The Office of the National Coordinator for Health Information Technology

ONC Direct Exchange Workshop

June 9, 2017

Event Hashtag: #DirectExchange

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The Office of the National Coordinator for Health Information Technology

Opening Remarks

Don Rucker, M.D., National Coordinator for Health Information Technology

The Office of the National Coordinator for Health Information Technology

Beyond Meaningful Use: Direct Interoperability Successes and Innovations

Luis Maas, M.D., EMR Direct
John Blair III, M.D., MedAllies
Bruce Schreiber, MaxMD
Yolande Greene, HealthShare Exchange

MedAllies

Integrated Data. Innovative Technology

Beyond Meaningful Use – Direct Interoperability Successes

A. John Blair, MD, CEO, MedAllies

MedAllies
Integrated Data. Innovative Technology

Comprehensiveness and Coordination: Clinical and Community

- Patient Discharged from Hospital to Home

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Successful Results From Innovative Technology Do Not Occur In A Vacuum

MedAllies Overview

MedAllies
Integrated Data. Innovative Technology

- Founded 2001
- Physician Led
- Business lines:
  - National Direct Network
  - EHR Implementation and Support
  - Value – Based Healthcare Consulting
    - Ambulatory
    - Hospital
    - Community

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MedAllies Consulting Programs

- State Innovation Model (SIM) Programs
- NY State Delivery System Reform Incentive Payment (DSRIP) Program
- National Committee for Quality Assurance (NCQA) Patient Centered Medical Home (PCMH) Recognition Programs
- Comprehensive Primary Care (CPC) Programs
  - CPC Classic
  - CPC +

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CPC + Overview

- Center for Medicare and Medicaid Innovation (CMMI)
- Regionally-based multi-payer payment reform and care delivery transformation
- Five-year program
- Regions
  - 14 initial regions
  - 4 new regions just announced
- Extensive training and support

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CPC+ Training and Support

- Program materials
- Educational sessions
- Practice facilitation and coaching
- Care management fee
  - Ongoing financial underwrite
- Data
- Annual performance based payment

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CPC+ 5 Comprehensive Primary Care Functions

- Access and Continuity
- Care Management
- Comprehensiveness and Coordination: Clinical and Community
- Patient and Caregiver Engagement
- Planned Care and Population Health

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Hospital Discharge Components

- Hospital
  - Discharge Medication Reconciliation
  - Discharge Checklist
- Hospital to PCP
  - Discharge C-CDA
  - Nurse to Care Manager (Nurse) Handoff
  - PCP Appointment Scheduled within three days
- PCP
  - Nurse to Care Manager (Nurse) Handoff (as above)
  - Medication Reconciliation
  - 24 hour telephone call

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Hospital Discharge: 5 **Key** Components

1. Discharge Medication Reconciliation
2. Real –time Document Transfer via Direct
3. Clinician to Clinician Hand-off
4. PCP Follow Up Appointment Scheduled Within 3 Days
5. Patient Called within 24 Hours Post Discharge

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MedAllies Consulting Programs

- State Innovation Model (SIM) Programs
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- National Committee for Quality Assurance (NCQA) Patient Centered Medical Home (PCMH) Recognition Programs
- Comprehensive Primary Care (CPC) Programs
  - **CPC Classic**
  - **CPC +**

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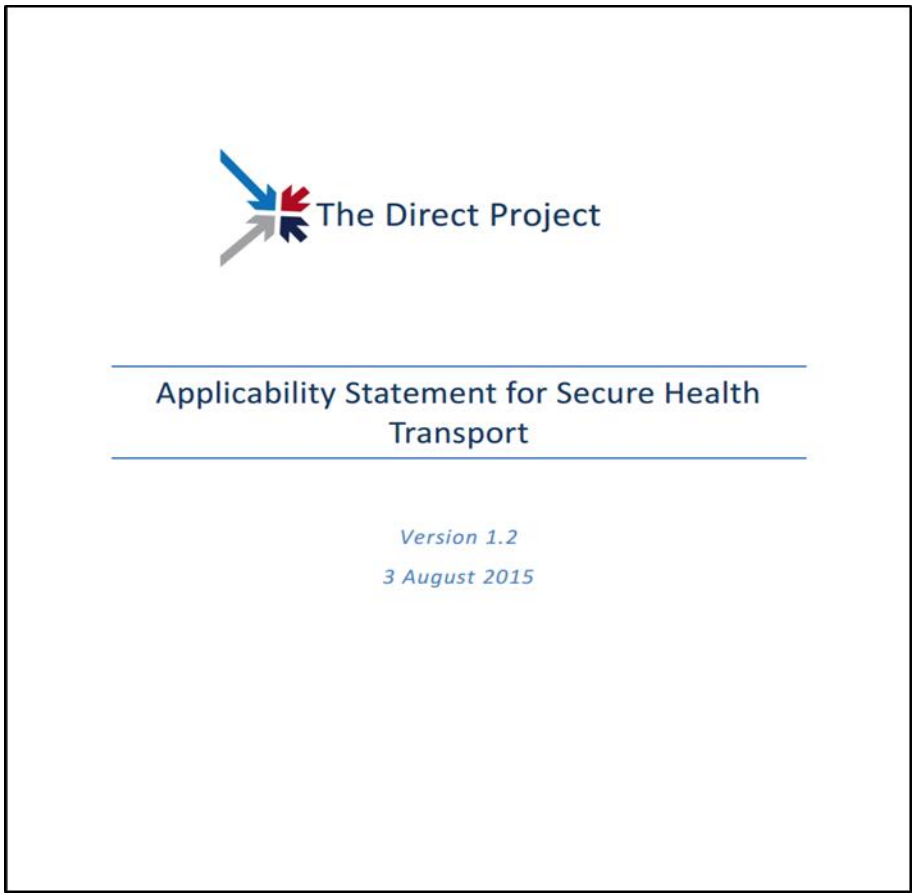
Comprehensiveness and Coordination: Clinical and Community

- Patient Discharged from Hospital to Home

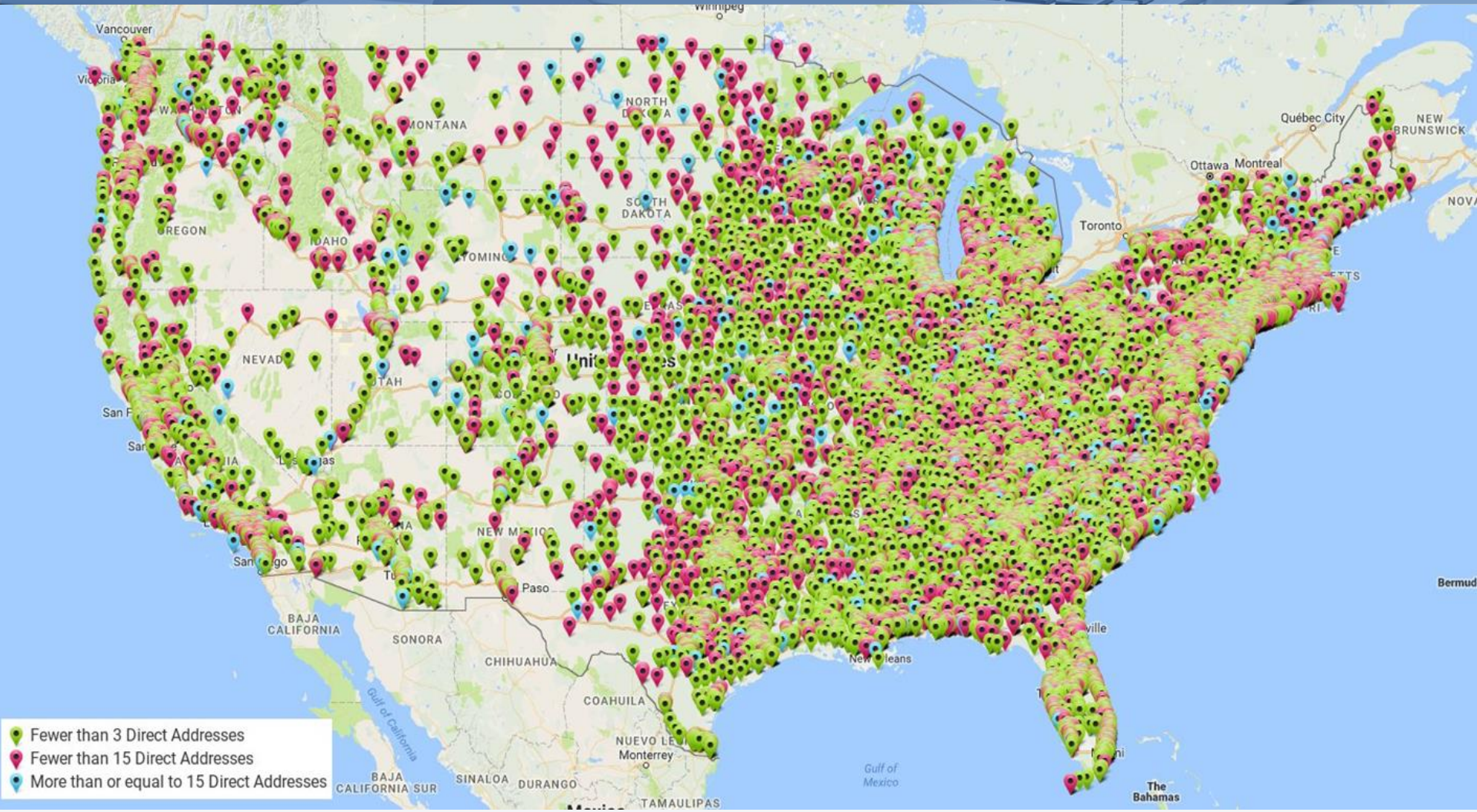
MaxMD

Direct Interoperability Successes and Innovations

The Foundation of Direct



DirectTrust Directory Coverage Map



MaxMD

70 Components of C-CDA R2.1

Admission Diagnosis	Admission Meds	Advance directive	Allergies & Intolerances	Anesthesia	Assessment & Plan	Assessment	Chief Complaint Reason for Visit	Chief Complaint
Complications	Course of Care	DICOM Object Catalog	Discharge Diagnosis	Discharge Diet	Discharge Medications	Encounters	Family History	Fetus Subject Context
Findings	Functional Status	General Status	Goals	Health Concerns	Health Status Eval/Outcomes	History Past Illness	History Present Illness	Hospital Consultations
Hospital Course	Hospital Discharge Instructions	Hospital Discharge Physical	Hospital Discharge Studies Sum.	Immunizations	Implants	Instructions	Interventions	Medical (Gen) History
Medical Equipment	Medications Administered	Medications	Mental Status	Nutrition	Objective	Observer Context	Operative Note Fluids	Op Note Surgical Procedure
Payers	Physical Exam	Plan of Treatment	Planned Procedure	Postoperative Diagnosis	Postprocedure Diagnosis	Preoperative Diagnosis	Problem	Procedure Description
Procedure Disposition	Procedure Est. Blood Loss	Procedure Findings	Procedure Implants	Procedure Indications	Procedure Specimens	Procedures	Reason for Referral	Reason for Visit
	Results	Review of Systems	Social History	Subjective	Surgery Description	Surgical Drains	Vital Signs	

MaxMD

Discharge Summary
(5 standard components, 21 optional)

Admission Diagnosis	Admission Meds	Advance directive	Allergies & Intolerances	Anesthesia	Assessment & Plan	Assessment	Chief Complaint Reason for Visit	Chief Complaint
Complications	Course of Care	DICOM Object Catalog	Discharge Diagnosis	Discharge Diet	Discharge Medications	Encounters	Family History	Fetus Subject Context
Findings	Functional Status	General Status	Goals	Health Concerns	Health Status Eval/Outcomes	History Past Illness	History Present Illness	Hospital Consultations
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Medical Equipment	Medications Administered	Medications	Mental Status	Nutrition	Objective	Observer Context	Operative Note Fluids	Op Note Surgical Procedure
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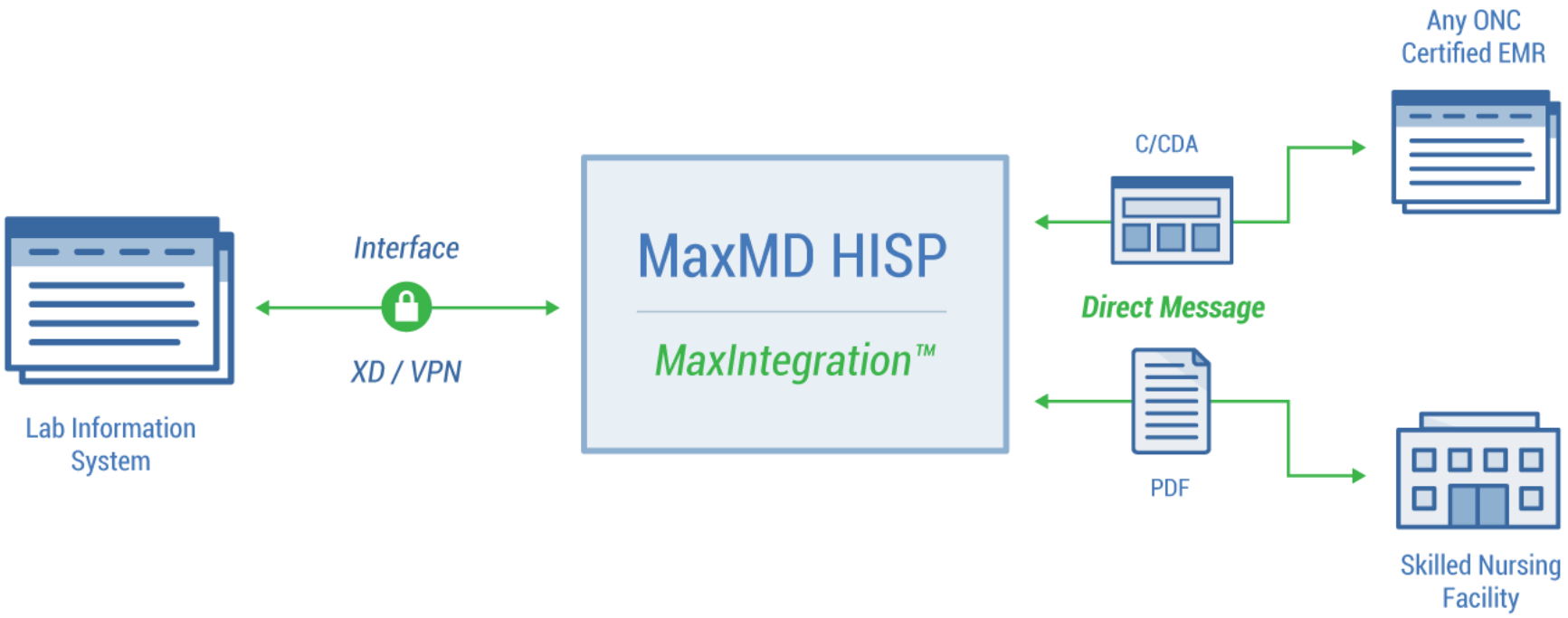
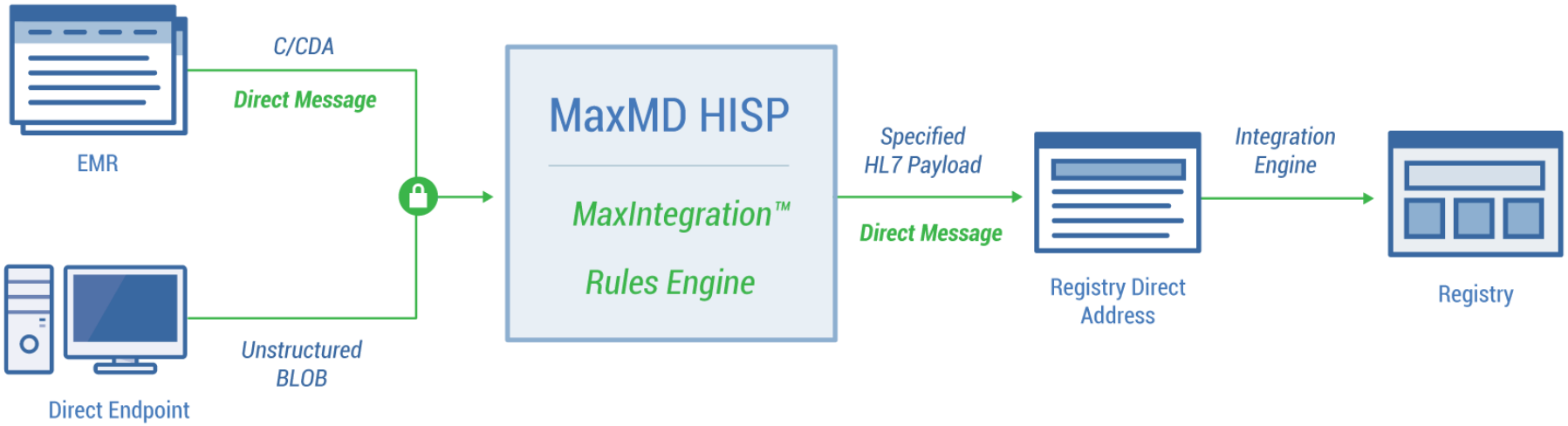
	Results	Review of Systems	Social History	Subjective	Surgery Description	Surgical Drains	Vital Signs	

MaxMD

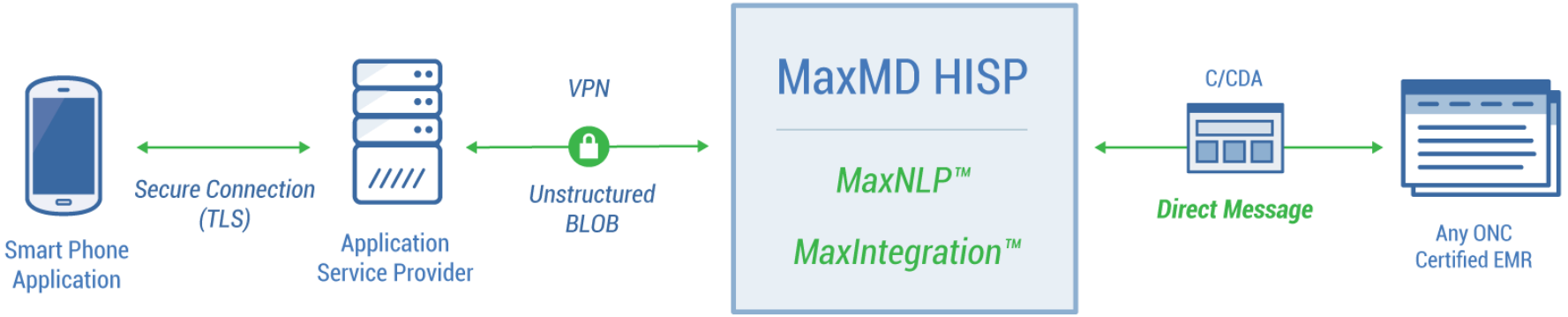
Legacy LIS


Lab Information System
Interface
XD / VPN
MaxMD HISP
MaxIntegration™
C/CDA
Direct Message
PDF
Any ONC Certified EMR
Skilled Nursing Facility

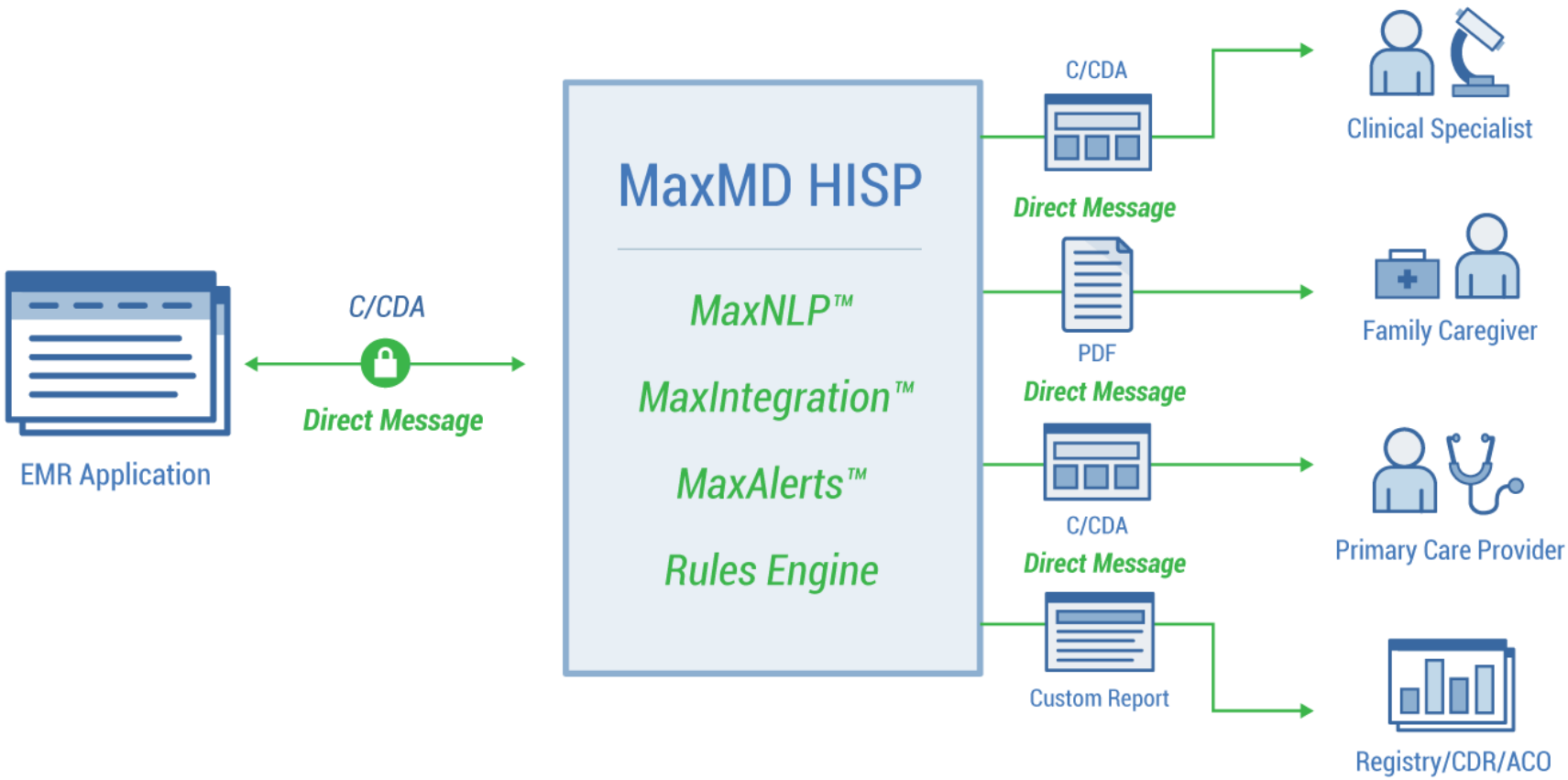
Disease Registry



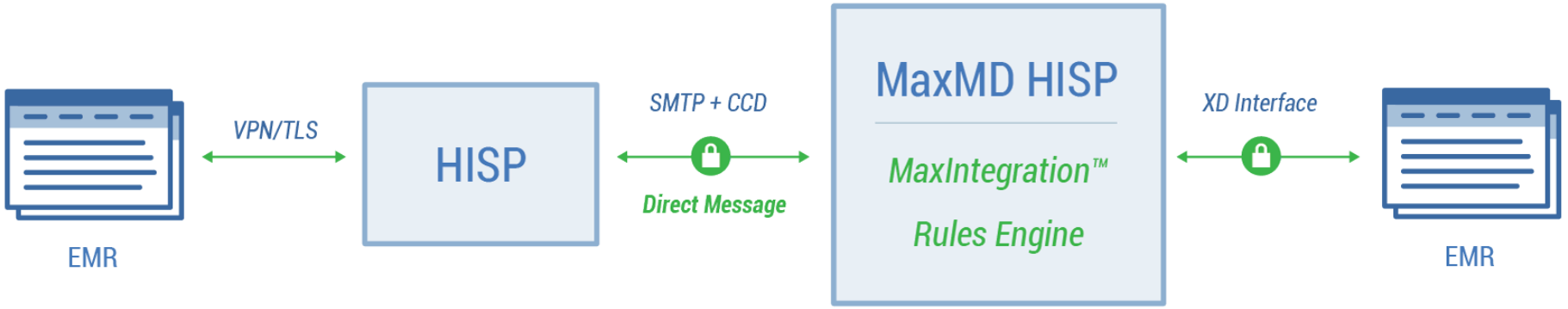
Mobile Application



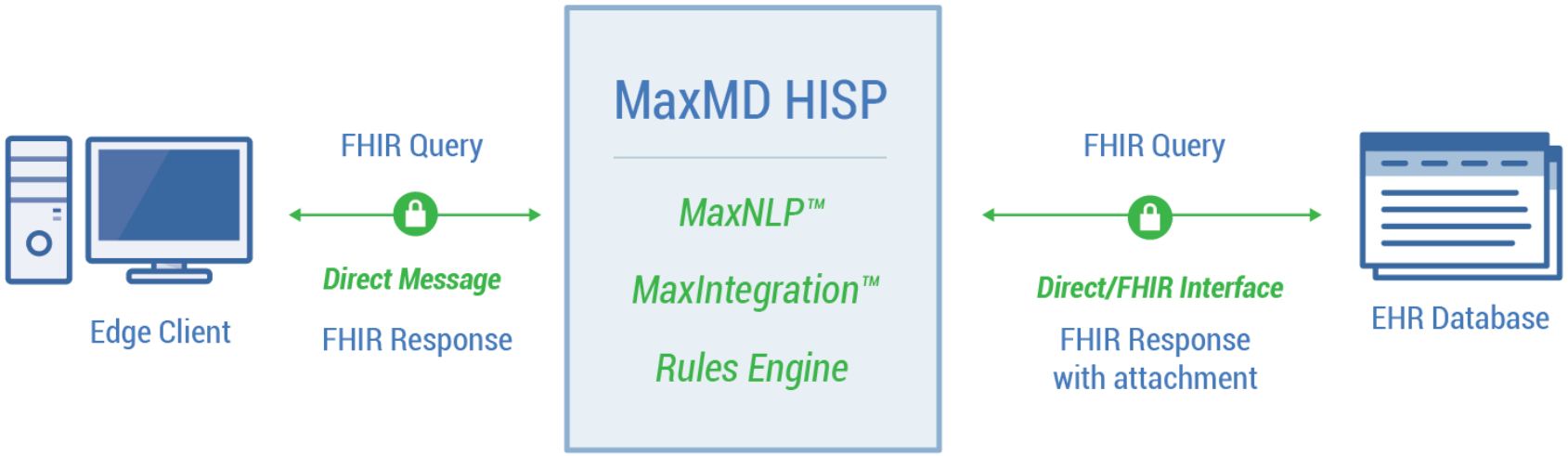
Alert Notifications



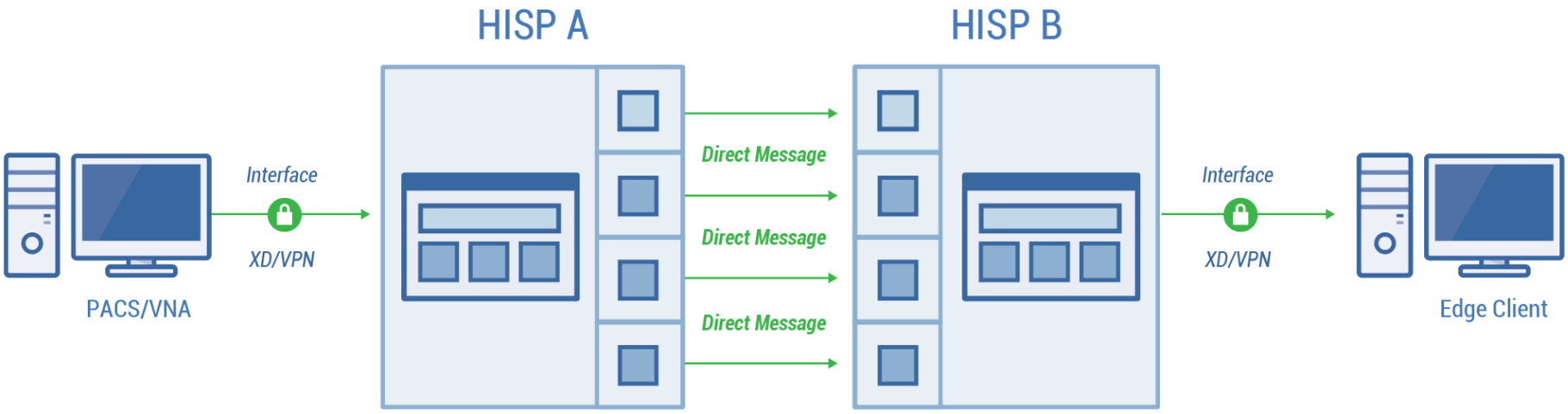
Adjust for interoperability conflicts between EMR Vendors



Direct to FHIR API



Exchange of DICOM images



Direct Message Fragmenting using RFC 2046 Section 5.2.2.1

MaxMD

Thank You!

HealthShare Exchange

ONC Direct Exchange Workshop

Beyond Meaningful Use- Direct Interoperability Services

HSX Enhanced Direct Services

Yolande Greene
Project Manager

June 9th @ 9am

HealthShare Exchange (HSX)

HealthShare Exchange (HSX) is a non-profit, health information exchange (HIE) serving the greater Philadelphia Region

- 37 Acute Care Hospitals and 2000 plus hospital owned Ambulatory practices
- 4 Health Plans
- 4 Behavioral Health Organizations
- 2 Specialty Hospitals
- 4 Long-Term Care Organizations
- 2 Accountable Care Organizations
- 1 Clinically Integrated Network
- 70 Plus Independent Practices and FQHCs

Business Case for HSX

Challenges faced by Southeastern PA Region

- Reduce readmissions
- Facilitate better transitions of care
- Access to information at the point of care

CIOs (Providers and Payers) in the region collaborated to develop two use cases (solutions) to address these challenges.

Created HSX to implement the solution.

Using the DIRECT protocol, HSX Enhanced Direct Services were developed:

- Automated Care Team Finder (ACTF)
- Clinical Activity History (CAH)

HSX Services

Encounter Notification Service (ENS)

- Subscription based service that notifies subscribers about admission, discharge or transfer encounters from HSX Member emergency departments and hospitals.

Encounter Notification Service – Auto Subscription

- Allows hospitals to be notified about patients who have been discharged from their facility and subsequently present to a hospital for emergency services and/or inpatient treatment within a specified period of time.

Clinical Data Repository (CDR)

- Secure access to a centralized repository of health information from multiple hospitals and providers in the trust community
- HSX receives admit, discharge and transfer (ADT) encounter feeds and clinical data from C-CDA documents from contributing members.

Family Reunification Urgent Patient Activity Liaison (UPAL)

- Patient locator service that supports family reunification during emergency situations.

Automated Care Team Finder (ACTF)

Using the patient's insurance information, ACTF identifies the patient's primary care provider (PCP) and routes continuity of care (C-CDA) documents, containing discharge information to the PCP.

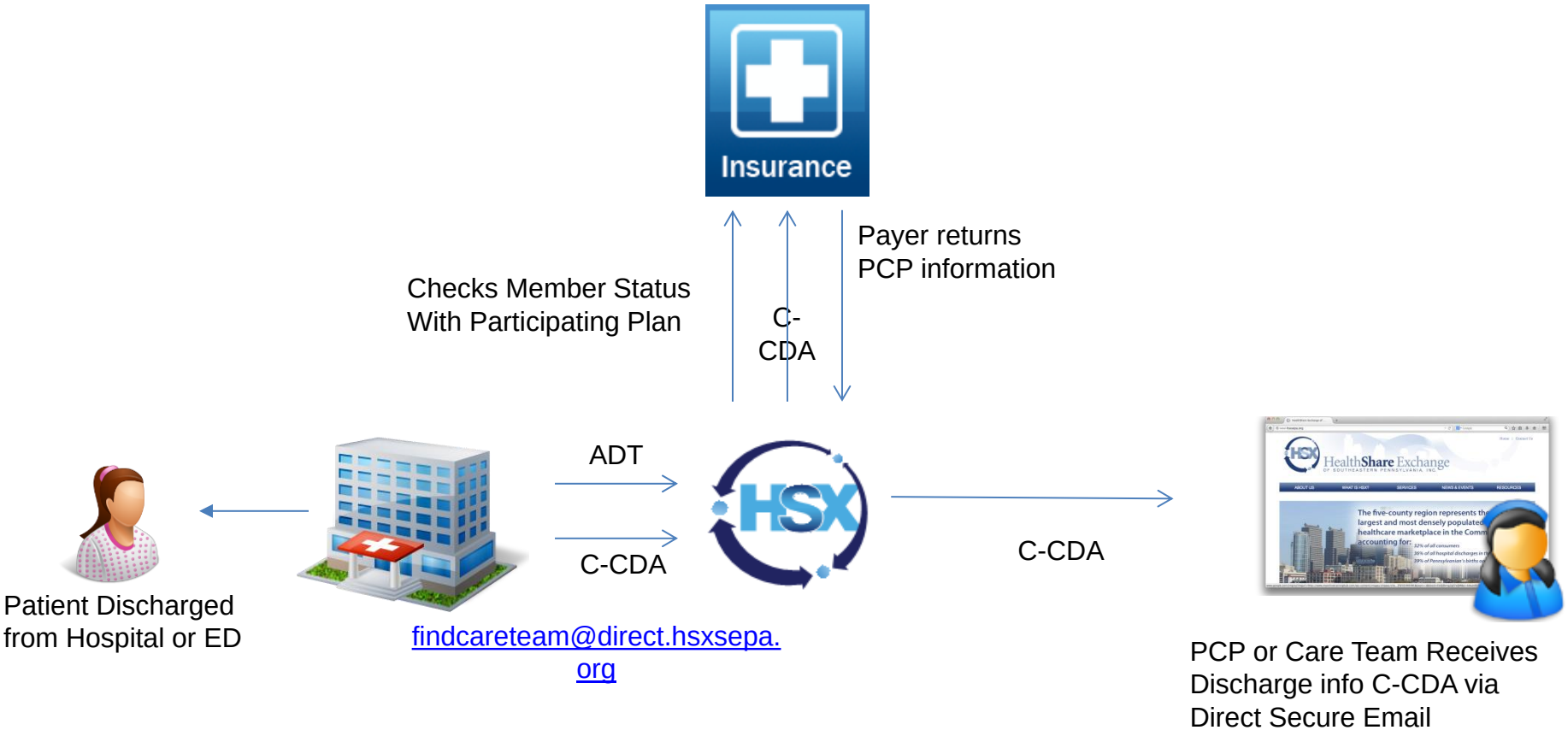
Typically used when the PCP is unknown at discharge either to the patient or the discharging PCP or organization.

This service leverages the HSX Provider Directory which includes >9000 Direct addresses for providers in our geographic area.

Forced the membership to be interoperable and use DT HISPs. HSX validated the EHR capability to not only receive direct messages but also whether they are consumable.

Supports transitions of care as part of Meaningful Use (MU) requirements.

Automated Care Team Finder

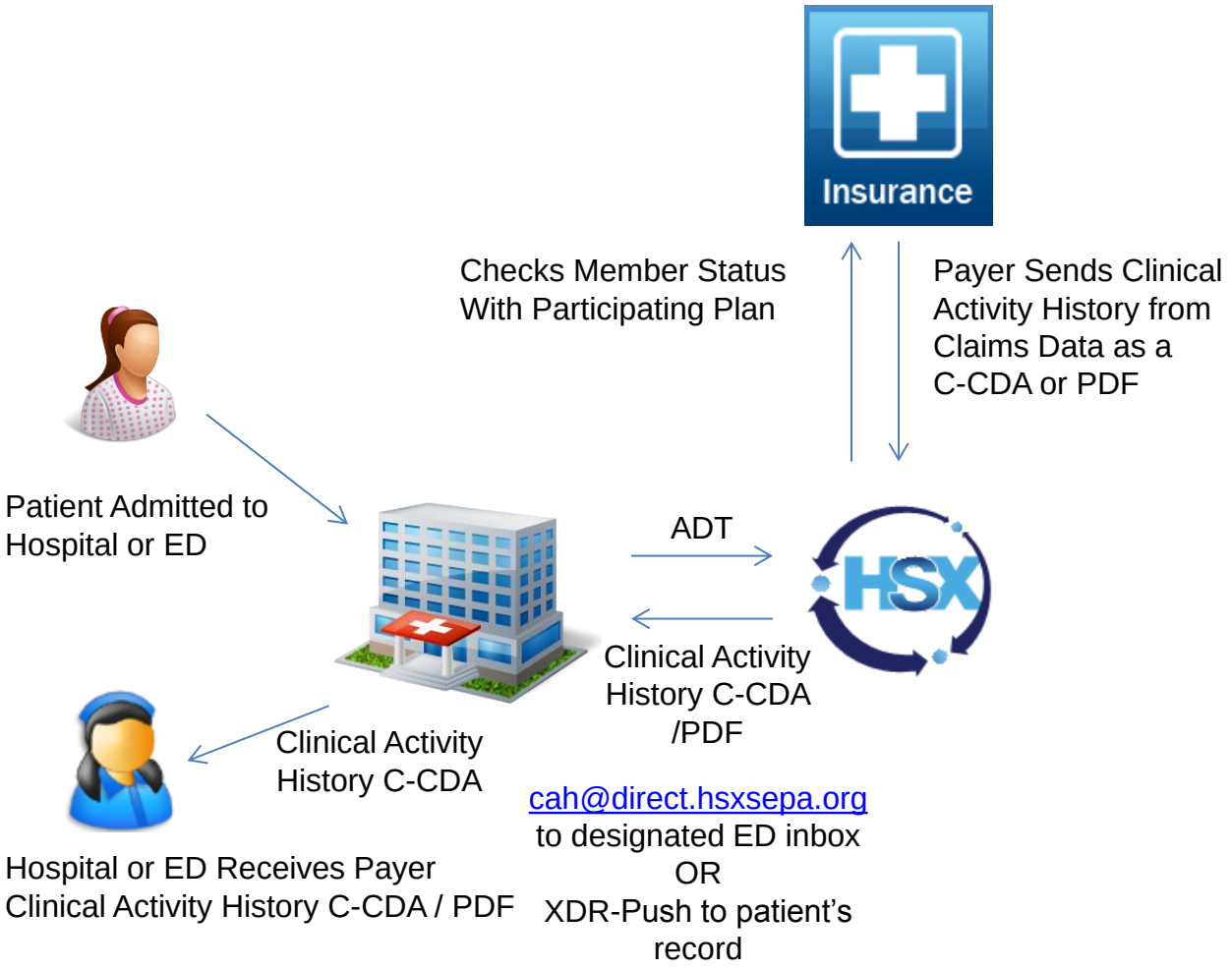


Clinical Activity History (CAH)

An emergency department service developed to enhance the clinical history gathering process by providing a longitudinal record of the patients medical history derived from payer claims data.
Information included on report:

- Patient Demographics
- Patient's PCP
- Past 6 Months
  - Rx Detailed Drug List
- Past Year
  - ED Visits
- Past 2 Years
  - Disease Conditions
  - Primary Procedures
  - Outpatient Procedures
  - Office Visits
  - Specialists Seen
  - Imaging
- Past 4 Years
  - Inpatient Admissions
  - Immunizations
- Lab Results
- Alerts by Condition - Gaps in Care

Clinical Activity History



Requirements to Deploy

- DIRECT enabled EHR System
  - >25 different EHR Systems represented in the HIE.
- Ability to send and receive CCD or CCD-A documents.
  - A PDF document format is also available for CAH.
- Provide Admit Discharge Transfer (ADT) data feeds to the HIE

ACTF Deployments

- Six Health Systems have deployed the ACTF service
- HSX sends ~2600 messages per month via this service
- This is in addition to the over 13,000 messages for point to point DIRECT messaging.

CAH Deployments

- 3 hospitals have deployed the CAH service
  - Workflow integration component to implementing this service.
  - HSX has a robust engagement and adoption program to assist with workflow integration and training.
- HSX delivers ~1300 CAH documents per month to Emergency Department (ED)

Roadmap and Enhancements

1. Implement the ACTF and CAH services across the membership
2. Onboard additional payers to the HIE
3. Enhance the ACTF Service
   - Leveraging other Directory resources i.e. DIRECT Trust Provider Directory
   - HSX encounter notification subscription service to identify patient-provider relationships
4. Expand the CAH service to other healthcare delivery settings
   - Inpatient, Outpatient, Ambulatory, Long Term Care

Thank You!

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The Office of the National Coordinator for Health Information Technology

Advancing Clinical Usability of Direct Interoperability Through Improving EHR Features and Functionality

Steven Lane, M.D., Sutter Health
Larry Garber, M.D., Reliant Medical Group
Hans Buitendijk, EHRA
Matt Doyle, Epic
Melissa Massardo, Athenahealth
Mike Warner, Cerner

Advancing the Clinical Usability of Direct Interoperability through Improving EHR Features and Functionality

Steven Lane, MD, MPH
Clinical Informatics Director, Sutter Health
Co-Chair, DirectTrust Clinicians Steering Group

June 9, 2017

Clinicians Steering Group

- Participants
- Background
- Scope
- White Paper

Steering Group Participants

• Elizabeth Ames, RN	Sutter Health
• David Camitta, MD, MS	Dignity Health
• Margaret Donahue, MD	Veterans Affairs
• Larry Garber, MD	Reliant Medical Group
• Lucy Johns, MPH	DirectTrust
• David C. Kibbe, MD	DirectTrust
• Steven Lane, MD, MPH	Sutter Health (Co-chair)
• Holly Miller, MD	MedAllies (Co-chair)
• Francisco Rhein, MD	Dignity Health
• Joseph Schneider, MD	University of Texas Southwestern
• Steve Waldren, MD, MS	American Academy of Family Physicians

Background

- Direct Standard released in 2011, adopted as part of Meaningful Use in 2012, widely deployed in EHR and other HIT systems by 2013
- Clinician expectations:
  - Satisfy MU requirements
  - Reliable clinical messaging to support patient **care transitions** and **coordination** among organizations and across vendor systems
- Clinician experience:
  - Inadequate awareness, implementation, functionality, workflow
  - *This should work as simply as e-mail!*
- 2015-16 discussions >> Workgroup convened Nov., 2016

Scope – Clinician Focused

- Secure Clinical Messaging
  - Direct Protocol – Edge systems, protocols <=> HISPs communicating via SMTP
  - Point-to-Point messaging between clinical systems – e.g., via XDR/XDM
  - Future solutions – e.g., FHIR
- Recommendations address both transport *and* payload/content issues
  - Relevant to Direct as well as other transport mechanisms, e.g., HL7, Query-based document exchange, APIs/FHIR
- Clinical perspective – *not* technical
  - Efficient workflows: Real time message sending and delivery, automated matching, routing, leverage care team, improve usability
  - Respect for privacy and information security
  - Improved discrete data transmission > improves safety, quality, and ***saves lives!***

White Paper

- Addressed to:
  - Practicing clinicians and Provider organizations
  - EHR and other HIT vendors
  - Standards development organizations
  - Direct Standard community
  - Policy makers, including ONC

- Draft released for public comment – February 1, 2017
  - https://www.directtrust.org/wp-content/uploads/2017/03/WhitePaper_Final_03.16.2017.pdf
  - 51 prioritized features/functions identified by clinicians as required/ desirable to support **care coordination** and **transitions**

White Paper

- Sections:
  - Transitions of Care – Typically automated, MU2 requirement
    - Outbound vs. Inbound message functions
  - Clinical Messaging – Manual, ongoing care coordination
  - Administrative Functions
- Items:
  - Recommendation, Rationale, Priority
- Prioritization:
  1. ***Required / Urgent / Now / Current-next version***
  2. ***Highly desired / Future priority / 1-2 years / Subsequent version***
  3. ***Advanced / Future development***

White Paper

	Total	*Priority 1*	*Priority 2*	*Priority 3*
Transitions of Care - Outbound	**8**	5	3	-
Transitions of Care - Inbound	**10**	6	2	2
Clinical Messaging - Outbound	**18**	7	8	3
Clinical Messaging - Inbound	**8**	4	4	-
Administrative Functions	**7**	2	3	2

White Paper

- Review, discussion, and incorporation of comments received
  - Consultation with DirectTrust Security and Trust Compliance Workgroup
  - Items modified, added, removed, reprioritized

- Final version with responses to all comments to be published Q3, 2017

Transitions of Care, Outbound

- Real time *vs.* batch transmission ***(Priority 1)***
- Automated workflows ***(1)***
  - Message trigger events – e.g., discharge, referral, consult
  - Addressing to relevant recipients – e.g., PCP, care team, patient
- Message content
  - Multiple C-CDA and other attachment types ***(1)***
  - Customizable templates, e.g., by specialty ***(2)***
- Discrete data
  - Standard terminology ***(1)***
  - Multiple data types: Problems, Allergies, Medications, Immunizations – "PAMI" ***(1)*** + Procedures, Results ***(2)***
  - Trigger Event specified in metadata ***(2)***
- Alerting – e.g., if message cannot be sent, delivered ***(2)***

Transitions of Care, Inbound

- Automatic patient matching when possible ***(1)***
- Consistent receipt, storage, and display of attachments ***(1)***
- Receipt and ingestion of discrete data
  - Reconciliation of discrete PAMI data ***(1)***
  - Reconciliation of procedures, results ***(2)***
  - Identification/flagging of new/changed data ***(3)***
- User customizable views ***(3)***
- Flag and manage highly sensitive data, e.g., 42 CFR Part 2 ***(3)***

Clinical Messaging, Outbound

- Send messages in real time ***(1)***
- E-mail like functionality
  - Compose and address message ***(1)***
  - Specify message Context ***(1),*** Subject ***(2)***, Priority ***(2)***
  - Message composition tools – e.g., macros, templates ***(2)***
  - Addressing tools: Favorite, multiple recipients, distribution lists, CC ***(2)***
- Workflow support – e.g., Send on behalf of ***(2)***
- Attachments ***(1)***, links to locally stored documents ***(3)***
- Alerts:
  - Message send success/failure ***(2)***
  - Acknowledgement of message delivery/read ***(3)***

Clinical Messaging, Inbound

- Receipt and consistent view of all sent data
  - Sender, CCs, Subject, Context, attachments ***(1)***
  - Priority ***(2)***
  - Customizable display of document contents, sections ***(3)***
- E-mail like functions
  - Reply ***(1)***, Reply All ***(2)***
  - Forward within organization to Direct user ***(1)***, to other user ***(2)***
  - Forward to Direct user at outside of organization ***(2)***
- Automated routing ***(2)***
  - To care team, covering user, based on context
- Message management tools ***(2)***
  - Sorting, notifications – *You've got mail.*

Administrative Functions

- Enable messaging functionality for more users / use cases ***(1)***
  - All clinical users
  - Departments / locations
- Automated directory updates ***(2)***
- Requests for information ***(3)***
  - Patient summary (CCD)
  - Customizable requests – e.g., discharge summary, operative/consult note, results, images
- Patient authorizations ***(3)***

Insights from Direct Exchange White Paper Commenters

Larry Garber, MD
Medical Director for Informatics, Reliant Medical Group
Board Member, DirectTrust

June 9th, 2017

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Request for Comment

- Request broadly disseminated through HIT media and ListServs
- Comment period: February/March 2017
- Comments were submitted via email
- Comments reviewed through numerous meetings of the DirectTrust Clinicians Steering Group, led by Drs. Steven Lane and Holly Miller

