
Rapid Operations to Contain the Initial Emergence of Pandemic Influenza: The WHO Interim Protocol

7 January version



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Overview of the presentation

- Background and context
- Decision making process
- Containment strategy
- Key activities during containment
- Challenges



Rapid Containment:

Background and Context

Preparing for Pandemic Influenza: WHO Strategic Action Plan

- **Timing and severity of the next pandemic cannot be predicted**
- **Countries and WHO need to prepare**
- **Objectives of WHO Strategic Action Plan**
 - **Prevent viruses with pandemic potential from initiating a pandemic (H5N1 most visible threat)**
 - **Ensure that capacity, research and planning measures are in place to reduce pandemic impact**
- **Rapid containment is one of the Plan's 5 priority actions**



What is the Rapid Containment Strategy?

- **STOP** the development of pandemic influenza
- When it is initially detected
- Before the virus spreads more widely



Rapid Response: Routine Public Health Action

- **Relies on early detection of cases**
- **Initial local investigation**
- **Standard control measures to prevent further transmission**
- **Notification of national authorities and WHO**

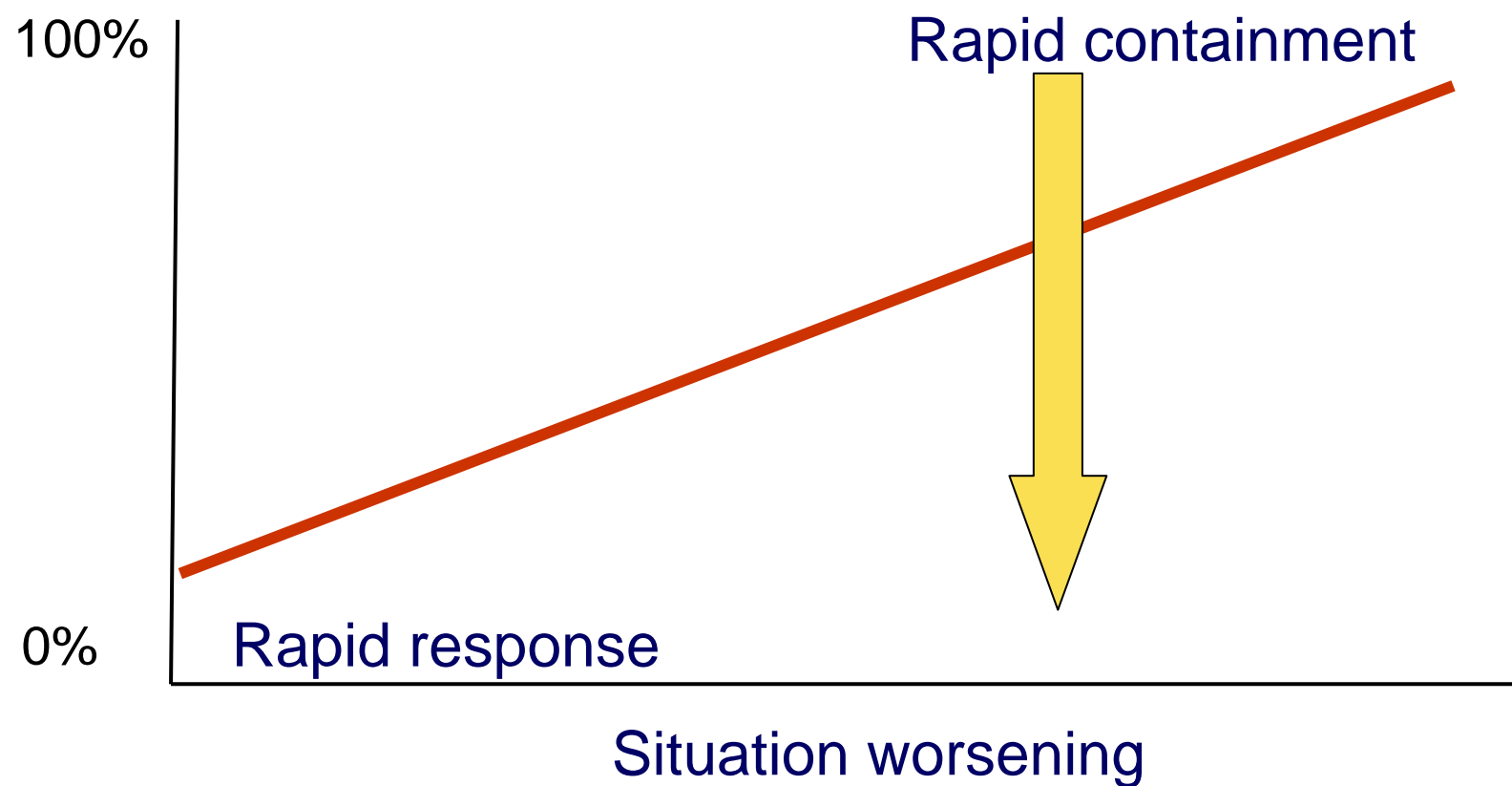


Rapid Containment: Extraordinary Public Health Action

- **Must be considered if investigation suggests that local outbreak may be the start of a pandemic**
- **Activities designed to stop emerging pandemic**
 - **Joint risk assessment by WHO and country**
 - **Decision by national authorities in consultation with WHO**
 - **Large scale use of antivirals and non-pharmaceutical interventions**



Rapid Response and Containment: Continuum of Activities



IHR considerations for alerting WHO

- **Early consultation with WHO is essential**
 - for any suspicious event or early signal
 - as "Window of opportunity" to launch RC operation is narrow
- **Must notify any human influenza cases caused by a new subtype**



Could Containment Work?

- **Never been tried; success cannot be guaranteed**
- **Few options to limit morbidity, mortality and social disruption associated with a pandemic**
- **SARS demonstrated it is possible to mobilize a complex public health operation**
- **Mathematical modelling studies suggest containment might be possible**



