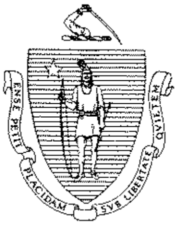

*The Commonwealth of Massachusetts*
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August 27, 2012

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U.S. Department of Health and Human Services
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Boston, MA 02203-0002

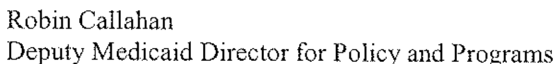
Dear Ms. Sheer and Ms. DelVecchio:

In accordance with term and condition number 84 of the Special Terms and Conditions of the MassHealth Demonstration (Project Number 11-W-00030/1), the Massachusetts Executive Office of Health and Human Services (EOHHS) submitted its Draft Evaluation Design to the Centers for Medicare and Medicaid Services (CMS) on April 27, 2012.

Please find enclosed EOHHS' Final Evaluation Design in response to CMS feedback submitted to the Commonwealth June 26, 2012.

If you should have any specific questions during your review, please contact me at (617) 573-1745.

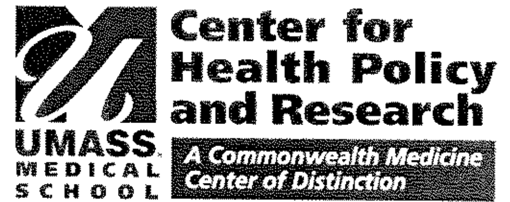
Sincerely,



Robin Callahan
Deputy Medicaid Director for Policy and Programs

cc: Mr. Richard McGreal, CMS Region One
Ms. Julie McCarthy, CMS Region One
Ms. Juliana Sharp, CMS Central

August 27, 2012




# MassHealth Section 1115(a) Demonstration Waiver Evaluation Design

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# Part 1 | Introduction

The Centers for Medicare and Medicaid Services (CMS) and the Massachusetts (MA) Executive Office of Health and Human Services (EOHHS) will continue their health care reform partnership via extension of the section 1115 (a) Demonstration through June 30, 2014. For this extension period, EOHHS's goals under the Demonstration are:

- Goal 1: Maintain near universal health care coverage for all citizens of the Commonwealth and reduce barriers to coverage;
- Goal 2: Continue the redirection of spending from uncompensated care to insurance coverage;
- Goal 3: Implement delivery system reforms that promote care coordination, person-centered care planning, wellness, chronic disease management, successful care transitions, integration of services, and measurable health outcome improvements; and
- Goal 4: Advance payment reforms that will give incentives to providers to focus on quality, rather than volume, by introducing and supporting alternative payment structures that create and share savings throughout the system while holding providers accountable for quality care.

EOHHS is responsible for evaluating the Demonstration as described in Special Terms and Condition (STC) 84. To accomplish this, EOHHS enlisted the organizations named in Table 1 below to conduct specific evaluation studies of six Demonstration initiatives. EOHHS has partnered with the University of Massachusetts Medical School (UMMS) Center for Health Policy and Research (the Center) to prepare this evaluation design, to conduct four of the six individual evaluation studies, to coordinate the six individual evaluation studies, and to prepare the final evaluation report. The Center will assist EOHHS with cross-study coordination, collaboration, and communication in order to develop progress reports of evaluation activities and interim findings for EOHHS submission to CMS (STC 58(g) and 59).

**Table 1. EOHHS Evaluation Study Partner Organizations & Leads**

| Evaluation Study | EOHHS Partner | Study Leads |
|---|---|---|
| Delivery System Transformation Initiatives (DSTI) | Center for Health Policy & Research (UMMS) | Teresa Anderson<br>Georgia Willis |
| Express Lane Eligibility (ELE) | Center for Health Policy & Research (UMMS) | Teresa Anderson<br>Georgia Willis |
| The Pediatric Asthma Pilot Program (Pedi Asthma) | Center for Health Policy & Research (UMMS) | Wen-Chieh Lin<br>Humberto Reynoso |
| Continued Monitoring of Population Level Measures | Center for Health Policy & Research (UMMS) | Teresa Anderson<br>Georgia Willis |
| The Intensive Early Intervention Services for Children with Autism Spectrum Disorder (IEI) | Massachusetts General Hospital/Harvard Medical School Center for Child and Adolescent Health Research and Policy | Karen Kuhlthau<br>Milt Kotelchuck |
| The Patient Centered Medical Home Initiative (PCMHI) | Commonwealth Medicine (UMMS) | Ann Lawthers<br>Valerie Konar |

## A. Demonstration Evaluation – Cross-Study Coordination and Deliverable Timelines

In order to submit progress on implementation of the evaluation design EOHHS and the Center will convene standing quarterly conference calls (and any additional meetings as needed) with the leads of the six individual evaluation studies. The study leads will report their evaluation activities during the past three-month period, will make comments on their findings including any challenges they have faced, and will describe their plans for

the following quarter. The Center will record this information as meeting minutes, then summarize it for EOHHS' use in preparing quarterly and annual reports for CMS. Study coordination meetings will begin in October 2012 and occur at three-month intervals through April 2014.

Additionally, these meetings provide an opportunity for EOHHS to dialogue with the study leads concerning how their respective evaluation study populations or program activities assist in monitoring the Demonstration goals. Table 2 presents the Demonstration goal(s) advanced by each initiative.

**Table 2. Demonstration Initiative by Goal(s)**

| Demonstration Initiative | Demonstration Goal |
|---|---|
| Delivery System Transformation Initiatives (DSTI) | Goals #3, 4 |
| Express Lane Eligibility (ELE) | Goal #1 |
| The Pediatric Asthma Pilot Program (Pedi Asthma) | Goals #3, 4 |
| Continued Monitoring of Population Level Measures | Goals #1, 2, 3 |
| The Intensive Early Intervention Services for Children with Autism Spectrum Disorder (IEI) | Goals #3 |
| The Patient Centered Medical Home Initiative (PCMHI) | Goals #3, 4 |

### B. Demonstration Initiatives - Isolated Impact

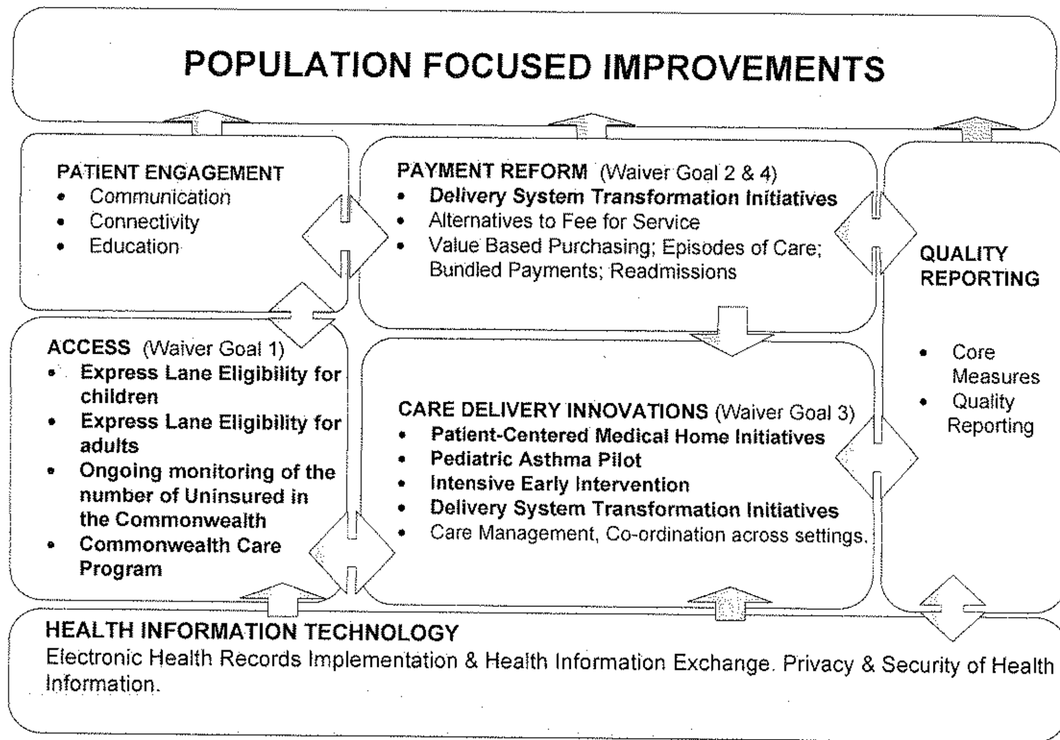
Each Demonstration Initiative will include detailed analysis plan information on how the population or service delivery initiative will be identified and isolated for purposes of the evaluation. The only exception to this is the continued monitoring of population level measures as it is not possible to isolate population health.

## Part 2 | Conceptual Framework

Our Demonstration conceptual framework adapts the Association of American Medical Colleges "Health Care Innovations Zone" model (AAMC, 2012) (Figure 1). We understand the Demonstration's health care reform efforts through six key domains: 1) patient engagement; 2) payment reform; 3) access to care; 4) care delivery innovations; 5) quality reporting; and 6) health information technology. Multiple Demonstration programs and initiatives touch on one or more domains. For instance, the ELE programs focus on improving care access through more efficient Medicaid renewal eligibility determination. PCMHI and the DSTI programs are significant care delivery innovations, and these two, along with the Pediatric Asthma Pilot program (the Pilot), initiate new forms of provider payment.

The access to care, payment reform and care delivery innovations domains are directly related to the four Demonstration Goals. The framework displayed in Figure 1 shows the relationship of these three domains both to the other three domains and to population focused improvements. Thus, the framework assists us in coordinating the evaluation study results with the six population level measures to assess Demonstration goal progress and population focused improvements.

**Figure 1. Conceptual Framework of the Waiver**




(Adapted from Association of American Medical Colleges (2011). *Readiness for Reform Assessment Results*. Washington, D.C.: Association of American Medical Colleges.)

# Part 3 | Individual Evaluation Component Study Designs

In this section, a description of each of the evaluation component studies' background, populations, evaluation design, data sources, comparison groups, measures, and data analysis are included, as well as how each particular component addresses the Demonstration goals.