Commenters

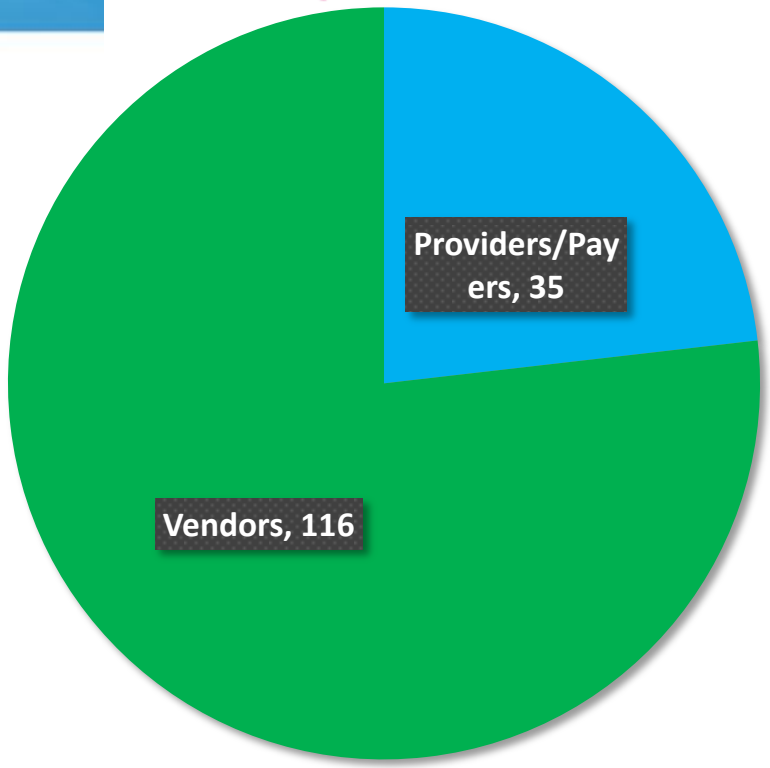
23 Organizations/Individuals:

- 13 Healthcare Provider/Payer organizations
- 10 Vendors

Vendor (excluding EHRA) market share represents:

- 52% of hospitals
- 34% of physician practices

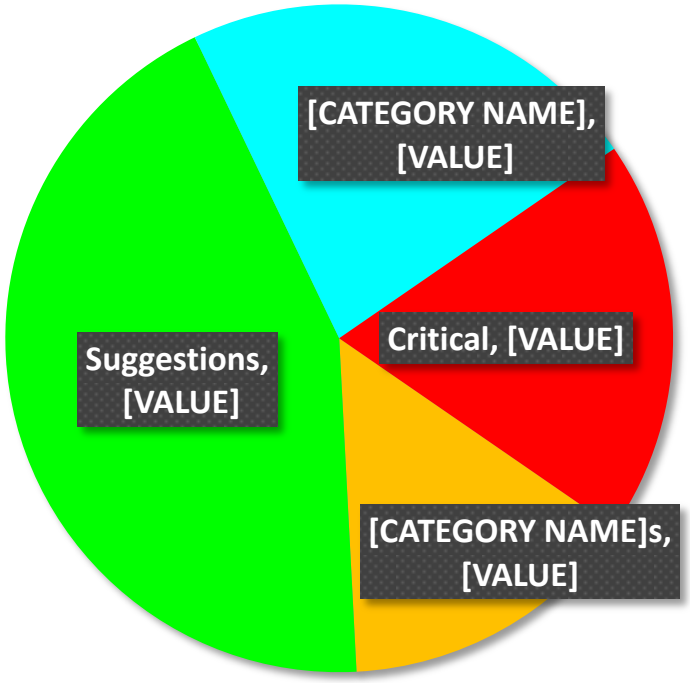
Comments



- 151 Comments
- 11,298 Words
- Equivalent to 45 pages
- Approximately 2 pages of comments for every page of recommendations

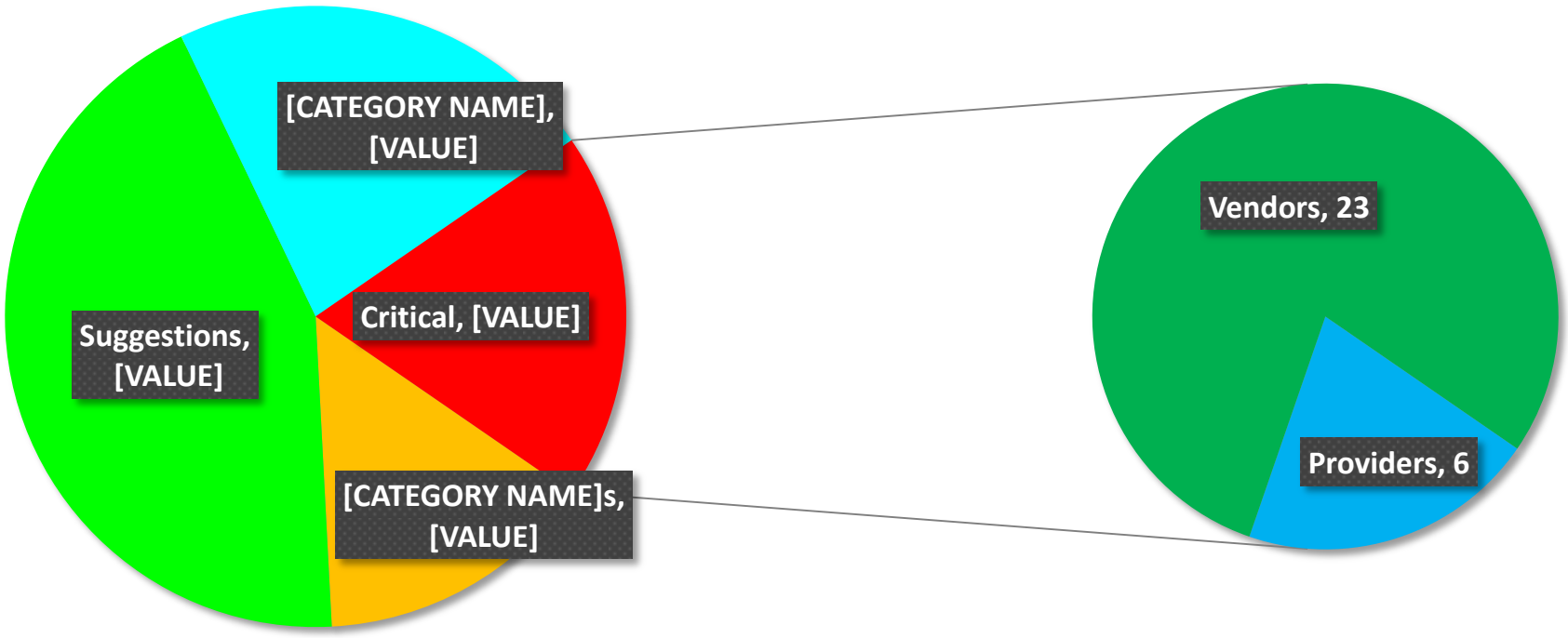
Comment Classification

Most comments were supportive of White Paper and Direct Exchange



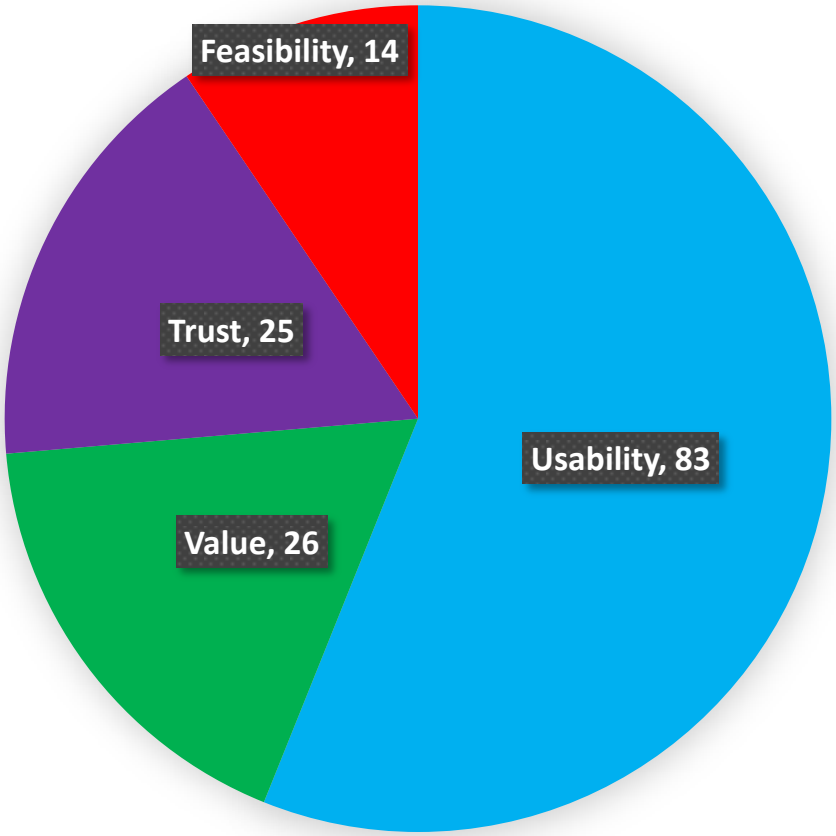
Comment Classification

Vendors were critical of recommendations more than healthcare providers



Major Themes of Comments

- Usability
- Value
- Trust
- Technical Feasibility



Theme: Usability

- General (5)
- Message Content (8)
- Message Addressing (15)
- Message Sending (6)
- Message Receipt/Routing (15)
- Message Viewing (12)
- Standards/Incorporating Data (22)

General Usability

- "I believe that streamlining the use, basically making the EHR system more efficient by **eliminating needless clicks, scrolling, and choices** would make the physicians more efficient and more importantly reduce user frustration and stress."

Message Content

- “It's [important] to **get a "rightsized" set of content to the receiver**, which in some cases might be a single document, in other cases multiple documents, depending on the contextual needs of the patient, the sending provider, and the receiving provider.”

Message Addressing

- “With the proliferation of use of direct messaging and increased direct addresses, **improved tools for maintaining and updating provider directories are essential** for efficient maintenance of accurate addresses.”
- “Ideally, individual providers could augment the standard data with other **information that helps them find a provider quickly** (e.g., nicknames, aliases, procedure comments - "knee replacement surgeon").”

Message Sending

- "At transitions of care, support to **automatically trigger messaging is crucial** as **relying on manual processes to send messages is a huge barrier** for busy clinicians."

Message Receipt/Routing

- "The **failure or reject message** needs to include the full MDN [Message Delivery Notification] or DSN [Delivery Status Notification] report to **allow rapid and effective identification and resolution of the problem source**."
- "The assignment of standard message context and control over the message subject is crucial for **supporting appropriate handling of inbound messages"**

Message Viewing

- "It is good that **requirements are** recommended not just for senders but **also for receivers** (inbound)"
- "[Recipient Configuration of the Information Viewed from the Incoming Message] is **in total agreement with what we learned from RnP** [Relevant and Pertinent Workgroup]"

Standards/Incorporating Data

- “Encoding results in these interoperable and machine actionable **standards would allow the EHR to alert the provider** on receipt of high priority positive test results.”
- “This is covered as part of the "reconciliation" items, but essentially **having EHR's automatically ingest and parse incoming attachments via Direct is essential**.”

Theme: Value

- Clinical Content (19)
- Patients (2)
- Comparison to other forms of information exchange (e.g. Fax, IHE XCPD/XCA or FHIR) (5)

Value of Clinical Content

- "The ability to easily attach, view and store a variety of standard file types would greatly enhance communications. True administrative **transformation requires** that the new electronic tool not only meets minimum documentation requirements [but also] offers **additional tools the customer did not yet think of**."

Value to Patients

- "I would like to see a requirement for the EHR Sending system to **send** not only to referring providers / PCPs in an automated fashion, but also **to patients that have portals/PHR's with access to Direct**."

Relative Value vs. Other Forms of Information Exchange

- "Templated payload should not necessarily be tied to the fact Direct is used. Rather, we should promote configuration of payload based on the intended use by the recipient and then the **transport is chosen based on available access/transport methods**."

Theme: Trust

- Reliable Delivery (5)
- Timely Delivery (4)
- Correct Patient Matching (5)
- Patient Privacy/Security (10)
- Liability (1)

Reliable Delivery

- “In order to depend on Direct Messaging for clinical communication, one **must have confirmation that the recipient receives the message** and we strongly support Failed Message Delivery/Receipt Notification CO13, CI26 and Read Receipt CO17 functionality.”

Timely Delivery

- "[We] agree that there are many **use-cases where real-time send and delivery is a must**, as in the example of critical result notifications, immediate transfer of care scenarios, etc. **There are, however, valid use-cases for batching** information where criticality and the timing of delivery is not an issue."

Correct Patient Matching

- "Our position is that **patient identity** needs to be established before any interaction with a provider or treatment is administered or data is shared"

Patient Privacy/Data Security

- "I would argue [that Preventing the forwarding of information specifically protected by HIPAA, 42 CFR Part 2, or other applicable statute] is **much more important [than Priority 3**]."

Provider Liability

- "[We have] heard concerns from providers that this might make them **liable for the information in the message**."

Theme: Technical Feasibility

- Transmission Standards/Policies (10)
- Difficulty Implementing Changes (4)

Transmission Standards/Policies

- "Direct was designed to be a 'Push' technology. … **How would Direct be used as a query-based exchange to request a "pull" of patient information?**"
- "We support the features, but **they require clarification and standards specifications**. These are not currently addressed in the Direct standard and would require HISP support."

Difficulty Implementing Change

- "[We have] capabilities to route messages, however **more intelligence and capabilities will likely be required** to enable more discrete and more complex routing logic."
- "Concern that a **large percentage of the recommendations are Priority 1**"

Summary

- Extensive, high-quality feedback focused on:
  - **Usability** ("Hassle-Free HIE", automation)
  - **Value** (All stakeholders find Direct Exchange very valuable, but sometimes IHE XCPD/XCA or FHIR are more appropriate)
  - **Trust** (Confidence in delivery, source & patient identity)
  - Technical **Feasibility** (Update/maintain transport standards; some features difficult to implement)
- Broad support for building upon current Direct Exchange successes

Changes Being Made

- Fixing typos and grammatical errors
- Clarifications and expansions of details
- One “requirement” deleted because too vague and redundant
- Nine functional requirements added:
  - 4 Priority 2 (Highly desired, future priority, 1-2 years)
  - 5 Priority 3 (Advanced, future development)

You Can Help!

- Read the current version of White Paper: https://www.directtrust.org/wp-content/uploads/2017/03/WhitePaper_Final_03.16.2017.pdf
- Share it with colleagues and professional orgs
- Send us feedback: Admin@DirectTrust.org
- Keep an eye out for final White Paper this Fall at www.DirectTrust.org
- Vendors: Implement the recommendations!
- Healthcare providers: Configure and train efficient use of Direct Exchange!
- ONC and Standards Development Orgs: Facilitate!

The Office of the National Coordinator for Health Information Technology

Federal Partner Direct Updates

Gail Kalbfleisch, Federal Health Architecture
Glen Crandall, Department of Veterans Affairs
Michael Fairbanks, Indian Health Service
Kim Nazi, Department of Veterans Affairs
Jeff Tackes, United States Postal Service

U.S. Department of Veterans Affairs

VA Direct Messaging

Glen Crandall
VA Direct Program Manager
Veterans Health Administration
Office of Informatics & Information Governance

VA Chooses Cerner as New EHR

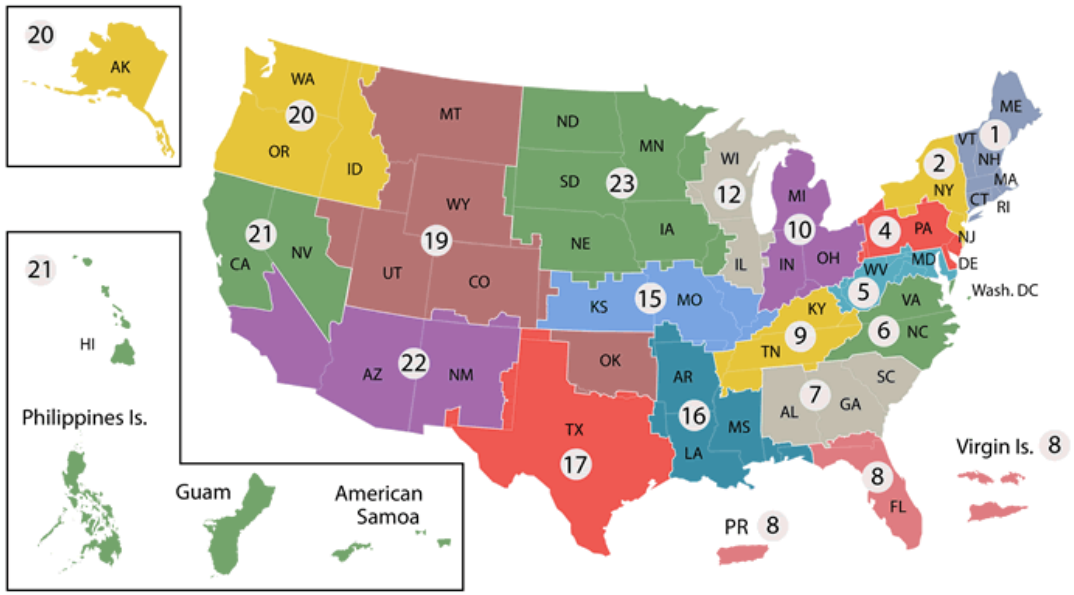
"…I have decided that VA will adopt the same EHR* system as DoD**, now known as MHS GENESIS, which at its core consists of Cerner Millennium."***

- VA Secretary David Shulkin in his June 5, 2017 announcement of VA's decision to adopt commercial EHR technology

- The full affect of this decision on VA Direct Messaging is unknown
- But, even as technology changes, the need to share Veteran health information grows within VA
- We expect no change in VA's commitment to nationwide Direct Messaging

*Electronic Health Record ** Department of Defense *** Military Health System

VA's Health System



- **1,026** Outpatient Services Sites
- **167** VA Medical Centers (VAMCs)
- **2** Stand-Alone Extended Care Sites
- **9** Stand-Alone Residential Care Sites
- **300** Vet Centers
- **70** Mobile Vet Centers

VA Facts

Enrollees	**8.97Million***
Unique Patients Treated	**6.6 Million**

Outpatient Visits	**92.4 Million****
Outpatient Surgeries	**312,000**
Inpatient Admissions	**707,400**

Lab Tests (Inpatient & Outpatient)	**272.7 Million****
Prescriptions Dispensed (30-Day Equivalent)	**271.4 Million**
Prosthetics Services Performed	**17.6 Million**

- Source: Department of Veterans Affairs, Office of the Actuary, Veteran Population Projection Model (VetPop) 2014; Veterans Benefits Administration; Veterans Health Administration, Office of the Assistant Deputy Under Secretary for Health for Policy and Planning92

** Source: FY 2014 End-of-Year Pocket Card

VA's Health Care Expertise

VA is one of the largest civilian employers in the federal government and one of the largest health care employers in the world.

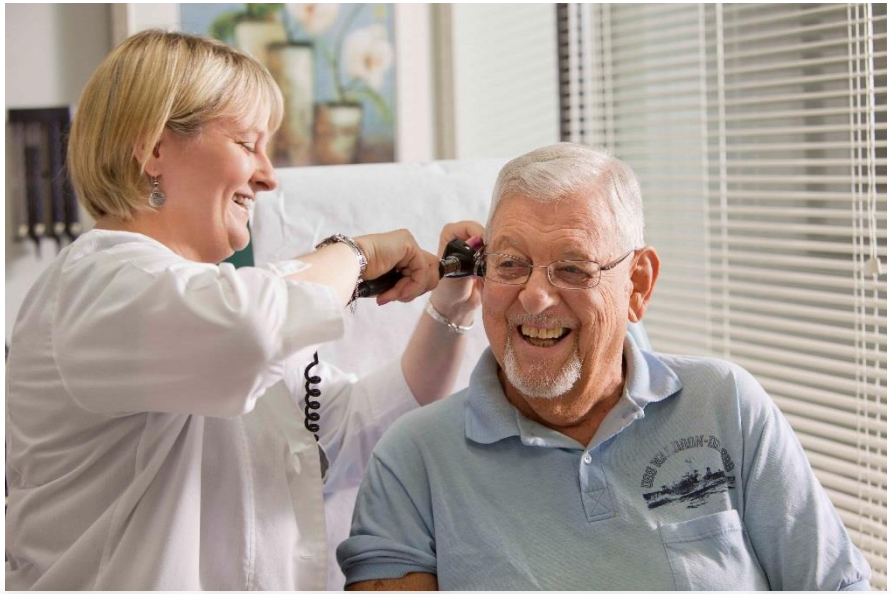
337, 097+ Total VHA Employees*

177,000+ Clinical Employees

88,000+ Veteran Employees

*Source of Veterans Health Administration (VHA) employees: as of Dec 2016, Office of Personnel Management

VA's Health System



3 out of 4

Veterans who receive VA health care also receive community care

VHIE Products

The Veterans Health Information Exchange (VHIE) Program (VLER* Health) includes two primary types of health information exchange:

– **VA Direct Messaging** – allows VA users to send and receive specific information to community care providers via secure email-like messaging under a trusted network (point-to-point)

– **VA Exchange** – allows VA providers and community care providers to query and retrieve Veterans' health information with each other's organizations for treatment

*Virtual Lifetime Electronic Record (VLER)

Sharing Health Information

- Because most Veterans who receive VA care also receive medical treatment in the community (e.g., on their own or because VA sent them to a community care provider), there are significant opportunities to share health information*

- Direct, **a nationwide effort**, is designed to be more secure and efficient than faxing, mailing, or hand-carrying health information

DirectTrust and Governmental Trust Anchor Bundle (GTAB)

- VA achieved DirectTrust accreditation first in 2015—undergoing re-accreditation now
- Working to get into DirectTrust Governmental Trust Anchor Bundle (GTAB)
  - Is moving slower than anticipated
  - Estimated in Fall 2017
  - Plan to join the DirectTrust Directory

Examples of How VA is Using Direct Messaging Today

Receipt of Community Care Consult Results

- OhioHealth – information to close consults
- Ochsner Health returned > 1000 results to Southeast Louisiana VAMC which were uploaded electronically into VistA Imaging

Admission/ Discharge/ Transfer (ADT) Notifications

- Several Health Information Exchanges (HIEs) send a notification to the VAMCs when a Veteran has an ADT event at a community hospital

Home Health

- Salt Lake VAMC sends/receives clinical and administrative information to/from a community home health agency

Transitions of Care (ToC) Documents

- Madison VAMC receives ToC health summary information from community care providers

Laboratory

- Pittsburgh VAMC receives lab results from University of Pittsburgh Medical Center (UPMC)

Future Uses of VA Direct Messaging

- **VA Choice (Health Net and TriWest)**
  - Information shared through Direct reducing the need to use the Health Net and TriWest web portals
- **Veteran-Initiated Messaging**
  - A Veteran can send their health summary information to a Direct address of their choice
- **Indian Health Service (IHS)**
  - Various information sharing between VA and IHS
- **Centers for Disease Control & Prevention (CDC)**
  - Supports monthly Infectious Disease (ID) data reporting
- **It's Up to You!**
  - Uses of VA Direct Messaging are practically unlimited

Direct Usage: Consult Results from OhioHealth

- **OhioHealth sending consult results (.pdf)** to VAMCs through Direct Messaging to support claims adjudication and closing the consult

	Sent	Received
Columbus VAMC	108	2827
Chillicothe VAMC	31	610
Cleveland VAMC	17	452

- **Why is it working?**
  - Senior level support
  - Motivated partner (OhioHealth)
  - Specific use that provides business efficiencies

Direct Usage: ADT

- San Diego VAMC, Salt Lake VAMC, and Indianapolis VAMC **receive Admission/Discharge/Transfer (ADT) messages** through Direct from Health Information Exchanges (HIE)
- Uses **existing eHealth Exchange correlation data**
- Started in late July 2016
- **So far over 3,600 messages received**
  - Initially received message for each alert
  - Now receiving spreadsheet summarizing a day's alerts

Direct Usage: Salt Lake City- Home Health

- Salt Lake City VA Health Care System (VAHCS) sharing **Direct Messages with Harmony Home Health agency**
- **Sharing .pdf files** required for home health
- **Previously** most health information exchange was done by **hand delivering paper**
- So far since July:
  - **Sent:** 172
  - **Received:** 166
- Simple use case that is **reducing printing/scanning** and is **speeding up approval processes** within the VAMC

Limits to Full Direct Messaging

- VA can currently **connect to many but not all HISPs** (Health Information Service Providers) or share all types of information with all community care providers for various reasons including:
  - HISPs not meeting federal security standards
  - Community provider's Direct system limiting types of attachments
  - Resource constraints from national VA Direct Messaging team, VAMCs, or community care providers

- All pieces of Direct Messaging, both technical and process, must be in place for Direct Messages to flow smoothly

- Therefore, connecting to some of high-priority clinical partners may need to wait until the Direct technical connection can be made

Overall Lesson's Learned

- **Successes:**
  - **Interest** in sharing information is extremely high everywhere
  - People will use Direct if they can see **efficiency increase**
  - **VA Direct Messaging partners**—including DirectTrust, HISPs, and clinical partners—have been supportive of VA Direct Messaging's efforts
  - **Top-down organizational** support is critical

- **Challenges:**
  - Direct technology/ connections can be hard, but **changing workflow is harder**
  - Many factors get in the way of initial excitement and successful usage including:
    - **Resource limitations** – everyone is extremely busy
    - **Comfort with current process** – even flawed ones
    - **Technology/ functionality limitations**
    - **Integration into overall workflow**

VA Direct Messaging Contacts

Glen Crandall – VA Direct Messaging Program Manager
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Margaret Donahue, MD – VHIE Director
margaret.donahue@va.gov

VA External Website: www.va.gov/vler

U.S. Department of Veterans Affairs

Q&A Discussion

Indian Health Service Direct Messaging

June 9th 2017

Michael R. Fairbanks
Office of Information Technology
IT Specialist – HIE, Direct, Vista Imaging

Indian Health Service (IHS)– Who we are

- The IHS provides a comprehensive health service delivery system for approximately 2.2 million American Indians and Alaska Natives who belong to 567 federally recognized tribes in 36 states.

