

Community-based Surveillance & Pandemic Preparedness



Whitney Pyles, MPH
Avian and Pandemic Influenza Coordinator
CARE USA



Why Community-based Surveillance?

“Rapid detection of human cases, supported by adequate national capacity, and rapid and transparent reporting of findings underpin WHO’s ability to issue a reliable risk assessment and declare an appropriate phase of pandemic alert, and are further needed to ensure that the earliest epidemiological signals of increased transmissibility of the virus among humans are not missed.”

- Fifty-Ninth World Health Assembly



Objectives of Community-based Surveillance

- 1) Move case finding and reporting along the spectrum from passive to more active
- 2) Link local mobilization for case detection and response to formal surveillance system
- 3) Improve sensitivity of current systems



Characteristics of different models

- ~ intensive, active models focusing solely on avian and human influenza (AHI)
- ~ events-based systems designed to detect and respond to “unusual events”
- ~ integrated disease models to improve detection of infectious disease outbreaks
- ~ enhanced national network models to increase public and private sector awareness of reporting protocols



AHI Intensive Models: Vietnam and Indonesia



- ~ Active, house-to-house surveillance models looking for suspected AI in poultry and humans
- ~ Strong BCC (through personal communication) Component
- ~ Volunteers recruited from community groups

Sample Case Definition

Human AI case definition:

Any person experiencing a combination of fever, cough, and difficulty breathing.

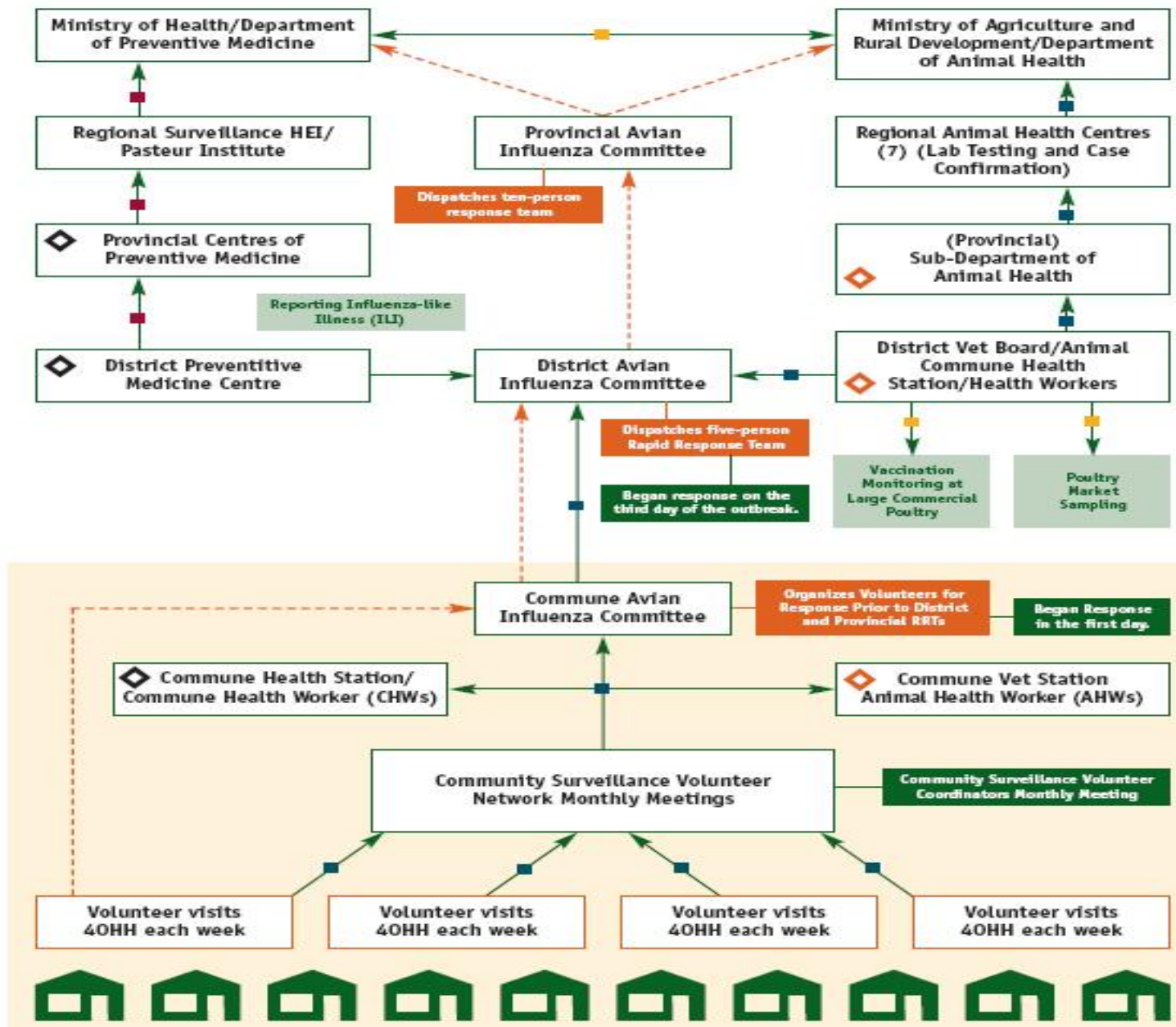
Poultry AI Case Definition:

Sudden death (*meaning previously health poultry die in less than 24 hours*).

In the commercial farms: Daily deaths of over 5% of a poultry flock over a few (3) days, or Sudden appearance of sick poultry in a flock.



Linking Communities with National Avian Influenza Detection and Response Capabilities: A Model for Community-based Surveillance in Vietnam



Tien Mien Commune Response

- ~ Reported same day to district
- ~ Broadcast instructions to households
- ~ Disinfected farms
- ~ Established check points to prevent poultry entering and exiting outbreak area
- ~ Organized culling team
- ~ Conducted surveillance for human cases
- ~ Vaccinated poultry



Key lessons learned

- ~ With just a little training, communities can mount an impressive response
- ~ Community response is more timely than RRTs and could be critical to preventing further spread



When to adopt an intensive model?

- ~ High risk of outbreaks of a particular disease
- ~ High density of population
- ~ High capacity of community to respond
- ~ Interest in promoting behavior change along with surveillance
- ~ Possibly time bound
- ~ Low interest/commitment from government to invest in integrated disease surveillance at community level



Integrated disease & events-based surveillance

“Strengthened capacity to respond to human cases of avian influenza and the corresponding pandemic threat will strengthen the capacity to respond to many other emerging and epidemic-prone infectious diseases, and thus increase global public-health security against the threat of infectious diseases.”

- Fifty-Ninth World Health Assembly

Community-based surveillance has been used sporadically for infectious diseases; however, wide scale integration of disease surveillance at the community level has yet to be tested. As the global health community is increasingly concerned about emerging infectious diseases, the cost-effectiveness and scalability of integrated disease surveillance should be considered.



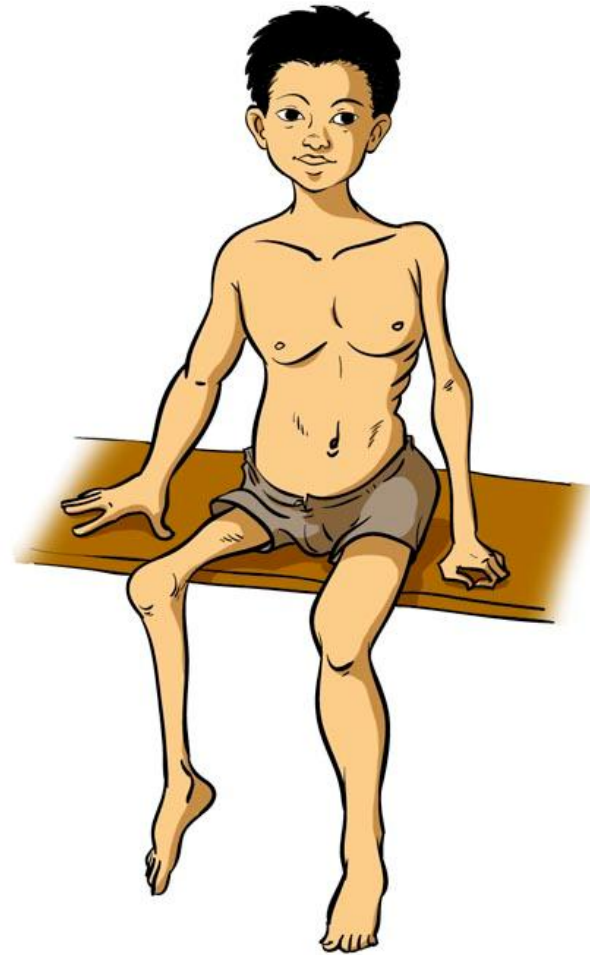
Limitations of current surveillance system in Lao PDR:

- ~ Only reaches to the district level
- ~ Animal and human health issues operate within their own vertical structure and have very limited or no communication
- ~ Communities do not see the importance of surveillance or reporting if something happens in the village
- ~ Separate surveillance for different diseases by different people is complicated the village level to understand
- ~ In urban and some peri-urban areas many people do not know who their village volunteers are.
- ~ Village volunteers are 100% voluntary and receive little training.