Containment is Time Sensitive

- **Mathematical modelling indicates “window of opportunity” to act is very short**
- **May have ~ 3 weeks to start antivirals and non-pharmaceutical measures after Index Cluster is detected**
- **Detection, investigation and reporting of first cases must happen quickly followed by timely assessment and decision-making**



Containment Protocol: Purpose and Scope

- **Outline “what” should be done**
- **Provide some information about “how” to do it**
- **Serve as a foundation for WHO and countries to build more detailed operational plans**
- **Encourage integration of containment planning into national pandemic preparedness planning**



Rapid Containment:

Decision-Making Process

Assessment by Country and WHO (1)

Virological factors

- Laboratory evidence of a novel virus

Epidemiologic factors

- Efficient and sustained human-to-human transmission
- Clinical severity not important consideration
 - Early cases could be “mild”
 - Later cases could be “severe”



Photo provided by CDC



Photo provided by WHO



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Assessment by Country and WHO (2)

Operational and logistical factors

- **Size of the Index Cluster**
- **Time since first cases became ill**
- **Geographical characteristics of the area (e.g. accessibility, natural boundaries)**
- **Ability to ensure basic infrastructure and essential services**
- **General security situation**
- **Willingness of the country to decide, lead and manage**
- **International resources and support**



Key Questions to Address During Decision-Making

- 1. Is there compelling evidence to suggest that a novel influenza virus has gained the ability to spread easily from person to person and initiate and sustain outbreaks in the community?**
- 2. If so, are there compelling reasons why a containment operation should not go forward?**



Decision-Making Process

- **Country reports or verifies outbreak to WHO according to IHR**
- **Country and WHO joint risk assessment determines if RC operation should be launched**
- **Additional field assessments if information is insufficient to make a decision**
- **Country makes ultimate decision to launch, lead and manage**
- **WHO continues to advise, assess, coordinate international assistance**
- **Declaration of a PHEIC is not necessary to launch a RC operation**