Direct Secure Mail

- Direct is currently deployed at 146 I/T/U databases which can include multiple facilities, with new facilities being added at 1-2 per month.
- Direct is utilized both for sending secure messages such as TOC to external partners, but providers also utilize it as a mechanism to communicate with patients via our PHR.
- Federal deployment is at 98%, with Tribal/Urban programs making up the remainder of facilities left to be deployed.
- Direct Secure Mail received Authority to Operate in 9/2015. Messages sent

Direct Stats

Messages Sent

- Monthly Average 2016: **2437**
- Monthly Average 2017: **7141**

Direct accounts/email addresses.

- # of unique Direct e-mail addresses includes PHR users
  (hMail) **12, 324**
- # of unique user accounts unique accounts for providers or care team members
  (Webmail) **19 60**

Direct future enhancements

- Providers have requested enhancements to create an experience from what they expect from Microsoft Outlook. Including notification alerts through EHR or other means, and group alias accounts.
- Integration into the Federal Active Directory and T/U Active Directory.
- Patient/Provider directory.
- Integrate Mobile/Tablet viewing capabilities

VA's My Health*e*Vet:
Empowering VA Patients with Information

Kim M. Nazi, PhD, FACHE
Veterans and Consumers Health Informatics Office
Office of Connected Care
Veterans Health Administration
Department of Veterans Affairs

JUNE 2017

VA HEALTH CARE Defining EXCELLENCE in the 21st Century

VA Mission

To fulfill President Lincoln's promise *“to care for him who shall have borne the battle, and for his widow, and his orphan"* by serving and honoring the men and women who are America's veterans

Who We Serve

21.7 million
Veterans living in the US

9.4 million
Veterans used a VA benefit

8.9 million
Veterans enrolled for VA healthcare

5.9 million
Veterans actively treated by VA

VA Patient Portal: My HealthVet

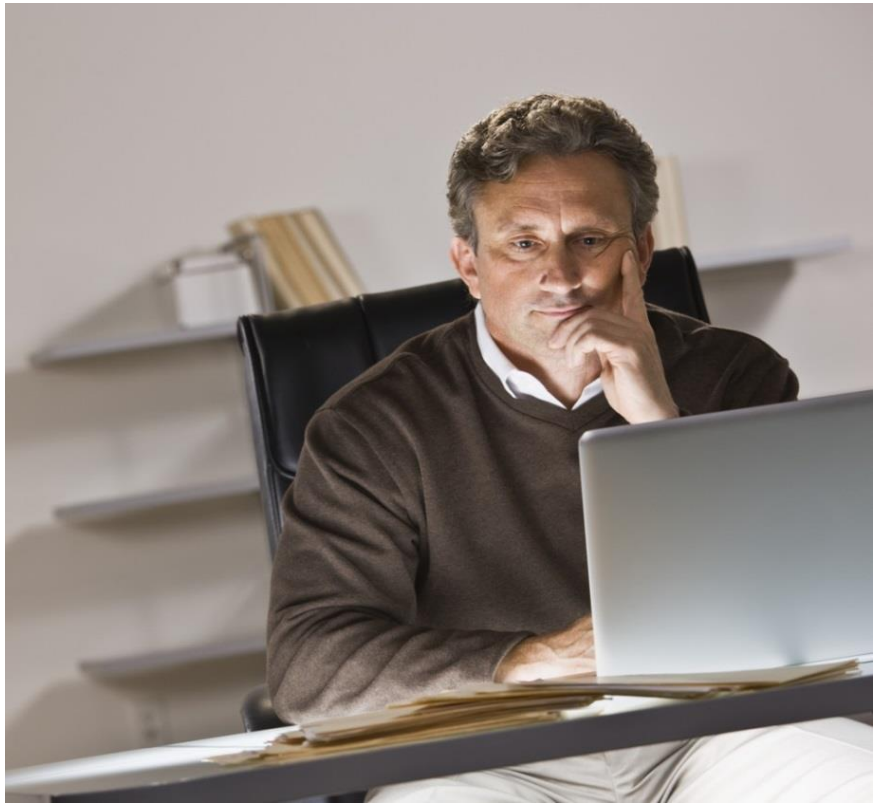
My healthevet
www.myhealth.va.gov

Knowledgeable patients are better able to make informed health care choices, stay healthy, and seek services when they need them.

Inform
Engage
Activate

VA My Health*e*Vet Patient Portal Features

- Personal Health Record
- VA Appointments and Email Reminders
- Prescription Refills and Delivery Tracking
- Secure Messaging
- Access to data from the VA Electronic Health Record
- VA Blue Button Feature
- VA OpenNotes
- VA Health Summary (CCD)
- Health***e***living Assessment
- Veterans Health Library

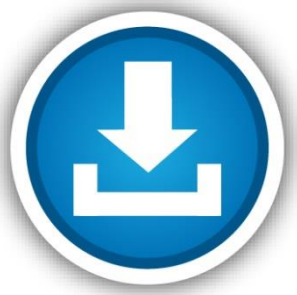


My healthevet
www.myhealth.va.gov

VA My HealtheVet Statistics (April 2017)

- 3.9 million registered users
- 2.3 million Premium users (authenticated VA patients)
- 2.0 million VA patients opted-in to use Secure Messaging
- 99 million VA prescription refills since August 2005
- 1.6 million unique VA Blue Button users downloaded 23 million reports
- >500,000 unique patients accessing their VA Health Summary

Blue Button Feature: Meaningful Use Stage 2



Patient Electronic Access
View/Download/Transmit

Provide patients with the ability to view online, download and electronically transmit their health information.

Why Consumer Mediated Exchange?

- An important complement to organizational/provider health information exchange (query-based and directed exchange)
- Patient ability to access and share their health information is at the core of patient-centered health care
- Patients are important validators of the accuracy of their health information
- Only patients know who all their providers are and when they are seeing them
- Patients with specific privacy concerns can manage what information is shared and with whom

VA Health Summary: Milestones

- C32 version of VA Health Summary (Continuity of Care Document) available in production since January 2013
- Partnering with VLER Health to expand to a more robust health summary (CCDA) aligned with Meaningful Use
- Preparing for full national deployment of CCDA in July 2017 with incremental enhancements
- Field testing ability to send CCDA securely via Direct Messaging (Meaningful Use View/Download/Transmit)
- USPS Collaboration: Pilot program for Veteran USPS employees to enable transmit via Direct Messaging

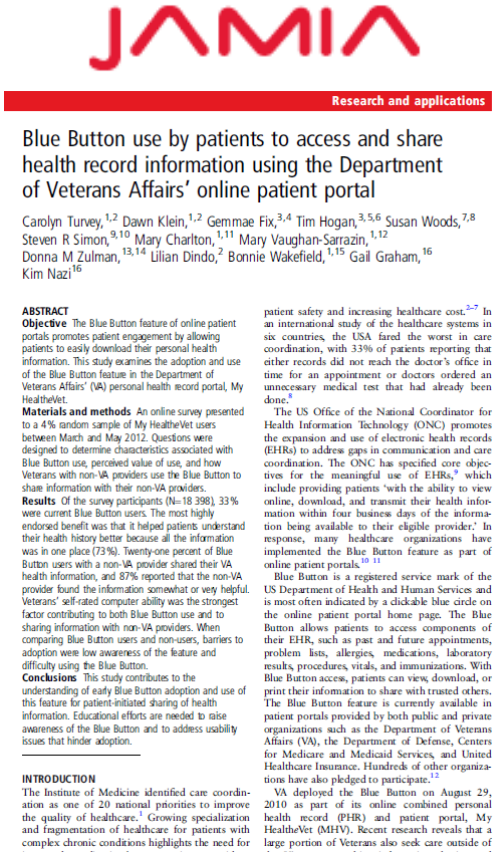
VA Health Summary Data Classes (CCDA)

- Person Information
- Support/Contact Information
- Healthcare Providers NEW
- Insurance Providers
- Allergies
- Problems
- Medications NEW
- Advanced Directives (list) NEW
- Immunizations
- Vital Signs
- Results
  - Lab Test Results
  - Radiology Reports
  - Pathology Reports
- Encounters
  - Outpatient Encounters and Associated Progress Notes
  - Consult Notes
  - History & Physical Notes
  - Discharge Summaries
- Procedures
  - Surgical Procedures and Associated Procedure Notes NEW
  - Clinical Procedure Notes NEW
- Plan of Care
  - Future Appointments
  - Future Lab Test Orders NEW
  - Future Radiology Orders
- Social History (Smoking Status)
- Functional Independence Measurements (FIM) NEW

Next Steps

- Develop Enterprise API(s)
- Explore complementary technologies, e.g. FHIR
- Bidirectional Exchange/Import: Veterans will be able to import or send a non-VA Health Summary (CCDA) using Direct Messaging from another organization or application back to VA
- Blue Button feature automation and triggers (subscribe to updates/set and forget)
- Potential for convergence of VA Blue Button feature (customization, data harmonization, PGD)

Blue Button Feature: Survey Findings



JAMIA

Research and applications

Blue Button use by patients to access and share health record information using the Department of Veterans Affairs' online patient portal

Carolyn Turvey,[1,2] Dawn Klein,[1,2] Gemmae Fix,[3,4] Tim Hogan,[3,5,6] Susan Woods,[7,8] Steven R Simon,[9,10] Mary Charlton,[1,11] Mary Vaughan-Sarrazin,[1,12] Donna M Zulman,[13,14] Lilian Dindo,[2] Bonnie Wakefield,[1,15] Gail Graham,[16] Kim Nazi[16]

ABSTRACT

Objective The Blue Button feature of online patient portals promotes patient engagement by allowing patients to easily download their personal health information. This study examines the adoption and use of the Blue Button feature in the Department of Veterans Affairs' (VA) personal health record portal, My HealtheVet.

Materials and methods An online survey presented to a 4% random sample of My HealtheVet users between March and May 2012. Questions were designed to determine characteristics associated with Blue Button use, perceived value of use, and how Veterans with non-VA providers use the Blue Button to share information with their non-VA providers.

Results Of the survey participants (N=18 398), 33% were current Blue Button users. The most highly endorsed benefit was that it helped patients understand their health history better because all the information was in one place (73%). Twenty-one percent of Blue Button users with a non-VA provider shared their VA health information, and 87% reported that the non-VA provider found the information somewhat or very helpful. Veterans' self-rated computer ability was the strongest factor contributing to both Blue Button use and to sharing information with non-VA providers. When comparing Blue Button users and non-users, barriers to adoption were low awareness of the feature and difficulty using the Blue Button.

Conclusions This study contributes to the understanding of early Blue Button adoption and use of this feature for patient-initiated sharing of health information. Educational efforts are needed to raise awareness of the Blue Button and to address usability issues that hinder adoption.

INTRODUCTION

The Institute of Medicine identified care coordination as one of 20 national priorities to improve the quality of healthcare.[1] Growing specialization and fragmentation of healthcare for patients with complex chronic conditions highlights the need for patient safety and increasing healthcare cost.[2–7] In an international study of the healthcare systems in six countries, the USA fared the worst in care coordination, with 33% of patients reporting that either records did not reach the doctor's office in time for an appointment or doctors ordered an unnecessary medical test that had already been done.[8]

The US Office of the National Coordinator for Health Information Technology (ONC) promotes the expansion and use of electronic health records (EHRs) to address gaps in communication and care coordination. The ONC has specified core objectives for the meaningful use of EHRs,[9] which include providing patients 'with the ability to view online, download, and transmit their health information within four business days of the information being available to their eligible provider.' In response, many healthcare organizations have implemented the Blue Button feature as part of online patient portals.[10 11]

Blue Button is a registered service mark of the US Department of Health and Human Services and is most often indicated by a clickable blue circle on the online patient portal home page. The Blue Button allows patients to access components of their EHR, such as past and future appointments, problem lists, allergies, medications, laboratory results, procedures, vitals, and immunizations. With Blue Button access, patients can view, download, or print their information to share with trusted others. The Blue Button feature is currently available in patient portals provided by both public and private organizations such as the Department of Veterans Affairs (VA), the Department of Defense, Centers for Medicare and Medicaid Services, and United Healthcare Insurance. Hundreds of other organizations have also pledged to participate.[12]

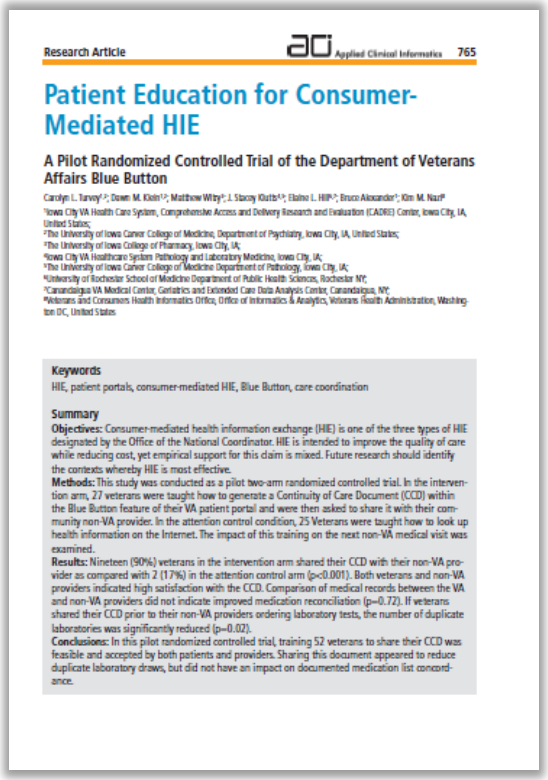
VA deployed the Blue Button on August 29, 2010 as part of its online combined personal health record (PHR) and patient portal, My HealtheVet (MHV). Recent research reveals that a large portion of Veterans also seek care outside of

For VA patients who had used the VA Blue Button feature:

- 73% felt greatest benefit is helping patients understand their health history better (having all information in one place)
- 44% also saw a Non-VA provider
- 52% noted "I share information between them" as the primary way that information is shared between providers
- 87% perceived that having access to Blue Button information was helpful to their care provider in making decisions about their care

Turvey CL, Klein D, Fix G, Hogan, TP, Woods SS, Simon SR, Charlton M, Vaughan-Sarrazin M, Zulman DM, Dindo L, Wakefield, B, Graham G, Nazi KM. Blue Button Use by Patients to Access and Share Health Record Information Using the Department of Veterans Affairs Online Patient Portal. J Am Med Inform Assoc. Jul;21(4):657-63. doi: 10.1136/amiajnl-2014-002723. Epub 2014 Apr 16.

Blue Button Feature: Pilot RCT



Research Article — Applied Clinical Informatics 765

Patient Education for Consumer-Mediated HIE

A Pilot Randomized Controlled Trial of the Department of Veterans Affairs Blue Button

Carolyn L. Turvey[1,2]; Dawn M. Klein[1,2]; Matthew Witry[3]; J. Stacey Klutts[4,5]; Elaine L. Hill[6,7]; Bruce Alexander[8]; Kim M. Nazi[9]
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[4]Iowa City VA Healthcare System Pathology and Laboratory Medicine, Iowa City, IA;
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[6]University of Rochester School of Medicine Department of Public Health Sciences, Rochester NY;
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Keywords
HIE, patient portals, consumer-mediated HIE, Blue Button, care coordination

Summary
Objectives: Consumer-mediated health information exchange (HIE) is one of the three types of HIE designated by the Office of the National Coordinator. HIE is intended to improve the quality of care while reducing cost, yet empirical support for this claim is mixed. Future research should identify the contexts whereby HIE is most effective.
Methods: This study was conducted as a pilot two-arm randomized controlled trial. In the intervention arm, 27 veterans were taught how to generate a Continuity of Care Document (CCD) within the Blue Button feature of their VA patient portal and were then asked to share it with their community non-VA provider. In the attention control condition, 25 Veterans were taught how to look up health information on the Internet. The impact of this training on the next non-VA medical visit was examined.
Results: Nineteen (90%) veterans in the intervention arm shared their CCD with their non-VA provider as compared with 2 (17%) in the attention control arm ($p<0.001$). Both veterans and non-VA providers indicated high satisfaction with the CCD. Comparison of medical records between the VA and non-VA providers did not indicate improved medication reconciliation ($p=0.72$). If veterans shared their CCD prior to their non-VA providers ordering laboratory tests, the number of duplicate laboratories was significantly reduced ($p=0.02$).
Conclusions: In this pilot randomized controlled trial, training 52 veterans to share their CCD was feasible and accepted by both patients and providers. Sharing this document appeared to reduce duplicate laboratory draws, but did not have an impact on documented medication list concordance.

- Intervention arm: Veterans were trained to use the Blue Button feature to access their VA Health Summary (CCD)
- 90% of veterans in the intervention arm shared their CCD with their non-VA community provider
- If veterans shared their CCD prior to their non-VA providers ordering laboratory tests, the number of duplicate laboratories was significantly reduced (p=0.02).
- Both veterans and non-VA providers indicated high satisfaction with the CCD

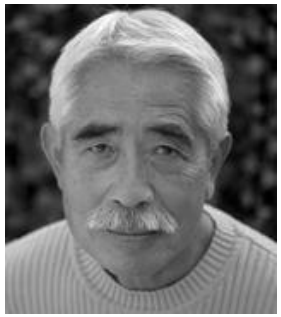
Turvey CL, Klein DM, Witry M, Klutts JS, Hill EL, Alexander B, Nazi KM. Patient Education for Consumer-Mediated HIE. A Pilot Randomized Controlled Trial of the Department of Veterans Affairs Blue Button. Appl Clin Inform. 2016 Aug 3;7(3):765-76. doi: 10.4338/ACI-2016-01-RA-0014. PubMed PMID: 27484821.

Patient Experience

"Everything happened so suddenly. I had all these things to worry about and did not know how I would keep everything straight. I remembered the VA Health Summary and printed it. I would not have been able to remember [my husband's] allergies and medications without the summary. Having it there helped me talk through his medications and conditions with the doctors. The doctors found it very useful."

- Constance M.

Questions



- How can current VA policy evolve to broaden “eligible” recipients?
- How can patients easily obtain the Direct address of an intended recipient?
- How can patients receive verification of receipt?
- What workflow best supports receipt, integration, communication, action?
- Should consumers be able to customize?
- Should CCDA accommodate PGD?
- What standards will support data provenance and pedigree?

UNITED STATES POSTAL SERVICE®

Identity * Direct Messaging * Electronic Postmark®

Jeff Tackes, U.S. Postal Service, Digital Integration
jeffrey.j.tackes@usps.gov

The Office of the National Coordinator for Health Information Technology

Lunch & Town Hall Forum

Grab lunch, and return for a Town Hall Forum discussion hosted by:

David Kibbe, M.D., DirectTrust

Aaron Seib, National Association for Trusted Exchange (NATE)

The Office of the National Coordinator for Health Information Technology

Using Direct for Consumer Mediated Exchange

Aaron Seib, NATE
Chris Burrow, Humetrix
Mike Warner, Cerner
Deven McGraw, HHS Office for Civil Rights
Linda Van Horn, iShareMedical

NATIONAL ASSOCIATION FOR TRUSTED EXCHANGE

A little about NATE…

Policies, practices and technologies…
…that enable and promote trusted exchange…
…within and across state lines...
…among unaffiliated organizations…
…and the consumers they serve.

Who Is NATE?

The **National Association for Trusted Exchange** (NATE) is a not-for-profit membership association focused on enabling trusted exchange among organizations and individuals with differing regulatory environments and exchange preferences

NATE is a 501(c)(3) Mission Driven Organization Focused on Enabling Trusted Exchange that Includes the Patient

NATE's Membership is Open to Government Entities, Non-Government Organizations, Associations and Individuals

NATE Members Include…

360 of me – personal data exchange
AZUBA – Your Health Records - Anytime, Anywhere
carebox
docsnap™
eSolutions – revenue cycle management technology
Get Real Health
Health Here
HealthNumeric
HealthCentrix – Scaling the Human Touch
HealthVault
huMETRIX
iShare MEDICAL – INNOVATING THE FUTURE OF HEALTHCARE
MediPortal – your gateway to better health
MEDYEAR
CONSUMER CONTROLLED APPS
NoMoreClipboard.com – EASY. ACCURATE. SECURE
omedix
onerecord™
PatientMD™ – where healthcare resides
SmartPHR® Health Record Account
TRILOGY – Integrated Resources
wellvana
WOMBA – POWERED BY ME®

U.S. Department of Veterans Affairs
SAN DIEGO HEALTH CONNECT – Better Information • Better Care
KHIN – Kansas Health Information Network
HRBA
CORHIO – COLORADO REGIONAL HEALTH INFORMATION ORGANIZATION
MiHIN Shared Services
INFOMC – ADVANCING THE VALUE OF CARE
DataMotion.
kantara INITIATIVE
STATES, NATIONAL ASSOCIATIONS AND INTERNATIONAL PEERS
wedi™
commonwell HEALTH ALLIANCE
CAHIE – California Association of Health Information Exchanges
The Office of the National Health Information Technology
UHIN – CONNECTING THE COMMUNITY
MaRS

Our First Federal Agency Member

U.S. Department of Veterans Affairs

"Participating in NATE allows VA to continue to be a national leader in enabling our Veteran patients to take control over their health information and become informed and active partners in their overall healthcare."

