

ANTIVIRAL PURCHASE AND DISTRIBUTION PLAN

NC Department of Health and Human Services, Division of Public Health

Background

Plans must be in place to allocate antiviral medications if supplies are limited during a pandemic. This plan provides the mechanism by which these limited supplies will be allocated safely and distributed throughout the state to assure the proper medications will get to the appropriate people in a timely and safe fashion. This plan is an adjunct to NC Pandemic Flu Plan, Part D: Antiviral Preparedness and Response and the NC SNS Distribution Plan.

Planning will incorporate recognized science and best practices and will comply with guidelines from the Centers of Disease Control and Prevention (CDC) and the CDC Division of the Strategic National Stockpile (DSNS).

Assumptions

- It is impossible to predict an accurate impact. Using the 1918 pandemic as a model with a 35% attack rate, the result in North Carolina could be:
 - 1.6 million doctor visits
 - 290,000 hospitalizations
 - 65,300 deaths

This Antiviral Purchase and Distribution Plan will go into effect on the order of the State Health Director and will not likely occur until it is recognized that the Pandemic has reached a Severity Index of 3.

Prioritization of individuals to receive antiviral treatment may be necessary and federal guidelines for prioritization will be followed (10A NCAC 41A .0201 Control Measures – General). **Table 1** lists the first nine of 11 priority groups with the estimated numbers of courses needed for each group [See **Appendix 1** for description of priority groups].

All plans for the purchase, allocation, distribution and use of antiviral medications must be flexible depending on the supply at hand and recommendations for use. Supplies may vary at the outset and during the course of the pandemic. Recommended dose and length of the course of prescription may vary based on clinical course and susceptibility of the virus.

In order to treat pandemic influenza, patients ideally should receive antiviral medications within the first 48 hours of symptoms onset. Therefore, antiviral medications must be pre-positioned as close to the point of treatment or dispensing as possible. The following is a proposed plan for distributing antiviral medications in North Carolina.

There will be four subsets of stockpiles:

Stockpile A : 402,280 pills (100% Tamiflu), already purchased and stored in a climate controlled, secure environment.

Stockpile B: 80% of this, 520,152 courses of Tamiflu, has already been purchased and is stored in a secured, temperature controlled facility in a pharmaceutical warehouse. An MOA exists which provides for the distributor to provide warehouse personnel during actual distribution. The remaining portion of antiviral medication will be purchased in SFY 2009 and will be approximately half pediatric dose Tamiflu and half Relenza. The total number of courses of all antiviral medications is expected to be approximately 620,000.

Stockpile C: anticipated to be up to 12 million pills (80% Tamiflu, 20% Relenza), supplied through the Strategic National Stockpile (SNS).

Stockpile X: those antiviral medications that are being stockpiled across the state by private companies, hospitals, etc. The state is not intending to procure these medications. The scope of this stockpile is unknown.

Antiviral medication in retail pharmacies will likely be in short supply and therefore will not be included in this plan. The state will collaborate with the NC Board of Pharmacy and the NC Medical Association to assure that these medications be used in a manner consistent with the federal and state priorities and authority of the State Health Director.

Receipt

Receipt of Stockpiles A and B will be made through a standard pharmaceutical distribution shipping practice to the designated storage facility with appropriate climate controls, security, and inventory management.

Receipt of Stockpile C will be made in accordance with the North Carolina Strategic National Stockpile Plan (NC SNS Plan). Receipt will occur using the facilities, security, documents of transfer protocols as defined in that plan and approved by the CDC Division of the SNS.

Assets from Stockpile X will not be received by the state and therefore no accommodations are made here for their receipt. However, under public health authority (if implemented) these medications must be used in accordance with recommended guidelines and priority populations.

Storage, Distribution and Transportation

Stockpile A:

Stockpile A has already been stored in a climate controlled environment. There is a triple layer of security that requires a badge entry into the building, a separate key code entry into the storage area and a padlock into the storage cage. The building has a generator with 36-48 hours of back-up fuel reserve and a process for refueling under arrangements with NC Emergency Management.

Unit of use bottles from Stockpile A will be counted and boxed for distribution the storage facility by staff at the warehouse.

Stockpile B:

The acquired portion of Stockpile B is currently stored in a pharmaceutical distributor warehouse. This is a temperature controlled and secure environment. An MOU is in place describing the provision of services of the warehouse personnel during an event. Lists of personnel and contacts for the personnel are maintained by the distributor. Additional personnel can be deployed through ServNC, the

NC ESAR-VHP registry of volunteers. Lists of personnel trained for warehouse operations are maintained and updated monthly and at time of deployment through this system.

Stockpile C:

Stockpile C will be stored, re-packaged and transported in full concordance as an SNS asset in the (Receipt, Storage and Security (RSS)) facility per the NC SNS Plan (p 28, and Attachments 4,5, and 23). Inventory will be managed by RITS with an Access Database back up if needed. All positions for the Receipt, Storage and Staging (RSS) facility have been identified and are included in the NC SNS Plan (Attachment 11)

Assets will be moved from the warehouses in accordance with the Transportation Plan in the NC SNS Plan (Attachment 23).

