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Learning to Collaborate: A Case Study of Performance Improvement CME

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Abstract

Introduction—Performance Improvement Continuing Medical Education (PI CME) is a mechanism for bringing quality improvement (QI) in health care and continuing medical education (CME) systems together. Although QI practices and CME approaches have been recognized for years, what emerges from their integration is largely unfamiliar, because it requires the collaboration of CME providers and stakeholders within the healthcare systems who traditionally have not worked together on closing performance gaps and may not have the same understanding of QI issues. This study describes how an academic institution and a community-based primary care practice collaborated to enhance patient care in the area of hypertension. It offers lessons learned from a PI CME activity in the area of hypertension.

Methods—This was an observational case study. Data were collected through interviews, observations of educational events, and review of documents such as learning logs, which were designed to: 1) help physicians learn and change, 2) satisfy requirements for CME credit, 3) serves as the basis for reimbursement, and 4) provide data for the case study.

Results—Nine clinicians from one clinic completed the PI CME activity, achieved measurable improvements in their practice, and contributed to systems change. The study highlighted: 1) value of shared goals and agreement on the process among the participants, planners and others involved, 2) advantage of a multidisciplinary approach, 3) importance to support clinicians' continuing motivation to participate, and 4) the need to allow for sufficient time to enable the initiative to evolve.

Discussion—PI CME required unprecedented collaboration between CME planners and QI stakeholders to enable change in clinical practice.

Keywords

continuing medical education; performance improvement; quality improvement; collaboration; reimbursement

Introduction

Performance Improvement Continuing Medical Education (PI CME) was established in 2004 as an innovative mechanism for awarding *American Medical Association Physician's Recognition Award (AMA PRA) Category 1 Credit*.^{TM} 1 The focus of PI CME on clinical practice, measurement of performance and systems issues^{1,2} mirrors major trends in the continuing medical education (CME) field^{3–6}. Currently, PI CME accounts for less than 0.1% of all CME activities⁷. However, these activities will almost certainly increase in number and scale given published reports of the effectiveness of integrated CME and quality improvement (QI) programs⁸, the inclusion of performance improvement in the requirements for maintenance of certification⁹, and increased readiness of CME providers to offer this type of CME^{4,10}.

A PI CME activity is defined as a long-term process that involves learning through current practice performance assessment (Stage A), application of performance improvement interventions to patient care (Stage B), and evaluation of the performance improvement effort (Stage C)¹. PI CME brings together CME and QI. QI is widely-accepted among healthcare organizations as an approach to measure performance and implement change¹¹. QI theory and tools, such as the Plan-Do-Study-Act cycle, process flowcharts, and dashboards¹², have been employed in the service of improved health care for years. At the same time, the CME field has accumulated knowledge about physicians' learning, forces that facilitate or inhibit individual behavior change, and educational program planning¹³. The concept of integrating CME and health care quality improvement is not novel^{14–16}. However, the intersection of QI and CME is largely uncharted terrain. It requires high levels of collaboration between CME providers and healthcare organizations¹⁵ where there may be no experience for these systems working together to close performance gaps or sharing the same understanding of QI issues¹².

Improvement of clinical practice requires a team to carry out leadership, coordination, technical and administrative functions¹⁷. Given CME planners' educational expertise in facilitating learning and change, to what extent should or could they be involved in the above functions in a PI CME activity? The QI literature describes the advantages of using existing channels and structures for training, improvement, and communications with the target group¹⁸. This leads to the question of how can existing channels and structures, such as CME planning committees, quality committees, and electronic health records systems, be utilized in PI CME? The present report contributes to a growing body of knowledge involving CME and QI through application of the PI CME model and sharing results of a case study of a PI CME activity in the area of hypertension involving clinicians at the Prairie Clinic in Sauk City, Wisconsin.

Case Description: PI CME Focused on Hypertension

Control of hypertension in the United States remains a significant healthcare issue. Only 34% of hypertensive patients are achieving their "goal" blood pressure¹⁹, and physician adherence to evidence-based practice guidelines on hypertension has been low²⁰. Clinicians at the Prairie Clinic saw a need to improve the assessment and treatment of hypertension. They approached the University of Wisconsin School of Medicine and Public Health (UW),

for educational support, and expressed a willingness to try new approaches. UW planners suggested conducting this initiative as a PI CME activity.