-- Dr. David Shulkin

U.S. Secretary of Veterans Affairs

Those That Take Consumer Engagement Seriously Join NATE

NATIONAL ASSOCIATION FOR TRUSTED EXCHANGE

A little about what we do…

What is the NBB4C?

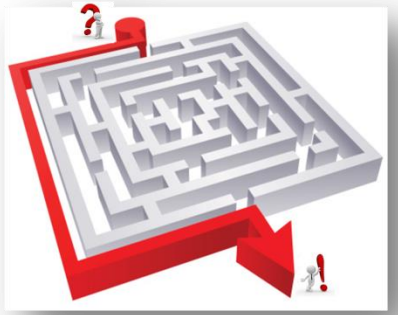
The **NATE Blue Button for Consumers** (NBB4C) Trust Bundle is a trust mechanism that provides, to HIPAA covered entities that use Direct, a facile method of exchange with **Consumer Facing Applications** that must meet or exceed a specific set of evaluation criteria and user experience requirements in order to become a NATE-QE

NATE Makes It Easier for Providers to Share Health Information With Their Patients So That Their Patients Can Do What They Want With It

Blue Button
Directory for Consumers

NATE Blue Button Directory

- An out of the box solution to a persistently wicked problem
- Rather than trying to overload the purpose of existing P2P4Tx Trust Bundles
- What if we tried to bring the consumer's "Individual Right of Access" request to the part of the health enterprise responsible for responding to these requests today?
- Would that result in a win-win for consumers and providers al



What is the NATE Blue Button Directory?

The **NATE Blue Button Directory** (NBBD) allows patients to discover how best to submit their request for health information and establishes a secure end-point that can be used by the HIPAA covered entity's staff responsible for managing these requests.

The NBBD Makes It Easier for Consumers to Discover How Their Providers Support the Individual Right of Access

Stayed Tuned for Webinar Information

NATE is Working with the ONC to Set Up a Demonstration of the NBBD – Date To Be Announced

NATE
Blue Button
Directory

Brighton Pediatrics Center

Address

213 Jupiter Street, Ann Arbor, MI, 48105

Identifiers/Licenses

Contacts

Url: https://cernerclinic.iqhealth.com

Departments

BPC Medical Records

Address

213 Jupiter Street, Ann Arbor, MI, 48105

Contacts

Phone: (919) 555-8345

Fax: (919) 555-2446

Email: info@bpc.com

Electronic Requests

Direct Address: bpc@direct.nbbdirectory.org

HL7 FHIR: urn:brighton:names:specification:consumerbook:dtd:xml:4.1.2

Search

Search the NATE Blue Button Directory for the best traditional and electronic addresses to use when requesting personal health information from healthcare providers and/or medical records departments.

A Demonstration of the NBBD Opportunity

Cerner

iBlueButton®
Your Health in Your Hands

huMETRIX®

HIPAA Right of Access

Deven McGraw
Office for Civil Rights (OCR)
U.S. Department of Health and Human Services

June 9, 2017

HIPAA Right of Access Guidance

- Issued in two phases in early 2016
  - Comprehensive Fact Sheet & Series of FAQs
    - Scope
    - Form and Format and Manner of Access
    - Timeliness
    - Fees
    - Directing Copy to a Third Party, and Certain Other Topics

https://www.hhs.gov/hipaa/for-individuals/guidance-materials-for-consumers/index.html

https://www.hhs.gov/hipaa/for-professionals/privacy/guidance/access/index.html

Access – Scope

- Designated record set broadly includes medical, payment, and other records used to make decisions about the individual
  - Doesn't matter how old the PHI is, where it is kept, or where it originated
  - Includes clinical laboratory test reports and underlying information (including genomic information)

Access – Scope (cont.)

- Very limited exclusions and grounds for denial
  - E.g., psychotherapy notes, information compiled for litigation, records not used to make decisions about individuals (e.g., certain business records) BUT underlying information remains accessible
  - Covered entity may not require individual to provide rationale for request or deny based on rationale offered
  - No denial for failure to pay for health care services
  - Concerns that individual may not understand or be upset by the PHI not sufficient to deny access

Access – Requests for Access

- Covered entity may require written request
- Can be electronic
- Reasonable steps to verify identity
- BUT cannot create barrier to or unreasonably delay access
  - E.g., cannot require individual to make separate trip to office to request access

Access – Form and Format and Manner of Access

- Individual has right to copy in form and format requested if "readily producible"
  - If PHI maintained electronically, at least one type of electronic format must be accessible by individual
  - Depends on capabilities, not willingness
  - Includes requested mode of transmission/transfer of copy
    - Right to copy by e-mail (or mail), including unsecure e-mail if requested by individual (plus light warning about security risks)
    - Other modes if within capabilities of entity and mode would not present unacceptable security risks to PHI on entity's systems

Access – Timeliness and Fees

- Access must be provided within 30 days (one 30-day extension permitted) BUT expectation that entities can respond much sooner
- Limited fees may be charged for copy
  - Reasonable, cost-based fee for labor for copying (and creating summary or explanation, if applicable); costs for supplies and postage (guidance covers options)
  - No search and retrieval or other costs, even if authorized by State law; per page fees permitted only in limited circumstances
  - Entities strongly encouraged to provide free copies
  - Must inform individual in advance of approximate fee

Third Party Access to an Individual's PHI

- Individual's right of access includes directing a covered entity to transmit PHI directly to another person, in writing, signed, designating the person and where to send a copy (45 CFR 164.524)
- Individual may also authorize disclosures to third parties, whereby third parties initiate a request for the PHI on their own behalf if certain conditions are met (45 CFR 164.508)

http://www.hhs.gov/hipaa

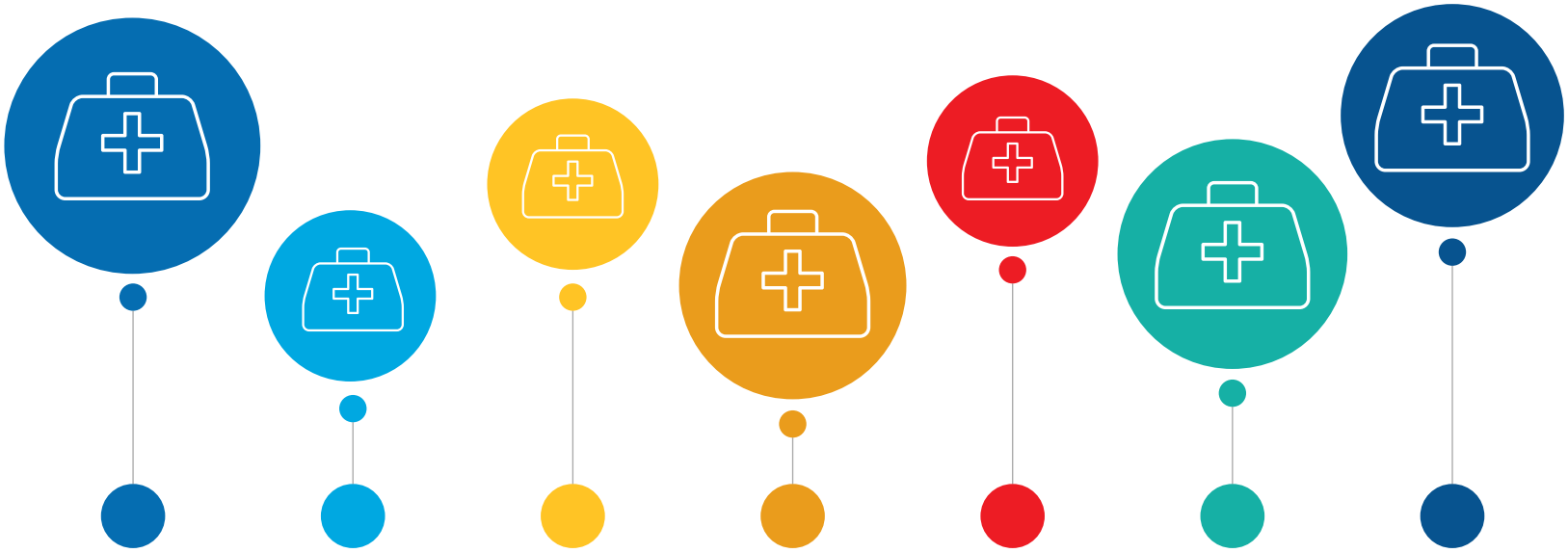
Join us on Twitter @hhsocr

iShare MEDICAL℠

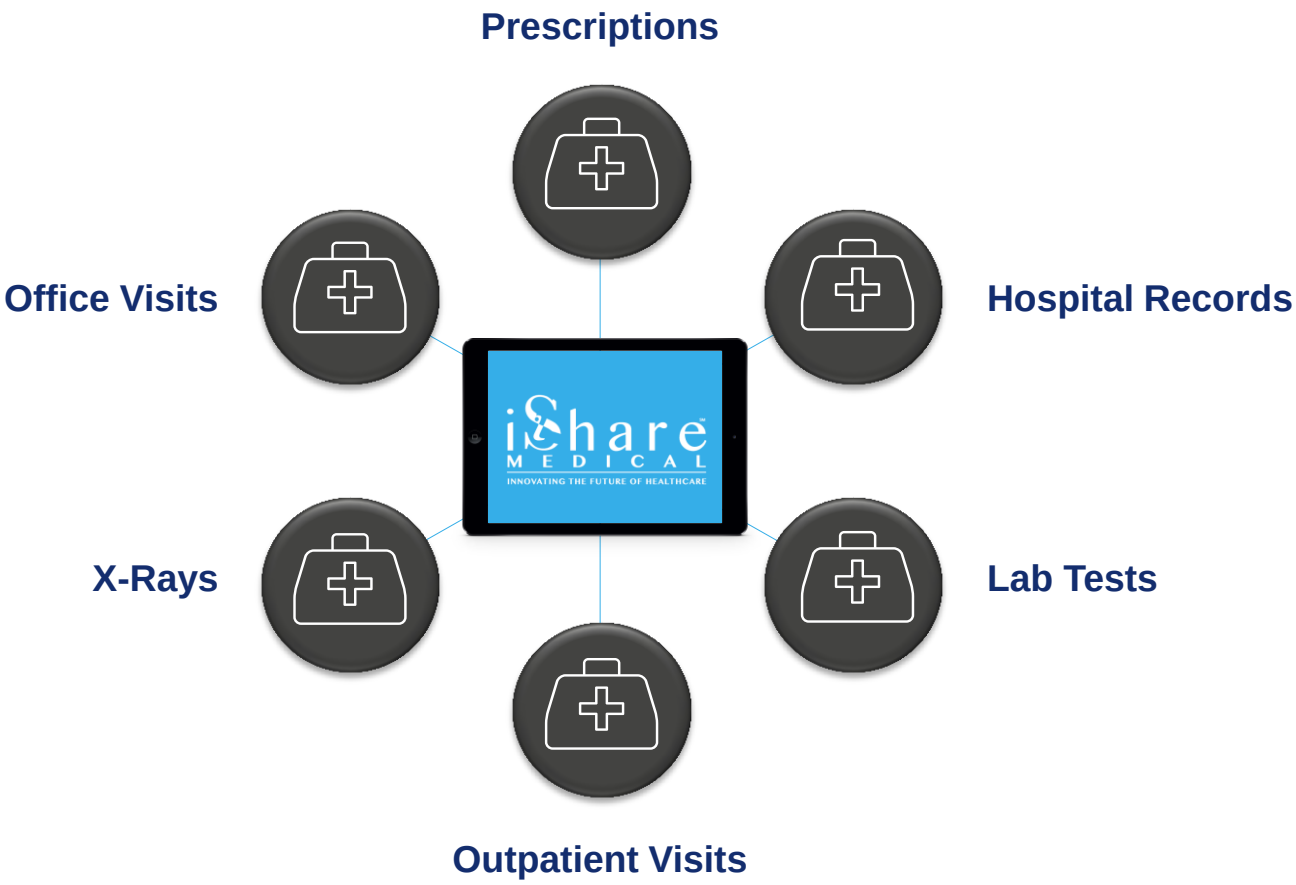
INNOVATING THE FUTURE OF HEALTHCARE

Pat’s True Story

Medical Records Are Incomplete

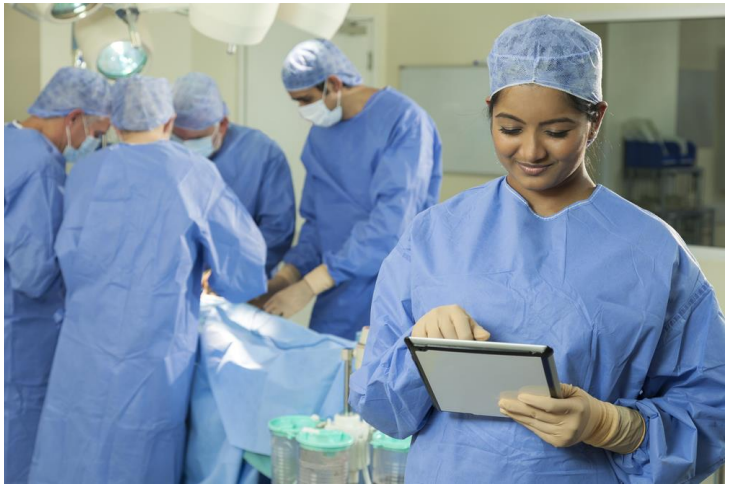


The Solution: A Complete Medical Record Organized Around the Patient/Consumer



Stakeholders That Need a Shareable Medical Record

Patients/
Consumers



Providers

Payors

What if you had access to your complete shareable medical record?

"The best way you can
help to prevent errors is to be an
active member of your health care team."*

* Source: AHRQ Agency for Healthcare Research and Quality

What if your doctor had access to your complete shareable medical record?

Preventable medical errors are the
third leading cause of death in the United States
behind heart disease and cancer.*

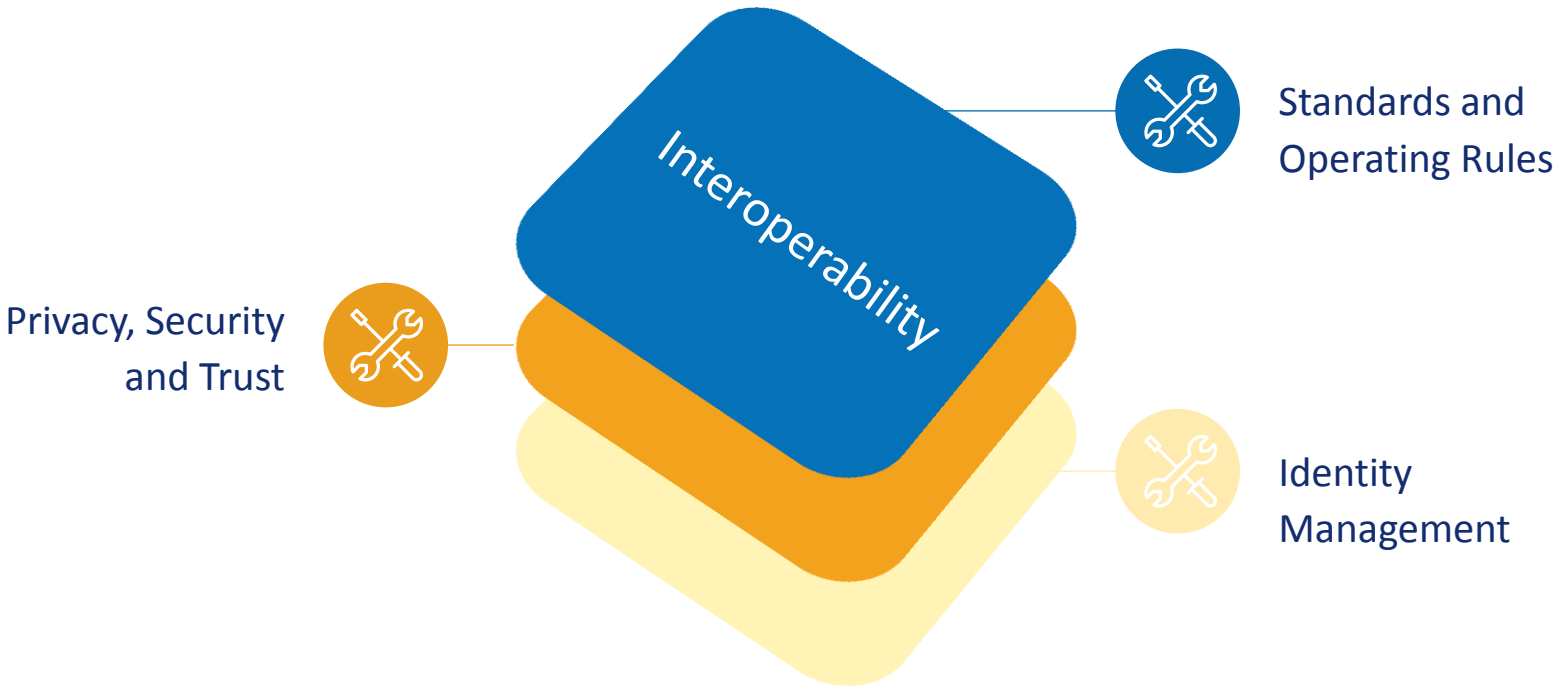
* Source: John Hopkins, *Medical Error – the third leading cause of death in the US*

What would the impact be on cost and outcomes if there were a complete shareable medical record?

A report to Congress estimates that sharing medical information between different systems and devices could **save over $30 billion a year** in the United States healthcare system alone, while simultaneously improving patient care and hospital safety.*

* Source: *Health Information Technologies: How Innovation Benefits Patients*

Foundations for Interoperability



iShare Medical's Accreditations and Trust Bundles

Accredited Trust Anchor Bundle HISP

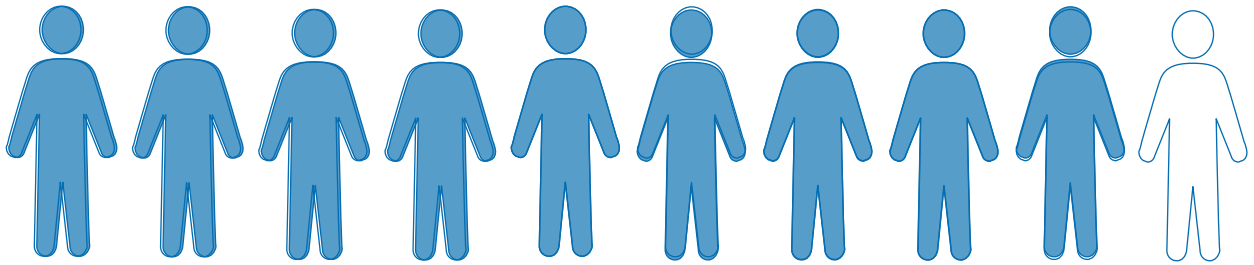
Governmental Trust Anchor Bundle HISP

Partnership for Patients HISP

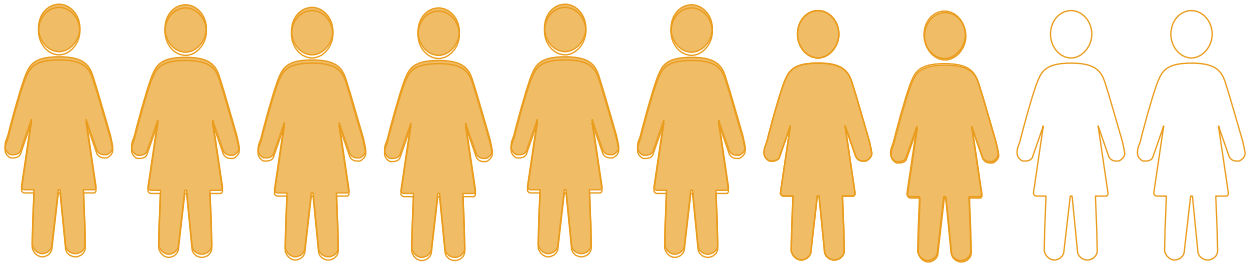
NBB4C NATE Blue Button for Consumers

HISP's Share Medical Records Between Trusted End Points like Patients/Consumers, Providers and Payors

Why Direct?
Direct is the most widely enabled sharing standard in healthcare.



94% of Hospitals



78% of Doctors

DirectTrust Network 94,000 health care organizations, 1.5 million Direct Addresses

Interoperability Need: An Unsolicited "Push" of Clinical Health Information to a Known Destination Between Individuals and Systems

Type	Standard/Implementation Specification	Standards Process Maturity	Implementation Maturity	Adoption Level	Federally Required	Cost	Test Tool Availability
1- Standard	Applicability Statement for Secure Health Transport v1.1 ("Direct")	Final	Production	●●●●●	Yes	Free	Yes
2 - Emerging Standard	*Applicability Statement for Secure Health Transport v1.2*	*Final*	*Production*	●●●○○	*Yes*	*Free*	*Yes*
1, 2, 3 - Implementation Specification	IG for Direct Edge Protocols	Final	Production	●●○○○	Yes	Free	Yes
1, 2 - Implementation Specification	IG for Delivery Notification in Direct	Final	Production	●●●○○	Yes	Free	Yes
1, 2, 3 - Implementation Specification	XDR and XDM for Direct Messaging Specification	Final	Production	●●●●○	Yes	Free	Yes
3 – Standard	IHE-XDR (Cross-Enterprise Document Reliable Interchange)	Final	Production	●●●●●	Yes	Free	Yes
4 - Emerging Standard	*Fast Healthcare Interoperability Resources (FHIR) DSTU 2*	*Balloted Draft*	*Pilot*	●○○○○	*No*	*Free*	*No*
3, 4 - Emerging Implementation Specification	*IHE-MHD (Mobile Access to Health Documents*	*Balloted Draft*	*Pilot*	●○○○○	*No*	*Free*	*No*

Interoperability Need: An Unsolicited "Push" of Clinical Health Information to a Known Destination Between Systems							
Type	**Standard/Implementation Specification**	**Standards Process Maturity**	**Implementation Maturity**	**Adoption Level**	**Federally Required**	**Cost**	**Test Tool Availability**
1- Standard	SOAP-Based Secure Transport Requirements Traceability Matrix (RTM) version 1.0 specification	Final	Production	●●●○○	Yes	Free	Yes
- Standard	Applicability Statement for Secure Health Transport v1.1 ("Direct")	Final	Production	●●●●●	Yes	Free	Yes
2 - Emerging Standard	*Applicability Statement for Secure Health Transport v1.2*	*Final*	*Production*	●●●○○	*Yes*	*Free*	*Yes*
2- Implementation Specification	IHE-XDR (Cross-Enterprise Document Reliable Interchange)	Final	Production	●●●●○	No	Free	Yes
1 - Implementation Specification	NwHIN Specification: Messaging Platform	Final	Production	●●●○○	No	Free	No
1- Implementation Specification	NwHIN Specification: Authorization Framework	Final	Production	●●●○○	No	Free	No

DirectTrust Establishes Rules Around Direct Protocol

Description	DirectTrust
Identity Management (LoA3 or higher)	✓
Direct Address is a National Patient Identifier that is already a component of every Stage 1 or higher MU Certified EHR System	✓
Scaleable - Trust Established by Trust Bundles	✓
Nonrepudiation – data is encrypted, if tampered with the encryption key is broken	✓
Data Provence – the source of the data is always known	✓
Role-based – provider, patient, device, BAA of Covered Entity	✓
Direct Address is Discoverable via a Directory Direct Address / Trusted End Points	✓

Pharmacogenetics

"**Pharmacogenetics** is the study of inherited genetic differences in drug metabolic pathways which can affect individual responses to drugs, both in terms of therapeutic effect as well as adverse effects" – Wikipedia

Patient / Consumer Innovation
How Direct Exchange is Being Used to Support Pharmacogenetics Personalized Health Application

- Online Sign Up for Patients/Consumers and Providers at FBCA Medium
- DNA Lab Test
- Monitor Medications: Automatic Real-time Updates When Medications Change
- Real-time look up of Drug to Genetic on a Smart Phone

iShare Medical®
Watch Over My Rx℠
Full Screen Demo

Patient/Consumer Direct Exchange
The 6 Action Items on Our Wish List

1. Educate patients, consumers, and provider about Direct Exchange.

2. Stop the Data Blocking: this is not a technology problem, Direct Exchange works.

3. Start sharing now: use Direct it's the mostly widely enabled exchange, it's already enabled in the EHR.

Patient/Consumer Direct Exchange
The 6 Action Items on Our Wish List

4 Use Direct Address for a National Patient Identifier.

5 Trust: educate providers that they can trust the identity of a Direct Address at LoA3 (or higher FBCA Medium). The patient has been identity proofed and the address is bound to two cryptographic keys pairs.

