

**Massachusetts Department of Public Health
Project Narrative**

Funding Opportunity: CDC-RFA-IP11-1107PPHF11

Part I. Program Area I: Enhance interoperability between electronic health records (EHR) and Immunization Information Systems (IIS) and reception of HL7 standard messages in IIS

Background Information

The Massachusetts Immunization Information System (MIIS) is a project of the Massachusetts Immunization Program in the Bureau of Infectious Disease at the Department of Public Health. The MIIS was developed by the Massachusetts Immunization Program using the Consilience Software Maven platform, already in use as a disease surveillance system in MA, to assist immunization providers with consolidating immunization records and increasing immunization rates in Massachusetts. A reliable, 24/7 accessible, web-based system, the MIIS is currently available in production to providers and allows for state-wide consolidation and assessment of immunization records. Consolidation and assessment of records ensures accurate forecasting of current and future vaccines, resulting in fewer missed opportunities as well as less unnecessary over immunization. The following describes the progress related to the three primary components of the MIIS.

First, the Massachusetts Immunization Program received the Consilience Maven MIIS product in December 2009. Since then, the MIIS Information Technology team completed custom enhancements to the product to adapt it as necessary to meet the needs of Massachusetts and for full compliance with CDC IIS functional standards. The effort included requirements definition, design, implementation, testing, and deployment. Custom enhancements included updates to the user interface, business rules, and security model as well as custom reports to support statistical analysis of immunization coverage benchmarks set forth by the CDC. Many

custom reports have been developed and more are planned. The IT team completed database tuning and performance testing of the system and the Immunization Program staff completed User Acceptance Testing.

Second, the Immunization Forecast Module (IFM), a component of the MIIS, has been in use since 2007. The IFM is a stand-alone rules engine designed as a web-service to support immunization forecasting recommendations. The MIIS and other IT systems can interface with the IFM to receive accurate forecast recommendations. Updates to the IFM business rules are made regularly, and the 2011 ACIP guidelines are scheduled to be incorporated by May 2011. The IFM now includes significant updates to the patient's clinical comments (for example adverse reactions to vaccines) as well as the most current vaccine CVX codes and manufacturer names.

Finally, the MDPH, in collaboration with the Massachusetts Executive Office of Health and Human Services (EOHHS), has also designed and developed an HL7 Gateway. The HL7 Gateway allows external Electronic Health Record systems to send an HL7 2.5.1 Unsolicited Vaccination Update (VXU) message to the MIIS, and receives a technical acknowledgment of success or failure. The HL7 Gateway was developed using shared Commonwealth investments in the IBM WTX messaging platform and was designed for scalability, re-usability, configurability, and high performance. It is currently deployed to allow for "meaningful use" testing. The solution is fully compliant with ONC-endorsed EHR-IIS interoperability standards (Federal Register, Vol. 75, No. 8, January 13, 2010 page 2033, section viii

<http://edocket.access.gpo.gov/2010/E9-31216.htm>), CDC messaging standards (documented in *HL7 Version 2.5.1: Implementation Guide for Immunization Messaging, Release 1.2 Published*

2/15/2010 <http://www.cdc.gov/vaccines/programs/iis/stds/downloads/hl7guide-02-2011.pdf>),

AIRA-MIROW standards, and HL7 2.5.1 messaging standards (www.HL7.org), including utilizing proper message structure and transport security. The design and architecture of the HL7 Gateway makes it a strong foundation upon which to build future enhancements.

The MDPH has begun outreach to provider sites and the state Regional Extension Center to increase the utilization of enhanced EHR-IIS interoperability using HL7, so more provider sites will be able to transmit data automatically to the MIIS. With a high rate of EHR adoption within provider sites, Massachusetts has a strong health care and technology community. The MIIS team has held multiple meetings with several large practice and hospital systems to design and implement the HL7 data exchange interface. Testing the HL7 Gateway with pilot sites will be complete by May 2011. In addition, the program has been collaborating with MDPH Registry of Vital Records to establish data exchange specifications for transmission of birth record information into the registry.

For the three system components (the MIIS, IFM and HL7 Gateway), the MDPH identified the Commonwealth of Massachusetts' Virtual Gateway (VG) as the hosting provider. Four different environments (Development, System Test, Quality Assurance and Production) were created and the necessary hardware and software were installed in each to meet the MIIS project needs for development, testing and production level services. A Test Plan was created and includes unit, functional regression, smoke , integration , user acceptance, performance, vulnerability and ADA compliance testing. Before deployment to Production, the MIIS must adequately pass this testing regime. For redundancy and failover, the MIIS is deployed in a clustered environment and backed-up routinely, which enables the system to seamlessly switch

to failover servers in the event of a hardware failure.

In February 2011 the first version of the MIIS for providers' use was deployed to production in the Virtual Gateway. Pilot kick-off meetings were held March 14 and 15 for eight sites that do not have electronic medical records and will enter immunization data through the user interface.

Widespread Support and Collaboration. Understanding that the MIIS will be a long-term foundation upon which to build, MDPH designed and implemented it in close partnership with professional organizations and key stakeholders and focus groups. This included input from federal, state, local and private stakeholders including the American Immunization Registry Association (AIRA), the CDC, health advocacy and service organizations, hospitals and community leaders, the Massachusetts Chapter of the American Academy of Pediatrics' (MCAAP), the Massachusetts Academy of Family Physicians (MAFP), MassHealth (state Medicaid agency), school health, local public health, the MDPH maternal and child health program, WIC, the Massachusetts eHealth Institute (Regional Extension Center or REC), and other health advocacy, service and professional organizations.

In addition, MDPH has collaborated with other MDPH Bureaus and MA Executive Office of Health and Human Services (EOHHS) in sharing the cost of implementing and hosting the IT infrastructure. This "shared services" approach ensures that many organizations who have a common technology need can also share the utilization and cost of the infrastructure.

Building on this progress and the strength of the project team, MDPH has a clear strategy for increasing the utilization and availability of the MIIS and its interoperability. One of the primary goals of this strategy is to enhance the interoperability between existing electronic health records (EHR) systems used by health care providers and the MIIS. Due to 1) the successful

launch of the MIIS, 2) the collaborative and strong capacity and support of the system, 3) the state-of-the-art technical design, and 4) the ongoing roll-out activities of EHR interoperability to an engaged provider site community, Massachusetts is in a strong position to realize significant benefits from further investments in enhanced EHR interoperability.

Implementation Plan

MDPH will continuously refine and enhance the MIIS' interoperability functionality and increase the number of providers utilizing the MIIS. The goals of these enhancements include the following:

1. Enhance functionality of the HL7 Gateway and increase its utilization
2. Collect baseline data to measure: 1) The number of enhanced EHR-IIS practice-based electronic interfaces available, 2) The number of practice-based electronic immunization transactions reported/timeframe (week/month) to the IIS, 3) The number/proportion of practice-based immunization data received and recorded in an IIS within 30 days or less
3. Collect post-implementation data to measure success
4. Improve completeness of immunization histories available to clinicians and public health
5. Increase in the proportion of children from birth through five years of age enrolled in the IIS and with two or more immunization recorded in the IIS until 95% or more of 0-6 year olds are enrolled in the geopolitical area in the MIIS. (IPOM 3.1a)
6. Improve timeliness of immunization data submission to the MIIS, quality of IIS coverage assessments and data available to other public health systems
7. Enhance clinical decision support including: 1) assisting providers with decision making to ensure that children are up-to-date with their immunizations, 2) identifying

unimmunized and under-immunized children, 3) reducing over-immunization of children thereby reducing vaccine waste

Objectives and Tasks, Timeline and Evaluation Criteria

To achieve these goals, the MDPH has identified the following objectives and tasks to be performed during the grant period of this funding award. (Please note that in all cases, this narrative assumes a grant award date of July 1, 2011):

Objective 1: Roll-out HL7 Data Exchange with at least 50 provider sites

The MDPH will continue its roll-out of interoperability with provider site EHRs. The MIIS and HL7 Gateway enable providers to meet one of the public health objectives within ONC's "meaningful use" criteria, so the enhanced MIIS interoperability support will complement this existing initiative and support health care providers.

MDPH will work with a number of key stakeholders to gather feedback on materials and processes, as well as outreach to and prioritize the roll-out of provider sites. Key stakeholders will include the Massachusetts Chapter of the American Academy of Pediatrics (MCAAP), the Massachusetts Academy of Family Physicians (MAFP), MassHealth (state Medicaid agency), school health, local public health, the MDPH maternal and child health program, WIC, the Massachusetts eHealth Institute (Regional Extension Center or REC), and other health advocacy, service and professional organizations.

MDPH will utilize a phased roll-out approach, and build from the lessons learned and existing documentation from the work already completed. Numerous roll-out related documents have been developed, including a roll out plan, policy documents, training videos, outreach flyers, help desk strategy and email communications. Provider training materials have been

developed, and a help desk was established to support end users. In engaging and supporting provider sites, MDPH will focus on customer service and follow a pre-defined process to ensure success. At a high level, the process will include: 1) Initial Outreach 2) Training and Documentation 3) Technical Support 4) Testing and Evaluation 5) Promotion to Production and 6) Ongoing Support. The following table lists the planned steps for this roll-out. The enhanced roll-out is expected to enable MDPH to ensure that approximately 2 million immunization records from at least 50 provider sites become a part of the MIIS by June 2013.

The following represent large, high-volume immunization provider practice networks that are initially targeted for enhanced EHR as part of this work effort (the attached master list of EHR vendors provides additional details about the provider and EHR vendor community in Massachusetts).

- Atrius Health (<http://www.atrusheralth.org/>).
- Beth Israel Medical Center (<http://www.bidmc.org/>).
- Boston Medical Center (<http://www.bmc.org/>).
- New England Health Exchange Network (NEHEN) (<http://www.nehen.net/>). NEHEN is a Health Information Exchange network which connects multiple provider sites.

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
1) Develop Staffing Plan necessary to form MIIS Interoperability Roll-out Team to implement interoperability enhancements. Staffing Plan will	July 1, 2011 to July 31, 2011	Fully staff Interoperability Roll-out Team by amending contracts to incorporate the proposed full time	Doreen Corban, Beth English, Pejman Talebian and Dr. Susan Lett

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
<p>include adding the following contracted full time positions to augment the existing team:</p> <ul style="list-style-type: none"> • Roll-out IT Implementation Technician • Quality Assurance and Data Quality Analyst 		<p>positions to augment the existing team:</p> <ul style="list-style-type: none"> • Roll-out IT Implementation Technician • Quality Assurance and Data Quality Analyst 	
<p>2) Write and distribute outreach documents and materials</p> <ul style="list-style-type: none"> • Write documents including presentations, outreach collateral soliciting involvement and providing updates, Communication Strategy describing the outreach and customer relations approach, and brochures 	<p>July 1, 2011 to September 30, 2011</p>	<p>Completed outreach documents. Documents signed-off for acceptance by key stakeholders, including Massachusetts Immunization Program and project collaborators.</p>	<p>Lynette Mascioli, Liesl Bradford, and Interoperability Outreach Coordinator</p>
<p>3) Complete initial rounds of outreach to key stakeholders including phone calls, emails, and presentations</p>	<p>October 1, 2011 to October 28, 2011</p>	<p>Completed initial outreach and formal documentation capturing results of outreach</p>	<p>Lynette Mascioli, Liesl Bradford and Interoperability</p>

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
<ul style="list-style-type: none"> Create list of interested provider sites Outreach to EHR vendors in collaboration with REC 		efforts, including a list of providers and their interest.	Outreach Coordinator
<p>4) Perform provider site surveys and identifying sites to be enhanced, prior to and during implementation.</p> <ul style="list-style-type: none"> Update and analyze existing survey information Prioritize provider site implementation approach Complete readiness survey of provider sites to ensure they have proper IT and staffing resources assigned and executive sponsorship 	October 1, 2011 to October 28, 2011	<p>Completed prioritized list of provider sites for implementation of enhanced interoperability.</p> <p>Prioritization of EHR provider sites will be based on EHR record volume, site readiness and site capacity.</p> <p>Completed readiness assessment of provider sites.</p>	Interoperability Outreach Coordinator and User Support Associate
<p>5) Develop and modify documents and manuals to support end users during the implementation</p> <ul style="list-style-type: none"> Distribute existing documentation 	July 1, 2011 to September 30, 2011	Completed documents and manuals applicable to the implementation effort. Documents	Karen Yee, Max Milendorf, Dr. Bill Adams

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
<ul style="list-style-type: none"> Contact key stakeholders and incorporate their feedback Modify documents including HL7 interface specifications, training documents, Frequently Asked Questions List, Security Documents, Provider Site Agreements and Legal Consent Forms 		signed-off by key stakeholders including Massachusetts Immunization Program and project collaborators.	
6) Develop testing protocols, including Test Plan, identification of testing tools, and sample test messages. <ul style="list-style-type: none"> Meeting with stakeholders Creating test messages Create testing protocols Analyze test protocols to ensure complete testing coverage 	August 1, 2011 to October 28, 2011	Completed Test Plan, including protocols, identification of testing tools, and sample test messages. Documents signed-off by key stakeholders.	Afreen Syed, Vahini Pandiarjan and QA and Data Quality Analyst
7) Develop an Evaluation Plan for enhanced interoperability, including the criteria used to measure	November 1, 2011 to December	Completed Enhanced Interoperability Evaluation Plan,	Max Milendorf, Afreen Syed and Vahini

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
<p>interoperability success with EHR systems, and the process for monitoring data quality. The Plan will be based on national standard guidelines including those from AIRA-MIROW</p> <ul style="list-style-type: none"> • Document evaluation criteria for successful enhanced interoperability connectivity. • Evaluate and measure transmissions and conduct data review against pre-defined testing plan and test scripts • Identify effective technical approaches and communication techniques 	30, 2011	including the criteria used to measure interoperability success with EHR systems and the process for monitoring and control to ensure data quality.	Pandiarjan
8) Collect provider data lists for pre- and post-enhancement benchmarking for all measurable outcomes included within this narrative and using CDC and ARRA	Ongoing July 1, 2011 to June 30, 2013	Completion of necessary reports on provider data pre-enhancement of interoperability Completion of necessary	Afreen Syed, Vahini Pandiarjan and QA and Data Quality Analyst

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
<p>HITECH 317 grantee-developed variables.</p> <ul style="list-style-type: none"> Identify key data reporting metrics, and compare and analyze pre-enhancement reports with post-enhancement reports on a provider-by-provider basis and in aggregate. 		<p>reports on provider data</p> <p>post-enhancement interoperability</p>	
<p>9) Train implementation team</p> <ul style="list-style-type: none"> Conduct necessary training for new team members on HL7 messaging, provider site high level business practices, MIIS system navigation and enhanced interoperability approach 	<p>July 1, 2011 to October 28, 2011</p>	<p>Completed training for all new team members, as necessary</p>	<p>Liesl Bradford and Interoperability Outreach Coordinator</p>
<p>10) Prepare site facilities for implementation</p> <ul style="list-style-type: none"> Generate provider site pre- and post-enhancement benchmarking data Determine training needs for EHR 	<p>Ongoing July 1, 2011 to June 30, 2013</p>	<p>Completed reports on provider data pre-enhancement of interoperability</p> <p>Completed reports on provider data post-</p>	<p>Max Milendorf and Interoperability Implementation Technician</p>

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
<p>and provider site personnel and provide training</p> <ul style="list-style-type: none"> Implement test protocols to ensure verified implementation of interoperability specifications at each site Provide presentations to provider site technical and programmatic staff 		<p>enhancement</p> <p>interoperability</p> <p>Completed profiles of provider site training needs</p> <p>Completed presentations to provider site technical staff</p>	
<p>11) Provide technical assistance to providers and EHR vendors, such as jointly developing project plans with timelines</p> <ul style="list-style-type: none"> HL7 Message creation HL7 Message transmission Monitor load and performance on system to ensure adequate hardware, and software resources 	<p>Ongoing</p> <p>July 1, 2011 to June 30, 2013</p>	<p>For each provider site:</p> <p>Completed Enhanced Interoperability Timeline for each provider site</p> <p>Completed HL7 Message creation</p> <p>Completed HL7 Message transmissions</p>	<p>Max Milendorf and Interoperability Implementation Technician</p>
<p>12) Ensure verified implementation of EHR-IIS interoperability specifications at each</p>	<p>Ongoing</p> <p>July 1, 2011 to</p>	<p>Provider site utilizing enhanced interoperability in</p>	<p>Max Milendorf and Interoperability</p>

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
provider site <ul style="list-style-type: none"> Promote successful providers to Production and sign-off that evaluation criteria met 	June 30, 2013	production environment	Implementation Technician
13) Monitor Data Quality and provide ongoing customer support <ul style="list-style-type: none"> Update Operational Plan with contact information, escalation procedures, issue triage protocols, communication plan and support service levels 	Ongoing July 1, 2011 to June 30, 2013	Completed data quality reports and operational documentation	Interoperability Implementation Technician, and QA and Data Quality Analyst
14) Participate in all required grant activity including project calls and meetings (both teleconference and/or face-to-face meetings in Atlanta GA), and all necessary progress reporting	Ongoing July 1, 2011 to June 30, 2013	Attendance and participation in meetings and their follow-up activities	Meeting attendees may vary based on agenda

Objective 2: Design, develop and deploy next version of HL7 Gateway infrastructure with enhanced interoperability functionality.