## A. Delivery System Transformation Initiatives (DSTI)

**Background**

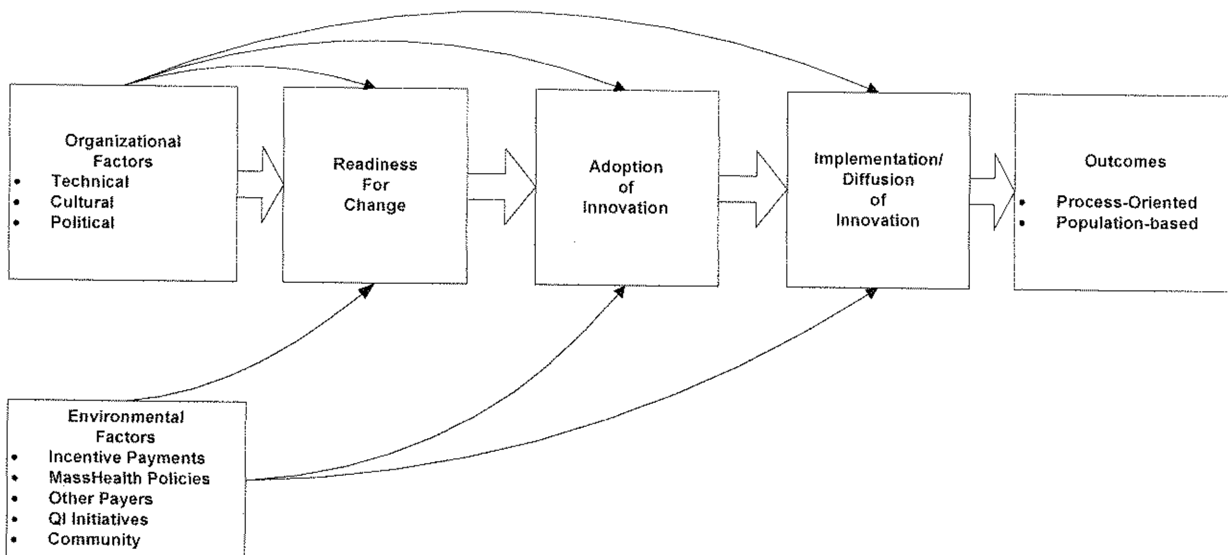
CMS and MassHealth will offer performance-based incentive payments to seven participating safety net hospital organizations to encourage and reward these hospital systems for making investments in healthcare delivery initiatives that support the triple aims of improving the quality of care, improving the health of populations, and reducing the per-capita costs of health care. In addition, DSTI payments will support initiatives that improve the participating hospitals' readiness for payment reform and the move away from fee-for-service payments toward alternative payment arrangements that reward high-quality, efficient, and integrated systems of care.. Each hospital organization has its unique structure and community context in which to implement these innovations during the Waiver period. Each hospital system has its specific, CMS approved DSTI plan based on the DSTI Master plan. Each hospital DSTI plans includes specific projects selected from a menu within the following categories:

DSTI Category 1: Development of a Fully Integrated Delivery System. Category 1 projects encompass the concepts of the patient centered medical home (PCMH) model to increase delivery system efficiency and capacity.

DSTI Category 2: Health Outcomes and Quality. Category 2 projects develop, implement or expand innovative care models to improve care management, patient experience and contain costs.
DSTI Category 3: Ability to Respond to Statewide Transformation to Value-Based Purchasing and to Accept Alternatives to Fee-For-Service Payments that Promote System Sustainability. Projects enhance performance improvement and reporting capabilities.

At least one project from each category had to be included in the hospital's plan. CMS and MassHealth expect that the combination of incentive payments and implementation of projects in DSTI Category 1 through 3 will impact the DSTI Category 4, Population Focused Improvements. In order to receive DSTI incentive payments, each hospital must demonstrate achievement of specified performance metrics as described in the hospital's approved three-year plan. Throughout the three-year period, EOHHS expects that the DSTI will advance Demonstration goals #3 and #4.

**Figure 2. Conceptual Model: Organizational Transformation**




Adapted from Bryan Weiner and Noel Tichy (Weiner, B. J. (2009). A theory of organizational readiness for change. *Implementation Science, 4*(67); Tichy, N. M. (1983). *Managing strategic change : technical, political, and cultural dynamics.* New York: Wiley)

In evaluating the DSTI, we consider each hospital system's transformation as a form of organizational innovation. Studies of diffusion and adoption of health care innovations point to a number of key factors that drive innovation and adoption (Weiner, 2009; Tichy, 1983) displayed in Figure 2 above. These factors can be grouped as characteristics of the organization which is "adopting," including its political, cultural and technical systems; as characteristics of the environment in which the organization operates, including the policy environment (for example, the DSTI incentive payments), competing and collaborating providers, and other local community factors; and finally, as characteristics of the innovation itself (in the case of DSTI, the specific initiatives each organization selects to adopt). We expect these factors to influence all stages of the adoption process, including organizational readiness to adopt, adoption, and diffusion. Once change has been adopted within one unit of an organization, it can be diffused or 'spread' to similar parts of the same organizational system. Further, the model suggests that the level of diffusion achieved will affect the expected outcomes of change (Weiner, 2009; Tichy, 1983).

The STC 84 stipulates that EOHHS evaluate "the impact of DSTI payments to participating providers on the Commonwealth's goals and objectives outlined in its master plan including:

- Were the participating hospitals able to show statistically significant improvements on measures within Categories 1-3 related to the goals of the three-part aim as discussed in STC 49(e)(4) and pursuant to STC 52? (Q1)
- Were the participating hospitals able to show improvements on measures within Category 4 related to the goals of the three-part aim as discussed in STC 49(e)(4) and pursuant to STC 52? (Q2)
- What is the impact of health care delivery system and access reform measures on the quality of care delivered by participating providers? (Q3)
- What is the impact of the payment redesign and infrastructure investments to improve cost efficiency? (Q4)
- What is the impact of DSTI on managing short and long term per-capita costs of health care? (Q5)
- How did the amount paid in incentives compare with the amount of improvement achieved? (Q6)"

To address these questions we developed study aims based on the specific objectives outlined in the CMS approved Master DSTI plan and each hospital's specific plan. We view DSTI success in these first three implementation years from the perspective of improvement over time within each hospital system.

The specific study aims are:

1. Describe each hospital organization's plan for care delivery system transformation and performance at DSTI inception on specific projects during SFY 2012 (STC 49(c)(4); STC 52) (baseline qualitative): (Q1-6)
    a. Describe the key implementation processes and improvements planned with identified measures (baseline quantitative)
    b. Identify the organizational units directly involved;
    c. Identify the incentive payment amounts associated with each initiative project.

2. Describe early progress toward implementing the planned transformations within each hospital system during SFY 2013 and SFY 2014.
    a. When possible, assess the statistical significance of differences in reported Category 1-3 measures within each site (quantitative) (Q1).
    b. Identify and describe the reported conditions that facilitate or impede each site's progress on its specific transformation initiatives (qualitative) (Q1-6).

**Study Population**

The DSTI includes seven hospital systems, identified in STC Attachment I, which are Cambridge Health Alliance, Boston Medical Center, Holyoke Medical Center, Lawrence General Hospital, Mercy Medical Center, Signature Healthcare Brockton Hospital and Steward Carney Hospital. These are safety net hospitals, and they are eligible for DSTI based on their unique payer mix: high Medicaid and Commonwealth Care/low Commercial health plan (DSTI Master Plan, p9).

**Evaluation Design**

Our overall evaluation will employ a descriptive research design. The evaluation will use both qualitative and quantitative methods. We will rely primarily on content analyses of the DSTI project documents and participant observations conducted at mid-year assessment meetings. Category specific quantitative process and outcome measures will be extracted from these documents. The evaluation focuses on the first three-year period of each hospital's five year plan, the time span consistent with the Demonstration extension period through June 30, 2014.

**Data Sources**

Data sources will be the project documents: the Master and seven hospital specific DSTI plans; DSTI Semi-Annual Reports for Payment; DSTI Year End Reports; Semi-Annual Request for Payment forms; DSTI Grace Period Request Forms (if filed) and DSTI Retrospective Carry Forward Reclamation Request for Payment Forms (if filed). In addition, we will conduct observations at the hospitals' midyear assessment meeting. The

hospital specific DSTI plans contain rich descriptive narratives including numerous, robust measures and metrics that are directly tied to the specific projects that DSTI hospitals are undertaking. The measures and metrics have been approved by CMS through a rigorous plan review and revision process. Hospital DSTI plans provide the baseline data. The semi-annual and at year end reports represent 5 additional data collection points. Semi-annual reports include documentation of demonstration achievements for each metric, providing rich data in addition to the reports themselves.

DSTI Semi-Annual Reports for Payment update baseline data, and Semi-Annual Request for Payment forms provide information about the incentive payments expected. DSTI Year End Reports provide accomplishments, challenges faced and lessons learned by project. Hospitals may file DSTI Grace Period Request Forms and DSTI Retrospective Carry Forward Reclamation Request for Payment Forms when they require additional time to achieve a measure (STC 52 (c) (4) (ii) and the Master DSTI plan). These reports will guide our understanding of factors impeding progress within a Transformation Stage and incentives paid.

**Comparison Group**

We will view the DSTI's success from the perspective of improvement over time within each hospital system. These hospital systems are eligible for DSTI participation precisely because of their unique payer mix, which has a significant impact on each hospital's resources, patient population, and outcomes. There is therefore no comparable group of non-DSTI hospitals that would serve as a comparison group. Further, as each DSTI hospital has its own distinct intervention, we will not compare one DSTI hospital to another.

Table 3, DSTI Hospital Project Matrix, displays the specific combination of Category 1-3 projects that each hospital will undertake. Project numbers reference the Master DSTI Plan.

**Table 3. DSTI Hospital Project Matrix**

| Hospital | Cat. 1 Project | Cat. 2 Project | Cat. 3 Project |
|---|---|---|---|
| Steward Carney Hospital | 1.6; 1.7 | 2.3; 2.7; 2.9 | 3.8; 3.9 |
| Cambridge Health Alliance | 1.1; 1.2 | 2.5; 2.1 | 3.7; 3.1; 3.9 |
| Lawrence General Hospital | 1.1; 1.3 | 2.3; 2.8 | 3.4; 3.3; 3.9 |
| Boston Medical Center | 1.1; 1.5 | 2.6; 2.1; 2.4 | 3.3; 3.9 |
| Holyoke Medical Center | 1.1; 1.4 | 2.2; 2.1 | 3.6; 3.9 |
| Mercy Medical Center | 1.3; 1.2 | 2.7; 2.3 | 3.3; 3.5;3.9 |
| Signature Healthcare Brockton Hospital | 1.3; 1.4 | 2.7; 2.1 | 3.2; 3.1; 3.9 |

Some projects are common to multiple hospitals, such as Project 1.1 or 2.7. Other projects are specific to a single hospital (3.2 at Signature Healthcare Brockton Hospital). All hospitals must include DSTI Project 3.9, Participation in a Learning Collaborative. This variation in DSTI hospital projects necessitates our examination of each hospital's progress on an individual basis. We will, however, explore the feasibility of accessing data, such as Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) and Healthcare Effectiveness Data and Information Set (HEDIS), to examine how DSTI hospitals using this data for measurement of their projects compare to all MA hospitals collecting the same data.

**Measures**

Quantitative and qualitative measures used in this evaluation are organized by four types: Organizational Factors, Environmental Factors, Project Specific Factors and Transformation Stage as depicted in the conceptual model (Figure 2).

- **Organizational Factors**
  These qualitative factors include the projects selected, the hospital units involved, project accomplishments, lessons learned, transformation facilitators and challenges faced within the hospital organization. These will be used to describe each hospital's organizational units involved (Study Specific Aim 1b) and to describe early progress towards implementation (Study Specific Aim 2) including conditions that facilitate or impede progress (Study Specific Aim 2b) (Q1, Q2). They are derived from the DSTI Hospital Plans, DSTI Semi-Annual Reports for Payment, DSTI Year-End Reports, DSTI Grace Period Request Forms and DSTI Retrospective Carry Forward Reclamation Request for Payment Forms.

