Introduction to the Center and Request for Collaboration

October 2015
The Center’s solutions will optimize the use of health information

**Vision**
Accelerating the seamless exchange of information to improve healthcare for all

**Mission**
To achieve plug-and-play interoperability by unifying healthcare organizations to compel change, building a lab to solve shared technical challenges, and pioneering innovative research and development
The Center is a member organization led by health system CEOs

• Committed to improving safety, quality and affordability of healthcare

• Leveraging the market presence and expertise of our members to compel change

• Creating a lab to cooperatively solve members’ shared technical challenges

• 501(c)(3) public charity
Founding members possess the market presence to demand change

Our founding members reflect different segments – for-profit, not-for-profit, academic, public – but they are unified by their desire to reimagine how information is shared in the healthcare marketplace.
Vendor Participation is Critical

- Patients
- Healthcare Professionals
- Payors
- Academic/Research Foundations
- Standards Dev. Org.
- Associations
- Government
- Vendors

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Value of Medical Device Interoperability

Analysis coordinated by West Health Institute finds medical device interoperability could save more than $30 billion a year in the US alone...

Interoperability is an enabling technology.

$1 billion could be saved through the coordinated use of standards.

http://www.westhealth.org/institute/interoperability/abstract-value-of-medical-device-interoperability
Vendor Benefits

» Estimate of over $1 Billion of duplicative and wasteful effort that vendors can eliminate through seamless interoperability.
  – The development and maintenance of custom interfaces and custom protocol converters can be eliminated.
  – Current barriers to acceptance of devices by IT Healthcare solutions can be eliminated.
  – Advanced clinical applications will be enabled through open, unfettered, seamless availability to clinical data and control of clinical devices.
  – Easier integration of medical devices into existing middleware solutions.

» Ability to better meet procurement requests from our Members.
Status Quo: Constrained, High Cost and Proprietary

- Electronic Health Records
- Other Applications (CDS, 3rd Party, Analytics, etc.)
- Closed Middleware Solution
  <Enterprise Component>
- Closed Middleware
  <BS Component>
- Vendor Gateways and IT Systems
- Networked Medical Devices
- Non-Networked Medical Devices

Manual Data Entry

Proprietary

Standards-Based

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Desired state is real-time, 2-way, low cost, complete & standards-based

Clinical Applications
(EHR, CDS, Analytics, Data Portals, mobile, etc.)

Application Interface(s)

Plug-and-Play Interoperability Platform

Device Interface(s)

Medical Devices

Complete, 2-Way Interoperable Data

Complete, 2-Way Interoperable Data
Interoperability Maturity Model (IMM)

- **Infrastructure**: Transport level connectivity including security; technology independent of systems and applications
- **Syntactic**: Use of recognized formats to communicate and exchange information
- **Terminology/Semantic**: Use of recognized vocabularies, nomenclatures, and ontologies as well as information models
- **Contextual/Dynamic**: Ability of devices and applications to share data based on the patient and clinical workflow
- **Conversational Complexity**: Extent and sophistication of information exchange including orchestration

State of the Art Medical Device
The envisioned Platform consists of 3 Layers:

- **Bedside Data Broker** - which aggregates and exchanges data between individual bedside devices and the Enterprise PnP-IOP.
  - Consists of PnP-IOP appliances deployed at the bedside or point-of-care

- **Enterprise Data Broker** – aggregates and brokers data from the Bedside appliances, Gateways and IT systems to Clinical Applications.
  - One or more Enterprise Platform servers which handle departmental or hospital level integration.

- **Multi-Enterprise Router** Platform which provides a single virtual entry point to access multiple Enterprise Layer Platforms
Protocol Interoperability Manager [PIM]
Embedded in a Medical Device
Protocol Interoperability Manager (PIM)

Bedside PnP-IOP Data Broker

Bedside PnP-IOP

Bedside PnP-IOP Software

PIM API

PIM Framework

MDIB

Lower Level Transport/Link Layer

IHE PCD Driver*

IEEE 11073 Pt to Pt Driver*

IEEE 11073 NW (OpenSDC) Driver

OpenICE w/DDS Driver

Legacy Adapter Driver

Legacy Adapter Driver

Legacy Adapter Driver

Vendor Supplied Drivers

Proprietary Input

Open Input

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Request for Collaboration

» The Center, on behalf of its Members, will be issuing a Request for Collaboration (RFC) to engage vendors and other interested parties in building an interoperability ecosystem.

» Opportunities for engagement include:
  – Participation in specific technical workgroups
  – Help shape overall platform architecture and requirements
  – Producing devices/drivers that are compliant with platform architecture
  – Validation with specific members and in the Center’s lab
Use Cases for a Protocol Interoperability Manager

- Electronic Health Records
- Clinical Applications
- Research, Innovation & Analytics

Medical Devices

Enterprise Application Layer
- Platform - Application Interfaces

Enterprise Platform Layer
- Multi-Enterprise Router (optional)
- Enterprise Data Broker

Device Interfaces
- Bedside Clinical Applications

Bedside Layer
- Bedside Data Broker
- Gateways and IT Systems
- Device Interfaces

Standards-based Proprietary

MDI Plug-and-Play Interoperability Platform

Adapters
Collaboration Overview

<table>
<thead>
<tr>
<th>Leadership Engagement</th>
<th>Ensure that there is knowledge and commitment by organization leadership. There will be opportunities for vendor leadership to have direct engagement with the Center Board CEOs.</th>
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</thead>
<tbody>
<tr>
<td>Cost</td>
<td>The Center is NOT Seeking financial contributions from Vendors to participate. The Center is currently led and funded by hospitals and health systems. Over time there may be some cost recovery fees (meetings, certification, etc.)</td>
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<tr>
<td>Commitment</td>
<td>Fundamentally we are seeking your technical expertise and guidance. There will be opportunities to attend strategic ecosystem meetings, review and provide feedback on architecture and retirements, and participate in peer testing and certification events.</td>
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<tr>
<td>Intellectual Property</td>
<td>The work done within the Center will be made available to the participating community and membership. If a vendor has relevant IP it can be contributed or licensed (on fair and reasonable terms) to the community effort.</td>
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<tr>
<td>Marketplace</td>
<td>On behalf of our Members, the Center would like to ensure that devices compliant with the platform architecture are available in the marketplace in a reasonable timeframe.</td>
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Thank You

www.center4mi.org