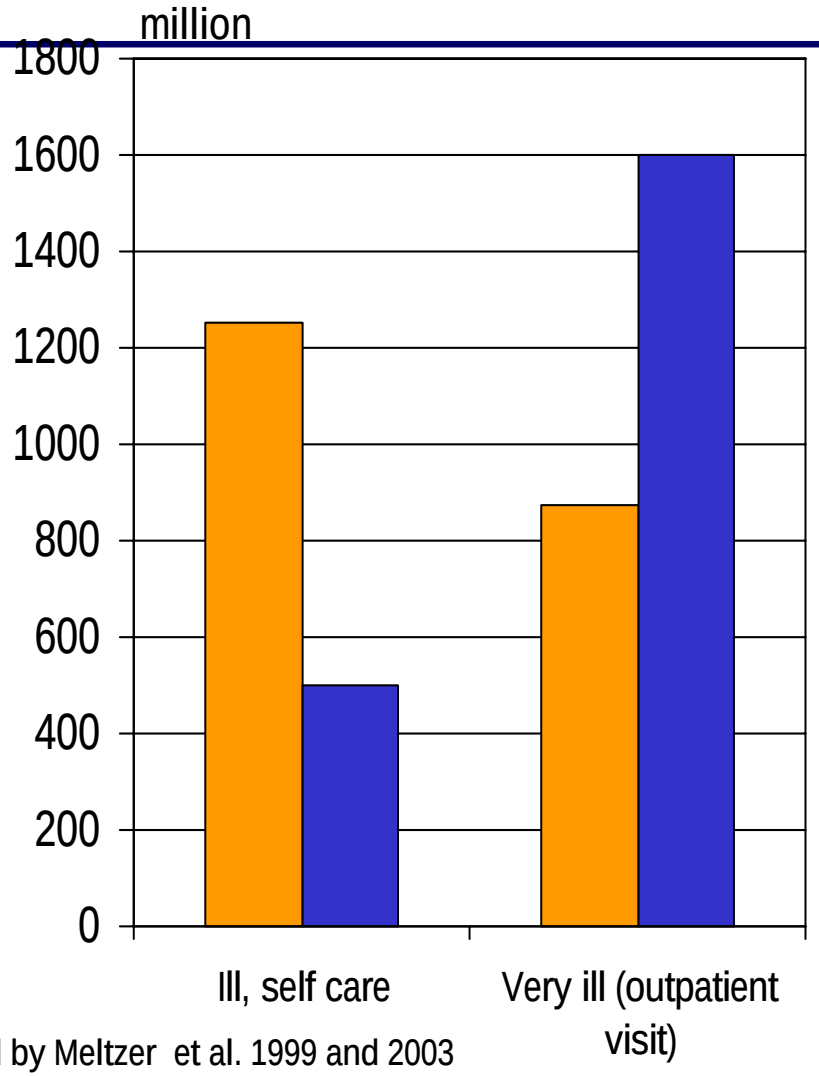
Global Health Implications

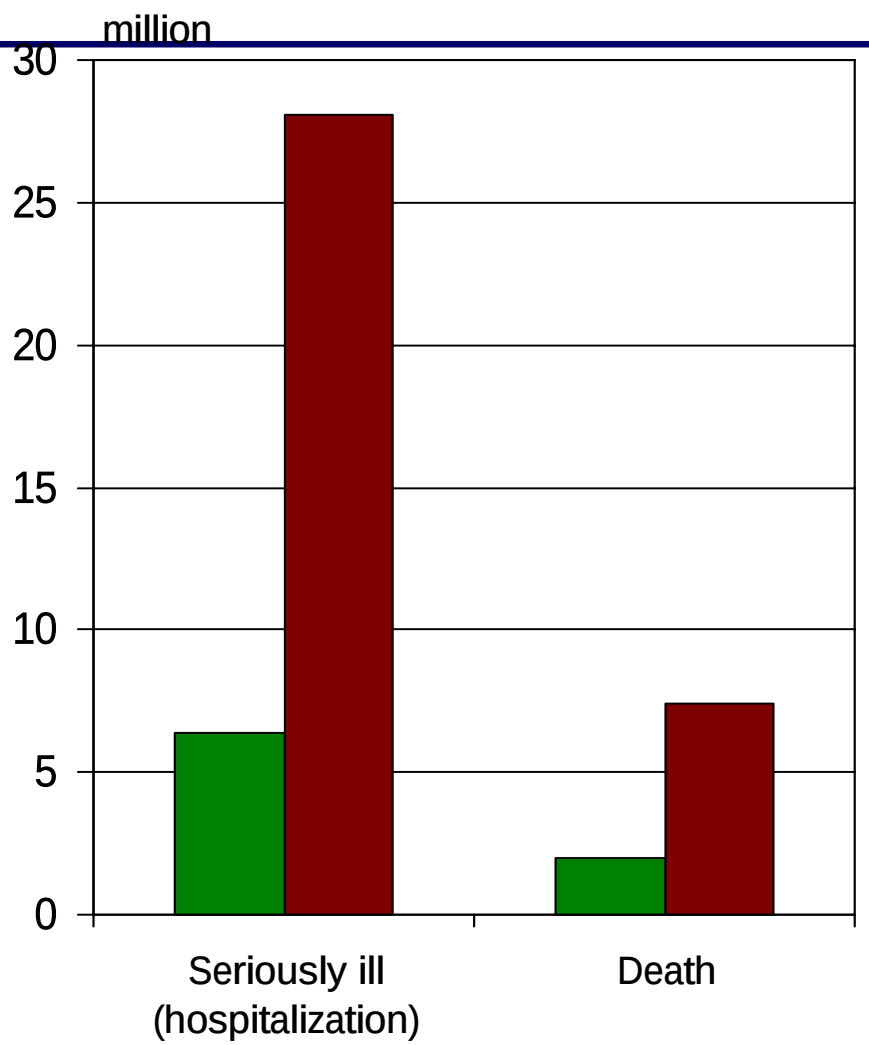
- Disease and death (attack rate 35%)
  - 1253 - 500 million ill
  - 875 - 1601 require medical care
  - 6.4 - 28.1 hospitalizations
  - 2-7.4 million death
    - Case fatality rate 0.6%
      - 1918: **mortality** was 2.2%
- During few weeks
- Several waves

Extrapolated by Meltzer et al. 1999 and 2003

Influenza Pandemics: Why are we concerned?

Global Health Implications





Extrapolated by Meltzer et al. 1999 and 2003

Influenza Pandemic
Other implications

Will affect medical service and essential disease control function

Will equally affect other essential community services

- Public transport, police, fire brigade, grocery stores, air traffic control, petrol stations, ..., teachers, politicians, ...