UW planners and the clinic's Quality and Education Committee (Q&E Committee) agreed on a process map²¹ outlining the major steps of the initiative (Figure 1). The principles of the Plan-Do-Study-Act cycle²² (taking action to improve care and using what was learned to guide the next round of improvements) informed the development of the process map. The guideline implementation model recommended by Grol et al¹⁷ and the educational programming principles described by Dick et al²³ were also considered. From these came principles such as beginning the cycle with the identified problem and review of the evidence¹⁷, and conducting an analysis of performance setting and learning environment²³. Given that Stages A, B and C of a PI CME activity are general enough to be used in a creative way², they were integrated in the process map. The steps were grouped in five phases: (1) purpose/context, (2) diagnosing, (3) planning action, (4) taking action, and (5) evaluating outcomes.

Six family physicians and three physician assistants who treat many hypertensive patients enrolled in the PI CME activity. Additionally, 23 nurses attended training on blood pressure measurement and participated in the organizational changes. A local coordinator—a nurse with a QI background—worked closely with an information technology specialist who helped generate data from the electronic medical records system. Three nephrologists conducted face-to-face educational sessions. The UW team included two CME planners, two researchers and a graduate student, all of whom contributed to the planning and implementation of the PI CME project and this study.

Funding to support the project was received from Merck and Company and Cardiovascular Therapeutics. This one-year activity was started in December 2005 and lasted 14 months.

Research Methods

We conducted an observational case study²⁵ focusing on a contemporary, concrete phenomenon—a PI CME activity—within its context. We explored how an academic institution and a community-based primary practice might collaborate to enhance patient care and outcomes in the area of hypertension. The case study was our method of choice due to the “how” nature of the research question and our interest in the real-life context of PI CME. The research team employed participant observation, a technique most often used in anthropological studies but applicable to case studies generally²⁶. The role of participant observer introduced greater potential for bias (i.e., less ability to work as external observers and becoming supporters of the group being studied) but facilitated access to all major events and learning “from the inside-out” what is involved in planning and implementing a PI CME project, the challenges and barriers encountered, and what is needed for a successful academic-community partnership to achieve practice change. These insights could be used by CME planners in similar contexts and by educational researchers to frame future studies²⁷. The primary sources of data were semi-structured 20 to 60-minute face-to-face and telephone interviews with seven performance improvement participants (two participants declined an invitation to be interviewed), a local coordinator, and a nurse.

The interview guide was based on the methodology proposed by Engel²⁸ and included questions about respondents' roles in patient care and PI CME, and their goals and actions. For instance, participants were asked if they felt there was a shared objective and how agreement was reached; what events occurred that were most relevant to achieving change and what the outcomes of these events were. Interviews were done when participants were at Stage B of their performance improvement (taking action phase). Data were also collected through 34 hours of direct observation (and note-taking) of the educational events at the

clinic. Additionally, we reviewed the participants' learning logs (structured forms to record improvement goals, progress on performance measures, experiences of learning and change and serve as the basis for reimbursement), evaluations, meeting minutes, planning documents, and activity reports.* (Appendix 1 indicates the first page of Learning Log Fax Back Form #1.) Although performance improvement participants and interviewed individuals were not provided any monetary incentive, the Prairie Clinic was partially reimbursed for the time that clinicians spent in the initiative (e.g., in planning meetings, interviews and completing learning logs) that they would otherwise spend doing their clinical work.

Interview transcripts and learning logs were coded using a coding dictionary initially created of categories related to the phases of the process (Figure 1) that progressed towards a coding structure grounded in the data. The rest of the data were reviewed to validate emerging findings and identify additional themes. NVivo version 7 (QSR International, <http://www.qsrinternational.com>) was used to facilitate the data organization and analysis. This study was approved by the University of Wisconsin-Madison Health Sciences Institutional Review Board.

Results

The results pertaining to the role of the CME program planners and their interaction with the performance improvement participants and other stakeholders within the clinic are discussed in relation to each phase of the process listed in Figure 1.

