United States House Committee on Homeland Security

"Beyond Readiness: An Examination of the Current Status And Future Outlook of the National Response to Pandemic Influenza"

July 29, 2009

Testimony of

Mark B Horton, MD, MSPH
Director
California Department of Public Health
and
State Health Officer

United States House Committee on Homeland Security

Beyond Readiness: An Examination of the Current Status

And Future Outlook of the National Response to Pandemic Influenza.

July 29, 2009

Testimony of

Mark B Horton, MD, MSPH, Director

California Department of Public Health

Good afternoon Chairman Thompson, Ranking Member King and distinguished members of the Committee. I am Dr. Mark Horton, Director of the California Department of Public Health (CDPH) and California's State Health Officer. CDPH, in partnership with the Centers for Disease Control (CDC), local health departments (LHDs), the California Emergency Medical Services Authority (EMSA)[1] and the California Emergency Management Agency (CalEMA)[2], responded to the recent outbreak of a novel influenza virus (H1N1) which has resulted in over 3,200 reported cases of illness, 537 hospitalizations and 60 deaths in California.

Thank you for asking me here today to discuss our response to this outbreak, activities underway to address ongoing illness, and our continued preparations to respond to future pandemic influenza, most urgently for the upcoming the influenza season. In my testimony I will briefly outline our experience with the H1N1 outbreak this spring, including lessons learned, but will focus on our activities to confront the next pandemic influenza outbreak by highlighting:

- Disease surveillance;
- Public health interventions, including mass vaccination campaigns;
- Health care surge capacity;
- Social disruption; and
- Communications.

The California Department of Public Health operates more than 150 discrete programs[3] ranging from communicable disease control; to food, drug and radiation safety; drinking water management; hospital and clinic inspections; chronic disease and injury control; maternal, child and adolescent health; and, most pertinent to today's hearing, public

[1] The California Emergency Medical Services Authority is responsible to ensure quality patient care by administering an effective, statewide system of coordinated emergency medical care, injury prevention, and disaster medical response

[2] In 2009 the California Office of Emergency Services and the California Department of Homeland Security were combined in the California Emergency Management Agency, CalEMA

[3] http://www.cdph.ca.gov

health emergency response. We employ more than 3,500 staff and our current budget is approximately $3.7 billion to serve California's 38 million residents.

Introduction

California was the first state to identify the H1N1 virus. On April 17, 2009, the CDC, through laboratory data supplied by the federal Border Infectious Disease Surveillance (BIDs) program office located in San Diego, determined that two California influenza cases had a unique combination of gene segments not previously reported among swine or human influenza viruses in the United States or elsewhere. Within days CDC epidemiologists were on the ground in these counties to augment local and state investigative resources.

By June 11, 2009, the World Health Organization categorized H1N1 as Phase 6, indicating a global pandemic was underway. At that time, 74 countries on five continents reported more than 28,000 illnesses and 144 deaths due to H1N1. We continue to experience significant H1N1 activity worldwide and there is much that remains unknown about this virus. Therefore, although our comprehensive public health surveillance allowed California to be the first to recognize the circulation of pandemic H1N1 and mount an aggressive response, we cannot relax our vigilance.

Background

The delivery of public health services in California, including public health emergency response, is accomplished through a partnership of federal, state and local agencies. In California local public health departments have primary responsibility for responding to outbreaks in their jurisdiction. In outbreaks involving multiple jurisdictions, the state public health department, in conjunction with CDC, and our state and local emergency management and homeland security agencies, takes the lead to provide additional laboratory capacity, confirmatory testing, coordinate distribution of stockpiled equipment and supplies, develop statewide policy guidance for public and private agencies and assist with development and dissemination of public information campaigns and provide resources when local needs exceed available capacity. In California, public health follows incident command system principles and county and state emergency management agencies coordinate closely with public health during all responses. In H1N1, CalEMA, in recognition that this is a public health emergency, designated CDPH as the lead agency while serving as a close and supportive partner.

Since 2002, the state of California has provided $470 million in federal grant funds to local health departments to build local health department preparedness capacity for all-hazard and specific public health emergencies. This funding included the FY 2006 Congressional investment in state and local pandemic influenza preparedness activities ($600 million allocated nationally).