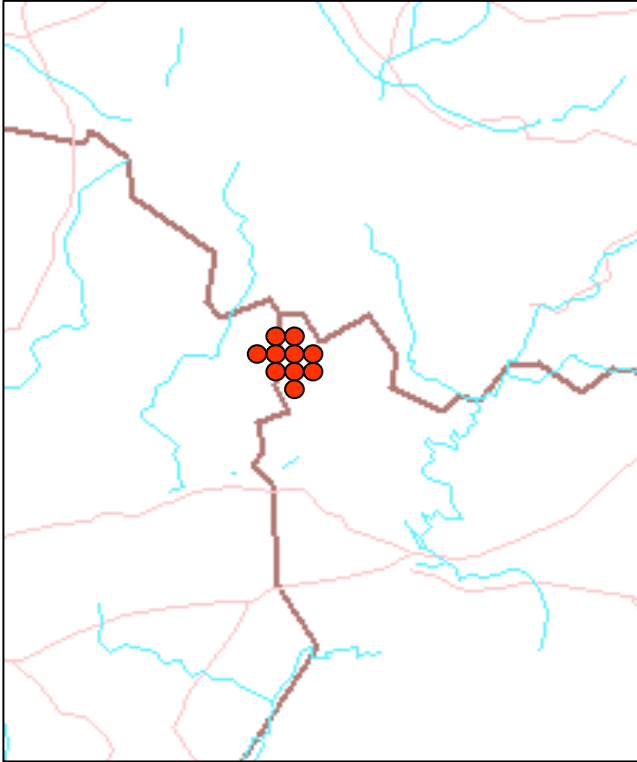
When Containment Would Not Be Done

- **Novel influenza virus could not be confirmed**
- **Not operationally feasible, including for security reasons, to rapidly implement at the necessary level**
- **National authorities do not support the operation**
- **Virus has already spread too far and containment no longer feasible**

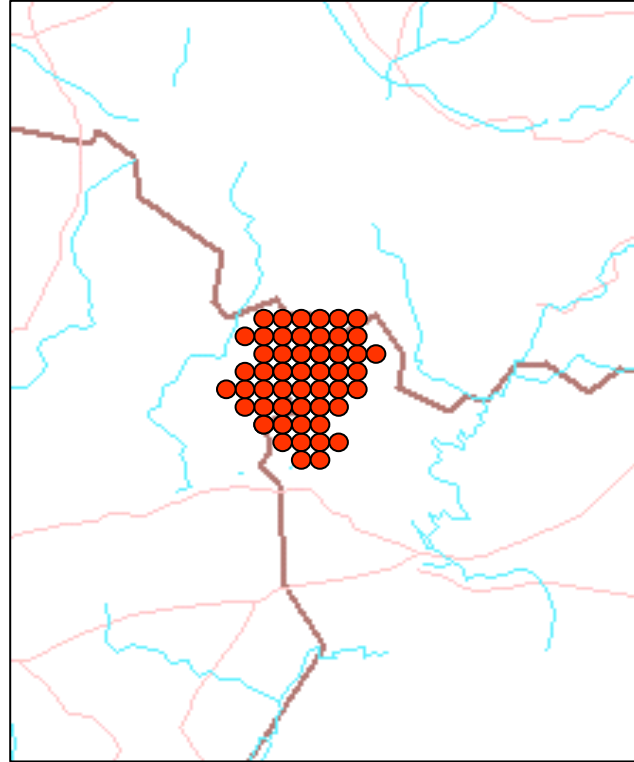


Containment Feasible?