Purpose/Context

The overall performance improvement goal defined by the Q&E Committee was “to promptly identify, assess and effectively and efficiently treat hypertension.” A shared understanding among clinicians about current blood pressure control was established using data from the clinic's electronic health records system and became the starting point for a clinic-wide initiative. Performance improvement participants, members of the Q&E Committee and UW planners also identified more personal goals such as evaluating the educational sessions with experts (two participants), developing connections with specialists (one participant), realizing the potential of the electronic health records system (one participant), fulfilling job responsibilities bearing on QI (a coordinator), and gaining experience in planning PI CME (UW planners). Patient improvement, learning, and successful collaboration between the clinic and UW were identified through the data analysis as the most common interests.

Interview data and planning meeting minutes suggest that the planners from both organizations viewed the process of negotiating the steps in the performance improvement plan as helpful for planning and implementing the initiative (Figure 1). Defining the roles of the participants and planners was a challenge resulting, for example, in a month-long period of confusion regarding who should suggest the measures. Interview participants identified several other factors supporting this and subsequent phases: shared goals, commitment of the individuals and groups involved (e.g., “we were quite literally incrementally dedicating ourselves to trying to do this right”, family physician), and positive past experience of the two organizations working together (e.g., on grand rounds).

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*The interview guide, learning log forms, and evaluations are available from the authors upon request.

Diagnosing

The analysis of the gap between desired practice and current practice required a multidisciplinary approach. One nurse characterized it as “opening the communication lines” between the physicians and other healthcare professionals. UW planners worked with physicians, physician assistants, nurses, and an information technologist to identify the reasons behind the performance gaps and the ways to close them. For instance, great variation was found in procedures for notifying a physician about a high blood pressure measurement in the patient. A discussion of this issue between nurses and physicians led to development of a new protocol for blood pressure checks.

The diagnosing phase was an iterative process that occurred on multiple occasions most of which were planned by the UW planners and the local coordinator. For instance, some barriers to performance improvement were anticipated from the beginning of the initiative (e.g., patient adherence to recommendations), whereas additional barriers were revealed through the learning logs and planning meetings at the PI CME Stages A and B (e.g., equipment poorly calibrated).

Planning Action

Measures to track progress were selected by UW planners and Q&E Committee from published sources (e.g., *Hypertension Core Physician Performance Measurement Set29*) and suggestions made by the Q&E Committee. Getting consensus on the measures was a challenge. “I remember being in the meetings where we were picking these, and I don’t think there was a lot of agreement about this or this criteria being a good criteria,” commented one family physician. The group decided to experiment and use 16 measures organized in four categories: (a) assessment (e.g., percentage of patients with systolic blood pressure 140+ mm Hg without documented blood pressure during appointment), (b) treatment (e.g., percentage of hypertensive patients who have documentation of antihypertensive medications prescribed), (c) patient outcomes (e.g., percentage of patients with a diagnosis of hypertension and no systolic readings 140+ mm Hg) and nursing process (e.g., percentage of hypertensive patients missing an appointment with a follow-up call within 24 hours). At the end of the project, the PI CME participants and planners agreed that the process for choosing measures needed improvement. Suggestions to test performance improvement indicators, identify most meaningful and feasible indicators, and reduce the number of indicators were documented in the final activity report.

The review of the baseline data and the establishment of performance improvement goals (PI CME Stage A) took place almost simultaneously with the first educational events (PI CME Stage B). There was a perceived lack of time for clinicians to reflect on baseline data, and for the planners to refine the plan and prepare the experts. The Prairie Clinic local coordinator felt that, “we were driving the car before we were taught how to drive”. However, having physicians actively involved at the planning phase appeared to be important in reviewing data and setting goals. In the words of one Q&E Committee member: “By having those physicians involved, they’re a little bit more open to suggestions and to changes.”

Taking Action

Half-day sessions to discuss patient cases with an expert were a central component of the educational intervention. UW planners and Q&E Committee intended that these sessions would be practice-oriented and address the barriers for performance improvement. These expectations for the most part were met. For instance, to address the patient adherence problem, one expert role-modeled a strategy for communicating life style changes with actual patients. This approach was appreciated by many of the participants: “an example of

how someone else does that, it's useful...and I think once you use someone else's approach it sort of becomes your own over a little piece of time" (physician assistant). Another expert, an experienced teacher and a respected consultant, used a more traditional didactic approach in his teaching, which participants rated less useful. Although he reviewed patient cases, he tended to lecture rather than discuss the patient with participants.

