Interventions to Contain Cluster of Human AI Cases

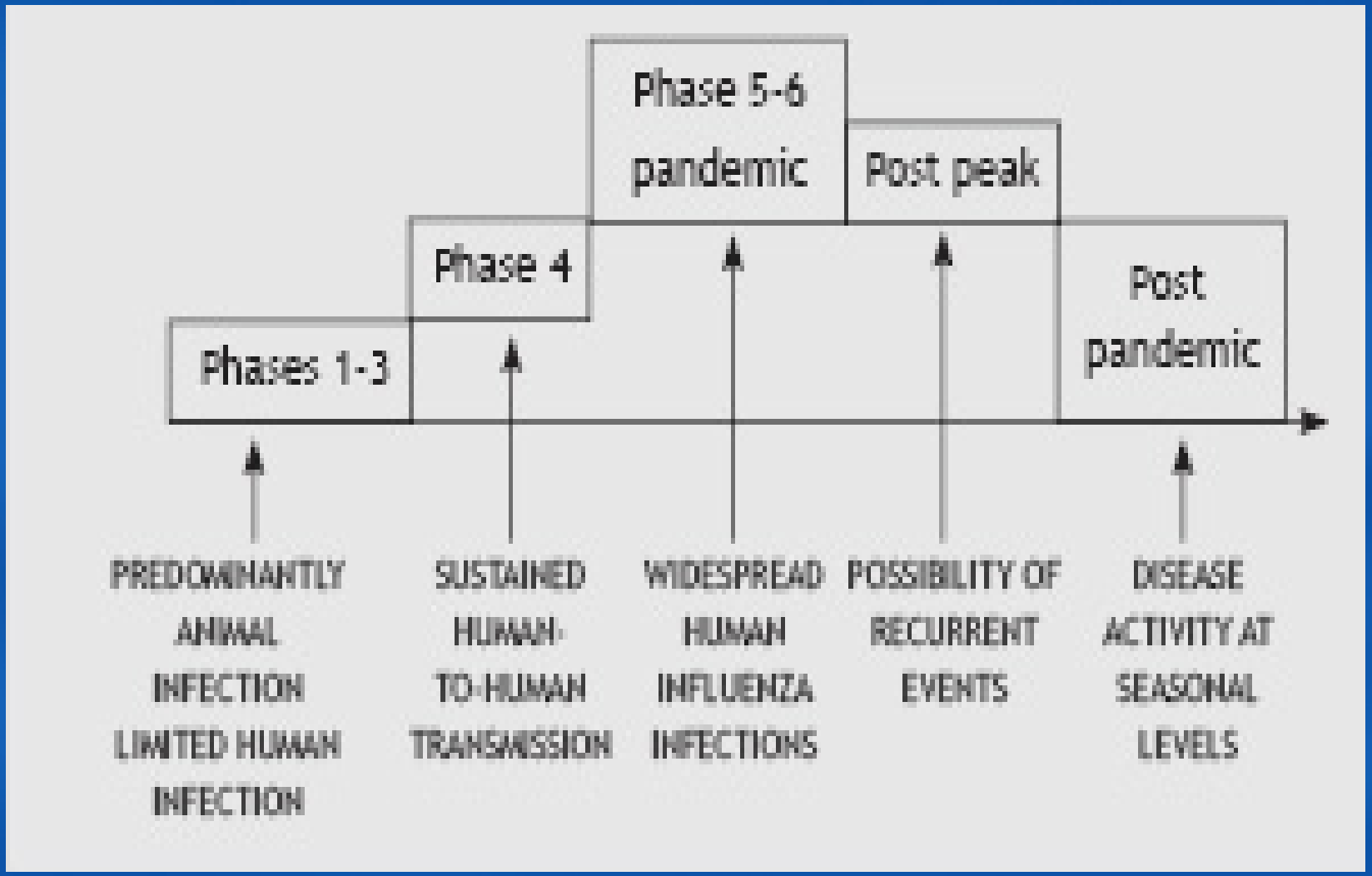
WHO Cluster Definition

- Two or more cases epidemiologically linked
  - At least 1 laboratory confirmed case
  - Other cases
    - Laboratory-confirmed, or
    - Unexplained deaths linked epidemiologically to a confirmed case (probable case)
- Countries can use their own definitions

