

The Role of Physician Engagement on the Impact of the Hospital-Based Practice Improvement Module (PIM)

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BACKGROUND: Physicians play an important role in hospital quality improvement (QI) activities. The Hospital-Based Practice Improvement Module (Hospital PIM) is a web-based assessment tool designed by the American Board of Internal Medicine (ABIM) to facilitate physician involvement in QI as a part of maintaining certification.

OBJECTIVE: The primary objective of this study is to explore the impact of the Hospital PIM on physicians participating in hospital-based QI.

DESIGN: Qualitative design consisting of semistructured telephone interviews.

PARTICIPANTS: A purposeful sample of 21 early-completers of the Hospital PIM.

MEASUREMENTS: Grounded-theory analysis was used to analyze transcripts of the semistructured telephone interviews.

RESULTS: Physician completers of the Hospital PIM describe the impact in a variety of ways, including new learning about QI principles and activities, added value to their practice, and enhanced QI experience. An emerging theme was the mediating role of physician engagement in relation to the overall impact of the Hospital PIM. Four case studies illustrate these findings. Facilitators and barriers that influence the overall experience of the PIM are described.

CONCLUSIONS: The impact of completing the Hospital PIM is mediated by the degree of physician engagement with the QI process. Physicians who become engaged with the Hospital PIM and QI process may be more likely to report successful experiences in implementing QI activities in hospital settings than those who do not become engaged. *Journal of Hospital Medicine* 2009;4:466–470. © 2009 Society of Hospital Medicine.

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Physicians play an important role in improving quality improvement (QI) through clinical expertise and leadership.^{1,2} The role of the physician leader is dynamic and complex, yet key competencies have been described in terms of personal commitment, professional credibility, QI behaviors and skills, and institutional linkages.³ Several characteristics have also been identified in hospitals successful in implementing QI, including shared goals for improvement, substantial administrative support, use of credible data feedback, and strong physician leadership.⁴ Cultivating physician leadership in hospital QI via development of these competencies is crucial for ongoing efforts in hospital QI activities.

The American Board of Internal Medicine (ABIM) developed web-based assessment tools called “Practice Improvement Modules” (PIMs), as part of the maintenance of certification (MOC) program. Designed to facilitate physician involvement in QI, most PIMs target a single medical condition in the ambulatory practice,⁵ and involve a medical record audit performed by the physician, a patient survey, and a systems readiness survey. Physicians use the results of this data collection to perform a single test of change, and receive MOC credit when they report on the results of their

intervention. Recognizing that QI activities may be different in hospital settings, the ABIM subsequently developed a Hospital-based PIM (Hospital PIM) that allows physicians to use nationally-approved hospital-level performance data to complete the module. The Hospital PIM requires physicians to carry out a single test of change, and report any change in the perception of the environment supporting QI activities.

The ABIM has also begun work on potentially creating a “focused pathway” for hospitalists in the MOC program.⁶ Practice-based learning and improvement (PBLI), systems-based practice (SBP),⁷ and QI⁸ are core competencies of hospital medicine, and assessment of these competencies would be an important component of the new, focused MOC pathway. The Hospital PIM potentially provides an assessment methodology, thus it is important to understand the impact and value of this web-based assessment tool.

The objective of this study is to explore the impact of the Hospital PIM on physicians participating in hospital-based QI, including facilitators and barriers to a successful experience. We highlight several case studies to describe this impact, which can be defined as learning about QI, “value-added” to practice, or an enhanced QI experience. We also

describe 3 pathways suggesting how physician engagement, which is an emerging theme of our research, mediates the impact of the Hospital PIM.

Methods

A nonprobability purposive sample of physicians who completed the Hospital PIM ($n = 21$) as part of MOC by January 2007 was interviewed using semistructured telephone interviews. At the time of data collection, 771 physicians completed the Hospital PIM, and our sample strategically reflects equal proportions of those currently active on a QI team, as well as those who formed a QI team. Physicians were contacted via e-mail and telephone to arrange an interview. None of the physicians contacted declined. All physicians were informed about the purpose of the study and provided consent for the ABIM to analyze and report data for purposes of understanding the feasibility of the PIM at improving practice. No physician personal identifiers were used in data analysis.

