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?**
  - ***O***ffice of ***N***at'l ***C***oordinator 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

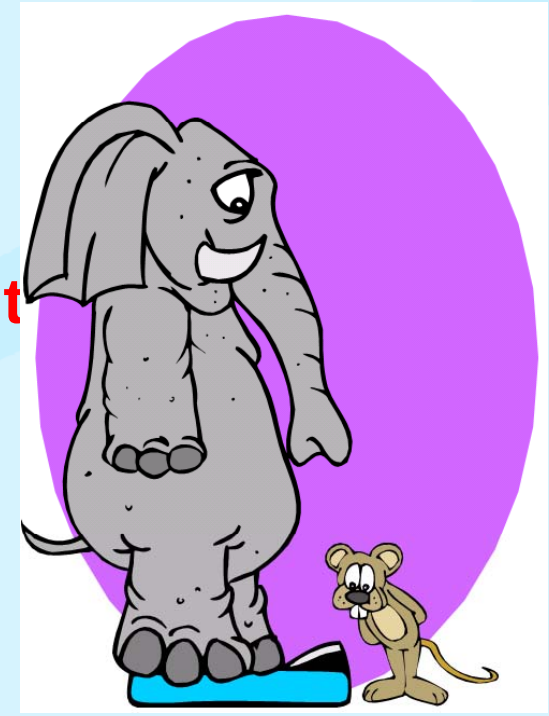
More About WHEN…

- 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?

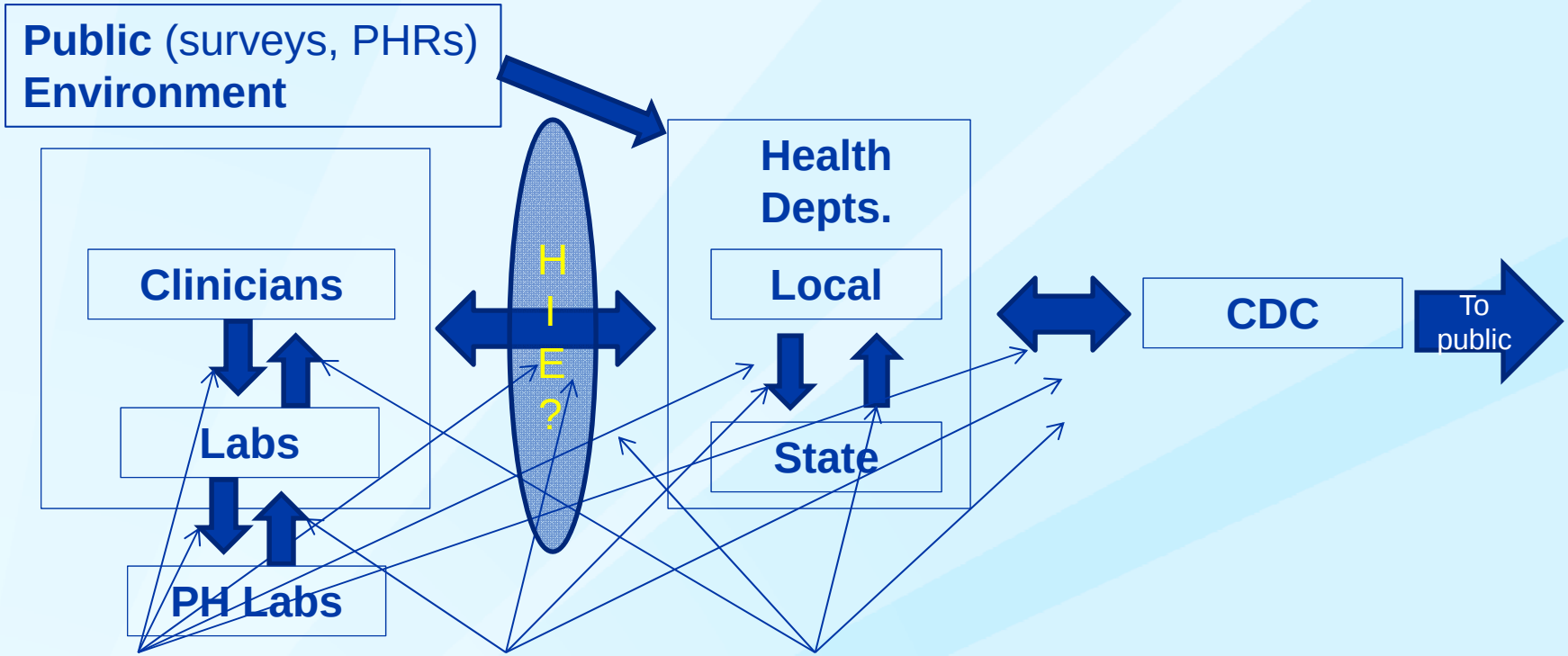
- Providers/hospitals urgently seek to e-report
- Electronic reporters rise from *dozens* to *thousands*
- EHRs will use ONC-prescribed standards
- Rising report volumes
- Timeliness and completeness
- Electronically reusable information
- Public health: **from ruler to participant**



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



- Governance (with ONC, S&L, CDC)
- Establish standards, certify PH
- Training, technical development, communication
- Prototypes and evaluations
- Open source development
- Research partnerships

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
- 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

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

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
- 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

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

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention