Attaining Value from Health Information Exchange

Arizona HIMSS Chapter Event

Connecting the Dots...Healthcare Technology and Interoperability

Al Kinel
President of Strategic Interests

March 24, 2017
Agenda

- Value Drivers of HIE
- Defining Scope to Attain Value
  - Enhancing Transitions of Care (ToCs)
  - Enabling Patient Engagement & Care Management
  - Supporting Analytics for Pop Health & Value-Based Payment
- Foundation for Success - Collaboration
- Case Studies
Perspective of the Role of HIE

- Providers and other stakeholders can indeed utilize HIE to:
  - Improve care, lower clinical and administrative costs
  - Improve satisfaction of providers, staff, and patients
  - Address the strategic needs of the organization(s)

- However, it is not an IT Science Project, or a way to implement cool technology

- HIE is an architecture and *IT utilities* that can liberate data and enable the organization to use it

- In order to successfully implement an HIE, providers must first:
  - Define how the HIE can help accomplish their specific objectives & initiatives
  - Confirm that the investment will provide a strong return
  - Get alignment with leadership to prioritize this project above other initiatives requiring resources
Value Drivers of HIE
Provider Perspectives & Links to Initiatives

**OBJECTIVES**

**Quality & Compliance**
- Improve Outcomes
- Compliance

**Financial**
- Cost Reduction
  - Increase Revenue
  - Cash Acceleration
  - Increase Effective Capacity

**Strategic**
- ACO / P4P
- Population Health
- Provider / Patient User Experience
- Scale

**TYPICAL INITIATIVES**

- Enhance decision-making cycle time / effectiveness / TOC
- Coordinated care, streamlined referral processes / PCMH
- Quality Improvement Programs (i.e. avoid errors, ADEs)
- Reduce readmissions, unnecessary procedures
- Enhance patient engagement – for outcomes and loyalty

- MU, PQRS, MACRA/MIPS, Immunization, RAC, Malpractice, HIMSS7

- Ops Excellence to reduce cost of supply chain, labor, overhead
- Reduce unnecessary procedures and hospitalizations
- Increase referrals, outreach,
- New service lines or become COE
- Improve rates with payers, enhance charge capture
- RCM: Coding / Billing / CDI / Denials Management
- Save time providers spend looking for / sending data
- Productivity tools to enable PCMH
- Deployment of telehealth

- Risk-sharing contracts with upside and minimal revenue loss
- Clinical integration network and workflow that aligns key partners
- Programs to identify, stratify, engage, and manage high risk patients
- Care / Disease / Case management views and tools
- Enhance satisfaction of providers, staff, and patients
- Mergers and Acquisitions – and Integration
- Affiliation and Alliances
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Defining the Scope of HIE Program

Once an organization decides to invest in an HIE architecture and utilities to support initiatives, need an approach to define the objectives & scope including stakeholders, content & use cases.

The lenses through which scope can be defined include:

- Enhancing Transitions of Care (ToCs)
- Enabling Patient Engagement & Care Management
- Supporting Analytics for Population Health & Value-Based Payment
Keys for Successful ToCs – More than HIE

- Right information, right time, right format...without extra noise
- Comprehensive Care Coordination, Health Coaching and PCMH Model
- Medication Management
- Effective Hand-offs to Providers and Social Workers
- Timely Post Discharge Follow-up
- Self-Management Care Plans with Patient Education and Clear Follow-up
- Identify and Provide Resources for Social Determinants of Care
- High Patient Satisfaction (correlated with lower 30 day readmit rates)

Sources:
- Project BOOST (Better Outcomes by Optimizing Safe Transitions) – www.hospitalmedicine.org
- Care Transitions Interventions (CTI) – www.caretransitions.org
- CMS Community-Based Care Transitions Program (CCTP) – www.innovations.cms.gov/initiatives/CCTP/
- Guided Care Comprehensive Primary Care for Complex Patients – www.guidedcare.org
- Project RED (Re-Engineered Discharge) – www.bu.edu
- State Action on Avoidable Rehospitalizations (STAAR) – www.ihi.org
Enhancing Transitions of Care
Where Information Gaps Appear & Compromise Care

Key Transitions
- Use Case 1: HOSPITAL to HOME
- Use Case 2: HOSPITAL to LTPAC
- Use Case 3: LTPAC to HOME
- Use Case 4: PCMH – PCP to Other
- Use Case 5: HOME to HOSPITAL
- Use Case 6: LTPAC to HOSPITAL
- Use Case 7: Hospital to Hospital
- Use Case 8: HOME to LTPAC
Which ToCs Should be Addressed for You?