Allocation

Antiviral medications in Stockpile A & B purchased under the federal contract remain under the control of the state.

Stockpile A:

Stockpile A is intended to be used for the following priority groups:

- a. In treatment and prophylaxis if initial cases in North Carolina in accordance with the Quenching / Rapid Containment of Early Pandemic Influenza Plan and the Highly Pathologic Avian Influenza Response Plan (NC Department of Agriculture)
- b. Prophylaxis for critical workers necessary for immediate response to the evolving pandemic

Stockpile B:

Stockpile B is intended for treatment of the first cases of influenza and will be targeted for those priority groups as identified in Table 1.

The current distribution/allocation plan is

1. Hospital

- a. NC DPH will designate ~60% of Stockpile B to be distributed to licensed North Carolina hospitals proportionately to their number of emergency department (ED) visits [approximately 312,091 courses of 75 mg Tamiflu, 30,000 courses of 30/45 mg Tamiflu and 30,000 courses of Relenza]
 - i. Each hospital will be assigned an “H value” based on ED visits as a proxy for size in order to group hospitals of like size and to make apportionment less complicated.
 - ii. See **Table 2** for examples
 - iii. **Appendix 2** has full list of hospitals and estimated # of antiviral courses based on ED visits
- b. Antiviral medications provided to hospitals by NC DPH will be used for treatment of patients presenting for care to hospital inpatient and/or outpatient facilities according to state controlled guidelines.
- c. The decision to prescribe the use of antiviral medications for an individual patient will be based on the clinician’s judgment in the face of guidelines published by the CDC or NC

DPH.

2. Local Health Department

- a. NC DPH will designate ~29% of the state stockpile to be distributed to LHDs on a population basis [approximately 150,844 courses of 75 mg Tamiflu, 15,000 courses of 30/45 mg Tamiflu and 15,000 courses of Relenza]
 - i. Each county is assigned a “C value” depending on population.
 - ii. It is assumed the proportion of “high risk” individuals is approximately the same throughout the state.
 - iii. **Appendix 3** has list of counties and estimated # of antiviral courses based on population
- b. Antiviral medications provided to local health departments will be used for treatment only in accordance with state guidance.
- c. LHDs will be responsible for assuring that treatment courses are provided to outpatients prescribed antiviral therapy at outpatient settings in their counties.
- d. LHDs may reserve a sufficient number of treatment courses to treat county employees deemed essential to maintain critical infrastructure in the county

3. State Mental Health, Developmental Disabilities and Substance Abuse Facilities

- a. 1% of the state stockpile will be distributed to the NC Division of Mental Health, Developmental Disabilities and Substance Abuse Services for distribution to its facilities for dispensing according to the priority groups and for critical personnel. [approximately 5,201 courses of 75mg Tamiflu, 500 courses of 30/45mg Tamiflu and 500 courses of Relenza]

4. State Reserve

- a. The remaining ~10% of the state stockpile will be stored and distributed by the NC Division of Public Health. [approximately 52,015 courses of 75mg Tamiflu, 4,500 courses of 30/45 mg Tamiflu and 4,500 courses of Relenza]
- b. Priorities for this portion of the stockpile include
 - i. Quenching / Rapid Containment of Early Pandemic Influenza Plan
 - ii. Highly Pathogenic Avian Influenza Response Plan (NC Department of Agriculture)
 - iii. Treatment of state pandemic health responders [priority group 4]
- c. Re-distribution of antiviral medications to hospitals or county health departments based on pandemic influenza activity

Stockpile C:

The estimated NC Allotment of the SNS is 1,254,946 courses

The number of antiviral courses in the SNS currently allocated to NC may be reduced based on the following:

- a. The full amount of antiviral medications in the SNS is not scheduled to be available until 2008 or later. If an influenza pandemic occurs before the SNS is fully stocked, the amount of antiviral medications that NC can receive from the SNS could be reduced.

- b. A portion of the NC allotment may be used to contain a pandemic in other parts of the country or the world before NC requests the antiviral medications from the SNS .
- c. The needs of the Department of Defense (DoD) have a high priority. Although a separate stockpile is being created for the DoD, some of the SNS may be used to augment the DoD stockpile if deemed necessary.

North Carolina will request the SNS when cases are reasonably expected to begin to appear in the state.

Available antiviral courses from the SNS will be used to augment the state stockpile

- a. Allocations to hospitals and local health departments will utilize the same allocation formula as Stockpile B with adjustments made according to reported demands as the pandemic evolves.
- b. Top priority will be to continue to be treatment of persons listed in groups 1-5
- c. Consider treatment of pandemic societal responders [priority group 8]
- d. Consider post-exposure prophylaxis for outbreaks in closed settings, such as long-term care facilities [priority group 6]
- e. Consider prophylaxis of some healthcare workers [priority group 7] if supply is adequate

North Carolina will distribute and deliver antiviral medications from the SNS to counties based on existing SNS plans.