6 Recognize that FHIR needs a security and Trust Framework.

iShare MEDICAL

INNOVATING THE FUTURE OF HEALTHCARE

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The Office of the National Coordinator for Health Information Technology

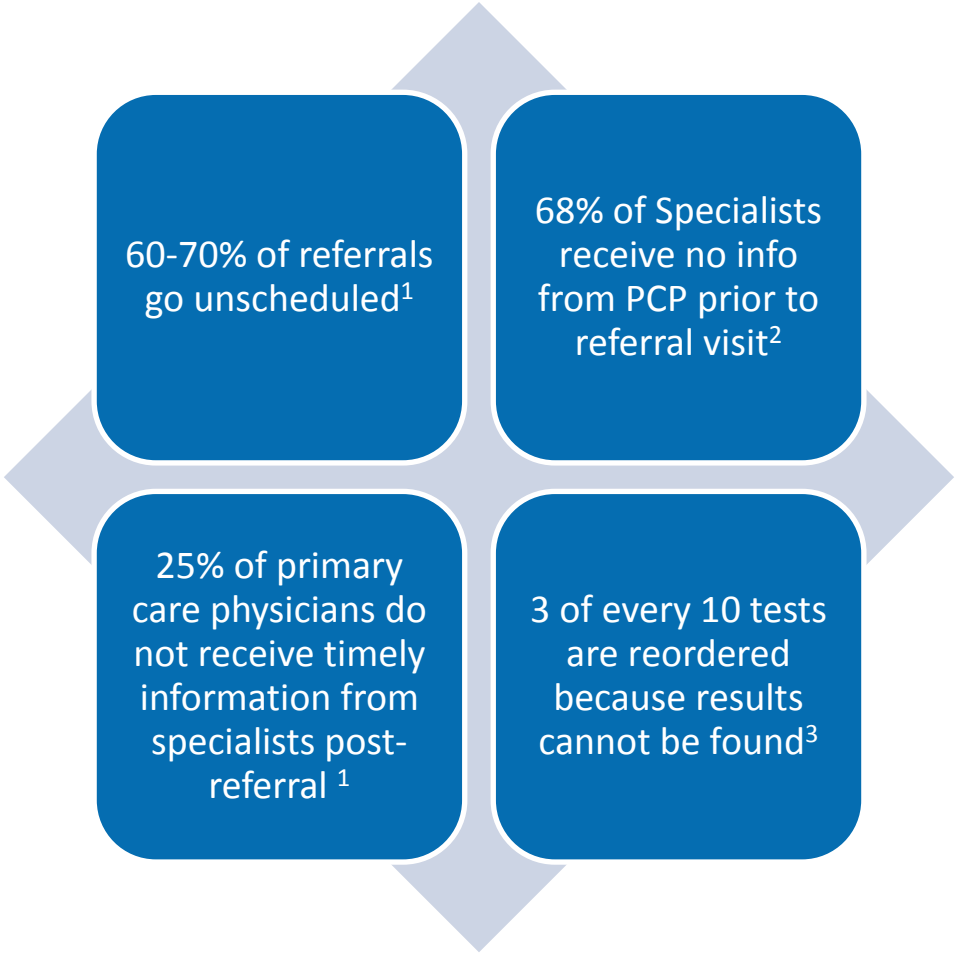
Workflow Harmonization for Closed Loop Referrals: An Overview of 360X

Brett Andriesen, ONC
Hans Buitendijk, Cerner
Vassil Peytchev, Epic

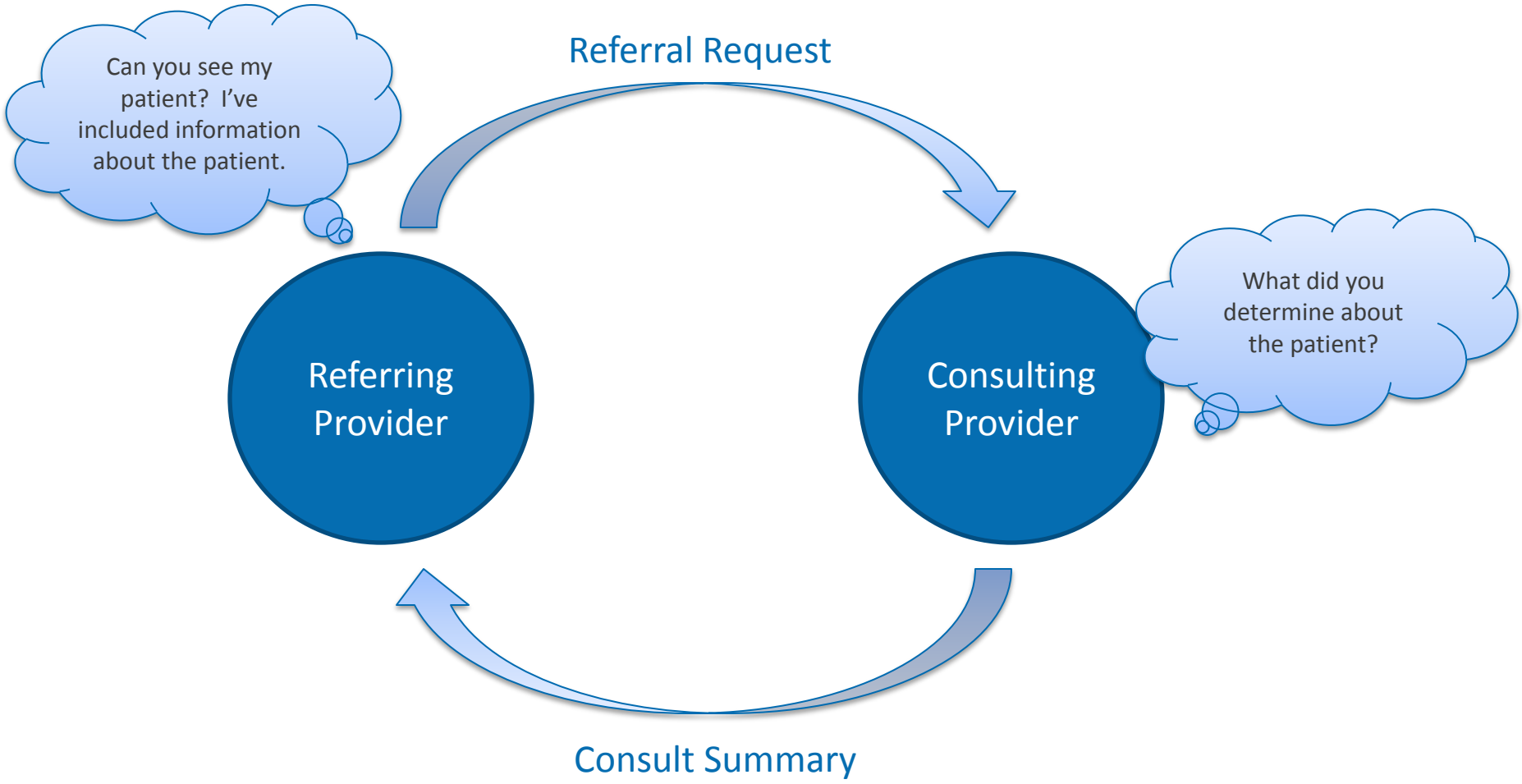
Background

- Started in 2012 as an Initiative of ONC's State Health Information Exchange Cooperative Agreement Program, 360X was launched to enable provider exchange of patient information for referrals from their EHR workflow, regardless of the EHR systems and/or HISP services used.
- Primary Goals:
  - » Standardize the type of data exchanged and method of transport during referrals
  - » Provide transparency to progress and/or gaps in care until the loop is closed.
  - » Design a process w/ a low bar of entry for implementations
  - » Add value to clinicians and overall clinical workflows
- To date, more than 30 organizations (representing health IT developers, HIE organizations, state/federal government agencies, health care consultants, and other stakeholders) have participated in four workgroups.
  - Three (use case, transport, provider directory) have completed their work, while one (payload) continues to meet on a bi-weekly basis to finalize the Implementation Guide.

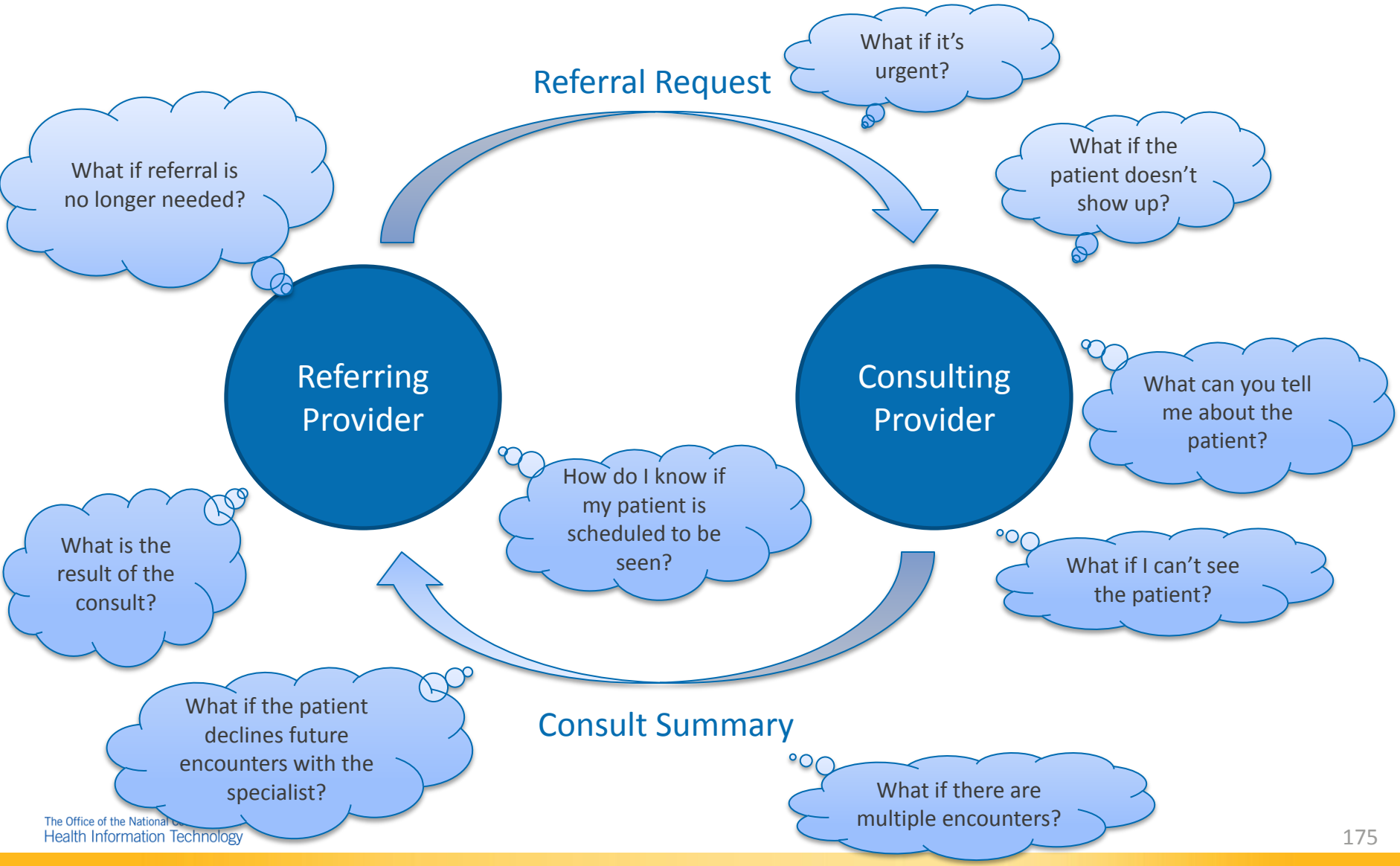
Problem


60-70% of referrals go unscheduled[1]
68% of Specialists receive no info from PCP prior to referral visit[2]
25% of primary care physicians do not receive timely information from specialists post-referral [1]
3 of every 10 tests are reordered because results cannot be found[3]

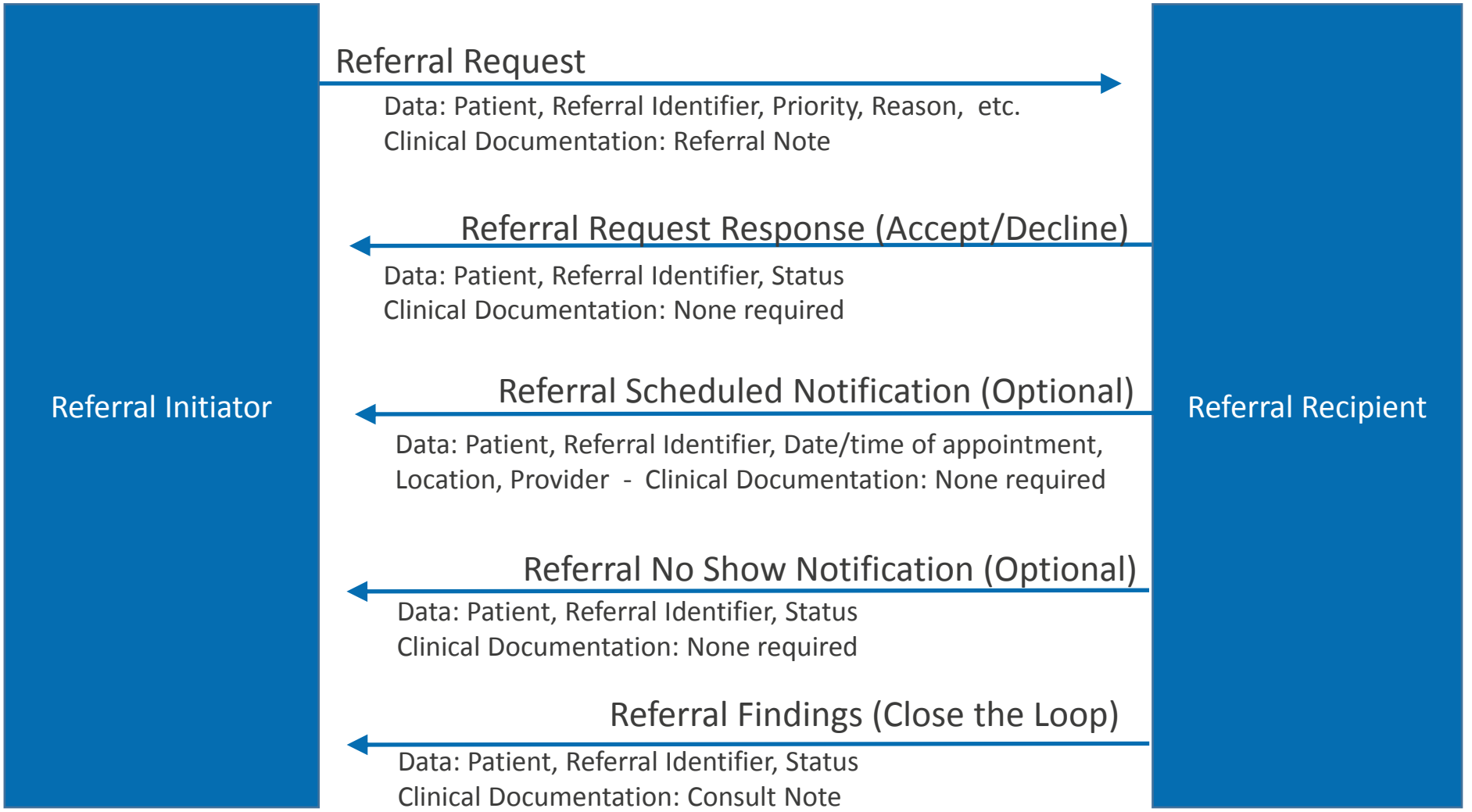
360X: In Theory…



360X: In Reality…



360X Referral Workflow



Referral Request

- Data (Order Information):
  - Patient Identifying Information
  - Referral Identifier
  - Priority
  - Reason for Referral
    - Standardized structured content or free text, as necessary to resolve concerns/provide clarity
- Clinical Documentation:
  - Summary of care record (CCD or a Referral Note)
    - Support for C-CDA 2.1
    - Contains common MU data set

Referral Request Response (Accept/Decline)

- Data:
  - Patient Identifying Information
  - Referral Identifier
  - Order Status (Accept/Decline)
  - Ability to send codified reason if declined
- Clinical Documentation: None

Referral Scheduled Notification (Optional)

- Data:
  - Patient Identifying Information
  - Referral Identifier
  - Date/time of appointment
  - Appointment Location
  - Referral Recipient (Treating Clinician)
- Clinical Documentation: None.

Referral No Show Notification (Optional)

- Data:
  - Patient Identifying Information
  - Referral Identifier
  - Date/time of appointment
  - Appointment Location
  - Referral Recipient (Treating Clinician)
- Documentation: None.

Referral Interim Findings/Consultation Note

- In the case of resolutions that require multiple visits, interim “progress reports” may be desired instead of one Referral Findings (Close the Loop) result.

- Data:
  - Patient Identifying Information
  - Referral Identifier
  - Interim Order Status

- Documentation:
  - Consultation Note (C-CDA)
    - Support for C-CDA 2.1
    - Contains common MU data set

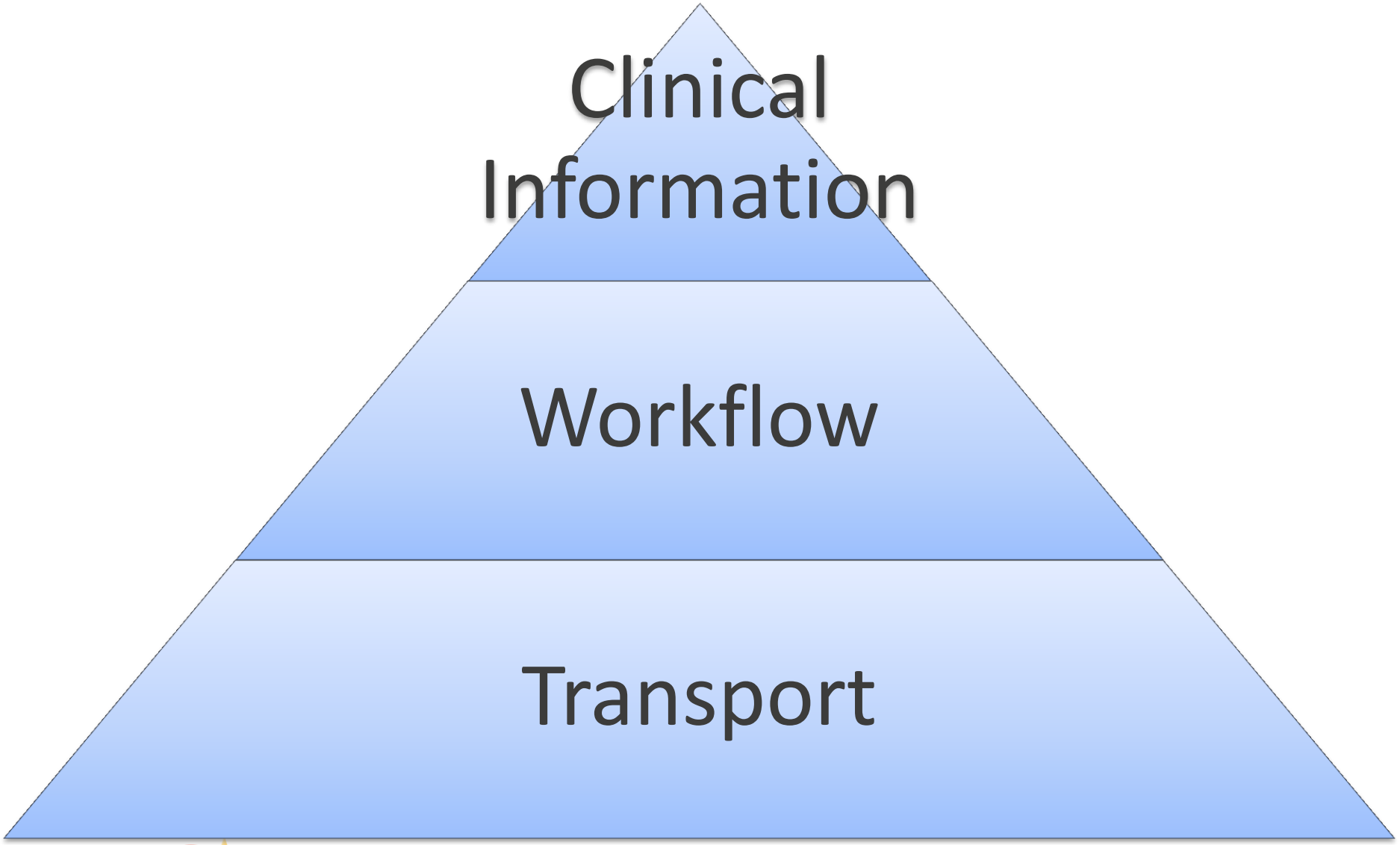
Referral Final Findings (Close the Loop)

- Data:
  - Patient Identifying Information
  - Referral Identifier
  - Completed Order Status
- Documentation:
  - Consultation Note (C-CDA)
    - Support for C-CDA 2.1
    - Contains common MU data set

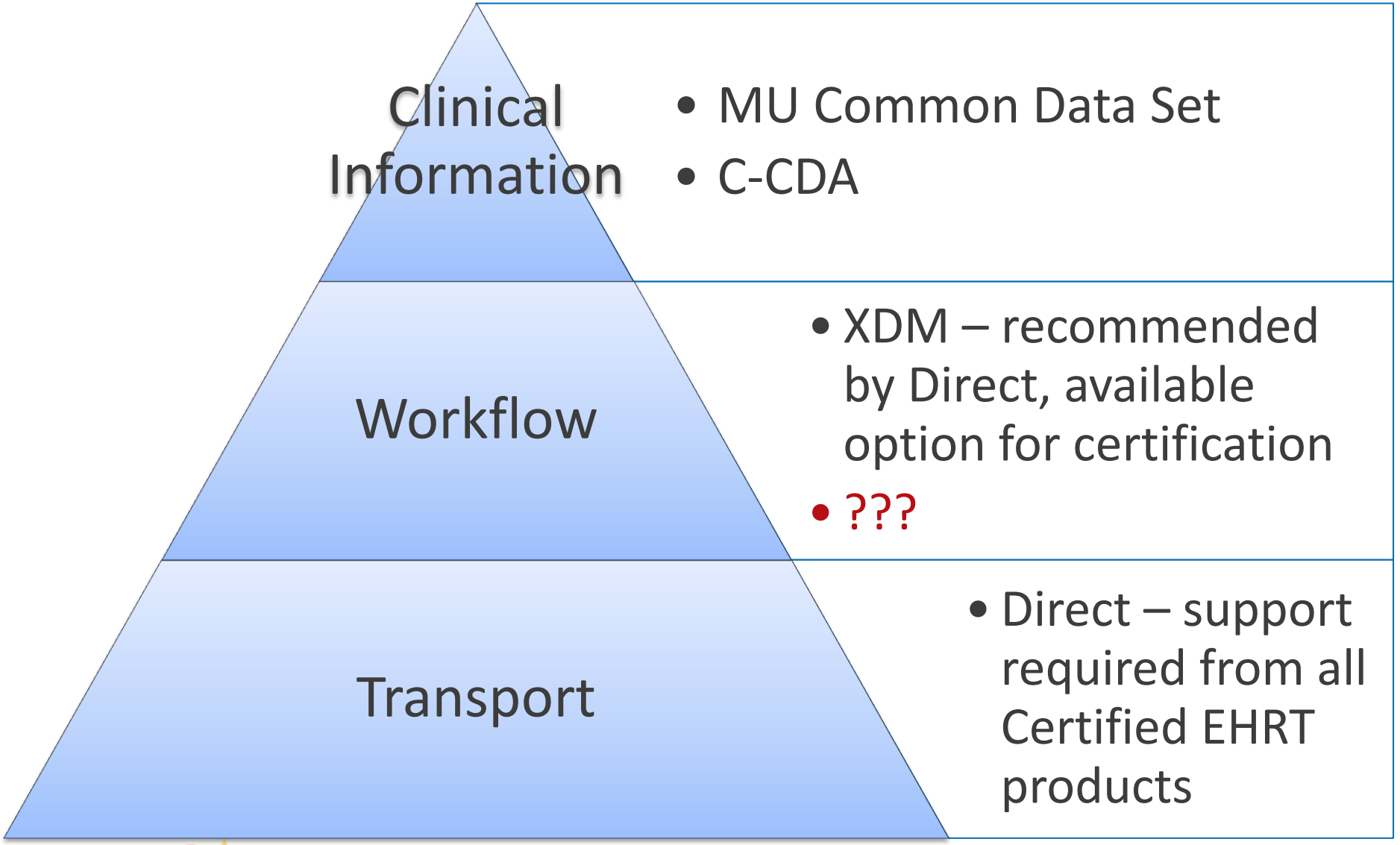
Exception Flows

- Referral Cancellation (Initiator Driven)
  - Referral Initiator sends a cancellation request
  - Referral Recipient replies with a cancellation confirmation
- Delayed Decline (Recipient Driven)
  - After the Referral Recipient has Accepted, the Recipient stops care prior to completion.