- Use Case 1: HOSPITAL to HOME
- Use Case 2: HOSPITAL to LTPAC
- Use Case 3: LTPAC to HOME
- Use Case 4: PCMH – PCP to Other
- Use Case 5: HOME to HOSPITAL
- Use Case 6: LTPAC to HOSPITAL
- Use Case 7: Hospital to Hospital
- Use Case 8: HOME to LTPAC
- Other

For each assess:
- Do problems exist? Are they significant?
- Are causes understood? Tied to important initiatives?
- Are they acknowledged by key stakeholders?
- How much value would addressing it generate?
- What content would address problems?
- Can source systems provide content?
- Can HIE deliver the content?
- Can receiving systems utilize content?
- Can workflow be defined? Can alignment be attained?
- Can cost be estimated?
- Do standards exist? Pending?
- Can a solution for this ToC address others?

Then Address Data Needs that can be Addressed by Multiple ToCs
How Standards Support ToCs

ONC Drivers of Interoperability: MU, S&I Framework, ToCs

- MU required information to be exchanged in transition of care
- Providers confused on how to use specs to exchange clinical data
- Concept of C-CDA established
- S&I Framework formed
- Lack tools to aid development & use of templated clinical documents
- Major impediment to the widespread adoption of the standards

**ONC Transition of Care (ToC) Initiative:**
Formed to improve the exchange of core clinical information among providers, patients and other authorized entities electronically

- Interoperability Standards Advisory (ISA) formed holds great promise

**S&I Framework - 2011**

- Specs
- Implementation Guides
- Data Models
- Vocabulary & Values
- Test Tools & Data
- Reference Implementations
C-CDA: Consolidated Clinical Document Architecture  
*Enabling Specific Transitions*

1. Choose **C-CDA Document Template** for clinical workflow

2. Include components defined:
   - **Required components**
   - **Optional components for the clinical situation**

3. Add components required to meet MU/MIPS:
   - Review requirements met
   - Add **C-CDA components aligning to data requirements** that have not yet been met

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### C-CDA IG Purpose: Single Source for CDA Templates

**Document Template**


**Continuity of Care Document (CCD)**

- Allergies
- Medications
- Problem List
- Procedures
- Results
- Advance Directives
- Encounters

**History & Physical (H&P)**

- Allergies
- Medications
- Problem List
- Procedures
- Results
- Family History
- Immunizations
- Assessments

**Section Template(s)**

- **Continuity Of Care Document (CCD)**
  - Family History
  - Functional Status
  - Immunizations
  - Medical Equipment
  - Payers
  - Plan of Care

- **History & Physical (H&P)**
  - Assessment and Plan
  - Plan of Care
  - Social History
  - Vital Signs
  - History of Present Illness

**Section templates in GREEN demonstrate CDA's interoperability and reusability.**

**Entry Templates:** 82

**Section Templates:** 60
The three overarching themes of the roadmap:
• giving consumers the ability to access and share their health data
• ceasing all intentional or inadvertent information blocking
• adopting federally-recognized national interoperability standards

2015-2017
Enable Sending, Receiving, Finding & Using Data

2018-2020
Expand data sources and increase the number of users to create healthier populations

2021-2024
Build nationwide interoperability with person at the center of a system that can improve care, public health and science through real-time data access."
Despite the efforts of ONC, standards bodies, and associations, it is still difficult for stakeholders to apply standards to define projects and solutions to enhance information exchange and support ToCs.
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Patient Engagement Strategies

Tell me and I forget. Teach me and I remember. Involve me and I learn.

