

The 2009 H1N1 Pandemic & North Carolina Schools

Jill Moore, MPH, JD

Associate Professor, UNC School of Government

October 2009

I. Terms

- *Influenza-like illness (ILI)* – An illness in which the person has a fever (temperature greater than 100 degrees F) along with a cough or a sore throat.
- *Influenza* – An acute respiratory disease caused by infection with an influenza virus.
- *Seasonal influenza* – A term used to describe subtypes of influenza viruses that are known to be circulating in human populations.
- *Novel influenza virus* – A new influenza virus subtype that differs from circulating seasonal influenza viruses. Novel influenza viruses are of public health importance because their differences from the seasonal viruses may mean that more people will be susceptible to infection.
- *Pandemic influenza* – An influenza subtype that meets three conditions: (1) it is a novel influenza virus, (2) the virus is capable of sustained person-to-person transmission, and (3) the virus has been detected in multiple geographic areas.
- *Pandemic H1N1 (aka 2009 H1N1)* – A novel influenza virus that originated in North America and was declared a pandemic by the World Health Organization (WHO) in June 2009. Although it is commonly called “swine flu,” the Centers for Disease Control (CDC) considers this a misnomer and describes it as a quadruple reassortment virus, because it contains components of human and avian influenza viruses as well as two types of swine influenza viruses.

II. Background & Current Status of the 2009 H1N1 Pandemic in NC

A. Monitoring Influenza in North Carolina

North Carolina participates in the U.S. Influenza Sentinel Physicians Surveillance Network, a network of public and private health care providers who assist public health officials in monitoring the extent of flu outbreaks and the strains of influenza viruses that are circulating. Health care providers who participate in the sentinel network make weekly reports to public health agencies. The reports include the total number of patients the provider saw during a week, as well as the number of patients who had influenza-like illness (ILI). From this, public health officials can calculate the percentage of visits to sentinel providers that are the result of ILI. Sentinel providers also collect lab samples on a portion of the patients with ILI. Those samples

are sent to the State Laboratory for Public Health (hereafter “State Lab”), which tests the samples to determine whether influenza virus is present and if so which strain of the virus.¹

North Carolina also monitors ILI through a data collection system called NC DETECT (North Carolina Disease Event Tracking and Epidemiologic Collection Tool). This system receives data daily from most of North Carolina’s hospital emergency departments and allows public health officials to estimate the percentage of emergency department visits that are due to ILI.²

Finally, the State Lab conducts additional tests to monitor the pandemic H1N1 outbreak in North Carolina. Early in the outbreak, the State Lab attempted to obtain and test a wide range of samples, but testing criteria have been changed as pandemic H1N1 has become widespread in the state. At present, testing is being conducted only on: (1) a sample of patients with ILI who are identified through the flu sentinel provider network described above, (2) hospitalized patients with ILI who are admitted to intensive care units, and (3) people who died of suspected influenza but had not been tested at the time of death.³

These methods of monitoring flu activity in North Carolina cannot capture every case of influenza that occurs in the state. The numbers reported through these systems therefore represent only a small portion of the number of actual cases that are present during any given week. However, they provide information about the types of flu that are circulating each week and thus allow public health officials to advise clinicians and the public about the nature and extent of influenza activity in the state.

B. Influenza Activity in North Carolina

The first cases of confirmed pandemic H1N1 were detected in North Carolina in late April. Over the summer, unusually high levels of influenza activity were detected by the state’s monitoring systems and pandemic H1N1 quickly emerged as the predominant flu strain affecting the state. On October 15, the NC Division of Public Health reported that over 6% of visits to health care providers in the flu sentinel network were for ILI, and that the overwhelming majority of the samples the sentinel providers sent to the State Lab for testing that were positive for flu were the pandemic H1N1 subtype.⁴

Throughout the summer, the state Division of Public Health provided numbers of lab-confirmed pandemic H1N1 cases by county, but that reporting ceased on September 26. By that time, 267 hospitalizations and 12 deaths had been attributed to lab-confirmed pandemic H1N1.⁵ On September 27, 2009, the NC Division of Public Health changed its methods for reporting

¹ For more information about NC’s flu sentinel program, see <http://www.epi.state.nc.us/epi/gcdc/flusentsurv.html>.

