Provider Directories: A Snapshot

Critical Infrastructure for Delivery System Reform

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Learning Objectives

I. Current provider directory standards activities

II. Policy, governance activities related to directory federation

III. How provider directories support sophisticated use cases such as alerting and new payment models

IV. How to accelerate provider directory success nationally
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The way we were...

• In the beginning...there was provider directory confusion:
  • Many competing standards – not harmonized, incongruent, inconsistent, incomplete
  • Organizations struggled to decide which standard to use; some even tried conforming to all standards 😞
Now: Harmonized Object Model

Standards
- IHE HPD 1.0
- CP 601
- HPD + 1.1

Harmonization

IHE HPD

S&I ModSpec

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Now: Harmonized Object Model
Figure 28.3.2.2-1: Organizational Provider Entity and its Attributes
Figure 28.3.2.2-2: Individual Provider Entity and its Attributes
Michigan Enhanced Object Model

- Provider Object Model adds:
  - ADT Sender Provisioning
  - ADT Receiver Delivery Preferences Provisioning
  - Active Care Relationships (Patient-Provider Attributions)
  - Data Sharing Agreements
    - Use Case Agreements
    - Use Case Onboarding
  - Meaningful Use Tracking

- Consumer Object Model adds:
  - Care Team Members
  - Family Members
  - Advance Directives
  - Personal Health Records
  - Consents
    - e.g. 42 CFR 2, SAMHSA, trials

IHE HPD 1.0
CP 601
HPD + 1.1
S&I ModSpec

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Michigan Object Model*

*Fully compliant with IHE HPD

- Organization Affiliation
- Provider Affiliation
- Electronic Service
- "Account"
- "Contact"
- Name
- Address
- Identifier
- Specialty
- Credential
- Care Team
- Organization
- Provider

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Directory Federation: Policy, Governance Activities

- What is directory federation?
  - Enabling multiple directories to mutually access information or mirror each other
Some Current Federation Activities

- At least four kinds of federation happening now:
  - 20th century approaches:
    - Sneaker-net (e.g. sharing Excel files)
    - Daily mirroring via CSV files (e.g. DirectTrust Directory)
  - 21st century approaches:
    - ModSpec (now in IHE HPD standard)
      - Most are using DSML 2.0 & LDAP (very chatty)
      - Michigan implemented RESTful version of ModSpec with Surescripts during ONC Exemplars pilot
    - Simple REST/RESTful read/write APIs (100% transactional):
      - NPPES Redux
      - MiHIN
      - Mirth
      - WebMD
      - Others
Some Directory Policy Questions

- Should provider directories be:
  - White pages? Yellow pages? Both?
  - Routing tables with electronic addresses/preferences?
  - Gating infrastructure with credentialing/licensing?
- Who owns electronic addresses? Vendor or address holder?
  - Telephone analogy: people now own their number
  - Who is liable for a wrong address?
- Are electronic addresses private? Public?
  - Published or unpublished as specified by owner?
- Should “wildcard” searches be allowed? Data mining?
  - Should search results be transient or persistent?
  - How do you stop spam?
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Phone book, infrastructure, or both?

- “Phone book directories” good for 20th century information:
  - NACSZ+ PFEU
- Provider directory as infrastructure: 21st century HIE!
  - Functions well beyond just a portal or client
  - Operates as web service with APIs
  - Integrates with other infrastructure components (PPA)
  - Serves as “provider routing table” and “gating service”
    - Gives access to both 20th and 21st century information
      - Not just Direct addresses
      - DirectText, IHE/EHR endpoints, OIDs, or any electronic address
    - Supports secure sharing of PHI between licensed, credentialed, verified and trusted identities
Critical Infrastructure Components

- Patient Provider Attribution Service
- Patient Consent Preferences
- Federated Identity Management (FiDM)
- Gateway Services (e.g. XCA)
- Master Person Index + Common Key Service
- Identity Management
- Health Provider Directory

Secure Transport Layer Services and Digital Credentials
Patient Provider Attribution Service
(in Michigan we call this ACRS)

