

**Local Health Department Pandemic Influenza Plans: An
Indicator of State Level Preparedness**

Southeast Public Health Leadership Institute

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Background

As the pandemic threat of avian influenza H5N1 continues to grow, pandemic influenza preparedness has become one of the leading activities that public health departments are focused on. The North Carolina Division of Public Health (NC DPH) posted its first Pandemic Influenza Response Plan to its website in October 2004. The plan has undergone two revisions since that time; the most recent version was completed in February 2007.

In the spring of 2006, the NC DPH announced plans to provide pandemic influenza funding to all 85 local health departments in North Carolina. One of the contract deliverables for this funding was completion of an approved Pandemic Influenza Preparedness Plan or Pandemic Influenza Preparedness Annex to an existing all-hazards plan. Plans were to be submitted to NC DPH by March 31, 2007.

All local health departments were offered technical assistance from the NC Center for Public Health Preparedness (NC CPHP). A list of essential elements (EE) for local plans was developed by the NC CPHP in collaboration with the NC DPH [Appendix 1]. The other primary resources that were utilized by local planners included guidance from the National Association of City and County Health Officers (NACCHO), the North Carolina Pandemic Influenza Plan available at www.ncpanflu.gov which includes a local health department toolkit, and the US Department of Health and Human Service (US DHHS) Pandemic Influenza Plan available at www.pandemicflu.gov. Some local health department planners also used Seattle-King County's plan as a resource.

Review of all submitted local health department (LHD) plans was completed in a two step process [Appendix 2]. NC CPHP staff first reviewed plans for inclusion of the essential elements. Plans that contained the recommended essential elements were given Tier 1 approval.

Plans were then sent to the NC DPH for review. One NC DPH staff member reviewed plans for compliance with the contract addendum for pandemic influenza funding; for example, plans needed to demonstrate collaboration with schools. A second reviewer provided subject matter expertise on content within the plans; for example, local plans had to reflect federal and state recommendations for vaccine and antiviral prioritization. Plans that were in compliance with the contract addendum and had accurate content were given final Tier 2 approval.

The purpose of this project is to summarize findings from the NC DPH content review of the LHD pandemic influenza plans. This summary will highlight strengths and weaknesses of local plans and recommend ways in which the NC DPH can continue to assist LHDs with their pandemic influenza planning efforts. A list of these recommendations will be provided to the NC DPH's Pandemic Influenza Work Group which can be used to enhance pandemic influenza planning at the local level.

Descriptive Statistics

North Carolina has 85 local health departments representing 100 counties. Eight-four counties submitted a pandemic influenza plan for approval. Most plans were written by LHD personnel (usually a preparedness coordinator); some local health departments hired an outside contractor to develop the plan.

Eighty-two of 84 plans submitted to the NC CPHP for Tier 1 review were approved and passed on to the NC DPH for Tier 2 approval. The NC DPH content review of these plans occurred between January and September 2007. All 82 plans were returned to the submitter with comments made within the plan as well as some suggestions for improvement.

Seventy-eight plans ultimately gained Tier 2 approval. Approximately half of the plans were approved without any required changes. Approximately 25% of the plans did not receive Tier 2 approval initially but when re-submitted with requested changes did achieve Tier 2 approval. The remaining 25% of plans were granted conditional Tier 2 approval pending minor revisions. An example of a minor revision was modification of language in the vaccine section regarding vaccine prioritization during a pandemic.

The most common reason that plans did not receive Tier 2 approval initially was a lack of specificity in certain areas, most notably in the surveillance and community containment sections. These plans often had information from other plans (e.g. state and federal pandemic plans) without including specific information on how surveillance and community containment activities would be conducted in the county.

Qualitative Review

Overall, the strongest sections of plans noted in the Tier 2 process included Command and Control (EE#2) and Communications (EE#9). One of the strengths of many of the plans' Communications section was the inclusion of press release templates. The most underdeveloped section was Continuity of Operations (EE#10). Most plans also did not have much information on planning for mass fatalities (item in EE#8 Emergency Response) and planning for the needs of vulnerable populations (EE#s 7, 8, & 9).

Existing all-hazards plans were used by some counties as their pandemic influenza response plan; this was successful when the unique features of responding to an influenza pandemic were included in the specific pandemic influenza annex. It was not adequate when the response planning for all-hazards was generically applied to pandemic influenza. One example of a response plan that used an all-hazards plan as a proxy for a pandemic influenza plan mentioned requesting mutual aid from other counties and states without acknowledging the lack of outside resources during a pandemic. One of the fundamental tenets of pandemic planning is the simultaneous impact on multiple geographic regions, making the receipt of help from resources outside of the county difficult if not impossible.

