

**Performance Improvement Initiative for Practice-Based Education,  
Training, and Support**

**Targeting Type 2 Diabetes:  
Achieving Glycemic and Cardiometabolic Goals**

**Final Project Report**

**November 14, 2014**

**Performance. Patient Outcomes. Patient Reach.**

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## Table of Contents

Project Description.....	3
Outcomes Summary .....	7
Appendix 1: Southeast Texas Medical Associates (SETMA).....	10
Participation.....	10
Data Collection .....	10
Level 5 – Performance.....	10
Level 6 – Patient Outcomes.....	10
Patient Reach.....	11
Project Summary .....	11
Appendix 2: University Hospital of Brooklyn SUNY-Downstate School of Medicine (Downstate), Department of Family Medicine .....	12
Participation.....	12
Data Collection .....	12
Level 5 – Performance.....	12
Level 6 – Patient Outcomes.....	13
Patient Reach.....	13
Project Summary .....	13
Appendix 3: East Hawaii Independent Physicians Association (EHIPA).....	15
Participation.....	15
Data Collection .....	15
Level 5 – Performance.....	15
Level 6 – Patient Outcomes.....	16
Patient Reach.....	16
Project Summary .....	16
Appendix 4: Aurora Health Care .....	18
Participation.....	18
Data Collection .....	18
Level 5 – Performance.....	18
Level 6 – Patient Outcomes.....	19
Patient Reach.....	19
Practice Summary .....	19
Appendix 5: Study Design .....	20
Appendix 6: Performance Goals and Educational Interventions .....	23

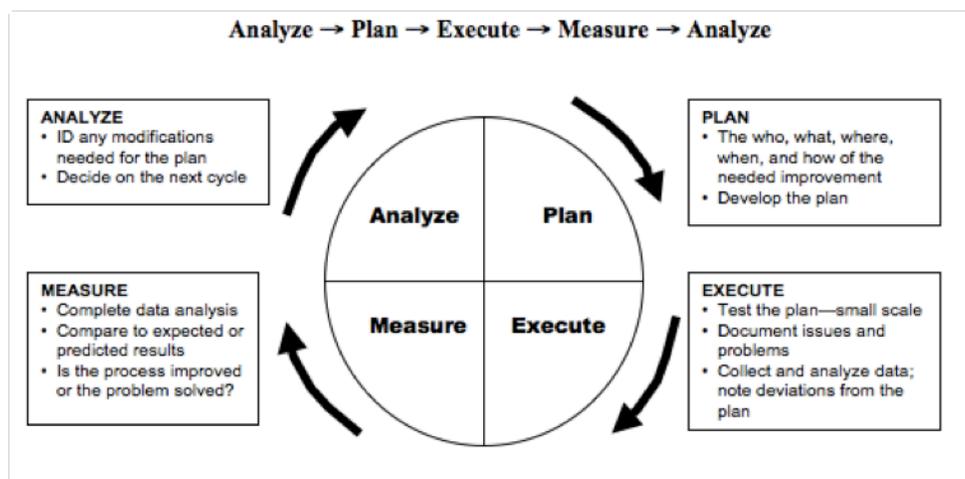
## Project Description

### Overview

The **Type 2 Diabetes: Achieving Glycemic and Cardiometabolic Goals** performance improvement continuing medical education (PI CME) initiative was designed to measure the effectiveness of interventions in achieving recommended metabolic treatment targets for type 2 diabetes and other elements of cardiometabolic syndrome. Joslin Diabetes Center (Joslin) developed a continuous quality improvement (CQI) learning model with multiple educational interventions that are targeted at improving knowledge, competence and office systems support to help providers and staff overcome practice obstacles and to encourage a culture of quality and continuous improvement within the practices in the areas of cardiometabolic risk factor management, documentation and goal setting. Lastly, the **Type 2 Diabetes: Achieving Glycemic and Cardiometabolic Goals** PI CME project has been approved by the American Boards of Internal Medicine (ABIM) for provider MOC Part IV recertification. This has been a major benefit to provider participants.

Due to the varying practice cultures, Joslin has taken a learner-centric approach and has added to its armamentarium customized practice-based and provider-based coaching in order to optimize provider engagement and ensure the successful implementation of the practice-based CQI plans that are a major deliverable for this initiative.

The educational methodology is based on Deming's Plan, Do, Study, Act model for continuous quality improvement which an integral part of this educational intervention. With guidance from Joslin clinical and CQI experts, each practice develops their own unique CQI plan (which is composed of two aligned goals they select). Each practice engaged in this initiative is responsible for deploying their CQI plan over a 4-month timeframe. Below is snapshot of the Plan, Do, Study, Act that is taught to the practice teams.

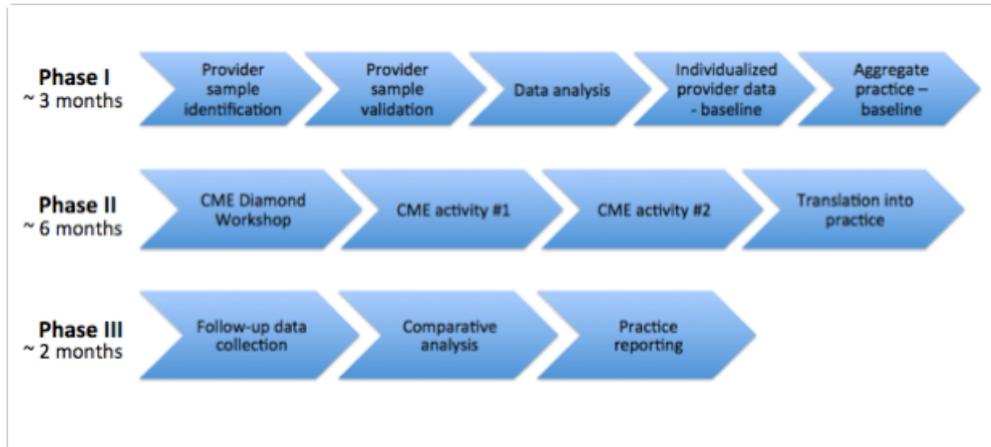


With regards to the overall program planning and implementation, there are three main phases of this project that occur after practice selection is complete. The phases are as follows:

1. **Phase I** – includes provider participant identification (against inclusion criteria), validation, and baseline data mining and analysis,
2. **Phase II** – learner engagement of baseline data review, goal setting, practice-based CQI planning, development and implementation, participation in 2 – 3 CME activities, and translation into practice, and

3. **Phase III** – consists of follow-up data collection and comparative reporting, provider/practice report review, evaluation and program completion.

