HIE STRATEGY: UPDATES AND RECOMMENDATIONS
Overview of Activity Since October 17 Advisory Committee meeting

- **Workgroups:** All 5 workgroups have met twice, have given feedback on the HIE strategy and APD, and are now working through the concrete details of the phases in each domain and engagement area.

- **CMS/ONC Meeting:** On October 24 Manu Tandon, John Halamka, Rick Shoup, and Micky Tripathi presented the strategy to representatives from CMS and ONC.

- **Plan Updates:** EOHHS and MeHI are in process of updating the State Medicaid Health Plan (SMHP), Advanced Planning Document (APD), and HIE Strategic and Operational Plan (SOP) with input from the workgroups.

*Detailed updates are provided in the following slides*
CMS/ONC meeting

- CMS/ONC Meeting: On October 24 a Massachusetts team that included Manu Tandon, John Halamka, Rick Shoup, and Micky Tripathi presented the straw man strategy to representatives from CMS and ONC.

- Response from Federal Agencies: The response to the updated strategy was very positive from both agencies:
  - Support for the strategy that unifies Medicaid and HIE plans, resources, and initiatives
  - Support for the proposed Fair Share cost allocation approach – offered additional ideas and approach refinement

- Next steps: CMS and ONC leaders suggested that we move rapidly forward as with the following:
  - Update to the SMHP
  - Update of APD
  - Update to HIE Strategic and Operational plan
Progress on APD, SMHP, and SOP

APD Update
- The Medicaid Advance Planning Document (APD) update draft, which updates the APD approved by CMS on 8/26/11, was completed on 11/8/11
- The APD was sent to Workgroup members for input on 11/8/11 – Comments were received on 11/11/11 and incorporated into the current draft
- EOHHS will submit a courtesy draft to CMS on 11/15/11, will conduct an early feedback call with CMS on 11/17/11, and will submit the final APD on 11/21/11

SMHP Update
- The State Medicaid HIT Plan (SMHP), which was approved by CMS on 6/13/11, has been updated and will be submitted to CMS with the APD

SOP Update
- The HIE Strategic and Operational Plan, which was approved by ONC on 11/03/10, has been updated and a draft copy will be submitted to ONC at the same time as the SMHP and APD
### High Level Timeline for Next 12 months

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submit IAPD and SMHP to CMS and updated draft SOP to ONC</td>
<td>Nov 18, 2011</td>
</tr>
<tr>
<td>High level planning and approvals completed</td>
<td>Jan 15, 2012</td>
</tr>
<tr>
<td>Design, launch, and go live for End User Adoption program</td>
<td>Oct 15, 2012</td>
</tr>
<tr>
<td>Design, launch, and go live for phase 1 Public Health Gateway</td>
<td>Dec 14, 2012</td>
</tr>
</tbody>
</table>

*Note: Detailed timelines provided in Appendix A*
Recommendation to Approve Updated HIE Strategy

Recommendation to HIT Council to approve the HIE strategy: The Advisory Committee recommends approval of the proposed Massachusetts Statewide HIE Strategy.

The current strategy, including updates from the workgroups and the October 24, 11 CMS/ONC meeting, is included in Appendix A.

Core elements of the proposed strategy:
- Three-phase HIE plan beginning with creating the statewide Information Highway as a foundation for richer applications and services from 2012-2014
- Aligned with national interoperability standards and emerging MU stage 2 requirements
- Maximizing Medicaid SMHP/MMIS 90/10 FFP funding
- Focusing Medicaid funding on building infrastructure for statewide services, and ONC Cooperative Agreement funding on maximizing end-user adoption of those statewide services
Chapter 305 Funds Allocated to HIE and Medicaid Incentive Payment Program

- ONC HIE Challenge Grants
  Assuming Current Plan $2.6 M

- ONC HIE Grants
  (Under Revised Plan) Currently Unknown

- MassHealth Federal Match Requirement $2.2 M

- MassHealth Cash Flow Requirement $3.5 M

  Total $8.3 M
Massachusetts Health IT Council and Advisory Committee

MOTION TO APPROVE PROPOSED HEALTH INFORMATION EXCHANGE (HIE) STRATEGY
Motion #1

Motion #1 - $5.7 million transfer of funds

The Health Information Technology Council (the “Council”) does hereby approve the transfer of funds from the Massachusetts E-Health Institute Fund to the Executive Office of Health and Human Services (“EOHHS”) in an amount that shall not exceed $5,700,000, as presented. The funds shall be utilized by the State Medicaid Office (“MassHealth”) to maximize its ability to secure federal funding participation (“FFP”) at a rate of nine-to-one for state expenditures that will support the implementation of the State Medicaid Health Information Technology Plan (SMHP). It is the current expectation of the Council that the funds shall be transferred to EOHHS in two disbursements of approximately $2,300,000 (the “First Disbursement”) and $3,400,000 (the “Second Disbursement”); provided that the release of the Second Disbursement shall be contingent on EOHHS submitting written evidence to the Massachusetts Technology Collaborative (“MTC”) that is deemed to be satisfactory by MTC’s Chief Executive Officer documenting the federal approval of an amended SMHP and revisions to the associated Implementation Advanced Planning Document by the Center for Medicaid Services (“CMS”) that will incorporate relevant elements of the revised statewide Health Information Exchange strategy and that is expected to be submitted to CMS on or about November 18, 2011.
Motion #2 – HIE Plan