- **Environmental Factors**
  These qualitative and quantitative factors external to the organization include characteristics of the hospital's community, DSTI incentive payments and payer policies. These will be used to describe each hospital's incentive payments (Study Specific Aim 1c) (Q6) and to describe early progress towards implementation including conditions that facilitate or impede progress (Study Specific Aim 2b) (Q1, Q2). They are derived from the DSTI Hospital Plans, DSTI Semi-Annual Reports for Payment, DSTI Year-End Reports, DSTI Grace Period Request Forms and DSTI Retrospective Carry Forward Reclamation Request for Payment Forms.

- **Project Specific Factors**
  These qualitative and quantitative factors describe the specific projects planned within each hospital as identified in Table 1, DSTI Hospital Project Matrix, above (Study Specific Aim 1a). Quantitative factors will be used to assess the statistical significance of differences in reported Category 1-3 measures within each site (Study Specific Aim 2a) (Q1) when possible and to report changes in Category 4 measures (Study Specific Aim 2) (Q2,Q3,Q4,Q5). They are derived from the DSTI Hospital Plans, DSTI Semi-Annual Reports for Payment, DSTI Year-End Reports, DSTI Grace Period Request Forms and DSTI Retrospective Carry Forward Reclamation Request for Payment Forms.

- **Transformation Stage**
  This factor describes each hospital organization's readiness for change and adoption of the innovation at baseline (Study Specific Aim 1) (Q1-6). It also assesses progress in adoption towards implementation/diffusion of the innovation (Study Specific Aim 2) (Q1-6). Qualitative data for this factor are derived from the DSTI Hospital Plans, DSTI Semi-Annual Reports for Payment, DSTI Year-End Reports and DSTI Grace Period Request Forms.

**Data Analysis**

We will develop qualitative analytic plans for each hospital based on Table 1, DSTI Hospital Project Matrix. Open coding will be conducted on the text of the various project documents. Two team members will independently code each transcript using both inductive and deductive strategies. Disagreement between team members will be resolved through discussion and additional data review until consensus is reached. Code summary reports will be generated.

We will then develop initial concepts and categories that reflect salient and recurring themes in the data. Code summaries will be clustered by site and site-specific memos will be generated to help facilitate our understanding of change within each hospital system. The memos identify both common and site-specific themes. To enhance their validity through data triangulation, the results will be compared to the observational data collected during the two midyear assessment presentations. Finally, we will review the analyses with the DSTI Master Plan project lead.

A challenge to measuring the statistical significance of changes in DSTI performance measures is that most of the chosen measures report a single statistic for the entire hospital, such as the percentage of patients receiving or expressing satisfaction with a particular service. Because these measures are not distributed

within a sample or population and are reported on an annual or semi-annual basis, standard statistical analyses are not possible. However, we will explore alternative approaches in which we look for reference points in a larger population of hospitals and report changes in a DSTI hospital's score or rank in relation to changes in the reference group. For example, several DSTI measures come from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). Because all hospitals are required to report HCAHPS data, we may be able to compare year-to-year changes on specific items within a DSTI hospital to changes for those same measures in the broader population of hospitals in the region, state or in selected other states. By comparing changes, rather than direct scores, these analyses will be less likely to be biased by differences in the populations served in each hospital. Some change measures may be limited by floor (extremely low) or ceiling (extremely high) effects in the larger reference group.

During the initial phase of the evaluation, we will explore possible reference points for measures used in each DSTI. Although it may not be possible to find suitable comparators for each measure, we may find that some measures within a hospital's three-year plan can be used for such comparison.

## B. Express Lane Eligibility Program

**Background**

In 2009, MA was one of eight states awarded a grant from the Robert Wood Johnson Foundation known as the Maximizing Enrollment Program. The objective of the grant is to increase enrollment and retention of children in Medicaid and the Children's Health Insurance Program (CHIP) by improving and streamlining eligibility and renewal processes. Section 203 of the 2009 Children's Health Insurance Program Reauthorization Act (CHIPRA) authorizes the Express Lane Eligibility (ELE) process which provides states with the option to borrow findings from an approved Express Lane Agency (ELA) to conduct simplified eligibility and renewal determinations for children in Medicaid and CHIP.

Through its participation in the Maximizing Enrollment program, MA learned of other states' success in using ELE to enroll eligible children. Also, MA determined that one reason for families' loss of subsidized health coverage is the failure to return or complete the annual paper renewal forms and ELE reduces this barrier to coverage (Demonstration Goal #1). Since MassHealth determines eligibility based on households, MA decided to seek approval to implement an Express Lane process for renewing eligibility for entire families. The STCs give MA authority to use ELE to determine whether a child's parent or adult caretaker satisfies one or more components of Medicaid or Commonwealth Care eligibility contingent upon Medicaid and CHIP State Plan Amendment (SPA) approval to include children in the process. The Medicaid SPA for children has been approved and the CHIP SPA for children is pending.

MassHealth is proposing to borrow income findings from the Supplemental Nutrition Assistance Program (SNAP) to renew health coverage for families currently eligible for Medicaid, Medicaid Expansion CHIP, and Waiver services. This includes both children and their parents covered under MassHealth, Commonwealth Care, and Health Safety Net. The MA Department of Transitional Assistance (DTA), the agency that administers the SNAP program, is considered by CHIPRA to be an approved ELA. Families with children under the age of 19 who have gross income as verified by MassHealth at or below 150% of the Federal Poverty Level (FPL) and who are receiving SNAP (Food Stamp) benefits with SNAP-verified income of 180% FPL or lower will be included in the Express Lane renewal process. (CHIPRA allows states to establish a screening threshold for using an income finding from Express Lane agencies that is 30 percentage points higher than the highest Medicaid income threshold for a child.)

MassHealth will send a notice to the family informing them that they have used SNAP data to determine that all active members in the household are eligible to continue their health coverage, including MassHealth and Commonwealth Care benefits. A review form will be included with the notice. If the family has any changes they need to report they are instructed to complete the enclosed review form and return it to MassHealth.

MassHealth estimates that 142,688 members (87,783 children and 54,895 adults) and 46,287 families may meet the criteria for Express Lane renewal and be electronically renewed for continued coverage. MassHealth further expects that ELE will reduce the workload in the MassHealth Enrollment Centers (MECs) by approximately 46,287 paper forms.

The objective of this evaluation is to assess the ELE program's early implementation and to determine its impact on member re-determination and re-enrollment. The Study's Specific Aims are:

1. Describe the adult and child populations using Express Lane Eligibility procedures for renewal including demographic characteristics such as gender, age and the adults' status as parents or caretakers.
2. Describe MassHealth staff experience with the Express Lane Eligibility determination process including factors that facilitate and inhibit program implementation.
3. Determine early progress in completing eligibility re-determination for families.

EOHHS expects that the ELE Program, through a streamlined renewal process, will advance Demonstration goal #1, reducing barriers to coverage.

**Study Population**

Families with children under the age of 19, including their parents or caretakers, who are (1) enrolled in MassHealth or Commonwealth Care; (2) have gross income as verified by MassHealth at or below 150% of the Federal Poverty Level (FPL); and (3) are receiving SNAP benefits with income verified by SNAP at or below 180% FPL. To be selected for the ELE process, the adult members must be receiving active health benefits, and have an active SNAP benefit. EOHHS selected this group because DTA SNAP data is already part of its electronic eligibility determination system.

**Evaluation Design**

The goal of this evaluation is to assess the degree to which the ELE process maintains health coverage for families and reduces the re-determination and re-enrollment paperwork requirements for families and MassHealth. We will use a descriptive design with quantitative and qualitative methods.

**Data Sources**

We will use enrollment data (MassHealth and Commonwealth Care members) from the MassHealth's MA21 eligibility system and matching SNAP member enrolled data from DTA to capture the adult and child populations for whom ELE procedures were used and to assess their final eligibility outcomes. We will also collect qualitative data from MassHealth staff and representatives from the UMMS who are managing ELE implementation as part of the Maximizing Enrollment grant program for the Office of Medicaid. This data will be used to describe the ELE process and to identify implementation challenges and facilitators. We will design semi-structured interview guides to collect data at program inception and at the end of the first year.

**Comparison Group**

We understand that selection bias was introduced when the study population was determined by its SNAP beneficiary status. To mitigate this, we plan to use as a comparison group, families with children under the age of 19 who are (1) enrolled in MassHealth or Commonwealth Care; and (2) have gross income at or below 150% FPL. These will be identified from MA-21 enrollment data, matching on member demographic characteristics (gender, age, adult status as parent or caregiver). Exact matching on these characteristics and propensity score matching techniques will be used to ensure this group's comparability with the study population. While having a comparison group will add to the study's rigor, there are some limitations. For example, no comparison group family will be electronically re-determined as all members must submit paper forms. This limits our comparisons to those families in either group who filed paper forms for re-determination or re-enrollment.

**Measures**
Quantitative measures include demographic characteristics and enrollment status. Demographic characteristics include gender, age and the adults' status as parents or caretakers. These will address study aim #1. Enrollment status outcome measures include the proportion re-determined (or not) proportion re-enrolled (or not) and the proportion re-determined electronically (or not). These will be used for study aim #3. Qualitative measures fall into two groups; implementation process and MEC workload. Implementation process measures describe ELE redetermination start-up including challenges and facilitators. MEC workload will describe their realized changes in the re-determination paperwork process. These address study aims #2 &3.

**Data Analysis**
We will summarize the demographic characteristics of the study population on an aggregate level. We will also summarize the demographics of the comparison group and assess comparability between the groups in gender, number of children or parent status using the Chi-Square statistic (Study Aim #1). We will assess by month the increase in the proportion of adults using the ELE program from the baseline of zero. A difference-in-differences approach will be used to analyze outcomes from enrollment data. We will compare enrollment status outcomes for the ELE group which reports changes by paper form with the comparison group as feasible (Study Aim #3).

All interviews will be transcribed in Word and then imported into Atlas.ti, a qualitative software program that facilitates qualitative data management, content coding and analysis. We will use content analysis to determine the major themes, using the semi-structured interview guides to plan analyses. Open coding will be conducted using the interview transcripts. Two team members will independently code each transcript using both inductive and deductive strategies. Disagreement between team members will be resolved through discussion and additional data review until consensus is reached. Code summary reports will be generated and then compiled to describe staff experience with ELE program implementation. We will also compare the code summary reports to quantitative redetermination statistics (Study Aim #2).

## C. Pediatric Asthma Bundled Payment Pilot

**Disclaimer**
Per STC 39(g), there is a series of protocols that the Commonwealth must submit for CMS approval before it may claim FFP for the Pediatric Asthma Bundled Payment Pilot. The target date for the Commonwealth is to submit documentation to CMS is October 2012, subject to internal review and approvals.

**Background**
The Pilot will provide a payment to participating providers for asthma-related services, equipment and supports for management of pediatric asthma for high-risk patients, to improve health outcomes, reduce asthma-related emergency department utilization and asthma-related hospitalizations, and to reduce associated Medicaid costs. The Pilot consists of two phases: Phase I includes payment for non-traditional Medicaid services and supplies to mitigate environmental triggers of asthma and home visitation and care coordination services conducted by qualified Community Health Workers. Work conducted in Phase I will advance Demonstration Goal #3, to implement delivery system reforms. .In Phase II, the payment structure, such as a per member/per month, bundled, global, or episodic payment, may be expanded to also include certain Medicaid State plan services with utilization that is particularly sensitive to uncontrolled asthma (i.e. treatment provided by physicians, nurse practitioners and hospitals, medical equipment such as a nebulizer, spacer, peak flow meter, etc.). These adjustments promote Demonstration Goal #4, advancing payment reforms.

