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29 January, 2007

Pat McConnon
Executive Director
Council of State and Territorial Epidemiologists
2872 Woodstock Blvd, Suite 303
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Dear Mr. McConnon:

Please find enclosed a report entitled "Consultation on Influenza Surveillance in the United States: Meeting Summary and Recommendations". The report satisfies the CSTE Position Statement ***06-ID-04 ("Assessment of Influenza Surveillance in the United States")***, which called for a broad consultative process to re-evaluate surveillance for influenza in the nation that would result in a report from CDC.

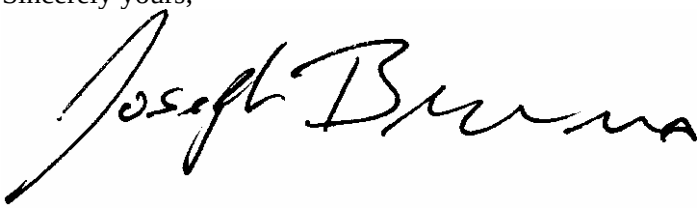
As you know, the Influenza Division at CDC worked with CSTE to plan and convene a workshop on 2-3 November, 2006 to review national, state and local influenza surveillance activities, to identify unmet needs and to recommend actions to address these identified needs. The November workshop was attended by more than 40 experts from CDC, State and local health departments, and universities. The recommendations from this meeting will provide a clear roadmap and milestones toward improving influenza surveillance in the U.S., and should help ensure that public health resources are used most efficiently and appropriately. In addition, addressing the recommendations of the meeting will advance the nation towards being better prepared for pandemic influenza.

The action items and recommendations contained in the report will be implemented by Working Groups established during the next month, which will consist of CSTE, CDC and other partner representation. We would expect that each of the Working Groups outlined in the Action Items would consist of 3-5 CSTE representatives along with members from other partners. In addition, the activities of the Working Groups would be directed and monitored by a Steering Committee that is comprised of 2-4 representatives each from CDC and CSTE. We look forward to working with you and CSTE members to determine the final size and composition of the groups.

Please let me highlight the efforts and valuable contributions of Drs. Kathy Gensheimer, Robert Rolfs,

Kenneth Gershman, and Matt Cartter, who served on the planning committee for the meeting and helped author the enclosed report. Also, I want to thank you for your continued and constant support of CDC's efforts to work closely with CSTE in influenza-associated activities. Your office's support of this meeting was critical to its success. We will look forward to keeping you apprised of the progress of these workgroups and the Steering Committee.

Sincerely yours,



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Consultation on Influenza Surveillance in the United States
November 2-3, 2006
Atlanta, GA

Meeting Summary and Recommendations

On November 2-3, 2006 the Influenza Division, Centers for Disease Control and Prevention (CDC) and the Council of State and Territorial Epidemiologists (CSTE) convened an expert consultation to evaluate and to explore options to improve surveillance for influenza in the United States. The meeting was attended by epidemiologists and laboratory experts from CDC, state and local health departments, and academic centers. This report summarizes the main areas of discussion, outlines recommendations from the meeting, and lists steps towards addressing these recommendations. The consultation catalyzed the process of evaluation of influenza surveillance systems, and serves as an initial step towards the ultimate goal of achieving long-term improvements. As a result, this summary will be followed by quarterly reports of progress towards this goal.

Background and rationale for the meeting

Influenza remains a cause of substantial annual morbidity and mortality and, is the leading cause of death in the United States from vaccine-preventable diseases. The Centers for Disease Control and Prevention estimated that between 1990 and 1999 an average of more than 200,000 persons were hospitalized and 36,000 persons died of influenza-associated illnesses each year in the U.S.. Because of the disease burden, and associated economic burden, vaccines against influenza have been used for decades as the principal prevention strategy. Influenza surveillance data have been somewhat effective in guiding these immunization programs and policy.

Recently, several issues have led to interest among national, state and local public health officials to reassess the goals, structure and utility of influenza surveillance systems in the United States. High-profile vaccine shortages, severe influenza seasons, concerns about the effectiveness of vaccination, and the increasing concerns of pandemic influenza caused by the continued spread of avian influenza have served to increased interest and awareness of influenza among a wide variety of segments of society. Pandemic influenza planning efforts are likely to require surveillance data that are more timely and complete than those provided by current surveillance systems. The increasing availability of electronic health data has raised suggestions that these alternatives to existing manual methods of collecting influenza surveillance data be investigated Finally, recognition that local, state and national surveillance needs may not be aligned has increased interest in finding a common approach to surveillance that might satisfy partners at each level. As a result, in June 2006, CSTE approved a position statement calling for an expert panel to evaluate and advise on influenza surveillance. Specifically, the statement recommended that the objectives, uses and value of surveillance system components be assessed and that recommendations for changes to improve surveillance systems be derived that would balance federal, state and local needs. The statement called for a report of the panel's findings by the end of 2006. This report is in response to this statement.

Meeting Goals

The expressed goals of the meeting were to 1) evaluate the objectives, uses, and value of the components of influenza surveillance at the national, state, and local levels; 2) identify and discuss potential methods to improve existing surveillance systems; and 3) outline plans for a more robust, more efficient, and more useful national, state and local surveillance system for influenza.