Dispensing, Distribution

Hospitals

Hospitals dispensing antiviral medication from Stockpiles A, B and C will do so in accordance with priority groups established by this plan and in accordance to hospital procedures.

Local Health Departments

Local health departments will distribute antiviral medications at their Points of Distribution (PODs) as described in their state approved SNS Plans. Badging and credentialing of personnel at the PODs occurs through the local health departments personnel identifications systems. Additional staff drawn from MRCs will be credentialed through ServNC, the ESAR-VHP registry utilized by NC. ServNC provides monthly updates to credentials against licensing boards and verifies credentials upon deployment of the individuals.

Job action sheets have been developed and disseminated to all local health departments for use in PODs. The job action sheets are designed such that they can also be used for just-in-time training in that they are step-by-step job action sheets. These are a part of the state and local SNS Plans.

Distribution and dispensing will occur in concordance with priority groups established by this plan. Verification will occur at the time of dispensing and will be recorded as part of the records maintained for those receiving antiviral medication.

A record of those receiving antiviral medications will be maintained in the registry described in the NC SNS Plan.

Adverse Events

Overall Coordination

The SNS Coordinator in the Public Health Coordinating Center will serve as the state medications safety coordinator and will:

- Serve as CDC's main point of contact for antiviral medication safety (reporting/surveillance)
- Serve as the state point of contact for clinicians, practitioners, and local health departments for antiviral medication safety related issues
- Serve as the coordinator for education through the regional and local staff for antiviral medication safety reporting at the state and local level
- Serve as lead for convening appropriate staff to collaborate in the planning and operational aspects for reporting and investigating antiviral medication safety issues.
- Coordinate with the lead for Countermeasure and Response Administration (CRA) to assure documentation and tracking of individuals with adverse events.

Hospitals

All hospitals in NC report adverse medication events and equipment failure to the FDA's MedWatch system. In addition, upon distribution of the antiviral medications, hospitals will be required to fax copies of reports to the SNS Coordinator in the Public Health Coordination Center.

Local Health Departments

Local Health Departments will be instructed to record adverse events regarding antiviral medications to MedWatch and to download and fax copies of the report to the Public Health Coordinating Center.

Table 1. Antiviral Drug Priority Group Recommendations and Estimated Number of Courses adapted from US DHHS Pandemic Influenza Plan, Part 1, November 2005					
	Group	US population¹ (estimated)	Strategy²	# courses (US)¹	# courses (NC)³
1	Patients admitted to the hospital	10,000,000	Treatment	7,500,000	225,000
2	HCWs with direct patient contact and EMS providers	9,200,000	Treatment	2,400,000	72,000
3	Highest risk outpatients	2,500,000	Treatment	700,000	21,000
4	Pandemic health responders	3,300,000	Treatment	900,000	27,000
5	Increased risk outpatients	85,500,000	Treatment	22,400,000	672,000
6	Outbreak response in nursing homes and residential settings	N/A	Post-exposure prophylaxis	2,000,000	60,000
7	HCWs in emergency departments, ICUs, and dialysis units	1,200,000	Prophylaxis	4,800,000	144,000
8	Pandemic societal responders	10,200,000	Treatment	2,700,000	81,000
9	Other outpatients	180,000,000	Treatment	47,300,000	1,419,000
	TOTALS			90,700,000	2,721,000

¹ Estimated US population for each group as well as the number of courses needed for these groups (US) were obtained from the US DHHS Pandemic Influenza Plan, Part 1, November 2005.

² **Treatment** refers to providing a treatment course of antiviral medications when an individual becomes ill [one pill twice a day for 5 days; total = 10 pills]. **Post-exposure prophylaxis** refers to providing a course of prophylaxis to an individual who has been exposed to a person with influenza [one pill once a day for 10 days; total = 10 pills]. **Prophylaxis** refers to providing a course of prophylaxis to an individual throughout a six week outbreak of influenza [one pill once a day for 40 days; total = 40 pills].

³ # courses for each of these groups (NC) were extrapolated from the US numbers (assuming NC population is 3% of the US population)

Table 2. Proposed Antiviral Distribution of State Stockpile to Various Hospitals¹				
ED Name/Location	H value (assigned based on annual ED visits)	# Courses of Tamiflu, 75mg²	~# Courses of Tamiflu, 30/45 mg²	~# Courses of Relenza²
Alamance Regional Medical Center	3	5250	500	500
Albemarle Hospital	2	3120	300	300
Alleghany Memorial Hospital	1	1345	125	125
Angel Medical Center	1	1345	125	125
Annie Penn Hospital	1	1345	125	125

¹ For a complete list of all hospitals with proposed # courses for each, see Appendix 2.

