Diabetes Education Programs and the CQI Process
Recommendations for Joslin Education Programs

Background:

A continuous quality improvement (CQI) process is an essential component of a comprehensive, quality diabetes self-management education (DSME) program. (See other definitions at the end of this paper.) Its importance is featured in National Standards for DSME as one of the ten standards devoted solely to CQI. (Fig. 1). According to the standards, "evaluation is planned as an essential step in the provision of quality DSME to determine if DSME goals and objectives are met. Monitoring participant progress (medical and behavioral) and best practices are critical to the success of DSME and can be used as a basis for quality improvement. To measure outcomes effectively, data must be collected over time and data collection instruments administered on multiple occasions." (1)

Figure 1: Standard 10 (1)
The DSME entity will utilize a continuous quality improvement process to evaluate the effectiveness of the education experience provided, and determine opportunities for improvement.

The ADA Education Recognition Program ensures the delivery of quality DSME programs by ensuring the implementation of the National Standards. As part of the recognition application, programs are asked to respond (yes or no) if in fact, " there is documentation that the DSME entity uses a CQI process to evaluate the effectiveness of the DSME experience provided, and that the DSME entity determined opportunities for improvement based on the CQI evaluation." In addition, programs must identify (by check mark) which behavioral outcome areas are tracked (Fig. 2) and which program outcome measures are evaluated (Fig. 3) Finally, a "formal CQI process" must be in place, as you may be asked to submit it to ADA when applying for recognition as part of a random "paper audit".(2)

Fig. 2: Seven Behavioral Outcomes

1. Healthy eating
2. Being active
3. Taking medication
4. Monitoring
5. Problem solving
6. Healthy coping
7. Managing risks

Fig. 3: Program Outcomes

- A1C
- Complications
- Eye Exam
- Mortality
- Patient satisfaction
- Provider Satisfaction
- Quality of Life
- Self-foot exam

In addition to the National Standards, another important document was recently released by the American Association of Diabetes Educators. This paper, "Standards for Outcomes Measures of DSME" identifies five standards for measuring behavioral outcomes (Fig.4) and emphasizes the unique opportunity that educators have to demonstrate their effectiveness by concentrating on changes in the seven behavioral outcome measures outlined in Fig.2.

Fig 4: Standards for Behavioral Outcome Measures (AADE) *(3,4)*

1. Behavior change is the unique outcome measurement of diabetes self management education.
2. Seven diabetes self care behavior measures determine the effectiveness of DSME at individual and population levels.
3. Diabetes self care behaviors should be evaluated at baseline and then at regular intervals after the educational program.
4. The continuum of outcomes, including learning, clinical, and health status should be assessed to demonstrate the inter-relationship of DSME and behavior change in the care of individuals with diabetes.
5. Individual patient outcomes are used to guide the intervention and improve the care for that patient. Aggregate population outcomes are used to guide programmatic services and for continuous quality improvement (CQI) activities for DSME, and the population served.

Implementing a CQI process:
Here are some basic steps to get you started:

1. *Select a formal process*.
There are a variety of CQI frameworks. Some of the more common ones include: the plan-do-study-act (PDSA) cycle, the focus-analyze-develop-execute (FADE) cycle and the plan-research-organize-create-evaluate-standardize-startover (PROCESS) cycle. Choose one of these, or use one from your own health care setting. See two examples of CQI cycles (figure 5).

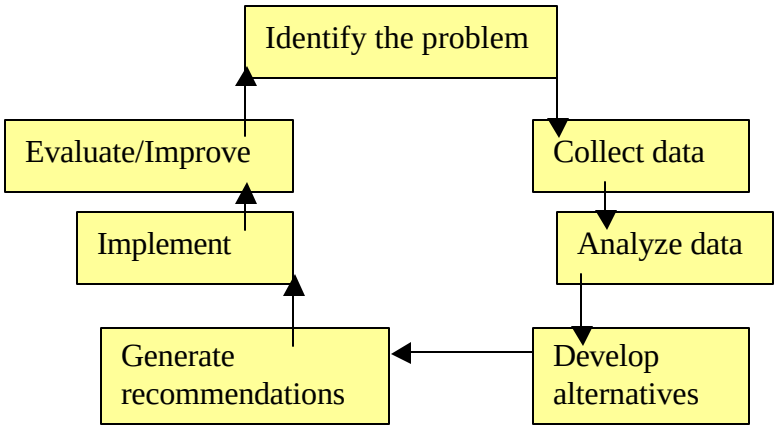
2. *Involve all the staff*
It works best when everyone has an understanding of the process, participates in the planning, data gathering, brainstorming for solutions and remeasurement. The full team can take pride in seeing specific, measurable improvements! In one of our affiliates, the hospital requires each staff member (including MDs and secretaries) to be team leader on at least one CQI project each year.