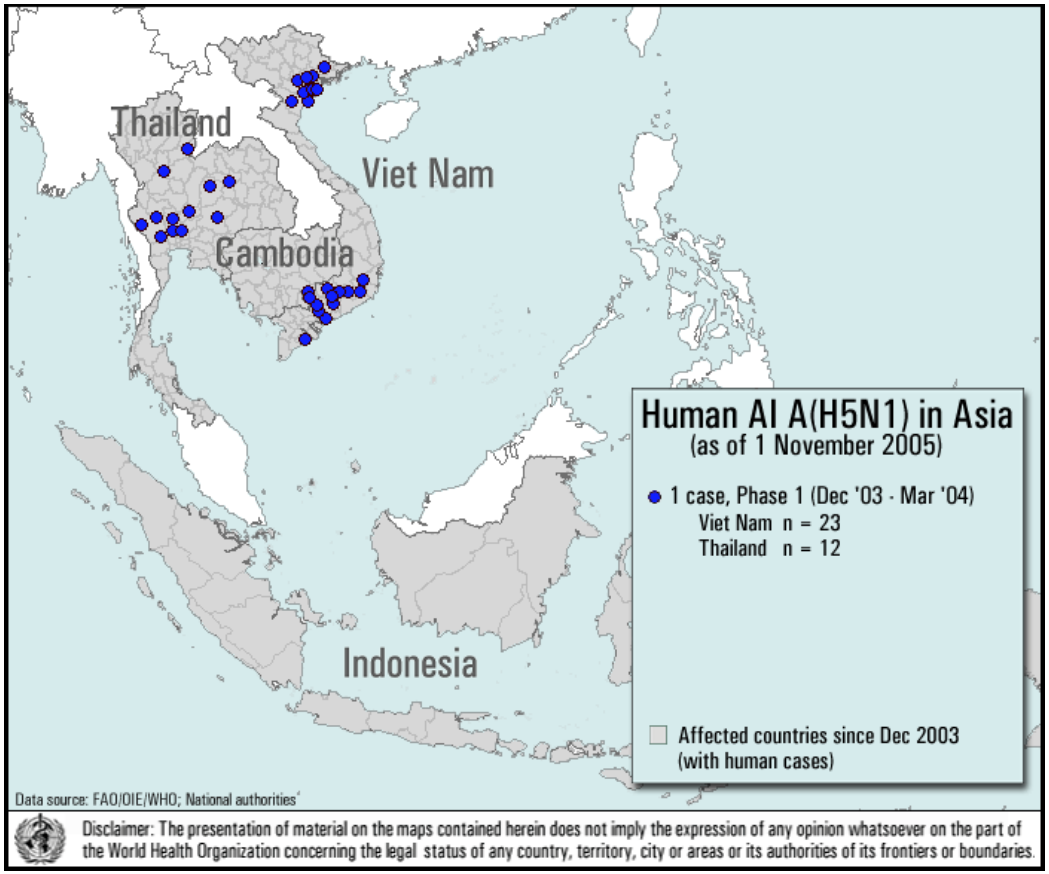
Social and political disruption

Considerable economic losses

- Health consequences of disease and prevention and control efforts