The objective of this evaluation plan is to determine the benefits and savings of the pilot and it is intended for the Phase I. The evaluation will also provide an assessment of the viability of the pilot and inform broader implementation of the design for pilot expansion. Pending CMS review and approval the required protocols in

STC 39 (g), a Request for Response will be sent out to practices and two to six practices will be selected for the Pilot. The targeted number of enrollees is 200 children from these participating sites. The specific aim of this evaluation is to assess the benefits, savings and design viability of the Pediatric Asthma Pilot Program.

**Study population**

- Selection criteria for practices:
  1. Participate as a Primary Care Clinician in the MassHealth Primary PCC Plan;
  2. Have a MassHealth PCC Plan provider identification and service location number (PID/SL) for the Applicant site;
  3. Treat pediatric patients ages 2-18 for asthma;
  4. Possess broadband Internet access; and
- Inclusion criteria for participating patients:
  1. be age 2-18 at the time of enrollment;
  2. be MassHealth eligible;
  3. be enrolled in the MassHealth PCC Plan with the selected Practice;
  4. Have a clinical diagnosis of asthma;
  5. Meet clinical criteria for high-risk asthma as demonstrated by at least one of the following in the last 12 months:
     - Inpatient hospital admission for asthma
     - Observation stay for asthma
     - Emergency Department visit for asthma
     - Oral systemic corticosteroid prescription for asthma
  6. Have poorly controlled asthma, as evidenced by a score of 19 or lower on the Quality Metric's Childhood Asthma Control Test (ACT) at least twice within any two month period in the last year. The ACT is a survey completed by the patient if 12 years of age or older, otherwise by the patient's caregiver. The survey may be completed in person or by telephone.

**Evaluation Design**

The goal of the evaluation is to assess the degree to which a bundled payment and flexible use of funds enhances the effects of delivery system transformation as demonstrated by changed practices in asthma care and improved health outcomes at the same or lower cost. Specifically, we will examine changes in 1) the way providers deliver services to Participating Members; 2) Participating Members' self-management on asthma, and 3) Participating Members' health service use, healthcare expenditures, and quality of asthma care. Additionally, we will conduct a cost-effectiveness analysis to examine the relative value between the Pilot and the usual care.

The evaluation will use a mix of qualitative and quantitative methods. Data will be collected from Participating Practices and Participating Members and extracted from Medicaid claims data and the program office. Individuals with characteristics comparable to Participating Members will be identified for comparisons. The evaluation focuses on the first full year of Phase I of the Pilot. Results from the evaluation will be considered in the expansion of the Pilot. The proposed evaluation design can also be extended for a longer period when and if the Pilot is approved for expansion in Phase 2.

**Data Sources**

Data will be collected from Participating Practices to evaluate changes in the practice at one year after full implementation of the Pilot. We will also collect data from Participating Members at the Pilot enrollment and one year after the enrollment to assess changes in asthma control and the number of days absent from school/work. Medicaid claims data (MMIS) will be used to evaluate changes in service use and healthcare expenditures. Additionally, data collected from Participating Members, healthcare expenditures paid by Medicaid, and program operation costs from the Pilot management office will be used for the cost-effectiveness analysis.

## Comparison Group

To mitigate the potential bias that any observed changes in outcomes are resulting from high service utilization or poor asthma control prior to the Pilot participation or from concurrent changes in healthcare environment, we will identify a matched comparison group from practices that applied for the Pilot but were not chosen for the 1st phase. To the extent available and comparable, we will include practices that applied for the Pilot but were not chosen for the 1st phase in this comparison group. Both practice and member characteristics will be considered in the matching algorithm. Exact matching on important characteristics and propensity score matching techniques will be used to ensure the comparability of characteristics between Participating Practices/Members and the comparison group.

Although practices participating in the READY study are not eligible for the Pilot, data collected from practices applied for the Pilot will provide additional information on other health system transformation initiatives the applying practices have involved. Considering these practice characteristics in the matching algorithm and subsequent statistical analysis are intended to isolate the effect of the Pilot from other initiatives. This approach also addresses requirements set forth by STC 84.

## Measures

Measures used in this evaluation are organized into three groups: changes in practice, changes in self-management of asthma, and changes in service use, healthcare expenditures, and quality of care. The initial core set of children's healthcare quality measured authorized by the Children's Health Insurance program Reauthorization Act (CHIPRA) will serve as the guide for service use and quality of care measures (see Measures: changes in service use, healthcare expenditures, and quality of care). Also, healthcare expenditures and program operation costs will be included in the analysis to assess the viability of the Pilot and to develop a payment rate for the program (see Measures: measures for the cost-effectiveness analysis).

### Changes in practice

Qualitative semi-structured key informant interviews with program staff and providers in each Participating Practice will be conducted at one year after implementing the Pilot. These interviews will assess changes in the way providers deliver services by identifying key components of changes in the practice and potential barriers in implementing the Pilot.

### Changes in self-management on asthma

Telephone and/or mail surveys will be used to evaluate changes in asthma management and the effect of the Pilot. The survey instrument includes the Asthma Control Test (ACT) measures and questions on the number of days absent from school for children/teens and from work for parents. These measures will also represent the effects in the cost-effectiveness analysis. We will conduct the surveys on all Participating Members and individuals in the comparison group at the baseline and at twelve-months after baseline, as budget permits.

### Changes in service use, healthcare expenditures, and quality of care

MassHealth claims data will be used to derive healthcare service utilization, healthcare expenditures, and quality of care measures before the Pilot enrollment and through the first year of the Pilot participation. Key healthcare service utilization measures include asthma-related emergency department (ED) visits and asthma-related hospitalizations. Other types of service use also will be analyzed to examine possible shifting in services. Quality of care will be evaluated based on HEDIS specifications for asthma care and on the use of asthma-control medications (e.g., medication possession ratio).

### Measures for the cost-effectiveness analysis

In addition to healthcare expenditures from claims data, cost data will include program operation costs. Healthcare expenditures are MassHealth payment amounts for providers which are reported in claims.

Program operation costs include the per-capita bundled payments for Participating Members and program-related administrative costs. MassHealth office managing the Pilot and Participating Practices will provide information on program operation costs. These cost data will represent the cost to Medicaid in the cost-effectiveness analysis. We will also use these cost data to develop the payment rate, such as the per-member per-month payment, for the program.

**Data Analysis**

Qualitative data collected from staffers in Participating Practices will be analyzed to identify common themes of changes in service delivery across Participating Practices. Innovative approaches and barriers for service delivery related to the Pilot implementation will be summarized.

A difference-in-differences analytical framework will be used to analyze outcomes from claims data and data collected from Participating Members. We will compare changes in services use, healthcare expenditures, asthma control, and number of days absent from school/work for Participating Members to those for individuals in the matched comparison group. Outcome measures will be available for each individual for two or more times before and during the first year of the Pilot. Measures for an individual at different time points are likely to be correlated. We will apply generalized estimating equations to account for the within-subject correlations. Given the usual time lag of claims data and the seasonal nature of acute events associated with asthma, quantitative analysis using claims data will begin at one year after the Pilot implementation.

Based on healthcare expenditures and program operation costs, we will develop a payment rate, such as per-member per-month payment, by considering additional case-mix adjustment at the provider level. We will also conduct the cost-effectiveness analysis to estimate the relative value between the Pilot and the usual care. Costs include MassHealth paid healthcare expenditures and program operation costs. The ACT score and the number of days being absent from school/work measures the effect of the Pilot, which is independent from the costs included in the analysis. Results will show the incremental costs associated with each day not absent from school or work.

## D. Continued Monitoring of Population Level Measures

**Background**

In accordance with STC 84, EOHHS will use six specific measures to monitor progress towards Demonstration Goals # 1, 2 and 3. Table 4 below illustrates the six specific measures and which Demonstration Goal they will monitor progress towards, along with what state data sources will be used. EOHHS has assigned no specific targets for these measures, however we do have the following directional goals:

- To decrease the number of uninsured
- Increase demonstration eligibles accessing Employer Sponsored Insurance (ESI)
- Maintain enrollment in the Commonwealth Care Program
- Reduce uncompensated care and supplemental payments to hospitals
- Reduce the number of individuals accessing the Health Safety Net Trust Fund
- Increase the availability of access to primary care providers

**Table 4. Demonstration Goals, Population Level Measures, and Data Source**

| | Demonstration Goal #1 Maintain near universal health care coverage for all citizens of the Commonwealth and reduce barriers to coverage | Demonstration Goal #2 Continue the redirection of spending from uncompensated care to insurance coverage | Demonstration Goal #3 Implement delivery system reforms that promote care coordination... | Data Source |
|---|---|---|---|---|
| STCs identified population level measures | | | | |
| 1. The number of uninsured in the Commonwealth [yearly] | X | | | The DHCFP Massachusetts Health Insurance Survey (MHIS) [yearly] |
| 2. The number of demonstration eligibles accessing Employer Sponsored Insurance (ESI) [monthly] | X | | | MassHealth Enrollment Data |
| 3. Enrollment in the Commonwealth Care Program [monthly] | X | | | MassHealth Enrollment Data |
| 4. Uncompensated care and supplemental payments to hospitals [yearly] | | X | | DHCFP annual figures related to payments [yearly] |
| 5. The number of individuals accessing the Health Safety Net Trust Fund [yearly] | | X | | DHCFP annual figures related to Health Safety Net Trust [yearly] |
| 6.The availability of access to primary care providers [yearly] | | | X | The DHCFP Massachusetts Health Insurance Survey (MHIS) [yearly] |

STC 84 identifies these six measures as evaluation domains of focus. The Center will coordinate and obtain necessary data source information for development of these six measures and report them to EOHHS at various time intervals to assess change over time.

**Study Populations**

For measure #1, the study population consists of MA residents who are insured which, includes children 0-18, and non-elderly adults as ages 19 to 64. Demonstration enrollees are enumerated for measure #2 and #3.

Safety net hospitals and clinics are the population for measure #4. Uninsured individuals with care compensated by the Health Safety Net are enumerated for measure #5. The study population for measure #6 consists of the MA residents, children 0-18 and non-elderly adults aged 19-64.

**Study Design**

The goal of this study is to develop the six specific measures and assess their change over the Demonstration period. The Center will use a descriptive design and quantitative methods to assess change in the measures over time.

**Data Sources**

Activities in study year one will focus on the Center requesting and securing data sets or operational statistics from the Massachusetts Division of Health Care Finance and Policy (DHCFP) and from MassHealth (MH). The data sets requested include the Massachusetts Health Insurance Survey (DHCFP), MassHealth/Commonwealth Care Enrollment data (MH:MA-21) and Health Safety Net claims enrollment data (DHCFP). Operational statistics will be requested for Employer-Sponsored Insurance Enrollment data (MH), Uncompensated Care claims data (DHCFP) and Supplemental payments to hospitals (DHCFP).