There was confusion about the various roles of state agencies in pandemic response; some examples are listed below.

One plan alluded to a State Health Commissioner as well as to the State Health Director; however, North Carolina does not have a State Health Commissioner.

“The State Health Director shall enforce all laws for the protection of the public health, and all rules, regulations, and orders of the State Board of Health. The State Health Commissioner also shall investigate outbreaks and epidemics of disease and advise the County Health Director about measures to prevent and control outbreaks. The State Health Commissioner shall enforce public health laws, rules, regulations, and orders in local matters when there is an emergency.”

Several plans stated that coordination of healthcare surge capacity issues would be coordinated by the NC Division of Public Health when in reality, the Office of Emergency Medical Services within the NC Division of Facility Services will coordinate surge capacity issues.

One plan mentioned that reports of novel influenza viruses should be made to the Office of Public Health Preparedness and Response. The Office of Public Health Preparedness & Response has a 24/7/365 pager (1-877-236-7477); this number can be used to alert State Public Health officials to potential public health emergencies; however, **reporting of novel influenza** should be made to the General Communicable Disease Control Branch. These reports can be made 24/7/365 by calling 919-733-3419.

Several plans attributed all of the pandemic response support from the state to one branch within NC DPH (see excerpt below).

“If there is a pandemic of influenza, it can be expected that there will be simultaneous impacts in other U.S. communities, limiting the ability of any jurisdiction to provide support and assistance to other areas. HD would work closely with the local community, with perhaps limited manpower from the Public Health Regional Surveillance Team, the N.C. General Communicable Disease Control Branch (GCDC), and the CDC.”

In the feedback provided it was emphasized that manpower from the state would be division wide (NC DPH) and not just limited to one branch.

It was also noted that many plans did not incorporate new information and guidance that was available prior to the submission deadline. For example, most plans did not include the *Community Strategy for Pandemic Influenza Mitigation* which was available February 1, 2007 at the US DHHS website www.pandemicflu.gov.

Furthermore, most plans did not incorporate or reference the clinical algorithm for health departments and healthcare providers designed by the NC DPH to help screen for avian influenza during the current pandemic alert period. This algorithm was included in the most recent version of the NC Pandemic Influenza Plan which was also available in February 2007. Many plans would mention the need for educating providers about screening as seen in the italicized excerpts below, but would not mention the clinical algorithm.

“[HD] will work with clinicians, hospital, and infectious disease specialists to enhance case detection, according to CDC screening criteria, among persons who have recently traveled to outbreak areas and present with illnesses meeting the clinical criteria for influenza.”

“Educate local providers about clinical interview questions for persons with ILI and a history of travel to areas in which novel viruses have been isolated. US DHHS Pandemic Influenza Plan has a Human Influenza A (H5) Domestic Case Screening Form and report form. These forms are available at <http://www.hhs.gov/pandemicflu/plan/sup1.html>.”

“The following information will be included in any outreach to health care providers regarding the need to remain alert for travel-related cases, and how to detect and manage any patients suspected to be infected with a novel influenza virus:

- *Clinical signs/symptoms of cases*
- *Epidemiology of novel virus (strain type, infectivity, demographics of affected individuals, affected countries)*
- *Guidance regarding triage of patients presenting with fever and respiratory symptoms and importance of obtaining travel history*
- *Criteria for reporting suspect cases.”*

In these instances planners were reminded about the screening algorithm found in Appendix P-1 of the NC Pandemic Influenza Plan 2007.

When looking in more detail within sections, certain inaccuracies and misconceptions were often noted in plans. Summarized below are some of these “trouble spots” in italics; in some cases, feedback (FB) that was given in response is also included.

Introduction Section (EE# 1)

Several plans had misinformation about pandemic influenza transmission. Fecal-oral transmission of pandemic influenza was cited, as well as the initiation of a pandemic as an act of bioterrorism. It was emphasized to planners that pandemic influenza is spread person-to-person via the respiratory route and that there is little evidence to show that influenza can be effectively engineered as an agent of bioterrorism.

There were also some inaccuracies regarding environmental decontamination and infection control. One plan mentioned the risk of contaminated buildings; several other plans mentioned leaving rooms empty for days after pandemic influenza patients were seen (see example below).