Our analysis of interviews and learning logs identified several factors that helped to sustain the motivation of clinicians: (a) reinforcement of shared goals and commitments by UW planners, the local coordinator and the champions of change in each involved group (physicians, physician assistants, nurses, administrators), (b) understanding the dynamics of change (e.g., that initial decrease in controlled blood pressure might be related to improved blood pressure measurement), (c) acknowledgement of individual and organizational changes, and (d) good coordination of the activity. Performance improvement participants did not relate reimbursement to the clinic to their motivation to participate. However, a few participants mentioned pay for performance principal as potential motivator for future performance improvement initiatives. One family physician commented about any kind of monetary incentive: "You're not going to be able to buy it [excellence]".

Evaluating Outcomes

Six family physicians and three physician assistants (i.e., all performance improvement participants) completed the entire cycle of the PI CME activity and each earned 20 *AMA PRA Category 1 Credits*^{TM}. As a group, they achieved improvement on 10 out of 16 measures: documentation of blood pressure, timely EKG for new hypertensive patients, controlled blood pressure in hypertensive patients, controlled blood pressure in patients on antihypertensive medications, poorly controlled blood pressure (at last visit), poorly controlled blood pressure (during study period), expired hypertensive patients, use of a family history template, use of a social history template, and follow-up calls regarding missed appointments. For instance, all participants achieved the increased number of hypertensive patients who received antihypertensive medications and had systolic blood pressure less than 140 mm Hg, and the group average went from 26.4% to 53.4%. Organizational changes included the purchase of new and the calibration of all sphygmomanometers, implementation of a revised protocol for blood pressure checks, consistent use of a social history template, improved follow-ups with the hypertensive patients, and update of patient educational materials.

The educational sessions, lists of hypertensive patients and the end-of-year performance data were reported by the participants as most helpful in achieving and sustaining their performance improvement goals (table 1). Participants also ranked high communication with colleagues and acknowledged how much they learned from each other, for instance:

I happen to see the physician's assistant that shares an office with me...so we generally compared notes about "this was helpful" or we had different days with the practitioner [expert], so we would sometimes share stories about "I presented this patient and this is what Dr...[expert] recommended". (Family physician)

The average estimated time spent in structured PI CME activities and independent learning was 14 hours varying from 6 hours to 30 hours. During the final meeting, the clinicians concluded that one year might not be long enough to achieve the desired patient outcomes and began making plans for their next cycle of PI CME focusing on specific populations of hypertensive patients.

Discussion

This PI CME activity resulted in improvements on several outcomes measures. The UW CME planners worked closely with clinicians, Q&E Committee members and the coordinator at the Prairie Clinic to facilitate the desired practice changes and achieve other shared goals demonstrating the collaborative nature of integration of CME into practice improvement.

As participant observers, we learned about the importance of shared goals, agreement on the process, and clearly-defined roles when conducting the PI CME activity, all of which are consistent with the recommended features of successful collaboration²¹. Physicians, physician assistants and nurses in our case had opportunities to exchange their learning and practice experiences, concerns, and insights through joint participation in planning meetings and educational events, and informal communications. They positively evaluated these opportunities as facilitating their learning and change. This case also highlighted the importance of thoughtful sequencing of events (e.g., gaining agreement on the process/roles and analyzing baseline data before PI CME Stage B begins), and allowing sufficient time for participants to reflect on their progress and for changes in patient outcomes to become evident. The value of the multidisciplinary approach and the necessity to spend sufficient time planning and implementing improvement confirmed previously published QI lessons learned^{12,30}. While financial incentives are discussed in the literature as factors increasing motivation to change behavior¹⁷ and participation in continuous improvement of performance¹², we did not reveal much of an impact of the reimbursement to the clinic on participants' motivation or behavior, perhaps, because this reimbursement was not directly linked to compensation of the individuals.