The MDPH has a clear plan for improvements to the MIIS, including enhancements to the

interoperability functionality. The MDPH will design, implement and test a new version of the MIIS which will include the following enhanced interoperability functionality:

- Implement ability to transmit data bi-directionally so that external EHR systems can query the MIIS for a full history of a patient's immunization record
- Implement support to import large amounts of existing legacy data at provider sites (in contrast to the current real-time messaging support)

To design and develop these enhancements, MDPH will utilize an iterative and industry standard System Development Life Cycle, called the Unified Process. This process includes the following phases: 1) Inception, 2) Elaboration, 3) Construction, 4) Testing. To ensure that stakeholder input and approval is included within the process, the development team requires sign-off of documentation and user acceptance testing throughout the development lifecycle. The following table lists the planned steps for this development effort and follows the standard MDPH development process.

Furthermore, all development is and will be fully compliant with ONC-endorsed EHR-IIS interoperability standards (Federal Register, Vol. 75, No. 8, January 13, 2010 page 2033, section viii <http://edocket.access.gpo.gov/2010/E9-31216.htm>), CDC messaging standards (documented in *HL7 Version 2.5.1: Implementation Guide for Immunization Messaging, Release 1.2* Published 2/15/2010 <http://www.cdc.gov/vaccines/programs/iis/stds/downloads/hl7guide-02-2011.pdf>), standards of AIRA-MIROW, and HL7 2.5.1 messaging standards (www.HL7.org), including utilizing proper message structure and transport security.

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
1) Develop Staffing Plan	July 1,	Fully staff	Doreen Corban,

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
<p>necessary to form MIIS Implementation Team to implement new interoperability enhancements functionality in the MIIS. Staffing Plan will include adding the following additional contracted positions to augment the existing team:</p> <ul style="list-style-type: none"> • MIIS HL7 Software Developer • MIIS Business Analyst 	2011 to July 31, 2011	<p>Interoperability Roll-out Team by amending contracts to incorporate the following additional full time positions to augment the existing team:</p> <ul style="list-style-type: none"> • MIIS HL7 Software Developer • MIIS Business Analyst 	Beth English, Pejman Talebian and Dr. Susan Lett
<p>2) Project Kick-off and Preparation</p> <ul style="list-style-type: none"> • Ensure project team has access to project document repository (MassForge), development issue tracker (JIRA), development IT environments and source code repository. • Establish Focus Groups of key Stakeholders 	July 1, 2011 to July 31, 2011	<p>All project team members have access to necessary project tools and documentation. Completed kick-off documentation which describes team roles and key stakeholders.</p>	Karen Yee and Aakash Ganveer
3) Complete Vision	July 1,	Completed Vision	Karen Yee and

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
<p>Documentation to describe the high level functionality and implementation approach for the MIIS, including the system's scope, risks and implementation timeline.</p> <ul style="list-style-type: none"> • Hold design session meetings with key stakeholders • Obtain sign-off on Vision and Scope 	2011 to August 31, 2011	<p>Document and Scope Documents signed-off by key stakeholders including Massachusetts Immunization Program and project collaborators.</p>	Aakash Ganveer
4) Create and maintain project plan and timeline	Ongoing July 1, 2011 to June 30,, 2013	<p>Completed baseline project plan signed-off by key stakeholders</p> <p>Project Plan updated weekly for review and feedback by key stakeholders.</p>	Max Milendorf and John Schaeffer
<p>5) Complete MIIS Enhanced Interoperability Requirements Document</p> <ul style="list-style-type: none"> • Meet with key stakeholders to obtain input 	August 1, 2011 to December 31, 2011	<p>Completed Requirements Document. Document signed-off by key stakeholders including</p>	Karen Yee, Dennis Michaud, Dr. Bill Adams and Aakash Ganveer

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
<ul style="list-style-type: none"> Define future workflow processes, updates to functionality, and necessary new system fields and code tables Define systemic requirements (e.g. performance, scalability, etc.) 		Massachusetts Immunization Program and project collaborators.	
6) Complete system design for enhanced interoperability update <ul style="list-style-type: none"> Design and document system architecture to meet system requirements 	December 1, 2011 to February 29, 2012	Completed System Architecture Document for use by the software development team members.	Saravana Kannan and Siva Challa
7) Complete Development <ul style="list-style-type: none"> Write software code to meet the functional and service level requirements Unit test software code to confirm proper functionality Deploy new source code into source code repository and on development version of MIIS 	January 1, 2012 to October 31, 2012	Completed software development for all new enhanced interoperability features.	Saravana Kannan, Siva Challa, Vinay Hoolooman, and Kiran Kumar

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
8) Complete QA testing including functional testing, load testing and performance testing <ul style="list-style-type: none"> • Write QA Test Plan • Write Test Cases • Conduct testing • Document test results • Work in collaboration with development team to troubleshoot identified issues 	August 1, 2012 to December 31, 2012	Completed Test Result documentation. Sign-off by key stakeholders that the enhanced interoperability functionality operates as specified and meets the documented requirements.	Afreen Syed and Vahini Pandiarjan

Objective 3: Upgrade infrastructure software

The enhanced interoperability functionality of the MIIS will require the provisioning of necessary Commercial Off the Shelf (COTS) software licenses from Consilience Software. This will need to support enhanced MIIS functionality and increased load on the system.

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
1) Procure necessary COTS Software maintenance licenses and change request enhancements (for example enhanced de-duplication for interoperability and enhanced	Ongoing July 1, 2011 to June 30, 2013	All necessary licenses and feature enhancements for COTS software is purchased and complete	Doreen Corban

bi-directional interface)			
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Objective 4: Enhance Hosting Hardware and Operations

The MIIS is hosted in the Commonwealth's Virtual Gateway hosting environment, as opposed to outsourced to a private vendor. The MDPH will work with the Virtual Gateway to ensure that the current hosting infrastructure is enhanced and maintained to meet the performance and data load requirements of enhanced interoperability.

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
1) Provision necessary hardware based on Deployment Plan for enhanced interoperability <ul style="list-style-type: none"> Identify and purchase necessary hardware to meet the load and performance needs of enhanced interoperability, including reporting server for generating reports on transmitted data 	Ongoing July 1, 2011 to June 30, 2013	All necessary hardware is set up to support the enhanced interoperability	Doreen Corban, Max Milendorf and Saravana Kannan
2) Develop and update Staffing Plan necessary to support hosting operations for the MIIS enhanced interoperability	Ongoing July 1, 2011 to June 30,	Completed Staffing Plan Finalization of hosting operations support for the MIIS to ensure	Doreen Corban, Max Milendorf and Saravana Kannan

Major Tasks and Sub Tasks	Timeline	Evaluation Criteria	Staffing Plan
<ul style="list-style-type: none"> Retain hosting operations support including 24x7 availability, internet, electrical, secure hosting facility and shared services for virus scanning and single sign-on 	2013	proper support to meet the enhanced interoperability functionality and additional system load.	
3) Document hosting Service Level Agreement with hosting provider which defines the necessary response times and support for the MIIS	Ongoing July 1, 2011 to June 30, 2013	Completed hosting Service Level Agreement.	Max Milendorf and Saravana Kannan

Staffing Plan and Capacity

As outlined in the Budget Justification, this grant will support the addition of the following staff:

1 full-time MIIS Interoperability Outreach Coordinator and 1 part-time User Support Associate hired through a contract with John Snow Inc. (JSI). MDPH currently has a contract with JSI for MIIS user support and roll out activities therefore this additional funding will supplement the existing contract. The grant will also support 1 full-time Developer, 1 full-time Quality Assurance and Data Quality Analyst, 1 full-time Interoperability Roll-out Implementation Technician, and 1 part-time Business Analyst hired through a contract with Strategic Solutions Group (SSG). MDPH currently has a contract with SSG for IT project management, IT systems

development and QA therefore this additional funding will supplement the existing contract. In addition to the new staff support by this grant, existing staff will provide overall project management, technical expertise, and support for all activities outlined in this application. The following identifies and describes existing individuals and teams providing support and oversight to the MIIS project:

1. Dr. Susan Lett, Medical Director and Program Manager, Immunization Program. Susan M. Lett, MD, MPH has been the medical director of the immunization program at the Massachusetts Department of Public Health for 23 years and the program manager for over 10 of those years. She is a former member of the both the Advisory Committee on Immunization Practices (ACIP) and the National Vaccine Advisory Committee (NVAC). She has written many articles and given numerous presentations about immunizations. She was recently invited to participate on CDC's Clinical Decision Support (CDS) Expert Panel for immunization registries.

2. Dr. Bill Adams, Clinical Informatics Consultant, MCAAP. Dr. Bill Adams is a general pediatrician, medical informatician. He is an Associate Professor and Director of Child Health Informatics at the Boston University School of Medicine. He has personally developed two pediatric electronic health records and has extensive experience in the development and implementation of electronic health systems for children. He has worked with Dr. Lett and the MA DPH for over 10 years and is on the National AAP Child Health Informatics Center Advisory Council.

3. Operations and Planning Team, led by Pejman Talebian, Deputy Director for Policy and Planning and Beth English, Deputy Director for Operations. Pejman Talebian has over 13 years of state immunization program management experience and has worked on immunization

policy and planning on both the state and national level. He is a former Chair of the Association of Immunization Managers (AIM) and current member of the AIM Executive Committee. Beth English has extensive experience in contract management, budget development and monitoring, and state and federal reporting.

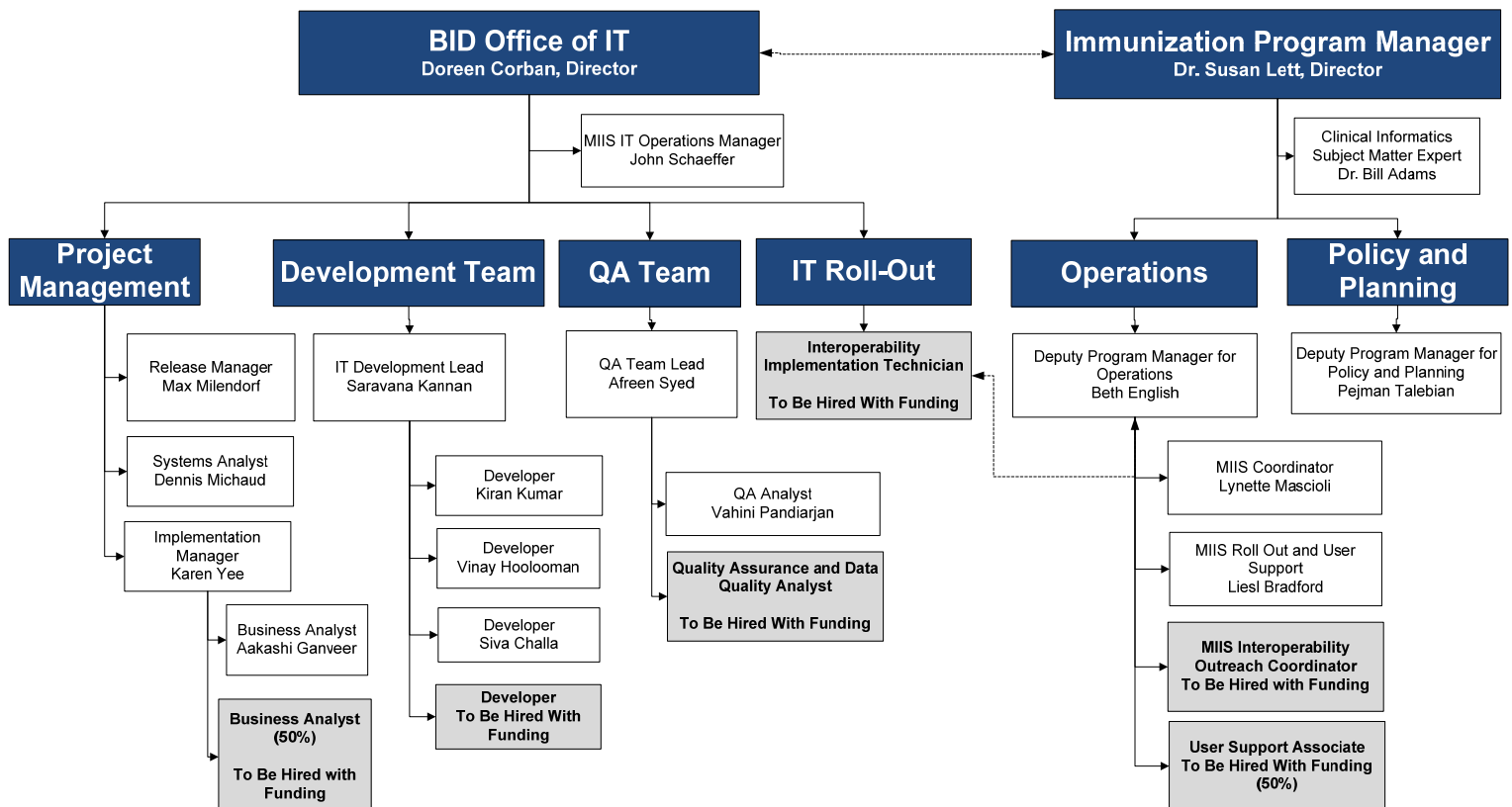
4. Doreen Corban, Director of IT, Bureau of Infectious Diseases. In managing all IT infrastructure and projects for the Bureau of Infectious Disease, Doreen Corban coordinates the efforts of the MIIS with similar projects. Her experience managing IT teams and budgets, establishing system development lifecycles, and cross-functional knowledge of public health systems ensure success of the IT implementation and provides strong leadership for the IT team.

5. Project Management and Requirements Definition Team, led by John Schaeffer and Max Milendorf. The Project Management and Requirements Definition Team has over 20 years of IT PM and BA experience, in addition to extensive knowledge of HL7 standard messaging, immunization forecasting requirements, and IIS programmatic goals and requirements. Some team members have worked on MIIS activities since 2001 and with HL7 messaging since 2003, including the design and implementation of HL7 Gateway infrastructure for McKesson Pharmaceuticals and local public health.

6. Development Team, led by Saravana Kannan. The Development team is composed of professionals with proven experience in J2EE applications and HL7 standard messaging. The IT architecture leverages robust platform tools, including IBM WTX, and follows industry standard design practices for Services Oriented Architectures, including appropriate separation of application layers and loosely coupled, web service based system interfaces.

7. Quality Assurance Team, led by Afreen Syed. The Quality Assurance team has a strong technical background and performs a thorough suite of test cases for unit, regression, performance, vulnerability, ADA, and load testing. The team utilizes Load Runner, JAWS, SOAP UI and testing automation to ensure high code coverage and consistent, repeatable testing practices.

