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Office of the National Coordinator for
Health Information Technology

Health Information Technology: a Critical Means to an Even More Critical End

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Beijing, China

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Information is the life blood of medicine…

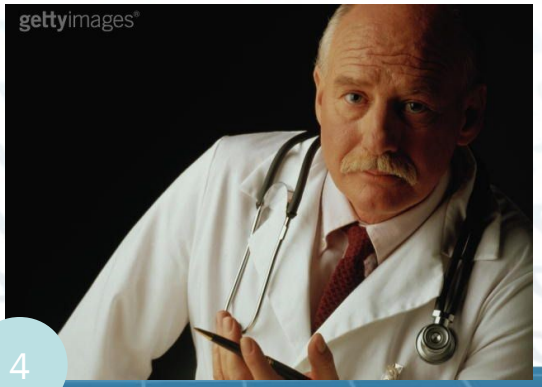
… and health information technology is its circulatory system.

Sir John Forbes discussing the stethoscope, 1821

That it will ever come into general use, notwithstanding its value, is extremely doubtful because its beneficial application requires much time and gives a good bit of trouble, both to the patient and to the practitioner because its hue and character are foreign and opposed to all our habits and associations.

The Stethoscope today

- Ubiquitous, enduring tool that enables better medicine
- Part of the health care provider uniform
  - Integral part of professionalism
- Now comes in many varieties
- Allows a more comprehensive "view" of patient health



Electronic health records will become the "newest" tool

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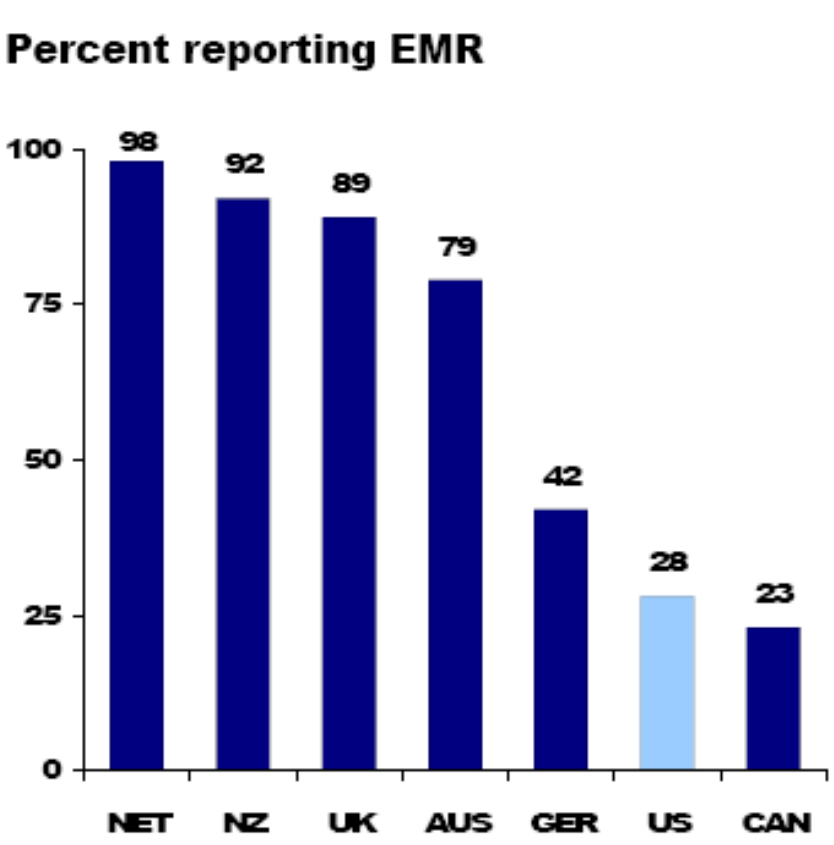
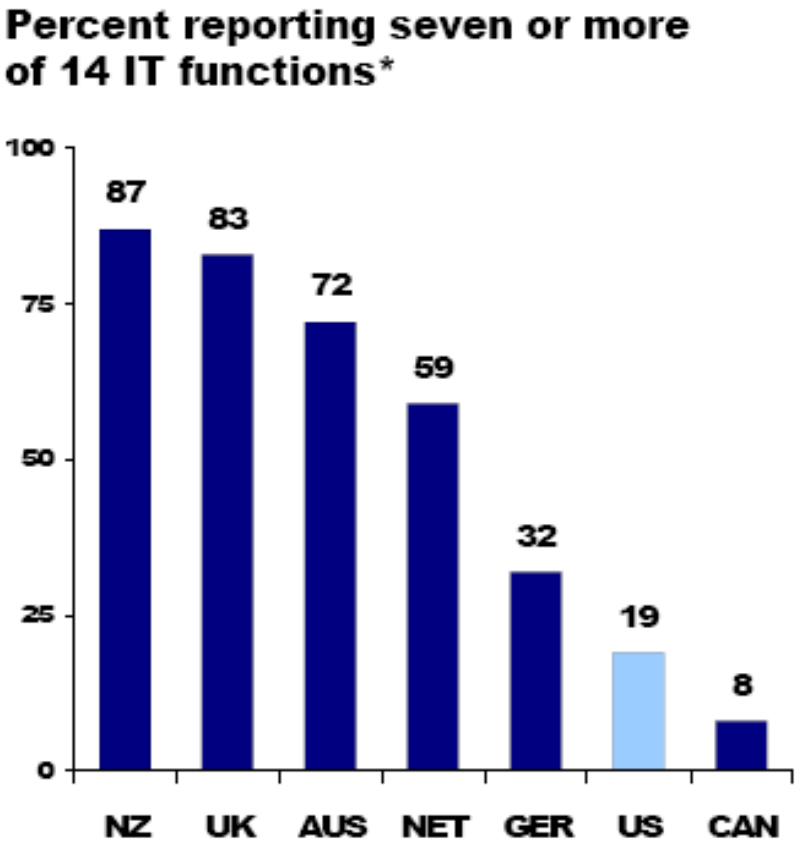
US EHR Adoption





* The 14 functions are: EMR, EMR access other doctors, outside office, patient; routine use electronic ordering tests, prescriptions, access test results, access hospital records; computer for reminders, Rx alerts, prompt test results; easy to list diagnosis, medications, patients due for care.

Source: Commonwealth Fund 2006 International Health Policy Survey of Primary Care Physicians.

