

IHR Event Assessment & Reporting - The CDC Experience

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With 1 billion people crossing international borders each year, there is no where in the world from which we are remote and no one from whom we are disconnected.



Purpose of IHR

Article 2 Purpose and scope

The purpose and scope of these Regulations are to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade.

- Global consultation on health measures
- Globally harmonized response
- **Rapid information exchange**

Timing of Assessment & Reporting of Events

ANNEX 1

A. CORE CAPACITY REQUIREMENTS FOR SURVEILLANCE AND RESPONSE

6. At the National Level

Assessment and notification. The capacities:

(a) **assess** all reports of urgent events within

48 hours

Article 6 Notification

1. Each State Party shall assess events within its territory by using the decision instrument in Annex 2. Each State Party shall **notify** WHO, by the most rapid means of communication available, by way of the National IHR Focal Point, of assessment of public health information, of all events which may constitute a public health emergency of international concern within its territory in accordance with the decision instrument, as well as any health measure implemented in response to those events. If the notification received by WHO involves

24 hours

Public Health Emergency of International Concern (PHEIC)

Definition

Extraordinary event



“public health emergency of international concern” means an extraordinary event which is determined, as provided in these Regulations:

- (i) to constitute a public health risk to other States through the international spread of disease and
- (ii) to potentially require a coordinated international response:

WHO Director-General makes **determination** of PHEIC

IHR (2005) Enter Into Force in U.S. on July 18, 2007

Reservation

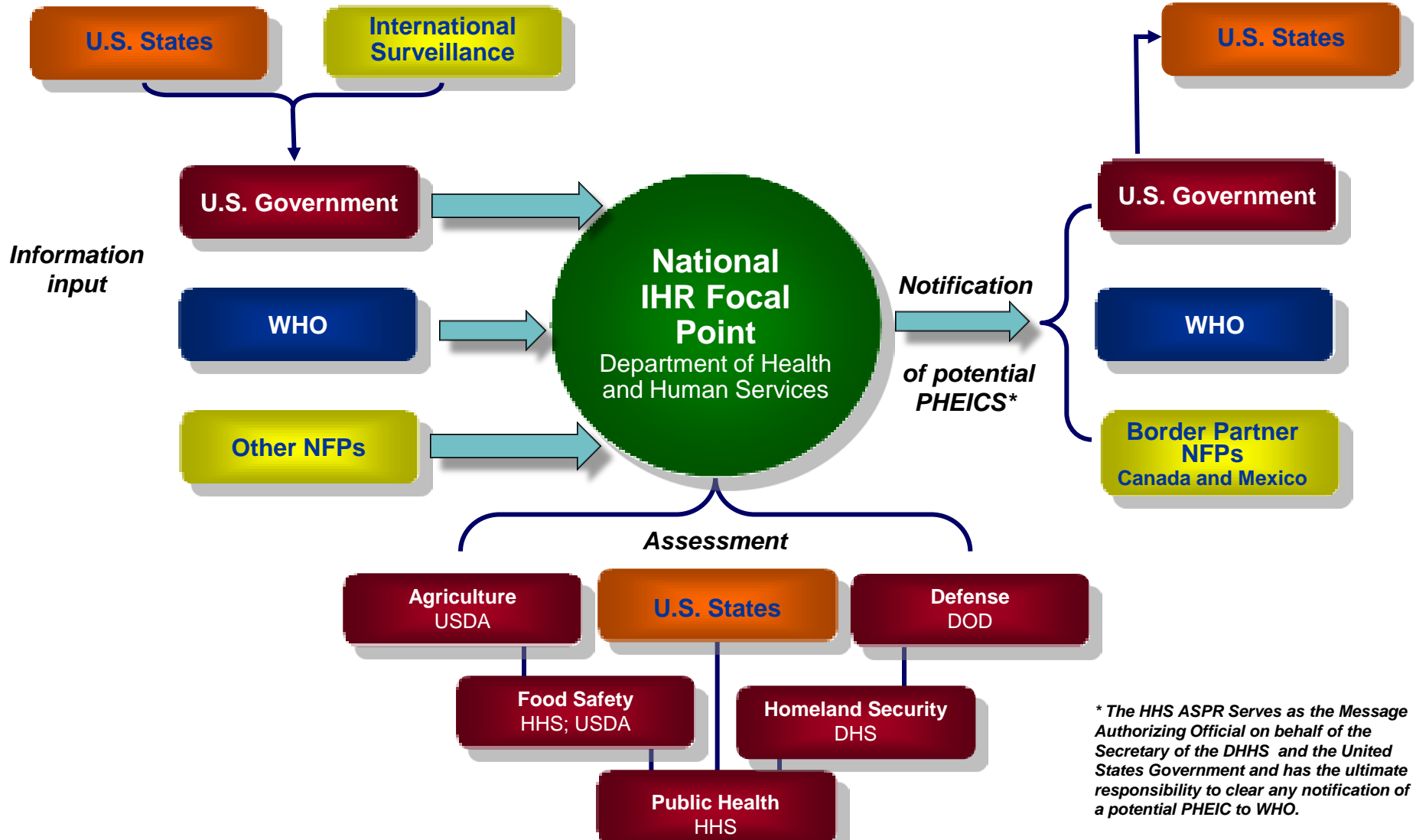
The U.S. will implement the IHR under the principles of federalism

Understandings

- Under the IHR, incidents that involve the natural, accidental or deliberate release of chemical, biological, or radiological materials must be reported
- Countries that accept the IHR are obligated to report, to the extent possible, potential public health emergencies that occur outside their borders
- The IHR do not create any separate private right to legal action against the Federal government



U.S. IHR Assessment & Notification Process for Public Health Events



* The HHS ASPR Serves as the Message Authorizing Official on behalf of the Secretary of the DHHS and the United States Government and has the ultimate responsibility to clear any notification of a potential PHEIC to WHO.