- Benjamin Franklin

“I don’t know which doctor to choose. One has more friends on Facebook, but the other one just retweeted my message.”
Interoperability Use Cases Enabling Patient Engagement

Common Uses of Patient Portal
Supported by Interoperability

Patient Health Record
Enabling Patients to be in Control
# Patient Generated Health Data (PGHD)

## Value & Challenges

**Value of PGHD**
- Empower patients for larger role in care
- Holistic view of a patient’s health over time
- Increase visibility into patient’s adherence
- Enable timely intervention before a costly care episode
- Establish personalized care plan
- Reduce time, effort, and costs of patient encounters and workflow

**Challenges with PGHD**
- Lack common specs, workflows, training to support PGHD intake
- Confirming accuracy & validity of PGHD
- Difficulty attaining insights from data
- Lack guidance and best practices
- Liability concerns - inaccurate PGHD used / ignoring PGHD in the clinical settings
- Disconnected from EHR systems
Patient Generated Health Data (PGHD)
Architecture & Benefits

ONC Framework / Architecture
Accenture White Paper

• the collection and validation of data and tools that capture PGHD
• data sharing between clinicians and researchers
• current regulatory landscape
• opportunities to combine PGHD with clinical data for analysis and patient care
• patient recruitment for research studies and trials
• data interoperability
• big data analysis


Enhancing the Conversation
mHealth – Billings Clinic – 3 States - Mayo

• 18-month program
• ~150 patients
• blood pressure control rates improved from 38.6 percent to 70 percent
• average blood pressure improvements:
  • avg. systolic from 148.8 to 139.6
  • avg. diastolic from 92.5 to ~85
• helped patients gain control over their personal health
• helped establish richer relationships with their healthcare professionals

Interoperability for PGHD Requires Multiple Integrated Functions

Any wearable or medical device

Mobile app to manage devices & patient communication

PGHD Data Management Platform

Care Management Dashboard

Must make sense of limitless amounts of digital data from a multitude of devices

And enhance decision making with efficient workflow to attain better care at lower cost

Turn PGHD into manageable clinical intelligence
Interoperability for PGHD

Current Vendors

Health Data Integration Platform
Validic, Human API, Apple Health Kit, Google Fit, Microsoft Vault

Remote Care Monitoring
Vivfy, HealthyCircles, entra Health, Sentrian

Traditional Remote Monitoring/Telehealth
Zaphir, Cardiocom, Honeywell, Phillips

PGHD Solution
Datos, Telemetrix

Delivering meaningful clinical insights across large scale (100K+) patient deployments

Market Landscape

Large Scale

Clinician Insights
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Improving Population Health

Coordinated efforts to improve the health of a population with a management process and creative approaches that utilize systems, data, and tools.

Source: www.ihealthtran.com
Identifying & Managing a Population & Patient Needs

- By Disease(s)
- By Payer
- By Age
- By Income
- By Ethnicity

- Clinical
- Psychosocial
- Social
- Compliance

- During Appointments
- With Outreach
- Ongoing

Source: Strategic Interests, Population Health Summit; Digital Rochester 04-15-16
www.ihealthtran.com
ACO Data Use & Analytics

Impact of Interoperability

ACOs most often analyze:
- Claims data (96%)
- Clinical data (79%)
- Administrative data (52%)
- Disease registry data (39%)
- Patient-reported data (38%)

In order to:
- Identify and close gaps in care (84%)
- Identify outliers in cost/utilization (80%)
- Compare clinician performance (77%)
- Measure/report on quality (77%)
- Proactively identify risk (68%)

Results are Used to:
- Address specific high-cost or high-utilization patient populations (84%)
- Care transitions management/care coordination programs (82%)
- Disease-management programs (73%)
- Post-discharge programs (68%)
- Development of evidence-based clinical/care guidelines (55%)
- Medication management programs (38%)
Barriers to Population Health

*Interoperability as Enabler*

- If an organization is to achieve better outcomes for a defined population at lower cost, its many clinical and administrative systems must be able to communicate and exchange relevant data.