HIT and what you need to know

- Health information technology (HIT) **enables patient information to be meaningfully managed clinically and administratively via electronic and computerized means**
- Electronic Health Records: sample benefits
  - **Computerized Provider Order Entry (CPOE)**
  - **Clinical Decision Support System (CDSS)**
- Interoperability **– sharing patient information between disparate systems, keeping the data "liquid" and not tied to any one application**
  - Enabled by **Standards** and enforced by **Certification**
  - Collectively known as **Health Information Exchange (HIE)**

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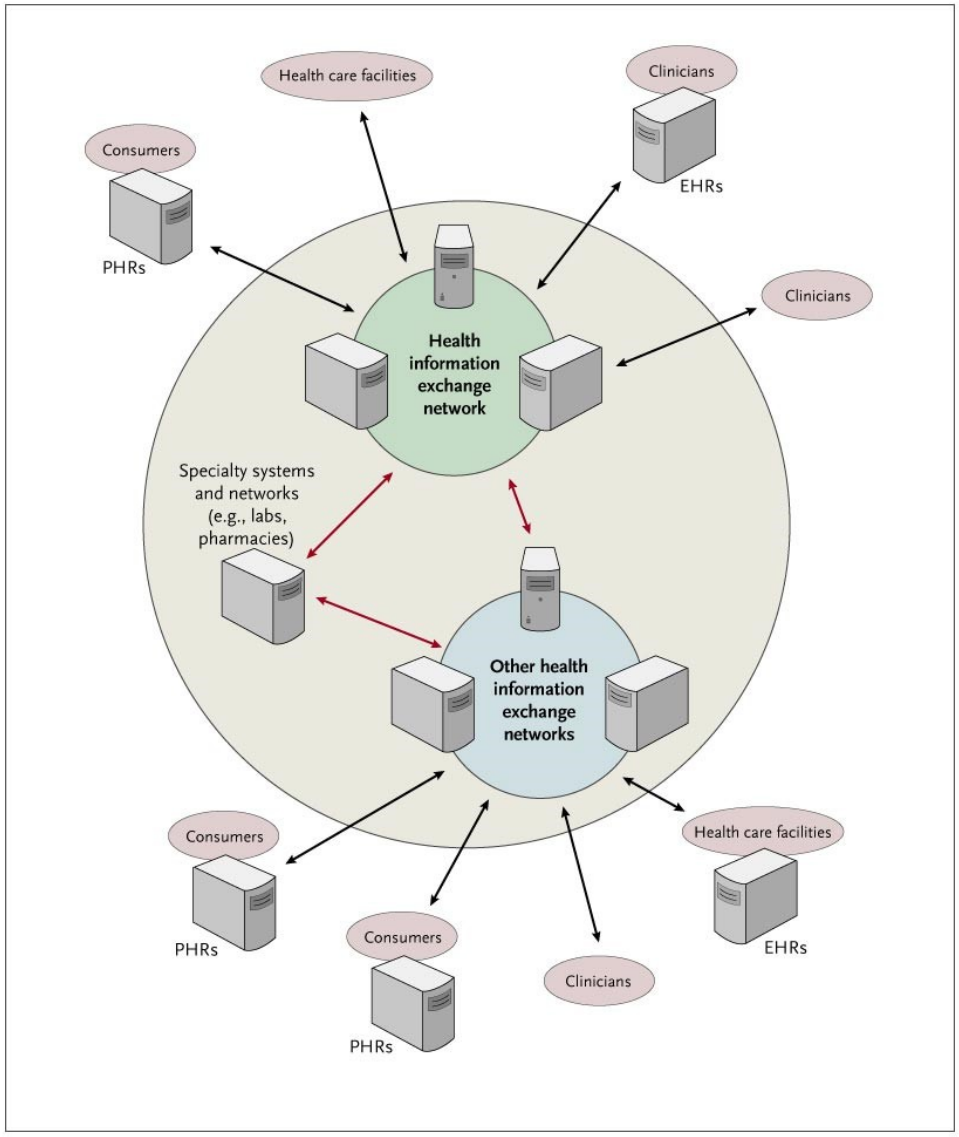
Health Information Exchange (HIE)



Background and History of ONC

- Initially established in 2004 by Executive Order 13335 by President Bush
- Charged with providing leadership for the development and nationwide implementation of an interoperable health information technology infrastructure to improve the quality and efficiency of health care
- Legislatively mandated with expanded powers in the Health Information Technology for Economic and Clinical Health Act [HITECH Act] of 2009