² Proposed numbers of courses is based on the full state stockpile designated for hospitals

Summary of Stockpiles of Antiviral Medication in North Carolina

	Source	Total number of courses (80% Tamiflu, (75mg), 10% Tamiflu (30/45 mg) and 10% Relenza)	Storage	Allocation	Distribution
Stockpile A	State and Federal Funds, Purchased 2006-7	40,228 (only Tamiflu, 75mg)	Raleigh	As needed for Quenching, High-Path AI, etc	Transportation Plan of SNS Plan
Stockpile B	Anticipated State Funds, partially purchased SFY 07 and completely purchased by SFY 08	620,000 courses (10 pills each)	Pharmaceutical Distributor Warehouse	To hospitals and Local Health Departments based on "H" and "C" values	Transportation Plan of SNS Plan
Stockpile C	SNS	1.2 million	RSS per SNS plan	To hospitals and Local Health Departments based on "H" and "C" values. Adjusted for inventory on hand and need.	Transportation Plan of SNS Plan
Stockpile X	Private industry	Unknown	Plans developed by purchasers	Plans developed by purchasers	Plans developed by purchasers

Appendix D-3: 1
**Definitions and Rationale for US DHHS Draft Antiviral
Drug Priority Groups**

Definitions and rationale for draft priority groups

from US DHHS Pandemic Influenza Plan, Part 1, November 2005

1. Persons admitted to hospital with influenza infection**a) Definition**

Persons admitted to acute care facilities (traditional or non-traditional with a clinical diagnosis of influenza; laboratory confirmation not required). Excludes persons admitted for a condition consistent with a bacterial super infection (e.g., lobar pneumonia developing late after illness onset) or after viral replication and shedding has ceased (e.g., as documented by a negative sensitive antigen detection test)

b) Strategy

Treatment within 48 hours of symptom onset.

c) Rationale

This group is at greatest risk for severe morbidity and mortality. Although there are no data to document the impacts of antiviral drug treatment among persons who already suffer more severe influenza illness, benefit is biologically plausible in persons with evidence of ongoing virally mediated pathology (e.g., diffuse pneumonia, ARDS). Providing treatment to those who are most ill is also consistent with standard medical practices, would be feasible to implement, and would be acceptable to the public.

d) Population size

The number of persons admitted to hospital in an influenza pandemic would vary substantially depending on the severity of the pandemic and on the ability to expand inpatient capacity, if needed.

e) Unresolved issues

More specific guidance should be provided to healthcare workers on implementing antiviral treatment, including when and when not to treat. In some persons with severe illness, the ability to take oral medication or its absorption may be important issues. For infants <1 year old admitted to hospital, decisions about whether to treat with antiviral drugs may depend on the child's age and potential risk versus benefit as the neuraminidase inhibitors are not licensed for use in infants. If possible, data on time from symptom onset to hospital admission, current use of antiviral drug treatment among inpatients, and its impacts should be collected during inter-pandemic influenza seasons.

2. Healthcare workers and emergency medical service providers who have direct patient contact**a) Definition**

Persons providing direct medical services in inpatient and outpatient care settings. Includes doctors, nurses, technicians, therapists, EMS providers, laboratory workers, other care providers who come within 3 feet of patients with influenza, and persons performing technical support functions essential to quality medical care.

b) Strategy

Treatment within 48 hours of symptom onset.

c) Rationale

Maintaining high quality patient care is critical to reduce health impacts of pandemic disease and to prevent adverse outcomes from other health conditions that will present for care during the pandemic period. Treatment of healthcare providers will decrease absenteeism due to influenza illness and may decrease absenteeism from fear of becoming ill, given the knowledge that treatment can prevent serious complications of influenza. Good data exist documenting the impacts of early treatment on duration of illness and time off work, and on the occurrence of complications such as lower respiratory infections. Treating healthcare providers is feasible to implement, especially for inpatient care providers who can be provided drugs through the occupational health clinic. It also would be acceptable to the public, who would recognize the importance of maintaining quality healthcare and would understand that persons with direct patient contact are putting themselves at increased risk.

d) Population size

There are about 12.6 million persons designated as healthcare workers by the Bureau of Labor Statistics and about 820,000 EMS providers. Among HCWs, two-thirds are estimated to provide direct patient care services.

e) Unresolved issues

Further work is needed to hone definitions and estimate population sizes. Implementation issues include the approach to identifying healthcare providers who would be eligible for treatment and where the treatment would be provided, particularly for outpatient care providers.