**Comparison Group**

There is no comparison group for this study as its purpose is to develop population level measures for EOHHS to continue monitoring its progress towards Demonstration Goals #1, 2 and 3.

**Measures**

1. The number of uninsured in the Commonwealth
This will be derived from the DHCFP Massachusetts Health Insurance Survey (MHIS) conducted annually. The MHIS develops proportional estimates of MA residents who are insured.

2. The number of demonstration eligibles accessing Employer Sponsored Insurance (ESI)
MassHealth enrollment data (MA-21) will be used to determine the number of demonstration eligibles accessing Employer Sponsored Insurance

3. Enrollment in the Commonwealth Care Program
MassHealth enrollment data (MA-21) will be used to determine the number of demonstration eligibles enrolled in the Commonwealth Care Program

4. Uncompensated care and supplemental payments to hospitals
DHCFP provides annual figures for uncompensated care payments to clinics and hospitals and for supplemental payments to hospitals.

5. The number of individuals accessing the Health Safety Net Trust Fund
DHCFP monitors and provides annual figures on the number of individuals accessing the Health Safety Net Trust Fund.

6. The availability of access to primary care providers
This will be derived from the MHIS which develops proportional estimates of MA residents who access primary care.

**Data Analysis**:

The Center will provide EOHHS with summary statistics for each measure. The analytic approach for developing each measure varies with the data source available as described below. Changes in these statistics over time may be assessed.

The number of uninsured in the Commonwealth [yearly]
The DHCFP Massachusetts Health Insurance Survey (MHIS) is provided as weighted proportional estimates for the MA population. The MHIS provides the proportion of individuals not covered by health insurance. Using this proportion, the aggregate number of uninsured individuals to be reported for this measure will be calculated from MA population data accessed from the U.S. Census Bureau. The MA population estimates for children 0-18, and non-elderly adults aged 19-64 will be used as it reflects the population surveyed for the MHIS.

The number of demonstration eligibles accessing Employer Sponsored Insurance (ESI) [monthly]
The aggregate number of beneficiaries for whom MassHealth purchases ESI will be determined as a monthly summary statistic from Medicaid enrollment data.

Enrollment in the Commonwealth Care Program [monthly]
The aggregate number of beneficiaries enrolled in the Commonwealth Care Program will be determined as a monthly summary statistic from Medicaid enrollment data.

Uncompensated care and supplemental payments to hospitals [yearly]
DHCFP will provide the aggregate expenditure total for (1) uncompensated care payments and (2) supplemental payments. One figure will be provided for all hospitals receiving either type of payment during each annual reporting period.

The number of individuals accessing the Health Safety Net Trust Fund [yearly]
DHCFP will provide the aggregate number of individuals whose care was reimbursed by the Health Safety Net Trust fund during each annual reporting period.

The availability of access to primary care providers [yearly]
DHCFP Massachusetts Health Insurance Survey (MHIS) is provided as weighted proportional estimates for the MA population. The MHIS provides the proportion of MA residents who have (1) reported a usual source of care; (2) seen a doctor in the past 12 months and (3) had a preventive care visit in the past twelve months. These population aggregated estimates are also provided by income level group (<150% federal poverty line (FPL); 151-299% FPL).

## E. Intensive Early Intervention Evaluation

### Summary

The Intensive Early Intervention (IEI) evaluation examines the benefits and costs savings impact of the part of the 1115 waiver that covers Applied Behavioral Analysis (ABA) through Medicaid. The Massachusetts General Hospital (MGH) team will provide an evaluation of the costs and utilization of services, examining the amount, level, and types of service as well as their associated costs. The MGH evaluation team will provide an overview of how costs and service use changed overall for the eligible group (from a time prior to the waiver to the time of the waiver), compared to a group that would be eligible based on diagnosis but is not covered by MassHealth. The evaluation will also include qualitative interviews of families and providers. Finally the MGH evaluation team will collaborate with the Early Intervention (EI) evaluation team to examine the EI measures of functional status.

### Overview

The focus of the evaluation will be benefits and cost savings of the part of the 1115 waiver that covers ABA services through Medicaid, with some additional focus on the impact of the transition to the 1115 waiver on families and providers. This individual evaluation study is being done in the context of the University of Massachusetts Medical School Center for Health Policy and Research evaluation of the whole Waiver on behalf of EOHHS. UMMS will assist EOHHS with cross-study coordination, collaboration, and communication of all evaluation activities and interim findings, including Intensive Early Intervention, for EOHHS submission to CMS.

Essentially the Waiver (valid through June 30 of 2014) authorizes the coverage of Applied Behavioral Analysis (ABA) services by Medicaid. Under the waiver MassHealth covers enhanced early intervention program services including medically necessary ABA based treatments that address Autism Spectrum Disorder's (ASD) core symptoms. Children must be MassHealth and EI eligible (thus age 0-3). No waiting list is allowed and there is no maximum benefit. ABA providers will be provided through EI and paid on a fee for service basis with money originating at MassHealth and claimed via EI. The IEI initiative will advance Demonstration Goal #3; integration of services.

The study's objective is to understand: "the benefits and cost savings of providing early intervention services for demonstration eligible children with autism"

**Evaluation options**: *Regarding cost and service utilization*

For cost and utilization outcomes, the analysis will determine whether there is a change in the time period from before to after the Waiver in 1) the number of children who use ABA services; 2) the extent or count of ABA services, including the number of children who crossed specific numbers of hours of services (e.g., received at least 10, 15 or 20 hours a week, 3), the age at which ABA was initiated, including the gap between ASD diagnosis time and the start of ABA; 4) length of time in ABA, including the number of children dropping out of EI/ABA services before three years of age; 5) total costs for waiver covered ABA services; and total costs for all other EI services We will compute descriptive data for these variables over time and by sub-population group strata/covariates for the Waiver eligible population and for comparison groups described

below.

Study groups: The core analytic study design involves the comparison of the cost and utilization for four groups of children. The principal or focal group is those children who are waiver eligible (on MassHealth during the time period covered by the waiver) and have an eligible ASD diagnosis (determined by the EI program). We will call this group ASD waiver eligible. The other comparison groups include children with an eligible ASD diagnosis who are waiver eligible prior to the implementation of the waiver (i.e., in FY 11 or 12): children who are ASD eligible (but do not have/are not eligible for MassHealth) prior to the implementation of the waiver (FY 11/12); and children who are ASD eligible and do not have/are not eligible for MassHealth during the time period of the waiver (FY 13/14).

We will ideally examine these four groups for each of two years (FY 11/12 versus FY 13/14), perhaps in 6 month segments, if possible. We recognize that the time frame for this analysis ultimately depends on how quickly the annual EI/Medicaid waiver data is available to us for analytic usage during this contract. We will analyze as long a time period/as much data as we can, but under any circumstances our goal is to have equal duration pre and post waiver time periods comparison study groups.

| | ASD Eligible<br><br>Prior to waiver<br><br>FY 11/12 | ASD Eligible<br><br>During the waiver<br><br>FY 13/14 |
|---|---|---|
| On MassHealth | 1 | 3 Primary group of interest |
| Not on MassHealth | 2 | 4 |

Analysis Plan: By looking at these four groups (for each study outcome measure), we can see if the changes in the use of services and cost of services over time (before to after Waiver) is similar for the groups of children on MassHealth and not on MassHealth. We are essentially proposing a before-after differences in differences analytic approach. We are assessing whether the difference between cell 1 and cell 3 is the same or different than the difference between cell 2 and cell 4. This analytic plan can be extended, if we have sufficient six month data points, to being a more sophisticated interrupted time series analysis, with a contemporaneous comparison population. While the principal proposed analytic approach explores the cost and service data as cross-sectional data points, we recognize the potential further complexity/richness of the study data. If the study data is robust enough and the initial analyses suggest the need for further analytic exploration, possible longitudinal and multivariate analyses will be explored. Moreover, if FY14 data is fully available, we will examine any changes from Year 1 to Year 2 of the Waiver.

Analytically, we will first examine the overall effect of the Waiver across all study children (among the four study groups) using the previously described unadjusted difference in difference approach. Second, we will examine the effect/impact of the Waiver across a series of important subpopulations (study covariates), by stratifying the data base to assess, if possible,

- Geography/Family Residence at ABA/EI enrollment (for a variety of reasons but especially

because it relates to supply of services)

- Age at time of ABA services (0-1/1-2/2-3)
- Age at initial ASD diagnosis
- Time in ABA services
- Specific ASD diagnosis
- Race
- Parent choice about use of services
- Child care participation (and thus likely not as available to receive services)
- Changes in the system or reimbursement rates for private insurance
- Rates of payment to providers
- Any systems variables, such as how providers are paid, delays in payment…

And finally, if needed, we will implement any multivariate and longitudinal analyses.

Data bases: The ability to implement the above proposed evaluation of the impact of the ABA Waiver on cost and services ultimately depends on the availability to the evaluators of the EI and Medicaid records for all ABA served children – and the linkage of their EI and Medicaid program data. We propose that this needed data be provided to us for the evaluation analysis. (We will work closely with the appropriate EI/Medicaid database personnel and the agencies' IRB/data access committees to assure the access to the needed data, as part of this contract).

*Patient and provider satisfaction*

We will conduct interviews with parents and providers to provide further qualitative contextual information for this evaluation. Parent interviews will determine whether the change to coverage via the waiver was seamless and whether there were unintended consequences. (We would anticipate that the parents won't notice any changes in the Waiver funded reimbursement system, and therefore unintended consequences will be the prime focus for the parent interviews. And in particular, we will explore whether the Waiver influenced the parent choices about use of services or changed utilization for child care participants)

We will ask similar questions of providers and will further focus on whether there were any administrative issues that facilitated or limited the provision of services from their point of view. In particular, we will explore if the Waiver associated with or impacts changes in the system or reimbursement rates for private insurance; rates of payment to providers: and payment system changes.

We propose to interview up to 30 parents, distributed across the State's EI program sites. Volunteer parent's will be recruited for the interviews, and will be given a small financial incentive for their time and efforts. Short, half an hour maximum, semi-structured interviews will be used, and with permission, recorded. We (the study RA) will interview as many parents as needed until we reach thematic saturation. Similarly, we proposed to interview up to 20 EI providers across the State (or until we reach thematic saturation). Investigators will review the interviews and summarize and describe the impact of the changes on

patients/families and providers. The findings of these interviews will be used to interpret and enrich the cost and service utilization evaluation described previously.

We propose that the semi-structured qualitative interviews be conducted at two time points -during the middle of year 1 and the middle of year 2 to sample the perspective of individuals at the beginning of the waiver process and then later to compare the perspectives of individuals once the waiver has been in existence for over a year.

*Dovetail with work of EI Evaluation group*

The MGH evaluation group will assist the EI evaluation group in the examination of the functional status measure. Specifically the MGH team will assist with the interpretation and understanding of the functional status measure in light of clinical and related knowledge about child development and ASD. The MGH team will further work with the EI evaluation team to delineate appropriate specification of the time frame for measurement, identifying key co-variates, and specifying the specific sample for analysis. Both the EI and MGH evaluation teams aim to create a technically correct and meaningful evaluation and will work together to achieve this aim.