Approach

- Phase wise approach
  - Management of human case of avian influenza (Phase-3)
  - Managing a cluster of human cases (Phase 4)
  - Managing a pandemic- Large number of human cases of influenza caused by a novel virus (Phase 5 & 6)

Phase-wise Intervention



Goal of Rapid Response and Containment

"To ensure rapid detection and investigation of clusters of cases, closely related in time and place, and ensure immediate international/national intervention aimed at preventing the emergence of a fully transmissible pandemic virus or delaying its international spread."

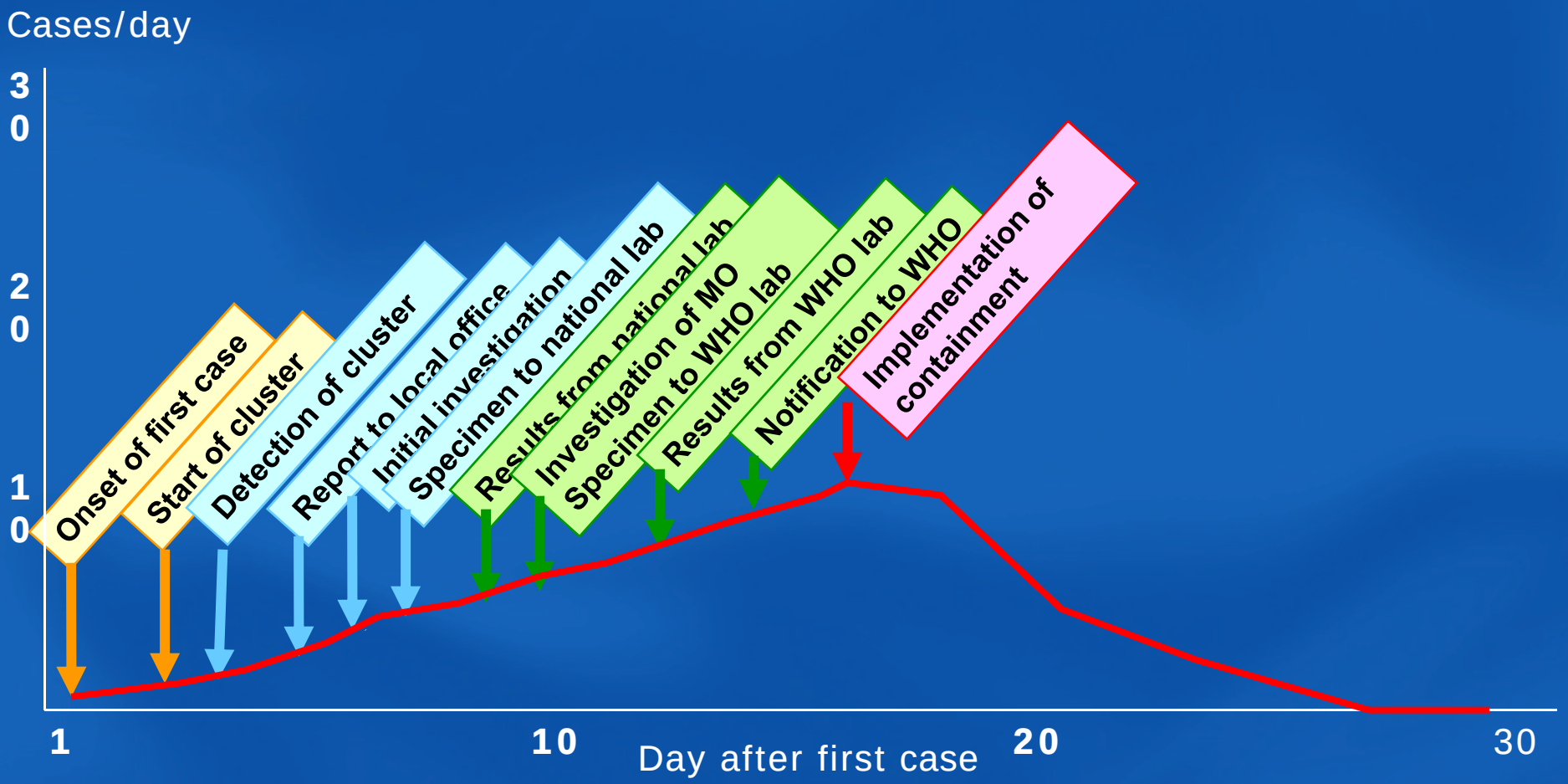
Source: WHO strategic action plan for pandemic influenza 2006-2007