Who Makes the Decision at CDC to Report a Potential PHEIC?

CDC Preliminary Assessment:

- Associate Director for Science at the National Center that 'owns' the disease/event

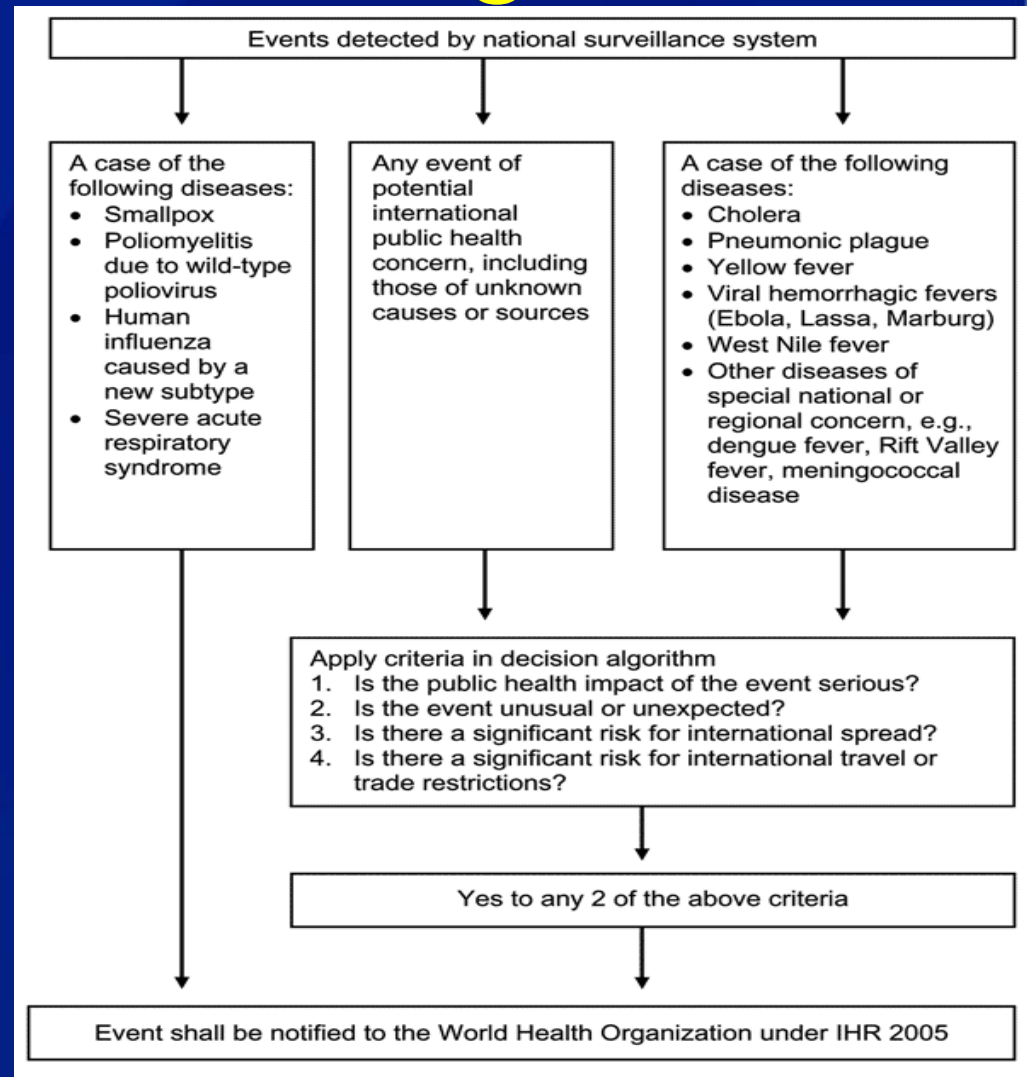
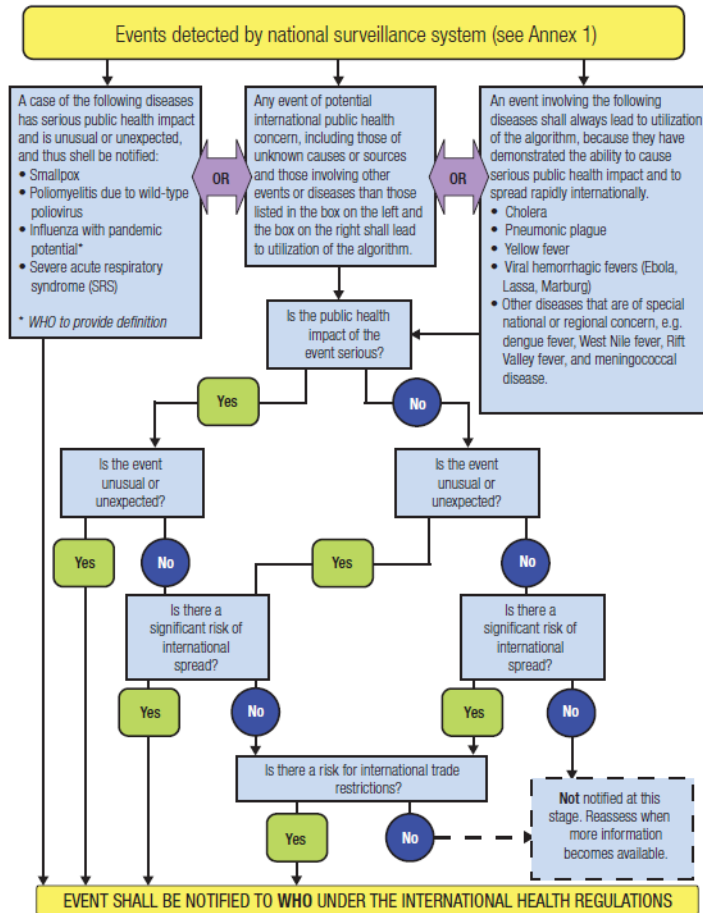
CDC Final Assessment:

- CDC PHEIC Analysis Team
 - Center and Office ADSs
 - CSTE* representative or State Epidemiologist

* Council of State and Territorial Epidemiologists

PHEIC Assessment Algorithm

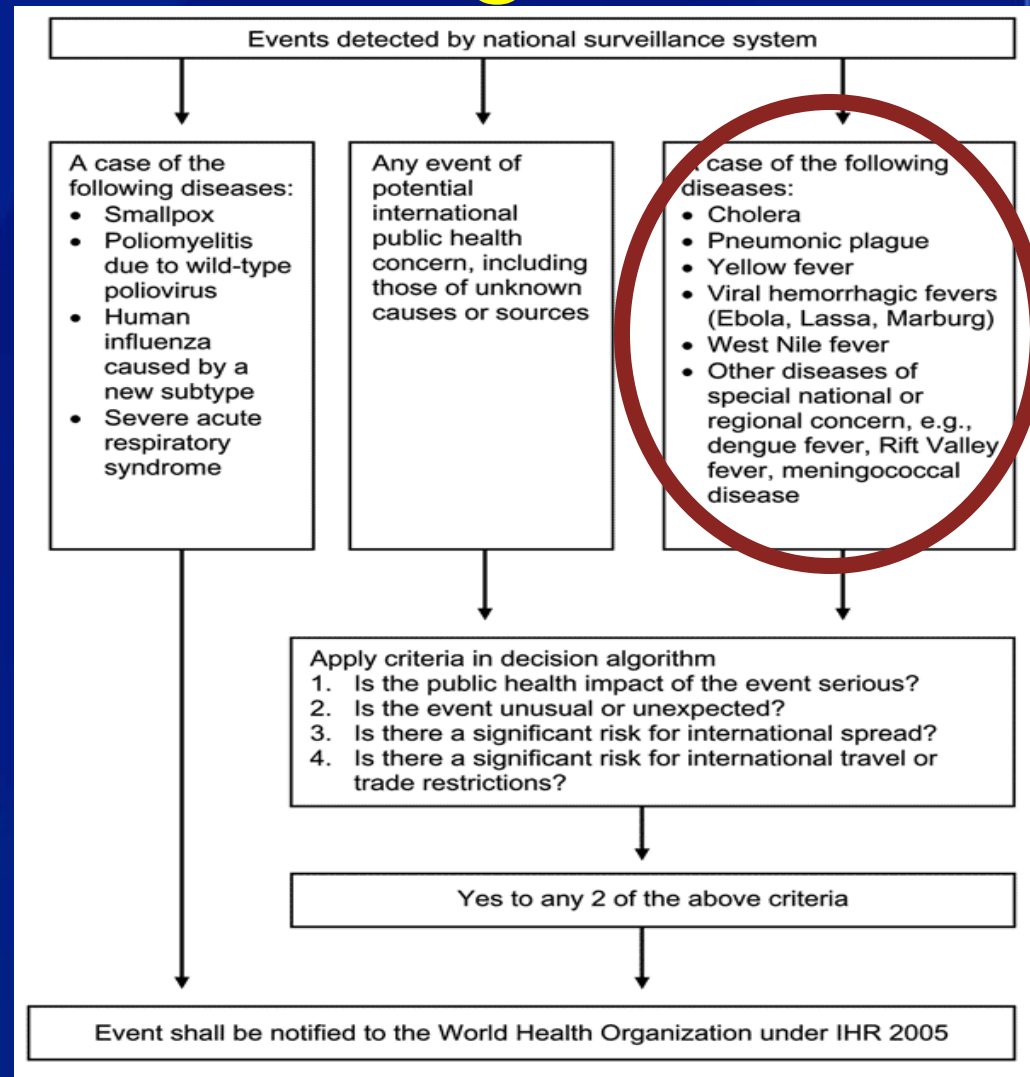
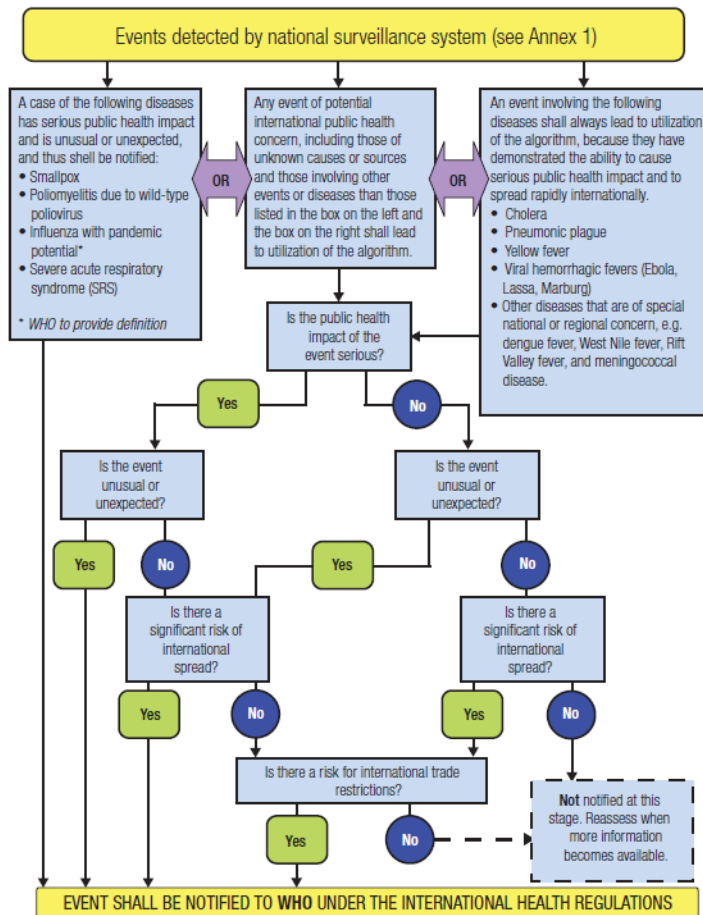
Decision Instrument for the Assessment and Notification of Events that may constitute a Public Health Emergency of International Concern