*Implementation Activities*

In the initial part of year 1, we will work on obtaining a merged Medicaid/EI database from the State and cleaning our analytic dataset and operationalizing study variables from the Medicaid/EI data bases. We will additionally obtain IRB approval and design qualitative interview protocols. We will conduct the first round of qualitative interviews during the first year. In the first year we further expect to conduct initial analytic modeling of the quantitative data. We will use as much post data as is available (likely FY13) and match that time frame with an equal time frame pre waiver. In Year 2, we will extend this quantitative work using the next round of post Waiver data again comparing it to a pre waiver cohort of equal length. We will conduct a second round of qualitative interviews of providers and families. Finally, towards the end of year two, the final Waiver evaluation report and other possible dissemination products/activities will be prepared. Assistance to the EI Evaluation group will be provided, as needed, throughout the two year project.

*Products*

A preliminary analysis from the evaluation (including both the cost and service utilization, and the patient and provider satisfaction assessments) will be produced at the end of year 1 and a final report at the end of year 2. In collaboration with State staff, we will seek to present the findings to relevant professional groups and prepare relevant findings for publication. In these reports and in the analysis and interpretation of the data, the MGH evaluation team will consider the implications of the findings for children with Autism and their families, as well as how the findings might influence future ABA reimbursement policy in Massachusetts and elsewhere.

## F. Patient Centered Medical Home Initiative

**Description of the Project**

This evaluation collects information on the activities, outputs and outcomes of the Massachusetts Patient-Centered Medical Home Initiative so that different stakeholder groups may assess the value of the Initiative. Results of the evaluation will be provided to policymakers (Secretary of EOHHS and the Legislature), purchasers (insurers, employers, payers), providers (individual practitioners, systems), and consumers of care.

**Evaluation Questions**

The evaluation asks three broad questions:

- Question 1: To what extent to do practices transform to become medical homes?
- Question 2: To what extent and in what ways do patients become active partners in their health care?
- Question 3: What is the initiative's impact on service use, expenditures, clinical quality, patient and provider outcomes?

During the design phase of the PCMH demonstration, the Massachusetts PCMH Council identified twelve core competencies of a medical home practice (see Table 5). Recognizing that not all twelve competencies could be achieved in the first year, the Council marked six of the competencies as high priority for the early stages of PMCH implementation.

**Table 5: Twelve Priorities for Transformation into a Patient-Centered Medical Home**

| Category | Highest Priority for Early Adoption | Priorities for Continuing Transformation |
|---|---|---|
| Consumer Engagement | • Involvement of the patient in goal setting, action planning, problem solving and follow-up | • Patient/family-centeredness<br>• Patient and family education |
| Practice Redesign | • Multi-disciplinary, team-based approach to care<br>• Enhanced access<br>• Population-based tracking and analysis with patient-specific reminders | • Evidence-based care delivery, including stepped care protocols<br>• Integration of quality improvement strategies and techniques |
| Clinical Care Management and Care Coordination | • Planned visits and follow-up care<br>• Integrated care management focused on high risk patients | • Self-management support by all members of the practice team<br>• Care coordination across settings, including referral and transition management |

**PCMHI Evaluation Relevance to 1115 Wavier Evaluation**

Evaluation questions One and Two focus on the adoption of the characteristics displayed in Table 5 from the perspective of the participating practices and the patients they serve. Answers to these evaluation questions will help address the 1115 waiver goals of implementing delivery system reforms that promote care coordination, person-centered care planning, wellness, chronic disease management, successful care transitions, and integration of services.

Evaluation question Three provides data to document measurable health outcome improvements as well as the extent to which providers were able to control cost growth while maintaining or improving quality.

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# Appendix 1: MA Patient Centered Medical Home Initiative – Evaluation Framework

## Purpose of the Evaluation

*Overview*: This evaluation will collect information on the activities, outputs and outcomes of the Massachusetts Patient-Centered Medical Home Initiative so that different stakeholder groups may assess the value of the Initiative.

*Audience*: Results of the evaluation will be provided to *policymakers* (Secretary of EOHHS and the Legislature), *purchasers* (insurers, employers, payers), *providers* (individual practitioners, systems), and *consumers* of care.

*Purpose*: Information will include *formative* components to inform the refinement and further development of the model as well as *summative* components to assess the initiative's impact.

## Evaluation Questions

This evaluation asks three broad questions:

Question 1: To what extent to do practices transform to become medical homes?

Question 2: To what extent and in what ways do patients become active partners in their health care?

Question 3: What is the initiative's impact on service use, clinical quality, patient and provider outcomes?

Medical home is a multi-dimensional concept. The Massachusetts PCMH Council has identified twelve core attributes of a medical home practice, and of those, marked six of them as high priority (see below Table 1). Question 1 focuses on the high priority attributes; grouped into three categories-- consumer engagement, practice redesign and clinical care management/care coordination. The adoption of the remaining competencies will be assessed using mixed evaluation methods (qualitative and quantitative throughout the evaluation. The qualitative evaluation will use multiple qualitative data collection methods including field observations in a limited number of sites, individual in depth interviews, periodic focus groups with the 6 Medical home facilitators conducted at several points in time and document review. Documents for review include the minutes of meetings between the Medical home facilitators and their assigned practice site staff, the practices' transition plans, including their AIM statements, and the content of on-line learning sessions. As part of question 1, the evaluation will examine those factors that facilitate medical home adoption as well as any challenges and barriers to adoption.

**Table 1. Core Competencies of a Medical Home[1]**
**Bold** Indicates high priority competency as designated by PCMH Council

1. Patient/family-centeredness
2. **Multi-disciplinary team-based approach to care**
3. **Planned visits and follow-up care**
4. **Population-based tracking and analysis with patient-specific reminders**
5. Care coordination across settings, including referral and transition management
6. **Integrated care management focused on high-risk patients**
7. Patient and family education

[1] Bailit Health Purchasing, LLC: "Massachusetts Patient-Centered Medical Home Initiative Council, Framework for Design and Implementation." November 2009

8. Self-management support by all members of the practice team
9. **Involvement of the patient in goal setting, action planning, problem solving and follow-up**
10. Evidence-based care delivery, including stepped care protocols
11. Integration of quality improvement strategies and techniques
12. **Enhanced access**

For question 2, the working definition of an engaged patient is as follows, "An engaged patient has the knowledge, skills and motivation to be an active partner with his or her medical home care team in managing his or her health and health care." This description applies to all patients: adults and parents of children, both with or without chronic conditions. The evaluation will focus on the ability of practices organized as medical homes to engage patients in managing their health and their health care.

Of principal interest to the participating payer stakeholders is the question of value - question 3. Is the investment in medical home "worth it?" This evaluation explores the initiative's impact on three aspects of "value": efficiency[2], quality[3] and patient outcomes[4].

The three broad questions generate additional, more detailed questions for this evaluation. These questions and proposed corresponding data collection methods are summarized in the sections.

## Design

We propose a quasi-experimental design for the evaluation: pre-post with comparison group. The initiative already includes two arms: technical assistance plus payment reform and technical assistance only. The inclusion of a comparison group makes the Massachusetts Patient Centered Medical Home a three-arm study.

The comparison group will be selected using data from participating payers. Non-participating sites will be matched to participating sites on a variety of characteristics such as type of practice, patient mix, practice size, geographic location. Comparison sites will be invited to participate and will receive a stipend to complete the TransforMED Medical Home Implementation Quotient.

The remainder of this document presents the strategy to be used for the evaluation, by major evaluation question. Each section includes the following information, as applicable:

Principal evaluation questions
Data sources
- Survey and other data collection instruments to be used, e.g. interviews
- Sample
- Survey administration
- Timing of data collection

Measures
Preliminary analysis strategy (as applicable).

PCMHI Appendix 1 summarizes the high level questions and data collection strategy.

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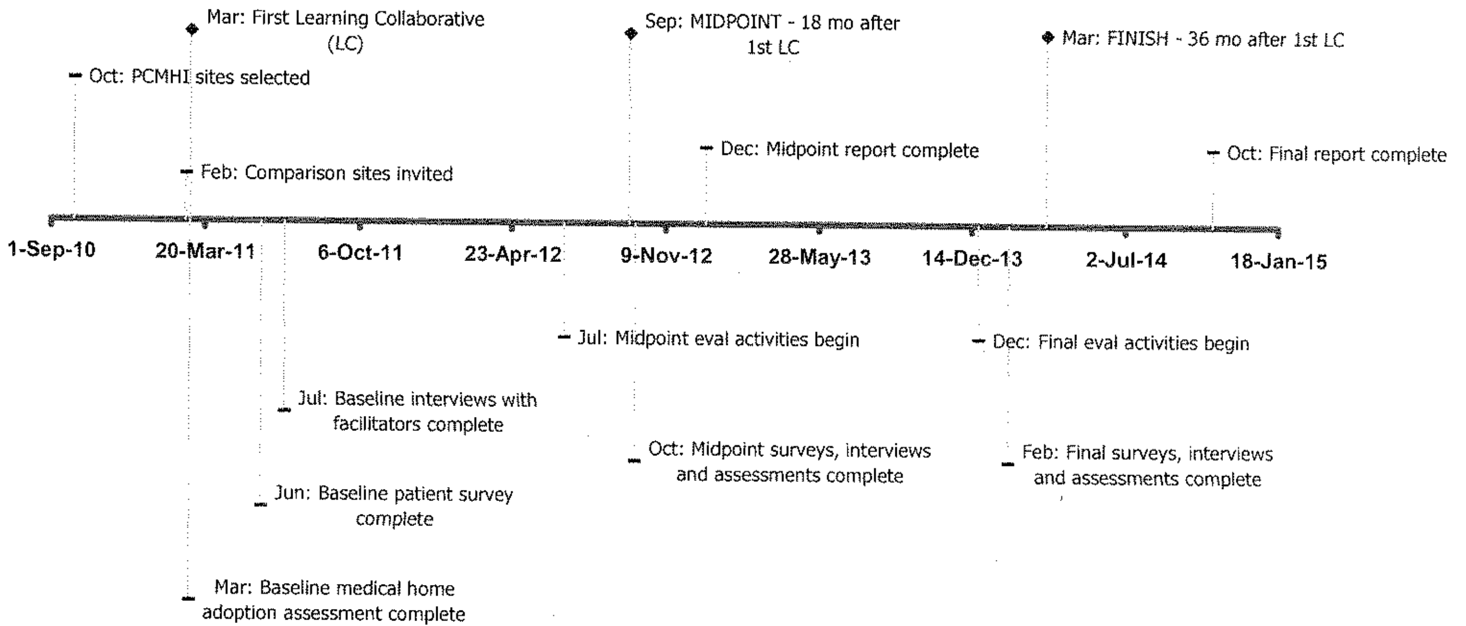
[2] The working definition of efficiency is the extent to which resources are used to maximize health benefits at a given cost -- Rosenthal, CWMF Evaluation Group.
[3] Aspects of quality to be assessed may include efficacy, timeliness, safety and patient centeredness.
[4] Patient outcomes may include satisfaction, impact on physical health, engagement in care and self-sufficiency.

Figure 1 displays the timeline for the major evaluation activities.