3. Outpatients at highest risk for severe morbidity or mortality from influenza infection**a) Definition**

The Advisory Committee on Immunization Practices defines groups at high risk (or increased risk) of complications from influenza infection during annual outbreaks based on age (6-23 months and >65 years) and underlying illnesses. Among this population of about 88 million persons, some can be identified who are at highest risk of severe disease and death. These include persons with hematopoietic stem cell transplants (HSCT) and solid organ transplants; those with severe immunosuppression due to cancer therapy or hematological malignancy; persons receiving immunosuppressive therapy for other illnesses (e.g., rheumatoid arthritis); persons with HIV infection and a CD4 count <200; persons on dialysis; and women who are in the second or third trimester of pregnancy.

b) Strategy

Treatment within 48 hours of symptom onset.

c) Rationale

Of the large group of persons who are at increased risk of severe disease or death from influenza, these groups represent the population at highest risk and who are least likely to be protected by vaccination. Studies show that neuraminidase inhibitor therapy decreases

complications and hospitalizations from influenza in high-risk persons and one unpublished study shows a significant decrease in mortality among patients who have undergone a hematopoietic stem cell transplant.

d) Population size

About 150,000 persons have had an HSCT or solid organ transplant. Assuming that the period of severe immunosuppression after a cancer diagnosis lasts for 1 year, the population targeted with non-skin, non-prostate cancers would equal the incidence of about 1.35 million persons. Based on a birth cohort of 4.1 million, a 28-week risk period during the second and third trimesters, and an 8-week pandemic outbreak in a community, there would be about 400,000 pregnant women included in this risk group. Further work is needed to estimate the size of other immunosuppressed groups.

e) Unresolved issues

Specific definition of included groups and population sizes.

4. Pandemic health responders, public safety workers, and key government decision-makers

a) Definition

Public health responders include those who manufacture vaccine and antiviral drugs; persons working at health departments who are not included as healthcare workers; and those who would be involved in implementing pandemic vaccination or other response components. Public safety workers include police, fire, and corrections personnel. Key government decision-makers include chief executives at federal, state, and local levels.

b) Strategy

Treatment within 48 hours of symptom onset.

c) Rationale

Preventing adverse health outcomes and social and economic impacts in a pandemic depend on the ability to implement an effective pandemic response. Early treatment of pandemic responders will minimize absenteeism and ensure that vaccination and other critical response activities can be maintained. Implementing early treatment for public health workers and vaccine manufacturers is feasible at workplace settings. Public safety workers prevent intentional and unintentional injuries and death, are critical to maintaining social functioning, and will contribute to a pandemic response, for example by ensuring order at vaccination clinics. A small number of decision-makers at federal, state, and local levels are needed to for an effective pandemic response.

d) Population size

An estimated 40,000 workers who produce pandemic vaccine and antiviral drugs in the U.S.; ~300,000 public health workers who would not be included in the HCW category; 3 million public safety workers; and a small number of government decision-makers.

e) Unresolved issues

Need to define the exact composition and size of this group.

5. Outpatients at increased risk of severe morbidity or mortality from influenza

a) Definition

For planning purposes, this group would include those currently designated as high-risk groups, except for those who have been categorized as being at highest-risk and included in a separate category. This increased-risk group includes persons 6-23 months and >>65 years old, or who have underlying illnesses defined by the ACIP as associated with increased risk. Definition of this group may change based on the epidemiology of the pandemic.

b) Strategy

Treatment within 48 hours of symptom onset.

c) Rationale

Early treatment has been shown to significantly decrease lower respiratory infections and to reduce the rate of hospitalization in elderly and high-risk populations. By extrapolation and based on the results of one small uncontrolled study, significant reductions of mortality can be expected as well. As these risk groups are familiar to the public given recommendations for annual vaccination, communication would be easy and acceptability high.

d) Population size

About 85.5 million persons are included in this group. Although all are at increased risk of annual influenza compared with the healthy under-65 year old population, there are different levels of increased risk for severe complications and death within this category. Further stratification may be possible based on several parameters including number of underlying conditions; recent hospitalization for a high-risk condition, pneumonia, or influenza; and age.

e) Unresolved issues

Stratifying this group into those at greater and lesser risk may be important if antiviral supplies are limited. Implementing treatment will be challenging given that it should be provided at the initial point of care to accrue the greatest benefit from early therapy.

6. Outbreak control**a) Definition**

Use of antiviral drugs to support public health interventions in closed settings where an outbreak of pandemic influenza is occurring.

b) Strategy

Treatment of cases and post-exposure prophylaxis of contacts (once daily antiviral medication for 10 days).

c) Rationale

Influenza outbreaks in nursing homes are associated with substantial mortality and morbidity. Nursing home residents also are less likely to respond to vaccination. Post-exposure prophylaxis has been shown to be effective in stopping influenza outbreaks in closed settings.

d) Population size

The number of outbreaks that may occur during a pandemic is unclear. Measures should be implemented to prevent outbreaks including limiting visitors, vaccination of staff, furloughing non-critical staff, and screening and exclusion for illnesses consistent with influenza.

e) Unresolved issues

Should this policy also be implemented in prisons or other settings where explosive spread of illness may occur but the risk for severe complications is not high?