The Health Information Technology Council (the “Council”) does hereby approve a revised statewide strategy for the implementation of Health Information Exchange (“HIE”) activities in the Commonwealth, as presented, which incorporates elements that include but are not limited to: (1) a unified statewide approach that integrates the state Medicaid office (“MassHealth”) and Massachusetts e-Health Institute (“MeHI”) plans, resources and activities; (2) maximizes MassHealth’s ability to secure federal funding participation (“FFP”) at a nine-to-one rate; and (3) provides for a focus of MeHI’s HIE activities on so-called “last mile” efforts that promote the adoption of health information technology. The Council recommends that the Executive Committee of the Board of Directors of the Massachusetts Technology Park Corporation (“MTC”) take corresponding final action to approve the revised HIE statewide strategy with the condition that implementation of the revised statewide HIE strategy should be contingent on MTC and MassHealth securing federal approval of the updated versions of all impacted planning, operational and implementation documents by the Office of the National Coordinator and/or the Center for Medicaid Services to ensure that federal grant and FFP funding for HIE activities is not reduced, rescinded or otherwise negatively impacted. The updated documents requiring federal approval include but may not be limited to: (1) State Medicaid Health IT Plan; (2) Health Information Technology Advanced Planning Document; and (3) HIE Strategic and Operational Plan.
Massachusetts Health IT Council and HIE HIT Advisory Committee

HIE WORKGROUP UPDATE
## Workgroup progress

<table>
<thead>
<tr>
<th>Workgroup</th>
<th>High level summary of discussion (detailed workgroup notes are available)</th>
</tr>
</thead>
</table>
| Consumer & Public Engagement    | • Discussed high level priorities and barriers for consumer engagement, specifically for Phase 1  
• Identified initial areas for consumer input and engagement including: Consent policy, privacy and security, and trust                                                                                     |
| Provider Engagement & Adoption  | • Discussed the end-state vision for health information exchange  
• Identified need to shift from technical discussions to clinical use case and value identification  
• Began discussion of differences in perceived value among different provider types/specialties  
• Identified need to articulate the value of the HIE to providers to encourage adoption                                                                                                              |
| Legal & Policy                  | • Discussed approach for analyzing the current legal framework in place for the virtual gateway and to identify gaps in this approach as the VG is extended for HIE use and users  
• Beginning process of bringing policies forward from the ad-hoc workgroups and framing them by the updated service and phasing framework                                                                 |
| Technology & Infrastructure     | • Discussed specifics of PKI and Certificate Management  
• Developed separate PKI task force to provide specific recommendations and requirements  
• Discussed transport                                                                                                                                  |
| Finance & Sustainability        | • Discussed the currently proposed cost and revenue assumptions for both the implementation and operations project phases.  
• Discussed private sector contributions to both the implementation and future phases  
• Discussed the Memorandum of Understanding (MOU) document and process to support the APD submission to CMS                                                                                      |
# Workgroup Next Steps and Focus Areas

<table>
<thead>
<tr>
<th>Workgroup</th>
<th>Immediate next steps and focus areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALL WORKGROUPS</strong></td>
<td>• Finalize membership                                                                                                                                  • Create high-level workplans and detailed 6-month workplans                                       • Create 6-month schedules (minimum monthly, some at higher frequency)   • Decide inputs required for <em>Massachusetts Statewide HIE Policy Guidance V 1.1</em></td>
</tr>
<tr>
<td><strong>Consumer &amp; Public Engagement</strong></td>
<td>• Identify possible opportunities for more direct patient engagement in earlier phases                                                                                       • Develop strategy for broader reachout to consumers                                      • Reshape presentation for consumer communication</td>
</tr>
<tr>
<td><strong>Provider Engagement &amp; Adoption</strong></td>
<td>• Develop ideas/approaches for “HIE Adoption Grant” program                                                                                               • Develop strategy for broader reachout to physicians                                        • Reshape presentation for physician communication                              • Identify possible pathways for “One Patient, One Record”</td>
</tr>
<tr>
<td><strong>Legal &amp; Policy</strong></td>
<td>• Ownership, Governance, and Operations model for Phase 1 services                                                                                         • Privacy and Security policies for Phase 1 services</td>
</tr>
<tr>
<td><strong>Technology &amp; Infrastructure</strong></td>
<td>• Technical requirements for Phase 1 service RFPs                                                                                                         • Identify possibilities for using existing infrastructure components to meet statewide HIE needs</td>
</tr>
<tr>
<td><strong>Finance &amp; Sustainability</strong></td>
<td>• Evaluate cost allocation approach and private contribution need                                                                                           • Develop framework for evaluating HIE value propositions in the market</td>
</tr>
</tbody>
</table>
Massachusetts Health IT Council and HIE HIT Advisory Committee

APPENDIX A: PROPOSED MASSACHUSETTS STATEWIDE HIE STRATEGY
Proposed Massachusetts Statewide HIE Strategy

Table of Contents

- Introduction
- Aligning Existing Plans
- Priorities and Phasing
- Resources
- Governance
- Timelines
The projects and activities presented in the following proposed statewide HIE strategy support the Medicaid program while advancing the development of a statewide HIE. To date, the Strategic and Operational Plan and State Medicaid Health IT Plan have been developed in parallel but with close cooperation but two recent events led to the effort to unify these plans