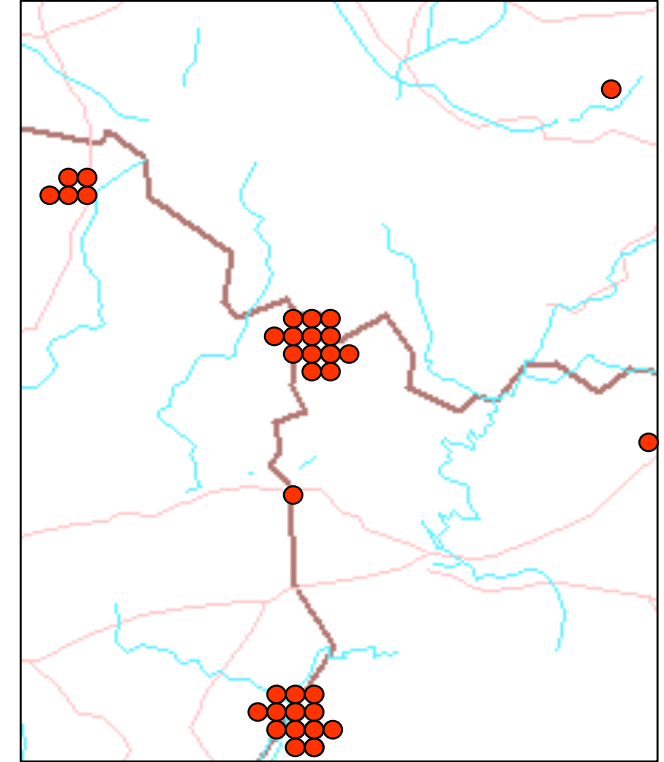
Location and Number of Cases



- One location
- Limited number of cases



- One location
- Large number of cases



- Multiple locations
- Large number of cases

Containment Feasible?

Setting and Population Density



- Rural area
- Low population density



- Urban area
- High population density

Photos provided by WHO



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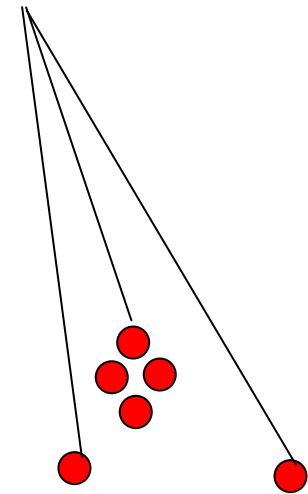
Rapid Containment:

How to implement

Geographic Containment: Index Cluster

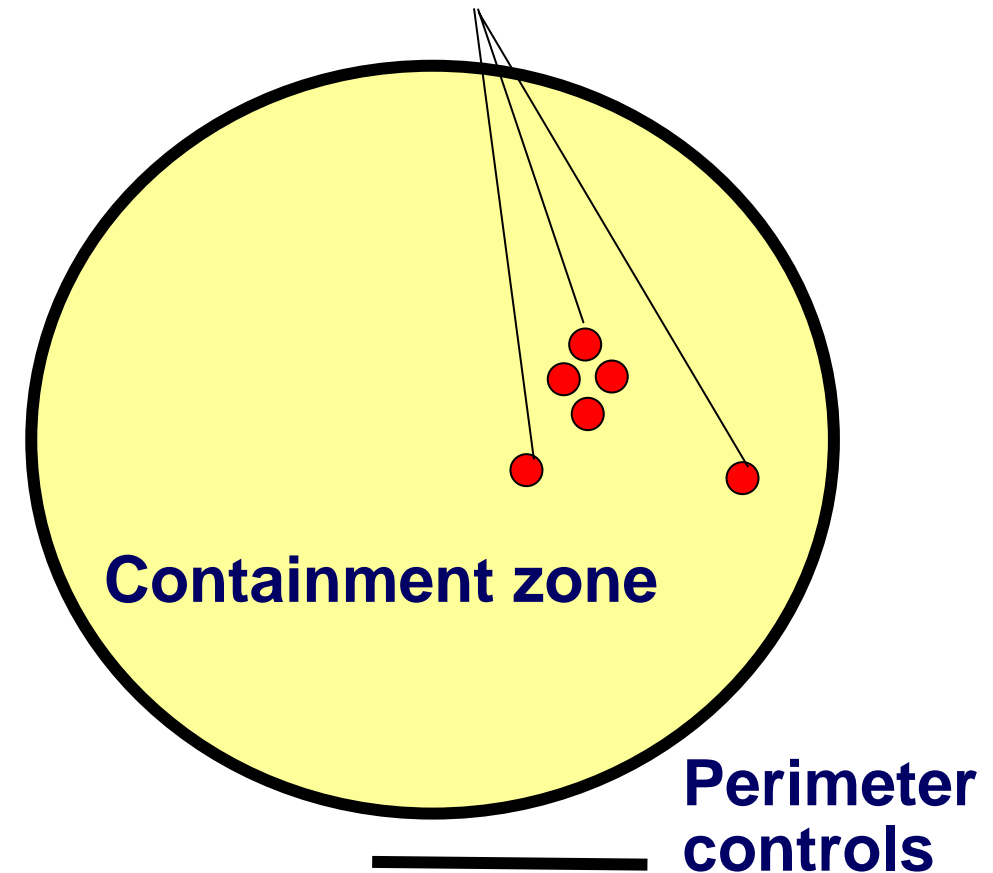
- Identify an “Index Cluster” of cases as early as possible
- Implement routine control measures
- Use antivirals to treat cases and prophylax contacts

