



Department of Health & Human Services  
Office of the National Coordinator for  
Health Information Technology



# ARRA and Health IT: What (I think) you need to know but (maybe) were afraid to ask

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Chief Scientific Officer*

*Office of the National Coordinator for Health Information Technology (ONC)*

*June 7, 2010*

# Film Still in the Cutting Room...



# Today's Menu



- Some history and where we are now
- HITECH and Meaningful Use
- Getting to Meaningful Use
  - Adoption
  - Incentives
  - Trusted information exchange
  - Transcendent programs
- “Element 3”: completing the agenda
- Concluding observations

# Office of the National Coordinator (ONC)



## Executive Order, April 2004:

Then President Bush created the National Coordinator position

- To achieve the goal of widespread adoption of interoperable electronic health records (EHR) by **2014**:  
“majority of Americans”

## Office of the National Coordinator (ONC):

Provide **leadership** for the development and nationwide implementation of an **interoperable health information technology infrastructure**

***This Established a National Health IT Agenda***

# President Obama's First Weekly Address

Saturday, January 24th, 2009

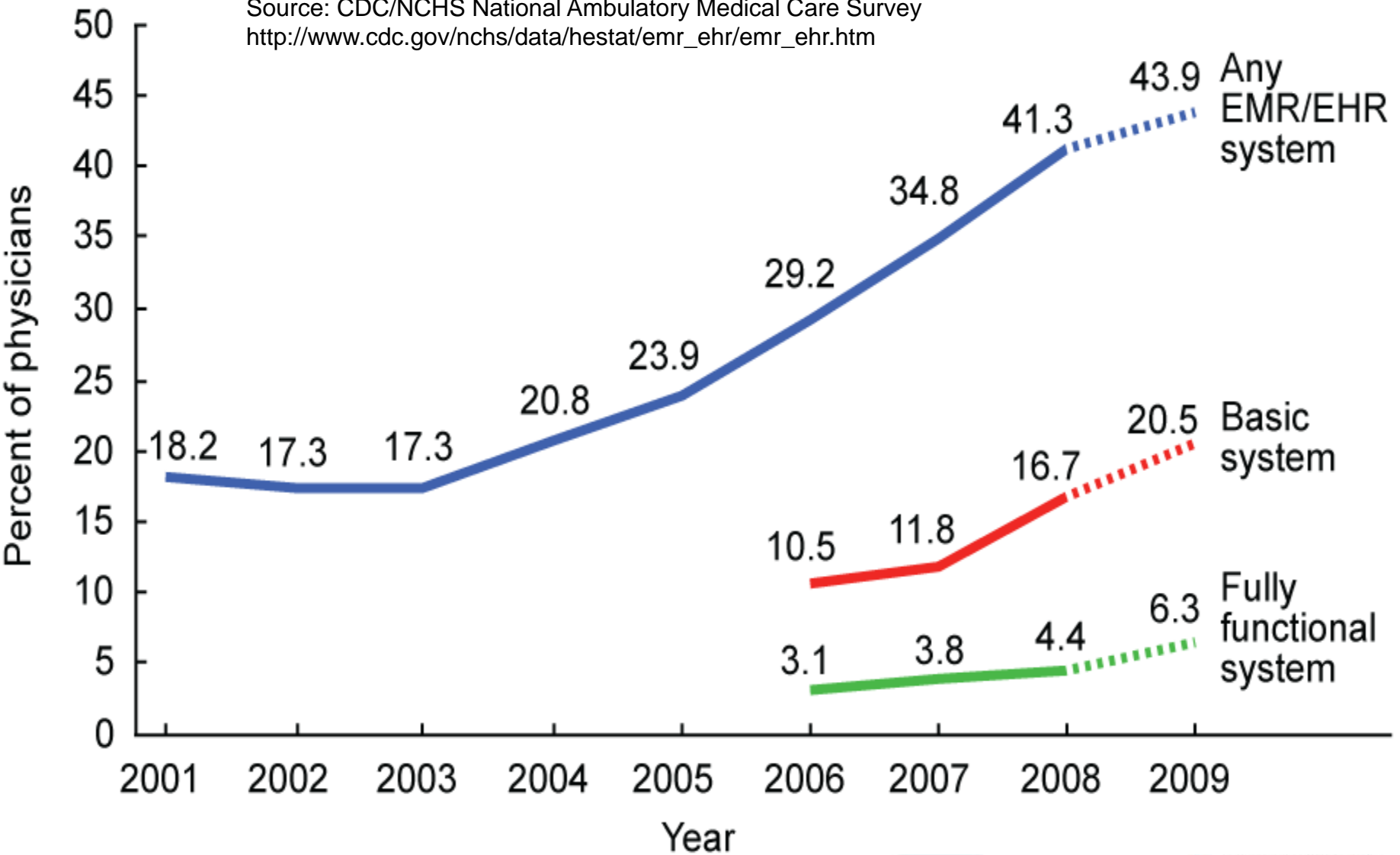


*“To lower health care cost, cut medical errors, and improve care, **we’ll computerize the nation’s health records in five years**, saving billions of dollars in health care costs and countless lives.”*

# EHR Use by U.S. Office-based Physicians



Source: CDC/NCHS National Ambulatory Medical Care Survey  
[http://www.cdc.gov/nchs/data/hestat/emr\\_ehr/emr\\_ehr.htm](http://www.cdc.gov/nchs/data/hestat/emr_ehr/emr_ehr.htm)



# Adoption in U.S. Hospitals: Jha et al. NEJM 2009



**Table 2. Selected Electronic Functionalities and Their Level of Implementation in U.S. Hospitals.**

Electronic Functionality	Fully Implemented in All Units	Fully Implemented in at Least One Unit	Implementation Begun or Resources Identified*	No Implementation, with No Specific Plans
<b>Clinical documentation</b>				
Medication lists	45	17	18	20
Nursing assessments	36	21	18	24