Additionally, since 2004, California has invested more than $170 million in state funds to support activities to increase medical surge capacity. These funds were used to purchase all available antivirals to supplement the federal investment in the Strategic National Stockpile. California purchased three mobile field hospitals, alternate care site caches, ventilators, respirators and funded preparation of Standards and Guidelines for clinics, long-term care facilities and health professionals.

Those resources were put to use when on April 21, in response to growing numbers of cases of this pandemic H1N1, CDPH and EMSA activated the Joint Emergency Operations Center (JEOC), the State's health operational center that coordinates and provides multijurisdictional response support for our federal, state, and local partners. In addition, our 500,000 square foot laboratory complex in Richmond, California activated its emergency response function, the Richmond Campus Coordinating Center (RCCC) to assist with identification of cases which could be "probable" H1N1, which were then sent to CDC for verification. Shortly thereafter, our Richmond laboratories received equipment, training and CDC certification to conduct the confirmatory tests leading to a more rapid collection of surveillance data. California was the first state in the nation to receive this certification for H1N1.

The JEOC and RCCC conducted numerous daily policy and operational meetings/briefings that included congressional staff, our State legislature, local health departments, sister agencies and departments, and media (daily briefings for up to 200 media outlets). We established a multi-lingual hotline available seven days per week, and developed public information materials (flyers, public service announcements, blogs, Facebook and Twitter outreach).

CDPH, through a State General Fund allocation, had already purchased 3.7 million treatment courses of antivirals and CDC shipped an additional 1.325 million courses of antivirals to California from the Strategic National Stockpile for distribution to local communities. During the course of this outbreak, CDPH received requests for antivirals from 51 local health departments, 100 percent of which were shipped within 24 hours. The California Highway Patrol provided 24 hour security for the stored materials and escorts for all antiviral shipments.

Governor Arnold Schwarzenegger declared a state of public health emergency clearing the way for redirection of resources from other departments, relief from administrative procedures and pursuit of federal resources.

As we continue to monitor H1N1 activity our JEOC and RCCC remain at a moderate level of activation. The state laboratory and the California network of 26 local public health laboratories continue to test hundreds of hospitalized and fatal cases each week; since the start of the pandemic four months ago these labs have collectively tested over 14,500 specimens, compared to a typical volume of 2,000 in a regular influenza season.

The data provided by this testing has enabled CDPH to have continuous, timely and reliable data on the pandemic and who is being affected, allowing CDPH to better prepare for the 2009-10 respiratory season and planning for antiviral and vaccination priority needs. Data from the CDPH influenza surveillance has had a major impact nationwide, including providing the first description of the clinical and epidemiologic profile of hospitalized cases, identifying obesity as a possible risk factor for death, and actively monitoring and providing important data on the rare occurrence of antiviral resistant viruses following the identification of the first US case in San Francisco.

California led the way with the identification of this new virus and with an aggressive multiagency response. We appreciate the federal investment which has taken place up to this point. Without it, our capacity would have been significantly diminished.

Lessons Learned

Planning Assumptions - As we prepare to respond to future outbreaks, mindful not only of the experiences of the past few months, but of more than 100 years of public health science and service to inform us, we must stress that planning for pandemic illness, or any emergency, requires certain assumptions which during an actual event may be realized, or not. The test of those assumptions through the course of an actual event becomes the basis for adjustments in the next phase of planning. For example, as you may know, the planning models assumed the initial outbreak of pandemic influenza would occur somewhere within the Asian countries and would then take approximately six weeks to arrive in North America. H1N1 did not follow that model. With the information available to us now, we believe it started in North America, dramatically reducing the amount of time to organize the response.

Decision-making Process - Certain technical and operational questions can be resolved relatively quickly and do not need to be revisited, allowing attention and resources to be directed to emerging or more complex issues. CalEMA and our California Department of Forestry and Fire (CalFire) embedded incident response experts in our state health operations center and laboratory operations center to assist with application of incident command strategies. More extensive use of the incident command structure will benefit future responses and the CDPH is using experts from CalEMA to conduct incident command structure training to strengthen the depth of that expertise within CDPH.

Communications - Because public health emergency response involves a system of federal, state and local partners it is critical to ensure that information flows efficiently among all parties. CDC and the federal Department of Homeland Security laid the groundwork for robust and integrated interagency communications.