Below is a diagram that illustrates these three phases.



Each of these phases demand a lot of time and resource support not only from Joslin staff, but from the practices themselves. We’ve found that beyond obtaining leadership buy-in and commitment, practices must identify and assign local project champions in order to sustain momentum and provider engagement. Though this is a “turn-key” PI CME for provider participants, there are multiple administrative tasks that have significantly evolved from the concept-model proposed in the original proposal. In addition, to enhance the practice-group and “user experience,” Joslin has deployed the role of a PI Practice Champion who fulfills three main functions:

1. Program management,
2. CQI practice coaching, and
3. Technical assistance to providers.

The ideal team structure required for successful deployment and practice engagement is as follows:

<i><b>PI CME Provider</b></i>	<i><b>Healthcare Organization/Practice</b></i>
<ul style="list-style-type: none"> <li>• Project Manager</li> <li>• Medical Director</li> <li>• Outcomes Manager</li> <li>• Data Analyst</li> <li>• Educational Design Specialist</li> <li>• CQI Practice Champion/Coach</li> <li>• Interdisciplinary clinical faculty (e.g., MD, NP/PA, RN and/or RD)</li> <li>• Meeting Planner/ Administrative Assistant</li> </ul>	<ul style="list-style-type: none"> <li>• Project Sponsor (Leadership/Medical Director)</li> <li>• Project Champion (internal QI or CME Manager)</li> <li>• In-Practice Champions or Advocates (MD, NP, or Office Manager)</li> <li>• Willing providers to participate</li> </ul>

Because the implementation of these types of PI CME or CQI projects requires a significant amount of effort from both organizations, change management principles should be embraced. Below is a list of the top 5 change management principles that need to be planned out and described in grant proposals and project plans. They include:

1. Assessing the practices’ organizational cultures and modifying design of this type of project based on the unique needs of each organization. There should be plans in place to learn about each organization’s people issues, politics and needs. Also learn about other projects that may be competing for the providers’ time.

2. Start at the top for leadership buy-in but assemble an interdisciplinary workgroup that represents each layer of the organization to optimize buy-in.
3. Make a formal case of the “WIFM” (what’s in it for me) for the provider and staff participants, and engage them in the process early on.
4. Create ownership by assigning internal project champions or advocates to help manage the project from within the health care practice or organization.
5. Communicate effectively. 1) Understand the communication style of the organization (e.g., preference of phone, fax, email, staff meetings, formal, informal, etc.). Also, develop a communication strategy to effectively communicate various elements of the project globally as well as individually. We have found that a communication mix of one-on-one provider participant communications coupled with group communications and face-to-face meetings (where available) has been most effective.

These best practices are a result of lessons learned over the course of this initiative and can help to ensure provider/practice engagement and program success with these types of projects.

### Practice Engagement

Joslin engaged four primary care practices/health systems in the **Type 2 Diabetes: Achieving Glycemic and Cardiometabolic Goals** PI CME project. The grid below depicts the practices engaged, providers enrolled, patients impacted and project end dates for each practice group. The number of patients impacted for all practices was calculated from responses to the evaluation workshop. In the workshop evaluation, the physician participants were asked how many patients with type 2 diabetes, hypertension, or dyslipidemia that they see in their practice on a weekly basis by selecting a range. The resulting response distribution from this self-reported question was used to calculate the number of patients seen by the entire practice.

<b>Practice Group</b>	<b>Providers Enrolled</b>	<b># of Patient Impacted</b>	<b>Project closed</b>
1. Aurora Health Care (Aurora) <i>Milwaukee, WI</i>	42	30,650 – 42,800	July 2014
2. East Hawaii Independent Physicians Association (EHIPA) Hilo, HI	29	23,870- 32,760	June 2013
3. Southeast Texas Medical Associates (SETMA) <i>Beaumont, TX</i>	62	17,470 – 34,280	June 2012
4. SUNY Downstate Medical Center, Department of Family Medicine (Downstate) <i>Brooklyn, NY</i>	47	14,270 - 22,930	July 2013

## Impact Statement

Primary care practices see more than 90% of people with type 2 diabetes and likely even a higher percent of those who do not yet carry that diagnosis, but who are at increased risk. Data (such as NHANES) have suggested that we are falling short in our efforts to achieve targeted treatment goals for the various cardiometabolic risk factors. It is in the realm of the primary care practice that education is needed to try to accomplish this.

As a result of participating in this PI initiative, 79 physicians have improved in all areas that would reduce the cardiovascular risk of their patients. Those physicians choosing to address smoking counseling and cardiometabolic screening improved from 39 to 54% for smoking counseling and from 93 to 95% for cardiometabolic screening. Those choosing to address clinical measures such as achieving A1C, blood pressure and LDL cholesterol goals improved 37%, 14% and 17% respectively. These practice improvements have the potential to impact the care of 86,260 – 132,770 patients annually.

Improved management of these cardiovascular risk factors in this patient population is very important because of their elevated risk for cerebrovascular disease. It is also important to note that these practices were able to demonstrate such improvements only after 6 months.