- Indirect disease consequences and impact of travel/trade recommendations/restrictions

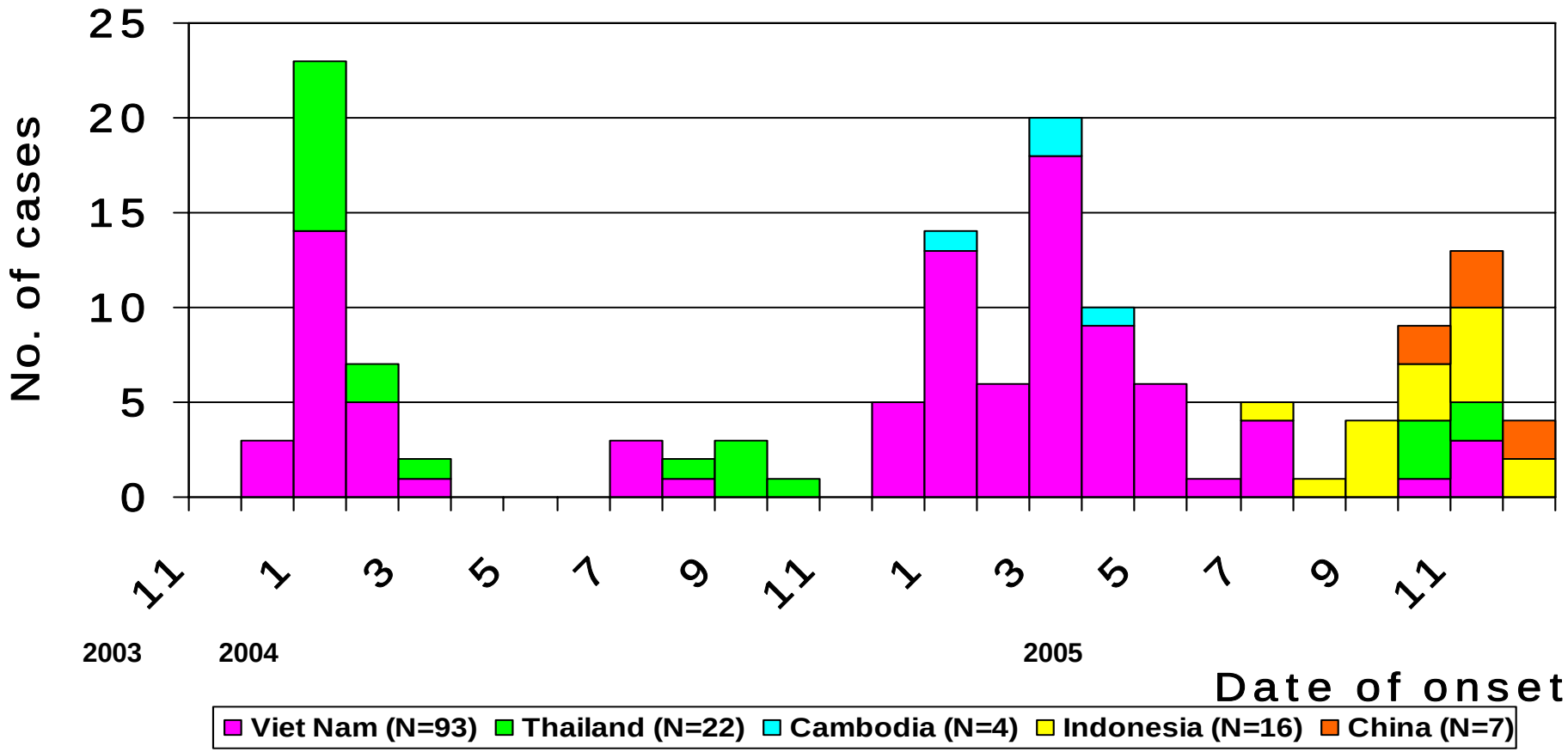
Situation (11/2005)