Yet it is critical to coordinate timing and frequency of information exchange among relevant parties. The numerous daily conference calls hosted by various federal and

state actors often conflicted, forcing officials to choose between calls or redirect other staff to participate in order to stay informed of new information. Often the same officials who conduct the briefings are also the officials who must be engaged in urgent policy decisions. Using incident command strategies, California revised its briefing strategies to avoid duplication and scheduling conflicts and smooth the timely flow of relevant information to affected federal, state and local officials.

Supply Chain - We experienced an early and inexplicable collapse of the private industry pipeline for antivirals and masks which, if not resolved, would have rapidly depleted our stockpiles. The resolution required federal intervention as the suppliers were national companies. Because the public sector relies so heavily on the private sector for a range of goods and services, including the emergency response supplies, government will need to work more closely with the private sector to ensure supply chain reliability.

Public Health Continuity of Operations - Despite a compressed timeline for response, the system responded appropriately and effectively to the H1N1 outbreak. However, had the event been more prolonged or more severe in its intensity, the public health systems, most likely, and the health care delivery system, certainly, would have been stretched to the limit. Our workforce of epidemiologists and microbiologists were redirected from other disease investigations to support the emergency response. If pandemic H1N1 becomes more severe or if there is another pandemic outbreak, we could not sustain core public health service levels, the continuity of our business operations would be affected. As we look ahead to the start of seasonal influenza activities we recognize the most optimistic scenario will find us confronted with the demands of the seasonal influenza, with H1N1 response as an additional pressure on our public health and health care delivery systems.

In order to support the state health and laboratory operations centers' response to a more sustained or severe epidemic, California has organized three additional response teams composed of staffs from within and outside of the Department who are already receiving training in the public health emergency response functions – everything from epidemiologic emergency response to support functions such as accounting and administrative support.

The new strategies must also take into account that the public health workforce will also be stricken with influenza, resulting in a high degree of absenteeism. In addition, we must commit to close collaboration with the private sector to enhance their planning for continuity of operations to ensure continued availability of essential goods and services.

Looking Forward

CDPH and CalEMA have been working together to plan for further escalation of the disease and the rollout of a vaccination campaign this coming fall and winter. While

CDPH focuses on some of the core public health functions that must be in place, CalEMA is working with CDPH on triggers for activation of the overall emergency response structure, use of its business operations center to address resource shortages in the supply chain and other issues.

H1N1 Surveillance/Monitoring and Laboratory – Preparation for surveillance to monitor for increasing pandemic activity, and possibly increased morbidity and mortality, is under way. These active surveillance activities include:

- Continuing and expanding current surveillance components to measure severity of the pandemic in different populations at risk;
- Laboratory testing to perform numerous activities including detecting the emergence of new strains that may cause more severe disease, identifying new strains that may be poorly matched to the vaccine, and developing antiviral resistance; and
- Continuing to monitor for morbidity and mortality associated with seasonal influenza.

Further, the emphasis on laboratory diagnosis is the key to strong surveillance. Because H1N1 is a laboratory based diagnosis, without laboratory testing and results, there can be no H1N1 diagnosis. The laboratory is the cornerstone of influenza diagnosis. As such, laboratory monitoring of the pandemic and seasonal viruses in the following populations will be the cornerstone of the surveillance activities for the upcoming respiratory season:

- Severely ill cases hospitalized in intensive care;
- Fatal cases;
- Sampling of hospitalized cases from Kaiser Permanente and other academic and community hospitals statewide;
- Outbreaks in institutions, including hospitals, prisons, schools, long term care facilities; and
- Outpatient specimens from over 150 volunteer sentinel providers statewide.

The CDPH Viral and Rickettsial Disease Laboratory (VRDL) is prepared to test over 16,000 specimens in the upcoming respiratory season to accomplish the above goals (the normal volume is a typical season is ~1000 specimens). Approximately 15-20% of specimens will be tested for antiviral resistance to continue to monitor for the emergence of antiviral resistance. A subset of fatal and severely ill cases will undergo genetic analysis to monitor for the emergence of new strains that may not respond to a pandemic vaccine. Surveillance will also monitor changes in the circulating seasonal influenza virus in order to determine the formulation for the season influenza vaccine in the subsequent 2010-11 season.