Technical Approach: Overview



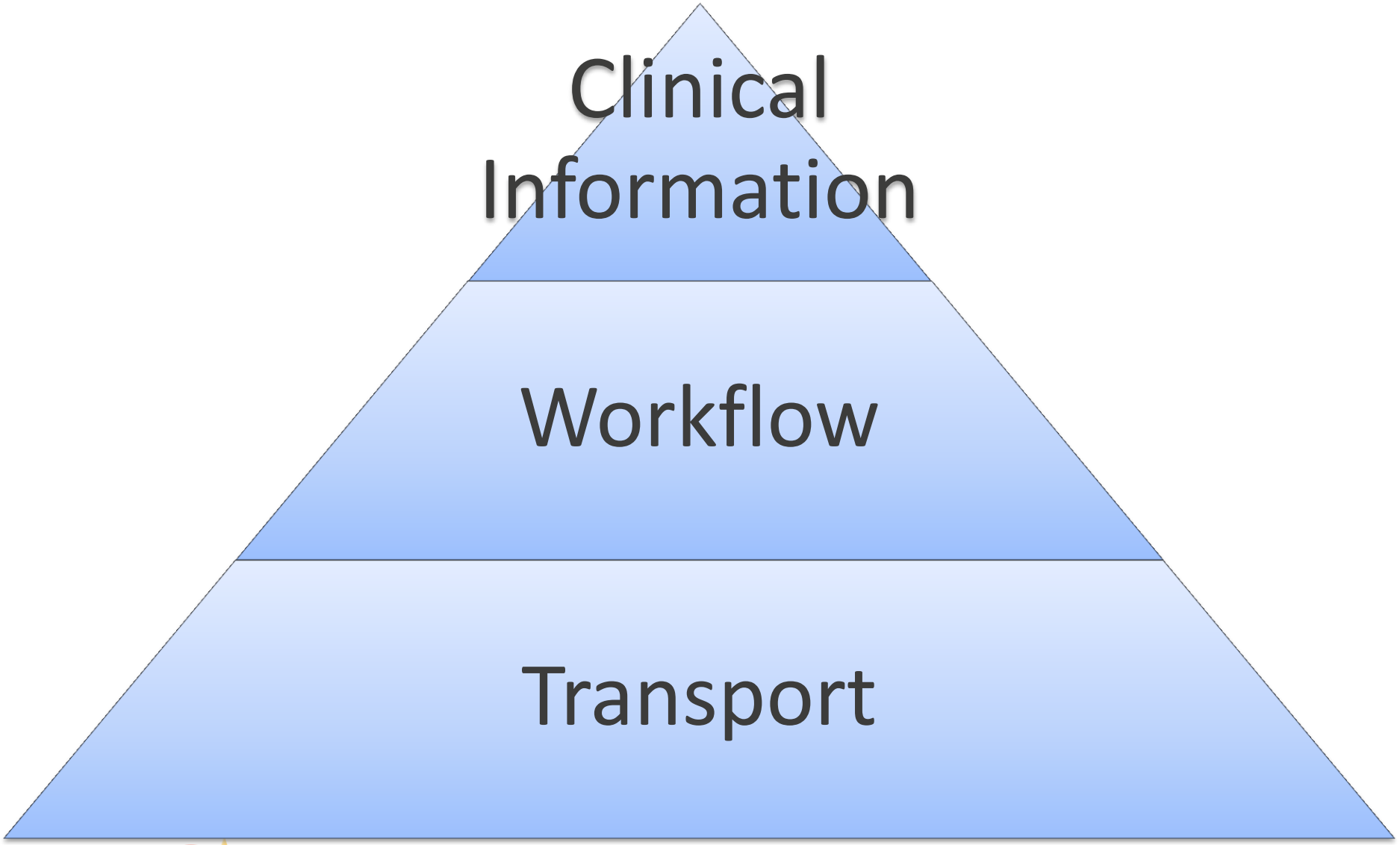
Technical Approach: Overview



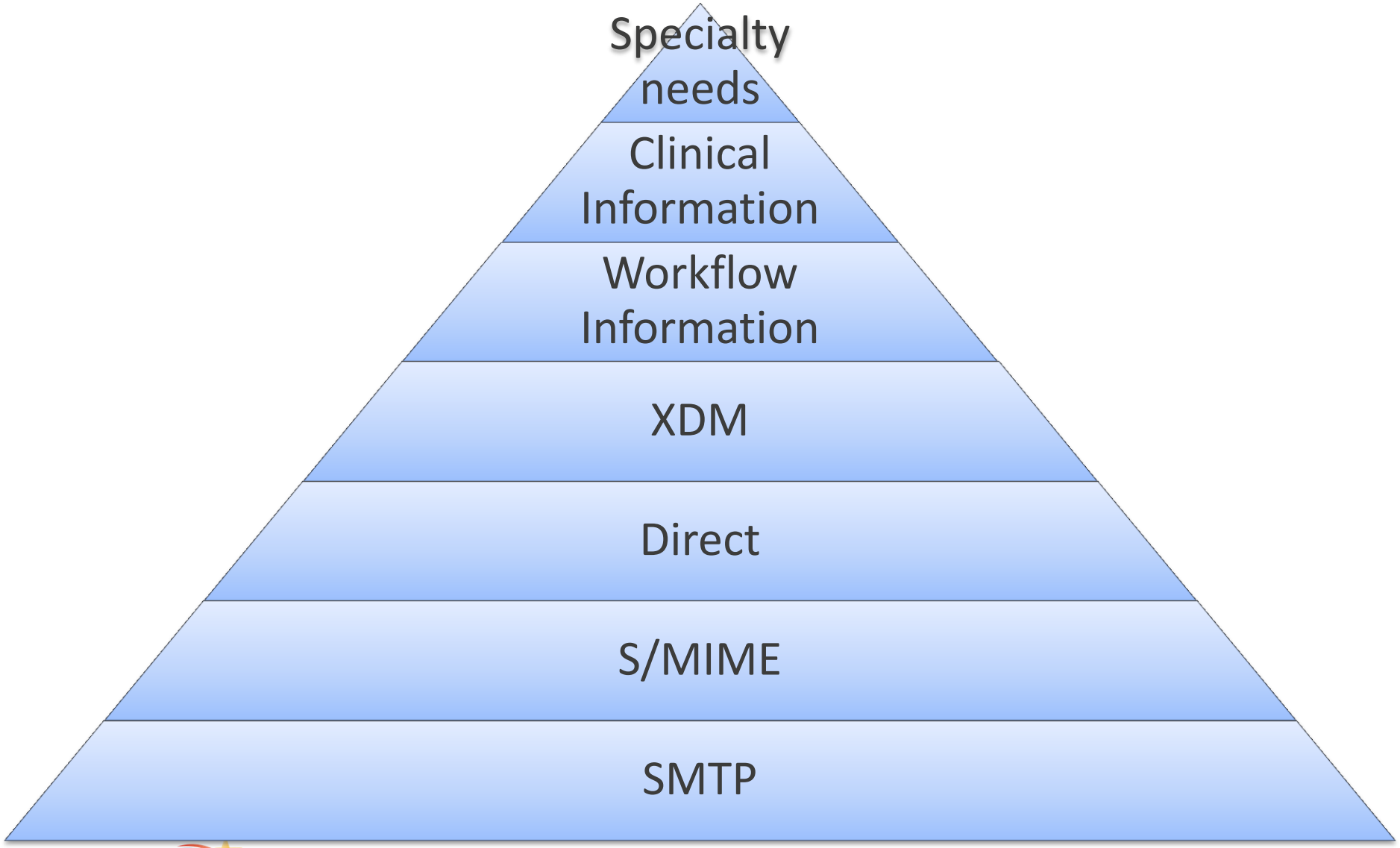
Technical Approach: Transport and Metadata

- The choice of transport was made based on the requirement that any certified EHR Technology product in the US must support the Direct Applicability Statement, and there are no other transport mechanisms that are nationally required by MU2, MU3 or any existing subsequent regulations.
- The use of XDM (as specified in the XDR and XDM for Direct Messaging Specification), and the Submission Set mechanism in particular, is necessary to provide the ability to group together multiple document entries for the purposes of the referral, thus facilitating the transmission of workflow data
- This also provides a consistent path for gradual adoption of more specific clinical information (e.g. evolution from a generic CCD to a Referral Note specially tailored for a cardiology referral), and for further extensions of the infrastructural capabilities of 360X (e.g. adding imaging information to the referral or adding additional steps to the workflow).

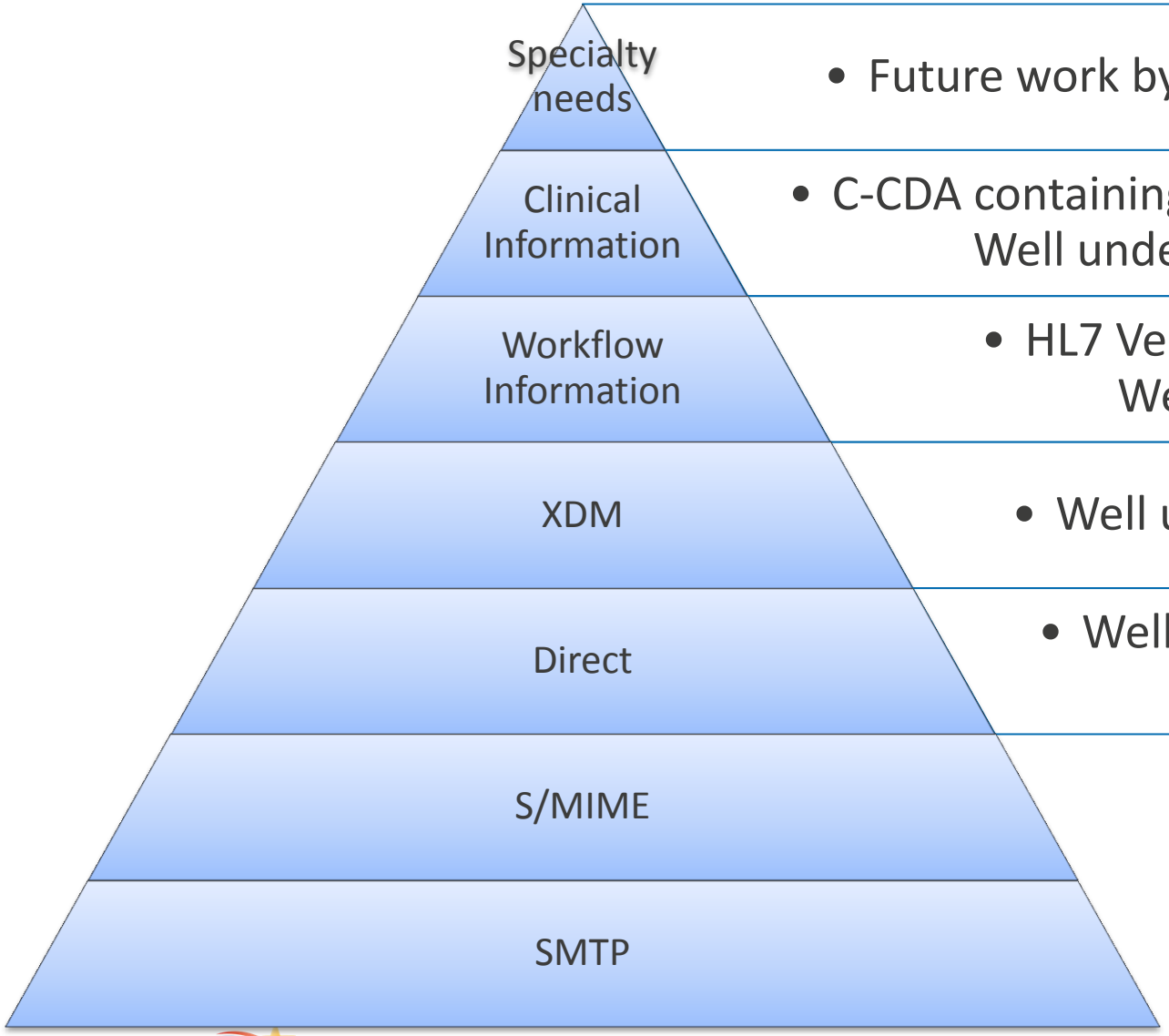
Technical Approach: Layers



Technical Approach: Layers



Technical Approach: Layers

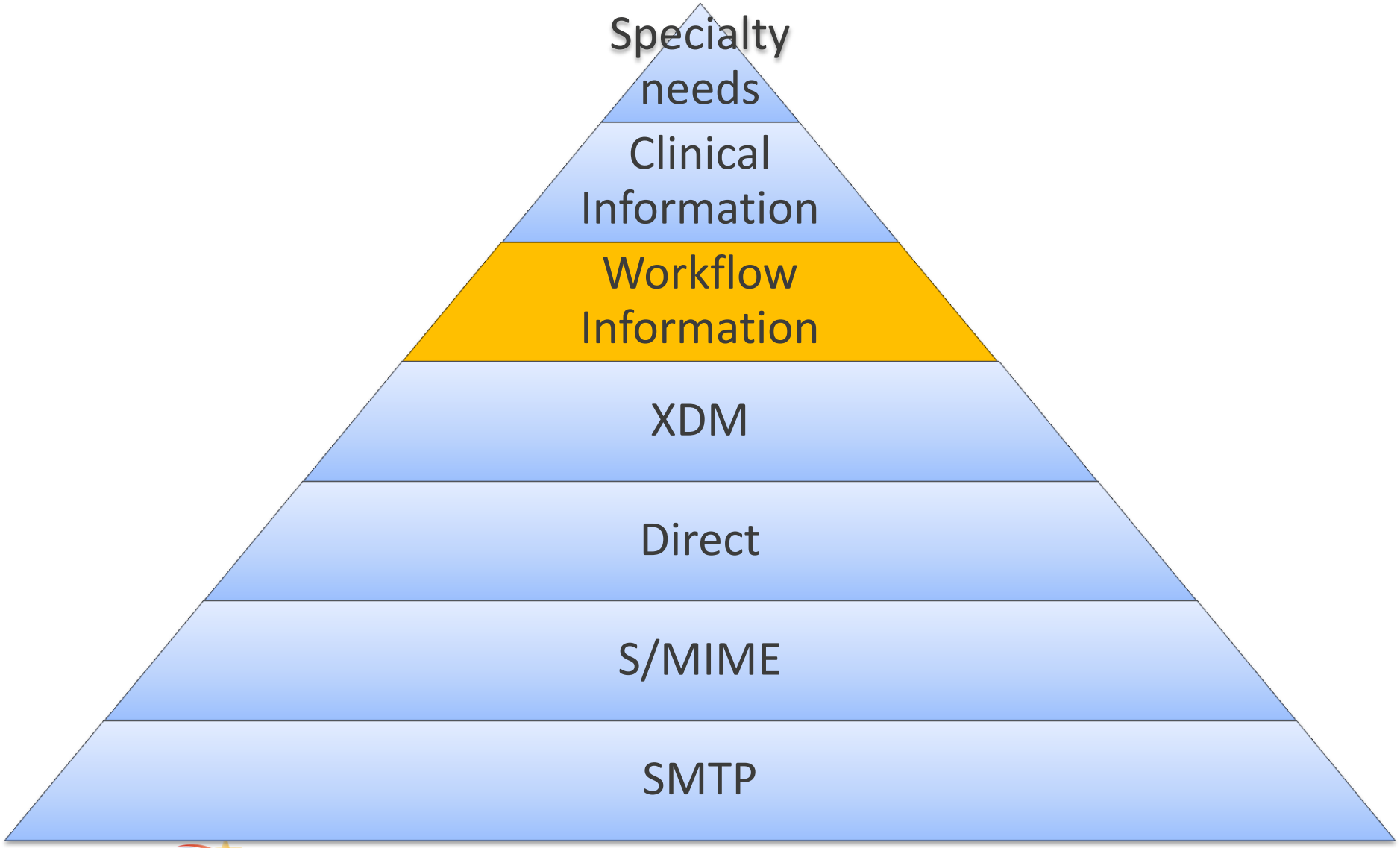


- Future work by medical societies
- C-CDA containing MU Common Data Set
  Well understood, available
- HL7 Version 2.x messages
  Well understood
- Well understood, available
- Well understood and widely available

Technical Approach: HL7 Version 2.x Messages for Workflow Information

- Reviewed various options for conveying workflow information
  - » Create specific C-CDA documents that contain workflow information
    - – Not an appropriate use of the document paradigm
    - – Specific documents are not required by MU or other regulations
  - » HL7 Version 3 messages
    - – No ready to use standard set of messages
    - – No available implementations in the US
    - – Too verbose
  - » HL7 FHIR format
    - – Specification is very new
    - – No standard set of resources
    - – Workflow is being addressed starting in 2017 – not expected anything robust for at least 5 years
  - » HL7 Version 2 messages
    - – Format familiar to most in Health IT
    - – Used in ONC- supported specifications (LOI and LRI)
      - Precedent of using the format in Direct
    - – Terse format, well suited for the minimal information required, while providing future extension capabilities

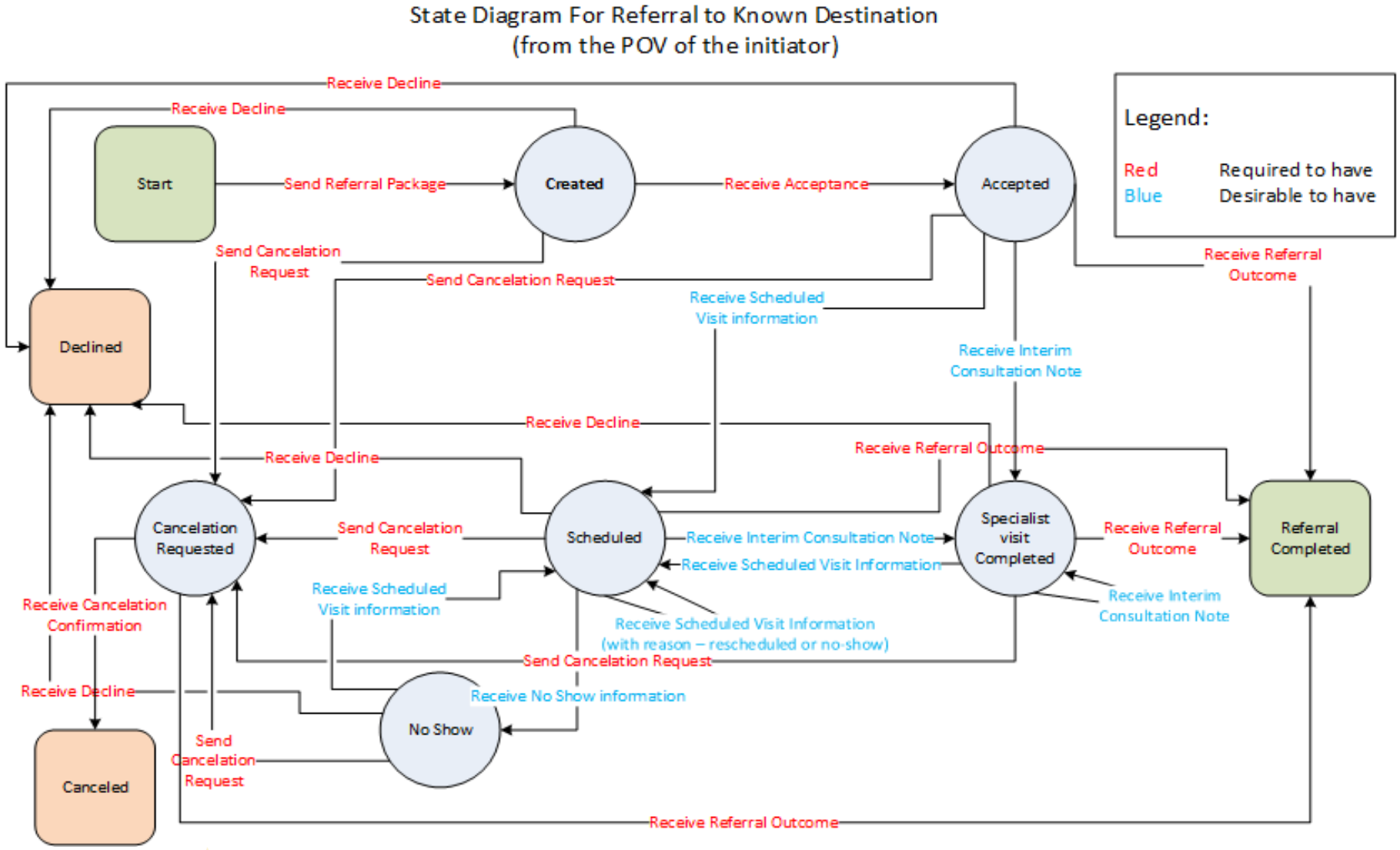
Technical Approach: Referral workflow information



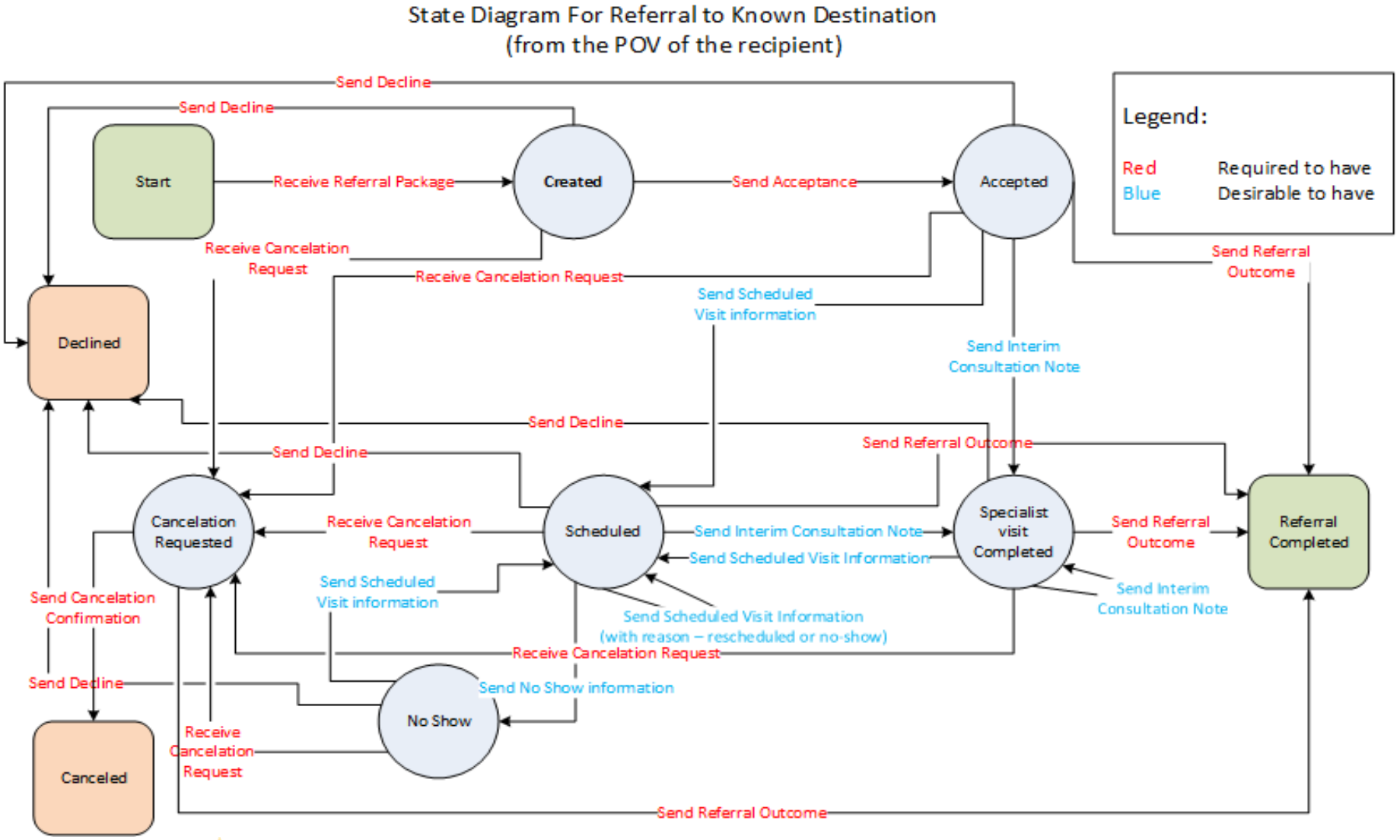
Technical Approach: Referral Workflow Information

- The exchange of information between a Referral Initiator and a Referral Recipient can be generalized in the following state transition diagrams. One of the goals of the 360X specification is to allow the workflow, in the vast majority of its instantiations, to reach either a successful, or an exceptional state without the need of manual intervention.
  - » Manual interventions, however, cannot be avoided 100% of the time, and those rare cases are called out, and considered out of scope for the specification.
- It is important to note that the specification is concerned with the transactions, which drive the transitions from state to state, and not with the states themselves. There are no specific requirements for how these states are to be externalized/displayed (if at all) within a given EHRT's end user interface.
  - » For example, once a newly "Created" referral package has been sent to the Referral Recipient, it may be shown as "pending" in the Referral Initiator's EHRT and may be displayed in the work queue of the Referral Recipient 's EHRT as "new" or some other suitable status. In this way, the 360X implementation guide provides a mechanism by which disparate EHRT may infer the state/status of a referral based on prior messages while retaining the ability to integrate this flexibility into a given application's workflow.

State Transitions from the Referral Initiator's point of view



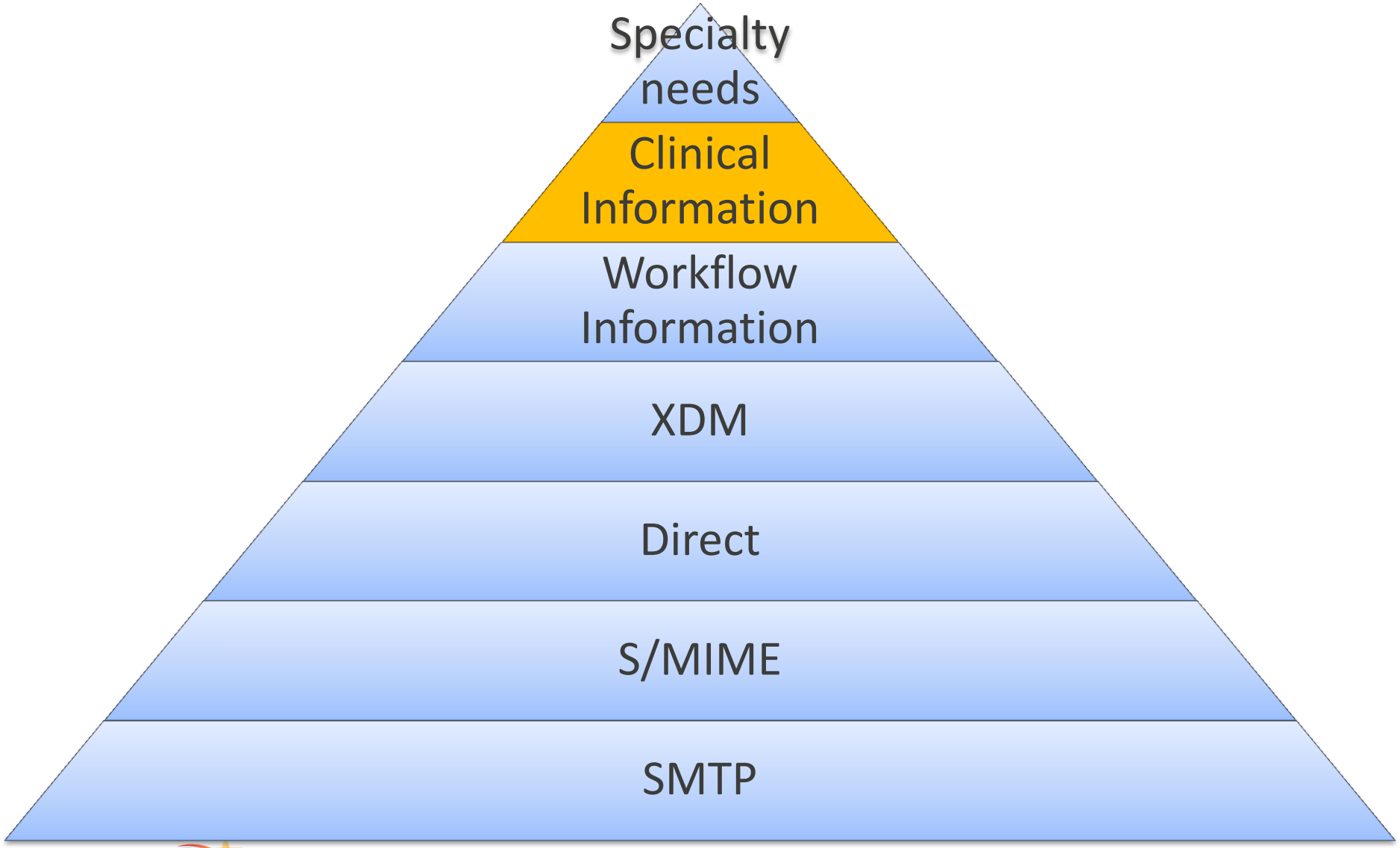
State Transitions from the Referral Recipient's point of view



Technical Approach: Workflow requirements

- Patient Identity management capabilities
  - The Referral Initiator sends basic demographics information and a patient identifier known to them
  - The Referral Recipient must send back the same patient identifier
  - The same patient identifier must be used by both sides in any exchanges related to the referral
- Referral Identifier
  - The Referral Initiator assigns a unique referral identifier with the referral request
  - The Referral Recipient must send back the same referral identifier
  - The same referral identifier must be used by both sides in any exchange related to the referral

Technical Approach: Layers



Technical Approach: Clinical Content requirements

- Clinical content is a required component of the Referral Request and the Referral Outcome.
- Starting point – a C-CDA document
  - » Allows for re-use of existing support for C-CDA documents, e.g. a CCD.
  - » Allows for a gradual enhancement for the referral request (add a reason for referral section) and for the referral outcome (add the referral ID to the inFullfilmentOf header)
  - » This can be followed by another enhancement – Use a Referral Note document for the request, and a Consultation Note document for the Referral Outcome.
  - » Medical Societies and other experts can further specialize the expected content for particular needs

Technical Approach: Putting it all together in a Submission Set

- We require the use of the HL7 C-CDA Implementation Guide, DSTU 2.1, for the exchange of clinical information, and small set of HL7 V2.x messages for the exchange of workflow information. These base specifications are constrained to reflect the needs of the 360X specification.
- The choice of the C-CDA Implementation Guide was made based on the 2015 Edition of the ONC requirements supporting MU stage 3, which includes the electronic transmission of C-CDA documents. The 360X specification further describes the particular document types, and section and entry templates that support the exchange of clinical information as part of a referral workflow.
- The choice of the HL7 v2.x messages was made based on the existing use of such messages to exchange laboratory orders and results between certified EHRT and reference lab systems. We believe that using a format and content that is already familiar to EHRT implementers provides a lower bar to implementing a 360X compliant solution, than using a format which is not as familiar.

Current Status

- 360X is currently working with IHE International's Patient Care Coordination domain to have 360X recognized as a PCC profile and a US National Extension.
- Public comments are currently being accepted for the 360X profile, until June 25, 2017. Please participate at https://ihe.net/Public_Comment/#pcc
- Most up to date (being finalized) Implementation Guide is available at: https://oncprojectracking.healthit.gov/wiki/display/TechLab360X/

Next Steps

- Review and incorporate Public Comment feedback into the implementation guide.
- Connectivity testing at the Jan 2018 IHE Connectathon.
- Showcasing at HIMSS in 2018.
- We are also seeking providers/vendors within a community to launch pilots.
  - Fill out our questionnaire at https://tiny.url/360xPilots to express your interest
  - Contact us for any questions
- Next phase potentials:
  - V2/C-CDA only use case
  - XDR (edge protocol) use
  - Convergence with MyHealth Referral Management use cases
  - HL7 FHIR use
  - Other?

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Thank you!

Contact Brett.Andriesen@hhs.gov with any questions or follow-up details.

@ONC_HealthIT @HHSONC HealthIT.gov

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Direct Specification and Community Updates

Luis Maas, M.D., EMR Direct
Matt Rahn, ONC

The Direct Project
Implementers Workgroup:

Implementation Guide for Expressing Context in Direct Messaging

June 9, 2017

Luis C. Maas III, MD, PhD
EMR Direct

We're all quite familiar with Direct Messaging…

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.

b.wells@direct.aclinic.org

h.elthie@direct.ahospital.org

- **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 one-off agreements (federated agreements instead), point-to-point connections, or centralized data storage.
- **Standards-based.** Built on well-established Internet standards, commonly used for secure e-mail communication; i.e., SMTP for transport, S/MIME & X.509 certificates for encryption and integrity protection
- **Identity Assurance.** When a use case requires it, Direct is capable of providing this, too.

Motivations for Context IG

Nationwide Direct infrastructure is established

- Over 1.4 million production Direct endpoints are live today

Connected users want to use Direct for more than just TOCs:

- Improved care coordination
- More complete healthcare records
- Automated transaction processing
- Leveraging existing trust framework to authorize transactions beyond the CCDA

Benefits of further enhancing interoperability:

- Predictive analytics, population health, clinical research, telemedicine, and more

Challenges

Some systems only capable of CCDA send/receive

- 2015 Edition certification will expand to include text, PDF, and XDM (at a minimum)
- Messages containing PDFs don't have a standardized way to include patient context
- Same true for JPGs and many other content types
- XD* not universally supported
- Workflow cannot always be determined from payload type
- Not all CCDAs are for Transitions of Care

Goals of Expressing Context in Direct

- **Extending Direct use cases beyond Transitions of Care**
- **Leveraging Direct Networks to encapsulate HL7 and other transactions**
- **Explaining why a message is sent & what response is expected**
- **Ability to tag non-CCDA attachments (PDFs, images) with patient information**
- **Make Context information accessible even to applications that are not Context IG-aware**

Not unlike a modernized cover sheet for a fax, so recipient knows why they are receiving a payload, what to do with it, and what response is expected

What can we do with context?

- Transaction Type
  - to identify the role of the message sender in the transaction sequence Appointment request

type-element = “type:” category “/” action
category = “laboratory”/ “radiology”
/ “pharmacy” / “referral” / “general”
action = “order”/ “report” / “result” / “query”
/ “response” / “notification”

Example: type: radiology/report

What can we do with context?

- Patient Identifiers
  - to identify the patient identifier in a sender's local context
  - Recipients echo this information back in responses and optionally add their own patient identifiers

patient-id-element = "patient-id:" pid-instance *(";" pid-instance)

pid-instance = pid-context ":" local-patient-id

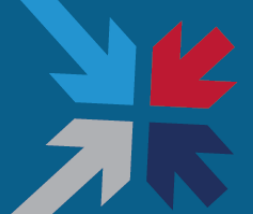
pid-context = <Assigning Authority Domain ID or standardized UUID constructed from Direct addresss or domain>

local-patient-id = <printable ASCII characters other than whitespace and ";">

Example:

patient-id: 2.16.840.1.113883.19.999999:123456;
2.16.840.1.113883.19.888888:75774

What can we do with context?



- Patient Matching Attributes
  - included to facilitate patient matching by the recipient

patient-data-element = “patient:” patient-attribute *(“;” patient-attribute)

patient-attribute = patient-parameter “=” patient-parameter-value

patient-parameter = “givenName” / “surname” / “middleName”
/ “dateOfBirth” / “gender” / “socialSecurityNumber”
/ “telephoneNumber” / “streetAddress” / “postalCode”

patient-parameter-value = <depends on patient-parameter…>

Example:

patient: givenName=John; surname=Doe; dateOfBirth=1961-12-31

What can we do with context?

- Purpose of Use
  - When a message sender requests the disclosure of healthcare information from the recipient, the purpose-element identifies the purpose for which the sender will use the disclosed information.
  - Policy engines determine transaction response

purpose-element = “purpose:” purpose-name

purpose name = “treatment” / “payment” / “operations”
/ “emergency” / “research”

Example: purpose: research

Assembling elements into a complete Context

- Example context attachment
  - Human-readable (if receiving system not context-aware)
  - version refers to IG version
  - Id refers to a transactional identifier established by the original sender, echoed back in responses

version: 1.0

id: 2ba8a9a1-0f59-4688-b818-67930ae26979

patient-id: 2.16.840.1.113883.19.999999:123456

type: radiology/report

patient: givenName=John; middleName=Jacob; surname=Doe; dateOfBirth=1961-12-31; gender=M; postalCode=12345

Adding Context to a Direct Message (1 of 3)

- Example context attachment

Date: Wed, 31 May 2017 18:32:15 -0700 (PDT)
From: test@direct.phimail-dev.com
To: another@direct.example.com
Message-ID: <0000015c-6148-1d24-9687-50a0730f8b21.test@direct.phimail-dev.com>
Subject: Context Example 1
MIME-Version: 1.0
Content-Type: multipart/mixed;
boundary="----=_Part_14_125690771.1496280735009"
X-Direct-Context: <0000015c-6148-1bc5-960f-cf885d5b8df1@direct.phimail-dev.com>

------=_Part_14_125690771.1496280735009
Content-Type: text/plain; charset="us-ascii"
Content-Transfer-Encoding: quoted-printable

This is the main message content. A PDF radiology report is attached.

Adding Context to a Direct Message (2 of 3)

» Example context attachment (continued)

```
------=_Part_14_125690771.1496280735009
Content-Type: text/plain; charset="us-ascii"
Content-Transfer-Encoding: quoted-printable
Content-ID: <0000015c-6148-1bc5-960f-cf885d5b8df1@direct.phimail-dev.com>
Content-Disposition: attachment; filename=metadata.txt

version: 1.0
id: 2ba8a9a1-0f59-4688-b818-67930ae26979
patient-id: 2.16.840.1.113883.19.999999:123456
type: radiology/report
patient: givenName=3DJohn; middleName=3DJacob; surname=3DDoe; dateOfBirth=
=3D1961-12-31; gender=3DM; postalCode=3D12345

------=_Part_14_125690771.1496280735009
```

Adding Context to a Direct Message (3 of 3)

» Example context attachment (continued)

```
------=_Part_14_125690771.1496280735009
Content-Type: application/pdf
Content-Transfer-Encoding: base64
Content-Disposition: attachment; filename="report.pdf"

JVBERi0xLjUNCiW1tbW1DQoxIDAgb2JqDQo8PC9UeXBlL0NhdGFsb2cvUGFnZXMgMiAwIFIvTGFu
Zyhlbi1VUykgL1N0cnVjdFRyZWVSb290IDggMCBSL01hcmtJbmZvPDwvTWFya2VkIHRydWU+Pj4+
[.....bulk of Base64 encoded PDF file redacted for brevity.....]
Pj4NCnN0YXJ0eHJlZg0KMTQ3MDc4DQolJUVPRg==
------=_Part_14_125690771.1496280735009--
```

Where do we go from here?

- Implementation—approximately 4 known prototypes in the field
- Exchanging messages in a test environment
- Connect-a-thon geared toward a specific use case:
  - Radiology report
  - Encapsulated HL7 transactions (HL7 v2 and FHIR)
- Community feedback
- Update from “Draft for Trial Use” status to final IG

Direct + Context = A variety of transaction types enabled via a single HISP connection

PM integration Routing ACO integration Inter-Enterprise Messaging

Billing/Claims E-Prescribing Sensor Gateway

Medication Adherence Patient-Centric Nurse Call On-Call Scheduling

Telemedicine Order Entry Secure Texting Pager Replacement

Care Coordination Patient Engagement Population Health

Home Health Referrals Second Opinions Remote ICU Remote Monitoring

Patient Education Public Health Reporting

Rounding Nurse/Physician Appointment Scheduling

Secure Messaging

Context IG References

- Direct Project Implementation Guide for Expressing Context in Direct
  http://wiki.directproject.org/file/detail/Implementation+Guide+for+Expressing+Context+in+Direct+Messaging+v1.0-DRAFT-2016122901.docx
- Context Examples
  http://wiki.directproject.org/file/detail/Implementation+Guide+for+Expressing+Context+in+Direct+Messaging+v1.0-EXAMPLES-2017060201.docx

Questions?

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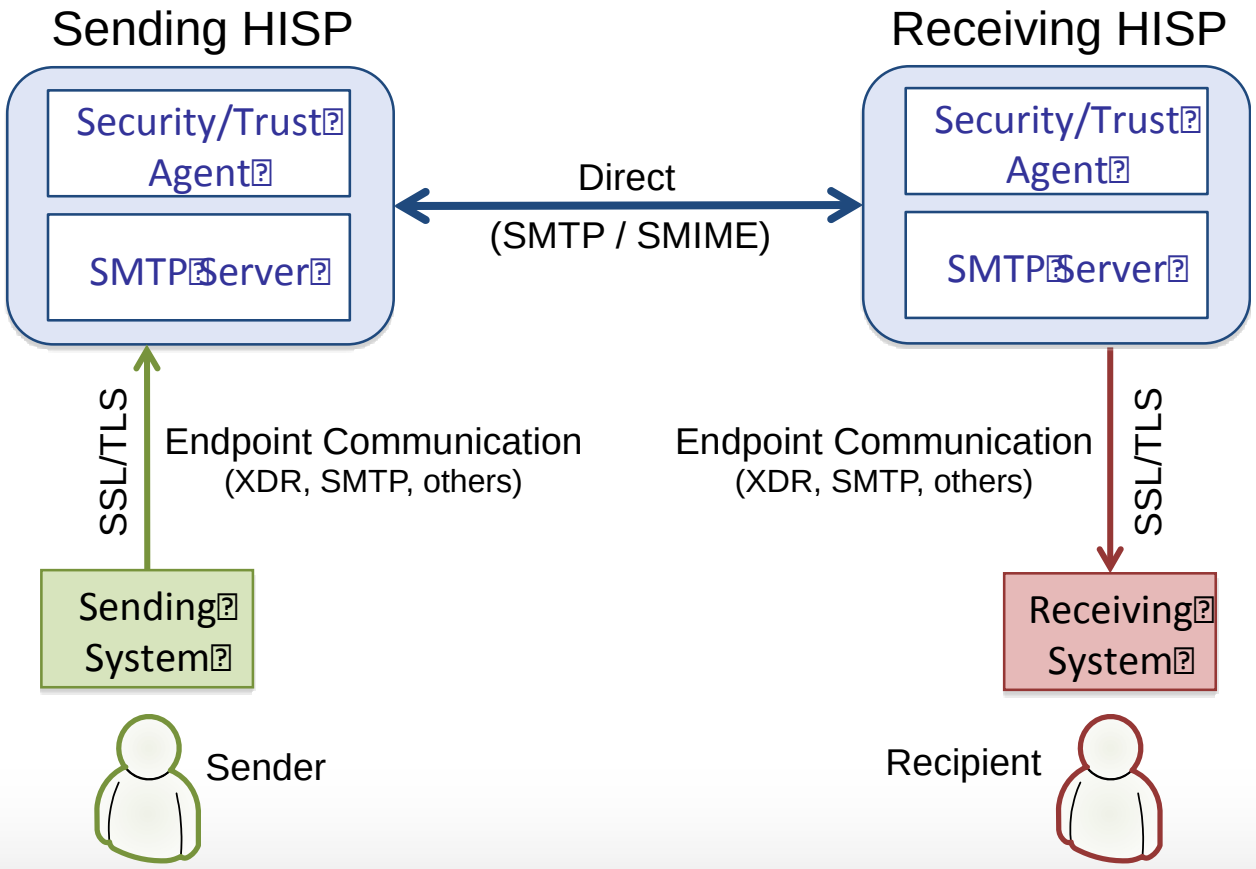
Additional Direct Project References

- Direct Project Wiki
  http://wiki.directproject.org
- Direct Project Reference Implementation Workgroup – Java and C# open source software implementations of Direct Project specifications
  http://wiki.directproject.org/Reference+Implementation+Workgroup
- *Applicability Statement for Secure Health Transport* – the normative specification defining Direct transport
  http://wiki.directproject.org/Applicability+Statement+for+Secure+Health+Transport
- *XDR and XDM for Direct Messaging* – the normative specification defining conversion between Direct and IHE XDR (optional for STAs and HISPs)
  http://wiki.directproject.org/XDR+and+XDM+for+Direct+Messaging

Beyond the Applicability Statement: Useful Implementation Guides

- *XDR and XDM for Direct Messaging v1.0* – defines standard conversions between Direct and IHE XDR, enabling STAs to serve XDR edge clients http://wiki.directproject.org/XDR+and+XDM+for+Direct+Messaging
- *Implementation Guide for Delivery Notification in Direct v1.0* – defines standard positive and negative delivery notifications, enabling assurance of quality of service http://wiki.directproject.org/file/view/Implementation+Guide+for+Delivery+Notification+in+Direct+v1.0.pdf
- *Implementation Guide for Direct Project Trust Bundle Distribution v1.0* – provides guidance on the packaging and distribution of trust anchors to facilitate scalable trust between STAs http://wiki.directproject.org/file/view/Implementation+Guide+for+Direct+Project+Trust+Bundle+Distribution+v1.0.pdf
- *Implementation Guide for Direct Edge Protocols v1.1* – provides guidance for standard mechanisms connecting STAs and edge clients http://wiki.directproject.org/file/view/Implementation+Guide+for+Direct+Edge+Protocols+v1.1.pdf

Supplemental slide: Direct end-to-end



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Closing Remarks

Steve Posnack, ONC

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Thanks for joining us today!

Please remember to fill out your workshop evaluation.