Index Cluster



Geographic Containment: Containment Zone

Index Cluster



- Create geographically-defined “Containment Zone” to include cases and contacts
- Implement perimeter controls
- Extensive use of pharmaceutical and non-pharmaceutical interventions

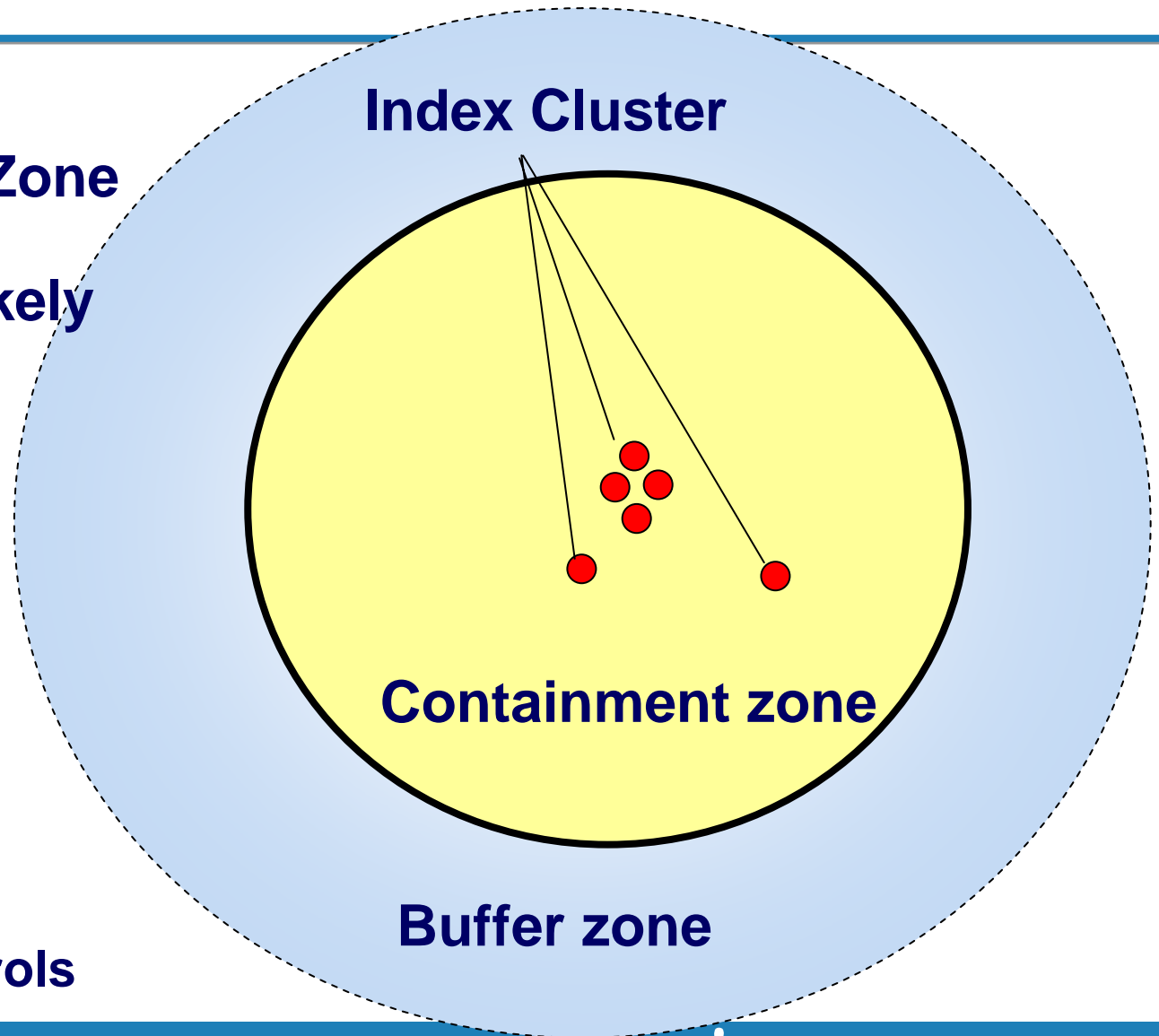


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Geographic Containment: Buffer Zone

- Define a “Buffer Zone” around the Containment Zone
- Where new cases most likely to appear
- Implement active and complete surveillance
- No movement restriction

————— Perimeter controls
- - - - - No perimeter controls



How to Determine Size and Shape of Containment and Buffer Zones

- **Known movements and geographical distribution of cases and contacts**
- **Local or national administrative boundaries**
- **Natural boundaries**
- **Infrastructure and essential services (e.g. power, water, food)**
- **Location of healthcare facilities and laboratories**



Rapid Containment:

Activities in the Containment Zone

Pharmaceutical Interventions in the Containment Zone

- **All well persons given 20 days of antiviral prophylaxis**
- **Why 20 days?**
 - **Increase the time most persons on prophylaxis or treatment at the same time**
 - **Uncertainty about the emerging virus; e.g. possibility of longer incubation period than seasonal influenza**
 - **Packaging considerations – blister pack of 10 tablets**
- **WHO global stockpile of oseltamivir can be used; countries must be ready to receive and distribute**
- **Possible role for vaccine if available**



Getting Antivirals Where They Need to Go In-Country