* Baker MG, Fidler DP. Global public health surveillance under the new International Health Regulations. EID; July 2006, Vol. 12. <http://www.cdc.gov/ncidod/eid/vol12no07/05-1497.htm>

PHEIC Assessment Algorithm

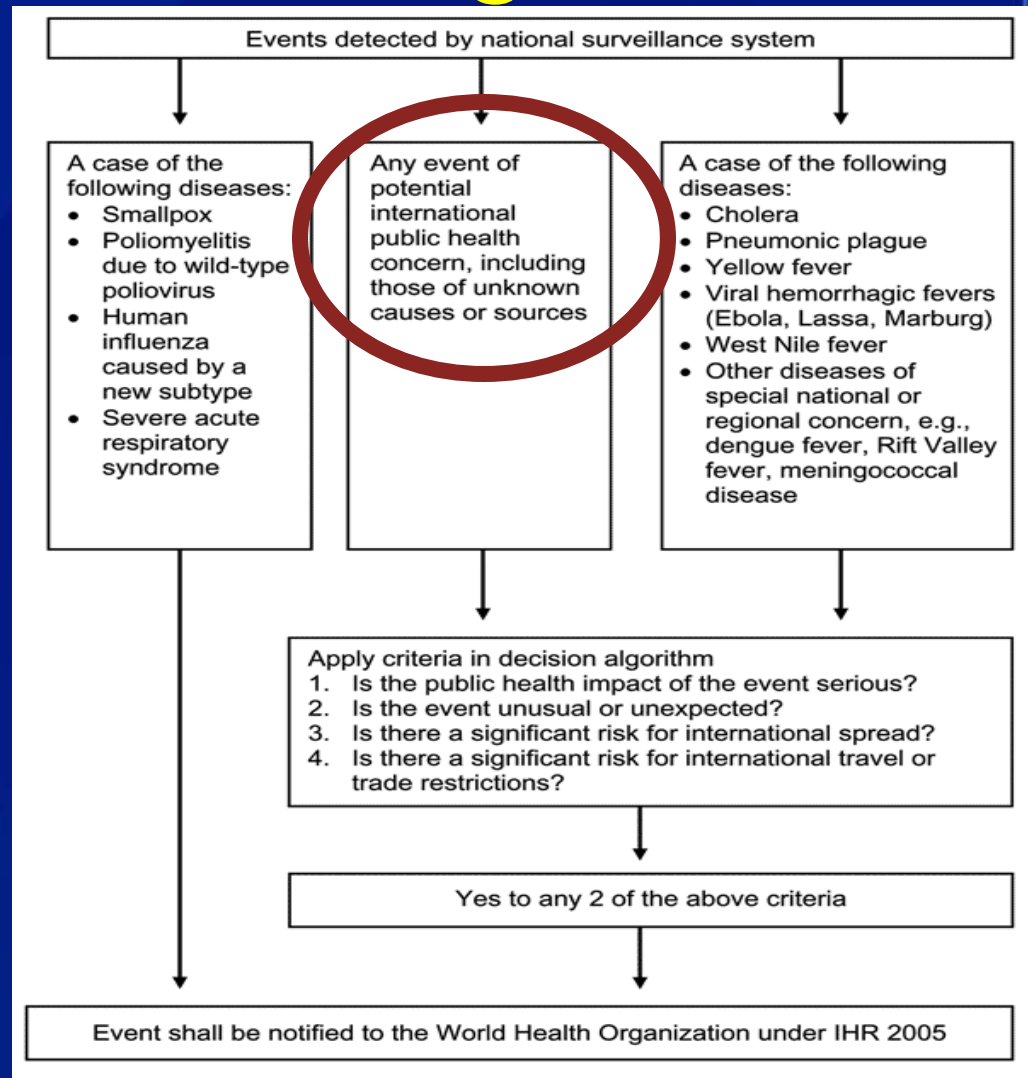
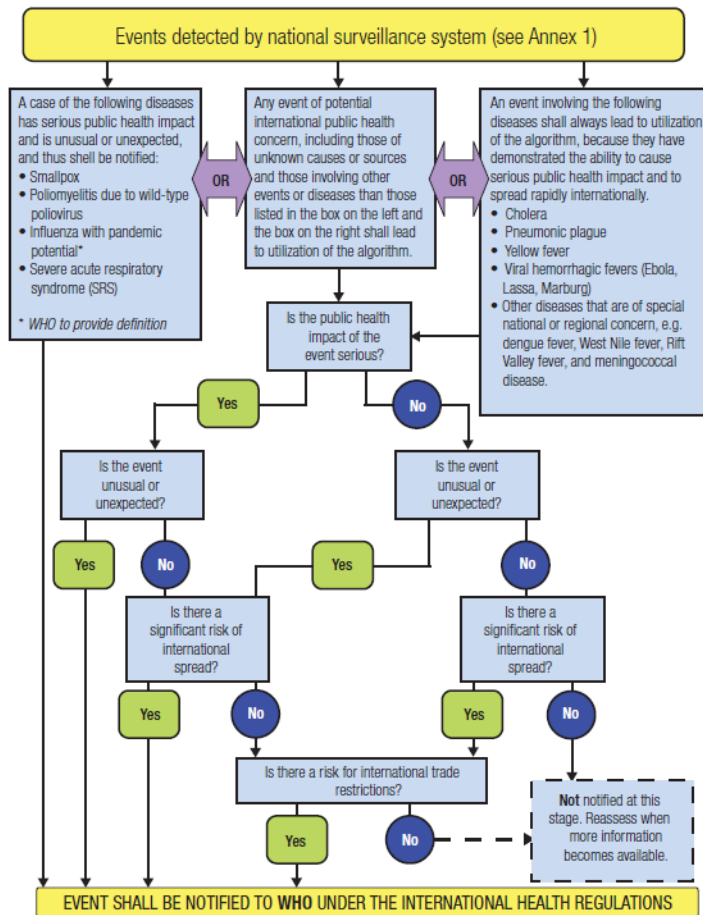
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PHEIC Assessment Algorithm