- The H5N1 virus is now present in birds in more than 12 countries
- The virus has crossed the species barrier on multiple occasions to infect 124 people in 4 countries
- The virus causes severe disseminated disease affecting multiple organs and systems with fatal infection in more than half those affected
- Most cases have occurred in previously healthy children and young adults
- As no virus of the H5 sub-type has ever circulated widely in humans, vulnerability to infection with a pandemic H5 strain will be universal



Human Avian Influenza A/H5N1 Cases by Onset Date and Country

(30 December 2005)



- As of 09 December, total of 137 cases with 70 deaths were reported officially to WHO
- 135 cases with available data for date of onset were included

Current WHO phase of pandemic alert

November 2005

CURRENT PHASE OF ALERT IN THE WHO GLOBAL INFLUENZA PREPAREDNESS PLAN

- WHO global influenza preparedness plan

Inter-pandemic phase New virus in animals, no human cases	Low risk of human cases	1
	Higher risk of human cases	2
Pandemic alert New virus causes human cases	No or very limited human-to-human transmission	3
	Evidence of increased human-to-human transmission	4
	Evidence of significant human-to-human transmission	5
Pandemic	Efficient and sustained human-to-human transmission	6

Experts at WHO and elsewhere believe that the world is now closer to another influenza pandemic

Response Capacity Assets

- Daily Outbreak Intelligence and Verification
- WHO Regional and Country Offices
- Global Outbreak and Response Network (GOARN)
- Disease Specific Networks (WHOCC and *ad hoc*)
  - SARS, Influenza
  - Guidelines and manuals
- Global Laboratory Network Directory

Event Management Process

Formal Reports

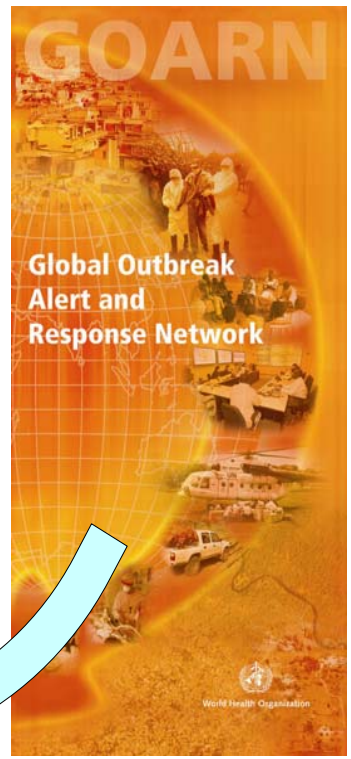
Informal

— WRO/RO/HQ —

Initial Screening

Event Verification

Risk Assessment



Response Strategy and Operations

Media | **Social Mobilization** | **Operational and Technical Coordination** | **Logistics** | **Security** | **Finance**

