MEANINGFUL USE and POPULATION HEALTH

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Objectives

- What is the Electronic Health Record?
- Who, What, When and How of “Meaningful Use”
- What does Meaningful Use change
- Challenges and Victories
- Long range horizons
The Electronic Health Record (EHR): More than an electronic folder (EMR)

- A systematic collection of patient electronic health information organized to assist the care of patients and groups of patients (like a practice’s population)
- Digital formatting enables information to be used and shared over secure networks
  - Track care (e.g., prescriptions) and outcomes (e.g., blood pressure) of individuals & groups (they perform surveillance)
  - Reuse digital elements (which will become part of surveillance reports)
  - Trigger warnings and reminders including preventive
  - Send and receive orders, results, care summaries and reports
  - Measure quality, safety
  - Share information with patients
EHRs: Implications

- Providers monitor their own practice populations
- Automate many surveillance and reporting tasks
  - Public health reporting
  - Clinical quality measures
  - Patient registries
  - Respond to data queries*
- Various systems (e.g. LIMS, ADT) certified as part of EHR
- Over time: most PH reporting through the EHR using national EHR standards
- Rules for EHRs start to define information available for surveillance

* Focus of PCAST report and Standards and Interoperability Framework, but not Meaningful Use Stages 1 and 2 to date
Meaningful Use

- **WHO sets EHR rules?**
  - Office of *Nat’l Coordinator* for Health Info Tech (*ONC* at HHS)

- **HOW are rules ‘enforced’?**
  - The Medicare and Medicaid *incentive* program

- **WHO qualifies?**
  - Eligible professionals & hospitals paid by Medicare &/or Medicaid

- **WHAT qualifies?**
  - Implement a *certified* EHR
  - “Meaningfully use” it to achieve objectives to improve care and population health, including (in Stage 1) *one* of:
    - Submit Electronic Lab Reports for reportable conditions to PH
    - Submit Syndromic Surveillance reports to PH
    - Submit Immunization reports to Immunization Registries
    - ALSO: Submit quality measures to Medicare &/or Medicaid

- **WHEN?** *Today!*
Other Meaningful Use Objectives-Examples

- E-Prescribing
- Computerized Physician Order Entry (CPOE)
- Exchange of care summaries
- Informing patients
- Clinical decision support
More About WHEN…

- 3 stages of Meaningful Use with escalating objectives
- Yearly attestation (hospitals: FFY, providers: calendar)
- Stage 1: Oct 2010-Dec 2013*
- Stage 2: Likely begins Oct. 2013*
- Stage 3: Likely begins Oct. 2014
- Incentives front-loaded to favor early participation
- Penalties start 2015

Original Stage 1 was 2 years, but ONC likely to extend by one year
What Does Meaningful Use Change?

- Providers/hospitals urgently seek to e-report
- Electronic reporters rise from dozens to thousands
- EHRs will use ONC-prescribed standards
- Rising report volumes
- Timeliness and completeness
- Electronically reusable information
- Public health: from ruler to participant
Four ideas about electronic standards

- **Format** (message or document standard): defines WHAT information goes WHERE
  - E.g. HL7 message version 2.3.1 versus 2.5.1

- **Implementation Guide**: defines which vocabularies to use, whether fields are mandatory
  - E.g. HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health, Release 1 (US Realm)

- **Vocabulary set**: defines what codes or words are used to populate fields in a message or document
  - E.g. SNOMED, LOINC

- **Transport**: defines how messages are addressed, “packaged” (e.g., encrypted), receipt reply, etc.
Pathways of Information Flow

**Public** (surveys, PHRs) Environment

- Clinicians
- Labs
- PH Labs

- Provide Standard Vocabularies
- Design Standard Formats
- Secure Private Transport

Health Depts.

- Local
- State

CDC

- Governance (with ONC, S&L, CDC)
- Establish standards, certify PH
- Training, technical development, communication

- Prototypes and evaluations
- Open source development
- Research partnerships

To public
Example: Electronic Lab Reporting in Stage 1

- Hospitals pick one: ELR, SS, Immunization reporting
- Single Implementation Guide: HL7 2.5.1 ELR
- Hospitals obtain “certified” EHR/modules
  - Meet NIST testing requirements
- Send test message to PH – may PASS OR FAIL
- If PASS, must begin ongoing submission of ELR
- CDC/ONC/CMS agreed that PH may “queue” hospitals so on-boarding process may be managed
- A “queued” hospital may attest “+” so long as it on-boards when finally requested
- 28 ELC jurisdictions “testing” and 4 in production
ELR example: How CDC Helps

- Consult with ONC and CMS
- Maintenance of HL7 ELR implementation guide
- Training and education
- Aligned ELC, PHEP Cooperative Agreements toward ONC-compliant ELR
- Created (with CSTE, APHL) vocabulary mapping tables appropriate for ELR; supply vocabulary using PHIN-VADS
- Create message validation tools (PHIN-MQF, MSS)
- Created translator modules (Rhapsody, MIRTH)
- Align case management systems to ONC-compliant ELR
- Provide technical assistance (with APHL)
Example: Syndromic Surveillance

- Two standards: HL7 2.3.1 or 2.5.1. **ONLY 2.5.1 in STAGE 2**
- Not much exchange with implementation guide. Newly published hospital implementation guide at [www.cdc.gov/phin](http://www.cdc.gov/phin)
- Had to negotiate data requirements against provider and vendor and ONC concerns
How CDC Helps: Syndromic Surveillance

- **BioSense redesign includes:**
  - An ONC-standards-ready “catcher’s mitt”
  - Centralized infrastructure but distributed ownership
  - Tools for information sharing
  - Tools for information analysis