- State Medicaid Director letter of May 2011 refining use of Medicaid funds for HIE activities
- Massachusetts Secretary of Health and Human Services recasting the state’s HIE governance structure

The timing and impact of these two events led the state to develop a unified approach that:

- Maintains the priorities and phasing of the original SOP and SMHP
- Rationalizes and aligns differences to create a single plan incorporating SDE, Medicaid, and DPH priorities and preferences
- Optimizes use of multiple funding streams (ONC, CMS, State, and Private) and existing infrastructure into a single, integrated approach
- Focuses on both creating infrastructure AND removing barriers to adoption
# Table of Contents

- Introduction
- Aligning Existing Plans
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- Timelines
Current state of the market favors a network of networks connected via a single statewide open HISP supported by centralized project management

**Illustrative example**
Eventually expect to transition to heterogeneous model with multiple, varied HISPs and decentralized shared services. *Illustrative example*
34 possible projects have been identified in SMHP and MeHI Strategic and Operational plan

SMHP (13 projects)

<table>
<thead>
<tr>
<th>Project</th>
<th>SFY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct gateway</td>
<td>2012</td>
</tr>
<tr>
<td>Public health interfaces</td>
<td>2012</td>
</tr>
<tr>
<td>VG upgrade</td>
<td>2012</td>
</tr>
<tr>
<td>Claims relay service</td>
<td>2013</td>
</tr>
<tr>
<td>PKI/certificate management</td>
<td>2013</td>
</tr>
<tr>
<td>Clinical data repository</td>
<td>2014</td>
</tr>
<tr>
<td>EMPI/RLS</td>
<td>2014</td>
</tr>
<tr>
<td>Formulary/medication management</td>
<td>2014</td>
</tr>
<tr>
<td>Open access HISP</td>
<td>2014</td>
</tr>
<tr>
<td>Provider directory</td>
<td>2014</td>
</tr>
<tr>
<td>Quality data infrastructure</td>
<td>2014</td>
</tr>
<tr>
<td>Re-architecting and enabling payment methodologies</td>
<td>2014</td>
</tr>
<tr>
<td>Statewide HIE solution integration services</td>
<td>2015</td>
</tr>
</tbody>
</table>

Note: Does not include MU incentive administration project

Strategic & Operational Plan (21 projects)

<table>
<thead>
<tr>
<th>Project</th>
<th>Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routing, packaging, and translation, de-identification</td>
<td>1</td>
</tr>
<tr>
<td>Provider/facilities directory services</td>
<td>1</td>
</tr>
<tr>
<td>Vocabulary services</td>
<td>1</td>
</tr>
<tr>
<td>Consent services</td>
<td>1</td>
</tr>
<tr>
<td>PKI/identity services</td>
<td>1</td>
</tr>
<tr>
<td>Immunization/Surveillance/ELR</td>
<td>1</td>
</tr>
<tr>
<td>Quality data aggregation</td>
<td>1</td>
</tr>
<tr>
<td>MPI/RLS</td>
<td>2</td>
</tr>
<tr>
<td>APCD</td>
<td>2</td>
</tr>
<tr>
<td>PCHRs</td>
<td>2</td>
</tr>
<tr>
<td>Routing service for patients</td>
<td>2</td>
</tr>
<tr>
<td>Advanced directives service</td>
<td>2</td>
</tr>
<tr>
<td>Patient education materials service</td>
<td>2</td>
</tr>
<tr>
<td>Radiology image exchange service</td>
<td>2</td>
</tr>
<tr>
<td>Event notification service</td>
<td>2</td>
</tr>
<tr>
<td>Pre-auth approval rules service</td>
<td>2</td>
</tr>
<tr>
<td>Disclosure logging services</td>
<td>3</td>
</tr>
<tr>
<td>i2B2 clinical research services</td>
<td>3</td>
</tr>
<tr>
<td>Pharmcosurveillance service</td>
<td>3</td>
</tr>
<tr>
<td>Medication safety analysis</td>
<td>3</td>
</tr>
<tr>
<td>Formulary service</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: 34 possible projects have been identified in SMHP and MeHI Strategic and Operational plan.
Reconciling these projects across programs identifies 15 priority projects

