A statewide HIE service that is flexible to wide variety of current and future market needs

Illustrative example
Basic Commonwealth HIE Services

**Description**

- **Provider directory**
  - Repository of physician names, entities affiliations, and security credentials

- **Certificate repository**
  - Repository of security certificates for authorized users of HIE services

- **DIRECT gateway**
  - Adaptor that transforms messages from one standard to another without decrypting the message

- **Web portal mailbox**
  - Secure, encrypted mailbox for users without standards-compliant EHR

**HIE Services**

- **“Lookup” services**
  - "Lookup" services

- **“Message-handling” services**
  - "Message-handling" services
3 ways to connect to Mass HIway

**User types**
- Physician practice
- Hospital
- Long-term care
  - Other providers
  - Public health
  - Health plans
- Labs and imaging centers

**3 methods of accessing HIE services**
- EHR connects directly
- EHR connects through LAND
- Browser access to webmail inbox

**HIE Services**
- Provider directory
- Certificate repository
- DIRECT gateway
- Web portal mailbox
Phase 1 infrastructure

• Release 1 (October 16, 2012)
  – Direct Gateway with 4 integration options: SMTP/SMIME, XDR/SOAP, LAND appliance
  – Provider directory v1
  – AIMS/Public key infrastructure v1

• Release 2 (December 17, 2012)
  – Participant enrollment portal (November, 2012)
  – Webmail (November, 2012)
  – HL7 Gateway (syndromic surveillance, ELR, CBHI)
  – IMPACT (SEE, web-based CDA-editor for long-term care facilities)
  – Provider directory v2
  – AIMS/Public key infrastructure v2

• Vendor-hosted cloud supports both HIE and HIX/IES
## Transactions sent over Mass HIway during Golden Spike demonstration

<table>
<thead>
<tr>
<th>Use Case</th>
<th>From</th>
<th>To</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Hospital to Western Hospital</td>
<td>Massachusetts General Hospital</td>
<td>Baystate Medical Center</td>
<td>Governor Patrick medical record (CCD)</td>
</tr>
<tr>
<td>ACO to ACO</td>
<td>Beth Israel Deaconess Medical Center</td>
<td>Massachusetts General Hospital</td>
<td>Patient summary record (CCD)</td>
</tr>
<tr>
<td>Hospital to Practice</td>
<td>Children’s Hospital</td>
<td>Atrius Health</td>
<td>Patient summary record (CCD)</td>
</tr>
<tr>
<td>Suburban Hospital to Academic Medical Center (bi-directional)</td>
<td>MetroWest (Vanguard)</td>
<td>Tufts Medical Center</td>
<td>Patient summary record (CCD)</td>
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<tr>
<td>ACO to Quality Data Warehouse</td>
<td>Beth Israel Deaconess Physician Organization</td>
<td>Massachusetts eHealth Collaborative</td>
<td>Encounter summary (CCD)</td>
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<td>Hospital to Referring PCP</td>
<td>Beth Israel Deaconess Medical Center</td>
<td>Dr. Ayobami Ojutalayo (Lawrence)</td>
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<td>ACO to Health Plan</td>
<td>Beth Israel Deaconess Medical Center</td>
<td>Network Health Plan</td>
<td>Patient summary record (CCD)</td>
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</tbody>
</table>

**Participating vendors:** Orion Health, Meditech, Cerner, eClinicalWorks, LMR (Partners), webOMR (BID), Epic, Siemens
## Consolidated HIE phasing proposed to CMS and ONC on October 23, 2012

<table>
<thead>
<tr>
<th>Component</th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
</table>
| **HIE components** | • Provider directory  
• PKI infrastructure  
• Direct/HL7 gateway  
• Web portal mailbox | • Master Person Index  
• Record locator service  
• Consent database  
• Patient-directed messaging  
• Query/retrieve infrastructure |
| **HIE end-points** | • Any TPO participant  
• Public health  
• SS, CBHI, MIIS | • MassHealth clinical data repository  
• Medicaid/HIX participants  
• Public health  
• ELR, PMP, Opioid, Lead |

A richer set of services available to a broader set of participants
Phase 2 supports high-value use cases

**MassHiway service**

**Use case examples**

**Medical record location**
- An emergency room provider uses MassHiway to determine the organization(s) that holds a patient’s medical records
- A case manager uses HIway to identify the care team that may be serving a patient

**Medical record retrieval**
- An emergency room provider uses MassHiway to retrieve a summary record for a patient
- A provider uses HIway to retrieve prior diagnostic test results and specialist visit records to aid in patient diagnosis

**Public health reporting**
- A provider uses MassHiway to report to the public health cancer registry, immunization registry, lab reporting program, opioid treatment program, syndromic surveillance program, or childhood lead poisoning prevention program

**Patient-directed Messaging**
- A hospital provider uses MassHiway to send discharge instructions to a patient-specified PHR/portal
- A patient uses MassHiway to send “clipboard” information to a specialist prior to an initial visit

**Consent management**
- A provider uses MassHiway to record a patient’s consent preferences for information sharing via the MassHiway
- A patient uses MassHiway to set his/her own consent preferences

**Value drivers:**
- Continuity of care
- Patient safety & reduction in adverse events
- Reduction in controlled substance overuse
- Reduction in utilization of medical services
- Enhanced public health reporting adherence
- Supports MU achievement
- Administrative simplification
## Mass HIway Phase 2 high level project schedule

