Council of State and Territorial Epidemiologists/CDC's Division of Integrated Surveillance Systems and Services - Retreat

CSTE National Office, 2872 Woodcock Blvd. Ste 303, Atlanta, GA 30341
Wednesday, September 26, 2007
8:15 – 2:00 p.m.

PARTICIPANTS

The meeting participants included CSTE National Office staff, members of the Executive Committee, and representatives from CSTE's Public Health Informatics Team. Participants from CDC include NCPHI's Center Director, DISSS staff, and a representative from the Coordinating Office of Terrorism Preparedness and Emergency Response. (See Appendix B for full list of participants)

OVERVIEW

On September 26, 2007, the Council of State and Territorial Epidemiologists (CSTE) and CDC's National Center for Public Health Informatics' (NCPHI) Division of Integrated Surveillance Systems and Services (DISSS) hosted a one-day strategic retreat to transparently articulate the impediments, opportunities, and next steps for creating effective and efficient public health monitoring (*integrated surveillance*) at the local, state, and national levels, in part, through the National Electronic Disease Surveillance System (NEDSS) project.

Objectives:

The objectives for this meeting focused on the application of public health monitoring principles[1] and activities to achieve efficient and effective work processes and information support of those processes.
The objective included:

1. Describe and reconcile a shared vision for public health monitoring (*integrated surveillance*)
2. Conceiving a national list of public health monitoring goals (and objectives) in the new environment[2] of public health practice.
    a. Describe the gaps (and support needed) to meeting these goals
    b. Propose performance targets based on objectives

Outcomes:

The outcome of this meeting will begin the process of establishing a national list of public health monitoring goals (and objectives), shared by CDC and CSTE.

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[1] public health monitoring *(integrated surveillance*) means achieving efficient and effective public health business practices supported by interoperable information systems to detect, register, and analyze health outcome data while visualizing and reporting out messages that guide [and are guided by] acute and planned responses. We should look at integrated surveillance as a movement toward creating tomorrow's infrastructure, capacity, and competence for efficient and effective public health monitoring.

[2] In view of AHIC and PAPHA and IHRs requirements, plus the rise of HIEs

Additionally, the meeting will yield recommendations to support the goals and objectives.

OPENING REMARKS

Perry Smith opened the retreat with a few remarks and turned the participants' attention to the Lynn Sokler, meeting facilitator. Lynn presented the ground rules and gathered group's expectations.

Expectations

- Open forum
- Basis for collaboration
- Shared vision
- Where things are at
- Leadership on topic
- Mutual ways to work together in future
- Genuine learning from past mistakes

DISSS OVERVIEW

Scott Danos presented a brief history of NEDSS. This included a review of the Epidemiology Laboratory Capacity Request for Proposals (RFP) and its three major segments (Element Development, Charter site, and NEDSS-base System). NEDSS was introduced as a broad initiative to use data and information systems standards to advance the development of efficient, integrated and interoperable surveillance systems.

Lessons learned

- Time to design, develop, implement is typically underestimated
- Cost to design, develop, implement, maintain is typically underestimated
- Public health technical support infrastructure is often challenged
- Executive sponsorship remains an important component of a successful project

NEDSS status in US – Since January 2005 to January 2007, there has been an increase in capacity of states to meet elements of NEDSS: Integrated Data Repository (from 17 to 36 states), Electronic Laboratory Reporting (from 15 to 35), Web-browser based software (from 21 to 37), and Standard-based electronic messaging (from 10 to 16).

Future NEDSS priorities to Achieve Integrated Surveillance

1. Support national standards for exchange of electronic messages
2. Provide tools, technical assistance, and support to stakeholders in achieving integrated surveillance system interoperability
3. Develop and support NEDSS data access that fully meets stakeholder needs at CDC
4. Develop and support an evaluation research agenda that focuses on local and state integrated surveillance systems
5. Increase cooperative agreement support to states and major jurisdictions
6. Ensure that the legacy NEDSS Base System meets emerging messaging standards and other stakeholder requirements for usability and functionality (to 2012)

Comment: In Oregon, the biggest success of the NEDSS initiative – it was an opportunity for those on the business side to learn about the IT concept and make the epidemiologists educated consumers. This created a bridge between the business side and technical side of development.