Purpose

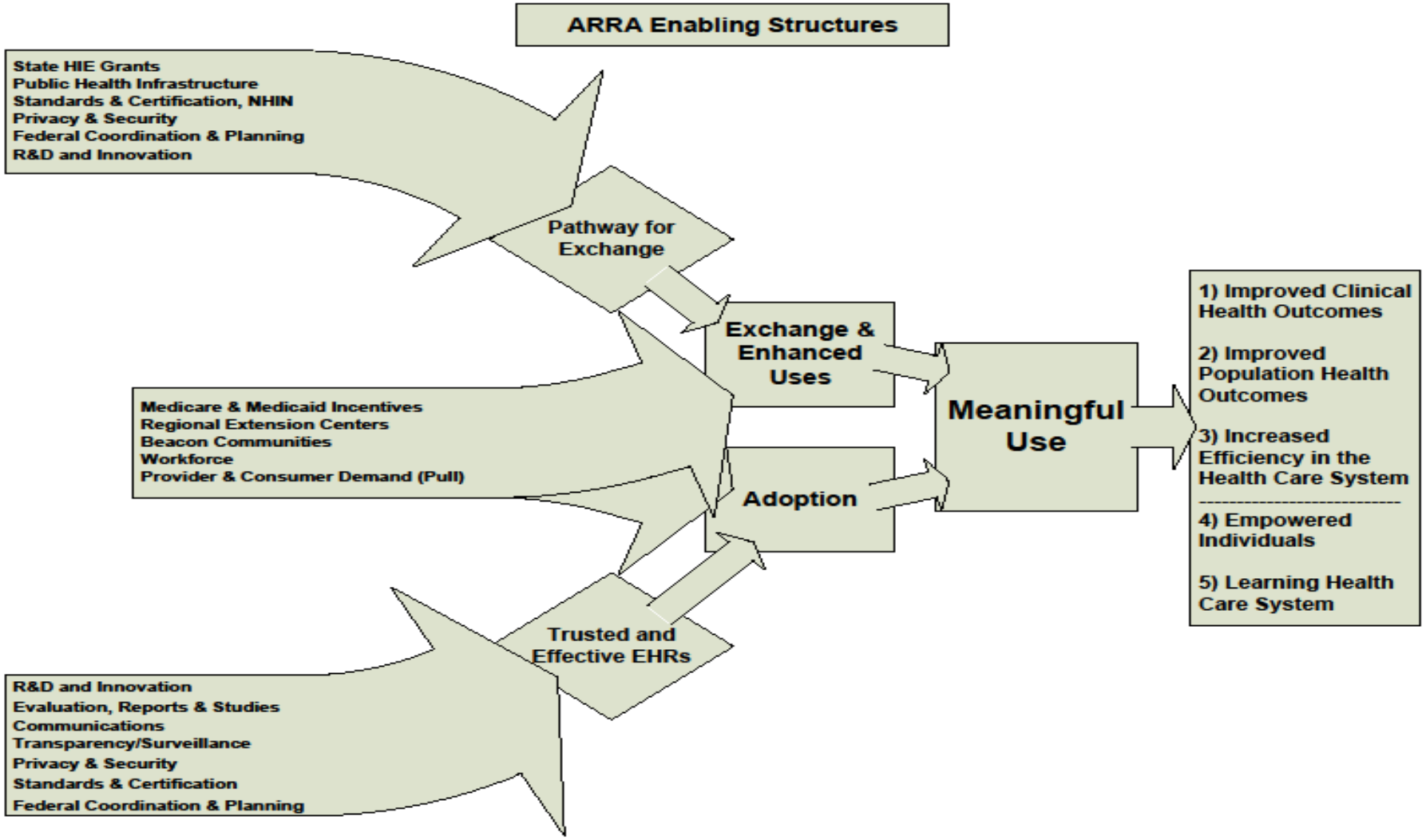
- To support the adoption of health information technology and the promotion of nationwide health information exchange to improve health care.

- Coordinating efforts nationwide to implement and use of health information technology and the electronic exchange of health information.

Goal

- For most Americans to have access to an interoperable electronic health record by 2014.

Getting to Meaningful Use



Funded Programs

- State Health Information Exchange (HIE)
- Regional Extension Center
- Workforce
- Beacon Community
- Federal Health Architecture (FHA)
- National Health Information Network (NHIN)

State HIE Cooperative Agreement: Strategic Objectives

Secure, Electronic Movement and Use of Health Information

- Facilitate and expand the secure, electronic movement and use of health information among organizations according to nationally recognized standards
  - The governance, policy and technical infrastructure supported through this program will enable standards-based HIE and a high performance health care system.

Nationwide HIE Interoperability

- Federal-state collaboration aimed at the long-term goal of nationwide HIE and interoperability
  - ONC intends to award cooperative agreements to states or SDEs to meet local health care provider, community, state, public health and nationwide information needs.

Statewide Policy, Governance, Technical Infrastructure and Business

- Cooperative agreements will focus on developing the statewide policy, governance, technical infrastructure and business practices needed to support the delivery of HIE services
  - The resulting capabilities for healthcare-providing entities to exchange health information must meet the to-be-developed Medicaid and Medicare meaningful use requirements for health care providers to achieve financial incentives.

- Funding: $548 million

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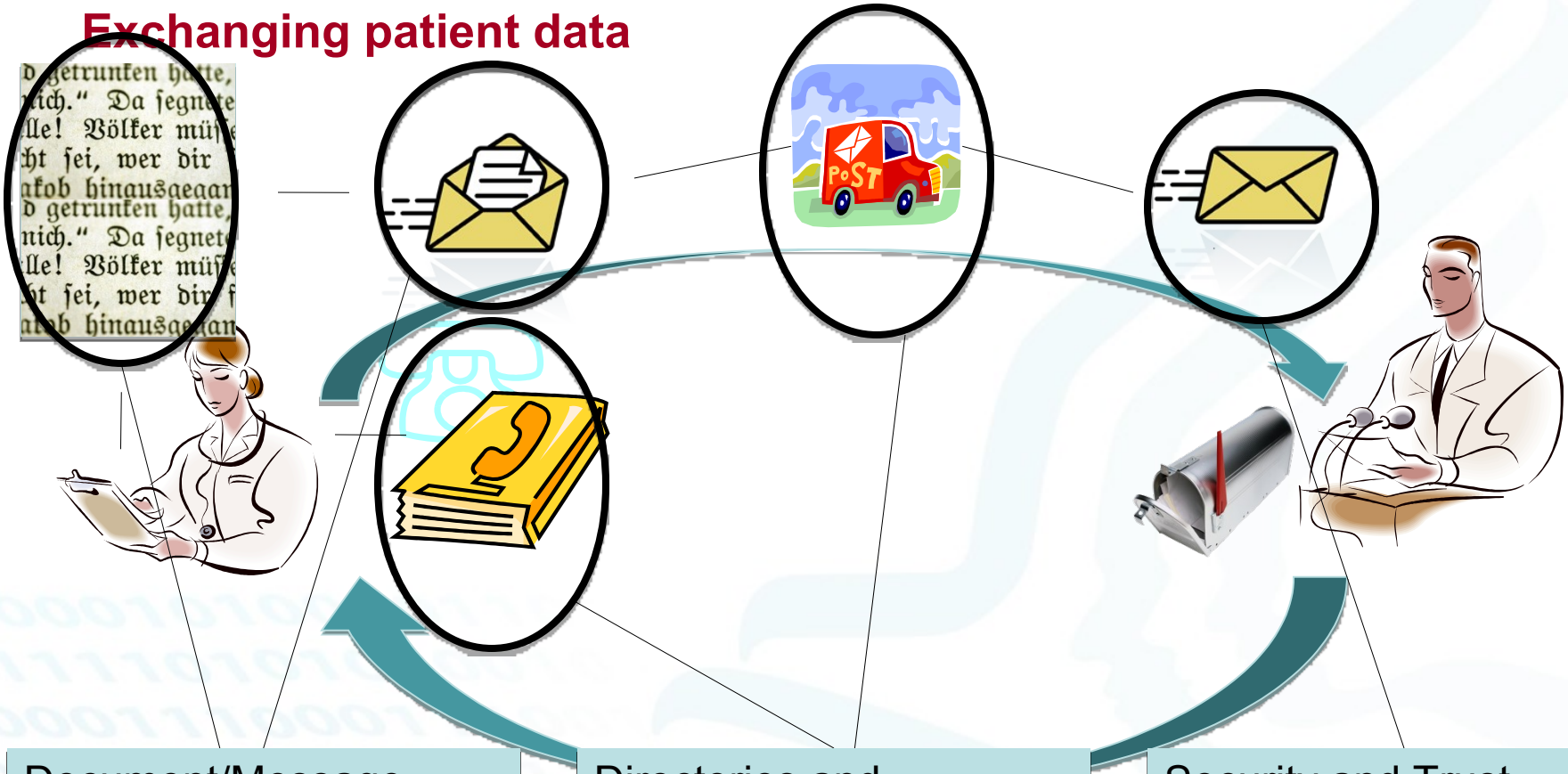
Beacon Community Cooperative Agreement Program: Overview