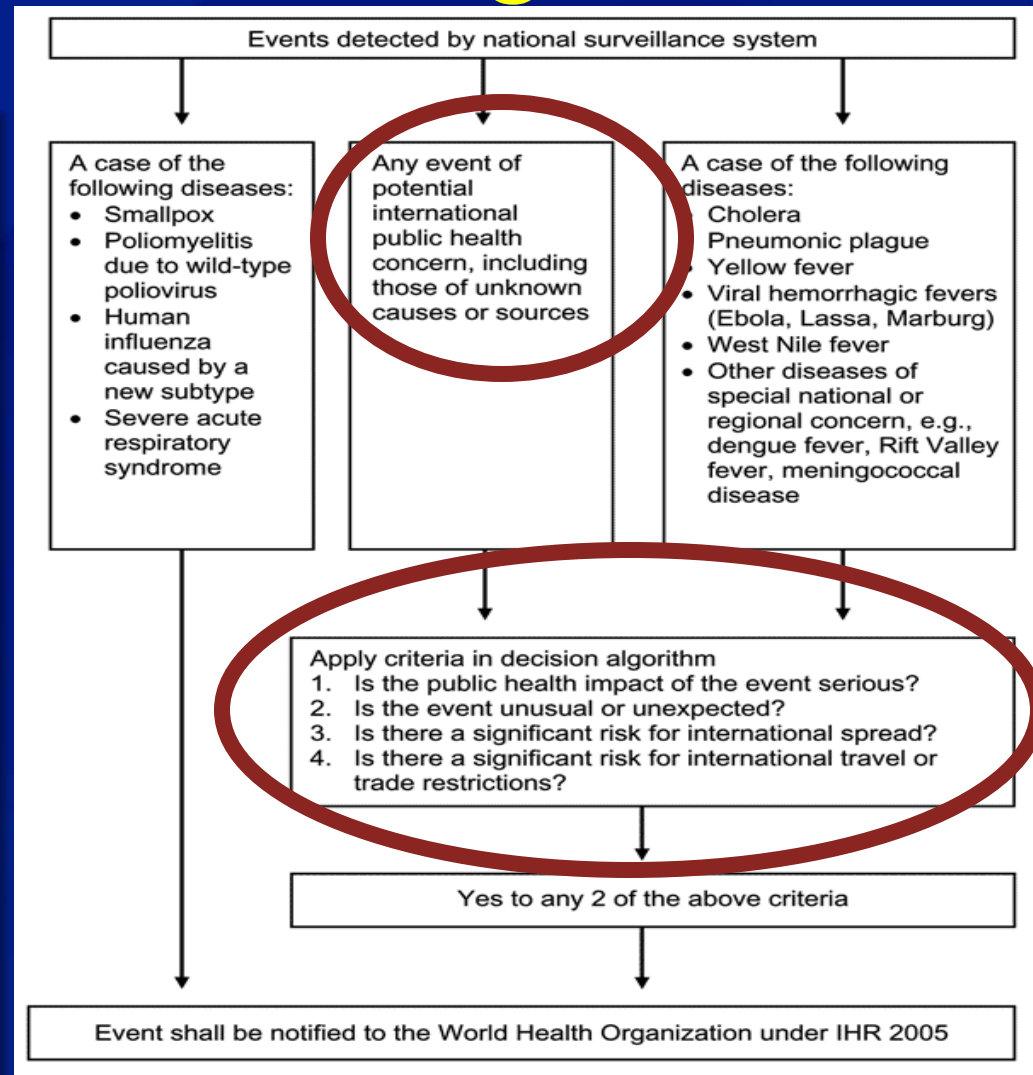
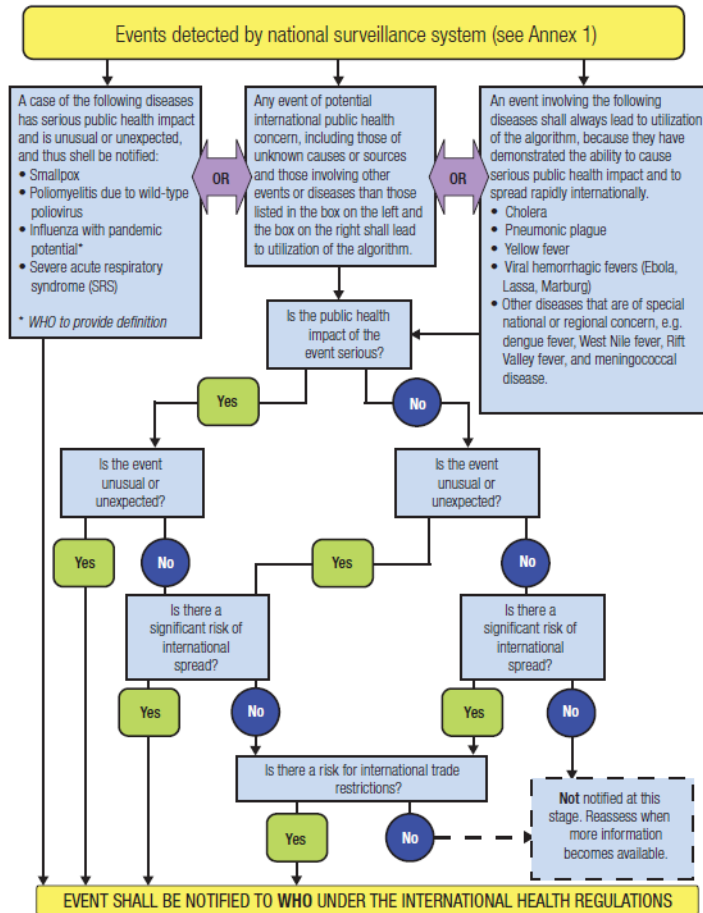
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PHEIC Assessment Algorithm