Physicians' notes	12	15	29	44
Problem lists	27	17	23	34
<b>Test and imaging results</b>				
Diagnostic-test images (e.g., electrocardiographic tracing)	37	11	19	32
Diagnostic-test results (e.g., echocardiographic report)	52	10	15	23
Laboratory reports	77	7	7	9
Radiologic images	69	10	10	10
Radiologic reports	78	7	7	8
<b>Computerized provider-order entry</b>				
Laboratory tests	20	12	25	42
Medications	17	11	27	45
<b>Decision support</b>				
Clinical guidelines (e.g., beta-blockers after myocardial infarction)	17	10	25	47
Clinical reminders (e.g., pneumococcal vaccine)	23	11	24	42
Drug-allergy alerts	46	15	16	22
Drug-drug interaction alerts	45	16	17	22
Drug-laboratory interaction alerts (e.g., digoxin and low level of serum potassium)	34	14	21	31
Drug-dose support (e.g., renal dose guidance)	31	15	21	33

\* These hospitals reported that they were either beginning to implement the specified functionality in at least one unit or had identified the resources required for implementation in the next year.

By panel definitions:

- 1.5% have comprehensive system
- 9.1% have basic system

# A slightly different way to look at the hospital data



*Percent of hospitals fully implementing:*

- Laboratory and radiology reports: **77%-78%**
- Drug allergy/interaction alerts: **45%-46%**
- Medication lists: **45%**

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# American Recovery and Reinvestment Act (ARRA)



February 17, 2009

## TITLE XIII—HEALTH INFORMATION TECHNOLOGY

### SEC. 13001. SHORT TITLE; TABLE OF CONTENTS OF TITLE

(a) SHORT TITLE.—This title (and title IV of division B) may be cited as the “Health Information Technology for Economic and Clinical Health Act” or the “HITECH Act”.

## TITLE IV—MEDICARE AND MEDICAID HEALTH INFORMATION TECHNOLOGY; MISCELLANEOUS MEDICARE PROVISIONS



### OFFICE OF THE SECRETARY

### OFFICE OF THE NATIONAL COORDINATOR FOR HEALTH INFORMATION TECHNOLOGY

(INCLUDING TRANSFER OF FUNDS)

For an additional amount for “Office of the National Coordinator for Health Information Technology”, \$2,000,000,000, to carry out title XIII of this Act, to remain available until expended: Pro-