*“HD staff with exposure to persons with probable or confirmed pandemic influenza will need to be managed as other influenza contacts. If a patient with probable pandemic influenza is inadvertently seen at the health department, the following will be implemented under the direction of the CCHD Environmental Health Director or designee:
The room will be left empty for 72 hours.”*

FB: Planners were asked to remove this language from their plans or include a reference for this information.

There was some confusion about moderate versus severe pandemics, and what factors contributed to a severe scenario. There was also confusion about what impact a pandemic may have on a county. Some excerpts and examples are listed below in italics.

“A worst case scenario would affect 25 -30% of the population.”

FB: Any pandemic, even some seasonal flu epidemics affect 25-30% of the population... the worst case scenario relates will depend on the virulence (which determines case fatality ratios) more so than attack rate.

“A 15% attack rate will be quite a challenge for the County Health Department to manage because of manpower and resources. A 25% or 35% attack rate would absolutely devastate [the] County without more resources.”

FB: It is not just the attack rate, but the virulence of the pandemic strain that will increase the impact of a pandemic by 10-fold. Attack rate of 35% is not synonymous with a severe pandemic.

One county with a population of 80,000 people stated that it could see 28,000 deaths from a severe pandemic.

FB: This would mean that over 35% of the population would die; the deadliest pandemic of the 20th century, the 1918 Spanish Influenza, had a case fatality rate of 2%. It is more plausible that 28,000 people would become infected with pandemic influenza if the attack rate was 35%, and it is assumed that in a worst case scenario 2% of these 28,000 cases would die (approximately 560 deaths).

Surveillance (EE# 3)

One of the best descriptions of routine influenza surveillance from a LHD plan is shown below.

“A. Reporting influenza viruses: In the state of North Carolina, there are three situations for which influenza viruses will be reported:

- 1. Pediatric influenza mortality: Local health Departments are required to report any influenza virus causing death in an individual younger than 18 years of age. These deaths are reportable within 24 hours.*
- 2. Any novel influenza virus infection is reportable immediately.*
- 3. Any outbreaks or unusual clusters of influenza, including seasonal influenza should be reported to the General Communicable Disease Branch (GCDC).”*

Many plans did not mention that novel influenza virus was reportable immediately. Furthermore, many plans did not specify that enhanced surveillance for novel influenza viruses needs to be occurring now (Pandemic Alert Phase 3).

“Surveillance for pandemic influenza will be dependent on global and national monitoring for virus strains and disease activity. Influenza infection is not a reportable disease through the National Notifiable Diseases Surveillance System. However, in Phases 2-4 of the pandemic, local surveillance will likely involve:

- *Surveillance for influenza-like illnesses (ILI) through the sentinel provider program. Currently two sites participate as a sentinel sites: Anson Community Hospital and the ACHD*
- *Enhanced syndromic surveillance for persons with ILI requiring care at local hospitals, emergency rooms, urgent-care clinics, and private health care providers.*
- *Enhanced surveillance for persons with mild ILI based on pharmacy prescriptions or over-the-counter sales, school or work absenteeism, etc.*
- *Surveillance for influenza and pneumonia deaths.”*

FB: While this is true for “garden-variety” flu, it is not true for novel influenza A viruses (reportable immediately) - see http://www.cdc.gov/epo/dphsi/casedef/novel_influenzaA.htm Pediatric deaths due to influenza are also reportable.

“The county HD plans to call the NC General Communicable Disease and Control (GCDC) in Raleigh, NC (919/733-3419) to report a suspected case of infection with avian influenza A (H5N1) or any other novel influenza virus. This number is available 24 hours a day, 7 days a week. The Health Director, or a designee, will notify the state Epidemiologist on call, and will who relay the current information. The Epidemiologist will ask and answer questions and provide guidance.”

While this plan did mention how the local health department would notify the state; there was no mention of reporting by healthcare providers to the LHD. In this and other plans, feedback was given reminding planners that novel influenza is reportable and the clinical algorithm in Appendix P-1 of the NC Pandemic Influenza Plan includes information about reporting.

“Prepare to implement enhanced surveillance once a pandemic is detected to ensure recognition of the first cases of pandemic virus infection in time to initiate appropriate containment protocols.”

“Enhanced surveillance [will begin] when cases of novel influenza are detected in neighboring counties.”

“Enhanced surveillance will begin with the first documented case in [the] County or one of the adjoining counties. This will consist of the Communicable Disease Nurse making weekly phone calls to the major health care providers in the county and the school nurses.”