Single Cases

- § suspected measles
- § suspected Acute Flaccid Paralysis
- § suspected Neonatal Tetanus
- § suspected meningitis
- § suspected avian influenza in humans



Polio

Cluster (5 or more cases)

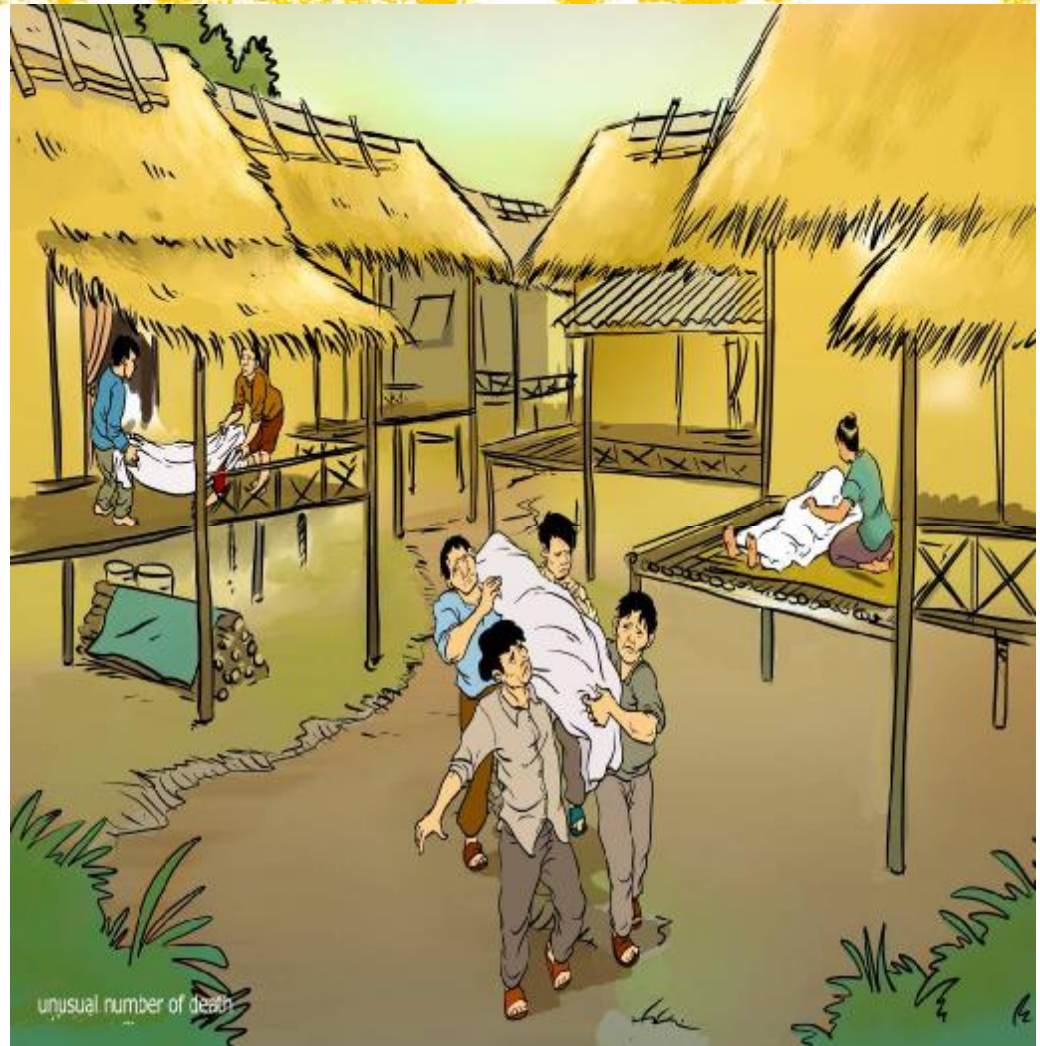
- § Acute respiratory infections
- § Illness with fever (dengue, leptospirosis, typhus etc)
- § Diarrhea, watery or bloody (cholera, shigellosis, food or waterborne disease outbreaks)
- § Mass poultry deaths
- § Foot and mouth diseases