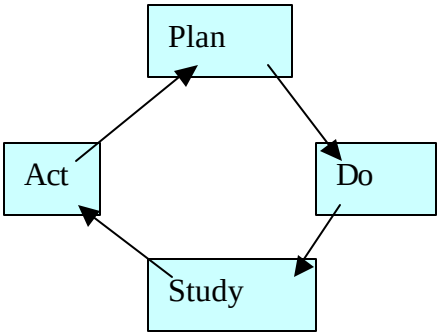
3. *Choose a project*
Projects can be operational in nature (decreasing wait time, increasing number of physician referrals,) or clinical (increasing % pts who are seen for follow-up, increasing % of pts who demonstrate improvement in a behavioral goal, such as walking)… or both!

4. Use data to set targets for performance improvements.
The baseline data collection can be used to set goals for improving performance. Measure after some suggested solutions are implemented and see if additional improvement is shown.

5. *Document*, *share and celebrate your findings!*
All results are useful, even if they didn't yield the conclusion you had hoped for. You always learn from it. Minutes need to document your CQI project for ADA, but better yet, think about sharing your findings (particularly if you were testing a creative solution) in the form of an abstract, poster presentation or short article!

Figure 5 **Two examples of Quality Cycles**





Benefits to your program:

- Gives you measurable data and evidence on which your programs can be justified.
- Demonstrates the successes of your program to your employees! We all like to know that what we do makes a difference – however, we usually don't know that – since it often goes unmeasured.
- Continuously improving means everyone is looking for ways to do their jobs better, faster, more productively and more effectively.
- Everyone participates. Likewise, everyone should celebrate the improvements!
- Many CQI projects will yield results worthy of publishing or presenting as an abstract

Case examples

	CQI Case #1 **Determining if behaviors actually change as a result of DSME**
1)Identify the problem	When the CDE manager was asked "how effective is your program in changing behaviors?" the manager realized she did not have concrete data on which to base her reply. She decided to see if the team could get a better understanding of how often people do actually meet their behavioral goals by doing a chart review and phone survey.
2)Collect and analyze data	Charts were pulled from 20 pts who had completed the DSME program 3 – 6 months earlier (so there would have been time for a change to be assessed or documented in a behavioral goal.) Two behaviors were chosen to study: increasing activity and using a meal plan. Data was available on 6 pts, either through an education f/up visit documented in the medical record or via a f/up phone call. Results showed 2 maintained or increased activity level and 3 reported using a meal plan >75% of the time. The analysis revealed the following additional problems: • The percentage of pts available for follow-up analysis was lower than expected. • Education records were not well designed to capture behavioral outcomes and it took a long time to search for it. • Some patients goals were unrealistic and needed better oversight before they were documented in the chart.
3)Consider possible solutions	The educators were disappointed in the results and brainstormed the following solutions: 1) Hire more staff just to do follow-up 2) Redesign education documentation tools to be easier to access outcomes 3) Ask patients to record day-time phone numbers where they can be reached in 3 months for a f/up phone call (instead of using home numbers in the chart) 4) Conduct an additional class on writing measurable goals 5) Ask pts to self-address two reminder post cards to themselves. One would be sent about 6 weeks post program with an upbeat message of support and the other a week before the follow up call to remind them the call is coming, and if they are not available to call in. 6) Use the new AADE 7 outcomes charting tool 7) Use the Joslin follow-up assessment form to remeasure behaviors
4)Make recommendations	The CQI team narrowed the list down to choose 3, 5 and 7 as they appeared to be lower cost options (time and money!)
5)Implement	The CQI team (including all staff), designed and printed the post cards, and discussed exactly how the follow-up assessment tool would be used. (Pts would complete at last class and then again at followup, even if it was over the phone.) The CDEs also were much more vigilant in reviewing pts behavioral goal choices and suggesting modifications if they were too ambitious.
6)Evaluate	After 2 comprehensive programs, the new methods had been implemented with 20 patients. 85% of the patients were reached at follow-up by phone or by clinic appt. Of those, 80% met or exceeded their meal plan and exercise goal. The program could now say that at baseline, patients walked an average of 30 minutes a week and at followup they walked an average of 60 minutes a week. In addition, 80% pts say they follow their meal plan >75% of the time, an increase from 20% saying they use a meal plan at baseline.
7)Maintenance Plan	Patients reported liking the postcard reminders. The clinic found that address labels could be easily printed, so the patients only needed to affix the label to their cards. AADE 7 goal sheets are kept on file, but may be moved to a computerized record.