7. Healthcare workers in ER, ICU, EMS, and dialysis settings**a) Definition**

Includes all staff in these settings who are required for effective functioning of these health care units.

b) Strategy

Prophylaxis

c) Rationale

Optimally effective functioning of these units is particularly critical to reducing the health impacts of a pandemic. Prophylaxis will minimize absenteeism in these critical settings.

d) Population size

Need to obtain population estimates.

e) Unresolved issues

Population sizes

8. Pandemic societal responders and healthcare workers who have no direct patient contact**a) Definition**

This group includes persons who provide services that must be sustained at a sufficient level during a pandemic to maintain public well-being, health, and safety. Included are workers at healthcare facilities who have no direct patient contact but are important for the operation of those facilities; utility (electricity, gas, and water), waste management, mortuary, and some transport workers.

b) Strategy

Treatment within 48 hours of symptom onset.

c) Rationale

Maintaining certain key functions is important to preserve life and decrease societal disruption. Heat, clean water, waste disposal, and corpse management all contribute to public health. Ensuring functional transportation systems also protects health by making it possible for people to access medical care and by transporting food and other essential goods to where they are needed.

d) Population size

Within these broad categories, there are about 2 million workers at healthcare facilities

who have no direct patient contact; 730,000 utility workers; 320,000 waste management workers; 62,000 in mortuary services; and 2.3 million in transportation. Not all occupations within these categories would be classified as pandemic societal responders. Estimates are that 35% of this population will develop illness and present within 48 hours of onset regardless of pandemic severity.

e) Unresolved issues

Need to stratify within these groups to identify who fills specific pandemic societal response functions and to assess whether those functions could still operate if a substantial proportion of the workforce became ill during a 6-8 week pandemic outbreak within a community. Implementation issues need to be addressed, especially with respect to how persons would be identified as falling within this priority group when presenting for treatment and where that treatment would be provided.

9. Other outpatients

a) Definition

Includes persons not in one of the earlier priority groups.

b) Strategy

Treatment within 48 hours of illness onset.

c) Rationale

Treatment reduces the risk of complications and mortality, reduces duration of illness and shortens time off work, and decreases viral shedding and transmission. If sufficient antiviral supplies are available, providing treatment to all who are ill achieves equity and will be most acceptable to the public.

d) Population size

There are an estimated 180 million persons who are not included in previously targeted groups.

e) Unresolved issues

Consider whether there are any strata that can be defined within this population.

Appendix D-3: 2
Proposed Distribution of State Stockpiled Antiviral
Courses to Hospitals
(Stockpile B)

ED Name/Location	H value (assigned based on annual ED visits)	# Courses of Tamiflu, 75mg	~# Courses of Tamiflu, 30/45 mg	~# Courses of Relenza
Alamance Regional Medical Center	3	5250	500	500
Albemarle Hospital	2	3120	300	300
Alleghany Memorial Hospital	1	1345	125	125
Angel Medical Center	1	1345	125	125
Annie Penn Hospital	1	1345	125	125
Anson Community Hospital	1	1345	125	125
Ashe Memorial Hospital, Inc.	1	1345	125	125
Beaufort County Hospital	1	1345	125	125
Bertie Memorial Hospital	1	1345	125	125
Betsy Johnson Regional Hospital	2	3120	300	300
Bladen County Hospital	1	1345	125	125
Blowing Rock Hospital	1	1345	125	125
Brunswick Community Hospital	1	1345	125	125
Caldwell Memorial Hospital, Inc.	1	1345	125	125
Cape Fear Valley Medical Center	4	7800	750	750
Carolinas Medical Center - Mercy	3	5250	500	500
Carolinas Medical Center - University Hospital	3	5250	500	500
Carolinas Medical Center (flagship hospital)	4	7800	750	750
Carteret General Hospital	1	1345	125	125
Catawba Valley Medical Center	2	3120	300	300
Central Carolina Hospital	2	3120	300	300
Charles A. Cannon, Jr. Memorial Hospital, Inc.	1	1345	125	125
Chatham Hospital	1	1345	125	125
Chowan Hospital	1	1345	125	125
Cleveland Regional Medical Center	3	5250	500	500
Columbus Regional HC System	1	1345	125	125
Craven Regional Medical Center	3	5250	500	500
Davie County Hospital	1	1345	125	125
Davis Regional Medical Center	1	1345	125	125
Duke Health Raleigh Hospital (formerly Raleigh Community Hospital)	1	1345	125	125
Duke University Hospital	3	5250	500	500
Duplin General Hospital	1	1345	125	125
Durham Regional Hospital	3	5250	500	500
FirstHealth Montgomery Memorial Hospital	1	1345	125	125
FirstHealth Moore Regional. Hospital.	3	5250	500	500
FirstHealth Richmond Memorial Hospital	1	1345	125	125

ED Name/Location	H value (assigned based on annual ED visits)	# Courses of Tamiflu, 75mg	~# Courses of Tamiflu, 30/45 mg	~# Courses of Relenza
Forsyth Medical Center	4	7800	750	750
Franklin Regional Medical Center	1	1345	125	125
Frye Regional Medical Center	1	1345	125	125
Gaston Memorial Hospital	4	7800	750	750
Grace Hospital, Inc.	2	3120	300	300
Granville Medical Center	1	1345	125	125
Halifax Regional Medical Center	2	3120	300	300
Harris Regional Hospital, Inc.	1	1345	125	125
Haywood Regional Medical Center	1	1345	125	125
Heritage Hospital	1	1345	125	125
High Point Regional Health Systems	3	5250	500	500
Highlands-Cashiers Hospital	1	1345	125	125
Hoots Memorial Hospital	1	1345	125	125
Hugh Chatham Memorial Hospital	1	1345	125	125
Iredell Memorial Hospital, Inc.	2	3120	300	300
J. Arthur Doshier Memorial Hospital	1	1345	125	125
Johnston Memorial Hospital	2	3120	300	300
Kings Mountain Hospital	1	1345	125	125
Lake Norman Regional Medical Center	1	1345	125	125
Lenoir Memorial Hospital, Inc.	2	3120	300	300
Lexington Memorial Hospital	2	3120	300	300
Lincoln Medical Center	2	3120	300	300
Margaret R. Pardee Memorial Hospital	1	1345	125	125
Maria Parham Medical Center	2	3120	300	300
Martin General Hospital	1	1345	125	125
Mission Hospitals, Inc.	4	7800	750	750
Morehead Memorial Hospital	2	3120	300	300
Moses H. Cone Hospital (may include Wesley Long Community Hospital cases)	4	7800	750	750
Murphy Medical Center, Inc.	1	1345	125	125
Nash Hospitals	3	5250	500	500
New Hanover Regional Medical Center	4	7800	750	750
North Carolina Baptist Hospital	4	7800	750	750
NorthEast Medical Center	3	5250	500	500
Northern Hospital of Surry County	2	3120	300	300
Onslow Memorial Hospital	2	3120	300	300
Our Community Hospital	1	1345	125	125

ED Name/Location	H value (assigned based on annual ED visits)	# Courses of Tamiflu, 75mg	~# Courses of Tamiflu, 30/45 mg	~# Courses of Relenza
Park Ridge Hospital	1	1345	125	125
Pender Memorial Hospital	1	1345	125	125
Person Memorial Hospital	1	1345	125	125
Pitt County Memorial Hospital	4	7800	750	750
Presbyterian Hospital	3	5250	500	500
Presbyterian Hospital Matthews	2	3120	300	300
Pungo District Hospital Corporation	1	1345	125	125
Randolph Hospital	2	3120	300	300
Rex Healthcare	2	3120	300	300
Roanoke - Chowan Hospital	1	1345	125	125
Rowan Regional Medical Center	3	5250	500	500
Rutherford Hospital	2	3120	300	300
Sampson Regional Medical Center	2	3120	300	300
Sandhills Regional Medical Center	1	1345	125	125
Scotland Memorial Hospital	1	1345	125	125
Southeastern Regional Medical Center	3	5250	500	500
Spruce Pine Community Hospital	1	1345	125	125
St. Luke's Hospital	1	1345	125	125
Stanly Memorial Hospital	2	3120	300	300
Stokes-Reynolds Memorial Hospital	1	1345	125	125
Swain County Hospital	1	1345	125	125
The McDowell Hospital	1	1345	125	125
The Outer Banks Hospital	1	1345	125	125
Thomasville Medical Center (formerly Community General Hospital)	1	1345	125	125
Transylvania Community Hospital, Inc.	1	1345	125	125
Union Regional Medical Center	2	3120	300	300
University of North Carolina Hospitals	3	5250	500	500
Valdese General Hospital	1	1345	125	125
WakeMed	4	7800	750	750
WakeMed Cary Hospital (formerly Western Wake)	2	3120	300	300
WakeMed North Healthplex	1	1345	125	125
Washington County Hospital, Inc.	1	1345	125	125
Watauga Medical Center, Inc.	1	1345	125	125
Wayne Memorial Hospital , Inc.	2	3120	300	300
Wilkes Regional Medical Center	1	1345	125	125
Wilson Medical Center	2	3120	300	300

* H value = Integer (1, 2, 3, 4) assigned based on reported ED visits. The total number of ED visits of all hospitals with each integer (1, 2, 3 or 4) = 25 % of total ED visits.