Scott McNabb presented "Where we are today and forces moving us forward". There are several factors (e.g., Domestic policy, globalization, and advances in informatics] influencing "integrated surveillance" at the local, state, and national levels.

Public health informatics is at an intersection of methodologies between public health and health IT. This new translation place can leverage the advantages of Information technology (IT) to be used for public health practice (surveillance and action). IT should supports public health practice, not the other way around. Funding and resources have been received by IT, and public health is reliant on them because we don't know the language.

Vision Scenarios – Recognizing that *one size doesn't fit all* …

by 2017, what could "integrated surveillance" look like and mean to a county health disease investigation specialist?
by 2017, what could "integrated surveillance" look like and mean to a state epidemiologist?
by 2017, what could "integrated surveillance" look like and mean to a national public health program?

Are these three visions mutually exclusive? No. Surveillance needs, goals, objectives can be met at all levels of public health without compromising any group. Does it make sense to lump and split these visions (county, state, national) based on goals of surveillance? No. There is a conception that surveillance science is being driven by IT.

Together, can we conceive and embrace a …

- vision (a future destination) for "integrated surveillance" in 2017 that we can agree to, advocate for, and communicate?
- "charter" (a set of operating rules) that will support us as we travel to that destination?
- strategy (a road map) that will lead us there?

Comment: What's the scope for this meeting? The scope for this discussion is integrated surveillance. Should it be relegated only to traditional surveillance?

Integrated surveillance is not just the informatics portion, but is driven by the business process and the IT systems that support it. Integrated surveillance is not just limited to traditional reporting of notifiable disease. It is one piece of it, but not the whole picture.

Public health surveillance is quite broad. For today's discussion, we need to set an area that we will address. It is important to acknowledge that there is a full landscape out there.

** For the purposes of this meeting, the group agreed to focus on notifiable disease surveillance. **

TOP 10 PRIORITY AREAS

Richard Hopkins presented CSTE's top 10 Informatics Priorities for Integrated Surveillance and Reporting Recommended Informatics (Refer to appendix C)

CSTE Comment: CSTE is concerned that priorities coming out of NCPHI and the priorities coming out of COTPER are not compatible with one another.

Response: NCPHI does not control BT CA but can influence synergy with COTPER.

Some of the CSTE priorities are far reaching. If we limit the scope for our discussion, not all will be applicable.

Scott McNabb presented CDC's top priority areas. (Refer to appendix D)

CSTE Comment: Many forces and players trying to define what integrated surveillance is and how it should be implemented. There is urgency just from a standpoint of people lining up to make these decisions for public health. CSTE and CDC should make this decision. Fundamental decisions are being made in Washington, DC by people that have never been in a health department.

Response: The goal of this meeting, from a CDC (NCPHI) perspective, is to embark on a journey to address this complex, large issue.

CSTE Comment: Concerned about the use of the word "research" in priory areas #1 and 2.

Response: Operational research is intended to identify business practices to support integrated surveillance.

*** Break ***

VISION
CSTE did not present its vision of integrated surveillance.

Scott McNabb described the vision of DISSS, which is to lead the integration of public health monitoring, so public health information is there where it's needed, when it's needed.

DISSS Working Vision

> Public health monitoring (*integrated surveillance*) means achieving *efficient and effective* public health work practices supported by interoperable information systems to detect, register, report, confirm, and analyze health outcome data while visualizing and reporting out messages that guide [and are guided by] acute and planned responses.