- **Creation of implementation Guides with ISDS, broad comment**
  - Hospitals (created)
  - Ambulatory (in progress)
Registered, Paid and Attesting in MU as of September 2011

• REGISTERED
  – 2,419 Eligible Hospitals
  – 112,248 Eligible Professionals (27% Medicaid only)

• MEDICARE Incentives (attested to meeting objectives)
  – 158 Eligible Hospitals (Inc. Medicare/Medicaid hospitals)
  – 3722 Eligible Professionals
  – $357 million in incentives

• MEDICAID “Adopt, Implement, Upgrade” (AIU) pay
  – 406 Eligible Hospitals (inc. Medicare/Medicaid hospitals)
  – 6,361 Eligible Professionals
  – $515M in incentives

• 8699 attested in total (approx 8% of registered EHs and EPs)

Source: Presentation: “Medicare & Medicaid EHR Incentive Programs . Robert Anthony,
EP Claimed Exclusions

- 64% E-copy of health information
- 18% E-prescribing
- 13% CPOE
- 8% Recording vital signs
- 37% Immunization reporting
- 24% Syndromic surveillance reporting

EH Claimed Exclusions

- 64% E-copy of discharge instructions
- 63% E-copy of health information
- 15% Immunization reporting
- 6% Laboratory reporting
- 4% Syndromic surveillance

Source: Presentation: “Medicare & Medicaid EHR Incentive Programs. Robert Anthony, CMS Office E-Health Standards & Services, HIT Policy Committee October 12, 2011”
Reasons for Immunization Exclusions for EPs

• Many EPs (especially MEDICARE EPs) do not give immunizations
  – E.g., sub-specialists, dentists
  – More MEDICAID EPs give childhood immunizations
  – Most MEDICAID EPs not attesting beyond “AIU”

• Some jurisdictions only authorized to record children
  – Excludes adult care (many MEDICARE) providers

• A few jurisdictions still lack immunization registries

• Some standards mismatches (HL7 version, transport protocol) create “no capacity” exclusions
Reasons for High Syndromic Surveillance Exclusions by EPs

- Most syndromic surveillance systems focused on hospitals (emergency departments)
  - Few public health jurisdictions monitor non-hospital outpatient visits today using these systems
- Final hospital implementation guide released only in October, 2011
- Ambulatory implementation guide in creation, expected in winter, 2012
- Anticipated to remain an “optional” item for EPs in Stage 2
Reasons for Electronic Laboratory Reporting (ELR) Exclusions for EH

• Stage 1 regulations implemented a new (HL7 v.2.5.1) single standard for ELR
• Virtually no public health systems received v. 2.5.1 at beginning of reporting period
  – Now 28 PH agencies testing v.2.5.1 messages and number rising fast
Activities Address Exclusions

- CDC/partners providing new translation, validation, mapping tools, implementation guides
- New “BioSense” system simplifies hospital SS
- “Test & queue” strategy for orderly on-boarding of large numbers of new data reporters to PH
  - Attestation allowed for successful test and “in queue” for ongoing submission
- Migration to single message standard (HL7 v. 2.5.1) in Stage 2 for Immunizations and Syndromic Surveillance
- Tighter correspondence between EHR certification and PH implementation guides in Stage 2
- PH investing in DIRECT and other industry-standard transport mechanisms
• NOTE: These public health investments are NOT supported by CMS Meaningful Use Incentive program
  – Public health investing *despite* marked budget reductions at local, state and Federal PH agencies
Some exclusions will continue

- Hospitals and professionals that do not deliver certain services
- Some PH jurisdictions that do not use the information (sometimes restricted by state law)

*Nevertheless, lives and dollars are saved:*
  - Immunization registries improve vaccine coverage
  - Electronic lab reporting improves speed and completeness of communicable disease reporting
  - Syndromic surveillance aided H1N1 influenza response
Success, Not Failure:

- Number of major PH jurisdictions testing MU-compliant messages rose from near 0 to 38 in one year and rising fast
- PH agencies are investing and inventing
- Recommendations for Stage 2 will eliminate several barriers
- Number of production PH MU data exchanges rising quickly
- Faster, more complete data exchange will
  - prevent contagious disease
  - improve preventive effectiveness of both public health agencies and health care providers
3 Tsunamis

• Stage 1
  – More hospitals and providers engaged
  – More jurisdictions, more programs receiving

• Stage 2 (Fall 2012 or 2013)
  – Single *format* for Imms, Syndromic Surveillance
  – ?New *transport* protocols
  – ?Cancer registry

• Stage 3 (Fall 2014)
  – Added case reports?
  – Bi-directional exchange for immunizations?
On the Horizon

- Standards and Interoperability Public Health Reporting Initiative
  - Harmonized vocabulary and format standards for many different reports (Stage 3?)
  - [http://wiki.siframework.org/Public+Health+Reporting+Initiative](http://wiki.siframework.org/Public+Health+Reporting+Initiative)

- Reportable condition knowledge base
  - Who, when, where, how report?

- Secure transport
  - Replacing PHIN-Messaging System with a new combination of DIRECT and web services
On the Horizon

• Using Quality Measures as surveillance
• Using Health Information Exchange for surveillance
• Using EHR connections (SS? Immune Registries?) to measure chronic and other health issues
  – Preventive care utilization
  – Risk factors
• Queries of EHRs, e.g. Mini-Sentinel
Four information sources for Population Health

- Mandated PH Reporting
- Quality Reporting
- Queries
- Registries
More Information

• www.cdc.gov/ehrmeaninfuluse
• www.cdc.gov/phin
• Ask: meaningfuluse@cdc.gov
• National PH MU teleconference
Public Health Informatics and Technology Program Office
www.cdc.gov/osels/phitpo

For more information please contact Centers for Disease Control and Prevention
1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: www.atsdr.cdc.gov