The Office of the National Coordinator for Health Information Technology

An Overview of Direct

Consumer e-Health Program Pledge Community

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Putting the I in HealthIT

www.HealthIT.gov

What is the Direct Project?

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A project to create the set of **standards** and **services** that, with a **policy** framework, enable simple, directed, routed, scalable transport over the Internet to be used for secure and meaningful exchange between known participants in support of **meaningful use.**

Direct: Secure Directed Exchange via the Internet

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The Direct Project specifies a simple, secure, scalable, standards-based *transportation mechanism* that enables participants to send encrypted health information directly to known, trusted recipients over the Internet.

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- **Simple.** Connects healthcare stakeholders through universal addressing using simple ***push*** of information.
- **Secure.** Users can easily verify messages are complete and not tampered with en route.
- **Scalable.** Enables Internet scale with no need for central network authority that must provide sophisticated services such as EMPI, distributed query/retrieve, or data storage.
- **Standards-based**. Built on well-established Internet standards, commonly used for secure e-mail communication; i.e.,. SMTP (or XDR) for transport, S/MIME for encryption, X.509 certificates for identity assurance

Direct: An alternative to legacy mechanisms

When current methods of health information exchange are inadequate:

Communication of health information among providers and patients still mainly relies on mail or fax

- Slow, inconvenient, expensive
- Health information and history is lost or hard to find in paper charts

Current forms of electronic communication may not be secure

- Encryption features of off-the-shelf e-mail clients not often used in healthcare communications today

Physicians need to transport and share clinical content electronically in order to satisfy Meaningful Use requirements

- Need to meet physicians where they are now

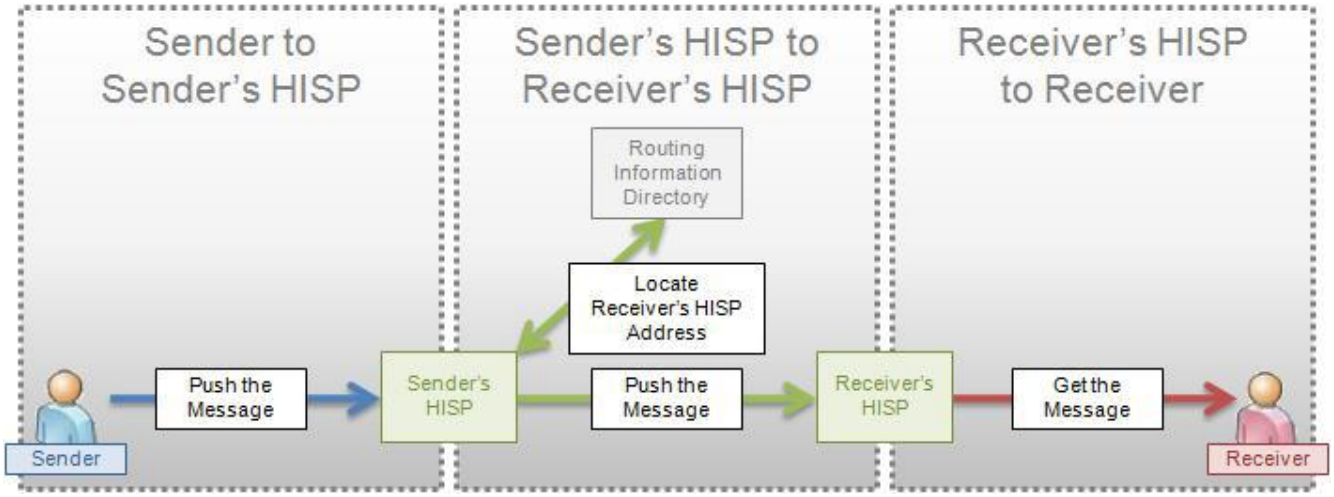
Components to Direct

- Direct Messages hold content
  - Similar to email messages but secure
  - Headers
  - Contents – text + attachments, e.g., CDA, CCD, PDF, TIFF, HL7 lab results
  - Security information – signatures, certificate information as applicable
- Direct Addresses are used to route Messages
  - Look like email addresses, e.g., b.wells@direct.aclinic.org
  - Used only for health information exchange
- S/MIME and X.509v3 digital certificates are used to secure Messages
  - Each Direct Address **must** have at least one digital certificate associated with it for encryption and signing
  - Individual certificate – certificate tied to a specific Direct Address
  - Organizational certificate – certificate tied to a Domain that is part of a Direct Address
- SMTP primarily is used to transport Messages

Health Information Service Providers

A HISP is in charge of performing a number of services required for the exchange of health information as defined by the Direct Project. These services may be handled by a third party or by the sender/receiver.

- Provide Direct Addresses
- Publish/manage digital certificates
- Encrypt and route Direct messages
- Depending on implementation model (e.g., web portal), possibly store Direct messages



Direct & Patients

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Direct facilitates communication between providers, patients, and caregivers.

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DIRECT

Example Information includes:

- Health information
- Discharge instructions
- Clinical summaries
- Reminders and alerts

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Providers

- Need access to a Direct-compliant EHR, a HISP, or HIE acting as a HISP
- Need a Direct Address (assigned by organization/HISP)
- Certificate typically managed by organization/HISP

Vendors

- At a minimum, product must comply with *Applicability Statement for Secure Health Transport*, http://wiki.directproject.org/Applicability+Statement+for+Secure+Health+Transport
- Open source reference implementations (Java & C#) available, http://wiki.directproject.org/Reference+Implementation+Workgroup

Patients

- Need access to a Direct-compliant PHR, HISP, or HIE acting as a HISP
- Need a Direct Address (assigned by PHR/HISP)
- Certificate typically managed by PHR/HISP

Direct: Who is using it?

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EHRs

- Amazing Charts
- ApeniMED
- Allscripts
- Quest Diagnostics Care 360
- Cerner Corporation
- eClinicalWorks
- e-MDs
- Epic
- GE Healthcare
- Greenway
- NextGen
- Polaris
- Siemens
- SOAPware

States

Alabama	Louisiana	Oregon
Alaska	Maine	Pennsylvania
American Samoa	Massachusetts	Puerto Rico
Arizona	Minnesota	Rhode Island
Arkansas	Mississippi	South Carolina
California	Missouri	South Dakota
Colorado	Montana	Tennessee
Connecticut	Nebraska	Texas
Delaware	Nevada	Utah
District of Columbia	New Hampshire	Vermont
Florida	New Jersey	Virgin Islands
Georgia	New Mexico	Virginia
Guam	New York	West Virginia
Hawaii	North Carolina	Wisconsin
Idaho	North Dakota	Wyoming
Kansas	Ohio	
Kentucky	Oklahoma	

HIEs / HISPs

- Ability
- Axolotl
- Harris
- Health-ISP
- Inpriva
- Kryptiq Corporation
- Max.MD
- Medicity
- Mirth
- Secure Exchange Solutions
- Surescripts

PHRs

- Microsoft
- Nomoreclipboard.com
- SmartPHR

The above are examples of vendors (EHRs, PHRs, HIEs/HIPSs) and states that have incorporated or are planning on incorporating the Direct Project protocol into their products/ strategies. Plans may have changed in the interim as of 11/2011.

Blue Button started as an electronic clipboard

Simple way for patients to keep track of their health data

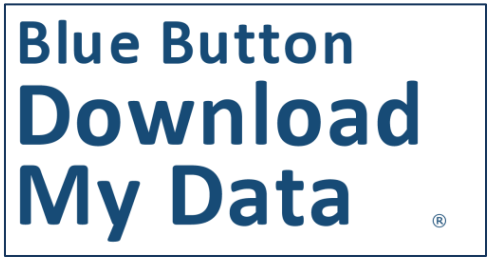
Simple way for patients to get their health data to their doctors and hospitals

- Memory devices: Thumb drives
- Low tech paper: Envelope on the refrigerator
    - Hand-carried – hey, it works!

- Mobile apps – some examples:
    - Northrop-Grumman iPhone app
    - Humetrix iBlueButton®
    - More in pipeline – platform independent

Blue Button: Beyond the Clipboard

How patients relate to their providers and providers relate to patients



- Clinically-based data:
  - Hospitals: discharge summaries
  - Physicians: clinical summaries of office visits
  - Labs: proposed CLIA rule change: 76 FR 56712

- Health claims:
  - Medicare: https://www.mymedicare.gov/
  - Health plans: Aetna, United Health, many others

- Transmitting health data:
  - BB file component of trusted transmission streams
  - Patient to provider, provider to provider

The Button: Beyond Health Care

What consumers look for when they want to download their data:

- Empowering consumers with their own data:
  - Green Button: Energy usage
    - Launch: January, 2011

  - Purple Button: Education data
    - “My Data” in development

Questions?