² For more information about NC DETECT, see <http://www.ncdetect.org/>. For a description of how it is used in influenza surveillance in North Carolina, see the NC Division of Public Health’s weekly influenza surveillance reports, available at <http://www.epi.state.nc.us/epi/gcdc/flu.html>.

³ Memo to NC Local Health Directors from Dr. Zack Moore, NC Respiratory Epidemiologist. Interim Guidance for Reporting of Pandemic Influenza A (H1N1) Infections (September 21, 2009).

⁴ NC Division of Public Health, North Carolina Weekly Influenza Surveillance Summary No. 1 (October 15, 2009).

⁵ As of this writing, 2009 weekly reports by county through September 26 are still available on the Internet at <http://www.epi.state.nc.us/epi/gcdc/fluisolates2009.html>.

hospitalizations and deaths to reflect the latest guidance from the CDC. The state is now reporting all hospitalizations from ILI and deaths that are attributed to influenza. According to the most recent surveillance report, there were 6 flu deaths in North Carolina between September 27 and October 10, and during the week of October 4-10, there were 570 hospitalizations for ILI.⁶

III. NC Communicable Disease Law & NC Schools

A. Fundamentals of Communicable Disease Law

In North Carolina, state statutes and administrative regulations provide the basic legal framework for the detection and control of communicable diseases within the state. Most of the relevant statutes may be found in G.S. Chapter 130A, Article 6, Part 1. Most of the regulations are in Title 10A of the North Carolina Administrative Code, Subchapter 41A. Among other things, these laws address the detection and control of communicable disease by:

- Requiring physicians and designated others (including school principals) to report certain communicable diseases to public health officials. G.S. 130A-135 through 130A-141.1; 10A N.C.A.C. 41A.0101-.0102.
- Requiring public health officials to investigate cases and outbreaks of communicable diseases that are reported. G.S. 130A-144; 10A N.C.A.C. 41A.0103.
- Authorizing the Commission for Public Health to adopt rules prescribing communicable disease control measures and requiring all persons to comply with those measures. G.S. 130A-144; 10A N.C.A.C. 41A.0200 et seq.
- Authorizing local health directors or the State Health Director to exercise quarantine and isolation authority. G.S. 130A-145.⁷

B. Reporting Law for School Principals

A North Carolina statute requires school principals and operators of child care facilities to make a report to public health officials when the principal or operator has reason to suspect that a person within the school or child care facility has a communicable disease or condition that has been declared reportable by the Commission for Public Health. The report must be made to the local health director for the county in which the school or facility is located.⁸ The list of reportable diseases and conditions has changed several times in the last few years. It presently consists of 71 diseases and conditions, including novel influenza virus infection.⁹

⁶ NC Division of Public Health, North Carolina Weekly Influenza Surveillance Summary No. 1 (October 15, 2009).

⁷ “Isolation authority” and “quarantine authority” are defined in G.S. 130A-2.

⁸ G.S. 130A-136. The local health director is the director of the local public health department. Most local health departments in North Carolina serve a single county, but there are also a few multi-county district health departments in the state.

⁹ 10A N.C.A.C. 41A.0101.

School principals may question whether their ability to make the reports required under this statute is limited by the Family Educational Rights and Privacy Act (FERPA), if the information on which the report would be based is contained in an education record that is covered by that Act. As a general rule, education records or the information contained in them may not be disclosed without the permission of the student's parent. FERPA defines "education records" as "those records, files, documents, and other materials which—(i) contain information directly related to a student, and (ii) are maintained by an educational agency or institution or by a person acting for such agency or institution."¹⁰ This definition is broad enough to capture records that are maintained by school nurses or others acting on behalf of the school who have health information about a student. Therefore, those records and the information in them generally may not be disclosed without parental permission.