The interviews focused on four domains: reasons for choosing the module, assembly and role on any quality improvement teams, the value and satisfaction with the experience of completing the Hospital PIM, and prior experience with QI. Interviews were conducted by 1 trained member of the research team, and lasted approximately 30 minutes. Data collection was terminated when theoretical saturation was reached, or when no new data was revealed during the interviews. Interviews were audio-recorded, and data were transcribed verbatim to facilitate analysis. Through an inductive and iterative approach, 3 members of the research team (including the interviewer) coded the data to identify themes that were consistently “grounded” in the data.⁹ These themes were subsequently discussed with a fourth researcher to maximize interrater reliability. Codes were then checked against existing literature to confirm linkages and enhance interpretation.

Results

The mean age of the participants ($n = 21$) was 42 years and 81% were male. Primary certificates were issued a mean of 13 years prior and completers came from a wide variety of disciplines, hospitals, and areas of expertise. Overall, the majority of physicians found the Hospital PIM to be a valuable experience ($n = 17$; 81%), which is similar to ABIM Hospital PIM surveillance data in which 75% of all completers said they would recommend the PIM to a colleague.

The impact and value of completing the PIM is illustrated in a variety of ways. For some, particularly those with extensive QI backgrounds, the PIM organized and broadened documentation of ongoing work. Several physicians described their utilization of the Hospital PIM as a “byproduct of their hospital’s existing cultural norms and interest in QI,” and many Hospital PIM projects dovetailed with ongoing hospital QI activities. In these cases, even though the PIM did not stimulate new ideas, there was still value

among physicians in receiving recognition for their ongoing QI activities and, perhaps more importantly, in learning by reflecting on their work.¹⁰

For others, the Hospital PIM was a “catalyst to change.” Similar to the role of a catalyst in a chemical reaction, our data suggest that the Hospital PIM facilitated QI by lowering the “energy” necessary for the process to occur. Many physicians reported the process stimulated new interest in QI, (eg, “[The process] gave me some ideas about future QI projects that I plan to do,” or described how the experience was an “extra boost” or “stimulus” to help “change their ways.”) These findings are consistent with recent findings on the use of PIMs in residency,¹¹ which describes the Preventive Cardiology PIM as a catalyst to change.

Several physicians were surprised at how easy it was to begin and initiate a QI project, acknowledging the importance of leadership and teamwork ($n = 7$; 33%). In addition, many physicians highlighted reflective processes ($n = 8$; 38%) whereby the PIM led to an increased awareness of their clinical environment, or QI in general, including how QI can affect patient care and/or patient outcomes.

The most frequently reported facilitators to a successful PIM experience were familiarity/access to QI resources and staff, institutional support and culture of QI, and documentation of ongoing QI activities. The most frequently reported barrier ($n = 9$; 43%) was the time that it took to complete the module. Other barriers included a lack of institutional support or negative culture supporting QI activities, a lack of familiarity/access to QI resources and staff, and perceived irrelevance of QI activities to clinical practice.

Physician Engagement

Our data revealed a critical theme, whereby a physician’s engagement with the QI process (especially the utilization of existing QI resources) mediated the impact of the PIM. Physicians who we describe as “active engagers” ($n = 8$) exhibited personal involvement in the QI project, including a commitment to working within the QI team structure. Active engagers possessed familiarity or knowledge of basic QI behaviors and skills, and most reported enhanced awareness of ongoing QI activities and the clinical environment as a result of completing the PIM.

“Passive engagers” ($n = 10$) may not have possessed the skills or motivation to become involved in the QI process. In our study, passive engagers were more likely to report perceived lack of relevance of QI activities to patient care practices, and may have had difficulty demonstrating personal commitment to improvement. Interestingly, many passive engagers reported an overall negative Hospital PIM experience, yet documented impact from the PIM via learning about the QI processes (eg, teamwork, communication, documentation, use of data) or ongoing QI activities that occurred while completing the PIM.

Finally, physicians who failed to engage in the QI process, “nonengagers” ($n = 3$) documented no evidence of QI

learning and reported little impact from completing the PIM. The following case studies illustrate how physician engagement relates to physicians' experiences with the Hospital PIM and describes the unique influence of facilitators and barriers on both engagement and impact.

Case Study A: Active Engagement

This hospitalist spends 100% of his time performing clinical work in a hospital. He denies formal training in QI principles and has no prior experience in QI, but has an interest in QI resulting from prior work on "throughput activities" as part of a patient safety initiative at his hospital. He possesses a positive perception of his hospital's leadership and culture supporting QI activities: "the hospital administration is very supportive of any sort of QI initiatives." His chosen measure was administration of pneumococcal vaccine in patients admitted with community acquired pneumonia (CAP), for which his hospital performed at 36% compliance.