- **Who will guarantee expedited clearance through customs**
- **Who will provide security at the airport, during transit or storage**
- **How will antivirals be moved to the site of the outbreak**
- **Who will move them**
- **How will they be distributed and monitored**



Perimeter Controls in the Containment Zone

Discourage all non-essential movement of persons as this is where persons are most likely to be infected or exposed

- **Post signs and other reminders**
- **Establish clear entry and exit points**
- **Perform exit screening (e.g. question travellers, measure temperature, issue certificate)**
- **Ideally, close major air, land and sea transit points in CZ**
- **Allow entry of essential goods and services; provide antiviral prophylaxis for persons who must enter**



Non-pharmaceutical Interventions in the Containment Zone

Necessary to reduce the possibility that a non-infected person will come into contact with someone who has influenza and is infectious

- **Community-wide practice of hand and respiratory hygiene**
- **Use of multiple measures**
 - **Isolation of ill persons**
 - **Voluntary quarantine of exposed persons**
 - **Social distancing measures (e.g. close schools, cancel mass gatherings)**
 - **Other ways to minimize person density (e.g. staggered work and market hours)**
- **Support needed to reduce impacts (e.g. social, economic)**



Surveillance in the Containment Zone

- **Objectives**

- Identify and laboratory confirm suspect cases
- Monitor the evolution of the outbreak
- Evaluate effectiveness of containment operation
- Guide decisions to modify, continue or end operation