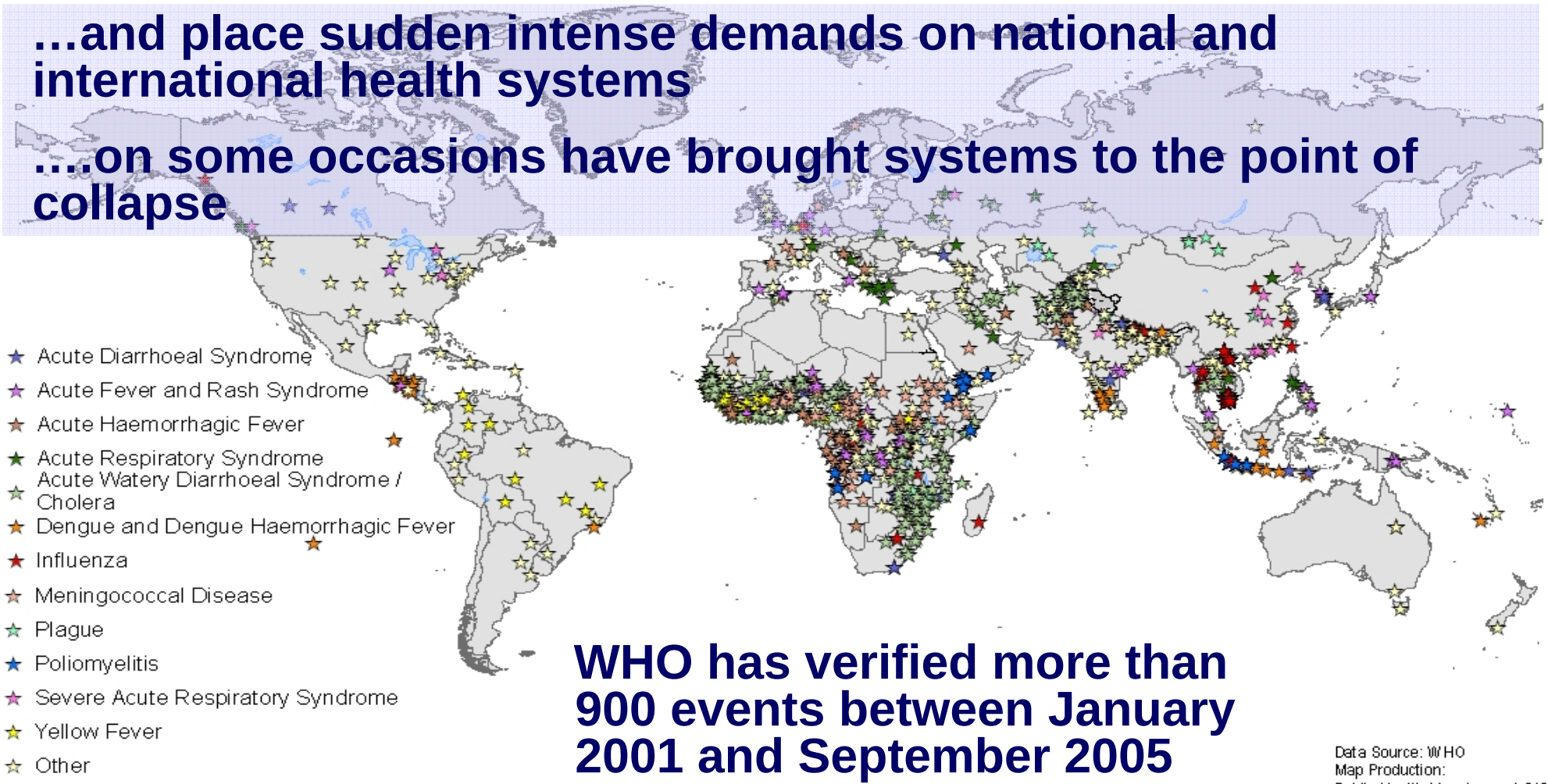
Epidemiological Investigation | **Infection control** | **Containment & Control** | **Clinical Management** | **Information Management** | **Field Communications**