Decision Instrument for the Assessment and Notification of Events that may constitute a Public Health Emergency of International Concern



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Example 1: 2009 H1N1

- April 15: CDC laboratory first detects a person with 2009 H1N1 influenza in the U.S.
- April 17: CDC notifies WHO via U.S. National Focal Point of potential PHEIC

U.S. Government International Health Regulation (IHR) Public Health Emergency of International Concern (PHEIC) Report Form	
Event Tracking Number	[REDACTED]
Date/Time	April 17, 2009
Event	Swine influenza A (H1N1) in a child
Location	San Diego, California, U.S.
Source of Report (for internal USG use only)	[REDACTED]
Step 1: Indicate why this event may be a potential Public Health Emergency of International Concern (PHEIC)*	
<input checked="" type="checkbox"/>	A. Disease is one of the following: SARS, polio, smallpox, human influenza caused by a new subtype (e.g., H5N1)
Event Tracking Number	[REDACTED]
Date/Time	April 17, 2009
Event	Swine influenza A (H1N1) in a child
Location	Imperial County, California, U.S.
Source of Report (for internal USG use only)	[REDACTED]

- April 25
WHO declares a Public Health Emergency of International Concern (PHEIC) in accordance with the International Health Regulations

Example 2: Turkish Pine Nuts and Salmonella

- October 26, CDC web-posting
- October 27, PHEIC notification to WHO...

**U.S. Government International Health Regulation (IHR)
Public Health Emergency of International Concern (PHEIC) Report Form**

Event Tracking Number [REDACTED]
Date/Time October 27, 2011 Event Multistate Outbreak of Human Salmonella Enteritidis Infection
Location 6 US States [REDACTED]
Source of Report (for internal USG use only) [REDACTED]

-WHO assessment and posting on PHEIC
Event Information Site

Turkish Pine Nuts and Salmonella

- Setting: 42 cases of *Salmonella* Enteritidis in 6 (5) States linked to Turkish Pine Nuts
- Assessment of Criteria:
 - Serious impact on public health
 - ✓ Unusual or unexpected
 - ✓ Significant risk of international spread
 - ✓ Significant risk of international travel or trade restrictions

Turkish Pine Nuts and Salmonella

I. Is the public health impact of the event serious?

1. *Is the number of cases and/or number of deaths for this type of event large for the given place, time or population?*

2. *Has the event the potential to have a high public health impact?*

THE FOLLOWING ARE EXAMPLES OF CIRCUMSTANCES THAT CONTRIBUTE TO HIGH PUBLIC HEALTH IMPACT:

- ✓ Event caused by a pathogen with high potential to cause epidemic (infectiousness of the agent, high case fatality, multiple transmission routes or healthy carrier).
- ✓ Indication of treatment failure (new or emerging antibiotic resistance, vaccine failure, antidote resistance or failure).
- ✓ Event represents a significant public health risk even if no or very few human cases have yet been identified.

○ Serious impact on public health:

>1 M estimated cases of Salmonella/year in U.S.