- “Information systems are designed for the unique needs of different settings and specialties,”. eHi Annual Report 2015

- Without interoperability, it’s impossible for providers to know for sure if a patient’s records are comprehensive.

- Without key information from disparate systems collected and available in a single place, it’s impossible to use data analytics to develop the insights that ultimately improve performance.
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- Case Studies
Community - Collaboration - “Co-opetition”

Effective community collaboration among strong organizations willing to work together to solve difficult problems, despite competition.
Case Study

Unity Health System – now Rochester Regional Health

Using HIE to:

• Address challenges of ToCs
• Enhance patient engagement
• Enable Population Health
Improving Population Health at Unity Health*
Community Diabetes Collaborative - CDC

Diabetes Across Care Continuum

- Lab/Testing
- POMH
- Behavioral Health
- Long Term Care
- Hospital
- Endocrinologist
- Other Specialists:
  - Cardiologists
  - Radiologists
  - Ophthalmologists
  - Podiatrists
  - Geriatricians
  - Nephrologists
  - Vascular Surgeons

Stratification Options Included
- Acuity, Provider, Payer, Income, Ethnicity, etc.

Results
- Reduced # of patients with uncontrolled A1c (> 9%) by 14% in Year 2, and more in Year 3
- Collaboration amongst diverse set of providers to better serve diverse set of patients with diabetes
- NCQA Diabetes Recognition Certification for all PCPs
- Decreased time to bring patients in control of fasting BGs through intensive insulin management tool (61 days)
- Improved patient satisfaction scores
  - 3.8% improvement by Year 2 in the participating PCMH practices, averaging 95.2%
- Hospital readmissions dropped by Year 3

* Unity Health System is now part of Rochester Regional Health
Unity IT Situation - 2010

Used electronic health records early – Best of Breed
- Ambulatory, 2004 - NextGen
- Hospital, 2006 – Cerner
- Home care – Allscripts
- Elder care – AOD

Strategic IT Needs
- Enable clinical integration within Unity and the community
- Improve clinical adoption and EHR optimization
- Further analytic capabilities across the continuum of care
- Shift from silo-care to cohesive, patient-centric care organization
- Develop infrastructure and tools to facilitate resource-intensive PCMH model for Care/Disease Management
Unity Community Diabetes Collaborative (CDC)

*Innovative Program – funded by NYS - to Improve Population Health*

**Access**
- Improved access to information with connected EMRs

**Share**
- Create a unified patient view for Unity Health System
- Community interoperability, leveraging Rochester RHIO

**Care Management**
- Tools to support PCMH model for ToCs & chronic disease management

**Analyze**
- A longitudinal patient record to support data analysis and decision support

**Engage**
- Patient engagement via patient portal outreach
CDC Participants
Those Who Care for Patients with Diabetes

**Unity Participants**
- Six Primary Care Practices
- Wound Care Center
- Diabetes and Endocrinology Services
- Dialysis Centers
- Vascular Surgery
- Diagnostic Imaging
- Unity Hospital
- Behavioral Health
- Long-Term Care Facilities
- ACM Laboratory

**Community Participants**
- Nursing Homes
- Lifetime Care Home Health
- University Cardiovascular Associates
- Two Podiatry Practices
- Nephrology Associates
- Radiology Practice
- Several Ophthalmology Practices
- Rochester RHIO
- Payers: Excellus & MVP
Upstate NY RHIO Situation 2010

Rochester RHIO:

- Rochester RHIO well established by 2010 with connectivity to 15 hospitals, over 800 physicians and 2,500 users
- Messages flying, data not normalized / organized
- Lofty goals yet limited data to-date
- Providers not utilizing data
- Limited ability to rapidly add providers

NYS DOH Introduced HEAL 17 with the objectives to:

- Advance New York’s HIT infrastructure with SHIN-NY
- Use HIEs locally to drive PCMH, chronic disease, mental health
How Did Unity Accomplish This?