Laboratory | **Environmental health** | **Medical Anthropology**

Disease Outbreaks of International Concern

…and place sudden intense demands on national and international health systems

….on some occasions have brought systems to the point of collapse



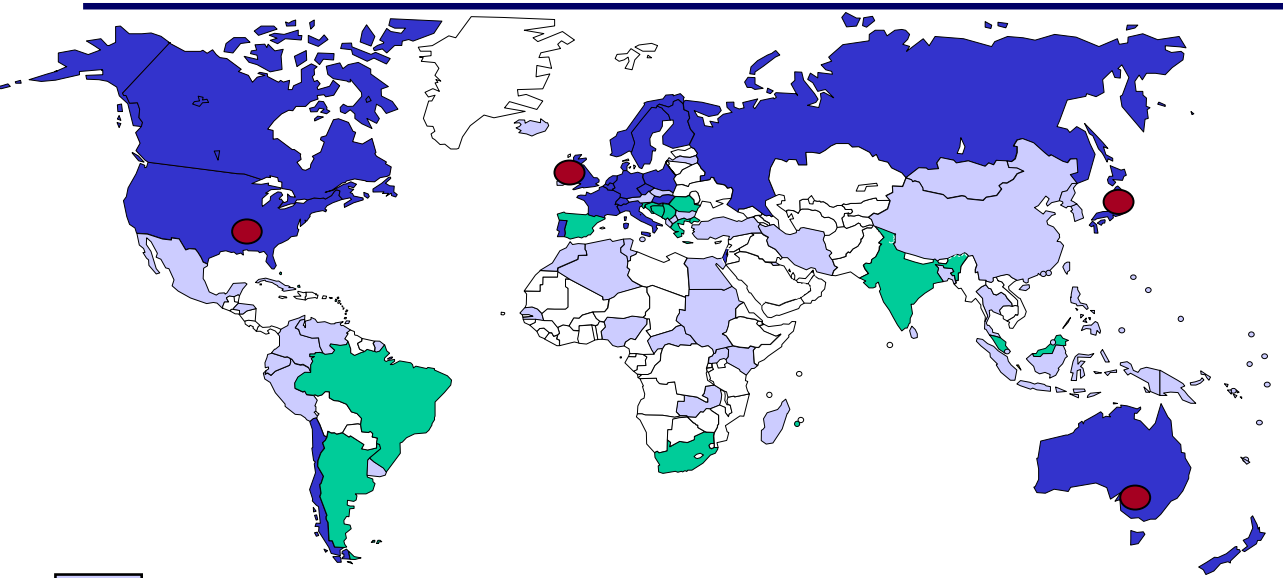
WHO has verified more than 900 events between January 2001 and September 2005

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

World Health Organization

The boundaries and names shown and the designations used on this map 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 lines on maps represent approximate border lines for which there may not yet be full agreement.

WHO Global Surveillance System for Human Influenza



- 1 laboratory
- ➢1 laboratory
- national network

Annual output

- ~ 175,000-220,000k samples;
- 15,00-40,000 isolates;
- 2,000- 10 000 viruses characterized

Key Strategic Actions for Human Pandemic Influenza

1. Reduce human exposure to H5N1
2. Strengthen the early warning system
3. Intensify rapid containment operations
4. Build capacity to cope with a pandemic
5. Co-ordinate global science & research including acceleration of vaccine development & expansion of production capacity

Education

National/Regional/Global

In response to human cases/clusters

- Rapid field investigation

National/regional/global preparedness requires

Improve the ability of the world to develop, produce and deliver vaccine to large numbers of people in a timely manner