Turkish Pine Nuts and Salmonella

II. Is the event unusual or unexpected?

4. *Is the event unusual?*

THE FOLLOWING ARE EXAMPLES OF UNUSUAL EVENTS:

- ✓ The event is caused by an unknown agent or the source, vehicle, route of transmission is unusual or unknown.
- ✓ Evolution of cases more severe than expected (including morbidity or case-fatality) or with unusual symptoms.
- ✓ Occurrence of the event itself unusual for the area, season or population.

5. *Is the event unexpected from a public health perspective?*

THE FOLLOWING ARE EXAMPLES OF UNEXPECTED EVENTS:

- ✓ Event caused by a disease/agent that had already been eliminated or eradicated from the State Party or not previously reported.

✓ Unusual or unexpected: unknown vehicle

Turkish Pine Nuts and Salmonella

III. Is there a significant risk of international spread?

6. *Is there evidence of an epidemiological link to similar events in other States?*

7. *Is there any factor that should alert us to the potential for cross border movement of the agent, vehicle or host?*

✓ Significant risk of international spread:
exportation of pine nuts to Canada

IV. Is there a significant risk of international travel or trade restrictions?

8. *Have similar events in the past resulted in international restriction on trade and/or travel?*

9. *Is the source suspected or known to be a food product, water or any other goods that might be contaminated that has been exported/imported to/from other States?*

10. *Has the event occurred in association with an international gathering or in an area of intense international tourism?*

11. *Has the event caused requests for more information by foreign officials or international media?*

✓ Significant risk of travel or trade restrictions:
importation of pine nuts from Turkey

Example 3: Cluster of Guillain-Barré Syndrome (GBS)

- PHEIC notification from U.S. to WHO – 6/24/2011

U.S. Government International Health Regulation (IHR) Public Health Emergency of
International Concern (PHEIC) Report Form

Event Tracking Number _____
Date/Time __ 24 June 2011 _____ Event _ Clustering of suspected cases of Guillain-Barre syndrome
(GBS) _____
Location __ Arizona, U.S., and Sonora / Baja, Mexico _____
Source of Report (for internal USG use only) _____

- Epi-X notification of PHEIC report - 6/27/2011



atrin Kohl
eader
2/13/2011

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Epi-X The Epidemic
Information Exchange

PHEIC: Cluster of Guillain-Barre Syndrome Cases -- Yuma County, Arizona, 2011

GBS Cluster

- **Setting: Cluster of GBS cases in neighboring counties in U.S. and Mexico**
- **Assessment of Criteria:**
 - ✓ **Serious impact on public health**
 - ✓ **Unusual or unexpected**
 - ✓ **Significant risk of international spread**
 - **Significant risk of international travel or trade restrictions**

GBS Cluster

B. Event (biological, chemical or radiological) meets the following criteria:

1. Serious Impact on Public Health

there is high or potentially high morbidity and/or mortality

the geographic scope is large or spreading over a large area (e.g. multi-state or regional); is in area of high population density

the agent is highly transmissible/pathogenic

the event has compromised containment or control efforts

therapeutic/prophylactic agents are unavailable, absent, or ineffective (e.g., XDR-TB)

cases occurring among health care staff

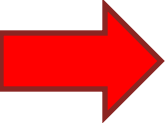
the event has compromised containment or control efforts

other: _____

✓ **Serious Impact on Public Health:**
several hospitalizations and disability have resulted from this event

GBS Cluster

X 2. Unusual or Unexpected Event

- the disease-causing agent(s) is yet unknown or a new (emergent) pathogen
- the population affected is highly susceptible
-  the event is unusual for the season, locality or host
- there is a suspicion that this may have been an intentional act
- other: _____

- ✓ The event is unusual or unexpected:
the local incidence of AFP has doubled as a result of this event

GBS Cluster

X 3. Significant risk for international spread

X epidemiologic link to a similar event outside the U.S.

potential cross-border movement of pathogen/agent/host

conducive transmission vehicles: air, water, food or environmental

other: _____

✓ Significant risk of international spread:
post-infectious GBS hypothesis and cases on
both sides of the border

GBS Cluster

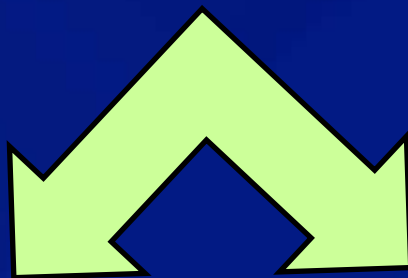
- **4. Risk for trade or travel restrictions**
 - there is a history of similar events in the past that have resulted in restrictions
 - the event is associated with an international gathering or a tourist area
 - the event is or has gained significant government or media attention

- **Significant risk of travel or trade restrictions: localized binational event; unlikely that other countries restrict travel or trade with either Mexico or the U.S.**

