Planning for Health Information Technology and Exchange in Public Health

UC Davis Health Informatics 2009 Seminar Series

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Public Health intersecting with Health Information Exchange (HIE)

• Public Health and HIE
• Public Health HIE Concepts
• Opportunities
Public Health and Health Information Exchange
The Context

Components in which we engage ...

Health Information Technology (HIT)
  is used for
Health Information Exchange (HIE)
  which moves through the
  National Health Information Network (NHIN)
  which sits on the
  National Health Information Infrastructure (NHII).
Why does it matter to public health?

NHII for electronic use and exchange of health data to:

• Improve public health activities
• Improve efforts to reduce health disparities
• Improve health care quality and reduce medical errors
• Facilitate early and rapid response to public health threats and emergencies, including infectious disease outbreaks
• Promote early detection, prevention and management of chronic diseases
State Health Information Exchange Cooperative Agreement Program

Participating states will also be expected to use their authority and resources to:

- Develop and implement up-to-date privacy and security requirements for HIE; Develop directories and technical services to enable interoperability within and across states;

- Coordinate with Medicaid and **state public health programs** to enable information exchange and support monitoring of provider participation in HIE.

- Remove barriers that may hinder effective HIE, particularly those related to interoperability across laboratories, hospitals, clinician offices, health plans and other health information exchange partners;

- Ensure an effective model for HIE governance and accountability is in place; and

- Convene health care stakeholders to build trust in and support for a statewide approach to HIE.

[Link to HHS HealthIT portal]
2. Specific Requirements for the First Two Years

Technical Infrastructure

Develop or facilitate the creation of a statewide technical infrastructure that supports statewide HIE. While states may prioritize among these HIE services according to its needs, HIE services to be developed include:

- Electronic eligibility and claims transactions
- Electronic prescribing and refill requests
- **Electronic clinical laboratory ordering and results delivery**
- **Electronic public health reporting (i.e., immunizations, notifiable laboratory results)**
- Quality reporting
- Prescription fill status and/or medication fill history
- Clinical summary exchange for care coordination and patient engagement
Meet Statutory Public Health Reporting Requirements

Required reporting of

• Infectious Disease Cases
• Healthcare-Associated Infections
• Cancer cases
• Elevated Blood Lead Levels
• Birth, Death and Fetal Death Events
• Etc.
Improve Coordination of Care

• Immunizations
• Case Management for Chronic Diseases
• Newborn Hearing Screening
• Cancer Screening and Treatment
• Women, Infants and Children Program
• Preventive Services
  *(U.S. Preventive Services Task Force)*
• Etc.
Ensuring Quality of Care

- Ambulatory Care Sensitive Conditions
- Healthcare Effectiveness Data and Information Set (HEDIS)
- Medication Utilization
- Healthcare-Associated Infections
- Etc.
Facilitating Provider Delivery of Care

• Reduce office workload related to statutory reporting
• Reduce time in making referrals and ordering procedures
• Improve accuracy of patient medication history to reduce risk for complications
• Create performance information to improve reimbursements
Public Health Data Integration

Child Health Information Systems:
- Potential cost savings of system integration
- Public Health Informatics Institute
- Link data from separate child health programs resulting in cost savings for the organization:
  - Newborn hearing screening
  - Genetic screening - dried blood spot
  - WIC – Women, Infant and Children
  - Immunizations
  - Vital Records
Why does it matter to vital records?

• The beginning and the end of life ... and electronic health records
• Birth records as linkage points to facilitate the Master Patient Index
• Vital records has one ... going on two ... successful national health information exchanges: EVVE and STEVE
Oh yes, and don’t forget ...

