I have no relevant financial relationships with the manufacturers of any commercial products and/or provider of commercial services discussed in this CME activity. I do not intend to discuss an unapproved/investigative use of a commercial product/device in their presentation.
Definitions (1)

- **Electronic Medical Record (EMR)**
  - Electronic health-related information on an individual within one healthcare organization

- **Electronic Health Record (HER)**
  - Electronic health-related information on an individual across more than one health care organization

- **Personal Health Record (PHR)**
  - Electronic health-related information on an individual managed, shared and controlled by the individual
Definitions (2)

- Health Information Exchange (HIE)
  - The mobilization of healthcare information electronically across organizations within a region of community

- Nationwide Health Information Network (NHIN)
  - A foundation for the secure exchange of health information that enables data exchange between different organizations
What is the status of office-based physician use of EMR/EHR?

- HITECH authorized use of Medicare and Medicaid financial incentives to increase use of EMRs/EHRs
- National Ambulatory Medical Care Survey
  - Annual survey conducted by CDC’s NCHS
  - Since 2008 has been asking physicians about use of EMR/EHR
  - 2010 asks about intent to apply for meaningful use incentive payments
- [http://www.cdc.gov/nchs/data/hestat/emr_ehr_09/emr_ehr_09.htm](http://www.cdc.gov/nchs/data/hestat/emr_ehr_09/emr_ehr_09.htm)
Figure 1. Percentage of office-based physicians with electronic medical records/electronic health records (EMRs/EHRs): United States, 2001–2009 and preliminary 2010

NOTES: Any EMR/EHR is a medical or health record system that is either all or partially electronic (excluding systems solely for billing). The 2010 data are preliminary estimates (as shown by dashed lines), based only on the mail survey. Estimates through 2009 include additional physicians sampled from community health centers; prior 2008 combined estimates were revised to include those physicians (4). Estimates of basic and fully functional systems prior to 2006 could not be computed because some items were not collected in the survey. Fully functional systems are a subset of basic systems. Some of the increase in fully functional systems between 2009 and 2010 may be related to a change in survey instruments and definitions of fully functional systems between 2009 and 2010 (see Table for more details). Includes nonfederal, office-based physicians. Excludes radiologists, anesthesiologists, and pathologists.

SOURCE: CDC/NCHS, National Ambulatory Medical Care Survey.
Physician use of EMR/EHR compared to National Average

Figure 2. Percentage of office-based physicians using any electronic medical record/electronic health record (EMR/EHR) system, by state: United States, preliminary 2010

NOTE: Significance tested at p<0.05.
SOURCE: CDC/NCHS, National Ambulatory Medical Care Survey.
Public Health and EMR/EHR

- Prevalence and incidence of disease
- Outcomes and quality of life
- Burden of disease and health care utilization
- Education needs for patient, family, provider
- Guidelines for care
Public Health Registries

- A registry is an organized system for the collection, storage, retrieval, analysis and dissemination on individual persons who either have a particular disease, a condition that predisposes to a health-related even, or prior exposure known or suspected to cause adverse health effects.
Registries and Surveillance

- Registries are tools to conduct public health surveillance, and conduct public health and clinical research.
- Surveillance: Ongoing, systematic collection, analysis, and interpretation of health-related data essential to the planning, implementation, and evaluation of public health practice, closely integrated with the timely dissemination of these data to those responsible for prevention and control.
Specific characteristics of registries

- Focused on a particular disease, group of similar diseases, specific exposures
- Collect data on individuals from multiple sources (physician records, hospital summaries, pathology reports, vital statistics)
- Looking through sources for cases (hospital discharge)
- Resource-intensive (active abstraction, linking data)
Examples of registries (managed by)

- National Exposure Registry (ATSDR)
- Metropolitan Atlanta Congenital Defects Program (CDC)
- Immunization Registries (federal and states)
- Surveillance, Epidemiology, and End Results Program (NCI)
- United States Eye Injury Registry (Helen Keller Eye Research Foundation)
- Other diseases (Insulin-dependent Diabetes Mellitus, Li-Fraumeni Syndrome)
NBS registries in development

- Newborn Screening Translational Research Network (NBSTRN, NIH-ACMG)
  - Public health surveillance, long-term tracking, assessing care (quality and access), etc.
  - Template for EMR for children picked up through NBS
  - Permissions for clinical research

- Registry and Surveillance System for Hemoglobinopathies (RuSH, NIH-CDC)
Current EMR/E HR Projects

- Maternal and Child Health Content Profile
  - Will link to and populate state vital records from birthing facilities

- EHDI Content Profile
  - Specifies data requirements and work processes for early hearing screening and short-term follow-up for children up to 3 years of age

- Profiles to be tested
  - Integrating Health Enterprise (IHE) Connectathon in Chicago January 17-21, 2011
  - HIMSS Interoperability Showcase in Orlando, February 20-24, 2011

- A workgroup federal, professional organizations, vendors is working on a model E HR for children
EHR and Public Health Alerts

- CDC pilot study with 10 providers in Chicago area
- Ambulatory setting
- Anonymous electronic patient profile transmitted to central alert repository
- Triggers foodborne disease alerts
  - Provide appropriate guidance for lab tests
  - Educational material for patients
Guarding privacy

- Consent database tied to EHR
  - Consent ‘wizard’: Opt-in, opt-out, combination

- Patient the steward of their own data
  - Gather source data from clinics, hospitals, labs and pharmacies
  - Apply privacy preferences and sharing the resulting data with caregivers as needed.

- Implication for Dried Blood Spot storage
  - In electronic record?
  - Levels of consent for PH quality assessment up to clinical research
  - Possibility of pediatrician counsel for families
In summation:

- Our goals: healthy people across the lifespan, living in healthy places, with access to information they need to adapt to changing health environment
- We achieve them by:
  - Looking at the big picture
  - Sharing and monitoring data that affect health
  - Identifying, developing, and using primary public health data sources
  - Working closely with vendors and end-users