- Will provide funding to communities to build and strengthen their HIT infrastructure and exchange capabilities to demonstrate the vision of the future where hospitals, clinicians and patients are meaningful users of health IT, and together the community achieves measurable improvements in health care quality, safety, efficiency, and population health.
- Awards made to 15 qualified non-profit organizations or government entities representing geographic health care communities.
- **Funding: $220 million**

Beacon Community Cooperative Agreement Program: Strategic Goals

- **The goal of the Beacon Program is to target and assist a selected number of communities in the United States that demonstrate best practices for Health IT adoption and will serve to lead the way for other communities to also realize the advantages of Health IT implementation.**
- **Additional goals of the Beacon Program include:**
  - To demonstrate widespread adoption of EHRs
  - To demonstrate improved care through quality measures
  - To demonstrate efficiency in Medicaid coordination

Exchanging patient data



Document/Message Standards

Directories and Certificates

Security and Trust relationships

Vocabulary Standards

Delivery Protocols

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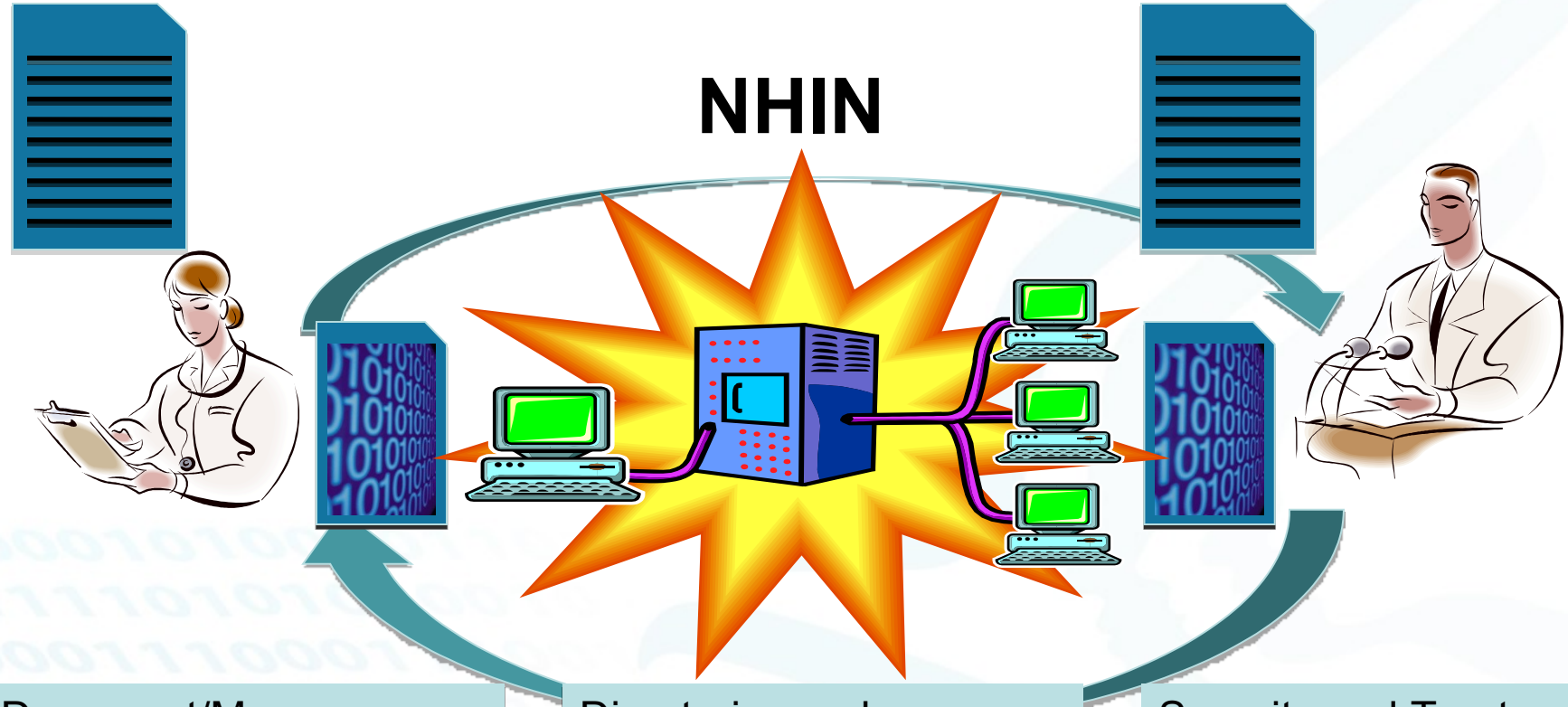
Exchanging patient data