# The HITECH Act in One Slide



1. Mechanisms for national coordination
2. Payment incentives to providers and hospitals who achieve *meaningful use* of certified EHRs (one estimate of net cost: \$17.2 Billion)
  - Beginning 2011
  - Through Medicare or Medicaid
3. Supportive programs (grants and contracts)
  - Three mandatory grant programs; others discretionary
4. Enhanced privacy, security, and access provisions
  - Breach reporting, right to a copy of an individual's data in electronic form

# National Coordination



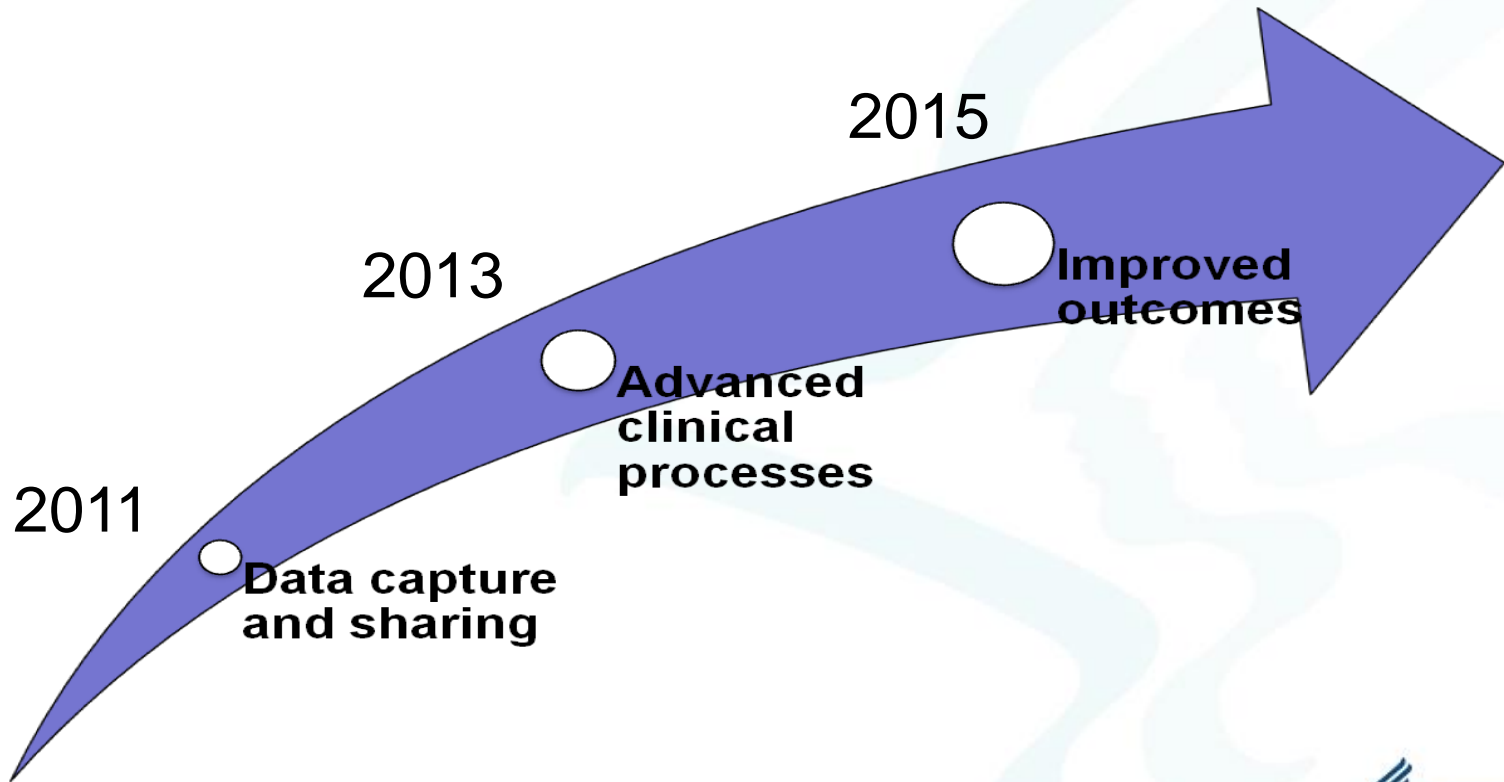
- ONC becomes a permanent organization
- Two Federal Advisory Committees
  - Policy
  - Standards
- Strategic plan to be revised
- Standards and certification criteria to be formally adopted
- Establish certification process
- Governance of Nationwide Health Information Network