Feedback from participating practices indicate that this Cardiometabolic PI CME project has allowed their organizations to recognize exactly where patient outcomes were good and where they needed improvement. This project empowered them to better understand their own performance gaps and outcomes. They are re-learning how to work as teams and devise effective strategies that improve their performance and the quality of care they provide to their patients.

## Outcomes Summary

### Outcomes Evaluation

The CME activities are evaluated using Moore's revised levels of measurement: Moore, D, Green, J and Gallis, H. Achieving Desired Results and Improved Outcomes: Integrating Planning and Assessment Throughout Learning Activities. *JCEHP* 2009;29(1):1-15.

**Complete evaluation of all educational components is provided in the October 2012 report. This Outcomes Summary focuses on the results for those practices completing the PI CME activity.**

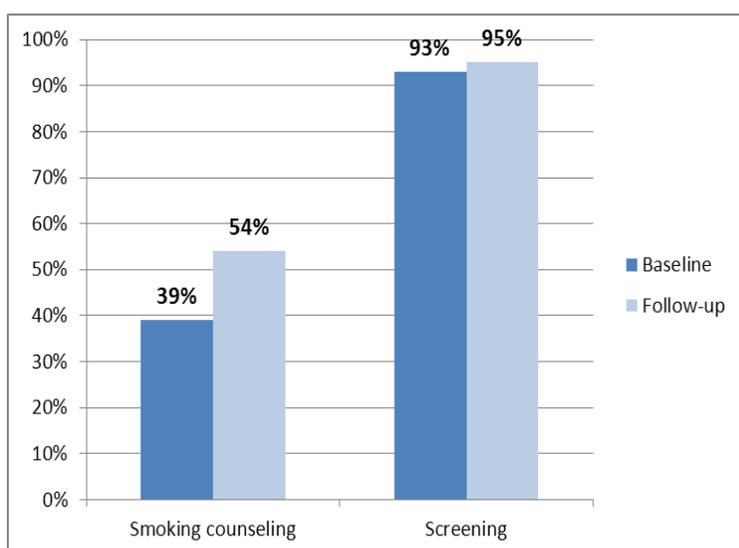
### Level 1 – Participation

Four practices have completed the PI CME activity, with a total of 180 primary care providers and staff enrolled in the PI pathway.

Practice	Participants	Physicians
SETMA	62	14
Downstate	47	25
EHIPA	29	25
Aurora	42	15
<b>TOTAL</b>	<b>180</b>	<b>79</b>

### Level 5 – Performance

Aggregating the results for all four practices, 25 providers have increased the percentage of their patients who smoke who receiving counseling by 38%; and 31 providers have increased the percentage of their patients who were screened for cardiometabolic risk by 2%.

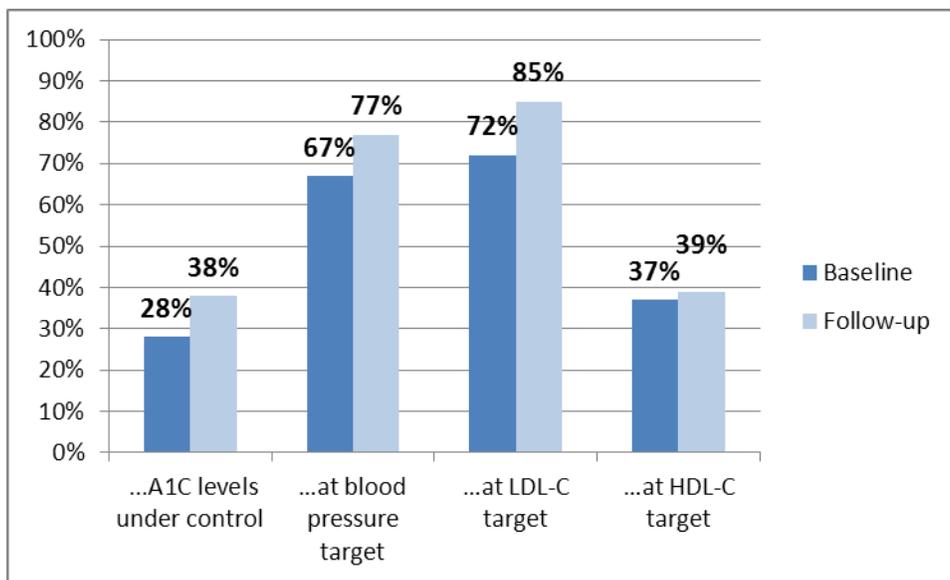


Goal	# of Providers	# of Patients	Baseline	Follow-up	% Change
Increase % of patients...					
...who receive counseling	25	625	39%	54%	+38%
...screened for cardiometabolic risk	31	775	93%	95%	+2

% change = ((follow-up minus baseline)/baseline) x 100%

### Level 6 – Patient Outcomes

For all providers in the four practices who focused on patient outcomes, all patient outcomes improved from baseline to follow-up.



Goal	# of Providers	# of Patients	Baseline	Follow-up	% Change
Increase % of patients...					
...with diabetes with A1C levels under control	13	325	28%	38%	+36%
...at blood pressure target	47	1125	67%	77%	+15%
...at LDL-C target	12	300	72%	85%	+18%
...at HDL-C target	29	725	37%	39%	+5%

% change = ((follow-up minus baseline)/baseline) x 100%

### Patient Reach

Based on the self-reported number of patients with type 2 diabetes, hypertension, or dyslipidemia that seen by each provider in each practice on a weekly basis, the practice gains achieved in this activity have the potential to affect the care of the following range of patients with type 2 diabetes, hypertension, or dyslipidemia in each practice on an annual basis, assuming that 30% of patients will be seen more than once a year by their provider.

Practice	Patient Reach - Range
SETMA	17,470 – 34,280
Downstate	14,270 - 22,930
EHIPA	23,870- 32,760
Aurora	30,650 – 42,800
<b>TOTAL</b>	<b>86,260 – 132,770</b>

## Appendix 1: Southeast Texas Medical Associates (SETMA)

Multi-specialty clinic with 32 providers serving patients in Southeast Texas ([www.setma.com](http://www.setma.com))

### Participation

Twenty-four providers and thirty-eight staff members attended the workshop on May 12, 2011, and started the PI CME activity with baseline data.

