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Presented to:

The HIT Policy Committee's

Meaningful Use Workgroup

Panel 1: Achieving population health through meaningful use: How do governmental public health agencies view the process to date?

Thursday, July 29, 2010

Washington, D.C.

I. Introduction

I want to thank the members of the Meaningful Use Workgroup for inviting me to provide testimony today. My name is Perry Smith, and I am the state epidemiologist for New York and am the Director of the Division of Epidemiology within the New York State Department of Health. I am here today representing the Council of State and Territorial Epidemiologists (CSTE), a national professional organization of over 1000 state, territorial, local, and tribal public health epidemiologists. Among other activities, CSTE sets national policy in establishing the list of nationally notifiable diseases for public health and is a leader in promoting policies and standards for public health information exchange. The work of this committee is very important to CSTE and to public health epidemiologists.

First, I would like to emphasize what I think this committee already knows: that the participation of public health is essential to successfully realizing the goals of population health envisioned in the Health Information Technology Policy Committee's overall strategy. Public health is the key player in measuring and improving the health of communities. Examples of the benefits of incorporating public health needs into the measures of meaningful use for electronic health records (EHRs) include:

- Increasing the capability to more closely and accurately monitor population health. A recent example is the tracking of the influenza pandemic last year through emergency room visits and laboratory reporting. Reporting from EHRs can also allow population monitoring of new, important measures, such as blood pressure, weight, and other chronic disease indicators;
- Increasing speed of access to population health data;
- Saving clinician and public health time and money spent on reporting and investigation;
- Increasing completeness and accuracy of reporting;
- Better targeting public health interventions (e.g., disease and outbreak control, education of providers and the public);
- Promoting clinical decision support (e.g., access to current immunization history from state immunization registries; sending metabolic screening results to the EHR; prompts to provide preventive services or to report to public health where indicated);
- Allowing providers to electronically submit specimen information and receive results from public health laboratories; and
- Allowing automated transfer of clinical data into state vital records systems.

II. Review of Current National Public Health Capacity for Electronic Clinical Data Use

I want to first focus on the current status of electronic laboratory reporting, immunization registries, and syndromic surveillance from a national perspective, since these are the three specific areas of health information exchange for public health that are included in the stage 1 meaningful use measures.

Electronic Laboratory Reporting (ELR)—In recent years, most states have made considerable progress in implementing electronic transmission of laboratory reports to public health. A 2009 survey of states and territories showed that 89% of jurisdictions have operational ELR, although about half are less than 50% operational. Even though the large national laboratories are able to perform ELR, not all states have been able to implement receipt of reports (e.g., only 67% of jurisdictions in 2009 received electronic reports from Labcorps and only 35% from Quest Diagnostics). Public health laboratories provide important information to public health surveillance offices, but in this survey, 17 of 55 public health laboratories were not reporting electronically. The most commonly cited barriers to ELR were

lack of health department staff and funding and competing information technology priorities for laboratories.

In the context of meaningful use, it is especially important to note that none of these ELR systems, of which I am aware, receive laboratory reports from EHRs. Reporting typically comes directly from the laboratories' information management systems, which raises the question of whether this reporting would qualify for meaningful use as coming from an EHR. It is also important to note that these systems are not uniform across the country; in many instances states have developed their own systems with some variation in standards. These systems have taken many years to develop, often at great cost. Most importantly, these systems and the information they transmit have been validated and now serve a function that can not easily be replicated without considerable revamping of information systems within health departments. Lastly, meaningful use requirements do not apply to commercial (non-hospital) laboratories, from which a significant proportion of reports to public health originate. Public health will continue to need direct reporting from commercial laboratories until there is assurance that reporting from hospital or provider EHRs is as reliable and timely as direct reporting from commercial laboratories and until all providers use EHRs. However, there will be public health advantages once EHRs can provide laboratory reports since it should be easier and quicker to link clinical information to the laboratory test result than it is now.

State Immunization Registries—Similarly, there has been great progress in recent years in the implementation of statewide immunization registries. Based on CDC data for 2008, we know that

- about 75% (17.7 million) of children < 6 years old have been reported into an immunization registry with two or more immunizations;
- 42% (36,997) of enrolled US provider sites submitted data to a registry during the 6 months prior to the survey;
- 82% (46 of 56) of jurisdictions reported that they include all ages in their registries; and
- of those with registry reporting, on average 71% of newborn records are recorded in the registry within 6 weeks of birth.

Unlike ELR where reporting is not directly from EHRs, some immunization reporting comes from an electronic interface with EHRs: in 2008, there were 1848 provider sites that reported from their EHR. Since 2008, this number, though small, has undoubtedly grown. In New York State in 2009, we estimate that 26% of providers, accounting for 60% of all reports, submitted to our immunization registry from EHRs.