# Meaningful Use (MU) in One Slide



- **MU:** those uses of health IT that will improve individual and population health
- **HITECH requires that MU include:**
  - Adoption of certified EHR products
  - Health information exchange
  - Quality reporting
- **MU policy priorities (from HIT Policy Committee):**
  - Improve quality, safety, efficiency and reduce disparities
  - Engage patients and families
  - Improve care coordination
  - Improve population and public health
  - Ensure adequate privacy and security
- **MU Stage 1 (2011) is being defined through a formal rulemaking process led by CMS**
  - Final rule expected soon

# Escalation of “Meaningful Use” Criteria



# MU Stage 1 As Proposed



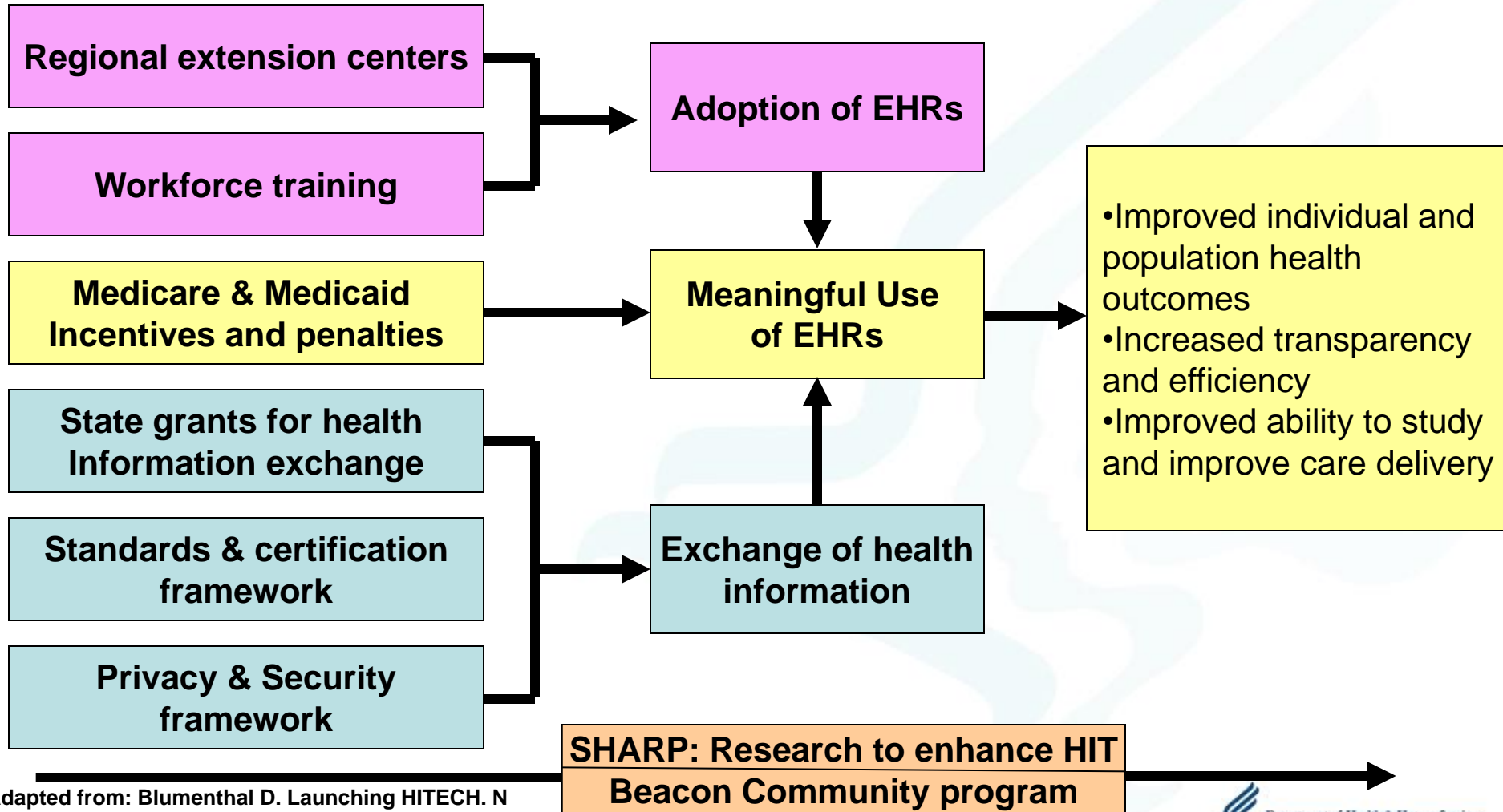
- 21 “objectives” address both eligible providers (EPs) and hospitals. Examples:
  - Use Computerized Physician Order Entry (CPOE)
  - Implement drug-drug, drug-allergy, drug-formulary checks
  - Maintain an up-to-date problem list of current and active diagnoses based on ICD-9-CM or SNOMED CT®
  - Maintain active medication list
  - Maintain active medication allergy list
- Four additional objectives for EPs only. Example:
  - Generate and transmit permissible prescriptions electronically
- Two additional objectives for hospitals only. Example:
  - Provide patients with an electronic copy of their discharge instructions and procedures at time of discharge, upon request