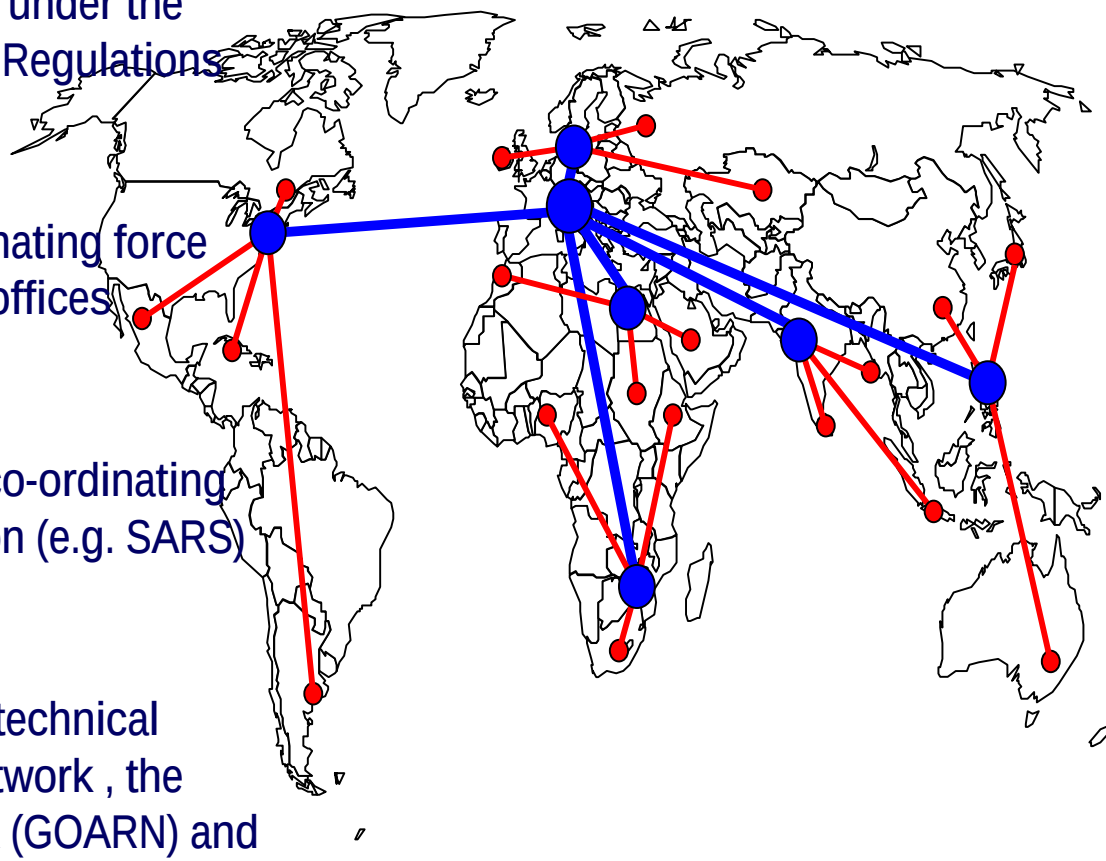
Strengthen WHO's capacity to gather real-time scientific data, access global expertise and translate into vital advice and guidance

Developments at WHO

- International Health Regulations 2005
- Epidemic Alert and Response (EAR)
- Greater/Formal Regionalization of Operations
  - WHO Global Team, Regional Operations Centres, SOPs, , + Resources at Regional Offices……
- Office of Alert and Response Operations
  - Risk Assessment and Field Operations, GOARN, Logistics
  - Strategic Health Operations Centre (SHOC)

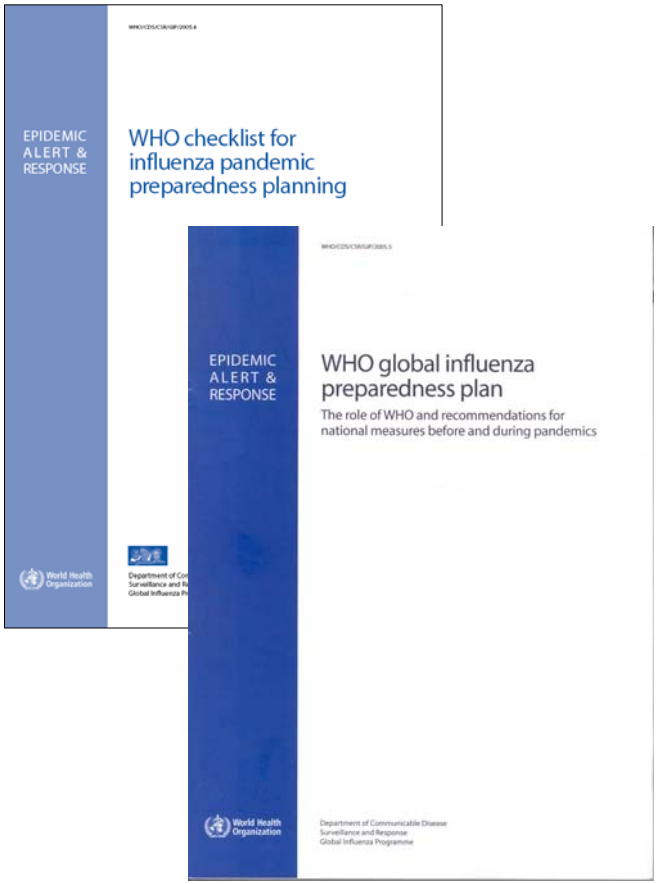
WHO is Supporting Countries Utilising its...