<table>
<thead>
<tr>
<th>Mapping results</th>
<th>SMHP</th>
<th>MeHI Strategic and Operational Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects common to SMHP and Strategic &amp; Operational Plan</td>
<td>Direct gateway</td>
<td>Routing, packaging, translation, de-identification</td>
</tr>
<tr>
<td></td>
<td>Provider directory</td>
<td>Provider/facilities directory services</td>
</tr>
<tr>
<td></td>
<td>PKI/certificate management</td>
<td>PKI/identity services</td>
</tr>
<tr>
<td></td>
<td>Public health interfaces</td>
<td>Immunization/Surveillance/ELR</td>
</tr>
<tr>
<td></td>
<td>EMPI/RLS</td>
<td>MPI/RLS</td>
</tr>
<tr>
<td></td>
<td>Quality data infrastructure</td>
<td>Quality data aggregation</td>
</tr>
<tr>
<td></td>
<td>Clinical data repository</td>
<td>APCD</td>
</tr>
<tr>
<td>Projects unique to SMHP</td>
<td>Statewide HIE solution integration services</td>
<td>na</td>
</tr>
<tr>
<td></td>
<td>Open access HISP</td>
<td>na</td>
</tr>
<tr>
<td>Projects unique to Strategic &amp; Operational Plan</td>
<td>na</td>
<td>Consent services</td>
</tr>
<tr>
<td></td>
<td>na</td>
<td>Vocabulary services</td>
</tr>
<tr>
<td>MassHealth infrastructure projects</td>
<td>Re-architect/enabling payment methods</td>
<td>Routing service for patients</td>
</tr>
<tr>
<td></td>
<td>VG upgrade</td>
<td>na</td>
</tr>
<tr>
<td></td>
<td>Claims relay service</td>
<td></td>
</tr>
<tr>
<td>Projects requiring further definition through WG process</td>
<td>Formulary/medication management</td>
<td>Formulary service</td>
</tr>
<tr>
<td></td>
<td>na</td>
<td>PCHRs</td>
</tr>
<tr>
<td></td>
<td>na</td>
<td>Advance directives service</td>
</tr>
<tr>
<td></td>
<td>na</td>
<td>Patient education materials service</td>
</tr>
<tr>
<td></td>
<td>na</td>
<td>Radiology image exchange service</td>
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<tr>
<td></td>
<td>na</td>
<td>Event notification service</td>
</tr>
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<td></td>
<td>na</td>
<td>Pre-auth approval rules service</td>
</tr>
<tr>
<td></td>
<td>na</td>
<td>Disclosure logging services</td>
</tr>
<tr>
<td></td>
<td>na</td>
<td>i2B2 clinical research services</td>
</tr>
<tr>
<td></td>
<td>na</td>
<td>Pharmcosurveillance service</td>
</tr>
<tr>
<td></td>
<td>na</td>
<td>Medication safety analysis</td>
</tr>
</tbody>
</table>
# Strawman Priority Project List for Unified Statewide HIE Program

<table>
<thead>
<tr>
<th>#</th>
<th>Reconciled HIE Project List</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Direct gateway</td>
</tr>
<tr>
<td>2</td>
<td>Provider directory</td>
</tr>
<tr>
<td>3</td>
<td>PKI/certificate management</td>
</tr>
<tr>
<td>4</td>
<td>Public health interfaces</td>
</tr>
<tr>
<td>5</td>
<td>EMPI/RLS</td>
</tr>
<tr>
<td>6</td>
<td>Quality data infrastructure</td>
</tr>
<tr>
<td>7</td>
<td>Clinical data repository</td>
</tr>
<tr>
<td>8</td>
<td>Statewide HIE solution integration services</td>
</tr>
<tr>
<td>9</td>
<td>Open access HISP</td>
</tr>
<tr>
<td>10</td>
<td>Consent services</td>
</tr>
<tr>
<td>11</td>
<td>Vocabulary services</td>
</tr>
<tr>
<td>12</td>
<td>Routing service for patients</td>
</tr>
<tr>
<td>13</td>
<td>Re-architect/enabling payment methods</td>
</tr>
<tr>
<td>14</td>
<td>VG upgrade</td>
</tr>
<tr>
<td>15</td>
<td>Claims relay service</td>
</tr>
<tr>
<td>16</td>
<td>HIE end-user integration</td>
</tr>
</tbody>
</table>

Need to determine the Roadmap for implementing these projects

Need to validate Strawman Priority List and Roadmap with stakeholders through Workgroup process

Recommend adding an additional project to address one-time adoption needs of end-users
## Description of priority projects

<table>
<thead>
<tr>
<th>#</th>
<th>Reconciled HIE Project List</th>
<th>Program description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Direct gateway</td>
<td>Implementation of gateway implementing Direct specification for universal messaging</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interoperability</td>
</tr>
<tr>
<td>2</td>
<td>Provider directory</td>
<td>Directory of providers and facilities to ensure unambiguous and reliable addressing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of electronic transactions</td>
</tr>
<tr>
<td>3</td>
<td>PKI/certificate management</td>
<td>Infrastructure to ensure security of statewide HIE infrastructure</td>
</tr>
<tr>
<td>4</td>
<td>Public health interfaces</td>
<td>HL7 interfaces to variety of public health services, including ELR, MIIS, SSS, CBHI,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CLPPP, PMP, OTP</td>
</tr>
<tr>
<td>5</td>
<td>EMPI/RLS</td>
<td>Statewide patient-matching function to match medical records across organizations</td>
</tr>
<tr>
<td>6</td>
<td>Quality data infrastructure</td>
<td>Infrastructure to facilitate aggregation of quality and performance measurement data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>for reporting to Medicaid and other purposes</td>
</tr>
<tr>
<td>7</td>
<td>Clinical data repository</td>
<td>Integration of clinical data with APCD</td>
</tr>
<tr>
<td>8</td>
<td>Statewide HIE solution integration services</td>
<td>System integration and project management for HIE infrastructure implementation</td>
</tr>
<tr>
<td>9</td>
<td>Open access HISP</td>
<td>Service organization to provide network connection to statewide HIE services for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>providers unable to connect through their own organizations</td>
</tr>
<tr>
<td>10</td>
<td>Consent services</td>
<td>Centralized management of patient consent status information</td>
</tr>
<tr>
<td>11</td>
<td>Vocabulary services</td>
<td>Translation service to transform non-standard medical vocabulary to national standards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>based nomenclatures</td>
</tr>
<tr>
<td>12</td>
<td>Routing service for patients</td>
<td>Messaging services to allow providers to send messages and records securely to patient-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>controlled applications</td>
</tr>
<tr>
<td>13</td>
<td>Re-architect/enabling payment methods</td>
<td>Flexible IT claim processing systems to address new forms of payment and organization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(accountable care, PCMH, etc)</td>
</tr>
<tr>
<td>14</td>
<td>VG upgrade</td>
<td>Upgrade of Virtual Gateway for standards-based HL7 transactions</td>
</tr>
<tr>
<td>15</td>
<td>Claims relay service</td>
<td>Single gateway for the submission of claims for MassHealth (regardless of medical,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pharmacy, Dental or Health Safety Net Claims)</td>
</tr>
<tr>
<td>16</td>
<td>HIE end-user integration</td>
<td>Program to remove/lower barriers to HIE adoption</td>
</tr>
</tbody>
</table>
Proposed Massachusetts Statewide HIE Strategy

