

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...

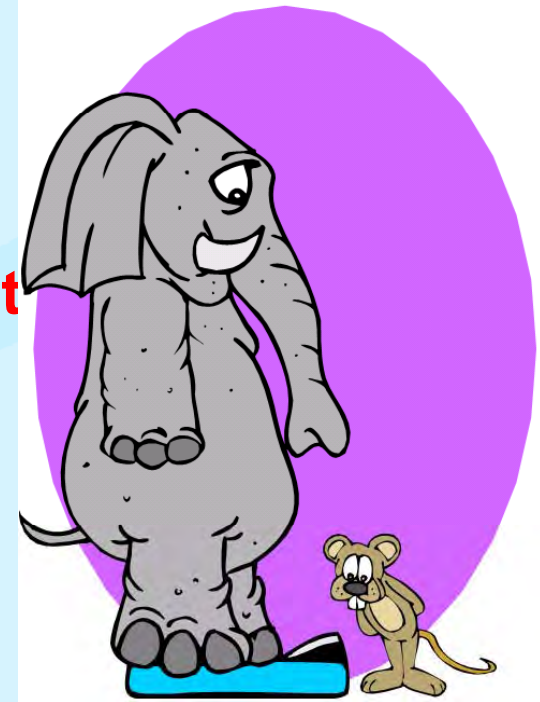
- ❑ 3 stages of Meaningful Use with escalating objectives
- ❑ Yearly attestation (hospitals:FFY, providers: calendar)
- ❑ Stage 1: Oct 2010-Dec 2013*
- ❑ Stage 2: Likely begins Oct. 2013*
- ❑ Stage 3: Likely begins Oct. 2014
- ❑ Incentives front-loaded to favor early participation
- ❑ Penalties start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

Original Stage 1 was 2 years, but ONC likely to extend by one year



What Does Meaningful Use Change?

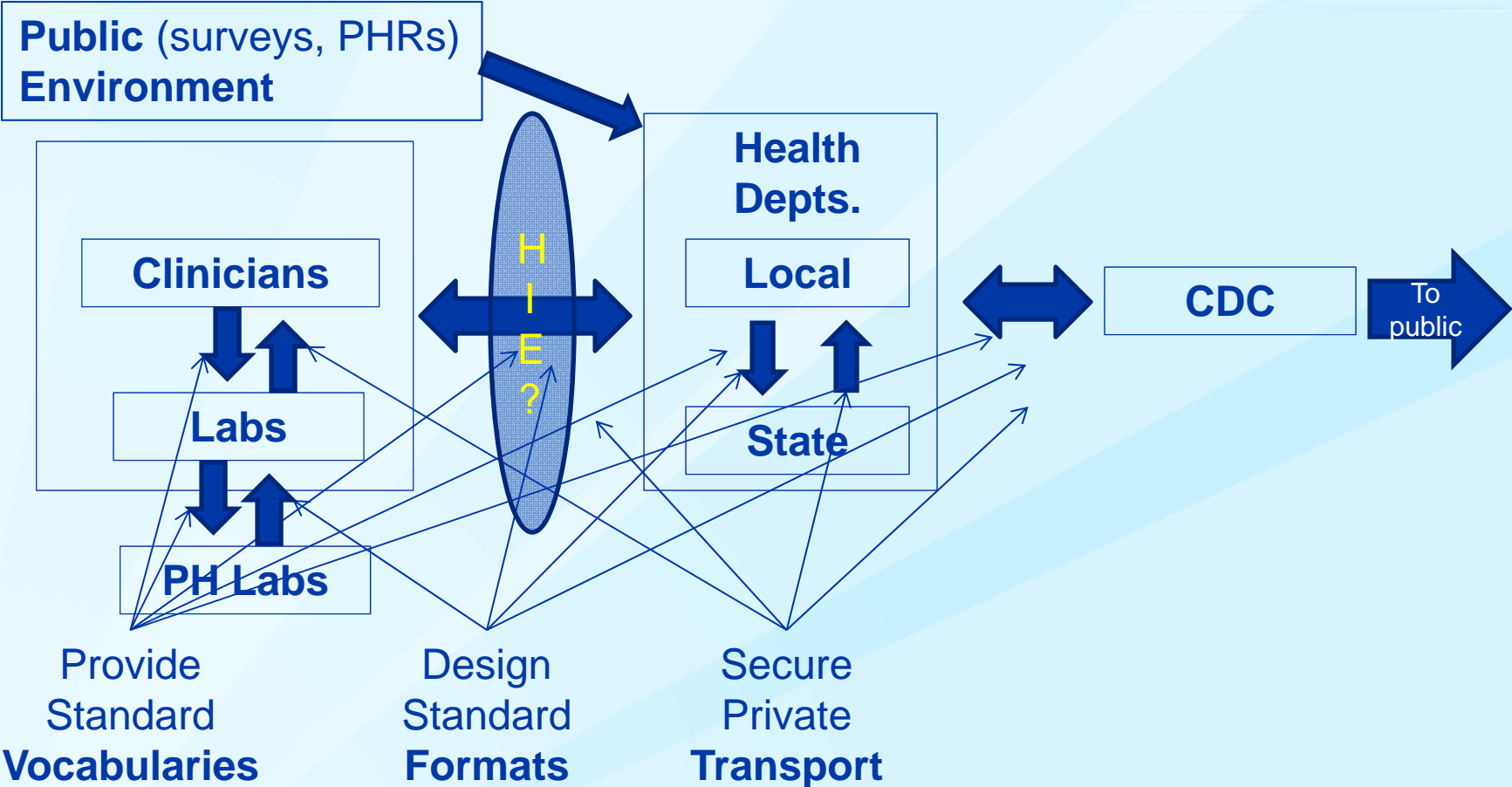
- ❑ Providers/hospitals urgently seek to e-report
- ❑ Electronic reporters rise from *dozens* to *thousands*
- ❑ EHRs will use ONC-prescribed standards
- ❑ Rising report volumes
- ❑ Timeliness and completeness
- ❑ Electronically reusable information
- ❑ Public health: **from ruler to participant**



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



- 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/phinf
- [Ask: meaningfuluse@cdc.gov](mailto: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



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