However, an exception to this general rule permits the disclosure of information without the parent's prior consent "in connection with an emergency [to] appropriate persons if the knowledge of such information is necessary to protect the health or safety of the student or other persons."¹¹ In the past, a federal regulation required this exception to be construed narrowly and U.S. Department of Education officials advised that disclosures under this exception required an imminent threat or other emergency that created an immediate need for a narrowly tailored disclosure of information.¹² However, the regulation was amended in 2008 to clarify that a school may take into account the totality of the circumstances and, if it determines that "there is an articulable and significant threat to the health or safety of a student or other individuals," it may "disclose information from education records to any person whose knowledge of the information is necessary to protect the health or safety of the student or other individuals."¹³ It thus appears that a school principal could make a report required by this statute if the principal, taking into account all the circumstances, determined that the principal's knowledge or suspicion of a reportable communicable disease in a student or other person in the school created an articulable and significant threat to the health or safety of students or others.

¹⁰ 20 U.S.C. 1232g(a)(4). There are certain exclusions to this definition that I have not described here; see the statute for more complete information.

¹¹ 20 U.S.C. 1232g(b)(1)(I).

¹² See Letter of February 25, 2004 from LeRoy S. Rooker, Director, Family Compliance Office, U.S. Department of Education, to Martha Holloway, State School Nurse Consultant, Alabama Department of Education ("[E]ducational agencies and institutions subject to FERPA may disclose personally identifiable, non-directory information from education records under the "health or safety emergency" exception only if the agency or institution determines, on a case-by-case basis, that a *specific situation* presents *imminent danger or threat* to students or other members of the community, or requires an *immediate need* for information in order to avert or diffuse serious threats to the safety or health of a student or other individuals. Any release must be *narrowly tailored* considering the immediacy and magnitude of the emergency and must be made only to parties who can address the specific emergency in question. This exception is temporally limited to the period of the emergency and generally does not allow a blanket release of personally identifiable information from a student's education records to comply with general requirements under State law."). The letter went on to advise that some communicable disease information could be disclosed to public health officials, but the circumstances described in the letter were narrow and appeared to limit the scope of disclosures that could be made under G.S. 130A-136.

¹³ 34 C.F.R. 99.36(c).

Should school principals therefore report known or suspected cases of pandemic H1N1 among those in their schools to local public health officials? Early in the outbreak, the answer to this question would have been yes. However, now that the disease has become widespread in North Carolina, the Division of Public Health has asked that physicians and others refrain from further reporting of known or suspected cases of pandemic H1N1 (except for those that are reported via the monitoring systems described above). However, if another novel influenza virus appears in the future, school principals should make the reports required by G.S. 130A-136.

C. Communicable Disease Control Measures

North Carolina law defines “communicable disease” as “an illness due to an infectious agent or its toxic products which is transmitted directly or indirectly to a person from an infected person or animal ...”¹⁴ The term “communicable disease control measures” is not defined in state law, but it has the meaning common sense would suggest: measures or steps that are taken to control the spread of a communicable disease.

The North Carolina Commission for Public Health is the body that is responsible for adopting rules prescribing communicable disease control measures.¹⁵ All persons in North Carolina are required to comply with the control measures prescribed by the Commission.¹⁶ The local health director is responsible for ensuring that communicable disease measures are “given”¹⁷—which in practice often simply means ensuring that people who may spread the disease are informed about the required control measures, but it could also mean instructing other persons (perhaps including school officials) to take certain steps to prevent the spread of disease. If a person fails to comply with control measures prescribed by the Commission, state and local public health officials may pursue various legal remedies.¹⁸

The Commission has adopted rules specifying the communicable disease control measures for only a few communicable diseases and conditions: HIV, hepatitis B, sexually transmitted diseases, and tuberculosis.¹⁹ For other communicable diseases, the required control measures are those that are specified in guidelines and recommended actions published by the CDC, or if no such materials are available, from the guidelines and recommendations that appear in the *Control of Communicable Diseases Manual*, a publication of the American Public Health

¹⁴ G.S. 130A-2(1c). The term “communicable condition” is defined separately as “the state of being infected with a communicable agent but without symptoms.” G.S. 130A-2(1b). For example, asymptomatic HIV infection is a communicable condition.