- International Mandate
  - Close collaboration with WHO member states under the framework of the revised International Health Regulations
- Decentralised Structure & Capacity
  - Ability to act as a regional and global co-ordinating force with 6 Regional Office hubs and 142 country offices
- Experience
  - Building national public health capacity and co-ordinating urgent international action and communication (e.g. SARS)
- Partnerships
  - Networking with and mobilization of the best technical institutions including the Global Influenza Network , the Global Outbreak Alert and Response Network (GOARN) and key regional networks



National Pandemic Preparedness

- Building on a Regionally implemented strategy for strengthening national early warning and response systems
- Rapid increase in number of countries with plans or with plans in preparation
- From < 50 countries 6 months ago to approx 120/194 today (60%)
- We can't stop here…!
  - Operationalisation and implementation
  - Exercises/Rehearsals
  - International co-ordination of plans (e.g. borders, stockpiles)

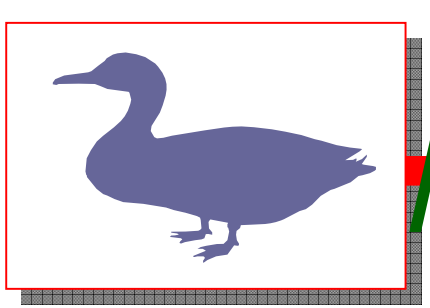


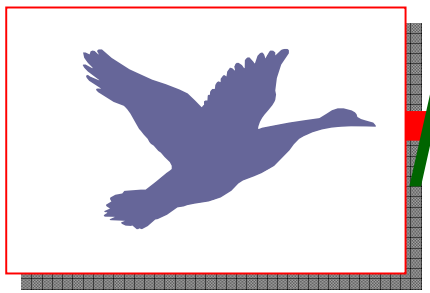
WHO Operational Support for a Pandemic....

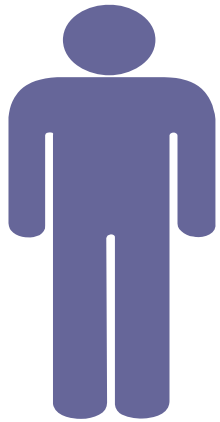
- Real-time global coordination using the Strategic Health Operations Centre and Regional office hubs/teams
- Sensitive global disease intelligence gathering and verification
- Collaborative risk assessment, effective information management and rapid risk communication
- Ongoing modelling & tracking of disease spread
- Rapid provision of technical support and deployment of field response teams from GOARN and regional network mechanisms.
- Immediate advice on control measures as epidemiological potential of the virus evolves
- Co-ordination of the development of new technologies/interventions as needed

The animal/human interface

Trade / Smuggling







Children

Farmers

Cullers

Hunters

Wild birds

Domestic poultry

Key Strategic Actions for Pandemic Influenza

1. Reduce human exposure to H5N1
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4. Build capacity to cope with a pandemic
5. Co-ordinate global science and accelerate vaccine development & expansion of production capacity

Building public health capacity to deal with influenza will lead to stronger national systems for alert and response linked to a comprehensive global alert and response system that will serve to protect us from whatever nature has in store for us in the future !


Thank You !