	CQI Case #2 **Improving Appointment Scheduling at Diabetes class**
1)Identify the problem	Although patients were encouraged as part of a group class to schedule a 1:1 follow-up appointment, patients seemed to be leaving class before scheduling an appointment.
2)Collect and analyze data	At the monthly comprehensive class attended by 10 patients, the team determined that only 1 person made a follow-up appointment after class, and 1 more called before the next scheduled class. At the next class, each person was asked individually the reason an appointment was not made. Five of the 8 said "forgot" or "didn't understand that I was supposed to do it"
3)Consider possible solutions	The team brainstormed the following solutions: 1) Ask the secretary come to class to schedule appointments. 2) CDEs will call pts to schedule appointments 3) CDEs will write possible class dates on the board and pts will each select the one they want and turn it in. 4) Mount a large piece of paper in front of the class listing date options for follow-up class and invite pts to write their name next to the class they will attend
4)Make recommendations	The 3rd choice above was selected to try as it required not only the least amount of time, but also empowered the pt to take the action., and potentially join a class they saw a classmate / friend sign up for.
5)Implement	For the next 2 series of classes, a piece of large poster paper was mounted in the front of the class with options for 3 different follow up classes. The CDEs and scheduling staff met to discuss implementation. CDEs introduced the follow-up class sign-up at the beginning of the class and again at the end.
6)Evaluate	After the first class series, 7 out of ten class members signed up for class, and 6 actually attended. After the second series, 9 out of 11 signed up and 8 attended.
7)Maintenance Plan	The solution demonstrated an excellent improvement, without extra staff time needing to be committed. When class members sign up for a follow-up class, they are given the choice of two different kinds of classes, at two different times. They also can complete a reminder card for themselves to take home with them.

Sample Joslin CQI reporting form:
CQI team leader:_____
Team involved in the CQI study:_____
Date of the CQI study: from _____ to _____-
Title of project:_____

What was identified as the "problem" you chose to study?	
What data did you collect? Did the data confirm that it was, in fact, a problem? What analysis did you make of this data?	
What are the some of the possible "solutions" or actions your team thought of to address this program?	
Which solution did you choose to implement and why?	
How did you implement this plan? What did you learn from this implementation process?	
Reevaluate the problem. Collect data and analyze it to see if your solution produced a measureable improvement. What was learned from this process?	
What is your plan to continuously check on this to make sure the improvement is maintained, or if there was no improvement – to pick another solution to try?	

Definitions

CQI (1)

A cyclic series of steps designed to enhance DSME processes leading to improved patient and program outcomes. Steps include the following: identify opportunities for improvement, collect data, analyze data, choose an approach, develop concepts and process, implement, evaluate and improve

CQI (2):

A formal, written process of a cyclic series of steps designed to enhance DSME processes leading to improved participant and DSME outcomes. Steps include identifying opportunities for improvement, collecting data, analyzing data, choosing a new approach based on data analysis, developing concepts and processes for change, implementing the process, data collection, data analysis and evaluation of a new process.

References

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   Carolé Mensing, Jackie Boucher, Marjorie Cypress, et al. Diabetes Care 2004 27: S143.
2) **Quality Diabetes Self-Management Education: Achieving and Maintaining ADA Education Program Recognition**
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3) **Standards for Outcomes Measurement of Diabetes Self-Management Education**
   American Association of Diabetes Educators Position Statement; Diabetes Educator 2003; 29: 804-816.
4) **Diabetes Self-Management Education Core Outcomes Measures**
   Mulcahy K, Maryniuk M, Peeples M et al; Diabetes Educator 2003: 29: 768-803.

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