<table>
<thead>
<tr>
<th>Activity</th>
<th>Completion date</th>
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<tbody>
<tr>
<td>Submit IAPD to CMS</td>
<td>Complete</td>
</tr>
<tr>
<td>CMS approval of Phase 2 IAPD</td>
<td>Jan/Feb 2013</td>
</tr>
<tr>
<td>Procurement for Phase 2 services (RFP, Change Orders, Internal Development)</td>
<td>Jan/Feb 2013</td>
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<tr>
<td>Phase 2 infrastructure vendor selected</td>
<td>March 29, 2013</td>
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<tr>
<td>Phase 2 contract (or change order) executed</td>
<td>Apr 15, 2013</td>
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<tr>
<td>Go-live for Phase 2, Release 1 (Public Health interfaces)</td>
<td>Apr-Oct, 2013</td>
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Hiway Private Fee Principles

• All participants pay some fee for ongoing HIE services
  – Minimizes market distortions caused by “free” services
  – Establishes payment framework for future later phase HIE services

• Participants pay for service-level that they consume
  – Service menu options
  – No requirement to purchase later Phase services
  – Annual subscription fees – no transaction or click charges

• Fees should cover private sector allocation requirement for HIE services (~$700K per year)
  – Private fees should not be used for other purposes
  – Fee revenues should be segregated from general state revenues
  – Need to align timing of fee generation with CMS matching rules

• Fees will need to be adjusted periodically as circumstances change
  – Will be difficult to precisely target allocation requirement in any given year
  – Need to create process for allocating and distributing surpluses to later phases and/or future year services
  – First year, in particular, will be a market-testing year – want to start with a reasonable framework, and apply lessons learned for future steady-state pricing
Current HIway Price List

Massachusetts Health Information Highway Rate Card

10/8/2012

<table>
<thead>
<tr>
<th>Tier</th>
<th>Category</th>
<th>Total # in state (estimated)</th>
<th>One-time set-up fee</th>
<th>LAND plus HIE services (per node)</th>
<th>Direct HIE services (per node)</th>
<th>Secure Web HIE services (per user)</th>
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<tbody>
<tr>
<td>Tier 1</td>
<td>Large hospitals</td>
<td>14</td>
<td>$2,500</td>
<td>$27,500</td>
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<td>Health plans</td>
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<tr>
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<td>Large ambulatory practices (50+)</td>
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<td>Large home health</td>
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<td>Tier 5</td>
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<td>$60</td>
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</table>
• General Highlights
  – Sets statewide health care cost goals pegged to GSP growth
  – Requires public payers to transition to alternative payment methodologies
  – Establishes voluntary certification process for ACOs and PCMHs
• HIE/HIT Highlights
  – Requires all providers to “implement fully interoperable electronic health records that connect to the statewide health information exchange”
  – HIE governance (HIT Council) and HIE program ownership consolidated in EOHHS:
    • “The executive office shall take all actions necessary to directly manage the Office of the National Coordinator-HIE Cooperative Agreement and ONC Challenge Grant programs, including the termination of the current State Designated Entity delegation and the transfer of management responsibility of said ONC-HIE Cooperative Agreement from the Massachusetts e-Health Institute to the executive office.”
  – EOHHS and MeHI working together through inter-agency agreements to assure momentum and continuity of CMS-funded HIE and ONC-funded Last Mile programs
Category 1 - Quality and Safety

• Standards which support flexible platforms for measuring and reporting quality (QueryHealth, QRDA/HQMF)
• Standards which support measurement of EHR usability
• Standards which address current content gaps - HL7 version 2 lab orders, formulary downloads, cancel transaction needed for hospital discharge medication e-prescribing, representing genomic data in the EHR
• Standards which support defect reporting to PSOs
• Standards which support redundant data identification/reduction

Category 2 - Health Information Exchange

• Standards which support query/response of provider and patient identity in directories
• Standards which support Record Locator Services
• Standards which support consent in a query/response architecture such as granular patient privacy preferences hosted in a managed service ("pull") and sent as part of the request for records ("push")
• Improvements to the CCDA standard to facilitate unambiguous parsing, longitudinal record sharing, and bulk record sharing
• Standards to support image exchange
Category 3 - Consumer

• Standards to support representation of patient generated data including consumer device data
• Standards to support consumer friendly terminology
• Standards to support transport of data to and from patients
• Standards to record advanced directives/care preferences
• Standards to record care plans/care team

Category 4 - ACO/Population Health/Care Management

• Standards for clinical documentation supporting new payment models (includes ICD10, smart problem lists, computer assisted coding)
• Standards needed for registry support including structured data capture and transmission to third party repositories
• Standards to support closed loop referral workflow
• Standards to support data comparability across entities including detailed clinical models
• Standards for clinical decision support, both knowledge representation and application programming interfaces (APIs) for query/response to knowledge resources
Category 5- Privacy/Security

- Standards for securing data at rest, especially genomic data and consumer downloads
- Standards for application programming interfaces supporting modular application integration
- Standards supporting data segmentation for privacy
- Standards and certification criteria that anticipate broad NSTIC adoption
- Standards supporting Digital signature