### Data Collection

This practice had a robust EMR and had a high level of experience in extracting their data. We were able to receive their data electronically and give providers full reports on their patient populations quickly and easily. Data collection took one week.

Baseline data was collected on April 25, 2011, from export of de-identified data from SETMA's EMR. The data was imported into the online JPEC Cardiometabolic Risk Performance Improvement CME activity.

Based upon the assessment of the patient data in the JPEC system, each SETMA provider chose two goals to improve from the list of 2 practice and 4 patient outcome goals, and then selected appropriate educational interventions that were aligned with these goals.

Follow-up data for 14 physicians was collected on February 6, 2012 for patients seen within the last six months.

### Level 5 – Performance

Degree to which participants *do* what CME activity intended them to be able to do in their practices

The chart below highlights the change in performance comparing baseline to follow-up data points for all providers who selected each goal. The average percentage at follow-up is the percentage of patients who achieved each target at follow-up, averaged for all providers selecting each goal.

Goal	# of Providers Choosing Goal*	Average % at Follow-up**	Average % Change***
Increase percentage of patients screened for cardiometabolic risk	8	94.3%	14.3%
Increase percentage of patients who smoke who receive counseling	1	88.4%	12.8%

\* Each provider was required to select 2 goals

\*\* Follow-up results for those providers completing the activity

\*\*\* % change = ((follow-up minus baseline)/baseline) x 100%

### Level 6 – Patient Outcomes

Degree to which patient health status improves due to changes in participant practice behavior

The chart below highlights the change in patient outcomes comparing baseline to follow-up data points for all providers who selected each goal. The average percentage at follow-up is the percentage of patients who achieved each target at follow-up, averaged for all providers selecting each goal.

Goal	# of Providers Choosing Goal*	Average % at Follow-up**	Average % Change***
Increase percentage of patients with diabetes with A1C levels under control	0	N/A	N/A
Increase percentage of patients at LDL-C target	6	52.4%	19.6%
Increase percentage of patients at HDL-C target	10	52.4%	19.8%
Increase percentage of patients at blood pressure target	3	72.6%	1.9%

\* Each provider was required to select 2 goals

\*\* Follow-up results for those providers completing the activity

\*\*\* % change = ((follow-up minus baseline)/baseline) x 100%

### Patient Reach

In the workshop evaluation, the physician participants were asked how many patients with type 2 diabetes, hypertension, or dyslipidemia that they see in their practice on a weekly basis by selecting a range. The resulting response distribution from this self-reported question was used to calculate the number of patients seen by the entire practice. The results indicate that the practice gains achieved in this activity have the potential to affect the care of:

- 480 - 942 patients on a weekly basis
- 17,470 – 34,280 unique patients on an annual basis, based on the assumption that 30% of patients will be seen more than once a year by their clinician.

### Project Summary

The Southeastern Texas Medical Associates (SETMA) group is unique in that it is a Joslin primary care affiliate and, through that affiliation, has had access to additional training materials even prior to the Diamond™ workshop that were analogous to the Joslin CareKit™ materials that had been designed for this initiative. However, we observed through the Diamond™ workshop, that SETMA providers and staff more effectively learned how to use such resources (both affiliate and CareKit materials) to attain the performance goals established as a result of this PI CME initiative than prior to this intervention. In addition, Dr. James Holly, Chief Executive Officer of SETMA is a stalwart leader and we recognize that his commitment to this project has been critical in affecting positive changes in his practice. As a result of this PI CME initiative, Dr. Holly focused on the following pillars to drive and sustain practice changes at SETMA:

1. Clinical Decision Support tools for provider, real-time, personal evaluation of performance at the point of care.
2. Quarterly and annual audit of panels and populations of patients and the public reporting by provider name of performance at SETMA's website [www.setma.com](http://www.setma.com) under **Public Reporting**.
3. The continuation of monthly, three-hour group training sessions for quality improvement with all SETMA providers attending and with quarterly meetings with nursing and support staff for the same.

## Appendix 2: University Hospital of Brooklyn SUNY-Downstate School of Medicine (Downstate), Department of Family Medicine

This academic medical center provides patient care, education, research and community services for the nearly 5 million people living in Brooklyn, Queens and Staten Island, The majority of patients represent underserved populations.

### Performance Improvement CME

#### Participation

Twenty-five physicians and twenty-two staff members attended the workshop on July 12, 2012; all twenty-five physicians completed baseline and follow-up data collection as well as engaged in the required educational interventions.

#### Data Collection

This group had a single electronic medical record but far less experience and expertise in mining and extracting data. Labs data wasn't integrated in with the patient records so obtaining information from labs required manual entry. Third year residents were assigned to manage this process. A team of 3 – 5 staff members (including the Chair of Family Medicine) worked closely with Joslin. They were responsible for manually running queries and pulling data into excel files. Data collection took 5 weeks. The average time it took to collect data for 25 patients per provider was approximately three hours.

Baseline data was collected in June, 2012. Data was extracted manually from Downstate's EMR and disparate databases by a team of three-four residents. Data for twenty-five (25) patients was collected for each provider. Prior to the workshop, the data was imported by July 6, 2012 into the online JPEC *Cardiometabolic Risk* Performance Improvement CME activity.

The assessment of the baseline data was presented at the workshop. Based upon the assessment of the patient data in the JPEC system, each provider chose two goals to improve from the list of 2 practice and 4 patient outcome goals, and then selected appropriate educational interventions that were aligned with these goals.

Follow-up data for twenty-five (25) physicians was collected during January, 2013 for patients seen within the last six months.