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- Introduction
- Aligning Existing Plans
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Map Projects into Phases

Various projects can be mapped into phases using criteria assessing difficulty, market demand, and market gaps.

**HIE projects**

<table>
<thead>
<tr>
<th>#</th>
<th>Reconciled HIE Project List</th>
</tr>
</thead>
<tbody>
<tr>
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<td>VG upgrade</td>
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<tr>
<td>15</td>
<td>Claims relay service</td>
</tr>
<tr>
<td>16</td>
<td>HIE end-user integration</td>
</tr>
</tbody>
</table>

**Phasing criteria**

- **Difficulty**
  - Are there significant business, technical, governance, or legal complexities that need to be resolved before deploying the service?

- **Demand for HIE service**
  - Is there immediate market demand for the transaction as a statewide HIE service?

- **Gap in market today**
  - Is there a gap in the market today?

**Phasing**

- **Phase 1**
  - Ready to go
  - Move to requirements and RFP development

- **Phase 2**
  - No significant technical or policy barriers
  - Needs governance & business model development
  - Needs scoping and budgeting

- **Phase 3**
  - Multiple barriers to tackle
  - Needs policy, technical, governance, and business model development
  - Needs scoping and budgeting
**Phasing defines Roadmap for Statewide HIE Program**

### Phase 1
**Information Highway**
- Create infrastructure to enable secure transmission ("directed exchange") of clinical information
- Will support exchange among clinicians, public health, and stand-alone registries
- Focus on breadth over depth

### Phase 2
**Analytics and Population Health**
- Create infrastructure to facilitate data aggregation/analysis
- Will support Medicaid CDR and quality measure infrastructure
- Will support vocabulary translation services (lab, RX)

### Phase 3
**Search and Retrieve**
- Create infrastructure for cross-institutional queries for and retrieval of patient records

---

**Increasing cost and complexity**
# Reconciled Projects Grouped Into Three Phases

<table>
<thead>
<tr>
<th>Phasing</th>
<th>Reconciled HIE Project List</th>
<th>Next steps</th>
<th>Timing</th>
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| Phase 1 | Statewide HISP w/ Direct Gateway  
Provider directory  
VG enhancement: Access & Identity Mgmt  
VG enhancement: PKI  
VG enhancement: HL7 gateway  
HL7 interface: Syndromic Surveillance  
HL7 interface: CBHI  
HIE end-user integration program  
IMPACT (ONC Challenge Grant) | - Develop detailed scope, requirements, budgets, and RFPs | Q3 2012  
Q3 2012  
Q3 2012  
Q3 2012  
Q3 2012  
Q3 2012  
Q3 2012  
Q3 2012  
Q4 2012 |
| Phase 2 | Clinical data repository  
Quality data infrastructure  
HL7 public health interfaces  
EMPI  
Vocabulary services  
Claims relay service  
MDPHnet (ONC Challenge Grant) | - Develop governance, business, and operational model | Q1 2013  
Q1 2013  
Q1 2013  
Q2 2013  
Q2 2013  
Q3 2013  
Q4 2013 |
| Phase 3 | RLS  
Consent services  
Routing service for patients  
Re-architect/enabling payment methods | - Develop policy frameworks & governance model  
- Develop technical standards  
- Develop business/operations model | Q1 2014  
Q1 2014  
Q3 2014  
Q3 2014 |
Proposed Massachusetts Statewide HIE Strategy
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- Aligning Existing Plans
- Priorities and Phasing
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- Timelines
Upgrade and leverage Infrastructure

Upgrade and leverage infrastructure that is currently in use by MMIS users – extend to HIE users (Medicaid and non-Medicaid)

MMIS Users

HIE Users (Medicaid & Non-Medicaid)

* Upgrade/Expansion
** New
Simplify User Access

Repurpose new and existing components

HIE Users (Medicaid and non-Medicaid)

EHR (Direct enabled)

EHR (not Direct enabled)

No interoperable EHR

Architecture and usage patterns identical for all users

Security and Provider Directory services leveraged for Statewide HISP

~80K users already using Virtual Gateway

HIE users serviced by existing service center

Provider Online Service Center

Claims Engine

MMIS Base Application

MMIS

Other Existing Enterprise Shared Services

AIMS* (Access and Identity Management)

PKI** (Public Key Infrastructure)

Clinical Gateway* (HL7 Interfaces)

Provider Directory**

Labs (HL7) Clinical documents (CDA)

XDR or SMTP

Labs (HL7) Clinical documents (CDA)

Web portal

Labs (HL7) Clinical documents (CDA)