Avian influenza and other respiratory infections

Unusual numbers

- § Deaths in the community
- § Persons being reported 'sick' in the community with no specific disease diagnosis
- § Death in children
- § Mass poultry or other livestock/animal deaths












Low literacy tools

ໃບບັນທຶກຈຳນວນກໍລະນີ ໃນການເຜົາລະວັງຕາມເຂດການສຳລັບອາສາສະໝັກບ້ານ

ເດືອນ

ບ້ານ

<p>ສິງໂສ ໝາກແດງ</p> <p>ຈຳນວນ: _____</p>		<p>00000</p> <p>00000</p> <p>00000</p>	<p>ອັກເສບ ລະບົບຫາຍ ຊຸ່ນແຮງ</p> <p>ຈຳນວນ: _____</p>		<p>00000</p> <p>00000</p> <p>00000</p>
<p>ສິງໂສ ລ່ອຍແຮງ ກະທັນຫັນ</p> <p>ຈຳນວນ: _____</p>		<p>00000</p> <p>00000</p> <p>00000</p>	<p>ການເຈັບເປັນ ທີ່ມີໄຂ້</p> <p>ຈຳນວນ: _____</p>		<p>00000</p> <p>00000</p> <p>00000</p>
<p>ສິງໂສບາດ ຫະບັກ ໃນ ເດັກເກີດໃໝ່</p> <p>ຈຳນວນ: _____</p>		<p>00000</p> <p>00000</p> <p>00000</p>	<p>ຖອກທ້ອງ, ຖ່າຍເປັນນ້ຳ ແລະ ຖ່າຍ ເປັນເລືອດ</p> <p>ຈຳນວນ: _____</p>		<p>00000</p> <p>00000</p> <p>00000</p>
<p>ສິງໂສເຫຍື້ອ ຫຼິ້ນສະໝອງ ອັກເສບ</p> <p>ຈຳນວນ: _____</p>		<p>00000</p> <p>00000</p> <p>00000</p>	<p>ສິງໂສ ພະບາດເຕົ້າ ໂຮມເລືອດ</p> <p>ຈຳນວນ: _____</p>		<p>00000</p> <p>00000</p> <p>00000</p>
<p>ສິງໂສ ອະຫິ ອາເຊ</p> <p>ຈຳນວນ: _____</p>		<p>00000</p> <p>00000</p> <p>00000</p>	<p>ສິງໂສ ພະ ບາດປາກ ເປື້ອນລົງ ເລັບ</p> <p>ຈຳນວນ: _____</p>		<p>00000</p> <p>00000</p> <p>00000</p>

When to adopt an events based or integrated model?

- ~ Low risk of outbreak of avian influenza
- ~ High risk of other infectious diseases
- ~ Rural areas, low population density,
- ~ limited communication and monitoring
- ~ Govt and institutional support for integrated disease surveillance



Enhanced National Network for Surveillance

“An Enhanced Nationwide Notifiable Disease Surveillance System (Nationwide Surveillance) can provide an early warning for outbreaks of respiratory diseases with pandemic potential. Such a system requires universal awareness of reporting triggers and an efficient reporting mechanism.”

- PAHO-CDC Generic
Protocol for Influenza Surveillance



Triggers for outbreak investigation

- ~ An excess number of SARI cases in a health care facility or community
- ~ Clusters of SARI
- ~ Atypical cases of ILI or SARI, including disease related to animal exposure
- ~ Any rumors of clusters of SARI or of atypical respiratory infections, including disease related to animal exposure
- ~ Possible other triggers for outbreak investigation may include clusters of animal deaths or excessive absenteeism from schools, institutions, and workplaces



Community-based Epidemiology

Training module on community-based epidemiology & surveillance has been designed for municipal level health staff:

- ~ basic concepts of epidemiology
- ~ objectives of surveillance
- ~ modalities of notification
- ~ flow of information to different levels
(national, departmental, municipal, etc.)
- ~ influenza case definitions



When to establish an ENN system

- ~ There is an established influenza surveillance system at facility level or sentinel sites
- ~ Private sector and/or community health structures have not been reached with key messages about influenza surveillance
- ~ No previous outbreaks of avian influenza or low risk area.