In addition, the laboratory surveillance data will be used so that CDPH can monitor clinical and epidemiologic data associated with severely ill and fatal cases and from outbreak settings for populations at increased risk for morbidity and mortality. CPDH receives surveillance data from many different sources, including electronic hospitalization and outpatient data (Kaiser Permanente), influenza like illness (ILI) data from a group of sentinel providers who voluntarily report ILA data to CDPH and from hospitals about severely ill cases hospitalized in ICUs. The data will allow CDPH to provide guidance on outbreak management, including in schools, and recommendations on antiviral prophylaxis and treatment for hospitalized patients and patients at high-risk, and vaccine prioritization strategies.

Public Health Interventions/Medical Countermeasures – In planning for the large task of providing pandemic influenza vaccine, it is helpful to review the capacity to produce and deliver the seasonal influenza vaccine. Influenza vaccine production has increased dramatically over recent years, resulting in over 100 million doses of licensed vaccine available in the US every autumn. Meanwhile, the public health system's capacity for vaccine administration health has diminished since 1976, when it delivered 40 million doses of swine flu vaccine. As a result of increased vaccine and decreased public infrastructure, public health departments provide less than 10% of flu shots each year in California.

Just as in 1976, public health is needed in 2009-10 to coordinate the delivery of pandemic influenza vaccine. However, instead of 40 million doses, the public health system is being asked to oversee the administration of many times this amount, up to hundreds of millions of doses of vaccine, with approximately one-eighth of this total going to California.

While we are awaiting final information about the decision to vaccinate and the amount and timing of vaccine production, California is working quickly to:

- Identify as many current private and public vaccinators who can also administer pandemic vaccine;
- Identify additional vaccinators who can fill in gaps in services and map vaccinators to the prioritized populations they serve;
- Identify or build systems to distribute vaccine to potentially thousands of vaccinators;
- Establish or strengthen systems to share information with vaccinators and receive and validate vaccine orders;
- Track administration of vaccine; and
- Monitor the safety of pandemic vaccines.

These vaccination program activities will require substantial resources beyond what is already available. Public health will have to allocate, distribute and administer a two

dose vaccine for the entire population in addition to the separate administration of the seasonal influenza vaccine.

CDPH continues to work closely with LHDs, health care providers and other state organizations such as the Board of Pharmacy to ensure that mass vaccination campaigns and antiviral dispensing plans are able to meet the needs of providing such medical countermeasures to all affected persons in California. CDPH as developed an allocation and distribution plan for shipping state and federal stockpiles of antivirals to local jurisdictions utilizing the Standardized Emergency Management System. In addition, statewide distribution plans for vaccines is currently under development and we continually communicate with local pandemic planning partners.

Surge Capacity[4] **-** CDPH will continue to work with LHDs and healthcare providers to ensure that California can respond to a surge in the need for patient care.

At the local level, LHDs and healthcare facilities are building partnerships and planning for patient distribution across the continuum of care from home health to expansion of existing healthcare facilities to government authorized alternate care sites to respond to an otherwise overloaded health care system. LHDs have purchased supplies to implement their plans and CDPH has stockpiled supplies and equipment for 21,000 alternate care site beds.

CDPH has stockpiled 50.9 million N95 respirators and 2,400 ventilators (estimated to supply hospital works for six months) to ensure the protection of healthcare workers. CDPH has allocated these on a population based share and is packaging county allocations to enable quick distribution.

CDPH has provided LHDs, hospitals and other healthcare facilities with standards and guidelines for emergency planning and operation of alternate care sites, expansion of existing facilities, and tools to move from individual to population based care.

Social Disruption - As Secretary Napolitano expressed many times during the initial stages of the H1N1 outbreak, the potential for social disruption during a pandemic is one of the most compelling arguments for interagency communication and collaboration. As the Director of Public Health and the State Health Officer one of my major concerns is the lack of widespread emergency planning for continuity of operations in the private sector and the potential for a disruption of public and private sector goods and services. During the H1N1 response we experienced a break down in the supply chain for antivirals. Without adequate planning we can also experience collapse of the supply chains for gasoline, food, and water. There must be a concerted

[4] Surge capacity is defined as a "health care systems' ability to rapidly expand beyond normal services to meet the increased demand for qualified personnel, medical care and public health in the event of bioterrorism or other large-scale public health emergencies or disasters". (Addressing Surge Capacity in a Mass Casualty Event, AHRQ, 2004)

and coordinated effort between and among all levels of government to engender and support the necessary planning.

Communications - As previously mentioned, under the leadership of CDC and Homeland Security, the flow of information from the local to the state to the federal level and back again was nearly constant, even at the initial stages of the outbreak. But we need to recognize that it is communication with the public that will play a critical role in our efforts to reduce the illnesses and deaths from pandemic influenza. As history demonstrated during the 1918 influenza pandemic, communities in which public officials made a commitment to sharing timely information about self-protective measures reported a lower level of social disruption from the flu. The public must be involved in our preparedness efforts. They will need advice on non-pharmaceutical interventions, such as staying home when sick. They will need advice on the appropriate use of available health services otherwise the health care delivery system will be quickly overwhelmed. These messages will need to be repeated often and shared widely.

Public communication must be coordinated and emphasize the actions that families, schools and businesses must take to reduce the toll of influenza. New tools, such as Web-based videos, text messaging, Facebook, Twitter and other social media will be employed. Community-based organizations, faith-based organizations and neighborhood groups will be messengers, too, disseminating life-saving information. We must motivate people to action without causing them alarm.

Closing Remarks

A mantra of emergency preparedness is that we are most ready for a disaster right after we have experienced the last one and that is true of our experience with the H1N1 outbreak this spring. But this type of readiness can deteriorate quickly unless adequate resources are provided to build and maintain the public health infrastructure.

There have been enormous efforts in California, the U.S. and globally to prepare for pandemic influenza. Congress has provided significant support for these efforts, as have state and local governments. Our detection of H1N1 came as a result of the investments made in enhanced surveillance and laboratory capacity. Our ability to maintain an effective response to this relatively mild pandemic also came as a result of previous investments. A severe epidemic would require mobilization of the public health work force for a period of many months and has the potential to cause serious social disruption of both public and private sector services.

I will return to my initial outline to suggest specific actions which could strengthen our efforts to achieve readiness for pandemic influenza:

Surveillance

- Additional investment in the public health workforce including epidemiologists, microbiologists and laboratorians to ensure enough scientists are on the ground to identity and monitor the spread of disease;
- Continued investment in epidemiologic and laboratory physical capacity including expanding the network of sentinel physicians;
- Providing investment to enhance surveillance systems within emergency rooms and hospitals to build capacity to monitor prevalence of disease in real time; and
- Investment in standardized electronic reporting systems and centralized databases (such as automated laboratory information management systems to connect hospital and private laboratory data systems to local and state health departments).

Public Health Interventions

- Investment in resources to ensure rapid development, re-evaulation and distribution of clear guidelines related to social distancing strategies for schools and workplace;
- Investment in supplies and guidelines for use of personal protective equipment such as masks and the prophylactic use of antivirals; and
- Investment in supplies and distribution for mass vaccinations.

Health Care Surge Capacity

- Continue investment in the Strategic National Stockpile to ensure adequate supplies antivirals, vaccines and medical supplies as well as the resources to distribute them;
- Restore investment in medical surge capacity to prevent the overload of the health care delivery system including guidelines for patient triage, infection control in health facilities, and vaccination of health care workers; and
- Provide resources for an aggressive public information campaign on the appropriate use of health care services.

Social Disruption

- Dedicate government resources to lead a multiagency initiative to increase public and private sector development of plans for continuity of operations and continuity of government. This is a critical undertaking in part because it is the least developed segment of emergency preparedness and the potential consequences could exacerbate any emergency beyond all of our ability to respond.

Communications

- Maintain the resources needed to support the flow of information through the levels of government and provide resources for sharing among states. The excellent communication spearheaded by CDC and the Department of Homeland

Security was well executed and adding the ability for communications across state governments will further enhance information exchange; and

- Invest in development of traditional and new media materials and messages for vaccinators, other medical providers, local, state and federal health agencies and the public.

The H1N1 outbreak has demonstrated the unique and essential public health skills and services that are provided for less than one percent (1%) of health care expenditures. Let me repeat, less than 1% of each dollar spent on health care goes to support the public health services which would be required in an emergency response. Core public health functions and the public health emergency response system deserve and require our nation's support.

The stronger the foundation of the public health system, the better the system is able to respond. Continued federal support of public health infrastructure and emergency preparedness and response will be vital to our ability to protect public health and safety when the next pandemic influenza strikes.

Thank you for this opportunity to appear before you today. I am pleased to answer any questions you may have.