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# ONC/CMS Program to Get to Meaningful Use

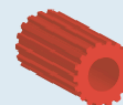


Adapted from: Blumenthal D. Launching HITECH. N Engl J Med. 2010 Jan 4.  
<http://healthcarereform.nejm.org/?p=2669>

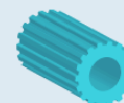
# The Nationwide Health Information Network (NHIN)



A set of **policies**, **standards** and **services** that enable the Internet to be used for secure and meaningful exchange of health information to improve health and health care.



**Services**



**Standards**



**Policies**



**Trust Fabric**

# NHIN Exchange and NHIN Direct



- **NHIN Exchange (original project begun in 2005)**
  - Group of participants who have agreed to be part of NHIN Collaborative
  - Focus on patient lookup & summary record exchange
  - Several important efforts live
    - Social security-MEDVirginia
    - VA-DoD-KP
- **NHIN Direct (new initiative)**
  - Designed to support 2011 MU exchanges
  - Simpler “push” scenarios
  - Initial implementation this fall

# Transcendent Program: Beacon Communities



- To demonstrate how high levels of meaningful use in a community can drive improvements in health and care
- These communities can serve as beacons for the nation
- 15 grants to communities announced
- Competition open for two more



# Transcendent Program: SHARP



- Strategic Health (IT) Advanced Research Projects
- Breakthrough research
- Four sites, with multiple collaborators, funded at \$15M each for four years
- Each site addressing one theme:
  - Patient-centered cognitive support (Texas-Houston)
  - Security (U of Illinois)
  - Secondary use (Mayo Clinic)
  - Advanced network and application platforms (Harvard)

# Taking Clinical Decision Support to National Scale



- Contract recently awarded to Rand Corporation in partnership with Partners Healthcare
  - Management and dissemination of medical knowledge
  - Identification of most important DDIs
- Structured Care Recommendations project (Thomson-Reuters and collaborators)
  - “Pseudo-code” representations of medical logic for consistent implementation across vendor systems

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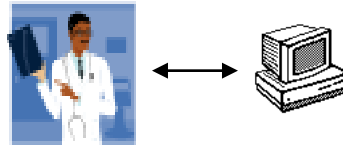


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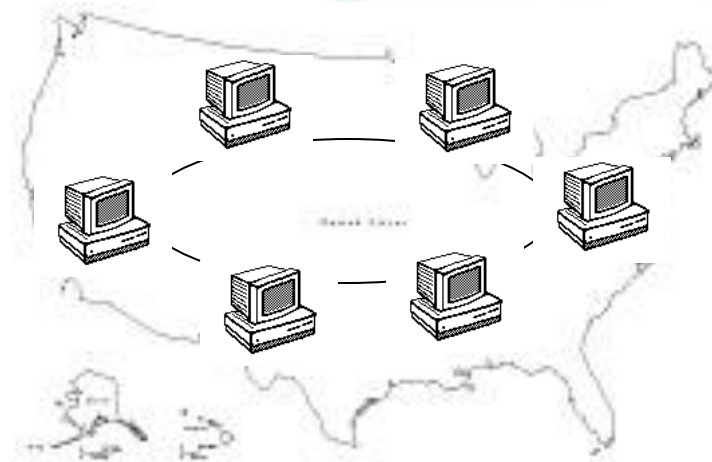
# Getting to Meaningful Use: The “Element” View