REVIEW and COMPARE CSTE/DISSS PRIORITIES
The goal is to come out with at least one common priority. The participants were asked to break in to 5 groups to identify common priorities. (Refer to appendices C and D)

CSTE Priorities	**CDC Priorities**
#1 Develop collaborative PH governance structure for information systems	#4,5,8, and 11 [identified tasks that would need to be addressed Common tasks under CSTE, Vocabulary repository, collaborative relationship
#2 Fully implement nationwide ELR	#3 [is related to ELR] and #6 [was broader but embraced CSTE's narrow focus]
#3 Maintain and enhance electronic disease surveillance systems (e.g., NBS)	Did not match with CDC list
#4 Build and maintain informatics workforce capacity	#12
#5 Collaborative forum to address issues and policy related to integrated surveillance	#2, 8, and 14
#6 Address priorities for information system development	Not directly in CDC list, but priority # 14 hints towards this
#7 Foundation to base electronic reporting process	# 3 [automated case reporting], 5 [standard vocabulary], 6, 7, and 9
#8 Establish universal definitions, reporting messages, and use cases definitions	#5
#9 Establish a workgroup or expert panel to define real-time information needs for public health situational awareness,	#4, 6, 10, and 11
#10 Establish collaborative panel to identify effective improvements for case reporting	#3 and 11

CDC priority items #13 and 14 were suspended until the other objectives have been agreed upon.

CDC priorities not represented by CSTE: CDC #8 "Surveillance system versus case management system" – could be put under #1 on the CSTE list as an issue that could be dealt with. Also fits under #5 under CSTE.

Point of clarification: Case management is not separate than surveillance, rather it is a core function of surveillance.

Response: Case management and surveillance are intimately tied together in some programs (like TB, STD, HIV/AIDS). For general communicable diseases, that is not the case. Surveillance systems should not be confused with the functions they are designed to support. In order for surveillance systems to meet local needs, case management needs to be an inherent component of the system. The larger systems for surveillance have to support this; otherwise there will be no incentive at the local level.

Common elements between CDC and CSTE

1. Bi-directional exchange of secure transported message
2. Centralized repository-terms
3. Automated case reporting
4. Effective working relationships
5. Master Patient Index
6. Surveillance vs. Case management
7. Expand system interoperability
8. Research/process for achieving integrated surveillance
9. Informatics tools - QC/QA
10. Cooperative agreements
11. Increase informatics Workforce
12. IOM review of Integrated surveillance

Common Elements Agreed Upon by CDC and CSTE

- Master Patient Index
- Central repository of vocabulary terms
- Workforce Development – CSTE would like to enhance capacity of national organizations to support their membership (like ASTHO, NACCHO), and have training program for mid-level persons in the states in public health informatics. At CDC, there is distance learning for mid-level professionals. 10 week course tailored toward mid-tier public health professionals in informatics. Also bring medical informatics to public health professionals through another initiative involving AMIA and conferences. The interest beyond building capacity, from CSTE's perspective, goes beyond current workforce. Trained people and money to support capacity.
- Bi-directional exchange of data
- Mechanism for effective working relationship

- Common charter (set of operating principles) for future development of applications and initiatives – group should be representative of the stakeholders. CSTE and CDC are not equal partners, but we can be the champion within our own organizations to achieve agreed upon progress and move our organizations forward.
- Interoperability of systems
- Move forward with NBS successor for those states who are vested – could be a further iteration of NBS, could be a commercial product, could be an adaptation of another state's implemented system, etc., but the point is to move forward with a collaborative solution.
- Automated Case Reporting – automated lab reporting already moving forward and being implemented. CMR initiative mentioned. At CDC, we see this tying into BioSense to meet immediate situational awareness needs and electronic case reporting needs.

Points of discussion about the responsibility to address integrated surveillance across CDC

- DISSS is meeting with CSTE to address integrated surveillance because there is no categorical focus across CDC programs. The focus of DISSS is public health practice (e.g., surveillance) and leveraging IT to support this. DISSS activities span across program areas. Even if DISSS ends up not being the focal point in the future, it is important that the agenda still moves forward.

- NCPHI has not outlined DISSS as a leader or POC for this effort. NCPHI's focus has been on applications, not on the surveillance programs. If this is the case, it hasn't been clearly communicated across NCPHI and CDC. NCPHI may be focusing on cross-cutting information systems.

- EPO was the nexus for surveillance at CDC and the contact between CDC and the states. For several years at CDC, there was nothing and states had no place to go. People in the states feel like DISSS is the new go-to place and that it is more than the development of the systems. If there are people at CDC, other than DISSS, who are making decisions that affect surveillance, the states haven't heard from them.

- CDC needs a focal point. DISSS believes they are configured to be that focal point. One coordinated example, which has allowed DISSS to serve as a broker (with CSTE), was to address International Health Regulations. CSTE can choose their focal point and empower that division to be the focal point.

Points of discussion about OMS

There was a side discussion of OMS:

- NCPHI stated that there will be a dedicated application, but that it interoperates in the bigger picture.
- CSTE felt that OMS was a critical piece and was going in the right the direction. Development of the system should not be held hostage to integration. "CDC 'pulled

the plug' for funding before messaging could be implemented [which would promote integration and interoperability]".

DIFFERENCES in LIST of PRIORITIES between CSTE and CDC

- The CSTE list focuses on creating forums for collaborative environments
- Some of the items are unique to CDC and some are unique to CSTE
- Some items are on both lists, but have a different level of emphasis (e.g., ELR)
- Having CDC organization figure out who the states deal with at CDC and how can DISSS facilitate decision making within CDC
- Public health is on the pot burner to respond to a number of national requests from AHIC. CDC and states not on the same page to respond to AHIC request. How can CSTE and CDC respond to the AHIC requests and make it a priority?
- Data flow among data entities (e.g., CDC programs) and re-release guidelines (especially as data is shared electronically). [CDC's lawyers have maintained that once a state gives CDC data, CDC has free re-use.] In the data re-release guidelines, CDC is supposed to report to CSTE progress on implementation of the data release guidelines. CDC has not provided any reports. There is a failure at CDC for acceptance of these guidelines at the administrative level and impose accountability at the program level.
- Support and help crafting questions for IOM report

IDENTIFIED PRIORITIES and ACTION ITEMS

1. Fix Electronic Laboratory Reporting
    - A survey of states to identify needs and barriers to ELR implementation. There needs to be a commitment from CDC to support further development of ELR. We need to balance state- and national-based solutions. Technical standards and federal funds are national-based solutions, but what's the state solution? An assessment will help document success. The outcome will make a compelling case for more funding and influence... [State and federal partnership. Provide explicit guidance/model. E.g., CA, HRSA.]
    - **Action Item: Identify team at CDC to work with CSTE ELR group.**

2. Repository of Terms
    - This is already ongoing. The assumption is made that CDC's Vocabulary Access and Distribution System (VADS) will be available and serves as a repository.
    - CSTE needs to provide input into standards and provide feedback
    - Vocabulary standardization has multiple parts:
        - Case Reporting: Initial case reports from providers to local public health. This is driven by AHIC (common data elements and disease specific data elements). Oversight is the SGE (CDC/CSTE process).
        - Case Notification: Messages from the states to CDC. Need to rekindle the NEDSS and legacy variable message (e.g., NETSS, paper-based forms) comparison project reviews. Once there is consensus on which elements are required and

extensible, the NEDSS message implementation guide should be written collaboratively. Currently, the feedback loop is not working.