Events posted on IHR Event Information Site Assessed by WHO

July 2007 – December 8, 2011

WHO posted 222 events



199 from 104 countries

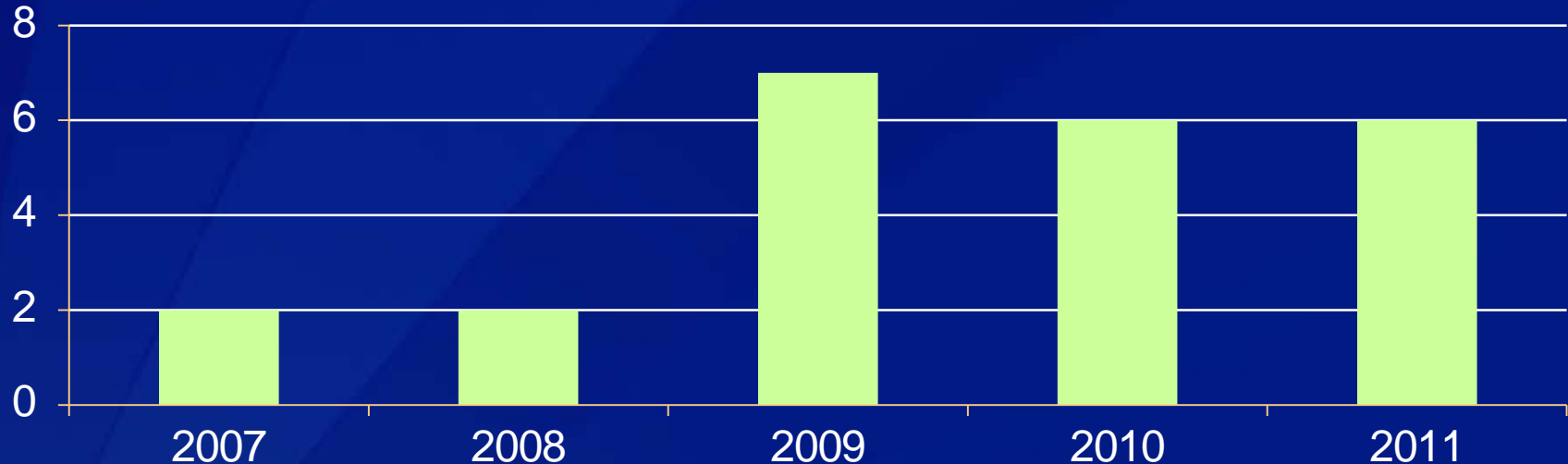
23 from the U.S.

- 109 influenza
- 18 poliomyelitis

- 520 reports/announcements for 2009 pH1N1

WHO Assessed U.S. IHR Events, 2007 - 2011

of IHR events from U.S. assessed by WHO (N=23)



1 event each

Botulism

Drug Adverse Event (Heparin)

E. coli (EHEC)

Environmental Pollution (Oil Spill)

Lassa Fever

Typhoid Fever

Multiple events

Influenza (12)

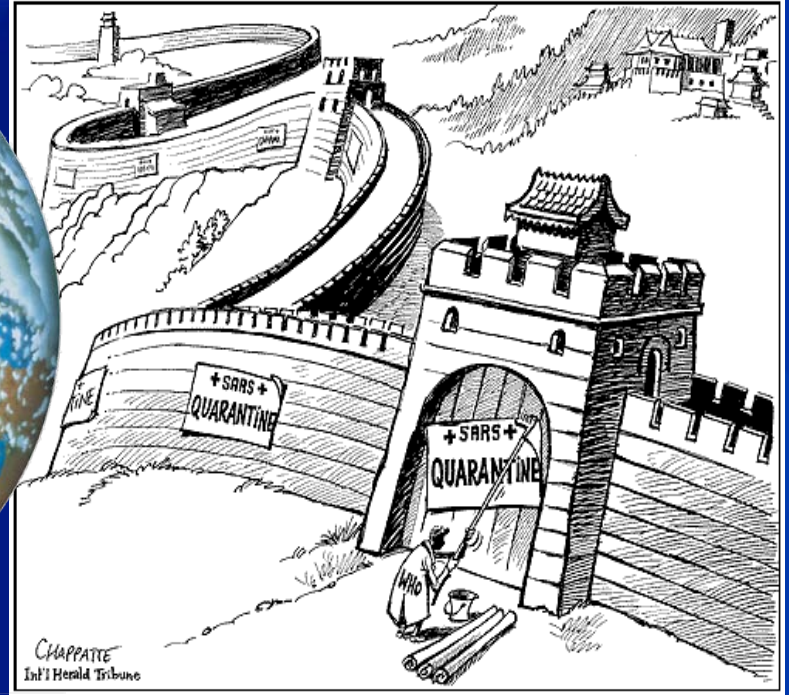
Salmonella (5)

National Focal Point to National Focal Point Notifications (NFP)

- Countries use NFPs for rapid information exchange of a variety of public health events - “By product” of IHR infrastructure and process

	Open Date	Event Name	Location
1			
2	12/09/2011	Notification of a contact of Chlamydia and Gonorrhoea in the United States of America	AL
3	12/2/2011	Cryptosporidium outbreak on Queen Victoria cruise liner	Bahamas
6	11/30/2011	Dengue DEN-2 Fiji	Fiji
7	11/30/2011	Transmissible gastroenteritis	Peru
11	11/17/2011	Bovine Tuberculosis	Mauritis
15	11/10/2011	Chlamydia	Canada/ Florida
16	11/10/2011	Mixomatosis	Greece
17	11/10/2011	Cadmium & Copper spill, British Colombia	Canda
19	11/4/2011	Measles in Ecuador	Ecuador

Examples of notifications to U.S. NFP from other WHO Member States' NFPs



THANK YOU

H1N1 reported in 122 countries within 6 weeks of emergence



Photo 5 of 10
A man with an eerie smile is walking the streets of Mexico City on April 28. The World Health Organization has now raised the pandemic threat level from four to five, one level short of a full-blown pandemic. Getty Images



HIDE CAPTIONS