FB: Enhanced surveillance needs to be occurring now (Pandemic Alert Phase 3).

Vaccines (EE# 5)

The vast majority of plans did incorporate federal recommendations for prioritization of vaccines [Appendix 3]. Some county plans wanted to include other priority groups in the prioritization scheme. Most notably was the inclusion of family members of health department personnel into a priority group for vaccination. Many health department planners felt strongly that this was essential to pandemic response in order to minimize absenteeism among health department staff. Although this strategy would likely minimize health department staff absenteeism, it would not be feasible if the amount of vaccine available to a county was in very short supply. A few plans also referenced the smallpox vaccination plan which mentions family members of essential personnel as a priority group for vaccination.

At the onset of a pandemic, vaccine against the pandemic strain will be in such short supply that the State Health Director will likely issue an emergency order requiring that local health departments follow federal guidelines for administering vaccine to individuals in certain priority groups. Family members of essential personnel are not currently prioritized.

FB: County planners were told to include language in their plans that mentioned that vaccinating family members of essential personnel would not be possible if vaccine was in extremely short supply and the State Health Director had issued an order to comply with federal guidelines on vaccine prioritization.

There was also some confusion regarding the use of seasonal influenza vaccine during a pandemic.

“If a pandemic overlaps with the regular influenza season, healthcare workers (who may also care for persons with seasonal influenza) will be vaccinated against seasonal influenza to reduce the possible risk of co-infection and reassortment of seasonal and novel strains.”

FB: If a pandemic is already in progress, the virus has already undergone reassortment or directly adapted to humans, so the risk of reassortment with a seasonal flu strain is no longer an issue.

Recommendations

Pandemic influenza preparedness is a challenge due to the constant influx of updated information. By the time a written plan has been completed, new guidance from expert authorities has emerged. For example, local planners were working on pandemic influenza plans beginning in the fall of 2006 with a due date to the state of March 31, 2007. The US DHHS released *Community Strategy for Pandemic Influenza Mitigation* February 1, 2007; therefore many of the local plans did not include this new guidance.

It is imperative that the NC DPH not only stay current with changing guidance, but find ways to keep LHD partners up to date as well. There are a number of ways that this challenge can be addressed. These include incorporating current information into the state pandemic plan, adding more links and materials for LHD planners to the state pandemic website www.ncpanflu.gov, and finally, reiterating key features of pandemic influenza in presentations and trainings offered to LHD personnel.

Based on the Tier 2 review of the 82 local health department plans; the following recommendations will be made to NC DPH to further enhance pandemic planning at the local level.

Suggested revisions to the state plan

1. Include an appendix to the Command & Control section that outlines the roles and responsibilities of the various state partners in pandemic influenza planning and response. At a minimum, include the roles and responsibilities for the following:
 - Office of Public Health Preparedness and Response
 - General Communicable Disease Control Branch
 - Immunization Branch
 - NC DHHS Office of Public Affairs
 - NC Division of Facility Services. Office of Emergency Medical Services
 - NC Division of Emergency Management
2. Summarize key information from the World Health Organization's guidance *Avian influenza, including influenza A (H5N1), in humans: WHO interim infection control guideline for health care facilities*. It was revised in May 2007 and includes guidance on environmental cleaning in healthcare facilities.
3. Add excerpt from the WHO's *Avian influenza, including influenza A (H5N1), in humans: WHO interim infection control guideline for health care facilities* on care of the deceased to Appendix K: Mass Fatality Planning of the NC Pandemic Influenza Response Plan.

The table of contents from this guidance is included in Appendix 4; the full document is available at http://www.who.int/csr/disease/avian_influenza/guidelines/infectioncontrol/en/index.html

4. Include information from *Community Strategy for Pandemic Influenza Mitigation* in Appendix I-1: Community Containment Measures of the NC Pandemic Influenza Response Plan. In addition, this guidance should be referenced in any other sections of the plan which discuss school and business closures, quarantine and isolation, and other containment measures.
5. Update Part B: Surveillance to emphasize that novel influenza viruses are reportable immediately anytime, not just during a pandemic.

6. Include references / link to Appendix P-1 of the NC Pandemic Influenza Response Plan in Part B: Surveillance in addition to it being a stand alone appendix in the plan at present.