To achieve these goals, the meeting was arranged into sessions that were intended to establish consensus on the goals of surveillance, to evaluate the ability of current surveillance systems to meet these goals at the national, state, and local levels, and to derive a plan to address areas where the current systems are unable to meet the goals.

Meeting Summary

I. Harmonizing influenza surveillance goals

The first session of the meeting was intended to review the goals of surveillance from the perspectives of both national and state stakeholders. Following short presentations that reviewed current CDC and state goals, differences were discussed, and a consensus group of major goals were developed. These harmonized goals were defined as goals of surveillance that were common between state and federal public health agencies. These harmonized goals formed the foundation for the rest of the meeting's discussions.

The Harmonized Influenza Surveillance Goals are:

- To detect the onset of influenza and the duration of influenza activity in a geographic area
- To measure and describe the severity of influenza during a season
- To determine the populations affected (especially to determine risk groups for severe outcomes)
- To identify prevalent virus types, subtypes and novel subtypes that might signal a pandemic
- To determine the geographic distribution of influenza during the season
- To provide information to communicate to key partners, such as
    - Policy Makers
    - Emergency response officials
    - Public and media
    - Clinical decision makers
- To provide data to guide interventions in a variety of arenas, including
    - Policy
    - Clinical
    - Individual
    - Public health control measures (outbreak detection – including Institutions)
- To support research related to critical questions

In the discussion regarding goals of the variety of partners in the meeting, important themes emerged. One was that the needs of state and federal officials were sometimes different. An

example of this was CDC's strong need to use surveillance to establish and follow trends in disease burden (i.e. rates of outcomes) that would be used to inform vaccine policy. While this was recognized as a critical need for federal public health officials, these issues need not necessarily be a focus for state or local systems because vaccine policy is made on a national level. Equally striking, however, were the commonalities between perspectives. All partners recognized the primacy of using surveillance to know when and where influenza activity was occurring, as this information directly informed response and communications at all levels.

A second theme was that the goals of seasonal and pandemic influenza surveillance are generally similar, even though timeliness and completeness of data may be different. As a result, the group decided that developing surveillance systems that could serve both seasonal and pandemic needs are superior to establishing separate surveillance systems to meet each of these needs.

Finally, the group agreed that, generally, if the state and local needs regarding surveillance were met, national needs would also be satisfied. While there were some key exceptions to this, such as the need to continue specific projects, such as Emerging Infections Program surveillance, to provide data for federal decisions, this conclusion led to a common agreement that national systems that were the sum of state-based systems would, in general, be most efficient and simple, and should be sought where possible

II. Review of existing surveillance systems

CDC's National Influenza Surveillance Systems were reviewed and written materials were provided that contained detailed reports of each system's data collection, reporting elements, and strengths and weaknesses. Following this, the potential uses of BioSense data for influenza surveillance were reviewed. Each of the systems was then measured against the harmonized goals, and their strengths and weaknesses to meet these goals were listed.

Several conclusions emerged from this discussion. First, while national systems generally met the needs of CDC, the data from the systems were often not robust enough (i.e. too few data points in each state) or timely enough to meet the states' primary need to determine quickly the onset and geographic spread of influenza in their state. Similarly, systems like the Emerging Infections Program sites that were well-suited to provide information on a season's severity at the national level, were not necessarily useful to states, because they collected data within limited geographic areas. Secondly, systems that might provide representative and timely enough data to be used by states, notably Sentinel Provider Network, were generally more labor-intensive and inefficient, and, therefore, were difficult to sustain in some states. Finally, it was noted that many of the systems were equally valuable and capable to meet one or more of the goals, which raised questions about efficiency and opportunities to reduce duplication. For instance, monitoring the timing of influenza activity is possible using both laboratory and disease surveillance systems.

A summary of an assessment of state health department influenza surveillance activities was presented and provided valuable data on the states' views of the national surveillance systems and on other influenza surveillance activities undertaken at the state level.

Finally, a group of state-based surveillance systems were reviewed, with the intent that these be viewed as potential options to fill gaps identified in the discussion to follow. Examples presented included obtaining outpatient influenza-like illness (ILI) data from electronic health maintenance organizations (HMO) records and from emergency department syndromic surveillance systems, reporting of electronic death certificate data, making influenza-associated hospitalizations reportable, and establishing sentinel clinical laboratory surveillance.

III. Improving Surveillance

During the second day, participants were divided into small discussion groups, each of which addressed a common set of questions. The groups were charged with identifying modifications to surveillance that would improve the systems' abilities to meet the harmonized surveillance goals as the local, state, and national levels and formulating a plan for how these improvements might be achieved. The groups were asked to consider the needs for seasonal and pandemic surveillance. Participants were brought back together for presentation of the groups' findings to the entire group of meeting participants. The recommendations of the group are provided below.

IV. Findings and recommendations of the panel

Several themes emerged from the meeting and reflect the consensus of the participants.