• Program management: teams with broad representation based on referrals

• Collaboration with providers involved in care and defined:
  – Transitions of Care (TOC)
  – Data, Images & Process Change to improve TOCs
  – Longitudinal record across facilities
  – Diabetes protocols (based on NCQA standard)
  – Patient engagement based on complete record

• Purchased, built, & integrated systems using Public & Private HIEs

• Clinical adoption of analytics, tools and new processes

• $6.5 million in NYS Grant funds
Interoperability within Unity & the Community
u.Net Connect – Longitudinal Patient Record
Types of Data Available in u.Net Connect

- Demographics: Age, Gender, Language, Marital Status, Race, Ethnicity, Religion
- Diagnoses (ICD-9 / 10), Labs, Radiology, Pathology (reports)
- Medications
- Encounters: Hospitalizations (ED, Inpatient), physicals, consult, Outpatient
- Immunizations, vaccinations (ordered and administered), Procedures (CPT)
- Problems, procedures, allergies
- Documents: Digital & scanned documents consultant reports, discharge summary, etc.
- Vitals: Temp, pulse, blood pressure, body mass index
- Doc Management: Links to systems with scanned documents
- Images: Radiology and Cardiology
- Subscription: hospitalizations and other event notification
- eResults: labs, radiology, cardiology, and hospital reports

- u.Net Connect Today
- Planned u.Net Connect
- Provided by RHIO
RHIO Clinical Sharing Modes Available

• **VHR:** Virtual Health Record including access to Images
  – **Pros:** Web-based, query tool on-demand with Diagnostic image viewer
  – **Cons:** Performance, password management, patient match, not normalized

• **eResults:** EMR Integration – reports and
  – **Pros:** Delivers lab results, radiology reports, other transcribed documents (discharge, etc.) into EMR inbox – with links to images via IERD
  – **Cons:** Only for providers that ordered or were copied on order

• **DIRECT:** Secure Messaging, HIPAA Compliant
  – **Pros:** Effective for secure messaging between providers with ability to include attachments (CCDs, Images, Documents Care Plans, etc.)
  – **Cons:** Not yet widely used

• **Subscription:** Patient Content
  – **Pros:** All relevant content available for patients with consent
  – **Cons:** Need to increase content, cost is per patient, lower eMPI match

• **Alerts:** Awareness of Impactful Events (ED, Admission)
  – **Pros:** RRHS Interface Engine and HIE can do more with a simple ADT alerts
  – **Cons:** Alerts should include RHIO eMPI ID (exact look-up for Query-based access)
HIE is a Foundation for Population Health

- Identify Gaps in Care
  - Point of Care
  - Between Appointments

- Patient Registries & Care Management
- Dashboards & Care Opportunity Reports
- Patient Engagement
  - Reminders
  - Alerts
u.Net Connect Supports Care Management
Combining Tools, Process & Organizational Change

**Offices**
- View hospital discharge reports
- Med Reconciliation
- Diabetes Education notes
- Social Work/CM notes
- Utilization information
- Self care goals
- Blood glucose downloads

**Hospital**
- Last PCP encounter
- Office Care Management Notes
- Med Reconciliation
- Utilization information
- Diabetes Education notes
- Self care goals
- Blood glucose downloads
Disease Management – ID Gaps in Care

**Diabetes Care Technology**

- Registry of patients with profile
- Intensive insulin management protocols
- Blood glucose download in office or remote in community
- Perioperative protocols
- Diabetes online community
Case Study

Image Exchange in New York
Image-Enabling HIEs

Image Exchange Use Cases & Workflow

Image Exchange Use Cases

1. Provider HIE Wide Patient Centric Query
2. Rad HIE Wide Search, Collaboration & Download to PACS
3. Image Enabled Results Delivery – link to EHR
4. Urgent Care – Referral
5. Statewide Patient Centric Query
6. Patient Engagement & Image Management
Image Exchange Adoption in New York

- Implemented and Operational in 4 RHIOs
- Under contract, implementation complete, outreach underway in two more
- Significant usage helping avoid unnecessary images, reduce time/effort to access images
Case Study

Defining Requirements to Share Data within a Community

NY DSRIP – A $6.2B Medicaid Redesign Program

Finger Lakes Performing Provider System (FLPPS)
**DSRIP Overview**

**Delivery System Reform Incentive Payment (DSRIP) program:** CMS initiative, engaged in NY to redirect Medicaid funds to radically transform the Medicaid delivery system and address uninsured.