Appendix D-3: 3
**Proposed Distribution of State Stockpiled Antiviral
Courses to Local Health Departments
(Stockpile B)**

County	Population (2006)	C value	~ # of Courses Tamiflu, 75mg	~ # of Courses Tamiflu, 30/45mg	~ # of Courses Relenza
ALAMANCE	139,786	2	1795	175	175
ALEXANDER	36,296	1	560	60	60
ALLEGHANY	11,012	1	560	60	60
ANSON	25,371	1	560	60	60
ASHE	25,774	1	560	60	60
AVERY	18,174	1	560	60	60
BEAUFORT	46,346	1	560	60	60
BERTIE	19,355	1	560	60	60
BLADEN	32,870	1	560	60	60
BRUNSWICK	94,964	2	1795	175	175
BUNCOMBE	221,320	3	3750	375	375
BURKE	88,663	2	1795	175	175
CABARRUS	157,179	3	3750	375	375
CALDWELL	79,298	2	1795	175	175
CAMDEN	9,284	1	560	60	60
CARTERET	63,558	1	560	60	60
CASWELL	23,523	1	560	60	60
CATAWBA	151,128	3	3750	375	375
CHATHAM	57,707	1	560	60	60
CHEROKEE	26,816	1	560	60	60
CHOWAN	14,664	1	560	60	60
CLAY	10,144	1	560	60	60
CLEVELAND	96,714	2	1795	175	175
COLUMBUS	54,656	1	560	60	60
CRAVEN	95,558	2	1795	175	175
CUMBERLAND	306,545	3	3750	375	375
CURRITUCK	23,518	1	560	60	60
DARE	34,674	1	560	60	60
DAVIDSON	155,348	3	3750	375	375
DAVIE	39,836	1	560	60	60
DUPLIN	52,710	1	560	60	60
DURHAM	246,824	3	3750	375	375
EDGECOMBE	52,644	1	560	60	60
FORSYTH	331,859	4	9,500	935	935
FRANKLIN	55,315	1	560	60	60
GASTON	197,232	3	3750	375	375

County	Population (2006)	C value	~ # of Courses Tamiflu, 75mg	~ # of Courses Tamiflu, 30/45mg	~ # of Courses Relenza
GATES	11,602	1	560	60	60
GRAHAM	8,109	1	560	60	60
GRANVILLE	53,840	1	560	60	60
GREENE	20,833	1	560	60	60
GUILFORD	449,078	4	9,500	935	935
HALIFAX	55,606	1	560	60	60
HARNETT	103,714	2	1795	175	175
HAYWOOD	56,662	1	560	60	60
HENDERSON	100,107	2	1795	175	175
HERTFORD	23,878	1	560	60	60
HOKE	42,202	1	560	60	60
HYDE	5,511	1	560	60	60
IREDELL	145,234	2	1795	175	175
JACKSON	36,312	1	560	60	60
JOHNSTON	151,589	3	3750	375	375
JONES	10,318	1	560	60	60
LEE	55,282	1	560	60	60
LENOIR	58,172	1	560	60	60
LINCOLN	71,302	1	560	60	60
MACON	33,076	1	560	60	60
MADISON	20,454	1	560	60	60
MARTIN	24,396	1	560	60	60
MCDOWELL	43,632	1	560	60	60
MECKLENBURG	826,893	4	9,500	935	935
MITCHELL	15,906	1	560	60	60
MONTGOMERY	27,506	1	560	60	60
MOORE	82,292	2	1795	175	175
NASH	92,220	2	1795	175	175
NEW HANOVER	184,120	3	3750	375	375
NORTHAMPTON	21,524	1	560	60	60
ONSLow	161,212	3	3750	375	375
ORANGE	123,766	2	1795	175	175
PAMLICO	13,097	1	560	60	60
PASQUOTANK	39,956	1	560	60	60
PENDER	48,724	1	560	60	60

County	Population (2006)	C value	~ # of Courses Tamiflu, 75mg	~ # of Courses Tamiflu, 30/45mg	~ # of Courses Relenza
PERQUIMANS	12,442	1	560	60	60
PERSON	37,448	1	560	60	60
PITT	146,403	2	1795	175	175
POLK	19,080	1	560	60	60
RANDOLPH	138,586	2	1795	175	175
RICHMOND	46,700	1	560	60	60
ROBESON	129,048	2	1795	175	175
ROCKINGHAM	91,830	2	1795	175	175
ROWAN	134,540	2	1795	175	175
RUTHERFORD	63,178	1	560	60	60
SAMPSON	64,057	1	560	60	60
SCOTLAND	36,994	1	560	60	60
STANLY	59,128	1	560	60	60
STOKES	46,335	1	560	60	60
SURRY	72,990	2	1795	175	175
SWAIN	13,938	1	560	60	60
TRANSYLVANIA	30,360	1	560	60	60
TYRRELL	4,240	1	560	60	60
UNION	172,087	3	3750	375	375
VANCE	43,920	1	560	60	60
WAKE	790,007	4	9,500	935	935
WARREN	19,969	1	560	60	60
WASHINGTON	13,360	1	560	60	60
WATAUGA	43,410	1	560	60	60
WAYNE	114,930	2	1795	175	175
WILKES	66,925	1	560	60	60
WILSON	77,468	2	1795	175	175
YADKIN	37,810	1	560	60	60
YANCEY	18,368	1	560	60	60

* C value = Integer (1, 2, 3, 4) assigned based on population. The total population of all counties with each integer (1, 2, 3 or 4) = 25 % of total population.