Most importantly, all of the MIIS teams work very closely together in collaboration with each other. The teams are physically located on the same floor and hold frequent standing and ad-hoc meetings to address the multi-dimensional challenges in implementing the MIIS and EHR interoperability. The following organizational chart identifies the current staff resources to support the MIIS. The funding requested will be used to provide an additional 4 contracted full-time positions and 2 contracted part-time positions which are indicated by shaded boxes.



Sustainability Plan

MDPH understands the importance of sustainability to ensure that MIIS-EHR interoperability improvements will continue to be deployed, installed and transitioned into provider sites after the period of performance for this project funding ends. The Sustainability Plan for the MIIS and EHR interoperability is grounded in the following four areas:

Experience of MIIS Programmatic and IT Teams. The MIIS Programmatic and IT team has a tremendous amount of experience and expertise regarding Immunization Information Systems and IT development best practices. With team leaders who have worked on the MIIS since its inception, the project team is well positioned to continue sustained growth and success (see Staffing Plan and Capacity section for details regarding existing MIIS team).

Executive support and multiple funding sources. To meet growing project demands, the MIIS project is funded through multiple funding sources. The MIIS team has been strong advocates for the importance of the system and been awarded funding from the following sources:

1. State funding. Legislation has been filed (H348) B to assess health plans for the operating costs of the immunization registry. There is broad support for this bill from MDPH, the administration, provider community as well as the health plans themselves. Also, ongoing state funding supports Dr. Lett's salary as well as the existing user support associate and clinical informatics consultant contracts.
2. ARRA federal grants funding.
3. CDC immunization grant funding.

These multiple funding sources increase the sustainability of the MIIS program, since reductions in any one funding source will not terminate all project activities.

Collaboration with internal and external partners. The MIIS project team has ensured that the activity of the project has the support and input from many partners both internal and external to the Massachusetts Executive Office of Health and Human Services. The project team has received input from federal, state, local and private stakeholders such as the American Immunization Registry Association (AIRA), the CDC, other health departments, health advocacy and service organizations, hospitals and community leaders, the Massachusetts eHealth Institute, and the Massachusetts Chapter of the American Academy of Pediatrics' (MCAAP) and other professional organizations. This ensures that the MIIS strategy and long term vision are in line with these key project stakeholders, a key to long term sustainability. In addition, MDPH has collaborated with other MDPH and MA Executive Office of Health and Human Services (EOHHS) in sharing the cost of implementing and hosting the IT infrastructure of the MIIS. For example, the interoperability infrastructure (named the MA HL7 Gateway) was developed as a “shared services” for use by more than just the MIIS in processing HL7 messages. This “shared services” approach supports sustainability in that many organizations who share a common technology need can all utilize shared infrastructure and thus share costs to reduce the financial burden on each individual program.

Project Monitoring and Evaluation. The MIIS IT and Programmatic teams will continue to monitor and evaluate project performance and interoperability with providers using EHR systems. As such, MDPH will document lessons learned during the implementation phases. This will enable MDPH to streamline and adjust the roll-out and implementation process

to reduce the cost and increase the quality of establishing enhanced interoperability interfaces.

Massachusetts Department of Public Health

Project Narrative

Funding Opportunity: CDC-RFA-IP11-1107PPHF11

Part I. Program Area 2: Develop a vaccine ordering module in IIS that interfaces with CDC's VTrckS vaccine ordering and management system

Background

The Massachusetts Immunization Information System (MIIS) is a project of the Massachusetts Immunization Program in the Bureau of Infectious Disease at the Massachusetts Department of Public Health (MDPH). The MIIS was developed by the Massachusetts Immunization Program using the Consilience Software MAVEN platform to assist immunization providers with consolidating immunization records and increasing immunization rates in Massachusetts. In early 2011, the MDPH completed implementation of the MIIS including deployment of the system to production and an initial roll-out phase to end users.

The MIIS is a secure and confidential, web-based system whose benefits and features include:

- Track vaccinations administered to the Massachusetts population, including lot number
- Meet ONC “meaningful use” criteria
- Exchange data with existing EHR systems for improved timeliness and accuracy of data
- Provide clinical decision support tools such as an Immunization Forecasting Module which automatically identifies when children and adults are due for their next vaccines
- Enhance emergency and pandemic response capabilities
- Improve and streamline Massachusetts Immunization Program operations

Understanding the tremendous value of Immunization Information Systems (IIS) to the

health and well-being of the public, MDPH has formulated and is committed to a clear strategy for increasing the utilization and functionality of the MIIS. One of the primary goals of this strategy is the development of a comprehensive vaccine management system which includes a vaccine ordering module that interfaces with VTrckS. This module will enable MDPH to better monitor and track over \$115 million worth of MDPH-purchased vaccines that are distributed annually to Massachusetts providers, and enable provider sites to more easily order vaccine and manage their vaccine inventories to reduce vaccine wastage.

Currently, MDPH utilizes CDC's Vacman system for provider registration and central vaccine ordering, and maintains a hybrid paper/computer-based system for vaccine ordering and accountability. Vaccine orders and usage are faxed to the MDPH Vaccine Unit who then scan the data into a database for analysis and report generation, and also manually enter the summary order information into Vacman. This current system supports over 3,000 provider sites who receive over 3.4 million doses of MDPH-supplied vaccines annually.

Additionally, last flu season, the MDPH utilized an online web-based vaccine ordering and usage system to support the H1N1 vaccine distribution to the provider community. The system enabled web-based registration and usage reporting by over 4,400 provider sites in Massachusetts which would not have been possible to implement in an efficient and timely manor utilizing the existing system for routine vaccines.

The MIIS infrastructure utilizes state-of-the-art IT design approaches and best practices which meet the ONC "meaningful use" criteria. One key component of the current MIIS is a web services based design approach which allows for easier integration with external systems.

As such, the MIIS is a strong foundation upon which to build future enhancements like this interface. The MIIS in Massachusetts is a new system, utilizing current technology platforms and design approaches, so an investment in a vaccine management module with a VTrckS interface will be a long term investment on a strong foundation of technology.

Due to the direct distribution of vaccine to provider sites and the strong existing web-base IT systems, Massachusetts presents a unique opportunity to leverage this VTrckS interface and realize significant benefits to public health.

Development Plan

This grant opportunity will provide support for the ongoing design and development work necessary to implement a vaccine ordering, provider management, and vaccine inventory management solution within the MIIS. This solution will be implemented in two distinct phases. Both phases of the project will begin with the creation of a Vision Document which will describe the high level functionality and implementation approach for the MIIS, including the system's scope, needs analysis, risks and implementation timeline. Phase 1 will include the development of two modules within the MIIS: a provider management module and a vaccine ordering module. Development work for these modules, which will be integrated into release 3.0 of the MIIS, will begin by July 2011 with an anticipated completion date of April 1, 2012. A comprehensive vaccine inventory management and ordering module had been developed in the prior iteration of the Maven-platform MIIS that was taken off line in 2008. As part of this Phase 1 development effort, the original requirements and use cases developed for the vaccine

ordering and provide management modules will be used as the basis for the new requirements. Requirements will also include future workflow processes, updates to functionality, new system fields and code tables, and systemic and service level requirements (e.g. performance, scalability, contingency/disaster recover plan, etc.). In addition, requirements, use cases, screen shots, and sample report outputs will be gathered from several other existing IIS that currently have a fully functional inventory management and vaccine ordering system including Michigan.

The new provider management and vaccine ordering modules will have, at a minimum, the same functionality and reporting capabilities as Vacman in addition to the new functionality and reporting capabilities in VTrckS. Functionality will include but not be limited to:

- tracking provider demographics including shipping information and VFC practice profile data;
- allowing providers to place vaccine orders directly in the MIIS Graphical User Interface (GUI);
- vaccine review and approval screens for state level users;
- vaccine order approval algorithm which factors in the MDPH's spend plan;
- ability to receive shipping information and displaying for providers;
- ability to enter supporting documentation required by Massachusetts for all vaccine orders such as a doses administered report, report of doses lost or expired, and temperature logs;
- ability to generate a date and unique order ID for each order;

- generate a unique line number for each item in an order;
- associate a National Drug Code (NDC) with each item in an order;
- associate a VFC PIN with an order ID;
- associate a priority reason with a priority order;
- associate an ordering intention with an order;
- associate a funding code with a direct ship order;
- associate a state purchase order number with an order;
- ability to export master provider data, inventory information, and orders per the VTrckS ExIS Interface Specifications; and
- ability to import shipment information from VTrckS for use by both state users and providers.

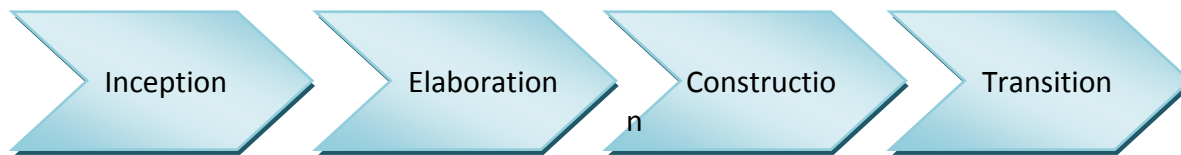
All development work will be performed in accordance with CDC and VTrckS specifications as outlined in the latest version (currently V4) of the *VTrckS ExIS Integration: File Specifications and Additional Information* and any other specifications to be provided by CDC.

Simultaneous to the development work for phase 1, the software vendor for the MIIS's core platform Maven (Consilience) is currently working on the development of a generic inventory management module within the core Maven application with a target deployment date of January 1, 2012. During Phase 2, Massachusetts will take this inventory management module and customize it for all the required use cases to handle a comprehensive vaccine inventory management system. Requirements will be developed using the prior requirements and development worked performed in 2007-2008 in addition to additional requirements, use

cases, screen shots, and sample report outputs gathered from other fully functional systems including Michigan. As with Phase 1, requirements will also include future workflow processes, updates to functionality, new system fields and code tables, and systemic and service level requirements (e.g. performance, scalability, contingency/disaster recover plan, etc.). Anticipated completion of this development effort will be July 1, 2013.

The new vaccine inventory management module will be fully integrated into the other three modules of the MIIS: Vaccine Administration, Provider Management, and Vaccine Ordering. The module will allow for comprehensive inventory tracking by NDC, lot number, expiration date, and funding source. The module will allow for tracking of both state-supplied and privately-purchased vaccine. It will allow for automatic decrementing of vaccine from inventories as it is entered as administered in the vaccine administration module, while also allowing for tracking of vaccine usage on an aggregate level for shots not fully documented in the MIIS vaccine administration module. The system will include mechanisms to reduce vaccine waste by creating reminders for providers as inventories are getting close to expiration. Some of the development work will include modification of the current vaccine administration module to allow for selection of vaccine lots that are currently in inventory and to track vaccine doses administered at the NDC level in addition to the lot number and expiration level as currently designed. The new module will also enable more thorough and comprehensive vaccine accountability tracking at the state level of all provider sites receiving state supplied vaccine.

To design and develop both phases of this project, MDPH will utilize a phased System Development Life Cycle, as shown in the illustration below.



Each phase has a set of corresponding activities and deliverables which are described below at a high level.

Inception

- Vision Document is finalized by the end of this phase.
- Architect team works with the business and project manager to understand what to build.
- Architect, QA, business and project teams agree on key system functionality.
- Project manager identifies the cost, schedule and risks.
- Phase-gate reviews are held on architecture and methodology.
- Stakeholders agree to move ahead.

Elaboration (iterative)

- Project manager drives a more detailed understanding of requirements.
- Business Analyst creates use cases and workflows.
- Project manager mitigates technical risks.
- Baseline architecture is established.
- Project manager ensures all stakeholders understand what it takes to build the system.
- Phase-gate reviews are held on project performance, architecture and methodology.

Construction (iterative)

- Project team builds iterative versions of the product.
- Code drop reviews conducted against predefined checklists.
- Promotion dates are negotiated with the Enterprise Change Control Board.
- Phase-gate reviews are held on project quality, architecture and methodology.

Transition

- Final version of the product is built and implemented.
- Phase-gate reviews are held on the product (application's) readiness, architecture and methodology.
- Application is moved through testing environments:
 - Desktop (Integration testing)
 - Development environment
 - System Testing
 - Quality Assurance
 - Production
- Go/No-Go cross discipline readiness assessment and decisions.

Implementation Plan

Pilot implementation of the vaccine ordering module will begin in July 1, 2012. Initial pilot users will include a combination of existing users of the MIIS graphical user interface (GUI) and former VPOP provider sites (VPOP was the earlier generation of VTrckS). Massachusetts was an active participant in the early phases of VTrckS and had over 50 provider practices entering vaccine orders into VPOP for over a year. Since the end of the VPOP project those sites have reverted to paper vaccine ordering (via fax) but many are anxious to return to some form of online ordering. Training for initial pilot users will be in the form of both in-person group trainings sessions, webinars, and online training modules.

After a 2-3 month pilot phase, MDPH will gather feedback and recommendations from pilot users and will inform the development team of potential enhancements and bugs. All

bugs will be prioritized for development work prior to further roll out of the system. After all bugs are reconciled, MDPH will begin rolling out the vaccine ordering module to all current users of the MIIS GUI who are also recipients of MDPH-supplied vaccines. This phase will take an additional 3-4 months. After this phase all remaining providers that currently receive MDPH-supplied vaccines will be recruited to become MIIS users at least for the purpose of online vaccine ordering. Training during statewide rollout of the vaccine ordering module will primarily be in the form of webinars and online trainings modules supplemented with in-person group trainings as needed. The goal is to have the majority of recipients of MDPH-supplied vaccines using the MIIS for vaccine ordering by July 2013. Those sites that order vaccines less than four times a year will be allowed to enter orders online but will not be required to. These sites will still be able to order vaccines using the existing paper-based system, and MDPH Vaccine Unit staff will enter their orders for them into the MIIS.

Implementation of the MIIS interface with VTrckS is dependant on VTrckS readiness to begin testing additional interfaces. However, it is anticipated that the MIIS will be ready to begin testing such an interface by June 2012. Until such time as the link between the MIIS and VTrckS has been established the MDPH Vaccine Unit will continue entering vaccine orders gathered from either the existing paper-based vaccine ordering system and/or the MIIS online ordering system into Vacman. Once MDPH has transitioned to VTrckS all provider orders that are still being received via fax will be entered into the MIIS by Vaccine Unit staff and transmitted to VTrckS along with provider orders being entered directly by provider offices.

Pilot implementation of the vaccine management module will begin in January 2013.

Initial pilot users will include sites that have already fully integrated the use of the new vaccine ordering module into their workflows and are also actively using the MIIS (either thru direct data entry or HL7 data exchange) for entry of immunizations. Training for these initial pilot users will be in the form of both in-person group trainings sessions, webinars, and online training modules. After an initial pilot phase, MDPH will gather feedback and recommendations from pilot users and will inform the development team of potential enhancements and bugs. Similar to our approach with the ordering module, all bugs will be prioritized for development work prior to further roll out of the system. After all bugs are reconciled, MDPH will begin rolling out the vaccine management module to all current users of the MIIS with a focus on those sites that actively order MDPH-supplied vaccines thru the vaccine ordering module. Roll out and training activities for phase 2 will be dependant on additional resources with the priority given to ensuring the full roll out of the vaccine ordering module.

During the implementation period of both phases of the project MDPH will actively participate in CDC, Association of Immunization Managers (AIM), and American Immunization Registry Association (AIRA) sponsored conference calls, meetings, workgroups and webinars to both share lessons learned and learn from other projects that are or have implemented similar systems. In addition, all requirements and use cases for both phases of the project will be shared with the Connecticut Immunization Program and all configurations files will be shared via a sub-version repository. The Connecticut Immunization Program is adopting the same Consilience IIS platform as Massachusetts.