- **Action Item: Identify group (Team) at CSTE/CDC to revisit the process for review of NEDSS vs. legacy message review.**

3. IOM study commissioned by CDC and CSTE
    - Need to develop a strategy around this to make sure the study doesn't go off course. Approach the IOM with the questions we want them to address. If we are not focus, then the task of IOM may get derailed. The CDC/CSTE priority list should serve as a purpose for us to pursue with IOM.
    - **Action Item: CSTE designate a few people who can work with CDC on defining the study request**
    - **Action step: CSTE develop a position paper on the importance**

4. Bi-directional exchange of messages
    - lump different tiers together: Automated case reporting and ELR

5. Mechanism for effective working relationship, common charter involving representative cross-section, CSTE to create collaborative environment
        - Engage in a charter between NCPHI and CSTE
        - Provide draft to CSTE for review
        - Potentially attract representatives across CDC program areas
    - **Action Item: CDC to draft a common charter about how CDC and CSTE will work together on surveillance**
    - **Action Item: Host another meeting of "other" representatives within CSTE for review; and identify potential stakeholder that would derail this process**

6. Move forward with electronic disease surveillance systems (perhaps open source), including the NEDSS Base System or state developed system.
        - **Action Item: Identify a group between CDC and CSTE to work together on this**

ADDITIONAL ACTION ITEMS

1. CDC and CSTE to work together to merge priority list, which is representative. This needs to be presented at the strategic level
2. Disseminate a report to participants

Appendix A: Agenda

CSTE – DISSS Retreat **Draft Aug 22, 2007**

Date: September 26th, 2007
Time: 8:00 am—2:00 pm
Location: CSTE National Office, 2872 Woodcock Blvd., Ste. 303, Atlanta, GA 30341
Invitees:

In partnership, CSTE and CDC/CCHIS/NCPHI/DISSS propose this 1-day strategic retreat to transparently articulate the impediments, opportunities, and next steps for creating effective and efficient public health monitoring (*integrated surveillance*) at the local, state, and national levels, in part, through the National Electronic Disease Surveillance System (NEDSS) project.

Defining the vision for public health monitoring (and NEDSS) is critical as the public health and the clinical care communities begin to exchange electronic health messages. This need is heightened by recent national and global policy changes; namely, the enactment of the Pandemic and All Hazards Preparedness Act (PAHPA), recommendations made by the American Health Information Community (AHIC), and adoption of the International Health Regulations 2005 (IHRs).

Together, as we move forward to meet the current challenges and needs of our local and state partners, it is important for DISSS to work horizontally [across CDC and HHS] and vertically [with local and state public health]. The points of discussion for this retreat will address the impacts of public health preparedness and epidemiology laboratory capacity funding, promulgation of national health IT policies, and the utility of NEDSS applications and tools to promote and support an integrated and interoperable environment.

Objectives:
The objectives for this meeting will focus on the application of public health monitoring principles[3] and activities to achieve efficient and effective work processes and information support of those processes.
The objective includes:

1. Describe and reconcile a shared vision for public health monitoring (*integrated surveillance*)
2. Conceiving a national list of public health monitoring goals (and objectives) in the new environment[4] of public health practice.

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[3] public health monitoring *(integrated surveillance*) means achieving efficient and effective public health business practices supported by interoperable information systems to detect, register, and analyze health outcome data while visualizing and reporting out messages that guide [and are guided by] acute and planned responses. We should look at integrated surveillance as a movement toward creating tomorrow's infrastructure, capacity, and competence for efficient and effective public health monitoring.

[4] In view of AHIC and PAPHA and IHRs requirements, plus the rise of HIEs

a. Describe the gaps (and support needed) to meeting these goals
b. Propose performance targets based on objectives

Outcomes:
The outcome of this meeting will begin the process of establishing a national list of public health monitoring goals (and objectives), shared by CDC and CSTE. Additionally, the meeting will yield recommendations to support the goals and objectives.