#### Level 5 – Performance

Degree to which participants *do* what CME activity intended them to be able to do in their practices

The chart below highlights the change in performance comparing baseline to follow-up data points for all providers choosing that goal. The average percentage at follow-up is the percentage of patients who achieved each target at follow-up, averaged for all providers. \*

Each provider was required to select two goals, for a total of 50 goals selected

Goal	# of Providers Choosing Goal*	Average % at Baseline	Average % at Follow-up	Average % Change**
Increase % of patients... <b>...who smoke who receive counseling</b>	<b>10</b>	<b>45%</b>	<b>55%</b>	<b>21%</b>
...screened for	8	97%	94%	-4%

cardiometabolic risk				
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\*\* % change = ((follow-up minus baseline)/baseline) x 100%

### Level 6 – Patient Outcomes

Degree to which patient health status improves due to changes in participant practice behavior

The chart below highlights the change in patient outcomes comparing baseline to follow-up data points for all providers who selected each goal. The average percentage at follow-up is the percentage of patients who achieved each target at follow-up, averaged for all providers selecting each goal.

Goal	# of Providers Choosing Goal*	Average % at Baseline	Average % at Follow-up	Average % Change**
Increase % of patients... ...at blood pressure target	12	59%	74%	24%
...with diabetes with A1C levels under control	11	28%	39%	38%
...at LDL-C target	5	68%	83%	23%
...at HDL-C target	4	51%	37%	-27%

\*\* % change = ((follow-up minus baseline)/baseline) x 100%

### Patient Reach

In the workshop evaluation, the physician participants were asked how many patients with type 2 diabetes, hypertension, or dyslipidemia that they see in their practice on a weekly basis by selecting a range. The resulting response distribution from this self-reported question was used to calculate the number of patients seen by the entire practice. The results indicate that the practice gains achieved in this activity have the potential to affect the care of:

- 392 - 630 patients on a weekly basis
- 14,270 – 22,930 unique patients on an annual basis, based on the assumption that 30% of patients will be seen more than once a year by their clinician.

### Project Summary

This performance improvement project was deemed a success due to multiple factors: clinical leadership and organizational buy-in; deploying a hands-on approach to PI Project Management both internally and externally; continuous support and coaching from Joslin faculty and the PI Practice Champion, as well as provider and staff ownership of the QI action plans. Areas where the project can provide greater impact are with periodic clinical consults from Joslin faculty or in-practice follow-up sessions. These will be assessed as “optional” educational interventions for future PI initiatives.

Upon conclusion of this project the SUNY Downstate Family Medicine team is committed to continuously improving cardiometabolic risk management in patients.

Below is a quote from Dr. Miriam Vincent, Chair of Family Medicine, SUNY Downstate Medical Center:

“At SUNY Downstate, in Family Medicine, our Joslin Cardiometabolic CME project allowed us the opportunity to work collaboratively to understand how we care for our patients with cardiometabolic risk factors. It empowered us to appreciate exactly where we need to focus our clinical and departmental efforts to improve our patient care outcomes. The Joslin Cardiometabolic CME project allowed our department to recognize exactly where patient outcomes were good and where they needed improvement. It allowed us to come together with individual and practice data and focus our efforts to

meet patient needs. As a result we are targeting Blood Pressure control and beginning smoking cessation strategies to help improve patient outcomes. This effort was a valuable experience. It was a combination of PI, education; research and I believe provider change in behavior, yet to be tested. We were able to understand our performance outcomes as a practice and come together as a team to devise strategies designed to improve the results of our patient care efforts. This is an invaluable, educational, CME, PI and educational effort, well organized and executed and much appreciated by our faculty, nurses, clerks and the Department of Family Medicine at SUNY-Downstate. Ms. Celone and the Joslin Team are a pleasure to work with and were available in person and by email at all times. I very much look forward with my faculty to completing this effort. All faculty feedback on grant activities has been positive.”

## Appendix 3: East Hawaii Independent Physicians Association (EHIPA)

East Hawaii IPA is a multi-specialty Independent Physician Association (IPA) incorporated in November 1994 as a non-profit corporation with 20 Primary Care Providers. Its membership has now grown to over 90 physicians and ancillary care providers throughout the Big Island. The total population of patients served is 44,500; 5,000 of these patients are diagnosed with type 2 diabetes.

### Participation

Twenty-five physicians and twenty-four staff members attended the workshop on August 7, 2012; twenty-five physicians completed both baseline and follow-up data collection tasks and required educational interventions associated with this project.

### Data Collection

EHIPA practitioners did not all share the same EMR, however they had much more experience in data mining and data extraction. The Quality Assurance Manager was responsible for working with practices on chart extraction and data abstraction. The process was very efficient as the Quality Control Manager worked with the office managers at each practice. The process took 3.5 weeks. Average data collection per provider was two hours.

Baseline data was collected on July 2012 by manual extraction by staff member of de-identified data from EMR. Data for 25 patients was collected for each provider. The data was entered into the online JPEC *Cardiometabolic Risk* Performance Improvement CME activity.

The assessment of the baseline data was presented at the workshop. Based upon the assessment of the patient data in the JPEC system, each provider chose two goals to improve from the list of 2 practice and 4 patient outcome goals, and then selected appropriate educational interventions that were aligned with these goals.

Follow-up data for 25 physicians was collected during December, 2012 for patients seen within the last six months.

### Level 5 – Performance

Degree to which participants *do* what CME activity intended them to be able to do in their practices

The chart below highlights the change in performance comparing baseline to follow-up data points for all physicians choosing that goal. The average percentage at follow-up is the percentage of patients who achieved each target at follow-up, averaged for all physicians.

Goal	# of Participants Choosing Goal*	Average % at Baseline	Average % at Follow-up	Average % Change**
...screened for cardiometabolic risk	15	96%	95%	-1%
....who smoke who receive counseling	8	38%	88%	128%

\* Each physician was required to select two goals; Dr. Olsen met the standards for all goals but one, so he could only select one goal

\*\* % change = ((follow-up minus baseline)/baseline) x 100%

### Level 6 – Patient Outcomes

Degree to which patient health status improves due to changes in participant practice behavior

The chart below highlights the change in patient outcomes comparing baseline to follow-up data points for all providers who selected each goal. The average percentage at follow-up is the percentage of patients who achieved each target at follow-up, averaged for all providers selecting each goal.