Staffing Plan

As outlined in the Budget Justification, this grant will support the addition of 2.5 full time MIIS User Support Staff hired through a contract with John Snow Inc. (JSI). MDPH currently has a contract with JSI for MIIS user support and roll out activities; therefore, this additional funding will supplement the existing contract. The grant will also support one full time IT Systems Analyst and one full time Quality Assurance (QA) analyst hired through a contract with Strategic Solutions Group (SSG). MDPH currently has a contract with SSG for IT project management, IT systems development and QA; therefore, this additional funding will supplement the existing contract. The grant will also support the addition of a full time Data Entry Support Staff hired through an existing contract with PSG, Inc to help support daily operations and data entry of vaccine orders within the MDPH Vaccine Unit during the transition to the new vaccine ordering system. In addition to the new staff supported by this grant, existing staff will provide overall project management, technical expertise, and support for all activities outlined in this application.

The following identifies and describes existing individuals and teams providing support and oversight to the MIIS project:

1. **Dr. Susan Lett, Medical Director and Program Manager, Immunization Program.** Susan M. Lett, MD, MPH has been the medical director of the immunization program at the Massachusetts Department of Public Health for 23 years and the program manager for over 10 of those years. She is a former member of the both the Advisory Committee on Immunization Practices (ACIP) and the National Vaccine Advisory Committee (NVAC). She has written many

articles and given numerous presentations about immunizations. She was recently invited to participate on CDC's Clinical Decision Support (CDS) Expert Panel for immunization registries.

2. **Dr. Bill Adams, Clinical Informatics Consultant, MCAAP.** Dr. Bill Adams is a general pediatrician, medical informatician. He is an Associate Professor and Director of Child Health Informatics at the Boston University School of Medicine. He has personally developed two pediatric electronic health records and has extensive experience in the development and implementation of electronic health systems for children. He has worked with Dr. Lett and the MDPH for over 10 years and is on the National AAP Child Health Informatics Center Advisory Council.

3. **Operations and Planning Team.** Led by Pejman Talebian, Deputy Director for Policy and Planning and Beth English, Deputy Director for Operations. Pejman Talebian has over 13 years of state immunization program management experience and has worked on immunization policy and planning on both the state and national level. He is a former Chair of the Association of Immunization Managers (AIM) and current member of the AIM Executive Committee. Beth English has extensive experience in contract management, budget development and monitoring, and state and federal reporting.

4. **Vaccine Management Unit.** Lead by Bob Morrison, Vaccine Manager. Bob Morrison has been the Vaccine Manager for the MDPH Immunization Program for the past 16 years. As part of his responsibilities, Bob manages a \$117 million vaccine budget and over 3.5 million doses of vaccine distributed annually to over 3,000 provider sites. He supervises all staff within

the Unit which is responsible for processing approximately 12,000 vaccine orders and responding to an estimated 20,000 phone annually.

5. **Doreen Corban, Director of IT, Bureau of Infectious Diseases.** In managing all IT infrastructure and projects for the Bureau of Infectious Disease, Doreen Corban coordinates the efforts of the MIIS with other similar projects. Her extensive experience in managing IT teams and budgets, establishing system development lifecycles, and cross-functional knowledge of public health systems ensure success of the IT implementation and provides strong leadership for the IT team.

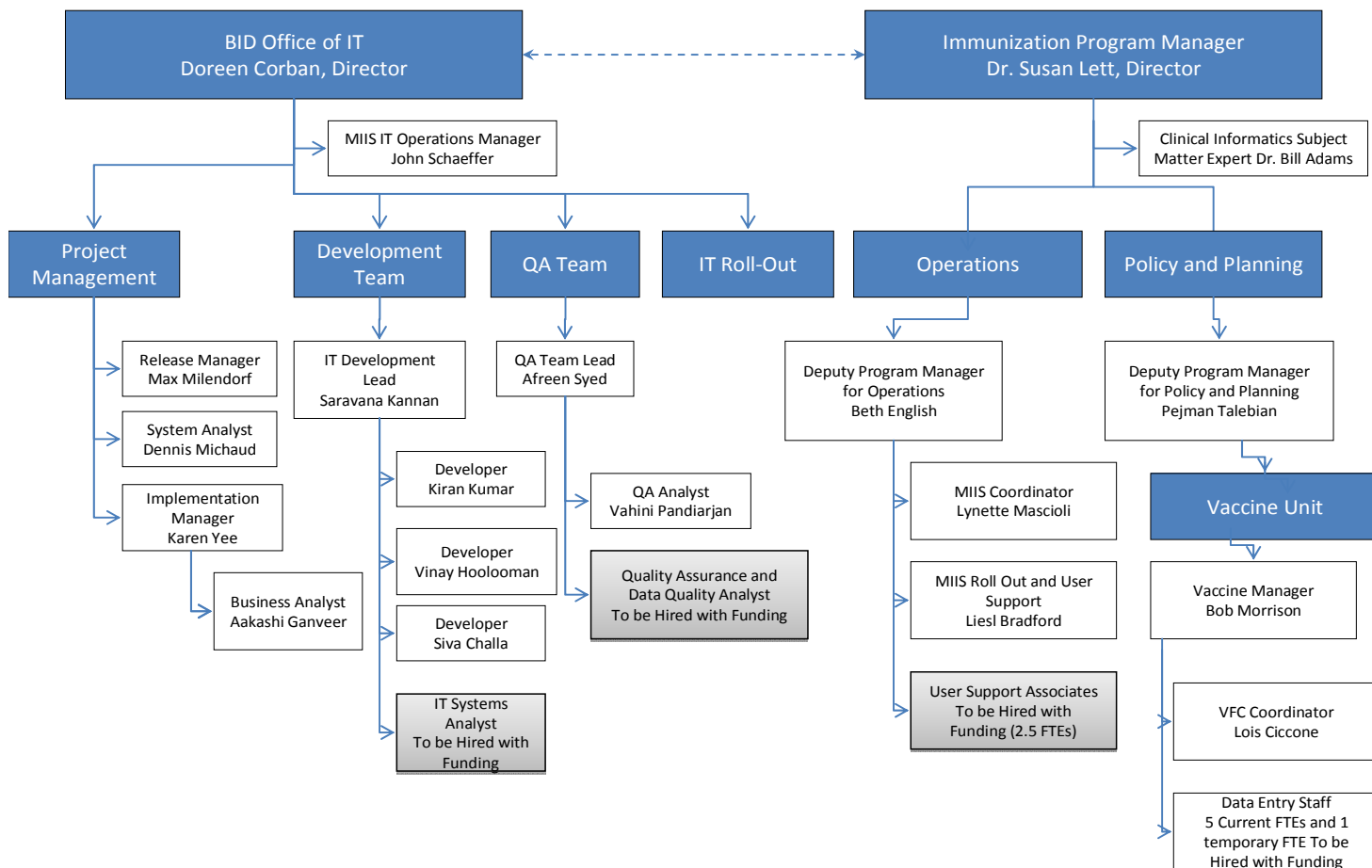
6. **Project Management and Requirements Definition Team.** The Project Management and Requirements Definition Team has over 20 years of IT PM and BA experience, in addition to extensive knowledge of HL7 standard messaging, immunization forecasting requirements, and IIS programmatic goals and requirements. Some team members have worked on MIIS activities since 2001 and with HL7 messaging since 2003, including the design and implementation of HL7 Gateway infrastructure for McKesson Pharmaceuticals and local public health.

7. **Development Team:** The Development team is a proven and experienced team specializing in J2EE applications and HL7 standard messaging. The IT architecture leverages robust platform tools, including IBM WTX, and follows industry standard design practices for Services Oriented Architectures, including appropriate separation of application layers and loosely coupled, web service based system interfaces.

8. **Quality Assurance Team.** The Quality Assurance team has a strong technical background and performs a thorough suite of test cases for unit, regression, performance,

vulnerability, ADA, and load testing. The team utilizes Load Runner, JAWS, SOAP UI and testing automation to ensure high code coverage and consistent, repeatable testing practices.

Most importantly, all of the MIIS teams work very closely together in collaboration with each other. The teams are physically located on the same floor and hold frequent standing and ad-hoc meetings to address the multi-dimensional challenges in implementing the MIIS and EHR interoperability. The following organizational chart identifies the current staff resources to support the MIIS. The funding requested will be used to provide an additional 5 contracted full-time positions and 1 contracted part-time position which are indicated by shaded boxes.



Objectives

Please note that in all cases, the timelines below assume a grant award date of July 1, 2011.

Objective 1: A provider management system will be integrated into release 3.0 of the MIIS by April 1, 2012. The following table sets forth the activities, timeline and staffing plan that will be utilized to implement and achieve this objective:

Activities	Timeline	Evaluation Measures	Staffing Plan

Activities	Timeline	Evaluation Measures	Staffing Plan
Complete Vision Documentation and project scope.	July 1, 2011 to September 1, 2011	Completed Vision Document that fully outlines scope of the project.	Max Milendorf and Pejman Talebian
Have completed requirements document which fully outlines all necessary functionality of the new modules.	July 1, 2011 to November 1, 2011	Completed requirements document with all necessary details needed for development work provided to development team.	Max Milendorf and Pejman Talebian will gather requirements and scope with input from rest of MIIS Team and Bob Morrison and Lois Ciccone.
Complete development of new modules.	October 1, 2011 to February 1, 2012	Full development of all new requirements.	Saravana Kannan and MIIS Systems Analyst will complete all necessary development work.
Complete QA testing including functional testing, load testing and	January 1, 2012 to March 1, 2012	Successful testing which passes all functional, load and	Afreen Syed and QA Analyst will perform and oversee all QU

Activities	Timeline	Evaluation Measures	Staffing Plan
performance testing.		performance requirements.	testing.
User acceptance testing (UAT) and deployment in production.	UAT: March 1, 2012 to April 1, 2012 Deployment: April 1, 2012 to June 1, 2012	Successful UAT by program staff with no significant issues identified and full deployment into production.	Max Milendorf will oversee UAT to be performed by MIIS Team and Vaccine Unit Staff.

Objective 2: An online vaccine ordering system will be integrated into release 3.0 of the MIIS by April 1, 2012. The following table sets forth the activities, timeline and staffing plan that will be utilized to implement and achieve this objective:

Activities	Timeline	Evaluation Measures	Staffing Plan
Complete Vision Documentation and project scope.	July 1, 2011 to September 1, 2011	Completed Vision Document that fully outlines scope of the project.	Max Milendorf and Pejman Talebian
Have completed requirements document	July 1, 2011 to November 1, 2011	Completed requirements	Max Milendorf and Pejman Talebian will

Activities	Timeline	Evaluation Measures	Staffing Plan
which fully outlines all necessary functionality of the new modules.		document with all necessary details needed for development work provided to development team.	gather requirements and scope with input from rest of MIIS Team and Bob Morrison and Lois Ciccone.
Complete development of new modules.	October 1, 2011 to February 1, 2012	Full development of all new requirements.	Saravana Kannan and MIIS Systems Analyst will complete all necessary development work.
Complete QA testing including functional testing, load testing and performance testing.	January 1, 2012 to March 1, 2012	Successful testing which passes all functional, load and performance requirements.	Afreen Syed and QA Analyst will perform and oversee all QU testing.
User acceptance testing (UAT) and deployment in production.	UAT: March 1, 2012 to April 1, 2012 Deployment: April	Successful UAT by program staff with no significant issues identified and full	Max Milendorf will oversee UAT to be performed by MIIS Team and Vaccine

Activities	Timeline	Evaluation Measures	Staffing Plan
	1, 2012 to June 1, 2012	deployment into production.	Unit Staff.

Objective 3: A provider management and online vaccine ordering system will be fully integrated into the workflow of the MDPH Vaccine Unit including integration with VTrckS and will be rolled out to the majority of provider sites that receive MDPH-supplied vaccines by July 1, 2013. The following table sets forth the activities, timeline and staffing plan that will be utilized to implement and achieve this objective:

Activities	Timeline	Evaluation Measures	Staffing Plan
Integration of MIIS into Vaccine Unit.	July 1, 2011 to June 1, 2012	Full integration into daily workflows without significant impact on regular operations and number of orders filled.	Pejman Talebian will work with the Bob Morrison to ensure all Vaccine Unit staff fully trained and system fully integrated into unit.
Integration with VTrckS.	July 1, 2011 to June 1, 2012	Successful transmission of provider master data,	Max Milendorf and Saravana Kannan will oversee testing of

Activities	Timeline	Evaluation Measures	Staffing Plan
		provider orders, and successful receipt of shipping information.	data exchange.
Develop training, on boarding, and roll out plan.	July 1, 2011 to June 1, 2012	Fully developed training and roll out plan the describes all the necessary steps for statewide rollout	Beth English and Lynette Mascioli.
Pilot Implementation.	June 1, 2012 to July 1, 2012	At least 20 provider sites (combination of current GUI users and former VPOP practices) beginning to place online orders for all MDPH-supplied vaccines.	Lynette Mascioli, Liesl Bradford and MIIS User Support Staff will facilitate roll out activities to ensure pilot implementation by selected providers.
Identification of bugs from pilot sites	July 1 2012 to September 1, 2012	All bugs indentified by pilot sites logged into JIRA (bug tracking software) with	Liesl Bradford and MIIS User Support Staff will receive and log all issues and

Activities	Timeline	Evaluation Measures	Staffing Plan
		sufficient detail for development team to address.	Pejman Talebian will enter into JIRA.
All bugs corrected and updated system put into production.	September 1, 2012 to December 1, 2012	All bugs identified from pilot sites are corrected and updated software successfully loaded into production servers.	Saravana Kannan and MIIS Systems Analyst will complete all necessary development work.
State-wide rollout to all MIIS GUI users.	December 1, 2012 to March 1, 2013	All current GUI users of the MIIS that receive state-supplied vaccines placing all their vaccine orders online.	Lynette Mascioli, Liesl Bradford and MIIS User Support Staff will facilitate roll out activities.
State-wide roll out to remaining providers who receive MDPH-supplied Vaccines.	March 1, 2013 to July 1, 2013	All provider sites who routinely receive state-supplied vaccines (those who	Lynette Mascioli, Liesl Bradford and MIIS User Support Staff will facilitate roll out

Activities	Timeline	Evaluation Measures	Staffing Plan
		order at least quarterly) routinely ordering vaccines online.	activities.

Objective 4: A comprehensive vaccine inventory management system will be integrated into the MIIS by July 1, 2013 and offered to all provider sites statewide. The following table sets forth the activities, timeline and staffing plan that will be utilized to implement and achieve this objective:

Activities	Timeline	Evaluation Measures	Staffing Plan
Complete Vision Documentation and project scope.	April 1, 2012 to May 1, 2012	Completed Vision Document that fully outlines scope of the project.	Max Milendorf and Pejman Talebian
Have completed requirements document which fully outlines all necessary	April 1, 2012 to July 1, 2012	Completed requirements document ready for developers.	Max Milendorf and Pejman Talebian will gather requirements and scope with input

Activities	Timeline	Evaluation Measures	Staffing Plan
functionality of the new module.			from rest of MIIS Team and Bob Morrison and Lois Ciccone.
Complete development of new module.	June 1, 2012 to October 1, 2012	Full development of all new requirements.	Saravana Kannan and MIIS Systems Analyst will complete all necessary development work.
Complete QA testing including functional testing, load testing and performance testing.	September 1, 2012 to November 1, 2012	Successful testing which passes all functional, load and performance requirements.	Afreen Syed and QA Analyst will perform and oversee all QU testing.
User acceptance testing and deployment in production.	UAT: November 1, 2012 to December 1, 2012 Deployment: December 1, 2012 to	Successful UAT by program staff with no significant issues identified and full deployment into	Max Milendorf will oversee UAT to be performed by MIIS Team and Vaccine Unit Staff.

Activities	Timeline	Evaluation Measures	Staffing Plan
	March 1, 2013	production.	
Pilot Implementation.	March 1, 2013 to April 1, 2013	At least 20 provider sites will begin piloting the vaccine management module of the MIIS	Lynette Mascioli, Liesl Bradford and MIIS User Support Staff will facilitate roll out activities.
Identification of bugs from pilot sites	March 1, 2013 to May 1, 2013	All bugs indentified by pilot sites logged into JIRA (bug tracking software) with sufficient detail for development team to address.	Max Milendorf and Pejman Talebian will gather requirements and scope with input from rest of MIIS Team and Bob Morrison and Lois Ciccone.
All bugs corrected and updated system put into production.	March 1, 2013 to July 1, 2013	All bugs identified from pilot sites are corrected and updated software successfully loaded into production	Saravana Kannan and MIIS Systems Analyst will complete all necessary development work.