$\text{\$\$\$}$

- Cost savings for hospitals
- Cost savings for health care system
- Quality improvement for patients
- Decreased cost for insurers
- Cost savings for Government
Public Health

Health Information Exchange

Concepts
Public Health HIT/HIE Concepts

1. Public Health Infrastructure Interface for NHIN
2. Public Health Data Integration
3. Health Information Delivery for policy makers, health care providers & public
4. Laboratory Data Exchange
5. Informatics Workforce Development
6. Infrastructure for Rural Health Information Exchange
1. Public Health Infrastructure Interface for NHIN

- Improve public health IT infrastructure to allow:
  - receipt of electronic health data
  - transformation of data into information
  - dissemination of information to policy makers, health care providers, and the public.

- Public health will need upgrades in capacity and service to meet the business needs that support engagement in the nationwide health information network (NHIN)
CDPH IT Infrastructure Needs

Data Integration / Movement:
- Transmit and integrate data across multiple internal and external data sources
- Transform this data into meaningful information in order to prepare for and respond to emergencies, diseases, outbreaks, epidemics, and emerging threats

Collaborative Communication:
- Comprehensive and integrated communications tools supported by the infrastructure to work collaboratively and in real time inside and outside the Department
- Share and disseminate information necessary to achieve timely public health interventions and response
CDPH Infrastructure Needs

Security:

• Guarantee secure, reliable, and rapid information access and communication capabilities

• Respond rapidly to public health emergencies within the evolving public health environment

Flexibility:

• Meet today’s dynamic environment through an infrastructure with adequate capacity, scalability and adaptability

• Leverage new and emerging data sources, applications, technologies, partnerships and funding sources
2. Public Health Data Integration

- Perform planning for improved and expanded use of HIT by public health departments. Specifically, address interoperability of public health data sources and registries.

- Public health has many core data repositories (e.g., vital records, etc.) and registries (e.g., cancer, birth defects, etc). To improve use of public health data for prevention of diseases and improvements in quality of care, the integration, de-duplication, linkage, and de-identification for data analysis is critical to add value for policy and public health interventions.
3. Health Information Delivery
   for policy makers, health care providers & public

   • To realize the benefit of health information exchange, health data must be transformed to useful information that can be understood by all providers and the public

   • Fully implement current technologies based on departmental standards in order to support:

     – Delivery of population information about the health of communities

     – Data dissemination
4. Laboratory Data Exchange

Establish infrastructure required for electronic exchange of laboratory data with health care providers, facilities and public health practitioners for the purpose of tracking diseases and conditions and improving health.

- Majority of laboratories have electronic data and are recognized as a potential win for health information exchange.

- Laboratory data are frequently a source of duplicated effort and have direct benefit for health care quality and cost.

- Laboratory data serves as the sentinel reporting mechanism for outbreak recognition, biosurveillance, and emerging threats.

- CDPH projects for electronic laboratory reporting include lead exposure reporting (RASSCLE), infectious disease reporting (ELR), genetic disease reporting (SIS), and electronic laboratory data management (LIMS for Richmond labs) among others.
5. Informatics Workforce Development

- Support graduate students and fellowships within public health departments in partnership with University of California to develop informatics capacity required for health information exchange.

- CDPH currently has strong partnerships with UC Davis Medical Informatics Graduate Program which can be leveraged more broadly within the UCs to develop the new workforce necessary for development and maintenance of health information exchange systems.
6. Infrastructure for Rural Health Information Exchange

• Focus on assessment and planning for necessary infrastructure to exchange health data for quality assessment and public health purposes.

• Work closely with sister departments in the CHHS to identify needs with respect to staff, hardware, software and capital investment which will allow data exchange and transformation within rural and Indian health networks.
Local Public Health

Need real-time patient information for:

• Patient treatment and case investigation
• Epidemiologic assessment and surveillance of disease and conditions in the community
• Connecting patients to services
Information Delivery

- Local Health Services:
  An example from the CDPH web site
- Issues:
  - Information organization
  - Information management
  - Information delivery
  - Usability testing
Local Health Services on CDPH

- Gained visibility during H1N1 Outbreak
- Needed to add 2-1-1 links to each of the County Pages
- Based on emphasis for County information during H1N1, Local Services changed title to Local Health Services and added to Left Menu
Local Health Services

• Listing by Local Areas
  (61 Local Health Jurisdictions – county and city)

• Listing by Program
  (13 programs listed)

• Listing by Region
  (2 regions listed)
Quality Assurance Review

- Staff reviewed all program pages in the A-Z Program Listing
  [http://www.cdph.ca.gov/programs/Pages/ProgramsIndex.aspx](http://www.cdph.ca.gov/programs/Pages/ProgramsIndex.aspx)

- 177 of the 328 programs listed had local or regional services described on their programs’ pages
Comparisons

- Local Health Services – 13 programs
- Quality Assurance Review of CDPH Web Site – 177 programs
Why does it matter?