Modeling Studies: Possible to Contain Emerging Virus in Southeast Asia

- Antivirals would need to reach a sizeable proportion of affected persons (80%-90%)
- Accompanied by rapid and effective implementation of non-pharmaceutical measures (i.e., isolation, quarantine, movement restriction)
- Over a very short period of time (days to 3 weeks)

Source: WHO strategic action plan for pandemic influenza 2006-2007

Containment is Time Sensitive



Enabling Factors

- Probably just enough time to implement strategy if
  - Rapid investigation by national team
  - No reliance on international team to trigger strategy
  - No waiting for definite diagnosis/virus characterization
  - Investigators prepared to take steps towards containment
- Close collaboration with relevant authorities and WHO
  - Continuous risk assessment
  - Scaling up without delay

Containment Strategy: Key Assumptions

- Virus will not be highly transmissible
- Emergence will be geographically circumscribed
- Initial clusters will be rapidly detected and reported
- Antivirals will be rapidly mobilised and administered
- Population movement will be restricted

Cluster Containment Strategy Options (Phase-4/5)

- Targeted/functional approach
  - Relies on identification of cases and contacts
  - “Manageable number of cases”

- Geographical approach
  - Focuses on persons within radius (0-10 km) of each case
  - Focuses on persons in an “administrative region” or other conveniently defined area/“containment zone”

Critical Actions for Rapid Response and Containment

- Early warning signal detection
- Initial investigation and control measures
- Notification and assessment
- Containment decision and strategy
- Implementation of containment measures
- Monitoring and evaluation
- Population movement restriction

Early Warning Signals

- Early warning signals suggest that the virus is acquiring the capacity for efficient human-to-human transmission
- Signals include
  - Epidemiological: Clusters of ILI or SARI cases closely related in time and place, involving chains of transmission sustained over time
  - Clusters involving healthcare workers/unusual age groups
- Virological: Isolation of an untypable reassorted virus; virus with mutations indicative of adaptation to humans

Initial investigation

- Case interview
- Laboratory testing
- Contact tracing
- Active case finding

Initial Cluster Containment Measures

- Initial Cluster Containments Measures
- Isolate cases
- Quarantine contacts
- Community quarantine
- Social distancing measures
- Port/airport/border control
- Antiviral drugs
- Social mobilisation

Notification & Assessment

Notification

- National authorities
- WHO

Assessment

- Diagnostic confirmation
- Needs assessment

Components of Operational Plan (Phase 4-5)

Micro Plan

- Surveillance, contact tracing
- Laboratory preparedness and diagnostics
- Early case detection and management
- Infection control practices in health facilities/community
- Pharmaceutical interventions
- Non-pharmaceutical interventions (e.g. isolation, quarantine)
- Risk communication
- Logistics
- Media management
- Social mobilisation
- Data monitoring