- **Strategy**

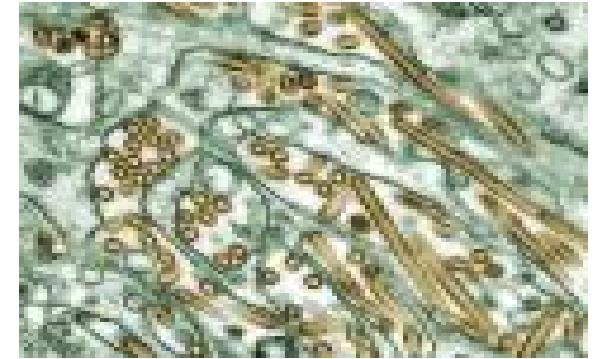
- If large number of suspect cases, do active and passive surveillance and lab confirm only a sample of cases
- After antiviral prophylaxis completed, do active and complete surveillance and lab confirm all cases



Assess Key Characteristics of the Novel Virus

- **Population-level**

- Reproductive number (R_0)
- Intergeneration time

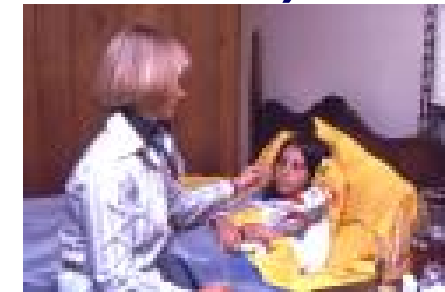


- **Patient-level**

- Efficacy of antiviral agents for treatment and prophylaxis
- Vaccine effectiveness (if used)
- Disease severity (e.g. CFR, hospitalization rates)
- Spectrum of disease (e.g. asymptomatic cases)
- Incubation period

- **Virus**

- Resistance to antiviral agents



Photos provided by CDC



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Rapid Containment:

Activities in the Buffer Zone

Surveillance in the Buffer Zone

- **Objectives**

- **Identify new cases – “leakage” from CZ**
- **Assess if measures in CZ working**
- **Guide decisions to modify (e.g. extend border of CZ), continue, or end operation**

- **Strategy**

- **Active and complete surveillance to detect all possible cases**
- **Lab confirmation of ill suspect cases essential**



Management of Suspect Cases and Contacts in the Buffer Zone

- **Prompt and aggressive action to eliminate any possible focus of pandemic influenza**
- **Isolate suspect cases and start antiviral therapy (pending viral test results)**
- **Identify household and other close contacts**
 - **Place in voluntary home quarantine**
 - **Start antiviral prophylaxis**



Perimeter Controls in the Buffer Zone

- **No access into Containment Zone**
- **No restrictions on transit out of Buffer Zone**