Syndromic Surveillance Systems—"Syndromic surveillance reporting systems" refer to automated electronic systems that monitor manifestations of illness in a population, using de-identified patient encounter data, often based on patient chief complaints. The emphasis of these systems is on timeliness and daily reporting for situational awareness. Based on a 2008 survey by the International Society for Disease Surveillance, 83% of 52 health departments, of which 46 were states, conducted syndromic surveillance, with the most common source (for 84% of health departments) being emergency departments, followed by outpatient visits, and then over-the-counter medication sales. In response to the 2009 influenza pandemic, CDC promoted the use of a system called "Distribute" for influenza syndromic surveillance: 34 states (about 1300 emergency departments) participated, with 8 of the health departments having over 90% emergency department visit coverage.

While most states are conducting syndromic surveillance, the systems and data collected are non-uniform across the country. In fact, the Distribute System allows each jurisdiction to define its own indicators of influenza; there is no national standard for defining the data to be collected for syndromic surveillance. Also, although the data is provided electronically, it often does not originate from an EHR. For example, in New York, the emergency department chief complaint data comes from hospital triage systems.

An important aspect of implementing all three of these systems—and this is true for any automated data exchange—is the critical need to evaluate the data being transmitted, establish its validity and completeness, and to continue to monitor its quality over time. Establishing the channels and turning on the data flow are only a part of what is required. Confirming that the data received matches the data that was sent and is indeed the data that was requested is no small task. Further, health departments then process, analyze, and transform the data into meaningful knowledge. The concern of public health epidemiologists being flooded with enormous amounts of unverified and unusable data is real. There will be no population health benefit by public health if we achieve only the transmittal of huge amounts of unusable clinical data as a result of the meaningful use measures. We all stand to benefit if we ensure that public health receives useful, verifiable data and has the resources to process it.

So, to summarize the current status of public health in regard to meaningful use measures, CSTE sees the glass as half full. Public health already has the capacity to use the three types of data under Stage 1 of meaningful use, but the following conclusions are especially relevant:

- implementation is only partial at this time;
- there is no uniformity of systems across the states;
- most of the information does not currently originate from EHRs;
- getting to the current state of implementation of these systems has been costly and time consuming, that is, these systems are not easy to build or to adapt;
- experience with every one of these systems has shown that simply establishing electronic data exchange was not enough; data validation and resources for its processing are essential; and
- it is not surprising that health departments are not be eager to discard these current systems in favor of direct data feeds from EHRs without adequate verification of data validity and the resources to accomplish the transfer to new systems.

III. What Are the Challenges to Further Use of EHRs for Public Health (or Why is the Glass Only Half Full?)

CSTE sees three major challenges for public health in its efforts to move towards greater use of EHRs.

The first is that the work is technically very difficult. Public health often utilizes data from multiple clinical data sources from within the same provider facility. For example, tracking hospital bed capacity in New York requires pulling data typically from two separate systems, the bed census system and the admission/discharge system. As noted previously, ELR data usually comes from laboratory information systems, and emergency department data from nurse triage systems. Even if all needed information were contained in one centralized EHR system, the information may not be available as soon as it is from current database sources. Also, changing public health's existing surveillance systems over to new, untried data sources entails public health staff working directly with healthcare information technologists in each facility to establish new reporting routes and verifying what information is being sent. Previous experience has shown that every alteration to automated systems involves iterative work steps for both the provider (sending) site and public health (receiving) site to reach a stable, useful system. Again, it involves much more than simply connecting the data transmission lines between EHRs and public health.

The second challenge is the partial absence of national public health information technology standards and priorities for reporting. Syndromic surveillance provides an illustration of this problem. There is no nationally agreed upon strategy for the architecture of a national syndromic surveillance system. The original Biosense Program envisioned data flowing from clinical settings to the federal government, bypassing state and local health departments, whereas most other public health

surveillance includes local and state health departments in the information flow. More recently, there has been confusion regarding whether the Distribute or the Gipse standard should be used for syndromic surveillance. And as mentioned earlier, even the Distribute system includes data that is generated using various definitions. Establishing national standards for reporting to public health with the specificity needed for meaningful use requires public health definitions of what data elements to report and standards for data, file format, architecture, and messaging. This is the desired state that we all are aiming for in the long run. But in the shorter term during implementation of meaningful use measures over the next several years, mandating new nationally agreed-upon standards for public health reporting would require most public health departments to update their existing systems. Setting national standards for all public health is challenging and will be costly for public health.

And this raises the third challenge, which is the relative lack of public health resources devoted to establishing effective information exchange from EHRs to public health. Although Federal HITECH funding is helping states with creating the hardware and software for information flow, claims transactions, and potential access to clinical data, there is a vast need for additional resources to increase public health capacity to develop the technical guidance, systems, and validation to process electronic information.