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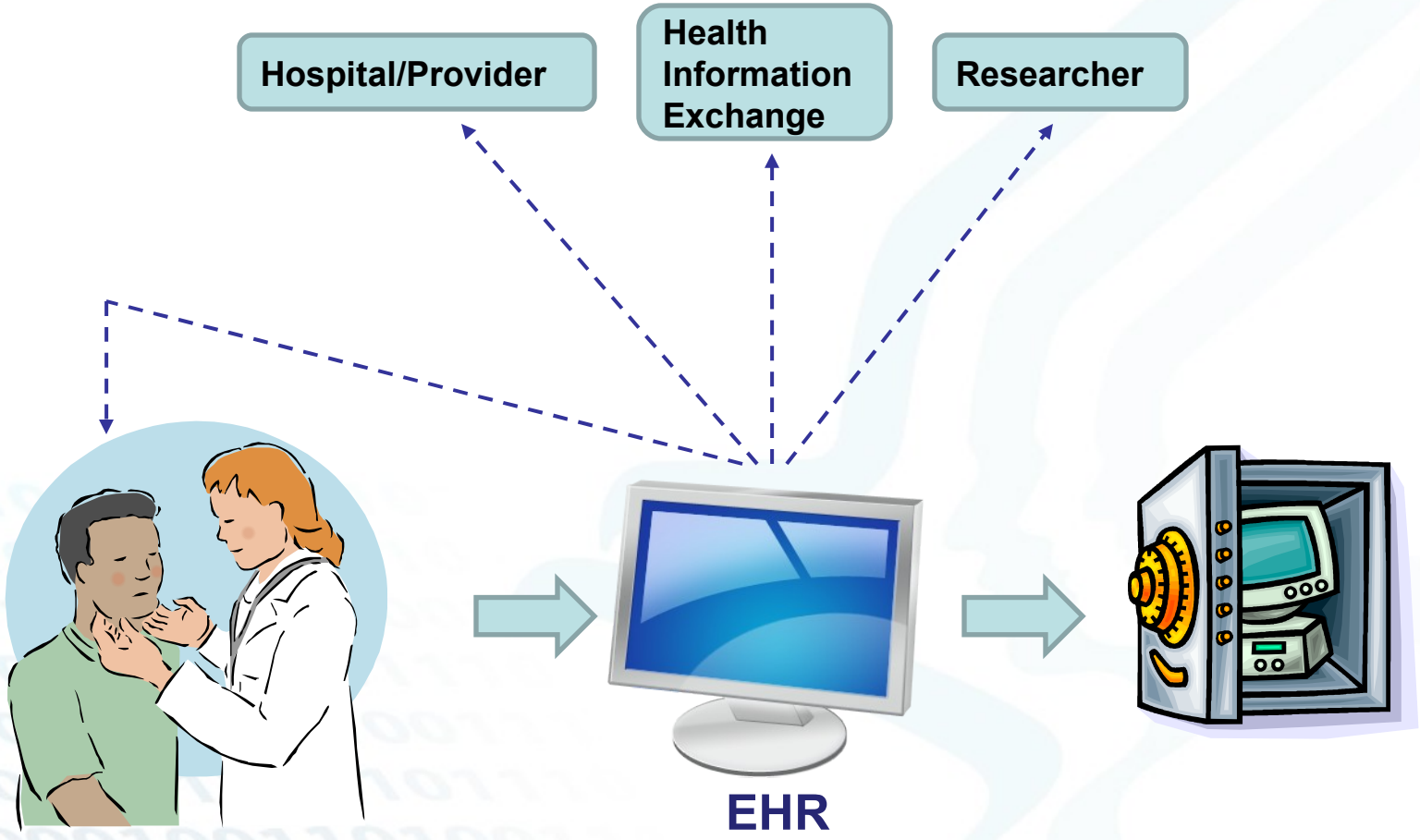
Privacy and Security as a Foundation

What is privacy and security



Health IT privacy and security face challenges and require solutions

Consumer knowledge, choice & uses of information

- Consumers are concerned about how their information is shared and their lack of control.
- Data holders may not appropriately limit use and sharing of information.

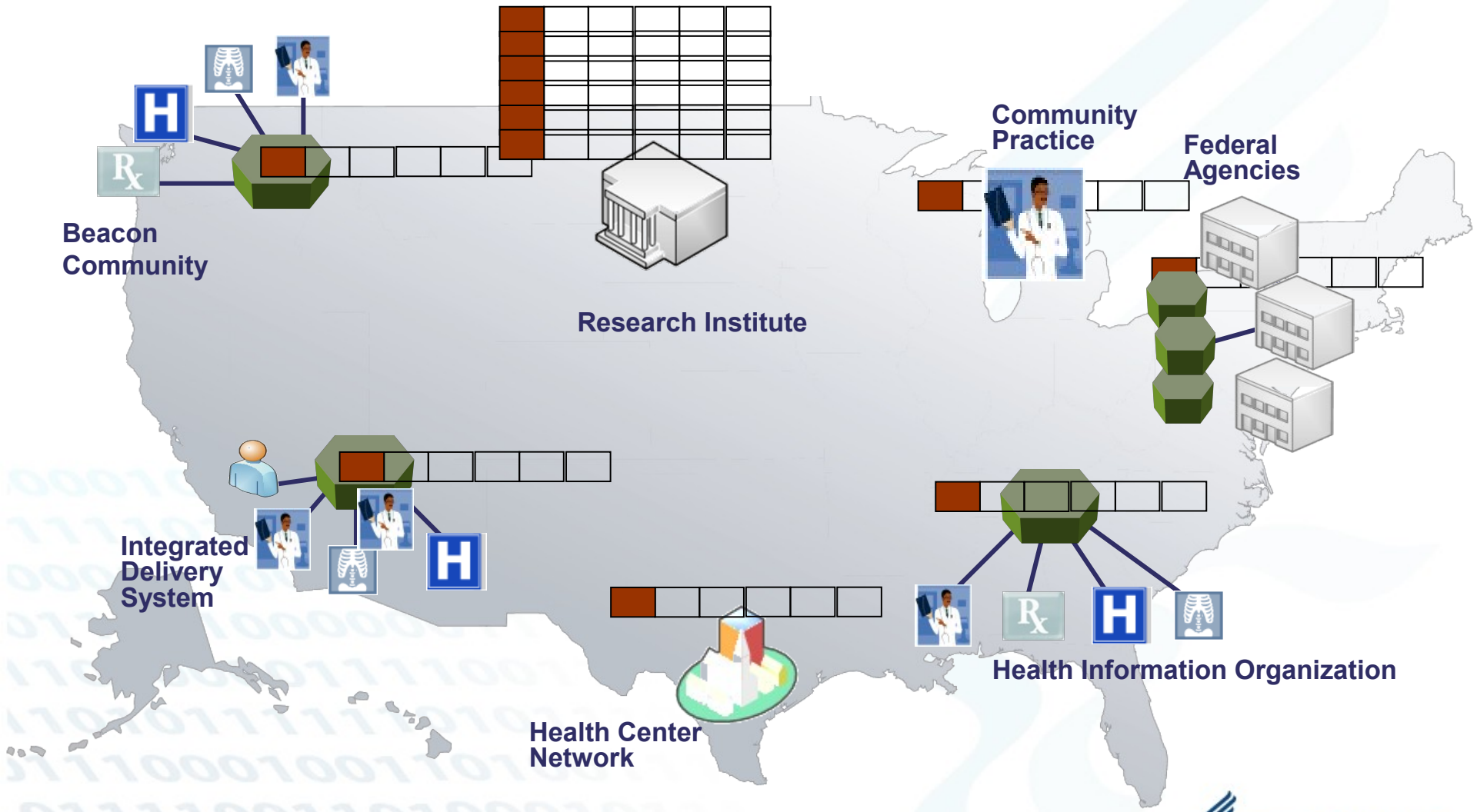
Consumer and provider access

- People who may need timely access to health information may not have access to it, including the consumer