¹⁵ G.S. 130A-144(g).

¹⁶ G.S. 130A-144(f).

¹⁷ G.S. 130A-144(e).

¹⁸ G.S. 130A-18 (authorizing the NC Secretary of Health and Human Services or a local health director to institute an action for injunctive relief); 130A-25 (making violation of most of NC’s public health laws, including the communicable disease statutes and rules, a misdemeanor). *See also* G.S. 130A-145 (authorizing the State Health Director or a local health director to exercise quarantine and isolation authority—an authority that is typically used only after a person has failed to comply with communicable disease control measures).

¹⁹ 10A N.C.A.C. 41A.0202-.0205.

Association. Both the CDC documents and the APHA manual are incorporated by reference into the Commission's rules.²⁰

The required control measures for pandemic H1N1 are therefore those specified in CDC guidelines and recommended actions. Because pandemic H1N1 is an emerging illness,²¹ this seems like a logical approach for the Commission to take in its rules. When a disease is emerging, there may be many unknowns: In what ways does the disease spread, and how readily? How severe is it? Are existing treatments effective, or is something new required? Are certain people more susceptible than others? The answers to all these questions are relevant to developing appropriate control measures, and as the answers emerge and evolve, CDC updates its guidelines and recommended actions. Thus, by incorporating the CDC documents into North Carolina's communicable disease rules, the Commission has attempted to ensure that the control measures required by state law are aligned with up-to-date scientific understanding about emerging illnesses.

On the other hand, by adopting inconstant guidelines as the required control measures, the Commission has handed public health officials and others a challenge: keeping up with changes in control measures—changes that sometimes come about very rapidly—and communicating those changes effectively to the public. For example, consider the issue of school closure. When pandemic H1N1 first appeared in the United States, CDC guidelines stated that a school should be closed if a student or school employee developed H1N1. The CDC changed this guidance only four days after issuing it. This created confusion and posed a significant communication challenge for public health and school officials throughout the United States, including in North Carolina. School closure as a disease control measure is discussed in more detail in section IV of this document, below.

D. Isolation and Quarantine

Isolation and quarantine are communicable disease control measures. In North Carolina, the terms have very specific (and somewhat unusual) legal definitions.²² However, they are commonly understood to mean the separation of a person or persons from the general public in order to prevent the spread of disease—an understanding that is sufficient for this discussion.²³

The key distinction between isolation and quarantine is that isolation is used for sick people, while quarantine is used for exposed people. To put it more precisely, isolation is a control measure that may be applied to persons who are infected with (or suspected of being infected with) a communicable disease, while quarantine is a control measure that may be

²⁰ 10A N.C.A.C. 41A.0201(a).

²¹ Emerging illness is a term that is used to describe two different types of diseases: those that are entirely new to a population, as HIV was in the early 1980s, or known diseases that begin to rapidly increase in frequency or geographic spread.

²² See G.S. 130A-2(3a) (defining “isolation authority”) and 130A-2(7a) (defining “quarantine authority”).

²³ For more detailed information about isolation and quarantine in North Carolina law, see Jill Moore, *The North Carolina Public Health System's Isolation and Quarantine Authority*, Health Law Bulletin No. 84 (July 2006), available at <http://www.sog.unc.edu/pubs/electronicversions/pdfs/hlb84.pdf>.

applied to persons who have been exposed to (or are suspected of having been exposed to) a communicable disease.