Goal	# of Participants Choosing Goal*	Average % at Baseline	Average % at Follow-up	Average % Change**
Increase % of patients... ...at blood pressure target	20	66%	75%	13%
...at HDL-C target	4	48%	51%	5%
...at LDL-C target	1	88%	92%	5%
...with diabetes with A1C levels under control	1	32%	40%	26%

### Patient Reach

In the workshop evaluation, the physician participants were asked how many patients with type 2 diabetes, hypertension, or dyslipidemia that they see in their practice on a weekly basis by selecting a range. The resulting response distribution from this self-reported question was used to calculate the number of patients seen by the entire practice. The results indicate that the practice gains achieved in this activity have the potential to affect the care of:

- 656 - 900 patients on a weekly basis
- 23,870 - 32,760 unique patients on an annual basis, based on the assumption that 30% of patients will be seen more than once a year by their clinician.

### Project Summary

The deployment of a customized educational curriculum that began with a 4-hour Diamond™ workshop followed by performance optimization coaching, and eLearning interventions as well as the support from the practice’s leadership, has made a great impact on the provider performance and patient outcomes. EHIPA also decided to use this project as one of their Patient Centered Medical Home (PCMH) projects for PCMH certification. They plan to continue deployment lessons learned and are considering engaging in other performance improvement project with Joslin. It is evident via provider feedback that EHIPA is committed to continuous improvement and deploying the highest quality of care to their patients.

The following are quotes from EHIPA participants and leadership:

*“The Diamond Workshop was very helpful. I think the physicians really appreciated the clinical expertise of the Joslin staff.”* --Richard Lee-Ching, MD President of East Hawaii Independent Physician’s Association

*“My entire staff participated in the Diamond workshop. We enjoyed the*

*opportunity to work together as a team to identify where we can improve our office systems. I was impressed that the Joslin team recognized some of the unique challenges we face here in Hawaii in terms of culture, diet, and lifestyle when treating patients with Cardio-metabolic syndrome.” --Kevin Kurohara, MD Vice President, East Hawaii Independent Physician’s Association*

*“Our participation in the Joslin Cardio-metabolic project has been instrumental in helping our providers identify where they can make improvements in the recognition and treatment of patients at risk. The CME activities were especially useful for our Patient Centered Medical Home (PCMH) providers who are actively exploring ways to prevent or more effectively manage patients with chronic disease. Based on the results I’ve seen so far, I have no doubt the Joslin project will help us improve the quality of care we provide to patients at risk or those diagnosed with CM syndrome.” --Craig Kadooka, MD, PCMH Medical Director for East Hawaii Independent Physician’s Association*

## Appendix 4: Aurora Health Care

Aurora is a private, non-profit integrated health care provider headquartered in of Milwaukee, WI. Aurora is one of the largest health care systems in the area that consists of 15 hospitals, 185 clinics, and more than 80 community pharmacies. In 2011 Aurora reported serving 1.2 million patients. With over 30,000 employees including over 6,300 registered nurses, and nearly 1,500 employed physicians, Aurora is one of Wisconsin's largest private-sector employers in Wisconsin. Aurora has 600 primary care providers in its network.

### Participation

Thirty-seven (37) physicians registered for the PI CME project; twenty-eight (28) physicians and fourteen (14) attended the 4-hour Diamond Workshop™ on November 13th 2013. Here Aurora Medical Group physicians, nurses, and office staff worked together to assess individual, practice and Aurora Medical Group performance; enhance their knowledge about Cardiometabolic risk stratification; and discuss quality improvement (QI) action plans based on performance goals selected as part of this initiative. Though the provider groups felt that many of the barriers to care stemmed from patients' lack of adherence, the group realized that there was a lack of consistency in CV-Risk management across the Aurora Medical Group and identified a number of ideas, such as educating patients about their medications and establishing rapport to enhance adherence, during the program.

### Data Collection

Baseline data was collected in May 2013 by manual extraction by the Aurora Medical Group Analyst and Quality Program Administrator using de-identified data from EMR. Data for 25 patients was collected for each participating physician. The data was entered into the online JPEC Cardiometabolic Risk Performance Improvement CME activity ([www.jpec.joslin.org](http://www.jpec.joslin.org)) manually at each of the practice sites. The Aurora Medical Group used paid interns to enter the data.

Follow-up data was collected starting in May 2014 for patients seen within the last six months using the same method as baseline.

### Level 5 – Performance

Degree to which participants *do* what CME activity intended them to be able to do in their practices

Fifteen physicians completed all three stages of the PI CME activity. Each physician was required to select two goals. The chart below highlights the change in performance comparing baseline to follow-up data points for all physicians choosing the goal of increasing the number of patients who smoke who receive counseling. The average percentage at follow-up is the percentage of patients who achieved each target at follow-up, averaged for all physicians.

Goal	# of Participants Choosing Goal	Average % at Baseline	Average % at Follow-up	Average % Change*
Increase % of patients... ...who smoke who receive counseling	6	24.6%	46.4%	89.0%

\* % change = ((follow-up minus baseline)/baseline) x 100%

## Level 6 – Patient Outcomes

Degree to which patient health status improves due to changes in participant practice behavior

The chart below highlights the change in patient outcomes comparing baseline to follow-up data points for all providers who selected each goal. The average percentage at follow-up is the percentage of patients who achieved each target at follow-up, averaged for all providers selecting each goal.