Activities	Timeline	Evaluation Measures	Staffing Plan
		servers.	
Begin statewide rollout.	July 1, 2013	The vaccine management module will be offered statewide to all MIIS provider sites. This will be rolled out gradually after ensuring that all activities in Objective 2 have been met.	Lynette Mascioli, Liesl Bradford and MIIS User Support Staff will facilitate roll out activities.

**Massachusetts Department of Public Health
Project Narrative**

Funding Opportunity: CDC-RFA-IP11-1107PPHF11

Part II. Program Area 4: Implement Billing for Immunization Services in Health Department Clinics

1. Background for Implementation Plan:

Massachusetts, with an estimated population of 6.4 million people, has been providing vaccines for the people of the Commonwealth for more than 100 years. In 2006, Massachusetts enacted comprehensive health reform legislation, [St. 2006, c.58](#), An Act Providing Access to Affordable, Quality, and Accountable Health Care. Key provisions of the law include subsidized health insurance for residents earning less than 300% of the federal poverty level and low-cost insurance for all other residents who are not eligible for insurance through their employers. This legislation has resulted in health care coverage for more than 98% of Massachusetts residents and 99.8% of Massachusetts children. (Source: [BC/BS of Massachusetts Foundation. Health Reform in Massachusetts: Expanding Access to Health Care Insurance Coverage. Assessing the Results. April 2011](#)).

While 98% of Massachusetts residents have health insurance, substantial gaps remain, as health plans usually do not cover vaccination services at sites such as local health departments and schools. Massachusetts has 350 cities and towns, each with its own local health department (LHD). The last decade has seen a contraction of local public health budgets and staff, threatening many services, including vaccination clinics. In order to continue to provide vaccination services, LHDs and schools must be reimbursed for the services they provide.

State-supplied vaccine: Using a combination of federal Vaccines for Children (VFC) and 317 funds, and an assessment on health plans, the Massachusetts Department of Public Health (MDPH) provides all ACIP-recommended vaccines for children through 18 years of age, except for HPV vaccine and the second dose of meningococcal vaccine, which are provided only to children who are VFC-eligible. Using state funds, MDPH has historically provided ACIP-recommended vaccines, except for HPV and zoster vaccines, for adults seen at public sites, including LHDs and community health centers. In 2009, MDPH used ARRA funding to provide HPV and zoster vaccines for adults at public sites. Those funds, however, are no longer available.

Existing reimbursement opportunities for local health departments:

- **Medicare roster billing:** Since 1998, some LHDs have been billing Medicare for reimbursement for the cost of administering state-supplied flu vaccine to Medicare beneficiaries in public clinics. Since 2004, MDPH has partnered with [Commonwealth Medicine Center for Health Care Financing](#) (Commonwealth Medicine), a division of the University of Massachusetts Medical School. On behalf of MDPH, Commonwealth Medicine collects copies of the Medicare roster bills submitted by LHDs for the cost of administering state-supplied flu vaccine, and resubmits them to Medicare so that MDPH is reimbursed for the cost of the vaccine itself. In 2010, 104 cities and towns participated in Medicare roster billing. Since FY 05, the project has generated more than \$2.8 million in revenue for the Commonwealth and approximately \$2.4 million for local public health.
- **Medicare Advantage Plan reimbursement:** For 14 years, the Massachusetts Association of Health Plans and Masspro (Massachusetts Quality Improvement

Organization) have coordinated the [Medicare Advantage Plan Reimbursement Program](#).

Under this voluntary program, Medicare Advantage Health Plans reimburse local health departments for the cost of administering flu and pneumococcal vaccines senior plan members at the public flu clinics during the fall and winter clinic season. It does not cover the vaccine itself. Since its inception in 1997, Medicare Advantage Health Plans have provided over \$1.2 million in reimbursements to local health departments.

- **Pilot Public Clinic Flu Vaccine Reimbursement Project:**

The reimbursement projects described above are limited to adults 65 years of age and older. In 2009, MDPH received ARRA funding to plan and pilot a billing project to reimburse LHDs and schools for the cost of administering flu vaccine to health plan members younger than 65 in public health and school clinics. The goal of the pilot was to develop a self-sustaining system through which local health departments and schools would be reimbursed for the costs associated with vaccination services.

The pilot was implemented for the 2009-2010 H1N1 pandemic and continued through 2010-2011 season. The billing project built upon the experiences and partnerships developed through the Medicare roster billing and Medicare Advantage Plans reimbursement project described above. In the pilot, Commonwealth Medicine established a centralized billing system, contracting with both health plans and LHDs and schools, to enable reimbursement for the cost of administering flu vaccine to plan members in public clinics.

a) Stakeholders: The planning and ongoing implementation for this pilot involves the

following partners and stakeholders:

- Massachusetts Department of Public Health
- [Commonwealth Medicine Office for Health Care Financing](#) (The health care consulting division of the University of Massachusetts Medical School, which develops savings initiatives and financing solutions for health care programs and health reform initiatives). See letter of support.
- Massachusetts Association of Health Plans (MAHP)
- MassHealth (the State Medicaid Agency and the Children's Health Insurance Program (CHIP), combined in one program). See attached letter of support.
- Individual private health plans, including Blue Cross/Blue Shield of Massachusetts, Atrius Health, Tufts Health Plan, Fallon Community Health Plan, Health New England, Neighborhood Health Plan, Unicare, Boston Medical Center Healthnet Plan
- Massachusetts Division of Insurance
- [Masspro](#) (Massachusetts Quality Improvement Organization)
- [Massachusetts Adult Immunization Coalition](#) (A partnership of health care professionals dedicated to increasing adult immunization through networking and sharing innovative approaches. There are currently over 40 members representing local and state public health agencies, senior service groups, health care networks, community-based healthcare organizations, and health insurers.)
- Massachusetts Association of Health Officers
- Massachusetts Association of Public Health Nurses
- Massachusetts School Nurses Organization

b) Overview of Data Collected

Relevant law and regulations:

- **Immunization Legislation:** In 2004, George Washington University School of Public Health reviewed Massachusetts health care coverage legislation against elements of a Comprehensive Immunization Coverage Insurance Statute (Comparison of Massachusetts Law with the Model Statute. Prepared by the George Washington University School of Public Health and Health Services, Center for Health Services Research and Policy Immunization Statute Project, Spring 2004). The review identified that the Massachusetts statute:
 - Required coverage for immunizations only for children up to age six years, instead of providing immunization coverage to all people, regardless of age;
 - Did not provide any standard guidelines for insurers to follow;
 - Did not address immunizations obtained outside of the network plan; and.
 - Allowed physicians to charge co-payments and deductibles.

In order to address these gaps in the statute, MDPH and the Massachusetts Chapter of the American Academy of Pediatrics (MCAAP) drafted legislation to ensure the availability of all vaccines recommended by the Advisory Committee on Immunization Practices (ACIP). This proposed legislation includes:

- **Financing:** vaccine purchase trust to support the universal childhood system will be established. Funds for this trust will come from an assessment of insurers

and health plans based on the number of children they cover, and who are not eligible for federally purchased vaccine.

- **Reimbursement.** Adequate comprehensive and first-dollar reimbursement for routinely recommended vaccines and their administration will be mandated for all children and adults, regardless of the setting where they are administered.
- **Tracking.** An immunization registry will be established. Funds for this registry will come from an assessment of insurers and health plans. The legislation also provides a legal basis for participation in the registry, and for the reporting and sharing of immunization records. The registry will also have the functionality to include immunization records of adults.

Two components of the legislation described above have been implemented: 1) assessment of health plans for the cost of childhood vaccines has been included as a line item in the state budget since FY 2010 and 2) establishment of a registry, which was enacted in 2010. The complete legislation, with some revisions, and with support from the health plans, has been reintroduced this legislative session.

- **Health Care Reform:** The Massachusetts Mandated Health Insurance Law [St. 2006, c.58](#). An Act Providing Access to Affordable, Quality, Accountable Health Care was enacted in 2006. Key provisions of the law include subsidized health insurance for residents earning < 300% of the federal poverty level, and low-cost insurance for residents who are not eligible for insurance through their employers.

Health department clinic patient insurance status: More than 98% of Massachusetts

residents, and 99.8% of children in Massachusetts, have health insurance. The remaining uninsureds are more likely to be young, single, male, non-elderly low-income adults, and/or of Hispanic ethnicity (Source: [Blue Cross Foundation. Health Reform in Massachusetts: Expanding Access to Health Care Insurance Coverage. Assessing the Results. April 2011](#)). In Massachusetts, the challenge is the large number of health plans that are available to Massachusetts residents, and whether or not they cover vaccination services.

Payer policies and regulations: Payers had been reluctant to contract with LHDs and schools because of the small market share that would be seen at any specific school or LHD and the logistical difficulty of handling very small reimbursements. This concern was addressed by the centralized billing system described below. In addition, the major health plans in Massachusetts have agreed to reimburse local health departments and schools for the cost of administering flu vaccine to plan members at public clinics without co-pays or deductibles, eliminating out-of-pocket costs for consumers. Although MassHealth participated in the pilot during the H1N1 pandemic without co-pays or deductibles, they did not do so for the 2010-2011 flu season. MassHealth is reluctant to contract with local health departments and schools because they do not currently have a mechanism for providing primary care providers with information about vaccines administered to their patients.

Financial analysis of potential return on investment:

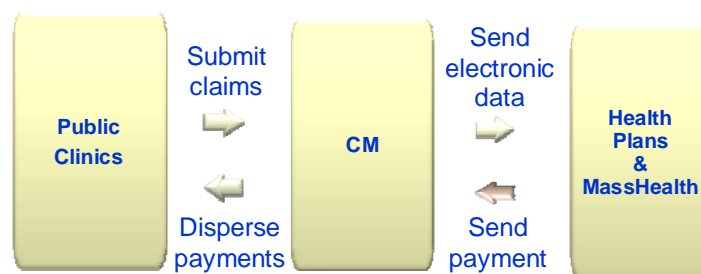
- Medicare and Senior Advantage Plans currently reimburse LHDs \$25.69/dose in metro-Boston and \$22.82 everywhere else in MA for the cost of administering flu and pneumococcal vaccine to plan members, but not the cost of the vaccine itself.
- Through the Commonwealth Medicine billing project, MassHealth and the private plans reimburse Schools and local health departments \$13.76 per dose administered. After Commonwealth Medicine's commission of 10%, schools and LHDs receive \$12.38/dose.
- Sustainability: Commonwealth Medicine has identified the following factors as necessary for the current centralized billing system to become self-sustaining:
- Commonwealth Medicine must receive approximately 100,000 claim forms from public providers.
- At least 50% of public providers must adapt to submitting their insurance forms electronically to Commonwealth Medicine.
- At least 65% of the claims submitted need to be paid by the health plans.
- There needs to be an increase in participation by local and national health plans. Examples include United Healthcare, Aetna, MassHealth, and Network Health
- The current rate of reimbursement cannot decrease.

Funding from this grant for Commonwealth Medicine will be used to support a part-time person for 18 months, with the expectation that, by the end of the project period, the volume of claims will be adequate for the centralized billing system will be fully self-sustaining through commissions.

Description of existing resources

- **Financial:** MDPH is using \$168,000 in ARRA funding to support Commonwealth Medicine to develop the electronic billing system; contract with health plans, local health departments and schools; recruit, train, and support local health departments in billing process; and develop all necessary forms and materials. This funding runs out in December 2011.
- **Personnel:** See the section on capacity below.
- **Centralized billing system:** One of the major obstacles to public clinic billing in Massachusetts has been the health plans' reluctance to contract with a number of different schools and LHDs, each of which would have a very small share of a single health plan's market. And from the other side, schools and LHDs do not have the resources to establish contracts with all the different health plans that cover their students and residents. Commonwealth Medicine has developed a centralized billing system that allows them to accept either paper claim forms or electronic Excel spreadsheets from LHDs and schools. The information is uploaded into the billing database, sorted by health plan, and sent electronically to the appropriate health plans. The health plans then send the reimbursement to Commonwealth Medicine, which disperses the funds, minus a commission, to the appropriate LHDs and schools.

Billing Process



- **IIS:** A pilot of the MIIS, which includes two local health departments, is currently on-going. All schools and LHDs will be included in the MIIS as it is rolled out.

c) Description of barriers and how they are being addressed

Major barriers to LHD and school billing have been identified and some of these have been addressed through the pilot. These include:

- Health plan reluctance to contract with schools and LHDs because of the small market share at any one LHD or school: **Solution:** The health plans contract with a single entity, Commonwealth Medicine, who submits claims and receives reimbursement on behalf of the schools and LHDs.
- LHD and school's difficulty in contracting with many different health plans: **Solution:** Schools and LHDs contract with a single entity, Commonwealth Medicine, who receives claims and disperses reimbursement on behalf of the health plans. See Section e) below.
- For LHDs and schools, the difficulty in determining whether or not a person is covered by an insurance plan that participates in the project: **Solution:** LHDs and

schools collect information from everyone, regardless of insurance type (See Attachment A). Commonwealth Medicine sorts the claims by health plan electronically.

Commonwealth Medicine will also reimburse claims from plans with whom they do not have a contract.

- Lack of billing training for LHD and school nurses: **Solution:** Commonwealth Medicine conducts regional and webinar training on the billing projects. They have established a toll-free number and email address dedicated to answering questions from LHDs and schools about billing. They also have a [website](#) with the forms, in English, Spanish and Portuguese, and instructions.

d) Remaining barriers and proposed solutions

While a number of barriers have been addressed through the pilot process, some barriers remain. Funding for this project will allow us to implement solutions to the following remaining barriers.

- MassHealth participated in the billing project for H1N1 in 2009-2010 under a special Medicaid waiver which allowed them to contract with a single entity Commonwealth Medicine instead of with the LHDs as individual providers. For the 2010-2011 flu season, MassHealth was planning to require cities and towns, or their local health departments and schools, to contract directly with MassHealth to become MassHealth providers. MassHealth had developed an RFA to contract with communities directly (not through Commonwealth Medicine, although the towns could still submit paper claims through Commonwealth Medicine if they chose to do

so). The approval process to post RFA within MassHealth broke down in late fall 2010 when key staff left MassHealth because of fiscal constraints. **Proposed solution:** MDPH proposes to use funding from this project to support staff time at MassHealth to ensure that the RFA is posted, and the paperwork completed so that contracts will be in place with LHDs and schools. The funding will support MassHealth staff in recruiting LHDs and schools, and providing necessary information, training and support needed to bring them on as MassHealth providers. Once established, there will be no end date on these contracts. MassHealth has committed to working with MDPH on this effort.

- MassHealth is reluctant to contract with LHDs and schools unless they have a mechanism for ensuring that primary care providers receive information about vaccines administered to their patients by LHDs and schools. **Proposed solution:** MDPH proposes to use funding from this project to support the technical development and provider training and support necessary for LHDs and schools to participate in Massachusetts immunization registry (MIIS), allowing providers to access information on vaccines administered to their patients at public clinics.
- Health plans currently only reimburse LHDs for the cost of administering flu vaccine. There is currently no mechanism for reimbursing LHDs for the cost of vaccine administered to adults 19 – 64 years of age. Schools do not require reimbursement for the cost of the vaccine because MDPH provides all ACIP-recommended vaccines for children through 18 years of age, except HPV and the second dose of

meningococcal vaccine, which are only available for VFC-eligible children. Flu and pneumococcal vaccine administered to adult older than 65 years is reimbursed through Medicare. **Proposed solution:** Funding for this project will be used to support staff at Commonwealth Medicine and the Massachusetts Association of Health Plans to work with MDPH, MassHealth and the individual health plans to ensure that they are aware of the advantages to their members of having access to vaccines at many places in the community, and to implement the systems necessary to for health plans to reimburse for the cost of vaccine.