Agenda

Topic	Presenter	Time
Breakfast		7:30 am — 8:15am
Opening Marks and Introductions	Perry Smith/Lynn Sokler	8:15 am – 8:30 am
Overview Presentation of brief history of NEDSS Where we are today and forces moving us forward	DISSS: Scott Danos Scott McNabb	8:30 am — 9:00 am
How do we define Integrated Surveillance (IS) - CSTE's Vision - CDC's Vision	Lynn Sokler	9:00 am — 10:15 am
Break		10:15 am —10:30 am
Top 10 Priority Areas (How do they fit with a shared IS vision?) - CSTE Top 10 - CDC Top 10	Lynn Sokler	10:30 am — 11:30 am
[Working Lunch] Top 10 Priority Areas - Identify Commonalities - Reconcile Differences	Lynn Sokler	11:30 am — 1:00 pm
Operationalize Priorities - Next Steps - Closing Remarks	Lynn Sokler	1:00 pm — 2:00 pm

Appendix B: Meeting Participants

CSTE

- Patrick J. McConnon, Director, Council of State and Territorial Epidemiologists
- LaKesha Robinson, Program Director, Council of State and Territorial Epidemiologists
- Lisa Dwyer, Associate Research Analyst, Council of State and Territorial Epidemiologists
- Dr. Eddy Bresnitz, President and State Epidemiologist, New Jersey Department of Health and Senior Services
- Dr. Perry Smith, President Elect and State Epidemiologist, New York State Department of Health
- Dr. Robert Harrison, Vice President and Environmental/Occupational Health, California Department of Health Services
- Dr. Melvin Kohn, Secretary/Treasurer and State Epidemiologist, Oregon Department of Human Services, Public Health Division
- Dr. Gail Hansen, Infectious Disease Chair and State Epidemiologist, Kansas Department of Health and Environment
- Dr. John Horan, Chronic Disease/Oral/Maternal Health Chair, Georgia Division of Public Health
- Dr. Martha Stanbury, Environmental, Injury, and Occupational Health Chair, Michigan Department of Community Health
- Dr. Tom Safranek, Member at Large and State Epidemiologist, Nebraska Health and Human Services System
- Dr. Michael Landen, Member at Large and Deputy State Epidemiologist, New Mexico Department of Health
- Dr. Richard Hopkins, Public Health Informatics Team Lead, Florida Department of Health
- Dr. Steve Macdonald, Surveillance Coordination Group Lead and Environmental Health Epidemiologist, Washington State Department of Health
- Dr. Christine Hahn, State Epidemiologist, Idaho Department of Health and Welfare

DISSS

- Dr. Les Lenert, Center Director, CDC/CCHIS/NCPHI
- Dr. Scott McNabb, Director, CDC/CCHIS/NCPHI/DISSS
- Scott Danos, Senior Advisor, CDC/CCHIS/NCPHI/DISSS
- John Abellera, Health Scientist, CDC/CCHIS/NCPHI/DISSS
- Jennifer Ward, Epidemiologist, CDC/CCHIS/NCPHI/DISSS
- Dr. Ruth Ann Jajosky, CDC/CCHIS/NCPHI/DISSS
- Dr. Dan Sosin, Associate Director of Science, CDC/Coordinating Office for Terrorism Preparedness and Emergency Response

Appendix C. Draft CSTE Informatics Priorities for Integrated Surveillance and Reporting (Please note, this is a consolidated/edited version from the original presentation. This list does not match the table presented above in the review and comparison of CSTE and CDC priorities.)