- Incentivizes healthcare and community-based providers to collaborate and introduce innovative system transformation to better serve Medicaid and uninsured populations who often experience greater healthcare disparities.

- $6.42 billion allocated to NYS DSRIP with payouts based upon achieving predefined results in system transformation, clinical management, and population health.

**Overarching Objective:** Improve clinical outcomes and reduce avoidable ED use and hospital admissions by 25% over five years.

Five program principles:
- Patient-centered
- Transparency
- Collaboration
- Accountability
- Value-Driven
Finger Lakes Performing Provider System
Rochester Area PPS

FLPPS Overview:

- Sponsored by two competing health systems
  - University of Rochester Medical Center
  - Rochester Regional Health
- The largest, most dispersed PPS in NY, with a mix of urban and rural sub-populations

DSRIP Projects:

- 2.a.i. Integrated Delivery System
- 2.b.iii ED Triage
- 2.b.iv. Transition of Care
- 2.b.vi Housing
- 2.d.i. Patient Activation
- 3.a.i. BH-PCP Integration
- 3.a.ii BH Crisis Intervention
- 3.a.v. BH-SNF Integration
- 3.f.i. Maternal / Child Care
- 4.a.iii BH/Substance Abuse
- 4.b.ii Chronic Care Mgmt

Improving data available for ToCs deemed critical to success
ToC Exchange Gap Methodology

1. Defined Transitions of Care and Developed Use Cases

2. Researched Standards, Best Practices; Interviewed Providers for Capability and Data Requirements.

3. Crosswalked Data from MU, PCMH, INTERACT, MIPS, etc. to ID gaps & needs

4. Defined and documented functional requirements for Provider types by use case

5. Prioritized data gaps by entity, effort, importance, and ability to address. **Rank Value/Cost/Work**

6. Determined Highest Impact Priorities with the Lowest Relative Costs/Work
Industry Standards Resources for ToCs
Focus on LTPAC?

Care Coordination Tool for Transition to Long-Term and Post-Acute Care

IMPACT - Improving Massachusetts Post Acute Care Transfers
IMPACT, which stands for Improving Massachusetts Post-Acute Care Transfers, was an Office of the National Coordinator (ONC) grant-funded project designed to improve care transitions using an enhanced electronic Universal Transfer Form (UTF) and Electronic Health Information (EHI) exchange.
**Data Gaps in Use Case 2: *Hospital to LTPAC***

A physician executive recently said that post-acute care has long been an archipelago of small islands, with no bridges, poor transportation, and limited communication options to the rest of the health care system. *Deloitte Center for Health Solutions, Viewing post-acute care in a new light: Strategies to drive value*

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Data Not Receiving</th>
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<tbody>
<tr>
<td><strong>LTPAC</strong></td>
<td>• Referrer contact for questions&lt;br&gt;• O2 sat, pain info (eg. non-verbal)&lt;br&gt;• Detail functional / cognitive status&lt;br&gt;• Pre-hospital admission meds&lt;br&gt;• PT/OT care &amp; abilities / willingness</td>
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<tr>
<td><strong>PCP / PCMH</strong></td>
<td>• Patient Contact Info&lt;br&gt;• Brief summary of Stay&lt;br&gt;• Expected course&lt;br&gt;• Responsibility to f/u on tests</td>
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<tr>
<td><strong>HH</strong></td>
<td>Notification regarding significant ToCs and care events</td>
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<tr>
<td><strong>DD / CBO</strong></td>
<td>Patient Contact Info&lt;br&gt;CDA, Demographics, Problems&lt;br&gt;Functional/Cognitive Status</td>
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<td><strong>Home Care</strong></td>
<td>Discharge Summary (CDA)&lt;br&gt;NLC LTPAC Requirements*</td>
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<td><strong>PT/OT</strong></td>
<td>CDA&lt;br&gt;Care team, care plan, care mgr&lt;br&gt;Prior functional status</td>
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<td><strong>Specialist</strong></td>
<td>Clinical contact person at LTPAC</td>
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<tr>
<td><strong>Patient</strong></td>
<td>Scheduled appointments, tests, further referrals, pending tests, notification for significant events</td>
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Data-Standards Crosswalk