- Currently, LHDs participate in three reimbursement projects: 1) Medicare roster billing; 2) Medicare Advantage Plan billing; and 3) the Commonwealth billing pilot for people younger than 65 years of age. **Proposed solution:** The MA Association of Health Plans, Masspro, and Commonwealth Medicine will work together to incorporate Advantage Plan billing into the Commonwealth Medicine system, allowing the LHDs to send all their forms to one place, rather sending advantage plan claims forms to the different payers. This will also increase the number of claims submitted through Commonwealth Medicine, increasing the sustainability of the centralized billing system.

f) Results that show that the plan will be effective

During the H1N1 pandemic, 54 communities and eight health plans participated in the first year of the pilot, resulting in 37,000 claims submitted and \$311,000 reimbursed to schools and LHDs. In the past flu season, the number of communities participating in

the pilot has increased to 130. The table on the next page shows data collected for each of the two years of the plot.

**Data from the 2009 – 2011 Pilot of the
Massachusetts Public Clinic Reimbursement Project**

Indictor	H1N1 2009-2010	Seasonal Flu 2010-2011
# of communities participating	54	130
# of claims submitted	44,428	48,198
Amount paid to schools and LHDs	\$311,895	NA
# of children 0 – 4 y/o with claims	1,979	832
# of children aged 5 – 18 y/o with claims	17,275	14,500
# of adults \geq 19 y/o	25,174	32,866
# of claims to each health plan		
BC/BS of MA	19,649	25,819
Tufts	6,654	6,229
Harvard Pilgrim	6,638	8,406
MassHealth	2,167	NA
Unicare	920	1,181
Fallon	851	756
Network Health	210	NA
Health New England	206	302
Boston medical Center HealthNet	106	216
Senior Whole Health	2	NA
Neighborhood Health Plan	NA	527
# of claims submitted to contracted plans	37,403	43,436
# of claims submitted to non-contracted plans	7,025	4,762
% of claims submitted to contracted plans	84%	90%

2. Plan and Evaluation:

All activities outlined below will be carried out through the expansion of existing

contracts and interagency service agreements. Project coordination, evaluation and MIIS support will occur through an expansion of an existing contract with John Snow, Inc. (JSI). Expansion of an existing contract with Commonwealth Medicine will support a part-time person to roll-out the pilot state-wide and provide billing training for local health departments and schools, and support of a part-time staff person at MassHealth to focus on adult immunization reimbursement issues. An expansion of an existing contract with SSG Solutions will support MIIS technical support for LHDs and schools. Please see Section 3, *Capacity* on page 24 for a description of the agencies and individuals who will implement the activities outlined below. See page 25 for organizational chart.

All funds will be encumbered within one year of the grant award, including funding for those activities that occur in the second year of the project period. The project coordinator will provide monthly progress reports that contain, at a minimum, project overview; work progress during the previous month, status of implemented activities, difficulties encountered; and future activities. A Financial Status Report and an Annual Progress Report will be submitted within 30 days of the end of the budget period. Final Performance and Financial Status Reports will be submitted no more than 90 days after the end of the project period.

Outcome Goal: *By June 2013, there will be a self-sustaining system in place through which schools and local health departments will be reimbursed by MassHealth and private payers for vaccination services provided to plan members in schools and public clinics.*

Objective 1: *By June 13, 2013, local health departments and/or schools in 150 communities will become MassHealth providers and will submit claims to the MassHealth for vaccinating*

MassHealth members.

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
Expand existing contract with John Snow, Inc. (JSI) to bring on personnel to coordinate project; and design and implement the evaluation plan.	By 8/30/2011	Contracted personnel listed in this grant will be in place to carry the activities listed below.	Beth English, Deputy Program Manager for Operations; Donna Lazorik, Deputy Program Manager for Program Development
Expand interagency agreement with Commonwealth Medicine to include activities outlined in this proposal through June 2013.	By 8/30/2011	Interagency agreement will be in place.	Beth English, MDPH; Donna Lazorik, MDPH
Commonwealth Medicine will establish an interagency agreement with MassHealth and use project funding to support a staff person at MassHealth	By 8/30/2011	A person supported with project funding and focusing on reimbursement for vaccines and vaccines services will be in	Mary Fontaine, Deputy Director, Office for Health Care Financing, Commonwealth Medicine

		place at MassHealth.	
Design evaluation for implementation of the billing project to include the number of communities with schools and /or local health departments that are MassHealth providers.	By 12/31/2011	A plan for evaluation of both processes and outcomes will be in place.	Proj Coord (JSI); Evaluator (JSI); Holly Oldham, Commonwealth Medicine; MassHealth
RFA for communities to contract with MassHealth will be posted.	By 1/31/2012	Posting of RFA	Proj Coord (JSI); MassHealth
Municipal governments, schools and local health departments will be notified of RFA posting by mail, email, and Health Alert Network announcement about the posting of the RFS	By 1/31/2011	Municipal governments, schools and LHDs will receive at least 2 notices of the RFA posting.	Holly Oldham, CM; MassHealth; Project Coord (JSI);
At least 150 communities will have signed contracts with MassHealth to become MassHealth providers.	By 3/31/2012	Contracts with at least 150 municipalities will be signed.	MassHealth: Holly Oldham, CM; Project Coord (JSI);

Objective 1 Outcome Evaluation Plan: Commonwealth Medicine will collect information from MassHealth on the number of municipalities with contracts with MassHealth and the number of claims submitted to MassHealth for vaccines administered in schools and public clinics.

Objective 2: *By June 2013, at least 100 LHDs and/or schools will be entering data into Massachusetts Immunization Information System (MIIS).*

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
Expand existing contract with John Snow, Inc. (JSI) and SSG Solutions Group to bring on personnel to coordinate project; train and support schools and LHDs on the MIIS; and design and implement the evaluation plan.	By 8/30/2011	Contracted personnel listed in this grant will be in place to carry the activities listed below.	Beth English, Deputy Program Manager for Operations; Donna Lazorik, Deputy Program Manager for Program Development
Design evaluation for implementation of the billing project to include the number of schools and /or local health departments fully functional on the MIIS.	By 12/31/2011	A plan for evaluation of both processes and outcomes will be in place.	Proj Coord (JSI); Evaluator (JSI); Holly Oldham, Commonwealth Medicine; MassHealth

Recruit and train 10 LHDs on the MIIS	By 12/31/2011	10 LHD will be fully functioning on the MIIS.	MIIS provider support (JSI); MIIS technical support (JSI)
Recruit and train 25 additional LHDs and 20 schools on the MIIS	By 6/31/2012	25 additional LHDs and 20 schools will be fully functioning on the MIIS.	MIIS provider support (JSI); MIIS technical support (JSI)
Recruit and train 20 schools and/or LHDs every month	On-going through 6/30/2013	Number of schools and LHDs that are fully functional on the MIIS	MIIS provider support (JSI); MIIS technical support (JSI)

Objective 2 Outcome Evaluation Plan: The project coordinator and project evaluator will work with MIIS staff, schools and LHDs to identify indicators for progress, monitor those indicators, and identify barriers to success. At a minimum, the indicators will include the number of LHDs and schools recruited for the MIIS, the number of trainings held and the number of records successfully entered into the MIIS by schools and LHDs.

Objective 3: *By June 2012, MassHealth and at least 5 major health plans will agree to*

reimburse LHDs for the cost of flu vaccine, in addition to the cost of administering the vaccine, in

public clinics.

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
Expand existing contract with John Snow, Inc. (JSI) to bring on personnel to coordinate project; and design and implement the evaluation plan.	By 8/30/2011	Contracted personnel listed in this grant will be in place to carry the activities listed below.	Beth English, Deputy Program Manager for Operations; Donna Lazorik, Deputy Program Manager for Program Development
Design evaluation for implementation of the billing project to include the number of plans that reimburse LHDs for the cost of vaccines administered in public clinics; the different kinds of vaccines for which they will reimburse; and the barriers to reimbursement.	By 12/31/2011	A plan for evaluation of both processes and outcomes will be in place.	Proj Coord (JSI); Evaluator (JSI); Holly Oldham, Commonwealth Medicine; MassHealth
Hold meeting with health plans.	By 7/31/2011	Meeting will be held.	Susan Lett, MD, Medical Director,

			Immunization Program Donna Lazorik, MDPH: MA Association of Health Plans
Conduct survey of health plans to identify willingness and barriers to reimbursing LHDs for the cost of vaccine.	By 12/31/2011	Survey will be completed with a 90% response rate.	MA Association of Health Plans; Holly Oldham; CM; Evaluator (JSI)
Have in-person discussions with health plans reluctant to reimburse for cost of vaccine.	By 3/31/2012	Number of meetings with health plans that have occurred.	Proj Coord (JSI); Holly Oldham, CM; Susan Lett, MDPH
Establish multi-year contracts between Commonwealth Medicine and health plans to reimburse LHDs for the cost of vaccine as well as the cost of administering the vaccine.	By 6/30/2012	Contracts that include reimbursement for the cost of the vaccine will be in place in time for the 2012-2013 flu season	Holly Oldham, CM.

Objective 3 Outcome Evaluation Plan: The project coordinator and project evaluator will work

with Commonwealth Medicine and the Massachusetts Association of Health Plans to determine motivations and advantages to plans that do reimburse for the cost of the vaccine.

Objective 4: *By June 2012, the Medicare Advantage Plan reimbursement project will be integrated into the Commonwealth Medicine reimbursement project.*

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
Expand existing contract with John Snow, Inc. (JSI) to bring on personnel to coordinate project; and design and implement the evaluation plan.	By 8/30/2011	Contracted personnel listed in this grant will be in place to carry the activities listed below.	Beth English, Deputy Program Manager for Operations; Donna Lazorik, Deputy Program Manager for Program Development
Expand interagency agreement with Commonwealth Medicine to include activities outlined in this proposal through June 2013.	By 8/30/2011	Interagency agreement will be in place.	Beth English, MDPH; Donna Lazorik, MDPH
Design evaluation for implementation of the billing project to include the integration of the Advantage	By 12/31/2011	A plan for evaluation of both processes and outcomes will be in place.	Proj Coord (JSI); Evaluator (JSI); Holly Oldham, Commonwealth

Plan billing project into the Commonwealth Medicine billing project. .			Medicine; MassHealth
Determine needs of health plans in order to accept Advantage Plan claims from Commonwealth Medicine (CM).	By 12/31/2011	CM will have the information necessary to adapt their electronic system and process to incorporate the Advantage Plan billing.	Holly Oldham, CM; MA Association of Health Plans
Renegotiate contracts between CM and health plans to include reimbursement for vacation services provided to Advantage Plan members in public clinics.	By 5//31/2012	Number of renegotiated contracts in place.	Holly Oldham, CM
Develop a single claims form that incorporates all necessary information for both billing projects.	By 2/31/2012	Claims form will be developed, reviewed, and posted on the CM website.	Holly Oldham, CM; Proj Coordinator (JSI)
At least 3 regional trainings and 1 webinar on the billing process	By 6/30/2012	Number of trainings held and number of	Holly Oldham, CM; Proj Coordinator (JSI)

will provided for LHDs.		attendees.	
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Objective 4 Outcome Evaluation: The achievement of this objective will be based on the number of contracts between Commonwealth Medicine and the health plans that include Advantage Plan reimbursement and the number of claims submitted and reimbursed for the 2012-2013 flu season.

3. Capacity

Donna Lazorik, RN, MS, will be the MDPH lead for this program area. She is the Deputy Program Manager for the Massachusetts Immunization Program and has overseen adult immunizations for 12 years. In 2008, Ms Lazorik was the author of the Massachusetts Adolescent and Adult Immunization Plan and is the MDPH lead for the billing project pilot. See attached resume.

[Commonwealth Medicine Center for Health Care Financing](#): Mary Fontaine, Deputy Director of the Office for Health Care Financing, will oversee of Commonwealth Medicine's activities on the project. Ms. Fontaine has over 25 years of state Medicaid experience, with a concentration in the areas of third-party liability, benefit coordination, revenue management, and program integrity. See attached resume. Holly Oldham, Benefit Coordination Consultant and Project Manager for the billing pilot project, is responsible for the day-to-day operations of the project. See attached resume

[John Snow, Inc.](#) (JSI) is a public health research and consulting firm that provides

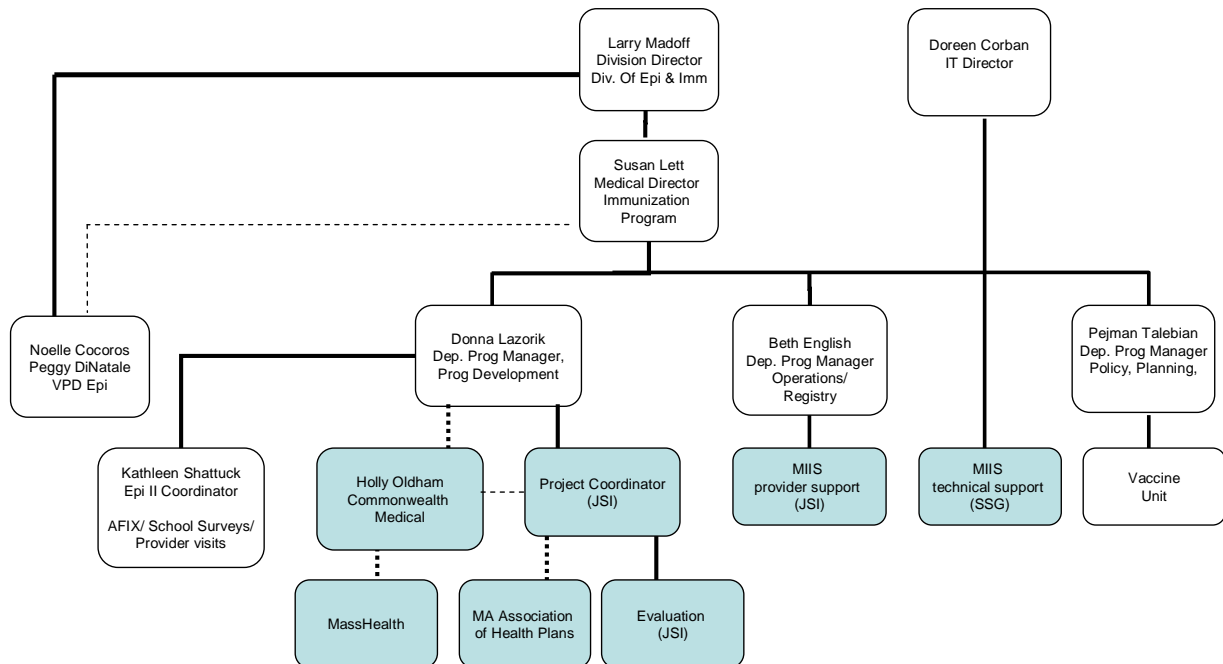
management assistance, research and evaluation, education, and training for agencies and individuals. JSI has assisted MDPH with many projects, including managing and evaluating the Massachusetts H1N1 Vaccine Program. Stewart Landers, JD, MCP, who will oversee all JSI activities for this project, has been a senior consultant with JSI since 1994. See attached resume.

[Strategic Solutions Group](#) (SSG) has provided the staffing for IT management and support services for the Massachusetts Immunization Information System since its inception. John Schaeffer, SSG President, manages all MIIS IT operations. See attached resume.

Beth English, MPH, is the Deputy Program Manager for Operations, Immunization Program, and is responsible for the daily operations of the Immunization Program in accordance with state and federal requirements, including contractual relationships. See attached resume.

Susan M. Lett, MD, MPH has been the medical director of the MDPH immunization program for 23 years and the program manager for over 10 years. She is a former member of the both the Advisory Committee on Immunization Practices and the National Vaccine Advisory Committee. She has been on many vaccine-related working groups at both the federal and state levels, including for the Council of State and Territorial Epidemiologists.