Cyber security

- Risk of harm to people from unauthorized access to data, which increases as data is aggregated electronically

Enhanced use: clinical research



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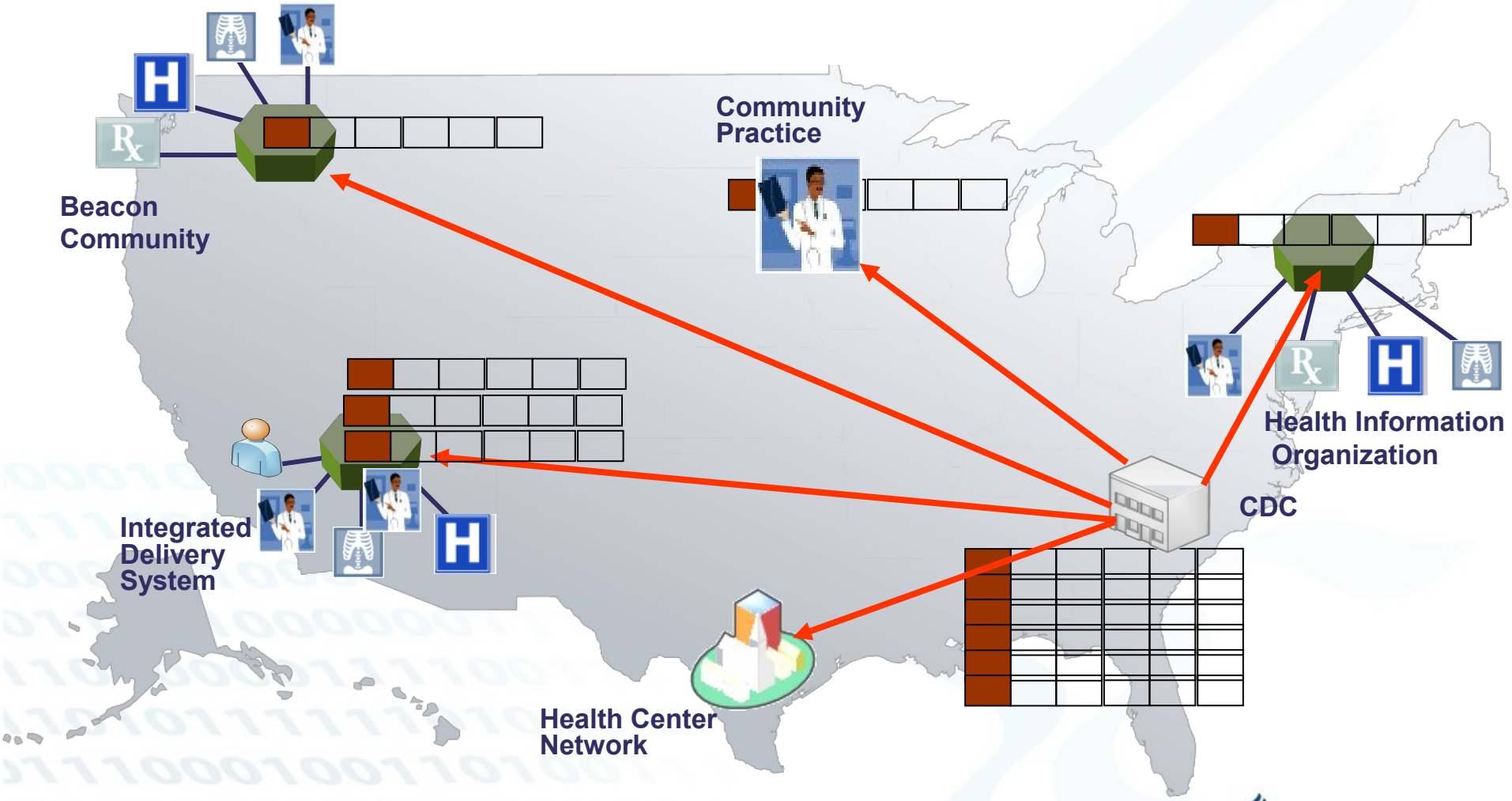
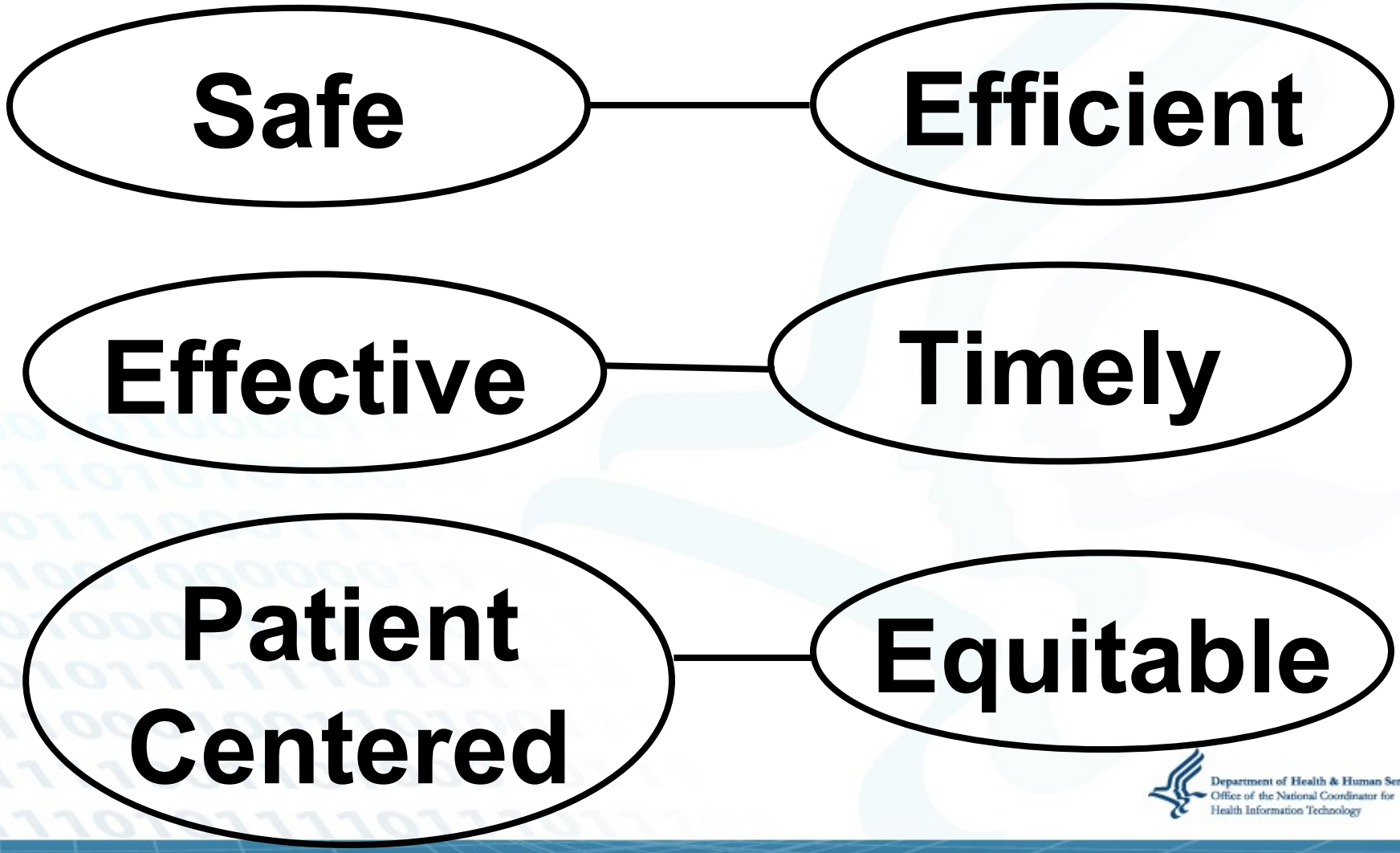
Enhanced use: disease reporting