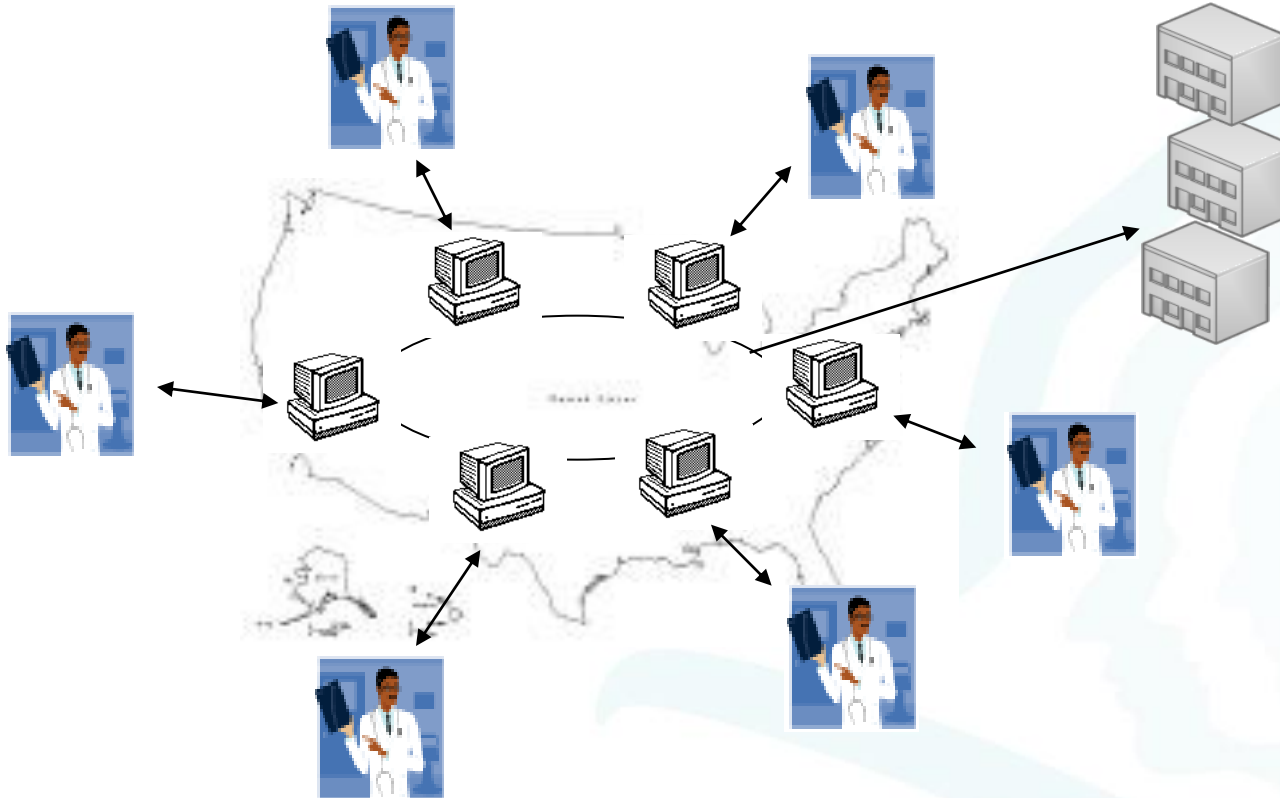
Element 1: **Adopted** Health IT Systems



Element 2: A **Trusted Pathway** to Exchange Information



# Combining Elements 1 and 2 Enables Meaningful Use



1. Adoption of certified EHRs
2. Health information exchange
3. Quality reporting

# ONC/CMS Program to Get to Meaningful Use



Regional extension centers

Workforce training

Adoption of EHRs

Element 1

Medicare & Medicaid Incentives and penalties

Meaningful Use of EHRs

- Improved individual and population health outcomes
- Increased transparency and efficiency
- Improved ability to study and improve care delivery

State grants for health Information exchange

Standards & certification framework

Privacy & Security framework

Exchange of health information

Element 2

Research to enhance HIT  
Beacon Community program

# Elements 1 and 2 are not Enough!



Research Institute

State Public Health

Community Practice

Federal Agencies

Research?  
Public health?  
A “learning system”?