Isolation has been a control measure for pandemic H1N1 throughout the outbreak, but the duration of the isolation period for most infected persons has changed. In the late spring and early summer, CDC guidelines called for individuals who had known or suspected H1N1 to be isolated for seven days or until 24 hours after the resolution of symptoms, whichever was longer. In August, the CDC guidelines were revised to reflect the current isolation period: individuals with influenza-like illness should be isolated at home until they have been free of fever for 24 hours, without the use of fever-reducing medications.²⁴ (This applies to individuals in community settings. Individuals in health care facilities are still subject to the old isolation period: 7 days or 24 hours after resolution of symptoms.)

Quarantine was a control measure for household contacts of individuals with known or suspected pandemic H1N1 early in the outbreak, but it is not a control measure at this time.

In North Carolina, local health directors may issue isolation or quarantine orders. The State Health Director has this authority as well.²⁵ During 2005-08, the state Division of Public Health and local health departments developed pandemic influenza preparedness plans that included model isolation and quarantine orders.²⁶ However, during the current outbreak, the Division has urged local health directors not to use the orders. Instead, individuals who should be isolated have been encouraged to “voluntarily self-isolate.” But this does not mean that isolation is not a required control measure—it is.²⁷ It simply means that public health officials are not contemplating ordering isolation at this time.

IV. Controlling H1N1 in Schools

A. CDC Recommendations for Management of Pandemic H1N1 in K-12 Schools

In August, the CDC issued a guidance document for K-12 schools with recommendations for actions to take during the school year to prevent and control the spread of influenza.²⁸ The guidance document recommends actions for schools to take during an outbreak that exhibits the

²⁴ CDC Recommendations for the Amount of Time Persons with Influenza-like Illness Should be Away from Others (August 5, 2009) (hereafter *CDC Exclusion Guidelines*), available at <http://www.cdc.gov/h1n1flu/guidance/exclusion.htm>. “Free of fever” means the person has a temperature of less than 100 degrees F (37.8 degrees C).

²⁵ G.S. 130A-145.

²⁶ See NC Pandemic Influenza Plan (2005), available at <http://www.epi.state.nc.us/epi/gcdc/pandemic.html>. Template isolation and quarantine orders are in Appendix L.

²⁷ G.S. 130A-144(f) (“All persons shall comply with control measures ... prescribed by the Commission”); 10A N.C.A.C. 41A.0201(a) (making the guidelines and recommended actions published by the CDC the control measures for most communicable diseases); *CDC Exclusion Guidelines*, supra note 24 (“CDC recommends that people with influenza-like illness remain at home until at least 24 hours after they are free of fever ... without the use of fever-reducing medications.”).

²⁸ CDC Guidance for State and Local Public Health Officials and School Administrators for School (K-12) Responses to Influenza During the 2009-10 School Year (hereafter *CDC School Guidance*), available at <http://www.cdc.gov/h1n1flu/schools/schoolguidance.htm>.

degree of severity (mild) that was seen with pandemic H1N1 during spring 2009. This is the scenario that we are in as of this writing. The guidance also describes recommendations that the CDC *may* issue if the outbreak becomes more severe—a scenario we have not yet seen. The guidance document was accompanied by a technical report that provides more detailed information on how to implement the recommendations in the guidance.²⁹

If the outbreak continues to be mild, the recommendations include the following control measures for students and school staff:³⁰

- Persons with ILI should stay home for at least 24 hours after fever resolves without the use of fever-reducing medicines.
- Students or staff with apparent ILI at school should be separated from others (and should wear surgical masks, if available) until they can be sent home. Those who care for ill students and staff should wear protective gear such as masks.
- Schools should emphasize hand hygiene and respiratory etiquette.
- Areas that students and staff touch often should be routinely cleaned.
- School dismissal should be considered if all or most of the students are at high risk for influenza complications. The guidance notes that not many schools will be in this situation. Schools for medically fragile students or pregnant students are examples of situations where this recommendation might apply.