Suggested updates to the state website (www.ncpanflu.gov)

1. “Re-tool” the local health department toolkit to include current information and resources that will assist local planners. Some suggestions include:

- Direct link to the *Community Strategy for Pandemic Influenza Mitigation* guidance.
- Clinical algorithm (Appendix P-1) from the NC Pandemic Influenza Response Plan.
- A link to the federal priority groups for vaccine and antivirals during a pandemic.

2. A “What’s New?” button or link which would contain any new guidance or recommendations from state, federal and international agencies.

Suggested information to be included in presentations / trainings

1. Emphasis on typical routes of influenza transmission
2. Distinction between moderate and severe scenarios and the factors that define this
 - a. Case fatality ratio (note this is the major determinant that the *Strategy for Pandemic Influenza Mitigation* guidance is based on, e.g. when to close schools and for how long)
 - b. Virulence of the pandemic strain
 - c. Attack rates
 - d. Differences in morbidity and mortality between moderate and severe scenarios
3. Importance of enhanced surveillance for novel influenza viruses during Pandemic Alert Phase 3.
4. Process of reporting novel influenza viruses.
5. Roles and responsibilities of specific state agencies.

Appendix 1

Pandemic Influenza Plan Checklist for Local Health Departments in North Carolina

Essential Elements

An Annex to the County All Hazards or Emergency Operations Plan

This checklist contains the essential elements that should be addressed by local health departments as they develop a pandemic influenza plan. The plan does not need to be a stand alone plan; it can be an annex to the county's all hazards or emergency operations plan. As such, the pandemic influenza annex only needs to focus on elements unique to an influenza pandemic.

Recommendations for Organizing the Plan

We recommend that the plan can be organized first by “essential element” (with the exception of Command and Control) and then by WHO pandemic phase, with specific activities as relevant to each phase of an influenza pandemic:

- I. Introduction
- II. Command and Control
- III. Surveillance
 - A. Pandemic Phase I activities
 - B. Pandemic Phase II activities
 - C. Etc.
- IV. Lab Diagnostics
 - a. Pandemic Phase I activities
 - b. Pandemic Phase II activities
 - c. Etc.
- V. Vaccines, Etc.

Note: In some cases different pandemic phases will have the same activities, and can thus be collapsed (especially in the cases of phases 1 and 2).

Planning Resource

The National Association of County and City Health Officials (NACCHO) recently published an excellent resource – The Local Health Department Guide to Pandemic Influenza Planning. It can be downloaded [here](#). Also note that the resources listed below are hyperlinks to actual documents and can be accessed by CTRL + clicking on the link.

The Essential Elements

I. Introduction (at least 3 of 5 items for approval: _____ addressed)

- Outline the purpose of the plan
- List assumptions of an influenza pandemic
Resource: [HHS Pandemic Influenza Plan Assumptions](#)
- Outline phases of a pandemic
Resource: [WHO Pandemic Phases](#)
- Use FluAid to describe impact of a moderate (1968-like) pandemic in county / jurisdiction in terms of: outpatient visits, hospitalizations, and deaths
Resource: [NC Pandemic Influenza Plan: Local Health Department Toolkit: Determining County Level Impact of Pandemic Influenza](#)
- List members of pandemic planning committee / key partners, stakeholders in the planning process**

II. Command and Control (at least 3 of 5 items for approval: _____ addressed)

- Discuss local emergency operations or all hazards plan and where/how pandemic influenza fits in with this plan
- Discuss role of public health during an influenza pandemic
- Discuss roles and responsibility of state vs. county during an influenza pandemic
- Discuss legal authority for isolation/quarantine and declaring a state of emergency
Resources: [NC Statutory Authority to Address Pandemic Influenza](#); [Isolation Order](#); [Quarantine Order](#)
- Outline the incident command structure for the local health department and provide an organizational chart for chain of command, including operations, logistics, planning, and finance/administration (reference all hazards/emergency operations plan as appropriate)**

III. Surveillance (at least 3 of 5 items for approval: _____ addressed)

- Mention sentinel surveillance programs in the county / district (if there are no sentinel sites, are there any plans for recruiting some?) and plans for enhanced surveillance
Resource: [Enhanced Surveillance for Avian Influenza in Humans](#)
- Discuss reporting procedures for how healthcare providers and laboratories will report cases of novel influenza viruses to the local health department**
- Discuss reporting procedures for cases of novel influenza virus infections to the state
- Discuss how cases of novel influenza viruses would be investigated (collaboration with hospital personnel, infection control practitioner, public health epidemiologist, etc)
- Discuss plans for counting cases, deaths, etc.