**MU, PCMH, MCMS, etc.**

- 390+ discrete data elements
- 28 industry standards, local standards, datasets and templates compared
- 8 ToC Use Cases, 13 Provider/Recipient Types

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<thead>
<tr>
<th>Vocabulary and Terminology</th>
<th>Standards and Datasets</th>
<th>Primary Care</th>
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<tr>
<td>TOC Data Element Matrix as of 2015-11-30</td>
<td>Federal</td>
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<td>MU Terminology</td>
<td>NLC LTPAC Vocabulary</td>
<td>MCMS Vocabulary</td>
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<td>Immunizations</td>
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<td>Administered during Visit</td>
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<td>Pneumovac and Flu vac</td>
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<td>Vital signs (height, weight, BP, BMI)</td>
<td>Vital signs (height, weight, BP, BMI)</td>
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<td>O2 Saturation</td>
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<td>Mental Status at Discharge</td>
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<td>Laboratory Tests/Value(s)/Result(s)</td>
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<td>Results of tests during stay</td>
<td>Results of tests during stay</td>
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<td>Relevant Lab results (1-3 months)</td>
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<td>Relevant x-rays and diagnostic test results</td>
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<td>Care Plan</td>
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<td>Future Appointments</td>
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<td>Future Scheduled Tests</td>
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<td>Referrals to Other Providers</td>
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<td>Care plan fields, including goals and care plan fields, including instructions, Future scheduled goals and instructions, Future Appointments</td>
<td>Care plan fields, including goals and care plan fields, including instructions, Future scheduled goals and instructions, Future Appointments</td>
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<tr>
<td>Diagnostic Tests</td>
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<tr>
<td>Person Following up next tests</td>
<td>Person Following up next tests</td>
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<tr>
<td>Follow-up tests and appointments needed/recommended</td>
<td>Follow-up tests and appointments needed/recommended</td>
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</table>
### Stratify & Rank Data Gaps

Prioritize: Value to Recipient, Effort & Cost – Use Case 2: Hospital to LTPAC

#### Content
- PAMI
- Labs
- Diagnostic Images
- Clinical Documents
- Referral Admin Info
- Claims
- Insurance Info

#### Clinical Documents

<table>
<thead>
<tr>
<th>Data Desired by LTPAC</th>
<th>Recipient Priority</th>
<th>Source Availability</th>
<th>Ease of Extraction</th>
<th>CDA Compatibility</th>
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<tbody>
<tr>
<td>Referrer Contact for Questions</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Mod</td>
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<td>02Sat</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Mod</td>
</tr>
<tr>
<td>Detailed Pain Information</td>
<td>High</td>
<td>Mod</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Detailed Functional and Cognitive Status</td>
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<tr>
<td>Pre-hospital admission meds</td>
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<td>High</td>
<td>Mod</td>
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<tr>
<td>PT/OT care, abilities and willingness</td>
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<tr>
<td>Pressure ulcers / skin / wounds</td>
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<td>High</td>
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<tr>
<td>Detailed Nursing Care: nutrition, hydration, devices, therapies</td>
<td>High</td>
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<td>Advance Directives/MOLST</td>
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<tr>
<td>Relative Notified of Transition of Care?</td>
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<tr>
<td>Vendor Supply / Info</td>
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<tr>
<td>Notification regarding ToCs</td>
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<td>High</td>
<td>High</td>
<td>N/A</td>
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Thank You

Al Kinel
President of Strategic Interests