**Figure 1: Timeline for Major Evaluation Activities**



## Question 1: To what extent to do practices transform to become medical homes?

### *Hypothesis*

Practices given both training and financial incentives will transform into medical homes.

### *Principal evaluation questions*

1. To what extent do practices adopt additional medical home competencies over their status at baseline?

2. How do practices become medical homes?

3. What hinders a practice from adopting medical home competencies?

PCMHI Appendix 2 presents a summary of the data sources and measures to answer the above questions. PCMHI Appendix 3 shows a cross-walk between the specific PCMHI medical home competencies and the proposed quantitative data sources.

### *Data sources*

Multiple data sources will be used to answer this question:

TransforMED's Medical Home Implementation Quotient survey
Interviews and focus groups with practice facilitators at regular six month intervals beginning in February, 2011
Site visits to selected practices (to be determined after the mid-point assessment). Site visits will be conducted in year 3
Documentation associated with the project such as minutes of facilitator meetings, practice transition plans, AIM statements and Learning Session content
PCMH/CAHPS survey (see below – Question 2 for additional detail about survey sampling and administration)

Quantitative data collection from participating practices will take place at three points, winter of 2011, fall of 2012 and summer of 2014. The comparison groups will be asked to complete the survey in 2011 and again in 2014. Upon submission of the data, the comparison sites will receive payment for completing the survey.

Qualitative data collection will begin in winter of 2011 and be ongoing through the summer of 2014. Interviews and focus groups with practice facilitators will begin in winter of 2011 and continue at 6 month intervals through the summer of 2014. Focus groups are conducted in addition to individual interviews to further the understanding of issues occurring across practices. Documents reviewed will provide a source of information about each practice that is common to the practice, the facilitators and the evaluators.

### *Measures*

<u>*TransforMED*</u>

Practices will complete the survey on-line and the data will be electronically submitted to the UMMS evaluation team through an agreement with TransforMED. The TransforMED tool covers nine domains, of which eight will be collected by the evaluation:

Module 1: Access to care and information
Module 2: Practice management (recommend not collecting)
Module 3: Practice-based services
Module 4: Patient-centered care
Module 5: Practice-based care team
Module 6: Quality and safety
Module 7: Health information technology
Module 8: Care coordination
Module 9: Care management

*Interviews*

Interviews with facilitators at selected intervals will focus on the "how" of practice transformation, with questions about their assigned practices' adoption of the 12 core competencies, their use of non-physician providers, leadership, and burden. Interview guides will be developed to understand the work done towards empanelment, enhanced access, the quality improvement [PDSA] cycles, the registry and the implementation of the team approach to patient care. They will also solicit the subjects' perceptions of the collaboration among the spread teams, pilot teams, medical home champion MDs, spread MDs, practice leaders and day-to-day leaders. In addition to these interviews, focus groups will be conducted with the six medical home facilitators to solicit more cross site information. Finally, site visits to selected practices will be conducted in year 3. PCMHI Appendix 4 includes additional evaluation questions for practices and facilitators.

*PCMH/CAHPS*

The medical home CAHPS survey includes multiple domains that relate to the medical home competencies identified by the PCMHI Council in their white paper of November 2009. See PCMHI Appendix 3 for examples of the domains and abbreviated question item content that relate to the medical home competencies.

### ***Preliminary analysis strategy***

*TransforMED data*

The TransforMED scores will trended over time, both by module and overall to determine the extent of change.

*Qualitative data*

The three principal questions relative to evaluation question #1 will provide the organizing framework for analysis. Within that framework the transition processes, key issues and key concepts will be examined by facilitator and by sites visited. Particular attention will be paid to cross facilitator and cross practice correlation.

Analysis of qualitative data will be completed using Atlas Ti. To organize the data, heuristic units will be established by facilitator, practice and evaluation question so that staff can begin to enter data as it is collected, and proceed with initial review, cleaning and coding activities. Each qualitative evaluation team member will review the data. Following cleaning activities, we will follow a process of coding in teams of 2 with review by a third staff member using a general inductive approach. Weekly team debriefings of analytic activities will be conducted, with memos written to develop findings. These preliminary results can be shared with the steering committee as requested. Axial coding techniques will be used

to explore the relationship of the twelve core attributes of a medical home to the quantitative findings.

Through a review of the medical home project documents and work-plans, a list of key concepts has emerged. It will be important to understand how medical home facilitators and the practice staff define, understand and operationalize these concepts and to identify any discrepancies in their understanding of and hence their implementation of the concepts in practice. In addition it will be important to identify any areas of confusion regarding the learning sessions' content and the approach to operationalizing it. The key concept list includes the following terms: consumer engagement, enhanced access, multidisciplinary team, population tracking, quality improvement, patient centered medical home, quality improvement, clinical care management, care coordination, medical home champion, spread team, patient registry, electronic medical record, practice policies and procedures, communication technology, patient centered, physician centered, medical neighborhood, care delivery system, transition plan, transition process, adaptive reserve, care management, payment support structure, AIM statement, Practice leader, continuity of care measures, panel integrity, collaborative learning, active partnership.

## Question 2: To what extent and in what ways do patients become active partners in their health care?

### *Hypothesis*

As a result of training and financial incentives, practices will put into place systems and processes that transform patients into partners in their health care.

### *Principal evaluation questions*

1. To what extent do patients become active partners in managing their health and health care, e.g. participate in goal setting, action planning, problem solving and follow-up?

2. In what ways do patients perceive their medical home to be patient-centered?

PCMHI Appendix 5 shows potential measures and data sources to be used to answer the above questions.

### *Data sources*

The principal source of data will be the beta version of the PCMH/CAHPS survey. Interviews with staff at PCMH practices will explore involvement of patients in practice redesign.

*Sample:*

The sampling frame for the survey will be patients with one or more visits in the last 12 months to participating and comparison group practices. The sampling frame will be constructed from administrative data from payers. We plan to select patients such that we have about 50 survey respondents per practice. The MPCMHI is a practice-based intervention, level of intensity of intervention will likely vary by practice, and we will use patient reports to assess their engagement in their care and experiences with the practice. Although we will not report individual practice results, we will require sufficient number of respondents to measure the effect of practice-based activities.

*Survey administration:*

Surveys will be administered by the Office of Survey Research at the University of Massachusetts Medical School.

*Timing of data collection*

Data collection from participating practices will take place at three points, winter of 2011, fall of 2012 and summer of 2014.

### *Measures*

The domains assessed by the patient-centered medical home CAHPS survey relate to patient engagement/activation and also include:

Access
Communication
Coordination
- Care from other providers
- Care from others on the care team

Comprehensiveness
Shared decision making
Whole person orientation
Self-management support

- Chronic disease management
- Health promotion

A composite score is produced for each domain.

### *Preliminary Analysis*

The analysis will compared mean scores for each composite measure at three points in time, baseline, midway through the initiative, and after 3 years of participation in the PCMHI. In addition, we will be able to compare the association between patient experiences with PCMH practices and change in level of engagement. This analysis will stratify practices by the extent to which they adopt principles of the PCMH and composite scores on the PCMN/CAHPS survey domains. The data collected via patient surveys potentially can be used to explore the differential effect of the PCMH on groups of patients, especially those who are at risk of high use of medical care resources. Finally, the analysis can assess any differences in patient engagement, use of and access to care, coordination, and communication by some limited patient characteristics (e.g., age, gender, ethnicity, and language).

## Question 3: What is the initiative's impact on service use, clinical quality, patient and provider outcomes?

### *Hypothesis*

Practices that adopt medical home competencies will have a positive impact on clinical quality, patient experience and the use of services by practices.

### *Principal evaluation questions*

1. What is the initiative's impact on the patient's experience?
2. What is the clinical impact of the medical home initiative?
3. How is access to care affected by the demonstration?
4. How does the demonstration affect service use and expenditures?
5. How does the initiative affect provider and staff satisfaction?

PCMHI Appendix 6 summarizes the measures and data sources to be used to answer the above questions.

### *Data sources*

To answer the impact questions all data sources will be tapped:

Payer claims
Practice registry data
TransforMED MHIQ practice survey
PCMH/CAHPS patient survey
Provider survey
Key informant interviews.

### *Measures*

*Clinical quality – prevention*

Well Child Visits
Cancer Screening (breast, cervical, colorectal)

*Clinical quality – acute and chronic disease management*

Comprehensive diabetes care
- A1c testing
- LDL-C testing
- Eye exam
- A1c control
- BP control
- LDL control

Depression management
- Acute phase
- Continuation phase

Use of appropriate medications for people with asthma
Follow-up care for children prescribed ADHD Medication

- Initiation phase
- Continuation and maintenance phase

Pediatric obesity

- No increase in BMI percentile

Hypertension

- BP control

*Patient experience*

Satisfaction with care
Whole person orientation
Shared decision-making
Self-management support

*Access to care*

Practice reported access to care
Patient reported access to care

*Service use and expenditures*

ED Visits
Hospitalizations – ambulatory care sensitive
Hospital readmissions – 30 day
Total costs – casemix adjusted
Primary care visits
Specialist visits
High cost imaging

*Patient survey measures*

The metrics describing the initiative's impact on patients are presented above under Question 2.

*Practice survey measures*

- Burnout
- Teamwork
- Satisfaction
- Communication
- Use of community resources
- Leadership support

## PCMHI Appendix 1
## Proposed Evaluation Questions and Corresponding Data Collection Methods

| Evaluation Questions | Subjects / Sources | Proposed Data Collection Methods | Participating Practices | Comparison Practices |
|---|---|---|---|---|
| **Medical Home Adoption** | | | | |
| 1. To what extent do practices adopt additional medical home competencies over their status at baseline? | Practices/providers | TransforMed Medical Home IQ (MHIQ) Tool<br>Focus group interviews<br>Site visits Document review | ☑ | ☑ |
| 2. How do practices become medical homes? | Practices/providers | Key informant interviews /focus groups Selected site visits | ☑ | |
| 3. What hinders a practice from adopting medical home competencies? | Practices/providers | Key informant interviews /focus groups Selected site visits | ☑ | |
| **Patient Partnership** | | | | |
| 4. To what extent do patients become active partners in managing their health and health care, e.g. participate in goal setting, action planning, problem solving and follow-up? | Patients (children, adults)<br>Practices/providers | TransforMed Medical Home IQ (MHIQ) Tool<br>PCMH/CAHPS | ☑ | ☑ |
| 5. In what ways do patients perceive their medical home to be patient-centered? | Patients (children, adults) | PCMH/CAHPS | ☑ | ☑ |
| **Outcomes** | | | | |
| 6. What is the initiative's impact on the patient's experience? | Patients (children, adults) | PCMH/CAHPS | ☑ | ☑ |
| 7. What are the clinical quality outcomes of the demonstration? | Claims data | Registry reports<br>Claims data | ☑ | ☑ |
| 8. How is access to care affected by the demonstration? | Patients (children, adults)<br>Practices/providers<br>Claims data | TransforMed Medical Home IQ (MHIQ) Tool<br>Claims data<br>Key informant interview<br>PCMH/CAHPS | ☑ | ☑ |
| 9. How does the demonstration affect service use and expenditures? | Claims data | Change in utilization and expenditures | ☑ | ☑ |
| 10. How does the initiative affect provider and staff satisfaction? | Practices/Providers | Key informant interview<br>Practice survey | ☑ | |