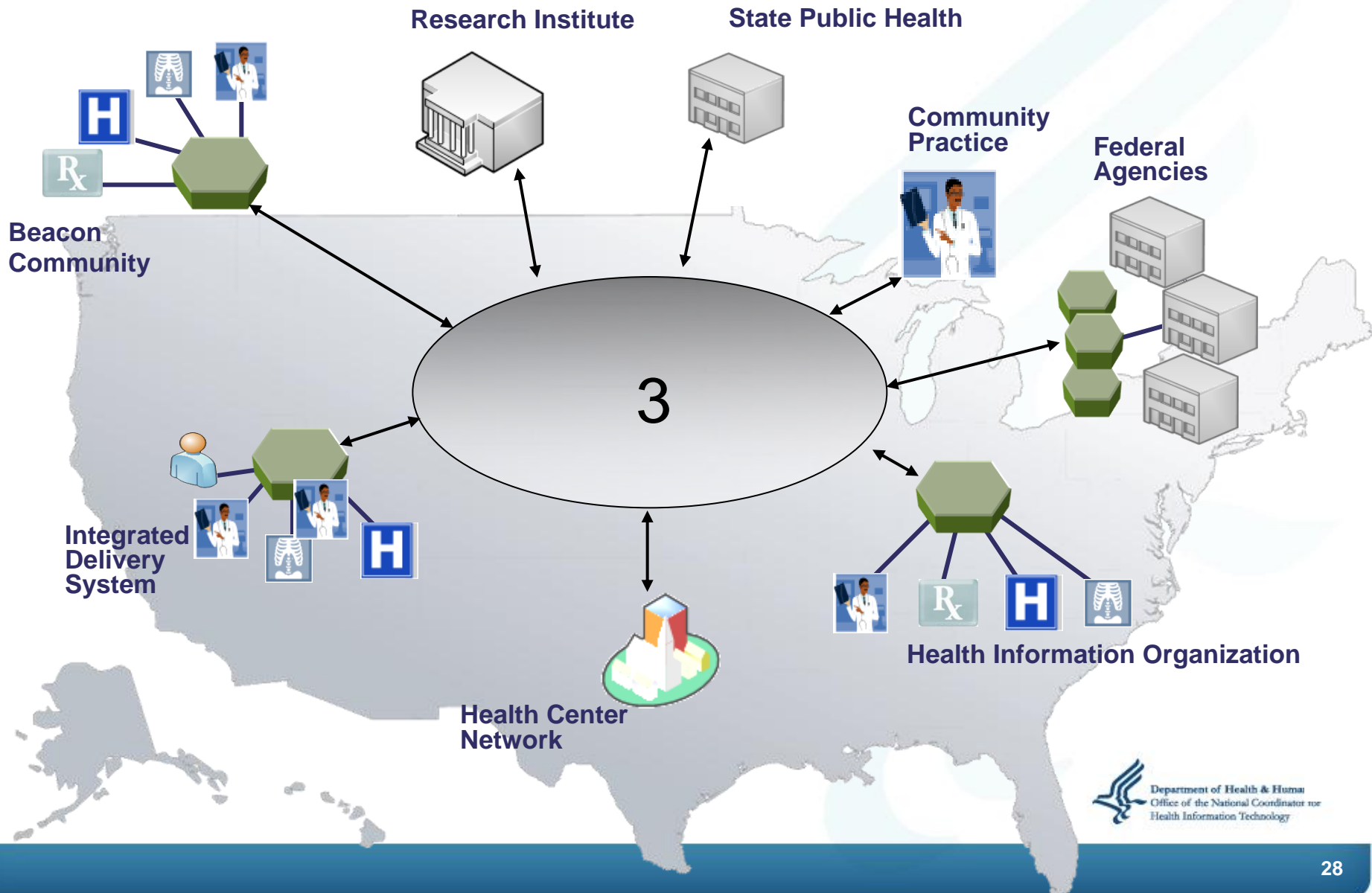
Beacon Community

Integrated Delivery System

Health Information Organization

Health Center Network

# Need an "Element 3"



# Element 3 in Words



## *Highest level goal:*

- By 2015, a federated, integrated learning system for health care quality improvement and population health.