Public health officials, and in particular CSTE in collaboration with CDC, have been making significant progress in recent years to address the technical challenges and to develop national standards for public health reporting. Since 2004, CSTE has collected data on the reporting requirements for diseases and conditions of public health importance (both reportable to each state and notifiable to CDC) on an annual basis. The requirements that doctors, hospitals and laboratories must meet to send data to state and local public health are often complex and usually variable by state. CSTE is continuing to work to build a central repository of this information to facilitate the reporting process to public health. CSTE also maintains a list of Nationally Notifiable Conditions that sets procedures for processing diseases of national importance between CDC and the states.

CSTE has also enhanced the surveillance documents that provide the details for surveillance case definitions and reporting requirements for Nationally Notifiable Conditions. These documents and their accompanying LOINC/SNOMED and ICD9 codes are intended to facilitate the mapping of EHR and ELR for reporters to send data consistently and uniformly to public health. CSTE is also collaborating with CDC to define the core data elements that must be sent with an initial case report from a clinician and laboratory. These efforts are significantly helping to define the specifications of reportable conditions for each state, define the criteria for reporting clinical data to CDC for surveillance at the national level, and facilitate reporting from clinicians, hospitals, and laboratories to public health.

Despite this progress, we suggest that much more is needed. The ramifications of incorporating meaningful use measures into public health are unknown and may have unforeseen consequences. Just as the Office of the National Coordinator has orchestrated and funded a huge national assessment and development of a plan to implement EHRs in the clinical setting, public health is in need of the same strong impetus and funding if we are to rapidly incorporate EHRs into public health.

IV. Specific Policy Recommendations for Implementing Meaningful Use for Public Health Purposes

With this background on the current public health situation, CSTE would like to comment on three policy questions:

1) Should the public health focus for meaningful use continue to be the three areas of ELR, immunization registries, and syndromic surveillance?,

2) Should the meaningful use measures require that data be transmitted specifically from EHRs?, and

3) Should there be uniform federal standards for public health data transmission or should there be some flexibility in these standards.

Regarding the first question, CSTE believes that the current emphasis on ELR, immunization registries, and syndromic surveillance is appropriate and practical. These areas represent important data sources for public health practice and are already well under state development, but in need of more attention and resources to fully realize their benefits. The biggest benefit of EHRs for public health will some day be automated case reporting of patient-specific clinical information and public health access to EHRs for case investigation, follow-up, and intervention. In addition, provision of patient-specific public health information at the point of care will be another huge benefit. But these capabilities will require considerable public health and clinical resources, and undertaking additional public health measures is not practical until the current three priority areas are implemented. In short, CSTE supports the three current public health focus areas for meaningful use.

The second comment concerns whether meaningful use criteria will require that data come specifically from EHR systems. As discussed above, data is already beginning to flow from EHRs into state immunization registries. Since EHRs are designed to contain immunization information and many state systems are ready to accept it, we believe it is practical to require that immunization data be required to come from EHRs for meaningful use criteria. However, CSTE recommends that a broad definition of EHR is needed when establishing meaningful use criteria for ELR and syndromic surveillance. This information is usually not available in EHRs when it is first available electronically; ELR results are first available in laboratory information systems, and syndromic surveillance data in various other systems, such as nurse triage databases. These systems are, in effect, extensions of EHRs. Since timeliness of data is critical, since states already have robust systems that collect these data from existing data bases, and since these other data bases are part of the information network in hospitals feeding into EHRs, CSTE recommends a broad interpretation of "reporting from EHRs" for ELR and syndromic surveillance.

In the third policy area regarding building some flexibility into national data standards, CSTE agrees with the current HHS approach. Although varying standards adds complexity to providers and EHR vendors in accommodating varying technical specifications when they report to multiple jurisdictions, states have developed extensive technical infrastructure and invested huge amounts of resources to achieve the current state of reporting described. At this time, it is not practical or realistic to require national reporting standards for public health; the result would likely be that many states would be forced to opt out of implementing public health reporting using meaningful use standards. Such a result would certainly be a huge lost opportunity.

V. Summary

In summary, CSTE would like to leave you with a few concluding thoughts.

First, CSTE believes that the approach that HHS is taking with meaningful use—that is, ensuring that EHRs result in rapid, meaningful health benefits, that involve public health—is extremely helpful and on target.

Second, health information exchange is difficult for the reasons mentioned, and involves far more than simply establishing data flow. Pulling the necessary information together at the provider's end, and receiving, downloading, validating, and analyzing the information at the public health end is challenging and costly.

Nevertheless, incorporating public health use of EHRs has the potential to greatly improve population health, and is worth the cost and effort. We need to ensure that our objectives are feasible and realistic.

We believe that a larger concerted effort nationally, like the current campaign to bring EHRs into clinical practice, would be extremely helpful in incorporating EHRs into public health practice. Without this focus and support, public health will not be able to move as fast as the clinical side to incorporate EHRs.

Our comments and recommendations are offered in the spirit of trying to ensure that meaningful use criteria for public health are crafted such that population health is improved. I want to again thank this committee for working on this very important issue and the chance for CSTE to offer our input.

Thank you.