If the outbreak becomes more severe, the CDC may recommend additional measures, potentially including the following:³¹

- Actively screening students and staff for fever or other symptoms, and sending symptomatic persons home.
- Arranging for high-risk students and staff members to stay home.
- Directing students with ill household members to stay home.
- Extending the period for ill persons to stay home.
- School dismissal (closure).

B. More on School Closures

As noted above, school dismissal or closure is a potential disease control measure. School closure may be pursued by either school officials or public health officials. Public health officials may seek school closure as a disease control measure, but it is not a required control measure unless it has been recommended by the CDC. During the present mild outbreak, the CDC recommends dismissal for disease control purposes only if all or most of the students in a school are at high risk for influenza complications. Since this recommendation will not apply to many schools in North Carolina, public health officials are not likely to ask school officials to close

²⁹ Technical Report for State and Local Public Health Officials and School Administrators on CDC Guidance for School (K-12) Responses to Influenza During the 2009-2010 School Year, available at <http://www.cdc.gov/h1n1flu/schools/technicalreport.htm>.

³⁰ For the complete list, see *CDC School Guidance*, supra note 28.

³¹ For the complete list, see *CDC School Guidance*, supra note 28.

school as a disease control measure while the outbreak remains mild. However, school officials may decide that they need to close a school for other reasons. For example, there have been school closures in North Carolina during past seasonal flu outbreaks, when staff or student absenteeism reached a level that the school was impaired in its educational goals or its ability to maintain adequate staff-student ratios.

If the outbreak becomes more severe during the 2009-10 school year, school closure may become a disease control measure that is recommended or required by public health officials. Current CDC guidance urges school and health officials considering school closure to balance the risks of flu in their communities with the disruption that school closures cause, both educationally and within a community.

The CDC has asked to be notified of school closures that occur due to pandemic H1N1. School closures may be reported through the CDC website, at http://www.cdc.gov/h1n1flu/schools/dismissal_form/.

V. Pandemic H1N1 Guidance & Information: Internet Resources

A. Federal government websites

<http://www.ed.gov/admins/lead/safety/emergencyplan/pandemic/index.html>: The US Department of Education's H1N1 flu information website. Includes information on continuity of learning during school dismissals, as well as links to the flu.gov and CDC websites described below.

www.flu.gov: News, vaccine locator, and information for individuals, families, and professionals. A good resource for general information for various audiences, but see the CDC website for detailed guidance documents.

www.cdc.gov/h1n1flu: Detailed guidance documents and information addressing a wide range of issues including communicable disease control measures in health care settings, schools, child care facilities, and correctional institutions; information for vaccine planners; guidance on the use of antiviral medications; information for specific groups, including pregnant women and others at high risk from H1N1; and legal information, including information about emergency use authorizations for antivirals and N95 respirators. For information specific to K-12 schools, go directly to <http://www.cdc.gov/h1n1flu/schools/>.

B. State government websites

www.flu.nc.gov: The main portal for information about H1N1 in North Carolina. The main page provides a general overview of H1N1 symptoms and disease control strategies. The sidebar on

the right side of the page provides links to more detailed information from the CDC or the NC Division of Public Health.

<http://www.ncpublicschools.org/emergency-resources/>: This NC Department of Public Instruction website provides links to various sources on pandemic H1N1.

<http://www.epi.state.nc.us/epi/gcdc/H1N1flu.html>: Detailed information and guidance for public health and health care professionals from the NC Division of Public Health.

C. Other Internet resources

www.ncphlaw.unc.edu: NC-specific public health law information from the UNC School of Government. To find information about NC communicable disease law, click on “Legal Information by Topic,” then on “Communicable Disease Control.” Includes copies of PowerPoint presentations from the SOG’s September webinar on pandemic H1N1, as well as frequently asked questions about NC communicable disease law.

<http://nccphp.sph.unc.edu/panflu/index.htm>: Pandemic flu resources and on-line training materials from the NC Center for Public Health Preparedness. Includes H1N1-specific information, as well as more general information about pandemic flu preparedness.