Quality Healthcare



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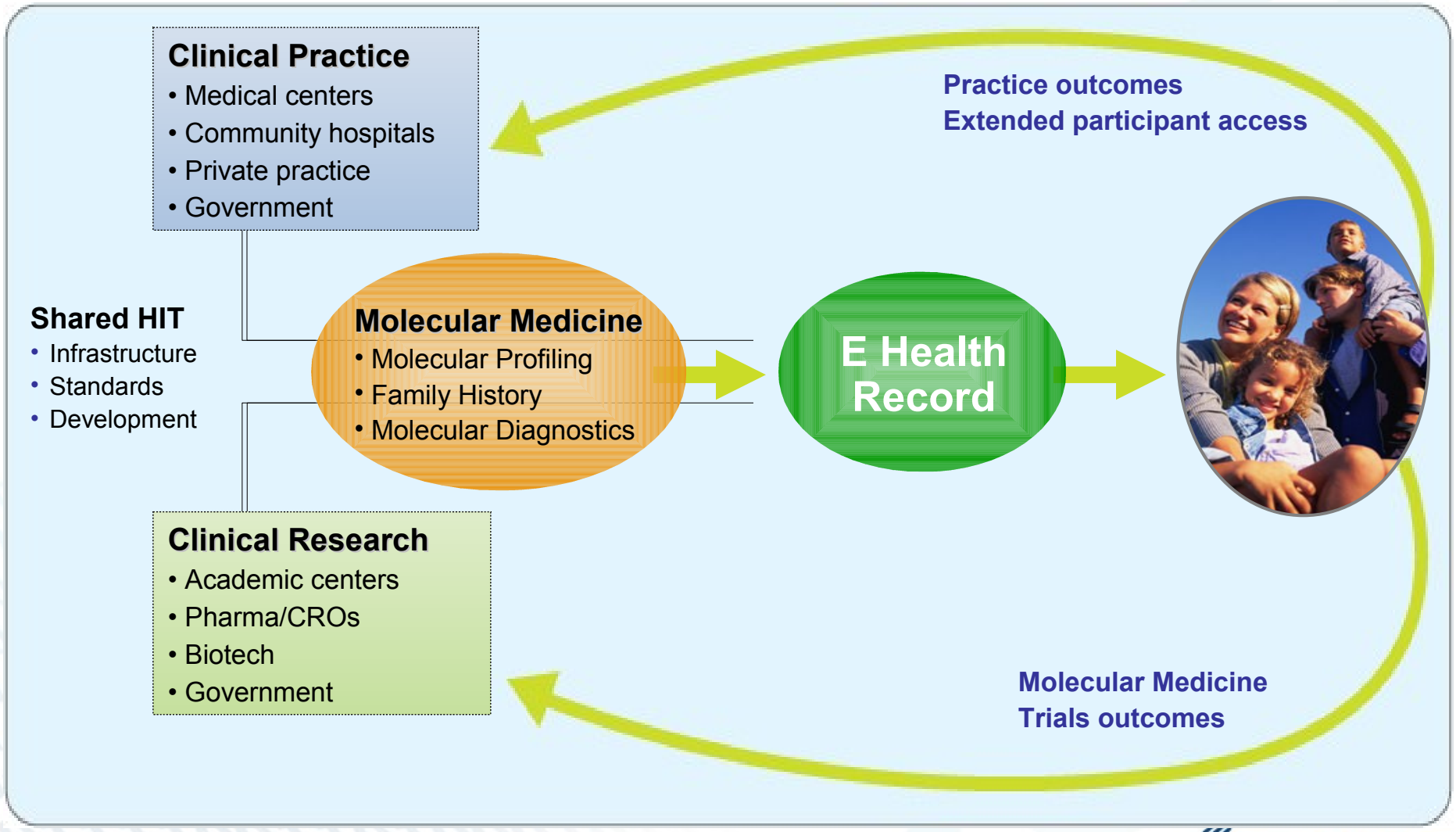
Bridging Research and Care Delivery