1. Design, develop, maintain, and implement informatics functionalities of public health importance for all states. Such functionalities may include:
    a) Fully implement nationwide ELR, including flow of data from national, regional, public health and hospital laboratories to and into state health department surveillance applications.
    b) Automated case reporting to public health at all levels, as appropriate.
    c) Informatics tools that accelerate the bidirectional exchange of securely-transported electronic messages between stakeholders (software, training, funding, collaborative activities, etc.)
2. Support the development of an open architecture venture for integrated electronic disease surveillance and reporting. This would include maintaining support for existing systems (e.g. NBS) including NEDSS and other electronic disease surveillance systems.
3. Identify and support a collaborative forum between CDC and CSTE to address issues and policy related to integrated surveillance. Possible areas of collaboration may include:
    a) Develop and implement a collaborative (CDC, CSTE, state, local) public health structure for information system initiatives (e.g. eHARS, TIMS, STDMIS, OMS, NBS).
    b) Establishing and maintaining a central, authoritative repository for public health questions, vocabulary, terms, etc. that can be accessed by local/state/federal surveillance programs and applications as appropriate.
    c) Data flow among health care providers, state and local health departments, and CDC.
    d) Revision of the Data Re-Release Guidelines for this new interoperable era.
    e) Evaluation of system designs to address different surveillance needs at different levels of government.
4. Build and maintain informatics workforce capacity in support of surveillance, disease control and emergency response.
    a) Build the informatics capacity in each state via increasing the informatics public health workforce and other IT resource needs (funding, fellowship program, competencies, training etc).
    b) Collaborate with CDC and Centers for Excellence in Public Health Informatics to develop short-term training courses in public health informatics for mid-level state and local health department program staff.
    c) Build capacity for informatics staff at CSTE and other public health associations (ASTHO, NACCHO, APHL) so that they can be more effective in working with CDC and practitioners in implementing public health surveillance in the informatics age.
5. Create the foundation on which providers and laboratories can base their electronic reporting processes. Some steps include:

a) Develop and support a Master Patient Index (MPI) architecture that is not tied to a proprietary application or technology.
b) Develop the Nationally Notifiable Conditions list as requested by AHIC
c) Complete the joint CDC/CSTE state survey of reportable conditions by state
d) Implement the Notifiable Conditions Knowledgebase as a web-accessible service useable by all PHIN-compliant applications
e) Develop a tool that parses and filters existing electronic health records to identify persons with conditions under public heath surveillance, and extract condition-specific data (both identified and de-identified) that would be messaged in an automated electronic fashion to authorized public health agencies that have developed software to receive and process the electronic data.

6. Address priorities for information system development among CDC organizational units and the states, ensuring they are aligned and internally consistent.
7. Establish universal definitions, reporting messages, and use cases definitions. Some steps include:
    a) Collaborate to define the disease-specific reporting definitions called for by AHIC
    b) Refine the public health reporting message from health care providers to public health (the CMR)
    c) Complete the Public Health Case Reporting Use Case
    d) Implement case-reporting from EHR repositories as they become widespread.
8. Establish a workgroup or expert panel to define real-time information needs for public health situational awareness, separate from early event detection.

Appendix D. Draft CDC Priorities

1. Conduct operational research to define what “integrated surveillance” can be to a county medical directory and a state epidemiologist
2. Conduct operational research to develop a process for achieving “integrated surveillance” at both the county and state levels
3. Design, develop, maintain, and implement automated case reporting to public health (local/state/federal, as appropriate)
4. Establish/expand system interoperability (e.g. transformed public health business practices, architect technical approaches, enhanced AVR capabilities by linking multiple datasets)
5. Establish and maintain a centralized, authoritative repository for public health questions, vocabulary, terms, etc. (Vocabulary Access Distribution System or VADS) that can be accessed by local/state/federal surveillance programs and applications, as appropriate
6. Develop and support informatics tools to accelerate the bidirectional exchange of securely-transported electronic messages between stakeholders (software, training, funding, collaborative activities, etc.)
7. Develop and support a Master Patient Index (MPI) architecture that is not tied to a proprietary application or technology
8. Surveillance system versus case management system: how can we resolve the different requirements of these systems from the national perspective?
9. Develop and distribute informatics tools that support QA/QC of surveillance system data
10. Support and (if possible) expand ELC and BT cooperative agreement funding
11. Continue the work underway to establish effective communication and working relationships with the expanding universe of public health stakeholders (e.g. AHIC, commercial vendors, other governmental organizations, international agencies, etc.)
12. Increase the informatics public health workforce and other IT resource needs (funding, competencies, training)
13. Co-author a forward-looking and thoughtful review manuscript describing the way forward to “integrated surveillance”
14. Engage the Institute of Medicine (IoM) in a process to circumscribe, define, and outline a comprehensive strategy to a vision of “integrated surveillance”