Despite a lack of formal training in QI, this physician actively engaged with the existing QI resources and was able to "call together . . . the people who are typically associated with [QI] initiatives in the hospital" to "work on [the PIM]." This supportive culture facilitated the navigation through the hospital system and the physician's active engagement in the QI process.

Another key aspect of this physician's experience was his interaction with the members of a multidisciplinary team. While he "provided the creative initiative for the project itself," the assembled QI team "quickly identified areas of need and moved on to a quality-based initiative," while "providing a framework to disseminate the ideas of the project." The PIM was a "valuable experience" and this physician noted that it was "surprisingly easier to begin and initiate a quality improvement project than thought".

Despite a lack of formal QI training or experience, this physician utilized his personal commitment to the value of QI and the positive hospital culture to engage the existing QI resources and staff. Similar to other active engagers, he demonstrated relationship building, team formation, and effective communication in completing the PIM. His level of engagement facilitated learning about QI and enhanced his PIM experience.

Case Study B: Passive Engagement

This physician is a subspecialist in Infectious Diseases who spends 15% of his time in patient care in the hospital. Prior to completing the PIM, he identified his prior QI experience as "receiving messages . . . from the head of our department in the hospital hearing about these kinds of things from a bureaucratic stance." At the beginning, he strongly disagreed with the notion that the hospital had strong leadership and culture supporting QI activities. His measure was the appropriate choice of initial antibiotics in CAP, in which his hospital reported 24% compliance.

In order to complete the module, this physician successfully enlisted the help of an existing QI team stating, "I joined the group for that period of time . . . so I could complete my certification." Specifically, "They helped me to understand the problems, the barriers to improvement, and helped me get a sense of the ways to better improve the management of pneumonia in the hospital setting . . . but in the end it probably didn't really affect my practice very much." When questioned about this dichotomy, this physician stated that the information learned in completing the PIM was "not particularly relevant to a subspecialist who practices inpatient medicine for only a short period of time and mainly does research." Interestingly, after completing the module, this physician had a significantly improved perception of his hospital's QI leadership and culture.

Like other passive engagers, this physician described some interaction with existing QI resources and staff, though to a lesser degree than the active engagers. Even though completing the PIM was perceived as an overall negative experience, his familiarity with QI resources, and his ability to successfully engage with those resources, allowed him to complete the module and document an impact (ie, new personal learning about hospital QI principles and team formation) in the process. Another important finding is that QI learning occurred despite the presence of multiple barriers.

Case Studies C and D: No Engagement

Case Study C

This physician has a small clinical practice and works mostly in the laboratory. He admits to "very limited" QI experience and, at the onset of the PIM, possessed a moderately negative opinion about his hospital administration and culture supporting QI. He also chose pneumococcal vaccine administration, for which his hospital was performing at 48% compliance.

He tried multiple times to enlist the help of a hospital QI officer but was told to "assemble the team myself" and was subsequently unable to do so. This physician ended up being disengaged with the PIM and the QI process because he had "no buy-in from the QI department." The experience was "frustrating" and at the completion of the module, his perception of the hospital's QI leadership and culture was rated as moderately worse. This physician documented no impact as a result of completing the PIM.

Case Study D

This physician chose to complete the Hospital PIM because he worked as a hospitalist 100% of the time. He claims experience in QI by "participating in conferences, teaching students, reading literature," but had not led or organized any QI projects or activities. He generally rated his hospital leadership and QI culture in positive terms.

Overall, this physician failed to engage because he did not believe in the basic tenets of QI, and possessed a

negative view of the Hospital PIM and its relevance to his practice. This perceived irrelevance was illustrated when, despite having a hospital baseline performance measure of 5% compliance for percutaneous coronary intervention in under 120 minutes, he stated, “We don’t need to improve . . . we’re at a terrific level right now.” During the PIM, this physician chose not to work with a QI team because he “[didn’t] need a team . . . everybody knows their own place and what to do in each situation.” To achieve QI gains, physicians at this hospital “discuss with administration . . . what they need to do to improve quality.” This physician did document a change in the hospital’s QI environment, but did not attribute it to the Hospital PIM, rather, “because we just became more experienced in our hospital.” The overall impact on this physician was negative, “a waste of time,” highlighting the perceived irrelevance of the PIM and of QI activities.