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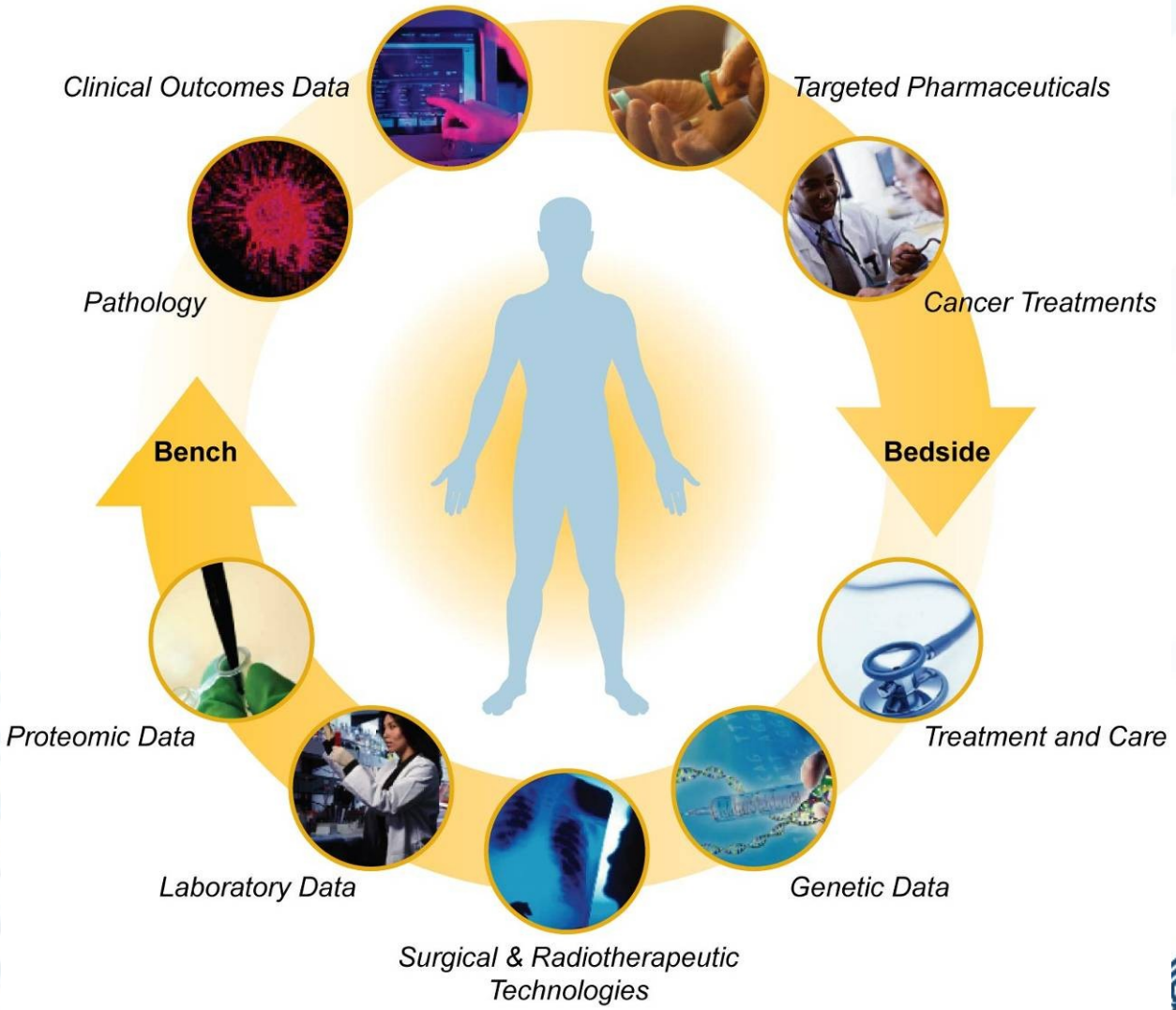
The Goal: Individualized, Targeted Care in Cancer and Other Diseases



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About the SHARP Program

Strategic Health IT Advanced Research Projects

Support "breakthrough" research findings that will:

- Address challenges and barriers to adopting and meaningfully using electronic health records and other forms of health IT
- Accelerate the nation's use of health IT
- Support dramatic improvements in health care

  - **Awarded to four universities that are leading the way in health IT research and innovation**

  - Funding total = $60 million ($15 million each)

About the SHARP Program

UNIVERSITY	RESEARCH FOCUS
University of Illinois Urbana-Champaign	Security and Health Information Technology
The University of Texas Health Science Center at Houston	Patient-Centered Decision-Making Support
Harvard University	Health Care Application and Network Design
Mayo Clinic College of Medicine	Secondary Use of EHR Information

SHARP Program Research Areas

1. ***Security and Health Information Technology***
   Goals: **Develop technologies and policies to increase security safeguards and reduce risk; develop technologies to build and protect public trust**

2. ***Patient-Centered Decision-Making Support***
   Goal: **Use the power of health IT to integrate and support doctors' reasoning and decision-making as they care for patients**

3. ***Health Care Application and Network Design***
   Goal: **Create new and improved system designs to achieve information exchange and ensure privacy and security of electronic health information**

4. ***Secondary Use of EHR Information***
   Goals: **Develop strategies for using information stored in electronic health records for improving the overall quality of health care while maintaining the privacy and security of protected health information**

Applying the SHARP Program Findings

The universities will work with technology developers, vendors, and health care providers to apply their findings to the practice of medicine to accelerate health IT adoption

Data "Disconnects" Are at the Heart of Many Life Sciences and Health Care Challenges

Basic research	Clinical/Translational research	Health care delivery
Huge amounts of data from countless sources	Expiring patents, development and regulatory delays; post-marketing product recalls	Clinical data from disparate sources difficult to integrate; hard to track patients across sites and over time
Dramatically increasing costs and declining resources	Dramatically increasing costs of clinical development; slow/difficult recruitment process for clinical trials	Rising costs; inadequate reimbursement
Lack of data sharing leads to redundancy and lack of productivity	Countless biomarker targets, but difficult to validate clinically for drug development	Lack of data sharing leads to redundancy, lack of productivity; little ability to improve care based on previous trials
Continued organizational and data "disconnects" slow the time to discovery	**Continued organizational and data "disconnects" slow the time to translate research findings into safe and effective products**	**Continued organizational and data "disconnects" slow the time to translate clinical research findings into better clinical care**

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