Web portal

Clinical documents

Syndromic Surveillance

CBHI (Children’s Behavioral Health Initiative)

Immunization

Electronic Laboratory Reports

Medicaid & Public Health Applications

Statewide HISP

EHR (not Direct enabled)

Labs (HL7) Clinical documents (CDA)

Web portal

EHR (not Direct enabled)

Labs (HL7) Clinical documents (CDA)

Web portal

No interoperable EHR

Clinical documents

Labs (HL7) Clinical documents (CDA)

Web portal

Clinical documents

EHR (Direct enabled)
Anticipate HIX & IES integration

- MMIS & VG Users
  - AIMS 3.0
    - Provider
    - Public
  - Clinical Gateway
  - HIPAA X12 Gateway
  - EDM
  - Provider Directory
  - PKI Service
  - MDM Services

- HIE Users
- HIX & IES Users

- Provider Online Service Center
- Claims Engine
- MMIS Base Application

- Eligibility Domain
- HIX Domain
- HIX & Integrated Eligibility System

- Direct Gateway
- Statewide HISP

- CBHI (Children’s Behavioral Health Initiative)
- Immunization
- Syndromic Surveillance
- ELR (not in VG)
- Medicaid & Public Health HL7 Interfaces

- MeHI: Massachusetts eHealth Institute
- A Division of the Massachusetts Technology Collaborative

11/14/2011
Building Infrastructure is no Guarantee it will be used

Building an infrastructure is no guarantee that it will be used - Need to bring on users and gain “network effect” values immediately

- Value of statewide HIE network and services will increase exponentially with the number of users
- Removing adoption barriers is key to increasing number of users
  - Up-front cost and difficulty of system integration is significant barrier to adoption to most users, especially small practices and safety-net providers
- Can address this barrier through a variety of means
  - Align all funding streams to maximize opportunities for synergy
  - Leverage existing assets
  - Build services where the users are
  - Lower the cost and ease the difficulty of using the statewide HISP
Approach is to complement infrastructure with a multi-pronged adoption program

ONC Cooperative Agreement (last-mile services) → CMS SMHP/MMIS (infrastructure)

- **Vendor-specific hubs (or HISPs)**:
  - Hospital EHR vendor
  - Ambulatory EHR vendor

- **Sub-network hubs (or HISPs)**:
  - HIE (e.g., SafeHealth)
  - Hospital network (e.g., Berkshire)

- **Individual interfaces**:
  - Ambulatory practices
  - CAHs

- **Web portal recruitment and training**:
  - Long-term care
  - Behavioral health

- **Statewide outreach, recruitment, and training**
- **Managed procurements, grants, and PM/technical support**
- **Synergies with REC**

**Regional Extension Center**

11/14/2011
Revising the Strategic and Operational Plan

- Priorities of original SOP have not changed
  - Focus on Direct-enabled “network of networks”
  - Incremental approach starting with “push” as foundation for more advanced aggregation and “pull” transactions

- With broad-based governance and a consensus statewide roadmap now in place, timelines and resource planning are now robust, executable, and aligned
  - Maps multiple federal and state initiatives to single statewide roadmap with consistent, coherent phasing
  - Gives concrete vision to providers getting eager for advanced HIE capabilities
  - Builds on state’s considerable public and private infrastructure already in place, and eliminates resource and capacity redundancies

- Statewide plan continues focus on addressing PIN priorities and MU
  - eRX: Rapid EHR adoption is building on MA #1 national eRX ranking
  - Labs: HISP/Direct Gateway will provide low-cost and universally accessible means for electronic delivery where it’s not already in place
  - Summary care exchange: Primary use case of HISP/Direct Gateway
  - Public health: Eases rapid adoption by unifying public health with all other clinical transactions

- Current plan is to immediately begin revisions to SOP to reflect statewide plan priorities and phasing, and adjust for new PIN priorities when available
Determining Federal and State-level Cost Allocation

Total project cost

**MMIS or SMHP?**
- MMIS applies to all Medicaid providers; HITECH must correlate with EHR-IP program

**HIE share of service?**
- Applies to multi-purpose components

**Medicaid share of market?**
- Basis
  - Providers
  - Claims
  - Transactions
  - Other?

% Medicaid-relevant

% not Medicaid-relevant

### Development
- MMIS/SMHP
  - 90% federal
- Medicaid share of market:
  - 10% state-level

### O&M
- MMIS
  - 75% federal
  - 100% state-level
- SMHP
  - 50% federal
  - 50% state-level
  - 100% state-level
Infrastructure Funding Approach

- Existing VG infrastructure leveraged to the greatest extent possible
  - Repurpose existing components to lower incremental cost of new functions
  - Add new functions to platforms that already have high use

- Most new infrastructure built with MMIS funds
  - Reuses centralized infrastructure consumed by MMIS
  - Lays foundation for future MMIS use cases (claims attachments, clinical outcomes data, etc)

- Direct Gateway and HL7 Syndromic Surveillance only Phase 1 projects funded through SMHP

- Build for Medicaid-only use at outset
  - Fixed infrastructure that is the same whether built for Medicaid-only or for universal use (100% of hospitals and +80% of physicians are Medicaid)
  - Non-Medicaid users pay allocation on operations for usage as they adopt once system is operational
## Budget estimate for Phase 1 projects and source of funds: Preliminary