- Webtrends provides some insight ...
  From July 1 to July 20 the following number of visits were recorded to the below pages:
  - 48,852 Home Page (1st)
  - 13,490 Novel H1N1 Home Page (8th)
  - 11,106 Programs Tab (10th)
  - 9,502 Services Tab (13th)
  - 2,721 Local Health Services Page (48th most frequently visited page)
Program Example

Medical Marijuana

– 11,106 Programs Tab (10th)
– 5,205 Medical Marijuana Program
– 454 Contact Medical Marijuana Program
– 9,502 Services Tab (13th)
– 2,721 Local Health Services Page
– 1,888 A to Z Listing of Medical Marijuana County Program Business Hours
Why does it matter?

- People want to know what we are doing for them locally
- Show off the good work we do
- Usability – people look for our services, not just our programs
Opportunities for Improvement

• Information organization
  – Type of information, categories, coding

• Information management
  – Collection of the information type (contact data)
  – Storage of the information type

• Information delivery
  – Audience based
  – Topic based
  – Geography based

• Usability testing
Tid Bits on Web Usage July 1-20

• In the top 10 Pages viewed:
  – CDPH Home
  – Birth, Death and Marriage Certificates
  – WIC
  – Novel Influenza A (H1N1) Virus
  – CDPH Programs Tab

• In the 11th -20th Pages viewed:
  – Birth, Death and Marriage Certificates
  – Services
  – Publications & Forms
  – Job Opportunities
  – Laboratory Field Services
  – WIC
  – Licensing and Certification
Tid Bits on Web Usage July 1-20

• In the 21st -30th Pages viewed:
  – Birth, Death and Marriage Certificates
  – Public Drinking Water
  – Health Information
  – Radiologic Health Branch
  – Medical Marijuana Program
  – Contact Us (the department)
  – Data & Statistics

• In the 31st -40th Pages viewed:
  – Birth, Death and Marriage Certificates
  – Novel Influenza A (H1N1) Virus – Data Tables
  – RSS Feeds
  – Forms
  – WIC
  – Drinking Water
  – Current Open Exams
  – Radiologic & Nuclear Medicine Technology (Medical Use)
HIE Opportunities
Bridging the Needs

- Local to State to Federal Public Health
- Individual clinical care to population health
- Standards being developed and shared
- Services identified and provisioned for
- Savings and improvements achieved
Continuity of Care Document (CCD) is a possibility:

- Continuity of Care Document (CCD) and its associated HL7 standard developed by the Health Information Technology Standards Panel (HITSP).
- Stores most relevant patient information
- Technology neutral – XML-based
- Completed by authorized healthcare personnel
- Collection of clinical information from different documents
Continuity of Care Document (CCD)

Includes:

- Current medical problems
- Procedures
- Family history
- Social history
- Payers
- Advance directives
- Alerts (allergies, adverse reactions)
- Medications
- Immunizations
- Medical equipment
- Vital signs
- Functional status
- Results
- Encounters
- Plan of care
Use of CCD in HIE

Multiple States using all or portion of CCD - Opportunities to learn from their experiences ...

- Minnesota
- Iowa
- Colorado
- North Carolina
- South Carolina
- California
Moving into the future

- California statewide HIT strategic planning
- Work with counties to further assess current opportunities and best practices
- Improving integrated architecture for management of public health data
- Advance business case for public health – converting data to information to policy
- Others ...
Thank you!