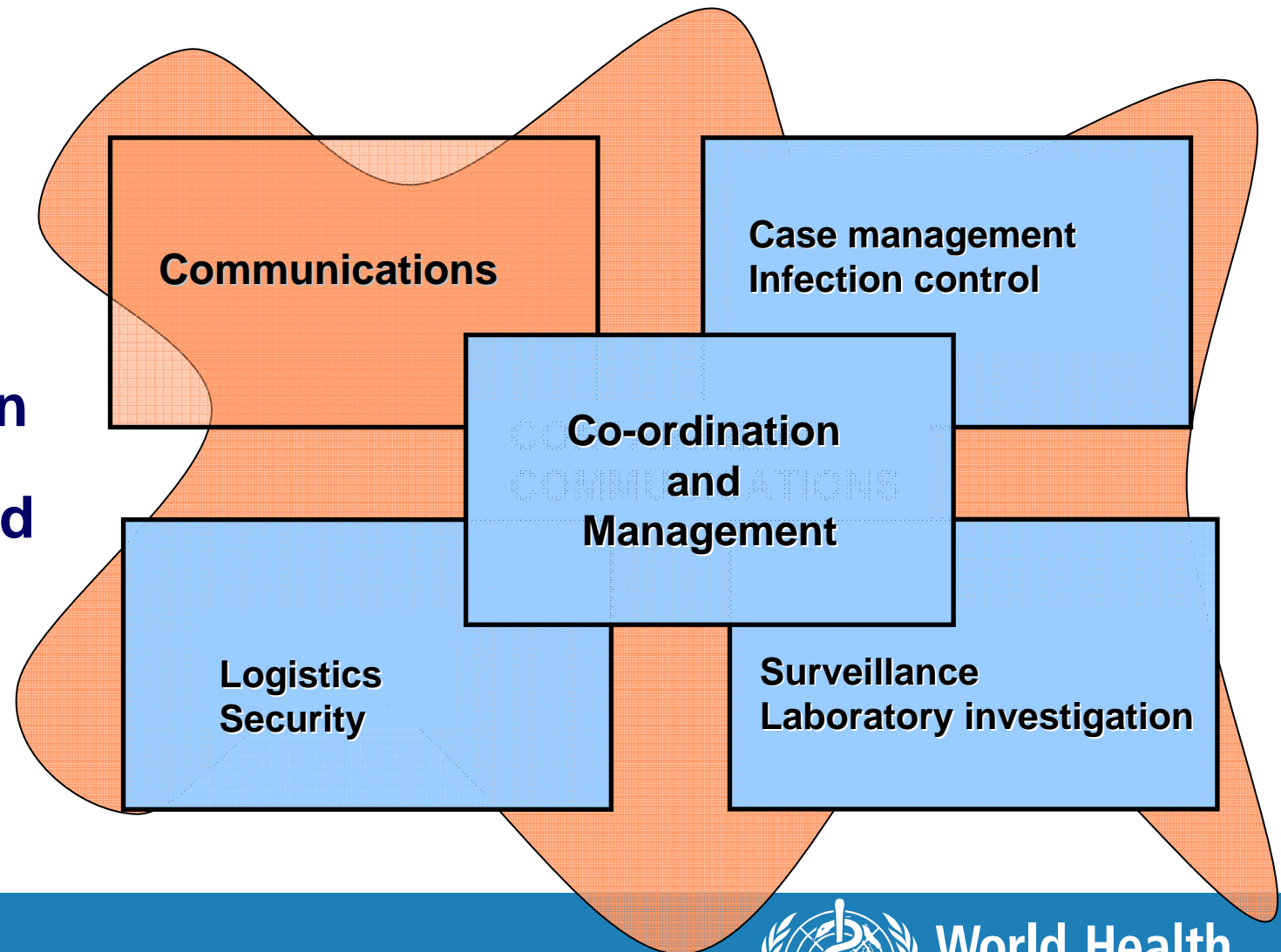


Rapid Containment:

Other Key Activities

Where does communications fit in to containment?

- Supports and integrates all aspects of rapid containment
- Organizes and guides information dissemination to persons inside and outside the Containment and Buffer Zones



Rapid Containment Communications: Objectives

- **Provide information that is timely and easily understood**
- **Instill public confidence about containment operation**
- **Convey realistic expectations about stopping a pandemic**
- **Promote compliance with containment measures using culturally-sensitive approaches**
- **Identify and address inaccuracies, rumours**
- **Reduce stigmatization of affected groups**
- **Prepare for possible pandemic if containment does not succeed**

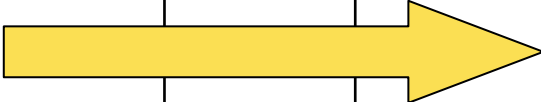




Situation Assessment and Monitoring: What Types of Data Are Needed?

- **Surveillance/epidemiologic data**
- **Virological data**
- **Compliance with containment measures**
- **Healthcare utilization and capacity**
- **Essential infra-structure needs**



Duration of Containment

	Containment Activities					
Antiviral prophylaxis in CZ						
Perimeter controls and NPIs in CZ						
Surveillance in CZ and BZ						
	Week 1	Week 2	Week 3	Week 4	Week 5	Continue for few months
	Time					



Challenges of Rapid Containment

- **Extraordinary advance planning and coordination by WHO and countries to implement rapidly**
- **Global response to provide necessary human, financial, technical and logistical resources**
- **Clear organizational structure at global and national levels with well-defined roles, responsibilities, chains of communication and the authority**
- **Adherence to ethical principles within a framework of international human rights.**