<table>
<thead>
<tr>
<th>Phasing</th>
<th>Reconciled HIE Project List</th>
<th>Funding vehicle</th>
<th>Preliminary budget</th>
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<td>Total budget to date</td>
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Aligning Resources for Statewide HIE Services

MA Chapter 305
$11.9M

ONC Cooperative Agreement
$12.6M

ONC Challenge Grants
$3.4M

Matching funds for
ONC HIE programs

Matching funds for
CMS FFP

CMS SMHP/MMIS
$17.1M (Phase 1)

SMHP/MMIS funds can
be used only for
infrastructure

Private funds
~ $472K annual
(O&M)

PIN priorities
and user adoption

Leverage programs
as relevant for
adoption and
infrastructure

Adoption program for
Statewide HIE Services

Infrastructure program for
Statewide HIE Services
## SMHP & MMIS Phase 1: Delineation of Funding Sources

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<th>Project</th>
<th>Build</th>
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<td>1 Statewide HISP/Direct Gateway</td>
<td>SMHP + IMPACT (ONC Grant) + Private</td>
<td>SMHP + Private</td>
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<td>Virtual Gateway Enhancements</td>
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<td>2 AIMS (Identity Management)</td>
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<td>3 Public Key Infrastructure</td>
<td>MMIS</td>
<td>MMIS + SMHP &amp; HIE Projects (based on usage)</td>
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<td>4 Clinical Gateway</td>
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<tr>
<td>5 Provider Directory</td>
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<tr>
<td>6 HL7 Interface - Syndromic Surveillance</td>
<td>SMHP</td>
<td>SMHP + Operating Funds</td>
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<td>7 HL7 Interface – Children’s Behavioral Health Initiative (CBHI)</td>
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<td>MMIS + Operating Funds</td>
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Uses and Sources of Phase 1 Funds (estimated)

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<td>Public health: CBHI</td>
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<td>Public health: Synd Surv</td>
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<td>Public Health Gateway</td>
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<td>PKI (Security)</td>
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<td>AIMS (Identity)</td>
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<td>Direct Gateway</td>
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<td>Operations &amp; maintenance (annual)</td>
<td>$17.2M</td>
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<table>
<thead>
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<tr>
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<td>Operations &amp; maintenance (annual)</td>
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Note: Cost and revenue data is preliminary and will be updated with finalization of APD

11/14/2011
### Source of funds by project (estimated)

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<th>DDI</th>
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<td>474,388</td>
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</table>

**Note:** Cost and revenue data is preliminary and will be updated with finalization of APD
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Secretary of HHS Oversight of Adoption and Infrastructure Programs

Massachusetts Technology Collaborative

HIT Council

MassHealth (Medicaid)

Secretary of Health and Human Services

HIE/HIT Advisory Committee

SDE

Massachusetts eHealth Institute

ONC Cooperative Agreement

ONC Challenge Grants

Regional Extension Center

CMS SMHP/MMI S

HIT/HIE Adoption

HIE Infrastructure

Regional Extension Center

ONC Cooperative Agreement

ONC Challenge Grants

CMS SMHP/MMI S

11/14/2011
Workgroup structure, leadership, and staffing

Health IT Council

HIE-HIT Advisory Committee

Co-Chairs:
- John Halamka
- Manu Tandon

Facilitator:
- Micky Tripathi

Business Analyst:
- Mark Belanger

---

Legal & Policy Workgroup

Co-Chairs:
- Wendy Mariner
- Gillian Haney

Facilitator:
- Ray Campbell

Business Analyst:
- Christina Moran

---

Technology & implementation Workgroup

Co-Chairs:
- John Halamka
- Manu Tandon

Facilitator:
- Nael Hafez

Business Analyst:
- David Delano

---

Finance & sustainability Workgroup

Co-Chairs:
- Andrei Soran
- Steve Fox

Facilitator:
- Micky Tripathi

Business Analyst:
- Christina Moran

---

Consumer and public engagement workgroup

Co-Chairs:
- Jessica Costantino
- Kathleen Donaher

Facilitator:
- Christina Moran

---

Provider engagement & adoption workgroup

Co-Chairs:
- Michael Lee, MD
- Dirk Stanley, MD

Facilitator:
- Mark Belanger
Proposed Massachusetts Statewide HIE Strategy

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- Aligning Existing Plans
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- Timelines
Update: High level timeline for next 12 months (1 of 4) Finalize all approvals

- Finalize scope, budget, requirements
- Brief CMS/ONC
- Update, vet, and submit APD, SMHP, SOP
- Obtain private sector MOUs
- CMS approval
- HIT Council approval of strategy (pending)
Update: High level timeline for next 12 months (2 of 4) Plan and launch phase 1 services for “Information Highway”

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<th>1st Quarter</th>
<th>2nd Quarter</th>
<th>3rd Quarter</th>
<th>4th Quarter</th>
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<td></td>
<td>Jan</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
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<tr>
<td>Design and launch Phase 1 services</td>
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<td>Go live - “Information Highway” Open</td>
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Go live - “Information Highway” Open! 10/15
Update: High level timeline for next 12 months (3 of 4) Plan and launch phase 1 services for Public Health Gateway
Update: High level timeline for next 12 months (4 of 4) Plan and launch End User Adoption and Impact programs
1. Health Information Service Provider (HISP)

**Scope**
- Direct Gateway - based on NHIN Direct standards and specifications
- To support Information exchange: Provider <-> Provider, Provider <-> State Agencies and Provider <-> Patients
- using HTTPS, SMTP and XDR protocols

**Funding**
- SMHP

**Rationale:**
- Helps Medicaid providers to send clinical message electronically and to meet MU Stage 1 criteria.
- Helps Medicaid and DPH agencies to exchange administrative and clinical data electronically with Medicaid providers.

