EHR Update: Integrating Immunization Registries with Electronic Medical Records

Immunization Registry Conference
October 18, 2004

Noam H. Arzt, Ph.D., President,
HLN Consulting, LLC
arzt@hln.com
858/538-2220

Susan M. Salkowitz, Principal,
Salkowitz Associates, LLC
salkowit@hln.com
215/351-7887

Topics

- Some definitions of medical records
- Overview of National Initiatives
- Trends in physician adoption of EMR
- The Problem: Challenges to Registry Use
- The Opportunity
- Possible Strategies
- Implications for Action

From CPR to EHR: Past-Present-Future

Past

CPR: **Computer-based patient record**- defined by the IOM as a longitudinal record that captured paper-based information in image form.

Present

EMR: **Electronic Medical Record**. Typically owned by a single provider organization, the EMR captures and manages patient data that <u>originates in electronic form.</u> Current generation. Many vendor products deployed.

Future

EHR: True lifetime medical record, <u>owned by the patient</u> who grants access to providers.

> HHS initiative The Decade of Health Information Technology: Framework for Strategic Action (Progress Report, July 21, 2004)

Overview of National Initiatives

National Health Information Infrastructure

– A Health Information Technology (HIT) initiative set forth to deliver consumer-centric and information rich healthcare to improve the effectiveness, efficiency and overall quality of health and health care in the United States.

– A comprehensive knowledge-based network of interoperable systems of clinical, public health, and personal health information that would improve decision-making by making health information available when and where it is needed.

– The set of technologies, standards, applications, systems, values, and laws that support all facets of individual health, health care, and public health.

Overview of National Initiatives (continued)

Electronic Health Record (HL7; EHR Collaborative, HIMSS, IOM, HHS, VA…)

- To develop a functional model of an electronic health record system and promote common understanding

- Use of the EHR functional model will improve the quality of care, reduce the cost of care and provide better access to more fine grained clinical data.

- Using HL7 ANSI-approved standards process to develop the model which passed March 04, to begin a two-year period of testing and further development.

Source: http://www.hl7.org/EHR/

10/21/2004   5

Overview of National Initiatives (continued)

How is the immunization registry community involved in these initiatives?

- American Immunization Registry Association (AIRA)participated in and will become a member of the Public Health Data Standards Consortium (PHDCS)

- PHDSC launched an EHR-PH task force which prepared a formal response to the HL7 EHR standards ballot which was adopted in 5/04 for 2 year pilot use by vendors and organizations.

- An immunization registry "Use Case" was included in the PHDSC response, as well as many other "registry-sensitive" comments.

- Work has begun on the development of a Pediatric EHR

- Federal funding has begun to be available for pilots which focus on system interoperability issues (HRSA, AHRQ, NHII)

10/21/2004   6

Trends in Physician Use of EMR

- Forrester Research, Cambridge, Mass., predicted that EMR sales to physician practices will increase from $816 million in 2003 to $1.4 billion in 2008. In the same time period, spending will more than double among small physician practices, from $366 million to $829 million.
- Automation Key to New Practice Model (April 02, 2004): "A standardized electronic health record, adapted to the specific needs of family physicians and the patients they serve, will constitute the central nervous system of the New Model practice," according to report issued by a coalition of medical associations.
- *Framework for Strategic Action* identifies need to reduce barriers and provide incentives for physician use of EMRs
- Center for Studying Health System Change: 74% of physicians in practices has IT support for 5 critical functions (2001)

Trends in Physician Use of EMR

- The National Alliance for Primary Care Informatics is an evolving, coordinating group of primary care organizations committed to the development and implementation of a national strategy for the use of information technology and management in primary care.
  - American Academy of Pediatrics
  - American College of Physicians
  - American Medical Informatics Association
  - American Nurses Association
  - National Organization of Nurse Practitioner Faculties
  - North American Primary Care Research Group
  - Society of General Internal Medicine
  - Society of Teachers of Family Medicine

Trends in Physician Use of EMR

- Kaiser Permanente has already gone live with its far-ranging electronic medical record project. Kaiser Permanente HealthConnect is now online in the 8-million member health plan's Hawaii region.
- The Indian Health Service is scheduled to complete development and start deployment of their Electronic Health Record with the system scheduled to be fully implemented by 2008.
- Georgia Healthcare System (GHS), a statewide organization comprised of 78 community health centers, has signed a $1.47-million contract to provide electronic medical record software to 14 GHS locations.
- Operational LHII projects emerging (Indianapolis, Santa Barbara)
- Recent AHRQ awards

The Problem
Challenges to Registry Use:

- Double entry of data
- Confusing array of computer systems and applications
  - Many commercial players
  - Varied functionality and scope
- Data fragmentation across systems
- Uneven deployment within an organization
- Closed networks
  - Bound by technology or policy
  - Inhibits record sharing beyond the site or organization

The Opportunity

- EMRs support chart-compliant documentation of immunization records- better than billing records
- EMRs may be able to eliminate double data entry
- EMRs already using and expanding use of HL7
- EMRs can provide access to Registry data without introducing a new application to the user.
- EMR-Registry partnerships for shared development and registry promotion

Possible EMR Strategies

1. Simple Records Exchange
2. Records Exchange with Registry Access
3. Records Exchange with Registry Features
4. System Integration
5. Collaborative Development

Possible Strategies (continued)

- Simple Records Exchange
  - Registry and EMR agree to routine exchange of patient and immunization records
  - Can be in one or both directions
  - Promote HL7 use
  - No direct access to registry by users
  - Issues:
    - Frequency
    - Records matching rules, especially *to* the EMR
    - Possible functional limitations

Possible Strategies (continued)

- Records Exchange with Registry Access
  - Registry and EMR agree to routine exchange of patient and immunization records
  - Can be in one or both directions
  - Users may access registry in *read-only* mode
  - Issues:
    - Frequency
    - Records matching rules, especially *to* the EMR
    - User confusion over which system to access

Possible Strategies (continued)

- Records Exchange with Registry Features
  - Registry and EMR agree to routine exchange of patient and immunization records
  - Can be in one or both directions
  - Users do not access registry but have registry features within the EMR
  - Issues:
    - Frequency
    - Records matching rules, especially *to* the EMR
    - EMR must support rich feature set

Possible Strategies (continued)

- System Integration
  - EMR is modified to directly access key registry screens and functions
  - Immunization data is entered directly into the registry
  - Issues:
    - While access is seamless, users will know they are in different systems
    - Records matching rules must follow native registry matching rules
    - Immunization data not captured in local EMR and must be independently returned to clinic if desired

Possible Strategies (continued)

- Shared Development
  - Collaboration between Registry and System User and/or Vendor User Group
  - Registry participation in requirements and specifications for EMR registry functionality or interfaces between EMR and Registry
  - Issues:
    - Financial- who pays for this?
    - Feature availability to all users of EMR software
    - Must represent increased participation in the registry by high volume providers.

Implications for Current Action

- Need to compare level of sophistication of EMRs in their jurisdictions with their own feature sets.
- Over time, EMRs will increase in degree of penetration and functionality.
- Need to survey providers to determine if there is leverage in a few common EMRs.
- Need to stay involved in national initiatives and advocate for public health's perspective.