Goal	# of Participants Choosing Goal*	Average % at Baseline	Average % at Follow-up	Average % Change**
Increase % of patients... ...at blood pressure target	12	DM: 30.3% No DM: 59.5%	DM: 38.8% No DM: 51.9%	DM: 28.1% No DM: -12.9%
...at HDL-C target	11	DM: 19.9% No DM: 22.1%	DM: %19.5 No DM: 21.4%	DM:-2.0% No DM – 3.2%
...with diabetes with A1C levels under control	1	21.5%	25.0%	16.3%

### Patient Reach

In the workshop evaluation, the physician participants were asked how many patients with type 2 diabetes, hypertension, or dyslipidemia that they see in their practice on a weekly basis by selecting a range. The resulting response distribution from this self-reported question was used to calculate the number of patients seen by the entire practice. The results indicate that the practice gains achieved in this activity have the potential to affect the care of:

- 842 - 1176 patients on a weekly basis
- 30,652 – 42,806 unique patients on an annual basis, based on the assumption that 30% of patients will be seen more than once a year by their clinician.

### Practice Summary

The top 2 goals selected by physicians who completed performance improvement CME were to improve the percentage of patients at blood pressure target and increase percentage of patients at HDL-C target.

There was improvement of 28.1% from baseline to follow-up for patients with diabetes who achieved the blood pressure target; while the percentage of patients without diabetes at blood pressure goal dropped by 12.9%. The reason for this is not clear. It is possible that the providers who chose to focus on improving blood pressure focused mainly on their patients with diabetes. There was little change in the percentage of patients achieving the HLD-C target from baseline to follow-up.

Providers who choose to work on counseling smokers showed a significant improvement of 89% in providing counseling for smokers after participating in the educational activities.

The provider who choose to address glycemic control had an improvement of 16.3% in the percentage of patients reaching target of A1C < 7%.

## Appendix 5: Study Design

Practices were recruited to participate via email, phone, and live Webex presentations.

This longitudinal Performance Improvement (PI) CME initiative was designed for providers and clinical staff. One PI CME pathway is aligned with this initiative:

### *Cardiometabolic Risk*

The goal of this Performance Improvement (PI) CME activity is for clinicians who provide primary care (or serve in that role while practicing in key specialties) and their clinical and office staff to become more effective and efficient in the identification and treatment of people at increased cardiovascular risk. Through improvements in systematic identification of at-risk people, clinicians and their practices will be able to intervene earlier with preventive strategies to positively impact morbidity, mortality, and quality of life.

Though the majority of educational interventions associated with these PI CME pathways are hosted within the Joslin Professional Education Continuum (JPEC) platform, the main educational intervention is the Diamond Workshop.

Each participating practice starts their educational journey by attending a Diamond Workshop. The Diamond Workshop is tailored to the needs of each practice. Content is customized, based on a preliminary analysis of the base-line data of the practice. Providers, clinical staff, and office managers are invited (and encouraged) to attend. This four-hour workshop is led by four faculty from Joslin. During the workshop, providers and their staff have an opportunity to reflect on current practice behaviors, develop team-based strategies that improve the practice's performance, and set goals to optimize patient care relative to managing patients with type 2 diabetes.

The following is an illustration of the design of the workshop:

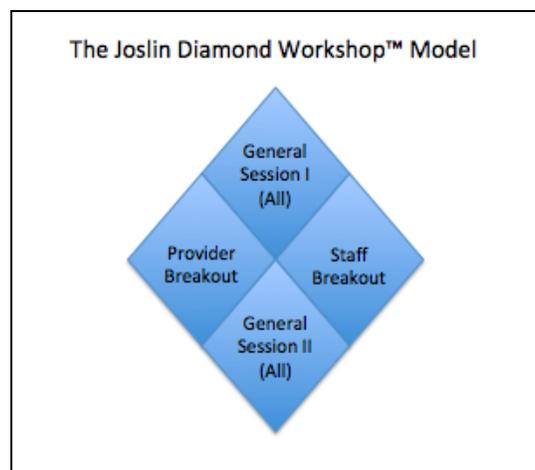


Figure 1. The Joslin Diamond Workshop™ Model

Below is a sample agenda from the Cardiometabolic Diamond Workshop™ hosted on August 8, 2012:

 <b>Joslin Diabetes Center</b> Professional Education		
<b>Performance Improvement Initiative for Practice-Based  Education, Training, and Support</b>		
A Cardiometabolic Risk PI CME Activity for East Hawaii IPA		
<hr/> <b>August 07, 2012</b> <hr/>		
<b>Opening Joint Session (Main Room)</b>		
Time	Description	Presenter
4:00 - 4:30	Registration	
4:30 - 4:35	Introduction and Program Objectives	Dr. Hertzman-Miller
4:35 - 4:50	Why Are We Here?	Ms. Colone
4:50 - 5:05	Clinical Challenges: Practice Challenges	Dr. Gaglia
5:05 - 5:10	Adjournment to Provider and Staff Break-out Sessions	
<b>Breakout Session</b>		
Providers (Main Room)		Office Staff (Breakout Room)
5:10 - 5:40	Cardiometabolic Lecture: Risk Stratification and Treatment (Dr. Gaglia)	5:10 - 5:40 Overview of Clinical Challenges (Dr. Hertzman-Miller)
5:40 - 6:10	Cardiometabolic Risk PI CME: Interpreting Baseline Data and Choosing Goals (Ms. Colone/Dr. Hertzman-Miller)	5:40 - 6:10 Optimizing Your Practice: Identifying the Team Approach to Care and Operational Approaches (Ms. Jackson)
6:10 - 6:45	Facilitated Discussion: Practice Self-Assessment Workshop (Ms. Colone/Dr. Gaglia)	6:10 - 6:45 Facilitated Discussion: Practice Self-Assessment Workshop (Ms. Jackson/Dr. Hertzman-Miller)
<b>6:45 - 7:00 Buffet Dinner Break in Main Session Room</b>		
<b>Joint Session (Main Room)</b>		
Time	Description	Presenter
7:00 - 8:15	Practice Workshop: Providers and Staff Discuss Practice Self-Assessment and Goal-Setting	Group Discussion: All
8:15 - 8:30	Postactivity Assessment and Discussion of Next Steps and Concluding Remarks	Ms. Colone /Dr. Hertzman-Miller

Figure 2. East Hawaii IPA Diamond Workshop Agenda (08/07/12)

During General Session 1, Joslin faculty review the scope of the project, provide an overview of Diabetes management and opportunities for team-based performance improvement as well as review aggregate practice data and goals of the initiative. Then, providers and staff break out into two groups for the breakout sessions.