## PCMHI Appendix 2

## Matrix of Questions and Potential Data Sources for Medical Homeness Assessment

| Evaluation Question | Measures | Data Sources |
|---|---|---|
| 1. To what extent do practices adopt additional medical home competencies over their status at baseline? | Practice-based assessment on:<br>Access to care and information<br>Practice-based services<br>Care management<br>Care coordination<br>Practice-based care team<br>Quality and safety<br>Health information technology | TransforMED Medical Home Implementation Quotient |
| | Assessment based on patient perspective (See below – Question 2) | PCMH/CAHPS |
| 2. How do practices become medical homes? | | Key informant interviews and focus groups Selected site visits, practice transformation plans |
| 3. What hinders a practice from adopting medical home competencies? | | Key informant interviews and focus groups Selected site visits |

## PCMHI Appendix 3

## Potential Quantitative Data Sources to Identify Adoption of Medical Home Competencies

| Massachusetts PCMHI Domains | MHIQ | | PCMH/CAHPS | |
|---|---|---|---|---|
| | **Module** | **Questions** | **Domain** | **PCMH-CAHPS** |
| Patient/family-centeredness | **Patient-Centered Care** (Module 4) | • Mindful clinician-patient communication Q6, 10-11<br>• Patient Engagement Q10-13<br>• Provider/Patient Partnership Q2<br>• Culturally Sensitive Care Q3-5, 14-15<br>• Continuous Relationship Q7 | Communication<br>Whole person orientation | • Explain things in a way that is easy to understand<br>• Listen carefully to you<br>• Talk about health problem or symptoms that were bothering you<br>• Get clear instructions about taking care of health problem or symptoms<br>• Get clear instructions about what to do if problem or symptoms get worse<br>• Show respect for what you had to say<br>• Doctor knows all important information about history<br>• Doctor knows your values and beliefs |
| | **Care Management** (Module 9) | • Patient Engagement and Education Q1, 9-10 | | |
| | **Practice-Based Services** (Module 3) | • Communication Barriers Q6-7 | | |
| Multi-disciplinary team-based approach to care | **Practice-Based Team Care** (Module 5) | • Provider Leadership Q1<br>• Shared Mission and Vision Q3<br>• Effective Communication Q7-10<br>• Task Designation by Skill Set Q5<br>• Nurse Practitioner/Physician Assistant Q12-13 | | |
| Planned Visits & follow-up care | **Care Management** (Module 9) | • Population Management Q2-8, & 12<br>• Chronic Disease Management Q4-6<br>• Leverages Automated Technologies | | |

| Massachusetts PCMHI Domains | MHIQ | | PCMH/CAHPS | |
|---|---|---|---|---|
| | | Q11-12 | | |
| | **Practice-Based Services** (Module 3) | • Comprehensive care for both acute & chronic conditions Q1, 10<br>• Prevention screening and services Q1-5 | | |
| Population-based tracking and analysis with patient-specific reminders | **Care Management** (Module 9) | • Population Management Q2-8, & 12<br>• Wellness Promotion Q10<br>• Disease Prevention Q3-6<br>• Chronic Disease Management Q4-6<br>• Leverages Automated Technologies Q11-12 | | |
| | **Health Information Technology** (Module 7) | • Electronic Medical Record Questions (Q) 1-4, 7-8<br>• Electronic Orders and Reporting Q1<br>• Electronic Prescribing Q2,5-6<br>• Evidence-Based Decision Support Q1-2<br>• Population Management Registry Q2, 4, & 7 | | |
| Care coordination across settings, including referral and transition management | **Care Coordination** (Module 8) | • Community-Based Resources Q2<br>• Collaborative Relationships Q2,-3, 7, & 9<br>• Care Transition Q2, 4-6, 8, & 10 | Coordination domain | • Doctor seems informed and up-to-date about care you received from specialist<br>• Receive test results from doctor<br>• Community resources available<br>• Help getting services |
| Integrated care management focused on high-risk patients | **Health Information Technology** (Module 7) | • Population Management Registry Q2 & 4 | | |
| | **Care Management** (Module 9) | • Chronic Disease Management Q4-6<br>• Patient Engagement and Education Q7-11<br>• Leverages Automated Technologies Q11-12 | | |
| Patient and family education | **Care Management** (Module 9) | • Patient Engagement and Education Q1, 9-10 | Comprehensive care domain | Changing habits or lifestyle |

| Massachusetts PCMHI Domains | MHIQ | | PCMH/CAHPS | |
|---|---|---|---|---|
| | | | | |
| Self-management support by all members of the practice team | **Care Management** (Module 9) | • Chronic Disease Management Q4-6<br>• Patient Engagement and Education Q7-11 | Activation domain | Talking about barriers to self-management<br>Instructions for self-management<br>Help from staff to make changes |
| Involvement of the patient in goal setting, action planning, problem-solving and follow-up | **Patient-Centered Care** (Module 4) | • Teach-back Q4<br>• Patient Engagement Q10-13 | Shared decision-making domain | Setting goals to manage health<br>Shared decision-making about treatment |
| | **Care Management** (Module 9) | • Chronic Disease Management Q5-6<br>• Patient Engagement and Education Q7-11 | | |
| Evidence-based care delivery, including stepped care protocols | **Quality and Safety** (Module 6) | • Evidence-Based Best Practices Q2<br>• Quality Improvement Q5-8, 10-13 | | |
| Integration of quality improvement strategies and techniques | **Quality and Safety** (Module 6) | • Evidence-Based Best Practices Q2<br>• Clinical Outcomes Analysis Q3 & 8<br>• Quality Improvement<br>• Q1, 3, 7-8, 10-14, & 16 | | |
| Enhanced Access | **Access to Care and Information** (Module 1) | • Same-Day Appointments Q7-8, 15<br>• After-Hours Access Coverage Q2-4<br>• Accessible Patient and Lab Information Q12<br>• Online Patient Services Q12-13, 14<br>• Electronic Visits Q11-12<br>• Group Visits Q11 | Access domain | • Got appointment for urgent care as soon as needed it<br>• Got appointment for routine care as soon as needed it<br>• Got answer to question same day when call during regular office hours<br>• Got advice or help needed when call after office hours<br>• Taken to exam room within 15 minutes of appointment time<br>• Seen in exam room within 15 minutes of entering |

| Massachusetts PCMHI Domains | MHIQ | | PCMH/CAHPS | |
|---|---|---|---|---|
| | **Health Information Technology** (Module 7) | • Practice Web Site Q1-2<br>• Patient Portal Q2 | | |

## PCMHI Appendix 4
## Additional Evaluation Questions to Assess Medical Home Adoption

1) What medical home competencies are present at baseline line and at milestone points?
   a) Do practices engage consumers?
      i) Do practices involve patients in goal setting, action planning, problem solving and follow-up? How?
      ii) Does the practice offer enhanced access? What strategies for enhanced access does the practice offer? What do patients use?
   b) Is the practice organized as a medical home as specified in learning collaborative materials?
      i) Does the practice have a multi-disciplinary team-based approach to care? How often does the practice team meet?
      ii) Does the practice offer planned visits? How does the practice manage follow-up care? Does the practice have patient-specific reminders?
      iii) What type of population-based tracking does the practice conduct?
      iv) What type of analysis does the practice do of its own data?
   c) Does the practice engage in clinical care management and care coordination?
      i) How does the practice integrate clinical care management? What activities does it engage in?
      ii) Does the practice focus on high-risk patients? How does the practice identify their high-risk patients?
2) What are the facilitators and barriers to adoption of medical home competencies?
   a) Was there a medical home champion within the practice and what actions did the champion undertake to facilitate adoption?
   b) What role did practice staff have in facilitating adoption, and what resistance occurred if any?
   c) What was the role of various payments (up front, for learning collaboratives, PMPM, P4P, and shared savings) in adopting medical home competencies?
   d) What is the practice's perception of the role of technology in becoming a medical home?
   e) Did the practice have a plan for becoming a medical home?
      i) If yes, was the medical home implemented as planned
      ii) If the medical home was not implemented as planned, at differences were there between the plan and implementation, and what was the impact of the change on adoption?
   f) If the practice did not have a plan for becoming a medical home, how did that affect the adoption of medical home competencies?
2) What was the practice's perception of the value of the technical assistance offered by the demonstration (Learning Collaboratives and the Practice Coaches)?
   a) Who received the technical assistance?
   b) What kind of technical assistance was most useful?
   c) What kind of technical assistance was least useful?
3) Do practices value certain competencies of the medical home over others, and if so which ones and why?
   a) What is the most valuable medical home competency? The least valuable? And why?
   b) What was the order of competencies adopted and do practices perceive that the order of adoption affected their ability to become a medical home?

## PCMHI Appendix 5
## Matrix of Potential Questions and Data Sources for Patients as Partners

| Evaluation Question | Measures | Data Sources |
|---|---|---|
| 1. To what extent do patients become active partners in managing their health and health care, e.g. participating in goal setting, action planning, problem solving and follow-up? | Activation and engagement<br>Shared decision making | PCMH/CAHPS |
| 2. In what ways do patients perceive their medical home to be patient-centered? | Access<br>Coordination<br>Communication<br>Comprehensive care<br>Whole person orientation | PCMH/CAHPS |

## PCMHI Appendix 6
## Matrix of Questions and Data Sources for Impact

| Evaluation Question | Measures | Data Sources |
|---|---|---|
| 1. What is the initiative's impact on the patient's experience? | Satisfaction with care | PCMH/CAHPS |
| 2. What is the clinical impact of the medical home initiative? | Well Child Visits<br>Cancer Screening (breast, cervical, colorectal)<br>Comprehensive diabetes care<br>o A1c testing<br>o LDL-C testing<br>o Eye exam<br>Depression management<br>o Acute phase<br>o Continuation phase<br>Use of appropriate medications for people with asthma<br>Follow-up care for children prescribed ADHD Medication<br>o Initiation phase<br>o Continuation and maintenance phase | Payer claims data |
| | Diabetes care<br>o HbA1c < 7.0<br>o BP < 149.79<br>o LDL < 100<br>Pediatric obesity<br>o % of patients with BMI >85 percentile with no increase in BMI percentile over last 12 months<br>Hypertension<br>o % of patients with diagnosis of HTN whose BP was adequately controlled (<140/90) over the last 12 months<br>Depression<br>o % of patients prescribed anti-depressants who remain on anti-depressants for at least 6 months | Practice registry data |
| 3. How is access to care affected by the demonstration? | Practice-reported access<br>Patient perception of access | TransforMED MHIQ<br>PCMH/CAHPS |
| 4. How does the demonstration affect service use and | ED visits and expenditures<br>Hospitalizations and | Payer claims data |

| Evaluation Question | Measures | Data Sources |
|---|---|---|
| expenditures? | expenditures<br>Readmissions and expenditures<br>Total costs<br>Primary care visits<br>Special visits<br>High cost imaging | |
| 5. How does the initiative affect provider and staff satisfaction? | Burnout<br>Teamwork<br>Communication<br>Leadership support<br>Use of community resources | Interviews<br><br>Provider survey |