IV. Lab Diagnostics (at least 1 of 2 items for approval: _____ addressed)

- Reference or include [NC State Laboratory of Public Health Pandemic Influenza Preparedness and Response Plan](#)
- Reference or include [Laboratory Submission Form NC DHHS 3431](#)

- V. Vaccine (at least 2 of 3 items for approval: _____ addressed)**
- Discuss priority groups for vaccine, noting any additional groups that may be important based on local circumstance**
Resource: [NVAC/ACIP Recommendations for Prioritization of Pandemic Influenza Vaccine and NVAC Recommendations on Pandemic Antiviral Drug Use](#)
 - Estimate doses needed
Resource: [Influenza Vaccine Estimations Worksheet; Instructions](#)
 - Address storage and distribution (reference county SNS plan, existing standard operating procedures for influenza vaccine administration during a pandemic, and/or standard operating procedure for mass vaccination clinics)
- VI. Antivirals (at least 2 of 4 items for approval: _____ addressed)**
- Discuss priority groups for antivirals, noting any additional groups that may be important based on local circumstances**
Resource: [NVAC/ACIP Recommendations for Prioritization of Pandemic Influenza Vaccine and NVAC Recommendations on Pandemic Antiviral Drug Use](#)
 - Estimate doses needed
Resource: [Antiviral Medication Estimations Worksheet](#)
 - Address storage and distribution (reference county SNS plan)
 - Note any private sector supplies that LHD is aware of (e.g., hospital)
- VII. Disease Containment (at least 3 of 5 items for approval: _____ addressed)**
- Discuss when, where, and how isolation and quarantine might be used
Resource: [Community Containment Measures Including Isolation and Quarantine and Home Care](#)
 - Discuss plan for monitoring those individuals in isolation / quarantine and caring for people in home isolation and quarantine
Resource: [Community Containment Measures Including Isolation and Quarantine and Home Care](#)
 - Discuss plan for addressing needs of vulnerable populations**
 - Discuss any plan for the use and stockpiling of masks/PPE at the local health department and community level
 - Discuss social distancing measures such as cancellation of mass gatherings, school closures, building closures**

VIII. Emergency Response (at least 3 of 5 items for approval: _____ addressed)

- Discuss medical surge preparations and integration with local partners. Reference hospital pandemic influenza plans as well as plans of other major medical providers in the county/area.**

- Discuss support issues for vulnerable populations
- Discuss mass fatality planning

Resources: [Mass Fatality Planning](#); [Contact Info for Key Stakeholders in Mass Fatality Planning](#)

- Discuss psychosocial support issues and plans
Resource: [Division of Mental Health Influenza Pandemic Response](#)
- Discuss security / public safety issues (while public health is not in the lead on this, plan should address at a minimum who is in the lead)

IX. Communications (at least 2 of 3 items for approval: _____ addressed)

- Discuss plan for dissemination of public information including special provisions for non English speaking groups and/or other vulnerable groups in the county (Public Affairs packet for Pandemic Influenza forthcoming from NCDPH)**
- Discuss how healthcare providers will be kept informed during an influenza pandemic (reference all hazards/emergency operations plan, as appropriate)
- Discuss how local health departments will stay up to date during an influenza pandemic, including plan for maintaining access to the NC HAN, Epi X users in the LHD (reference all hazards/emergency operations plan, as appropriate)

X. Continuity of Operations (at least 2 of 3 items for approval: _____ addressed)

- Reference LHD plan for continuity of operations**
- Reference county plan for continuity of essential infrastructure in the county (water, electricity, transport, etc.)
- Discuss plans for outreach to local businesses regarding the creation of continuity of operations plans

Are all bold items addressed sufficiently?