Billing Implementation Functional Chart



Shaded squares represent individuals or contracts fully or partially funded through this grant.

**Massachusetts Department of Public Health
Project Narrative**

Funding Opportunity: CDC-RFA-IP11-1107PPHF11

Part II. Program Area 5: Plan and Implement Adult Immunization Programs

Statement of the Problem:

Residents of Massachusetts benefit from a universal select childhood vaccine program and some of the highest childhood vaccination rates in the nation. Adults, however, have less access to vaccines, vaccine services and vaccine information. The Massachusetts Mandated Health Insurance Law [St. 2006, c.58](#), An Act Providing Access to Affordable, Quality, Accountable Health Care, was enacted in 2006. Key provisions of the law include subsidized health insurance for residents earning less than 300% of the federal poverty level, and low-cost insurance for all other residents who are not eligible for insurance through their employers. More than 98% of Massachusetts residents, and 99.8% of children in Massachusetts, have health insurance. The remaining uninsured are more likely to be young, single, male, non-elderly low-income adults, and/or of Hispanic ethnicity (BC/BS Foundation of MA, April 2011). Virtually the only access to primary care and vaccination services for the remaining 2% of Massachusetts residents who are uninsured have is through community health centers.

In order to monitor statewide adult vaccination coverage, the Massachusetts Department of Public Health (MDPH) has funded optional state-added questions to the Behavioral Risk Factor Surveillance Survey (BRFSS) since 2009. Massachusetts adult immunization rates are shown in the table on the next page:

**Massachusetts Adult Immunization Rates
Results from the 2010 BRFSS**

Flu \geq 65 y/o	73%
Flu high risk 18-64 y/o	59%
PPV23 \geq 65 y/o	71%
PPV23 18-64 y/o w/ diabetes	57%
Hep B series 18+ y/o	42%
Hep B high risk 18+ y/o	64%
Td within last 10 yrs 18+ y/o	75%
Ever had Tdap 18+ y/o	17%
HPV females 18-26 y/o	57%
Zoster 60+ y/o	16%

Source: Unpublished data from the 2010 Massachusetts Behavioral Risk Factor Surveillance Survey.

Unfortunately, racial disparities remain, with 64% of blacks \geq 65 years of age receiving flu vaccine in 2010, compared with 74% of whites in the same age group. (Unpublished data from the 2010 Massachusetts Behavioral Risk Factor Surveillance Survey.)

In 2008, MDPH received special 317 supplemental funding to develop an Adolescent and Adult Immunization Action Plan for the Commonwealth. With the input from partners and stakeholders from across the state, specific objectives and activities were identified to increase adult vaccination rates. Some of the objectives are being implemented but need additional resources to be fully operational, including enrolling pharmacies and community health centers into the Massachusetts Immunization Information System (MIIS); promoting assessment of

vaccination status and administration of all recommended vaccines to adult as a standard of care; promoting vaccination at non-traditional sites, such as pharmacies; and expanding assessment of adult immunization coverage rates through participation in the MIIS.

MDPH is requesting support through this funding opportunity to address these gaps. Specifically, MDPH proposes to address the two required activities and two optional activities:

1. Establish collaborations with pharmacies
2. Establish collaborations with employers
3. Work with MassHealth, the State Medicaid Agency, to ensure that all ACIP – recommended vaccines are included as preventive benefits for adults
4. Work with community health centers (CHCs) to expand adult vaccination efforts.

1. Pharmacies

- **Current activities:** In Massachusetts there are 10,300 licensed pharmacists and 1,122 chain and independent pharmacies, representing an enormous resource for adult immunization (Source: [MA Board of Registration in Pharmacy](#) . MDPH regulations [105 CMR 700.004(B)(6)] permit pharmacists to administer influenza vaccine to adults with a prescription, physician directive or standing order (Source: [Joint Guideline on Pharmacist Administration of Influenza Vaccine Minimum Requirements](#)). There is also a pilot program, through which three pharmacies are administering zoster vaccine. MDPH staff participate in vaccination training for pharmacists through Massachusetts schools of pharmacy. The Massachusetts Pharmacists Association is a member of the Massachusetts Adult Immunization Coalition. During the H1N1 pandemic, MDPH

enrolled independent and chain pharmacies into the MA H1N1 Vaccine Program and maintains a current mailing list of these pharmacies so that they receive regular immunization updates from MDPH. Walgreens and CVS, the two largest pharmacy chains in Massachusetts, have agreed to partner with MDPH on this project (See letters of support from Walgreens and CVS.)

- **Gaps:** With the exception of a few pilot projects, pharmacists are not currently authorized to administer vaccines other than influenza vaccine to adults. Pharmacies are not currently enrolled in the Massachusetts Immunization Information System (MIIS). Pharmacies lack the resources to enroll in the MIIS. There is a lack of baseline data on the number of vaccine doses administered to adults, and employee vaccination rates, at pharmacies. Finally, pharmacies lack the ability to directly bill insurers for vaccination services resulting in out-of-pocket costs for consumers.
- **Resources needed:** MDPH staff are needed to reach out to and liaise with pharmacies. Pharmacies need to be recruited, trained and supported on the MIIS. Pharmacists need training on immunization recommendations and best practices. Data should be collected on the number of pharmacies offering vaccines to adults and the number of doses of vaccine administered to adults in pharmacies. Pharmacies need to bill health insurance with no co-pays or deductibles. MDPH needs to work with the Massachusetts Pharmacists Association, pharmacy chains, and the MDPH Bureau of Health Care Quality to authorize pharmacists to administer, at a minimum, pneumococcal, Td, and zoster vaccines to adults.

2. Employers

- **Current activities:** In 2008, the last year for which these data were collected by the BRFSS, 19% of Massachusetts adults who received flu vaccine reported that they received the vaccine at their work site (Source: Unpublished data from the 2008 Massachusetts BRFSS). During the H1N1 pandemic, MDPH partnered with the Associated Industries of Massachusetts (AIM), the largest association of employers in Massachusetts with 5,000 members, to provide information to employers on protecting their employees. AIM appreciates the added value to their members of working with MDPH to protect employees against vaccine-preventable diseases and has agreed to participate in this project to promote work-site vaccination programs. (See letter of support from AIM.)
- **Gaps:** MDPH needs to partner with employers and employer organizations. Baseline data is needed on the number of employers who offer vaccination services at the worksite and a description of the types of work site vaccination programs and types of vaccines offered.
- **Resources needed:** MDPH staff are needed to reach out to and liaise with employers and employer organizations. MDPH needs to contract with a vendor to survey employers on workplace vaccination programs. Employers need training on the advantages of worksite vaccination programs and how to implement worksite vaccination programs, and to recruit, train and support commercial vaccinators on the

MIIS so that information about vaccines administered at the worksite is accessible to providers; and to evaluate this project.

3. MassHealth

- **Current activities:** MassHealth is the State Medicaid Agency in Massachusetts. MDPH provides regular updates to MassHealth on immunization recommendations, provides training to their staff, and shares information from practices-based assessments conducted at MassHealth provider sites. MassHealth participates on the Massachusetts Pediatric Council, which helps establish immunization policies in the Commonwealth, and in the Massachusetts Chapter of the American Academy of Pediatrics Immunization Initiative. MDPH also currently works with MassHealth on a reimbursement project, through which local public health is reimbursed for the cost of administering flu vaccine in public clinics. (See letter of support from MassHealth.)
- **Gaps:** MassHealth does not have the staff to focus on vaccine reimbursement issues. Providers lack of clarity about which adult vaccines are covered by MassHealth and under what circumstances. MassHealth does not reimburse for vaccine services administered to adults at non-traditional sites.
- **Resources needed:** A dedicated staff person at MassHealth is required to organize and support a MassHealth Work Group on adult vaccination issues. This new staff person could also provide the needed policy and administrative support to ensure that all ACIP-recommended vaccines for adults are reimbursed through MassHealth, and that

reimbursement extends to vaccines administered at non-traditional sites, such as local health departments and pharmacies.

4. Community Health Centers:

- Current activities: Until this year, MDPH used state funds to provide CHCs with all ACIP-recommended vaccines for adults, except for HPV and zoster vaccines. Unfortunately, because of budget constraints, MDPH currently provides vaccines to CHCs only for adults who are uninsured. MDPH staff conducts VFC and AFIX visits at CHCs, and provides training for CHC staff. The MDPH Immunization Program and the MDPH Office for Health Equity are working with the LCHC Social Media + mHealth Project Manager on using social messaging to reach minority young adults with flu promotion information. (See letter of support from the Massachusetts League of Community Health Centers.)
- **Gaps:** CHCs do not have a baseline of current adult vaccination policies and adult vaccination rates. There is no assessment of reimbursement issues for adult vaccination services at CHCs and no assessment of CHCs' needs for information and training. CHCs do not currently participate in the MIIS.
- **Resources needed:** A dedicated staff person at the Massachusetts League of Community Health Centers is needed to coordinate all project activities with CHCs and assess need information and training. An evaluator is needed to assess current adult vaccination rates at CHCs, including identification of ethnic and racial disparities. MIIS technical and support staff are needed to recruit train and support CHCs on the MIIS.

Plan and Evaluation:

All activities outlined below will be carried out through the expansion of existing contracts and interagency service agreements. Project coordination, evaluation and MIIS support will occur through an expansion of an existing contract with John Snow, Inc. (JSI). Expansion of an existing contract with Masspro will support of recruitment of CHCs, employers and pharmacies to the Adult Immunization Coalition and the establishment of, and support for an Adult Immunization Work Group. Expansion of an existing interagency service agreement will support adult immunization activities at MassHealth. Expansion of an existing contract with the League of Community Health Centers will support adult immunization activities at the League. An expansion of an existing contract with SSG Solutions will support MIIS technical support for pharmacies and CHCs. Please Section 3, *Capacity* for a description of the agencies and individuals who will implement the activities outlined below. See page 25 for organizational chart.

All funds will be encumbered within one year of the grant award, including funding for those activities that occur in the second year of the project period. The project coordinator will provide monthly progress reports that contain, at a minimum, project overview; work progress during the previous month, status of implemented activities, difficulties encountered; and future activities. A Financial Status Report and an Annual Progress Report will be submitted within 30 days of the end of the budget period. Final Performance and Financial Status Reports will be submitted no more than 90 days after the end of the project period.

Objective 1: By June 2013, increase the number of vaccines administered to adults in

pharmacies participating in the project by 10% over the baseline established in 2011. The following table sets forth the activities, timeline and staffing plan that will be utilized to implement and achieve this objective.

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
Expand existing contracts with John Snow, Inc. (JSI) and SSG Solutions Group to bring on personnel to coordinate project; train and support pharmacies on the MIIS; and design and implement the evaluation plan.	By 9/30/2011	Contracted personnel listed in this grant will be in place to carry the activities listed below.	Beth English, Deputy Program Manager for Operations; Donna Lazorik, Deputy Program Manager for Program Development
Design evaluation for the pharmacy component of project to include number of pharmacies offering vaccines to adults, ability of pharmacies to be reimbursed by insurance for administering vaccines, and pharmacy employee vaccination policies.	By 12/31/2011	A plan for evaluation of both processes and outcomes will be in place.	Proj Coord (JSI); Evaluator (JSI); Donna Lazorik
Establish baselines for the	By	Baselines will be	Proj Coord (JSI);

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
number of pharmacies offering vaccines to adults and current reimbursement systems and out-of-pockets costs.	11/31/2012	established and systems for on-going evaluation will be in place.	Evaluator (JSI)
Collaborate with the Massachusetts Pharmacists' Association to explore partnerships with additional independent pharmacies and pharmacy chains.	By 3/31/2012	The new members on the Adult Immunization Coalition that represent independent and chain pharmacies.	Proj Coord (JSI) Sharon Reidbord, Manager of Adult Immunization Services, Masspro
Collaborate with the MA Adult Immunization Coalition, the MA Pharmacists Association, Masspro (the MA quality improvement organization) and the MDPH Bureau of Health Quality to expand pharmacists' authority to administer vaccines other than influenza to adults.	By 3/1/2012	The number of different vaccines that pharmacists are authorized to administer. At a minimum, this should include pneumococcal and zoster vaccines.	Al DeMaria, MD, State Epidemiologist; Donna Lazorik; Proj Coord (JSI); Susan Lett, MD, Immunization Program Manager
Enroll two large pharmacy	By	The exchange of	Lynette Mascioli,

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
chains in the MIIS.	3/30/2012	electronic immunization information between the MIIS and all the pharmacies of at least two pharmacy chains.	MIIS Coordinator; MIIS technical staff (SSG); MIIS programmatic staff (JSI).
Program staff will make two visits to CDC.	By 6/30/2012	Two visits made to CDC.	Donna Lazorik; Proj Coord (JSI)
Continue enhancing existing, and developing new, partnerships with independent and chain pharmacies to ensure that pharmacists receive all information regarding adult vaccination recommendations, schedules and best practices.	On-going during and after the project period	The number of independent and chain pharmacies that are on the adult immunization and influenza email distribution lists.	Adult Immunization Coalition Donna Lazorik

Objective 1 Outcome Evaluation Plan: Project staff will analyze data collected through on-line surveys and interviews with pharmacies and through the MIIS on the number of pharmacies offering vaccines to adults, the kinds of vaccines they offer, status of reimbursement for vaccination services at pharmacies, status of need for co-pays and deductibles, and pharmacy

employee vaccination policies and rates. Results will be submitted to CDC and reported to the Massachusetts Pharmacists Association and the Adult Immunization Coalition by June 30, 2013.

Objective 2: *By June 2013, increase the number of members of the Associated Industries of Massachusetts (AIM) that provide on-site vaccination programs for their employees by 10% over the baseline established in 201 .* The following table describes the activities, timeline and staffing plan that will be utilized to implement and achieve this objective.

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
Expand existing contract with John Snow, Inc. (JSI) to bring on personnel to coordinate project; provide information and training to employers; design and implement evaluation plan; conduct surveys pre- and post-surveys of employers.	By 9/30/2011	Contracted personnel listed in this grant will be in place to carry the activities listed below.	Beth English, Deputy Program Manager for Operations; Donna Lazorik, Deputy Program Manager for Program Development
Expand existing contract with ABT Associates to include question on the 2012 BRFSS on where do adults get their flu	By 9/30/32011	A question about where adults get their flu vaccine will be included in the 2012	Beth English; Donna Lazorik

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
vaccine.		BRFSS.	
Design evaluation for the employer component of project to include number of AIM members that offer employee vaccination programs; which vaccines are included in the programs; and status of insurance reimbursement for employee vaccination programs.	By 12/31/2011	A plan for evaluation of both processes and outcomes will be in place.	Karen Choi, Sr. Vice President for Management and HR, AIM Proj Coord (JSI); Evaluator (JSI); Susan Lett, MDPH
Conduct on-line survey of AIM members.	By 12/31/2011	Completion of baseline survey.	Karen Choi, AIM Proj Coord(JSI); Evaluator (JSI);
Collaborate with AIM to conduct presentations and webinars for AIM members on the advantages of, and best practices for, employee vaccination programs.	By 6/30/2012	Number of presentations and webinars conducted; number of attendees at these activities.	Proj Coord (JSI); Health Educator (JSI); Karen Choi, AIM

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
Collaborate with the MA Adult Immunization Coalition to explore partnerships with other groups representing employers and labor.	By 6/30/2012	Number of new members of the Adult Immunization Coalition that represent employers and labor.	Proj Coord (JSI); Masspro
Program staff will make two visits to CDC.	By 6/30/2012	Two visits made to CDC.	Donna Lazorik; Proj Coord (JSI)

Objective 2 Outcome Evaluation Plan: Program staff will collaborate with AIM to collect, analyze and report on the number of AIM members that offer employee vaccination programs; which vaccines are included in the programs; and status of insurance reimbursement for employee vaccination programs. The data will be collected through electronic surveys of AIM members at both the beginning and the end of the project. Survey results will be submitted to CDC and reported to AIM and the Adult Immunization coalition by June 30, 2013.