**Cost Allocation Approach**
- SMHP – adds HTTPS and SMTP support
- IMPACT (ONC challenge grant) – adds XDR support
- Private sector contribution
- MeHI ONC grant – used for adoption
- Requires Provider Directory and PKI – cost allocated based on usage.

**Budget**
- DDI : $3.4M
- O&M : $1.03M

*Note: Budget and cost allocation information is preliminary and will be updated with finalization of APD*
2. Provider Directory

**Scope**
- Setup Infrastructure for Provider Directory
- Phase 1 – Direct gateway will use the infrastructure to store provider demographics, direct email ids and public certificates
- Will be extended to support Phase 2 and Phase 3 use cases.

**Funding**
- MMIS

**Rationale:**
- 90% of providers in MA are Medicaid
- Supports MMIS in several ways
  - One central repository for maintaining provider data
  - Provides intelligent search capabilities using current and historical demographics
  - Ensures up to date information reducing billing and claim errors
  - Facilitates coordinated care by linking with member data
  - Control the information shared and Audit information accessed
  - Enables members to locate a Medicaid provider
  - Improves analytics, detect and investigate any suspected fraudulent behavior
  - Maintains electronic and paper based communication preferences
  - Can be leveraged for HIE, Enables Medicaid provider to search for a specialist and send “direct” email

**Cost Allocation Approach**
- Cost allocated based on usage by SMHP projects

**Budget**
- DDI : $3.3M
- O&M : $619K

Note: Budget and cost allocation information is preliminary and will be updated with finalization of APD
3. Virtual Gateway Enhancements

Scope

- **AIMS** - Expand capacity of Access and Identity Management Service (AIMS) to support SMHP projects.
- **AIMS** - Migrate MMIS, CBHI and other related business applications to use new AIMS infrastructure (built using Oracle IdM).
- **PKI** – Setup Public Key Infrastructure (PKI) for Direct and future SMHP projects.
- **AIMS** - Integrate PKI with Access Manager in AIMS to support Two-factor authentication.
- **Gateway** – Expand capacity of XML Gateway and Enhance it to support B2B transactions
- **Gateway** - Enhance Clinical gateway for
  - Asynchronous transactions
  - To support MU Stage 2 and 3 use cases (Pull, Publish/subscribe)
  - Build centralized Audit, Logging and Monitoring solution
  - Enhance message security

Funding

- **MMIS**

Note: Budget and cost allocation information is preliminary and will be updated with finalization of APD
3. Virtual Gateway Enhancements (Cont'd)

Rationale:

- Virtual Gateway
  - VG, SOA based architecture, acts as the front-door for MMIS– All user and web service interaction goes through VG.
  - Provides Single sign-on - Medicaid Providers can use the same user id to access MMIS and HIE applications (e.g. Direct Web Mail)
  - Reusing/Extending the existing infrastructure to support HIE
- Clinical Gateway
  - Facilitates Medicaid providers to submit Immunization and bio-surveillance data to Public Health agency - to achieve Meaningful use objectives
  - Critical infrastructure to build Clinical data repository in phase 2.
  - Clinical repository (Phase 2) will be used for claims adjudication, analysis, treatment policy determination and fraud detection
  - Will be used by MMIS to receive medical documentation from Providers – Facilitates suspected fraud and improper payment investigation.
  - Will be used by MMIS to receive Prior Authorization requests with ASC12n 275 transaction with embedded HL7 – Helps MMIS to process PA request without manual intervention.

Cost Allocation Approach

- Cost allocated based on usage by SMHP projects
- PKI – follows subscription fee based model

Budget

- DDI : $5.67M
- O&M : $1.77M

Note: Budget and cost allocation information is preliminary and will be updated with finalization of APD
4. HL7 Application Interface – Syndromic Surveillance

**Scope**
- HL7 interface for Providers to submit Syndromic Surveillance to DPH in HL7 format

**Funding**
- SMHP

**Rationale:**
- Helps Medicaid provider to achieve MU Stage 1 criteria
- Support proactive Public Health initiatives
- Helps to build Clinical data repository in Phase 2

**Cost Allocation Approach**
- Requires Clinical Gateway Infrastructure – cost allocated based on usage.

**Budget**
- DDI : $2.85M
- O&M : $1.06M

*Note: Budget and cost allocation information is preliminary and will be updated with finalization of APD*
5. HL7 Interface – Children Behavioral Health Initiative (CBHI)

**Scope**

- HL7 interface for Providers and Managed Care Entities (MCE) to submit assessment reports in HL7 format for
  - Serious Emotional Disturbances (SED)
  - Child and Adolescent Needs and Strengths (CANS)

**Funding**

- MMIS

**Rationale:**

- Helps MMIS Functions
  - Early Periodic Screening, Diagnosis and Treatment (EPSDT) – performed for members under age 21
  - Claims
  - Allows MMIS to identify any discrepancies in claims processing

**Cost Allocation Approach**

- MMIS

**Budget**

- DDI : $1.93M
- O&M : $869K

*Note: Budget and cost allocation information is preliminary and will be updated with finalization of APD*