During the breakout sessions Joslin faculty walk through individual base-line data, and discuss individual and practice-based issues. They also are engaged in a clinical presentation regarding the treatment and management of type 2 diabetes. Simultaneously, in another room, the clinical and office staff are engaged in an interactive session that reviews optimal strategies to improve diabetes care for patients.

Joslin’s faculty also facilitate discussion around what’s working and what could be improved relative to the performance improvement goals of the project. After the breakout sessions, the two groups come together to discuss aggregate performance data, review the strengths and areas for improvement of the team. Often, operational issues are identified. This setting is usually a first for practices to come together to discuss how to improve system-based care for their patients with Diabetes.

During Session II, the providers and staff select two goals to work on. They are then guided by faculty to develop quality improvement plans that are grounded in the Plan, Do, Study, Act model. Providers and staff are grouped together and work on developing strategies and tactics that they can implement when they return to their practices. In some instances, in addition to developing their tactical plans,

practices often select their group educational activities and commit to completing them within four to six weeks of the Diamond Workshop™.

After the workshop ends, over the following month, the practice participants complete 2 educational interventions, facilitated by the PI Practice Champion. At approximately month 4, follow-up data is pulled examining and comparing the same measures as baseline to assess performance change and improvement in patient outcomes over time.

### **Target Audience**

The target audiences for these PI CME initiatives include:

- Primary care providers (MDs, DOs, NPs, PAs)
- Primary care office staff and support personnel, including: LPNs, medical assistants, RNs, diabetes educators (RNs, RDs, and exercise physiologists) and office managers

### **Learning Objectives**

Participants will be provided with clinically relevant, evidence-based information. Upon completion of these activities, participants should be able to:

- Identify recommended treatment goals for type 2 diabetes and other components of cardiometabolic syndrome risk profile
- Explain stratification methods for determining increased cardiometabolic risk based on non-glycemic issues, including hypertension, dyslipidemia, and obesity
- Identify and use specific interventional triggers to initiate preventive interventions in various cardiometabolic factors in a timely manner
- Demonstrate methods to advance non-pharmacologic and pharmacologic therapies for type 2 diabetes and other cardiometabolic risk factors when recommended treatment goals are not met
- Summarize indications for, and use of, non-pharmacologic as well as pharmacologic interventions targeting type 2 diabetes and other components of cardiometabolic syndrome
- Select and participate in continuum of educational activities to increase knowledge, competence, and performance in providing care, including materials provided in JPEC system, such as the CareKit resources and PI CME pathways

### **Eligible Patient Population**

Patients had to meet the following inclusion criteria:

- Age 30 – 74 years old
- With at least one of the following diagnoses or items in a problem list, billing diagnosis code, or family history already present in chart prior to last visit
  - Type 2 diabetes (not insulin treated)
  - Dyslipidemia
  - Hypertension
  - Obesity BMI > 30
  - Waist circumference > 40 inches in men or > 35 inches in women

## Appendix 6: Performance Goals and Educational Interventions

For this PI CME activity, there were performance goals (actions taken by the provider) and patient outcomes goals (clinical goals for the patient). For each goal, a customized menu of live and online activities were available to the participant to choose from.

The Diamond Workshop focused on overall cardiovascular risk reduction strategies and the selection of goals for each provider. The online Virtual Clinical activities were patient-visit simulations with several short visits, and frequent online consultation from primary care and specialist faculty. The online e-monographs were available for download from the online JPEC system.

The following tables show the educational activities available for each goal.

### Performance Goals

Goal	Title	Format	CME Credits
Increase % of patients...			
...screened for cardiometabolic risk	Diamond Workshop	Live symposium	4.0
	Virtual Clinic: Lloyd, A 54-year-old male presenting with cardiometabolic syndrome	Online e-monograph	1.0
	The "Lipid Clinic" Method for Treating Dyslipidemia in Primary Care	Online e-monograph	1.0
....who smoke who receive counseling	Stopping Smoking (Patient handout)	Print	N/A

### Patient Outcomes Goals

Goal	Title	Format	CME Credits
Increase % of patients...			
...at blood pressure target	Treating Hypertension and Dyslipidemia in Patients with Diabetes	Online e-monograph	1.0
	Lloyd, A 54-year-old male presenting with cardiometabolic syndrome	Online Virtual Clinic	1.0
	Case Based: Managing Patients with Diabetes and Cardiovascular Disease	Online	.75
...at LDL-C target	Lloyd, A 54-year-old male presenting with cardiometabolic syndrome	Online Virtual Clinic	1.0
	The "Lipid Clinic" Method for Treating Dyslipidemia in Primary Care	Online e-monograph	1.0
	Treating Hypertension and Dyslipidemia in Patients with Diabetes	Online e-monograph	1.0

...at HDL-C target	Lloyd, A 54-year-old male presenting with cardiometabolic syndrome	Online Virtual Clinic	1.0
	The "Lipid Clinic" Method for Treating Dyslipidemia in Primary Care	Online e-monograph	1.0
....with diabetes with A1C levels under control	Case Based: Managing Patients with Diabetes and Cardiovascular Disease	Online Virtual Clinic	.75
	Treating Hypertension and Dyslipidemia in Patients with Diabetes	Online e-monograph	1.0
	Managing Patients with Diabetes and Cardiovascular Disease	Online Virtual Clinic	.75