Common Issues in CBS Models

- ~ Supply & demand for services
- ~ Community response
- ~ Sustainability



Are you creating more demand than supply?

- ~ Will rapid response teams respond quickly?
- ~ Do govt health and animal health know the value of investigating all cases, even if it is a false positives?
- ~ Will communities see value if they see no response?



Community response is essential

- ~ SOP for suspected outbreaks targeting community leaders and governing structures should be created
- ~ Training for surveillance volunteers and community leaders on response measures
- ~ Containment strategies employed by communities could be vital in preventing spread of disease



Sustainability

The World Bank estimates that the outbreaks of winter 2004 reduced the GDP of Vietnam by 0.12% , meaning that the economy lost \$244 million. If community-based surveillance can stop outbreaks while they are affecting only one or two farms, as opposed to widespread outbreaks across the country, the model will be cost effective.



Sustainability: Volunteer effort

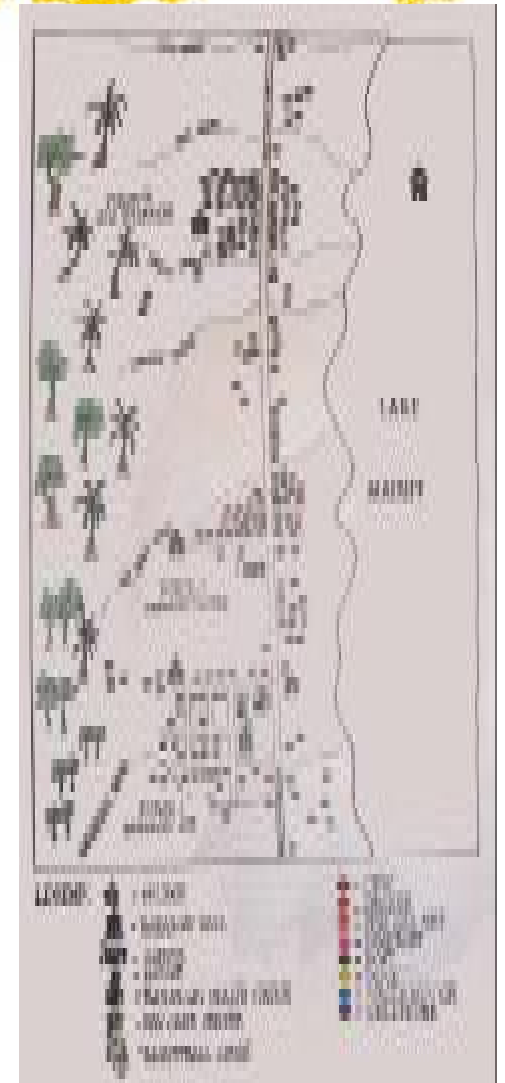
MoH National Dengue Control Program: As of 2007, 59% of the original households were still receiving regular visits from surveillance volunteers, despite the donor having ceased funding and support in 2001.



Sustaining Community & Volunteer Effort

Reducing volunteer effort:

- ~ make visits every other week or monthly?
- ~ use volunteers to visit households during high risk months? (colder months, lunar new year)
- ~ limit volunteer efforts to households most at risk? (poorer households, those raising ducks, households resistant to behavior change)



Sustaining Community & Volunteer Effort

Rumor Surveillance: Volunteers would not do regular household visits; instead, District/Commune would use volunteers to do house-to-house surveillance when triggered by a rumor surveillance system from the District.



Sustainability: Can local government support CBS?



- ~ Can local government monitor and support community activities when CARE's involvement ends?



Other questions

- ~ How could CBS be linked with sentinel surveillance activities?
- ~ What role can technology play?
- ~ How do we increase community ownership and participation?



Humanitarian Pandemic Preparedness Initiative H2P

- ~ USAID-funded initiative aiming to build a “off-the-shelf” capacity of likely first-responders during an influenza pandemic
- ~ Limit morbidity and mortality, safeguarding livelihoods, and maintaining societal cohesion
- ~ Support community-level planning & coordination of response



H2P Partners

- ~ IFRC
- ~ CORE Group
- ~ AED
- ~ Interaction

Other collaborating agencies: WHO, WFP, UNSIC and other UN partners



Activities

- ~ Global training materials and guidance
- ~ Subnational level preparedness planning (i.e. select number of districts)
- ~ Local adaptation of training materials
- ~ Testing and drilling down to community level at select sites



Example Training Materials



Website

<http://icarenews.care.org/avianflu.html>