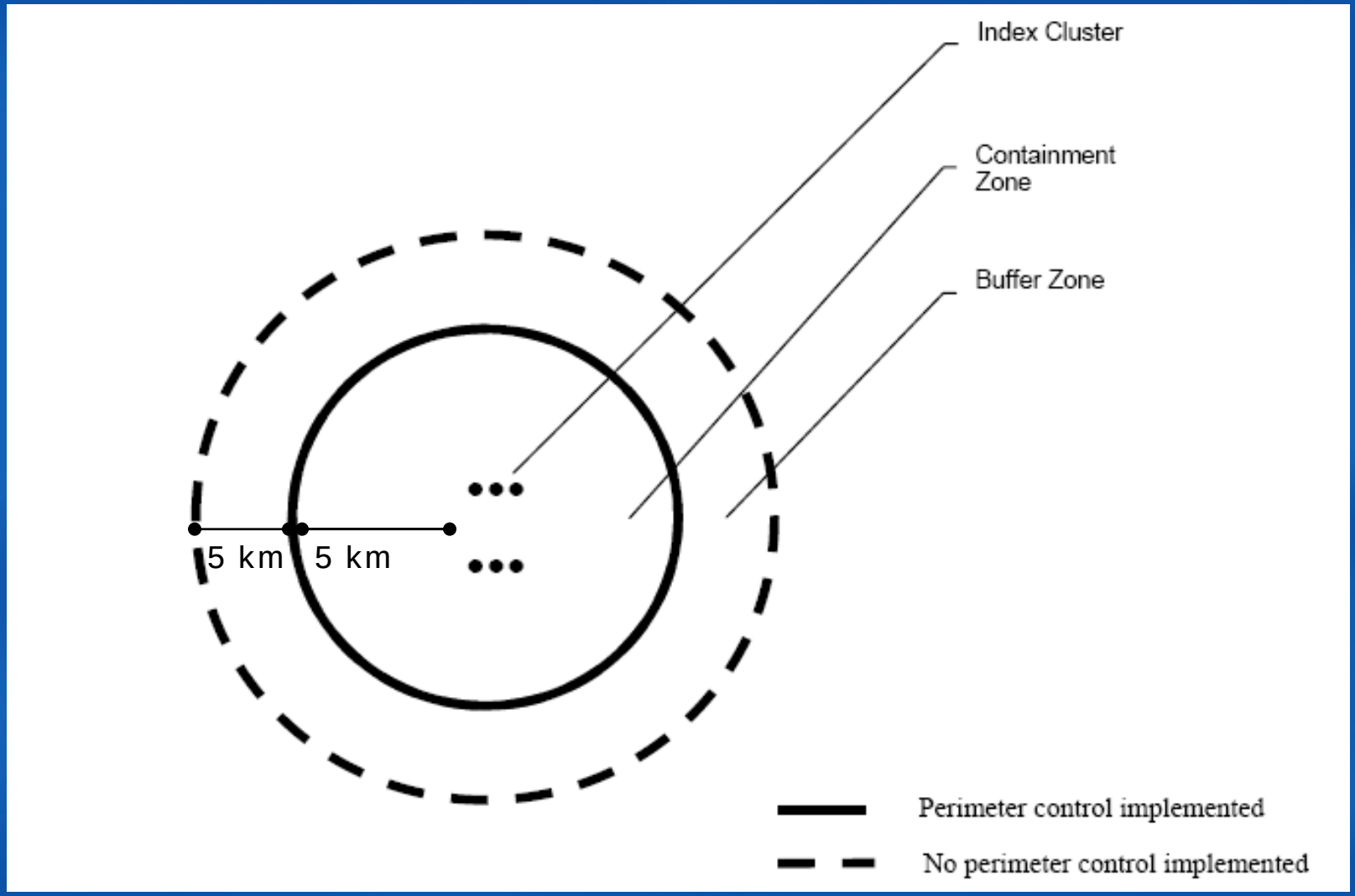
Operational Plan

Identifies the roles and responsibilities of all stakeholders

- Ministry of Health/DGHS/EMR
- National Institute of Communicable Diseases
- Indian Council of Medical Research
- Central Government Hospitals
- Other Central Ministries: Home Affairs/Civil Aviation/ Information and Broadcasting
- State Health Department/Medical Education
- District Health Authorities
- Block Administrative Authorities