We observed that, even in such a well-researched QI area as blood pressure control³¹, the selection of meaningful and feasible measures was a challenge. Although, in contrast with a concern regarding the willingness of clinicians to honestly address the measurement of outcomes³², transparency of data and critical evaluation of an individual's practice were not an issue in this PI CME activity.

The availability of CME credit did not appear to be a primary motivator for participation in PI CME. At the same time, clinicians in our study hoped to address their learning needs by implementing performance improvement activities. It is possible that the educational opportunity in itself increased the perceived value of QI for participants. Given that obtaining the participation of physicians in QI activities is recognized as a problem^{30,33}, an educational opportunity associated with QI could make the latter more appealing to them.

Moore and Pennington¹⁵ argued that practice-based learning and improvement required CME providers to move "from focus of being 'top-down' providers of faculty or content-driven learning resources to a 'bottom-up' approach." In the current case, leadership and coordination of the PI CME activity were shared and many decisions were negotiated making it neither top-down nor bottom-up, but simultaneously top-down *and* bottom-up approach. Planning an intervention to address specific practice gaps and learning needs of clinicians and preparing a faculty/facilitator to support the PI CME stages appear to be the areas where a CME provider could make the most contribution to the performance improvement process.

The described case is one of many possible ways to implement PI CME. Our findings may be limited to situations where (a) participants are from the same practice, (b) CME planners are intensively involved in the performance improvement process and work closely with the local team, and (c) resources are available to pilot and evaluate PI CME. Another limitation of our study is self-selection of a clinical site and participants.

To conclude, PI CME required unprecedented collaboration between CME planners and QI stakeholders to enable change of clinical practice. We argue that PI CME is not only a new mechanism for awarding CME credit but may be an integrating structure that takes CME programs and QI initiatives to a new level of collaboration leveraging the expertise associated with each respected field. Given that collaboration is central to the planning and implementation of PI CME activities, it is important for the CME community to continue to share experiences of facilitating performance improvement and for future research to explore collaboration models in a variety of PI CME settings.

Lessons for Practice

- Gaining agreement among participants and others (e.g., healthcare administrators, CME planners) on performance improvement goals, processes, and related roles may contribute to the success of a PI CME activity.
- Clinicians' continuing motivation to participate in a PI CME activity may be supported through reinforcement of their goals and commitments (e.g., by the CME planners and champions of change in each involved specialty), shared understanding of the change dynamics, acknowledgement of achievements, and good coordination of the activity.
- Opportunities to exchange their learning, practice experiences, and concerns enable performance improvement participants to change their practice in a desired direction.
- Plans for a PI CME activity should allow sufficient time for the initiative to evolve, for participants to reflect on their learning and change, and for changes in patient outcomes to become evident.

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Figure 1.
The PI CME Activity: A Process Map

Table 1

Participant Evaluation of Various Components of the PI CME Activity.

Question: How did each component contribute to your progress in achieving your performance improvement goals?	
Component/activity	Evaluation (1=least useful and 5=most useful)
Reviewing list(s) of your hypertensive patients (n=9)	4.2
Reviewing your baseline measures (n=8)	3.6
Reviewing your interim measures (n=8)	3.1
Reviewing your end-of-the-year measures (n=8)	3.8
Reviewing Project Interim Progress Report (n=9)	3.0
Attending orientation meeting (n=9)	3.3
Attending (or reviewing slides from) nursing training (n=3)	2.6
Expert #1 first session (n=8)	4.6
Expert #1 second session (n=8)	4.6
Expert #2 session (n=7)	2.4
Expert #2 lecture (n=6)	2.8
Expert #3 session (n=9)	4.6
Luncheon meeting with Expert #3 (n=8)	3.7
Completing Learning Log #1 (n=9)	2.3
Completing Learning Log #2 (n=9)	2.2
Completing Learning Log #3 (n=9)	2.2
Completing Learning Log #4 (n=9)	2.3
Participating in the Q & E Committee meeting(s) (n=7)	3.4
Communicating informally with colleagues (n=8)	4.4
Participating in an interview (for the research component) (n=8)	2.5
Other, please specify: Patient interaction and teaching (n=1)	5.0