Yes No

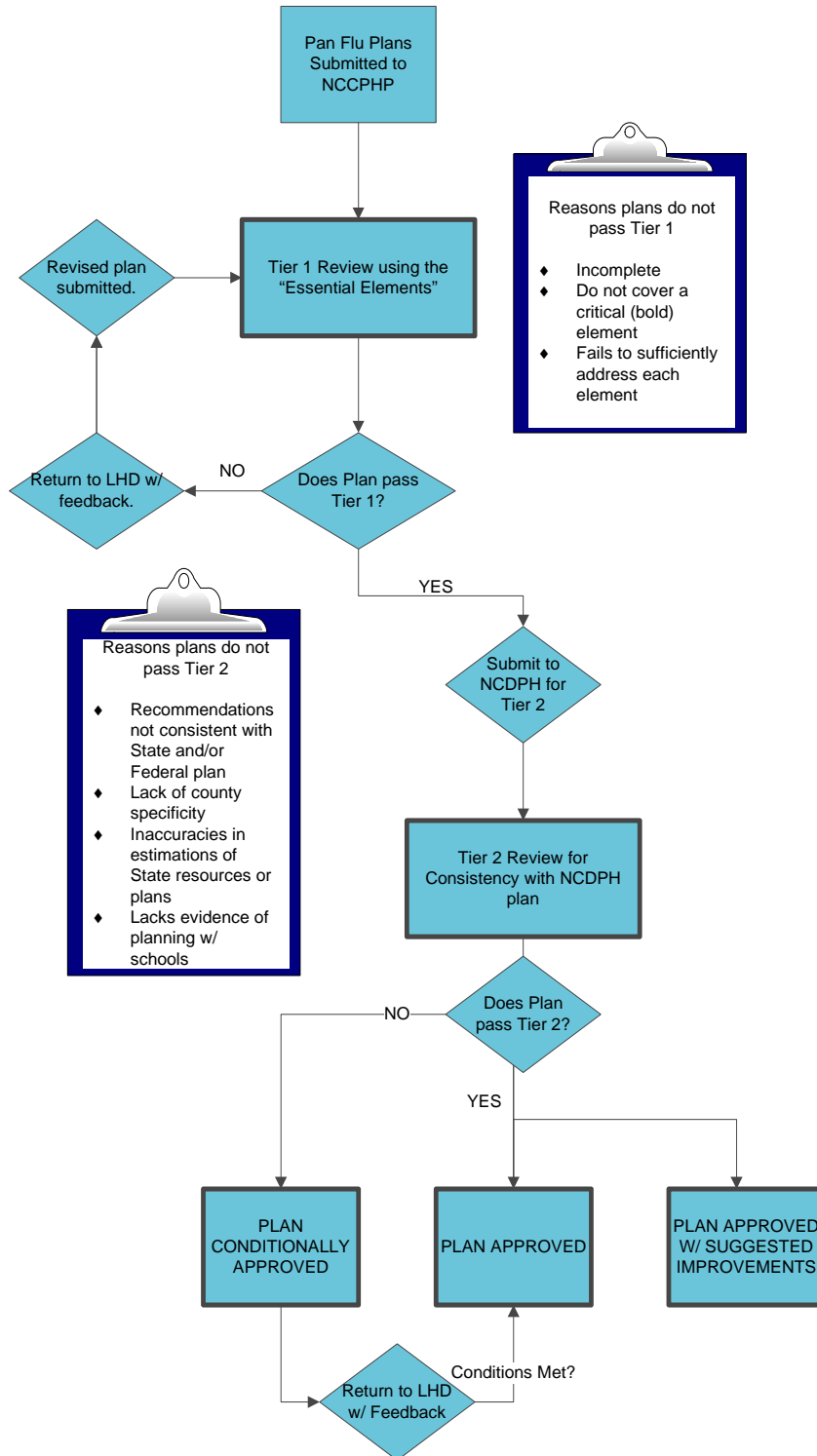
Are a minimum number of items in each Element addressed sufficiently?

Yes No

Comments:

Appendix 2

Joint Agency Review of LHD Pandemic Influenza Plans



Appendix 3

Vaccine Priority Group Recommendations from the US DHHS Pandemic Influenza Plan

Tier	Subtier	Population	Rationale
1	A	<ul style="list-style-type: none"> • Vaccine and antiviral manufacturers and others essential to manufacturing and critical support (~40,000) • Medical workers and public health workers who are involved in direct patient contact, other support services essential for direct patient care, and vaccinators (8-9 million) 	<ul style="list-style-type: none"> • Need to assure maximum production of vaccine and antiviral drugs • Healthcare workers are required for quality medical care (studies show outcome is associated with staff-to-patient ratios). There is little surge capacity among healthcare sector personnel to meet increased demand
	B	<ul style="list-style-type: none"> • Persons > 65 years with 1 or more influenza high-risk conditions, not including essential hypertension (approximately 18.2 million) • Persons 6 months to 64 years with 2 or more influenza high-risk conditions, not including essential hypertension (approximately 6.9 million) • Persons 6 months or older with history of hospitalization for pneumonia or influenza or other influenza high-risk condition in the past year (740,000) 	<ul style="list-style-type: none"> • These groups are at high risk of hospitalization and death. Excludes elderly in nursing homes and those who are immunocompromised and would not likely be protected by vaccination
	C	<ul style="list-style-type: none"> • Pregnant women (approximately 3.0 million) • Household contacts of severely immunocompromised persons who would not be vaccinated due to likely poor response to vaccine (1.95 million with transplants, AIDS, and incident cancer x 1.4 household contacts per person = 2.7 million persons) • Household contacts of children <6 month olds (5.0 million) 	<ul style="list-style-type: none"> • In past pandemics and for annual influenza, pregnant women have been at high risk; vaccination will also protect the infant who cannot receive vaccine. • Vaccination of household contacts of immunocompromised and young infants will decrease risk of exposure and infection among those who cannot be directly protected by vaccination
	D	<ul style="list-style-type: none"> • Public health emergency response workers critical to pandemic response (assumed one-third of estimated public health workforce=150,000) • Key government leaders 	<ul style="list-style-type: none"> • Critical to implement pandemic response such as providing vaccinations and managing/monitoring response activities • Preserving decision-making capacity also critical for managing and implementing a response

- | | | | |
|---|---|---|--|
| 2 | A | <ul style="list-style-type: none"> • Healthy 65 years and older (17.7 million) • 6 months to 64 years with 1 high-risk condition (35.8 million) • 6-23 months old, healthy (5.6 million) | <ul style="list-style-type: none"> • Groups that are also at increased risk but not as high risk as population in Tier 1B |
| | B | <ul style="list-style-type: none"> • Other public health emergency responders (300,000 = remaining two-thirds of public health work force) • Public safety workers including police, fire, 911 dispatchers, and correctional facility staff (2.99 million) • Utility workers essential for maintenance of power, water, and sewage system functioning (364,000) • Transportation workers transporting fuel, water, food, and medical supplies as well as public ground public transportation (3.8 million) • Telecommunications/IT for essential network operations and maintenance (1.08 million) | <ul style="list-style-type: none"> • Includes critical infrastructure groups that have impact on maintaining health (e.g., public safety or transportation of medical supplies and food); implementing a pandemic response; and on maintaining societal functions |
| 3 | | <ul style="list-style-type: none"> • Other key government health decision-makers (estimated number not yet determined) • Funeral directors/embalmers (62,000) | <ul style="list-style-type: none"> • Other important societal groups for a pandemic response but of lower priority |
| 4 | | <ul style="list-style-type: none"> • Healthy persons 2-64 years not included in above categories (179.3 million) | <ul style="list-style-type: none"> • All persons not included in other groups based on objective to vaccinate all those who want protection |

Appendix 4

Table of Contents from WHO Guidance

Avian influenza, including influenza A (H5N1), in humans: WHO interim infection control guideline for health care facilities

Revised 10 May 2007

WORLD HEALTH ORGANIZATION - WESTERN PACIFIC REGION

[Full text \(English\) - \[pdf 1.18Mb\]](#)

I. Executive summary

- Rationale
- Summary of WHO recommendations
- Personal protective equipment (PPE) recommendations for health-care workers (HCWs) providing care to avian influenza (AI)-infected patients

II. Infection control recommendations

1. Standard infection control precautions for health-care facilities
2. Respiratory hygiene/cough etiquette for health care facilities
3. Early recognition, isolation, and reporting of possible AI-infected patients
4. Isolation precautions for suspected or confirmed AI cases
5. Duration of infection control precautions
6. Recommendations for ambulatory-care settings
7. Specimen collection/transport within health-care facilities
8. Family member/visitor recommendations
9. Patient transport within health-care facilities
10. Pre-hospital care and transport outside health-care facilities
11. Waste disposal
12. Dishes and eating utensils
13. Linen and laundry
14. Environmental cleaning and disinfection
15. Patient-care equipment
16. Patient discharge
17. Occupational health recommendations
18. Administrative control strategies for health-care facilities
19. Prioritizing the use of PPE when supplies are limited
20. Engineering control strategies for health-care facilities
21. Care of the deceased

III. Annexes

1. Avian influenza background
2. Human-to-human seasonal influenza A transmission
3. Standard and transmission-based precautions
4. Respiratory protection
5. National infection control programmes
6. Airborne infection isolation rooms
7. Use of disinfectants
8. Information about contact with chickens, ducks, and other animals
9. Antiviral prophylaxis after AI exposure
10. Samples HCW influenza-like illness monitoring form

Acknowledgements

References