• Enables providers to declare active care relationships with patients – this attributes to a patient the active members of their care team
• Accurately routes information (e.g. Admit-Discharge-Transfer messages, medication reconciliations)
  • Improves care coordination
  • Reduces readmissions
  • Allows better outcomes
• Enables alerts to providers in active care relationships with patients
• Coordinates entire care team with changes to patient status in real time
• Allows searches by authorized persons or organizations:
  • Health systems and provider/physician organizations
  • Care coordinators
  • Health plans
  • Consumers (who can dispute asserted relationships)
1) Patient goes to hospital, hospital sends message to DSO / MiHIN
2) MiHIN checks patient-provider attribution and identifies providers
3) MiHIN retrieves contact and delivery preference for each provider from HPD
4) Notifications routed to providers based on contact information, preferences
Empowers Clinical Alerts: Medication Reconciliation

1) Patient discharged, hospital sends message to DSO / MiHIN
2) MiHIN checks patient-provider attribution and identifies providers
3) MiHIN retrieves contact and delivery preference for each provider from HPD
4) Medication reconciliation routed to providers based on contact info, preferences
Empowers MORE Clinical Alerts: Medication Adherence

1) Patient picks up Rx, pharmacy sends message to DSO / MiHIN
2) MiHIN checks patient-provider attribution in ACRS and identifies providers
3) MiHIN retrieves contact and delivery preference for each provider from HPD
4) Medication information routed to providers based on contact info, preferences
Supports New Payment Models

Intra-Clinic Provider Comparison

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| Measure | (A4) |
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| Measure Category | (A4) |
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Robust Reporting Hierarchy

Health Provider Directory

Physician Organization

Practice Unit

Individual Provider

Active Care Relationship Service

Patient
Example Reporting Flows

Physician Organization

PO Level Report Monthly Report:
- Current ACRS list
- Patients dropped from Last Month
- Patients added from Last Month
- Providers added
- Providers removed
- Patients reassigned
- Sorts by Practice Unit

Practice Unit

Individual Provider

Practice Unit Report Monthly Change Report:
- Current ACRS list
- Patients dropped from Last Month
- Patients added from Last Month
- Providers added
- Providers removed
- Patients reassigned

Patient
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Three infrastructure questions:

• Did you build your own word processor?

• Did you or are you building your own spreadsheet tool?

• Are you or your vendor building your own provider directory?
Is there a faster solution than federating directories?

- N provider silos with N*(N-1)/2 interfaces (where N > 100)
What Would Make This Go Faster?

• One possible way to **accelerate directory success**:
  • Take existing solution that conforms to new standard
  • Connect to existing, high traffic healthcare web site
  • Tie in leading directory efforts and data sources
    • NPPES Redux
    • DirectTrust Directory
    • Commercial data (e.g. Surescripts, CAQH Universal Provider Directory)
    • Real-time credentialing service
    • State licensing data
  • Enable “update once, update everywhere”
Concept: Virtual Open Directory

• What if fewer large silos updated each other in real time via one standard HPD Directory Infrastructure Service and a common, popular GUI?
The Open Directory Collaborative: A National Virtual Provider Directory

UI Layer

HPD Data Model & PPA Layer

Data Sources

Subscribers / Edge points

Health Provider Directory Infrastructure Service
Affiliations, Patient-Provider Attributions, Delivery, Routing, ESI

doctor.webmd.com
Popular GUI for provider information and for consumers to connect to providers

NPPES Redux
NPI #s, ESI, etc.

State Silos
(e.g. MMIS, REC)
(varies by state)

HIEs, HINs, HIOs, SDEs, EHRs
(varies by state)

LARA, Verge, etc.

Surescripts
CAQH UPD
Optum P360/PIM
SK&A etc.

Commercial Provider Data

DirectTrust Directory
(daily batch)

Accredited HISP
This is Possible…

- Growing support for a national provider directory
- Organizations, standards are moving in right direction
- Collective - not owned or controlled by one organization
- Everyone wants a working directory…now
Thank you!

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Compliments: pletcher@mihin.org

Complaints: complaints@yahoo.com