Managing Travel-related Risk of Disease Transmission

I. Rationale

The 2003 pandemic of severe acute respiratory syndrome (SARS) demonstrated how quickly human respiratory viruses can spread, especially in a world of modern air travel. Disease spread will likely be even faster during an influenza pandemic because a typical influenza virus has a shorter average incubation period and is more efficiently transmitted from person to person. Because persons in the incubation period of influenza infection can shed virus asymptomatically, and those early in their infection might have mild symptoms, it will not be possible to identify and isolate all arriving infected or ill passengers and quarantine their fellow passengers. Moreover, if an ill passenger is identified after leaving the airport, it is unlikely to be possible to identify and contact all travel contacts within the incubation period for influenza

Legal authority exists at local, state, and federal levels to control movement of persons with certain communicable diseases within and between jurisdictions. Novel influenza virus with pandemic potential was added to the federal quarantinable list in April 2005. Measures that might be used to modify the risk of travel-related spread of pandemic influenza range from distribution of health alert notices and arrival screening to quarantine of new arrivals and restrictions or prohibitions of non-essential travel. Although the states have authority for movement restrictions within states, federal laws govern movement between states or across international borders. Thus airports and other ports of entry are sites of multiple overlapping jurisdictions where the interplay between various authorities must be clearly understood.

The North Carolina Division of Public Health (NC DPH) will cooperate with federal authorities in implementing travel-related diseases containment measures. NC DPH will assess the burden of implementing recommended travel-related control measures and their impact on the public health workforce's ability to carry out other, potentially more critical, epidemic control measures appropriate to the current pandemic period. For example, once in the Pandemic Period (phase 6) NC DPH might chose to scale back travel-specific control measures in order to more vigorously employ community containment.

II. Goals

- Prevent the introduction and spread of novel subtypes of influenza into North Carolina from areas in which such viruses are circulating.
- Prevent the transmission of novel influenza viruses to passengers on a conveyance with a person infected with a novel virus, and evaluate and monitor other passengers to detect influenza-like illness and prevent further spread.
- Employ state and local resources most effectively to control the spread of pandemic influenza in North Carolina.

III. Assumptions

- North Carolina has a number of major ports that pose a risk of international travel-related disease transmission.
- Persons infected with novel influenza virus might be able to transmit infection to other passengers on conveyances and should postpone travel until they are no longer infectious.

• Active follow-up of passengers on conveyances with cases of novel influenza virus infection must occur rapidly in order to identify infected passengers and prevent further spread during the later Pandemic Alert Periods (Phases 4 and 5).
• State and local public health resources will be severely stressed during the Pandemic Period (Phase 6), making it necessary to divert resources from travel-related containment activities to community-containment activities.

IV. Priority Activities

INTERPANDEMIC AND PANDEMIC ALERT PERIODS (Phases 1 through 5)

• Improve readiness to implement travel-related diseases containment measures.
• Work with CDC quarantine stations and federal partners to provide public health information to travelers who visit countries where avian or animal influenza strains that can infect humans (e.g., avian influenza A [H5N1]) or human strains with pandemic potential have been reported.
• Work with CDC quarantine stations and federal partners to evaluate and manage arriving ill passengers who might be infected with avian or animal influenza strains (e.g., avian influenza A [H5N1]) or human strains with pandemic potential. Development of a port plan for North Carolina is ongoing.
• Minimize travel-related disease transmission using a range of containment strategies.

PANDEMIC PERIOD (Phase 6)

• Evaluate the impact of a pandemic on public health resources and the need to implement or terminate travel-related containment measures as the pandemic evolves.

V. Stakeholders

• Federal agencies that have the authority related to international travel in North Carolina include the US Public Health Service (USPHS)/Atlanta Quarantine Station, Centers for Disease Control and Prevention (CDC) Division of Global Migration and Quarantine (DGMQ), and the US Department of Homeland Security (Customs and Border Patrol and US Coast Guard).
• North Carolina Division of Public Health and Port Authorities have the responsibility to protect the health of North Carolina residents
• Local public health authorities have the duty to protect the health of their communities. Counties with international ports must anticipate and plan for control measures to protect the health of residents if infection with a new influenza virus subtype is suspected in an international traveler. Local public health authorities should be involved in developing protocols for the medical evaluation of international travelers, including EMS transport and clinical services at a medical center. This necessitates working with CDC DGMQ to provide accommodation for "home" isolation of patients who do not require hospitalization. The protocols should include memoranda of understanding (MOUs) between medical centers and CDC to establish guarantees of evaluation and treatment by the medical center, and reimbursement of all requested services by CDC.
Other stakeholders include:

• North Carolina National Guard
• Medical Centers
• Emergency Medical Services
• Local and state law enforcement (e.g., police, sheriff's departments, NC State Troopers)
• Port authorities and the transportation industry, including unions
• Airlines and shipping companies with international journeys originating or ending in NC.
• Political leaders

• American Red Cross and other humanitarian organizations

VI. NC Relationship with USPHS Atlanta Quarantine Station CDC Division of Global Migration and Quarantine

The major ports in North Carolina are:
- Charlotte-Douglas International Airport (Mecklenburg County)
- Raleigh-Durham International Airport (Wake County)
- Piedmont-Triad International Airport (Guilford County)

And the seaports of:
- Port of Wilmington (New Hanover County)
- Port of Morehead City (Carteret County)

Memoranda of Understandings between the following medical centers and CDC are on file in the Division of Public Health describing the relationship between nearby ports and the medical center:
- Wake Medical Center (Wake County)
- New Hanover Regional Medical Center (New Hanover County)
- Charlotte-Mecklenburg Hospital Authority (Mecklenburg County)
- J.A.Dosher Memorial Hospital (Brunswick County)

These facilities are prepared to isolate, evaluate, and manage ill travelers.
Each of these ports is under the federal jurisdiction of the Atlanta Quarantine Station
Officer in Charge: (404) 639-1224 (v) (404) 639-1220 (f)

VII. Novel Influenza Viruses on Conveyances

INTERPANDEMIC PERIOD (Phases 1 and 2)

1. Protocols for managing ill travelers at ports of entry

In collaboration with law enforcement authorities and other partners, public health officials and quarantine officers should develop protocols for managing ill arriving passengers identified by airplane or cruise ship personnel. The protocols should include provisions for:
- Meeting flights with a reported ill passenger
- Establishing notification procedures and communication links among organizations involved in the response
- Reporting potential cases to local health department, NC DPH, and CDC
- Providing a medical assessment of the ill traveler and referral for evaluation and care
- Separating the ill traveler from other passengers during the initial medical assessment
- Transporting the ill traveler to a designated healthcare facility
- Identifying other ill passengers and separating them from passengers who are not sick
- Transporting and quarantining contacts, if necessary
- Enforcing isolation and quarantine, if necessary, when ill travelers or their contacts are uncooperative.

CDC is working with partners in the travel industry to ensure that airplane and cruise ship personnel are familiar with:
- Case definitions for avian influenza A (H5N1) and other novel influenza strains of public health concern as they arise. CDC will provide additional and updated case definitions as necessary.
- Actions to take and persons to contact at their home offices, local quarantine station, or CDC if they are concerned about a sick passenger who might have novel influenza

2. Quarantine preparedness at ports of entry

NC DPH and local public health officials, in collaboration with the CDC, should identify quarantine facilities for housing passengers, crew, and emergency workers who may have been exposed to an ill traveler. These facilities should be equipped for:

- Temporary quarantine (up to a few days) until the results of diagnostic tests become available
- Longer-term quarantine (up to 10 days) if a diagnosis of novel influenza with pandemic potential is confirmed

NC DPH and local health departments working with NCEM and local EM and community partners should plan for the provision of goods and services to persons in quarantine.

3. Legal Authority

Current federal code and North Carolina statutes allow for collaborative authority between state and federal agencies including:

- Prohibitions on travel by ill persons and their contacts
- Restrictions on use of mass transit systems
- Cancellation of nonessential travel

PANDEMIC ALERT PERIOD (Phases 3 through 5)

1. Health information for travelers

CDC's Travelers' Health website (www.cdc.gov/travel/) will provide up-to-date travel notices for international travelers to countries affected by novel influenza viruses during the Pandemic Alert and Pandemic Periods.

2. Evaluation of travel-related cases of infection with novel influenza viruses

Guidance on the clinical management of suspected cases of novel influenza is provided in Supplement 5 of the US DHHS Pandemic Influenza Plan.