Objective 3: *By June 2013, MassHealth (the Massachusetts Medicaid program) will provide reimbursement for all ACIP-recommended vaccines for adults, with payments to providers documented as similar to those paid by private insurers in our jurisdiction.* The following table includes the activities, timeline and staffing plan that will be utilized to implement and achieve

this objective.

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
Expand existing contract with John Snow, Inc. (JSI) to bring on personnel to coordinate project; provide information and training to MassHealth employees; and design and implement evaluation plan	By 9/30/2011	Contracted personnel listed in this grant will be in place to carry the activities listed below.	Beth English, Deputy Program Manager for Operations; Donna Lazorik, Deputy Program Manager for Program Development
Develop interagency service agreement (ISA) with MassHealth to support an Adult Immunization Coordinator (AIC) at MassHealth dedicated to identifying and addressing adult immunization reimbursement issues; and supporting the MassHealth Work Group on Adult immunizations.	By 9/30/2011	The presence of a person dedicated to adult immunization reimbursement issues at MassHealth.	Beth English; Donna Lazorik
Expand existing contract with	By	Revision of existing	Beth English;

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
Masspro to support the MassHealth Adult Immunization Work Group.	8/31/2011	contract.	Donna Lazorik
Establish a MassHealth Adult Immunization Work Group to evaluate current MassHealth coverage of ACIP-recommended vaccines for adults, and provide MassHealth with an analysis of its coverage of adult vaccines and recommendations for expansion of coverage, and strategies for implementation and notification of providers and consumers of those changes.	By 1/31/2011	Establishment of a MassHealth Adult Immunization Work Group.	MassHealth AIC Sharon Reidbord, Masspro Proj Coord (JSI) Donna Lazorik, MDPH; Susan Lett, MDPH
Design evaluation for the MassHealth component of project to determine which adult vaccines are reimbursed by MassHealth and under what	By 12/31/2011	A plan for evaluation of both processes and outcomes will be in place.	Proj Coord (JSI); Evaluator (JSI); MassHealth AIC

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
<p>circumstances, and at what rates</p> <p>MassHealth reimburses for adult vaccines and vaccine services.</p>			
<p>Conduct training on adult vaccination for MassHealth staff.</p>	<p>By</p> <p>6/30/2012</p>	<p>Number of</p> <p>MassHealth staff who receive training on adult vaccination.</p>	<p>MassHealth AIC</p> <p>Health Educator (JSI)</p>
<p>Ensure MassHealth representation on the MA Adult Immunization Coalition.</p>	<p>By</p> <p>6/30/2012</p>	<p>Number of new members of the Adult Immunization Coalition that represent employers and labor.</p>	<p>MassHealth AIC</p> <p>Sharon Reidbord, Masspro</p>
<p>Finalize and present evaluation of MassHealth coverage of ACIP-recommended vaccines for adults, and provide MassHealth with an analysis of its coverage of adult vaccines</p>	<p>By</p> <p>6/30/2011</p>	<p>Presentation of recommendations to MassHealth.</p>	<p>MassHealth Adult Immunization Work Group; MassHealth AIC; Proj Coord (JSI)</p>

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
and recommendations for expansion of coverage, and strategies for implementation and notification of providers and consumers of those changes.			
Program staff will make two visits to CDC.	By 6/30/2012	Two visits made to CDC.	Donna Lazorik; Proj Manager (JSI)
The Mass Health Adult Immunization Work Group will meet on a regular basis to identify and address issues with MassHealth reimbursement of adult vaccination services.	Ongoing during and after the project period.	The number of meetings held by the Work Group.	MassHealth Adult Immunization Work Group, with support from Sharon Reidbord, Masspro; Donna Lazorik, MDPH; Susan Lett, MDPH

Objective 3 Outcome Evaluation Plan: At the end of the project period, the MassHealth Adult Immunization Work Group, with support from Masspro and MDPH, will again review policies on reimbursement for adult vaccines and vaccine services to evaluate the extent to which the MassHealth Work Group recommendation have been implemented, including which specific

vaccines are covered, under what circumstances and at which venues the vaccines are covered, and compare MassHealth reimbursement rates for adult vaccines with reimbursement rates of Medicare and private insurance plans. Changes in MassHealth policies regarding adult vaccination between the beginning and the end of the project period will be documented. Results from this evaluation will be submitted to CDC and reported to MassHealth and the Adult Immunization Coalition, along with recommendations for further improvements and strategies for informing providers and consumers of any policy changes.

Objective 4: *By June 2013, enhance existing relationship with federally-qualified community health centers (CHCs) to ensure that all ACIP-recommended vaccines for adults (influenza, pneumococcal, Tdap, hepatitis A, hepatitis B, and zoster vaccines) are offered to adult patients, and racial and ethnic disparities in adult vaccination rates identified at CHCs in 2011 have increased by at least 10 percentage point .* The following table includes the activities, timeline and staffing plan that will be utilized to implement and achieve this objective.

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
Expand existing contract with John Snow, Inc. (JSI) to bring on personnel to manage project; provide information and training CHCs; recruit, train and support CHCs on the MIIS;	By 9/30/2011	Contracted personnel listed in this grant will be in place to carry the activities listed below.	Beth English, Deputy Program Manager for Operations; Donna Lazorik, Deputy Program Manager for Program

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
and design and implement an evaluation plan.			Development
Expand existing contract with the League of Community Health Centers (LCHC) to support an Adult Immunization Coordinator (AIC) at the LCHC to coordinate all adult vaccination efforts with CHCs.	By 9/30/2011	The presence of a person dedicated to adult vaccination issues at the LCHC.	Beth English; Donna Lazorik
Ensure representation from the CHCs on the Adult Immunization Coalition.	By 10/31/2011	Representatives from the CHCs attend meetings of the Adult Immunization Coalition.	LCHC AIC Sharon Reidbord, Masspro
Design evaluation for the CHC component of project to determine which adult vaccines are provided to adults at CHCs; reimbursement issues around adult vaccination services at	By 11/30/2011	A plan for evaluation of both processes and outcomes will be in place.	Proj Coord (JSI); Evaluator (JSI); LCHC AIC Donna Lazorik, MDPH; Susan Lett, MDPH

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
CHCs; and adult vaccination rates at CHCs.			
Conduct survey of CHCs to identify barriers to adult vaccination services at CHCs.	By 11/30/2011	Survey of CHCs will be completed.	LCHC AIC; Proj Coordinator (JSI)
Conduct training on adult vaccination for CHC staff.	By 6/30/2012	Number of MassHealth staff who receive training adult vaccination.	LCHC AIC Health Educator (JSI)
Recruit, train and support 50% of CHCs in the MIIS.	By 6/30/2012	The exchange of electronic immunization information between the MIIS and the CHCs.	MIIS technical staff (SSG); MIIS programmatic staff (JSI)
Program staff will make two visits to CDC.	By 6/30/2012	Two visits made to CDC.	Donna Lazorik; Proj Coord (JSI)
On-going partnership with the LCHC and individual CHCs monitor and address on-going	Ongoing during after the	Increase in adult vaccination rates and decrease in disparities	Donna Lazorik; MDPH; Susan Lett, MDPH;

Activities to Reach Objective	Timeline	Evaluation Measures	Staffing Plan
services and assess adult vaccination rates at CHCs through the MIIS.	project period.	in vaccination rates among racial and ethnic groups.	Adult Immunization Coalition; MIIS staff

Objective 4 Outcome Evaluation Plan: The MIIS will be used to establish baseline adult vaccination rates and increases in vaccination rates for all ACIP-recommended adult vaccines (influenza, pneumococcal, Tdap, hepatitis A, hepatitis B, and zoster vaccines) at CHCs at the end of the project period. The MIIS will also be used to analyze racial and ethnic disparities in adult vaccination rates at individual CHCs and, and in the aggregate. Aggregate vaccination rates for CHCs will be submitted to CDC and reported to the LCHC and the Adult Immunization Coalition.

Ongoing Evaluation of Adult Vaccination Rates:

Once the CHCs and pharmacies are enrolled into the MIIS, we will be able to monitor adult immunization rates at the individual centers.

MDPH has been funding state-optional questions on the BRFSS since 2009 to determine adult vaccination rates for hepatitis B, Tdap, HPV, and zoster vaccines. Funding from this grant will allow us to include these questions on the 2013 BRFSS to monitor the overall impact of the interventions described in this application on adult vaccination rates. MDPH is committed to ensuring that these questions are included on the Massachusetts BRFSS through 2013.

Capacity:

Donna Lazorik, RN, MS, will be the MDPH lead for this program area. She is the Deputy Program Manager for the Massachusetts Immunization Program and has overseen adult immunizations for 12 years. In 2008, Ms Lazorik was the author of the Massachusetts Adolescent and Adult Immunization Plan. See attached resume.

[John Snow, Inc.](#) (JSI) is a public health research and consulting firm that provides management assistance, research and evaluation, education, and training for agencies and individuals. JSI has assisted MDPH with many projects, including managing and evaluating the Massachusetts H1N1 Vaccine Program. Stewart Landers, JD, MCP, who will oversee all JSI activities for this project, has been a senior consultant with JSI since 1994. His areas of technical expertise include research methodology, needs assessment, technical assistance, utilization and cost analysis, and program design and management. See attached resume.

[Associated Industries of Massachusetts](#) (AIM): Karen Choi, Senior Vice President Management and HR Services, The Employer's Resource Group, manages the compensation and benefits survey process. She also consults with member companies on compensation and benefit plan design, diversity initiatives, employee opinion surveys, retention initiatives and general Human Resource issues. AIM is the largest employer organization in Massachusetts, with 5,000 members. See letter of support from AIM.

[Massachusetts League of Community Health Centers](#) (LCHC): Patricia Edraos, D, MBA, MPH, Health Resources & Policy Director for LCHC, will oversee all LCHC activities for the project. In her role at LCHC, she developed the 1985 Medicaid Prepaid Medical Care Program and the Department of Medical Security CenterCare program; assisted the state Medicaid agency and the health centers in implementing Medicaid and CHIP expansion. See attached resume.

[Masspro](#): Sharon Reidbord, MBA, is the Manager for Adult Immunization Services at Masspro. She previously worked at the Massachusetts Executive Office for Health and Human Services where she oversee project management activities for high-priority, cross-agency initiatives pertaining to children's mental health, Healthcare Reform, emergency management, and patient safety . She designed and directed the MassHealth Project Support Unit. See attached resume.

[Massachusetts League of Community Health Centers](#) (MLCHC): Patricia Edraos, JD, MBA, MPH, Health Resources & Policy Director for MLCHC, will oversee all MLCHC activities for the project. In her role at MLCHC, she developed the 1985 Medicaid Prepaid Medical Care Program and the Department of Medical Security CenterCare program; assisted the state Medicaid agency and the health centers in implementing Medicaid and CHIP expansion. Currently responsible for Sec.340B and dental services expansion, and participation in state Medical Home and other health care reform initiatives. See attached
Funding Opportunity: CDC-RFA-IP11-1107PPHF11
Massachusetts Project Narrative: Program Area 5

resume.

[Associated Industries of Massachusetts](#) (AIM): Karen Choi, Senior Vice President Management and HR Services, The Employer's Resource Group, manages the compensation and benefits survey process. She also consults with member companies on compensation and benefit plan design, diversity initiatives, employee opinion surveys, retention initiatives and general Human Resource issues. See attached resume. AIM is the largest employer organization in Massachusetts, with 5,000 members. See letter of support from AIM.

[The Massachusetts Adult Immunization Coalition \(MAIC\)](#) is a partnership of health care professionals dedicated to increasing adult immunization through networking and sharing innovative approaches. There are currently over 40 members representing local and state public health agencies, senior service groups, health care networks, community-based healthcare organizations, and health insurers. See letter of support from the MAIC.

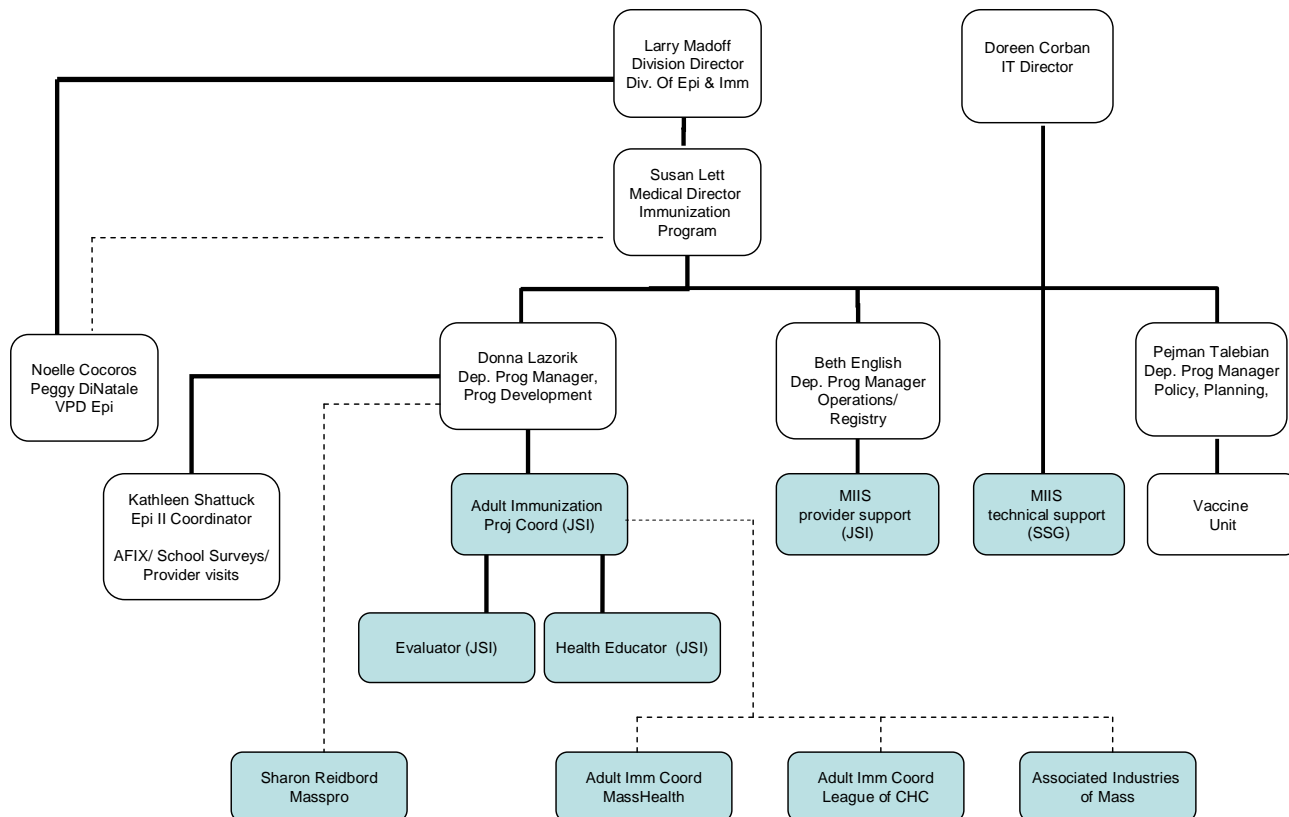
[Strategic Solutions Group](#) (SSG) has provided the staffing for IT management and support services for the Massachusetts Immunization Information System since its inception. John Schaeffer, SSG President, manages all MIIS IT operations. See attached resume.

Beth English, MPH, is the Deputy Program Manager for Operations, Immunization Program, and is responsible for the daily operations of the Immunization Program in accordance with state and federal requirements, including contractual relationships. See attached resume.

Susan M. Lett, MD, MPH has been the medical director of the immunization program at the Massachusetts Department of Public Health for 23 years and the program manager for over 10 of those years. She is a former member of the both the Advisory Committee on Immunization Practices (ACIP) and the National Vaccine Advisory Committee (NVAC). She has

been on many vaccine-related working groups at both the federal and state levels. See attached resume.

Implementation of Adult Immunization Programs Functional Chart



Shaded squares represent individuals or contracts that are fully or partially funded through this grant