Demarcation of Containment and Buffer Zone

(0-5 and 5-10 Km area)



Components of Operational Plan for Cluster Containment

Surveillance

- Active house to house Surveillance in Containment and Buffer zone
- Surveillance workers at higher risk hence to be protected using PPE
- Contact tracing
- Prophylaxis of close contacts
  - Identification of close contacts by active case finding and contact tracing
  - Prophylaxis of household and family contacts
  - Health monitoring of close contacts
- Treatment of contacts become symptomatic

Components of Operational Plan for Cluster Containment

Laboratory Support

- National Institute of Virology, Pune and National Institute of Communicable Diseases, Delhi are the apex laboratories
- Sixteen additional laboratories to test samples. Identify the laboratory attached to the State
- Have stock of viral transport medium
- Refer to the guidelines on sample collection, storage and transportation
- Initially all cases need to be tested. Subsequently when the community spread is established, samples from cases need to be tested based on a sampling framework
- Know the flights and their timings to send samples to designated labs
- Know the contact details of the nodal person of the identified laboratory

Components of Operational Plan for Cluster Containment

Early Case Detection and Management

- Identified health facilities have isolation wards conforming to WHO guidelines
- Facilities for respiratory and ventilatory management
- Staff on chemoprophylaxis
- Treatment of suspected, probable and confirmed cases
- Strict infection control practices

Components of Operational Plan for Cluster Containment

Infection Control Practices

- To be followed in community settings and hospital settings
- Surveillance workers need to use triple layered surgical mask
- Medical personnel treating the patient need to wear full complement of PPE
- N-95 respirator advocated in all aeorosol generating procedures and situations were splashing of blood or body fluids are expected.
- Droplet and contact precautions in all settings

Components of Operational Plan for Cluster Containment

Pharmaceutical Interventions

- Mass Chemoprophylaxis/Targeted Chemoprophylaxis
- Chemoprophylaxis of all persons in the containment zone with oseltamivir – geographical approach
- In targeted approach, only close family and social/community contacts are provided chemoprophylaxis
- Approach depends on the oseltamivir stockpile
- In either approach, contact tracing as per guidelines to be done in buffer zone and beyond
- Supply chain management of oseltamivir for mass chemoprophylaxis needs to be in place

Components of Operational Plan for Cluster Containment

Non-pharmaceutical Interventions

- Individual level
  - Contact and droplet precautions
- Community level
  - Social Distancing measures
    - School closure
  - Quarantine and isolation
  - Risk communication

Components of Operational Plan for Cluster Containment

- Risk communication
  - Communicate risk in clear terms
- Media strategy
  - Flu-wise campaign
  - Flu-care campaign
- Media Plan
  - Use print and visual media in regional language and/or local vernacular
  - Social mobilisation-self help groups/commuity volunteers/AWW/ASHA/school teachers

Components of Operational Plan for Cluster Containment

- Logistic support
- Oseltamivir
- PPE
- Other medical supplies for supportive therapy
- Hand sanitisers/disinfectants

Components of Operational Plan for Cluster Containment

Media Management

- Only identified person would speak to media
- Fully knowledgeable about the facts/figures
- Regular press briefing and press releases

Components of Operational Plan for Cluster Containment

Command and Control

- Unified command
- Identified nodal person
- 24x7 control room
- Number circulated widely

Cluster Containment Would be Planned and Implemented if:

- Virus is not efficiently transmitting, clusters and limited in terms of time, place, person
- Population demarcated by natural or artificial boundaries
- Legal instruments available to support it
- Enough human and material resource (PPE, oseltamivir) are available
- Community informed of the risk and involved in implementing the micro plan
- Essential services are maintained

Thank you