For various reasons highlighted in these case studies (eg, institutional barriers, perceived irrelevance, redundancy with existing QI activities), the Hospital PIM may be unhelpful to nonengagers and as a result, physicians with no engagement in the QI process may not have a successful experience with the Hospital PIM.

In summary, physician engagement mediates the experience and impact of the Hospital PIM on the physician. Importantly, initial engagement by itself is not a powerful predictor; rather, the degree of engagement unfolds as the QI activity progresses. Physicians may elect to (at times not purposefully) actively, passively, or not engage in the QI process; however, simply enrolling in the PIM will not necessarily lead to engagement or to a successful experience. The physician must engage in the QI process in order to achieve learning. In all of these case studies, facilitators and barriers undoubtedly influence the Hospital PIM experience, as well as any subsequent impact on learning about QI. However, their presence or absence does not seem to be as powerful of a predictor of impact as is the degree of physician engagement.

Discussion

This study describes experiences for a small number of early-completers of the Hospital PIM. For many, impact is described as an increased awareness of the hospital clinical environment, particularly an awareness of ongoing QI activities. For others, the primary impact was learning through an increased appreciation of the importance of QI activities and understanding of basic QI procedures (ie, interdisciplinary teamwork, enhanced communication, and documentation, buy-in, using data). Still others described impact as an enhanced QI experience via reflection on current QI work or catalyzing change in their hospital environment. Further exploration of these findings will be important to determine the full impact of the PIM. An unanticipated finding, however, was the emerging theme of the role of physician

engagement in mediating a successful experience with the Hospital PIM.

Prior research on physician engagement more generally demonstrates that increased physician engagement enhances interaction with nursing and other office staff,¹² improves overall physician alignment,¹³ enhances QI,² and may heighten physicians’ willingness to participate in hospital administration and policy.¹⁴ Our data support these findings and further describe the importance of engagement in QI activities, whether it be through assembling and working in a team, helping analyze hospital systems, navigating existing institutional linkages, or simply becoming the “creative initiative” on a QI project. For completers of the Hospital PIM, engaging in any aspect of the QI process facilitates a successful PIM experience as documented by impact, and may stimulate physician leadership and hospital level change as well. Nonengaging physicians, in contrast, had a negative experience and documented little or no impact as a result of completing the PIM.

As our findings illustrate, engagement may not be a fixed construct, and may be acquired or generated through the QI process. In this context, physicians with varying levels of QI experience and expertise may learn and find value in completing the Hospital PIM, provided they become engaged with the process. Internal (ie, personal commitment, buy-in, perceived relevance) and external (ie, hospital QI culture, access to QI team, access to data) factors may influence the degree of satisfaction and success with the Hospital PIM experience, thus maximizing facilitators and overcoming the barriers is also important for a positive outcome.

There are important limitations to this study. Most importantly, we acknowledge that the quality of the resources available between hospitals is highly variable. Therefore, our subjective assessment of whether or not someone was actively engaged is largely dependent on the quality of the available resources, and in a resource-poor environment, this may not be a fair reflection of their engagement. We further recognize that coming to any broad or conclusive findings about the impact of the PIM is difficult given the qualitative nature of this study. However, our findings do suggest that the Hospital PIM may promote learning and value to completing physicians, especially those that engage in the QI process. Future studies should further explore the described impact and the relationship between engagement and QI.

To further enhance the Hospital PIM, consideration of prerequisite criteria for future completers, such as documentation of engagement, adequate access to hospital QI resources, and significant clinical work in the hospital setting, may be warranted. Additionally, consideration for alternative means of MOC credit may be warranted for physicians who demonstrate a proficiency in QI activities or who work in hospitals that efficiently participate in QI activities, such as a Health Maintenance Organization, for whom completion of the Hospital PIM may be redundant.

In conclusion, our findings suggest that the Hospital PIM is a useful component of MOC for appropriate groups of

physicians despite the unique aspects of the Hospital PIM using hospital-level outcomes data. Many physicians in our sample found it to be useful as a catalyst for learning about QI activities, which was facilitated through active engagement with the PIM QI process. While ongoing study is needed, it is anticipated that the findings from this study will help to inform the proposed pathway of focused practice in hospital medicine as part of MOC, particularly activities geared toward assessing competency in QI.

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