## *Term Definitions:*

- **Learning system:** Data related to individual patients and the care they receive is continuously aggregated, analyzed, and thereby transformed into knowledge that is used to improve care.
- **Population health:** Activities customarily associated with public health; basic, translational, and clinical research; and emergency preparedness.
- **Federation:** Decision makers can assemble from different organizations and locations the data they need without knowing where the relevant data reside.
- **Integration:** Ability to merge data and analyze them in unanticipated ways to discover relationships and generate knowledge.

# Element 3 Scenario



- Any authorized person could broadcast a question and have that question applied automatically to relevant data distributed across the nation.
- If the question is “simple” (e.g.  $\frac{\text{<numerator>}}{\text{<denominator>}}$ ), the answer would be returned automatically.
- If the question is more complicated, sites across the country with relevant data could return de-identified cases for analysis by the originator of the question.

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# Talking Revolution!



Health Care Reform

Patient Access to Information

Rapid Adoption Of EHRs

Personalized Healthcare



Use of Clinical Decision Support

Comparative Effectiveness Research

Trusted Data Mobility

# Revolutionary Change in Beliefs and Values



*Due to availability, trusted mobility and ubiquity of information:*

- Patients and providers share information and thus decision making
- Informational skills are essential to professional preparation
- The only good decision is an evidence-based decision
- Care is customized to the patient
- We can measure and improve what we do
- “Questions are the answer”
- Digital divide is unacceptable
- How did we ever do without this?



# Distinguishing Characteristics of U.S. Approach



- Statutory basis
- Focus on meaningful use, not technology
- Return to agrarian roots
- Support a vibrant market; stimulate innovation
- Late start, fast finish?
- The challenge of the “national resonant frequency”



# Skate to Where the Puck is Going to Be

Wayne Gretzky





# Thanks and Write to Me:

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[healthit.hhs.gov](http://healthit.hhs.gov)

# Additional Slides



# Meaningful Use Proposed Stage 1 Objectives for EPs & Eligible Hospitals (Objs 1-7)



1. Use Computerized Physician Order Entry (CPOE)
2. Implement drug-drug, drug-allergy, drug-formulary checks
3. Maintain an up-to-date problem list of current and active diagnoses based on ICD-9-CM or SNOMED CT®
4. Maintain active medication list
5. Maintain active medication allergy list
6. Record demographics
7. Record and chart changes in vital signs

# Meaningful Use Proposed Stage 1 Objectives for EPs & Eligible Hospitals (Objs 8-14)



8. Record smoking status for patients 13 years and older
9. Incorporate clinical lab-test results into EHR as structured data
10. Generate lists of patients by specific conditions to use for quality improvement, reduction of disparities, and outreach
11. Report ambulatory quality measures to CMS or the States
12. Implement 5 clinical decision support rules relevant to specialty or high clinical priority, including diagnostic test ordering, along with the ability to track compliance with those rules
13. Check insurance eligibility electronically from public and private payers
14. Submit claims electronically to public and private payers

# Meaningful Use Proposed Stage 1 Objectives for EPs & Eligible Hospitals (Objs 15-21)



15. Provide patients with an electronic copy of their health information upon request
16. Capability to electronically exchange key clinical information among providers of care and patient-authorized entities
17. Perform medication reconciliation at relevant encounters and each transition of care
18. Provide summary care record for each transition of care and referral
19. Capability to submit electronic data to immunization registries and actual submission where required and accepted
20. Capability to provide electronic syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice
21. Protect electronic health information created or maintained by the certified EHR technology through the implementation of appropriate technical capabilities

# Additional Meaningful Use Proposed Stage 1 Objectives for EPs Only



1. Generate and transmit permissible prescriptions electronically
2. Send reminders to patients per patient preference for preventive/follow-up care
3. Provide patients with timely electronic access to their health information within 96 hours of information being available to EP
4. Provide clinical summaries for patients for each office visit

# Additional Meaningful Use Proposed Stage 1 Objectives Eligible Hospitals Only



1. Provide patients with an electronic copy of their discharge instructions and procedures at time of discharge, upon request
2. Capability to provide electronic submission of reportable lab results, as required by state or local law, to public health agencies and actual submission where it can be received.