1. Management of a potential case of infection with a novel influenza virus on a conveyance
   a. Isolate the suspected patient as completely as possible from other passengers and crew. The ill passenger should wear a surgical mask.
   b. Ensure that persons caring for the ill passenger follow infection control measures recommended for cases of infection with a novel influenza. Airlines have contracts with ground-based medical consultants which they will use to help manage the ill passenger en route.
   c. If possible, designate a separate toilet for the exclusive use of the ill passenger.
   d. In the event of an ill passenger or crew with a potentially communicable disease, the captain radios the airport or land port at the destination so that health authorities are prepared to manage the patient. The tower or land port notifies airport emergency services which notifies local Emergency Medical Services (EMS).
   e. Port authorities should notify appropriate partners, including the nearest federal Quarantine station, the epidemiologist on call for NC DPH Epidemiology Section [General Communicable Disease Control Branch duty phone 919-733-3419], and local public health authorities.

2. Management on arrival
   a. Separate the ill passenger/crew from exposed, well passengers at the earliest moment both in transit and after arrival.
   b. On arrival, the ill passenger/crew, still wearing a surgical mask, should be placed in a private room and assessed by local EMS.

c. EMS will transport to designated facility per memorandum of understanding.
d. Airport authority will notify local public health authority.
e. Other passengers should be assessed for illness and types of exposures to the ill passenger/crew and other potential novel influenza strain exposures.
f. Traveling companions of ill passenger/crew
i. Business authority exists to restrict travel (i.e. an airline can refuse to allow a customer to board a conveyance for any safety reason)
ii. Local public health authority should immediately inquire about the health status of traveling companions
iii. If traveling companions are symptomatic, they should be medically evaluated and not be allowed to continue travel on commercial craft

3. Management of passengers and crew on the same conveyance
a. Locating Information - Collect locating information for all passengers and crew. This information should be obtained directly from the passengers, if possible. If a potential case of infection with a novel influenza strain on a conveyance is not detected until after arrival, this information can be obtained from:
i. Passenger manifests
ii. Staff lists
iii. Customs forms
Local public health authorities should work with port authorities and commercial carriers to obtain this information. For retrospectively identified cases, if passengers and crew members cannot be traced within 48 hours of the presumed exposure, local and/or state health departments, in consultation with CDC, might consider other options (e.g., issue a public notice through the news media).
b. Monitoring - All passengers on board should be educated about the novel influenza virus and advised to seek medical attention if symptoms develop within 10 days of the flight. Close contacts of the case need particular attention.
c. Limited quarantine – A quarantine on passengers may be issued that allows continued travel provided that essential education is communicated by public authorities.
d. Quarantine - In some circumstances, restriction of movement of the plane or ship and arrangement for monitoring and quarantine of all passengers and crew may be warranted. Home quarantine may be used for persons who live in the port of arrival, whereas quarantine in a designated facility should be arranged for the others. Local public health authorities should work with the county emergency management team to identify a facility for travelers who cannot be quarantined at home. Planning should include passengers with special needs and unaccompanied minors.

PANDEMIC PERIOD (Phase 6)
The following factors will be considered in developing policy during the pandemic period:
• The relative magnitude, duration, and stage of indigenous transmission versus the risk associated with further introduced cases.
• The value of compulsory travel restrictions in a setting of voluntary changes in travel patterns.

Travel-related containment measures
Early during an influenza pandemic that begins outside the United States, health authorities will heighten disease surveillance at U.S. airports and seaports and maintain close communication with WHO, foreign governments, and the airline industry.
Travel-related disease control measures as described above for the Pandemic Alert Period might continue during the early stages of the Pandemic Period especially if a pandemic strain emerges in another country but has not yet entered the United States.

Once the pandemic has spread outside and within the United States, screening for arriving ill passengers will become less useful and feasible. Although exit-screening of travelers from affected areas ("source control") is likely to be a more effective disease control measure, its effectiveness too will be limited. NC DPH and local health departments will de-emphasize public health responses to individual ill travelers at such time as these efforts would detract from other essential public health activities to control the pandemic.

Travel health precautions and warnings

As the pandemic spreads from country to country, NC DPH will review updated country-specific travel on the CDC Travelers' Health website (http://www.cdc.gov/travel/) and disseminate US DHHS recommendations to stakeholders. Advisories might include:

• Travel Health Precautions that describe steps that can be taken to reduce the risk of infection (e.g., avoiding travel to high-risk settings and communities where transmission is occurring).
• Travel Health Warnings that recommend postponement of nonessential travel.