- The existing national surveillance system does not fully meet the needs of the state and local health departments. It was acknowledged that national systems have evolved to address the needs from the federal perspective primarily. Notably, national systems do not always provide sufficient data for areas within states that allow local and state officials to make decisions based on the data. As a result, a variety of state and local surveillance systems have been initiated that fill these gaps. While these systems have served to address the unmet needs of states, they do not necessarily contribute to the national picture because of differing surveillance and data collection methods.
- The relatively large number of state and federal systems to monitor influenza is likely inefficient. To address the dual needs of simplicity and efficiency, and to maximize sustainability of influenza surveillance the fewest number of systems needed to address both local, state and federal needs should be sought. The group concluded that a national system that is based on the sum of comparable state and local systems would be most efficient.
- Because of the relative labor-intensive nature of current influenza-like illness surveillance interest was expressed in the increased use of electronic data sources to augment and potentially replace current systems that use manual reporting methods. In addition, the use of electronic data takes advantage of increased national interest in using electronic data sources for public health surveillance (e.g., BioSense) and the increased use of these types of data in local and state health departments as a product of bioterrorism initiatives. The participants also recognized the potential opportunity to use electronic data sources to track hospitalizations and deaths, and to standardize collection of data between states.
- Some systems that are used by federal public health officials to make policy and recommendations but do not provide useful data at a local or state level should be continued. These include laboratory surveillance to monitor vaccine match and antiviral

resistance, and the use of population-based platforms for special research studies, including vaccine effectiveness assessments.

- Pandemic influenza surveillance should be based on routine seasonal surveillance as much as possible. While the needs, in terms of timeliness of information, during a pandemic may be different, the goals are substantially the same between seasonal and pandemic influenza. The recommendations derived from the meeting related to building better surveillance systems to monitor for both seasonal and pandemic influenza.
- The group recognized the value of ongoing dialogue between all public health partners in solving issues as they arise and in deriving improved surveillance systems. The group agreed that this consensus meeting was a start of a long-term collaboration towards enhancing surveillance and cooperation among partners.

Recommendations

The main recommendations from the meeting are as follows:

Recommendation #1: Facilitate implementation of electronic death reporting as a means for improving reporting of pneumonia and influenza related deaths.

Recommendation #2: Develop methods for timely assessment of severe influenza disease and health care resource demands including developing standards and definitions for case reporting.

Recommendation #3: Develop methods for expanding laboratory networks within states, electronic laboratory reporting, and data feedback mechanism within states.

Recommendation #4: Develop flexible yet consistent systems for capturing outpatient ILI, specifically focused on expanded use of alternative electronic data sources. Local and state health departments and CDC should make it a priority to evaluate existing electronic health data to enhance influenza surveillance where appropriate. Objectives and standards for collecting and reporting different aspects of influenza infection using these data types should be established and, the validity of potential data sources needs to be evaluated.

Recommendation #5: Develop standardized definitions for influenza activity including a measure of intensity for the State and Territorial Epidemiologists' Report.

Recommendation #6: Promote standardized approaches to influenza surveillance among states by linking priority recommendations to sustainable funding through the Epidemiology and Laboratory Capacity program.

Recommendation #7: Formalize a collaboration between federal, state and local public health authorities, with academic centers to develop protocols for rapid assessment studies, such as vaccine effectiveness and antiviral effectiveness evaluations during pandemic influenza.

Recommendation #8: CDC will work with CSTE members to plan the schedule and composition of the workgroups and timelines for their work

Action Items
The action items identified from the meeting are listed below. Work has already begun on these items.

Action Item #1: Form an Influenza-Associated Mortality Surveillance Workgroup that includes participation from CSTE, NACHO, CDC (including NCHS), and NAPHSIS to focus on electronic death reporting and short-term mortality surveillance enhancements that may be necessary until all states have a functioning electronic death reporting system.

Action Item #2: Form an Influenza-associated Hospitalization Surveillance Workgroup that includes participation from CSTE, NACCHO, AHA, APIC, and CDC. This group should focus on methods for timely assessment of severe influenza disease burden and health care resource demands including developing standards and definitions for hospitalized case reporting.

Action Item #3: Form an Influenza Laboratory Surveillance Workgroup that includes participation from APHL, CSTE, NACCHO, CDC, and commercial laboratories that will address methods for expanding laboratory networks within states, electronic laboratory reporting, and data feedback mechanisms within states.

Action Item #4: Form an Outpatient ILI Surveillance Workgroup that includes participation from CSTE, NACCHO, CDC, APIC, and MCOs/HMOs to focus on enhancing current methods to collect ILI and exploring the use of electronic data sources, including BioSense data.

Action Item #5: Form a Working Group that includes participation from CDC and CSTE to address concerns about the State and Territorial Epidemiologist's Report component of national surveillance.

Action Item #6: A small group CDC staff and CSTE members (CDC-CSTE Influenza Surveillance Steering Committee) will be formed to oversee and coordinate the work described above. This group will convene the Workgroups, monitor their progress, facilitate the implementation of the recommendations and actions, and work to implement Recommendations 6, 7 and 8.

V. Additional Information

For additional information about the meeting including the agenda or detailed meeting minutes please contact Alicia Postema (apostema@cdc.gov).