Harmonizing the Practice-Based Learning and Improvement Milestones

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ABSTRACT

Background The milestones created by the Accreditation Council for Graduate Medical Education (ACGME) beginning in 2009 were developed by each individual specialty. The lack of standardization across specialties has resulted in unnecessary variation and has complicated the development of validated assessment tools.

Objective We developed a common set of subcompetencies and milestones that could harmonize the practice-based learning and improvement (PBLI) competency across specialties.

Methods A group of medical educators with expertise in PBLI was recruited by the ACGME and created 2 PBLI subcompetencies: (1) evidence-based and informed practice (PBLI-1), and (2) reflective practice and commitment to personal growth (PBLI-2). After vetting the new subcompetencies with a group of medical educators, an electronic survey was sent to a national sample of stakeholders to assess if the subcompetencies should be used, were understandable, and could be assessed.

Results A total of 1195 respondents completed the survey. For PBLI-1, 89% of all survey respondents believed PBLI-1 should be used, 95% understood it, and 84% reported they knew how to assess it. For PBLI-2, 85% thought it should be used, 89% understood it, and 76% reported they knew how to assess it.

Conclusions The majority of stakeholders surveyed understood and believe they should use 2 new "harmonized" PBLI subcompetencies. At the same time, there appears to be more comfort in evaluating PBLI-1 (evidence-based and informed practice), compared to PBLI-2 (reflective practice and commitment to personal growth). Harmonizing the subcompetencies presents an opportunity for faculty development and dissemination of tools that can be used across specialties.

Introduction

The milestones are an important component of the Accreditation Council for Graduate Medical Education's (ACGME's) Next Accreditation System that serves as an outcomes-based assessment framework based on the 6 core competencies. The development of the educational milestones began in 2009, and use of the milestones in trainee assessment began in 2013.[1]

The initial milestones for all 6 competencies Medical Knowledge (MK), Patient Care (PC), Interpersonal and Communication Skills (ICS), Practice-based Learning and Improvement (PBLI), Professionalism (PROF), and Systems-based Practice (SBP) were developed by multidisciplinary workgroups in each specialty. The workgroups used program requirements, certification examination outlines, curricula, national competency statements, literature reviews, and results from national consensus-building exercises to guide the milestones development process.[2,3]

While the milestones offered a shared mental model of competence for practice and represented an advance in medical education, there was dissatisfaction with the differences among the specialty milestones. Reasons provided were that the differences complicated efforts to share and validate assessment tools, and ensure comprehensive faculty development.[4]

In response, the ACGME formed 4 multidisciplinary workgroups to develop a common set of subcompetencies and milestones that could harmonize the ICS, PBLI, PROF, and SBP milestones across specialties while leaving PC and MK to reflect specialty-specific differences. The intent was to identify subcompetencies for all learners that offer appropriate developmental language. Accredited specialties will be asked to incorporate these subcompetencies into their milestones, and provide additional specialty-specific contextual language, as appropriate. An

article summarizing the benefits of the 2.0 milestones is published in the June 2018 issue of the *Journal of Graduate Medical Education*.[5] Here we describe in detail the development of the harmonized milestones for practice-based learning and improvement.

Methods

The ACGME solicited for volunteers to be part of 4 interdisciplinary workgroups, with each group focusing on a single competency. Selection of individuals considered diversity in specialty, role, and geography, and knowledge of the content area. The PBLI milestones workgroup consisted of 11 members with broad specialty representation, diversity in education roles, and expertise in PBLI and competency-based education. The group met in person, and remotely by e-mail and conference calls.

The development work began with a review the current PBLI milestones used by core specialties and the transitional year, data from focus groups, and the biannual milestone submission to ACGME. The workgroup focused in particular on addressing potential overlap and more clearly differentiating themes in PBLI from SBP, resolving this by having PBLI focus on the attitudes and actions of individuals, and SBP focus on systems of care. This left the important themes of self-directed learning and ongoing self-monitoring throughout practice in the PBLI competency.[6] Milestone development identified 4 overarching PBLI themes: adaptability for change, commitment to personal growth, critical thinking and informed practice, and performance improvement. The workgroup discussed these extensively, and ultimately identified 2 subcompetencies that captured these themes: evidence-based and informed practice (PBLI-1) and reflective practice and commitment to personal growth (PBLI-2), shown in the FIGURE.

FIGURE

PBLI Subcompetencies

PBLI1: Evidence Based and Informed Practice

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates how to access and use available evidence, and incorporate patient preferences and values in order to take care of a routine patient	Articulates clinical questions and elicits patient preferences and values in order to guide evidence based care	Locates and applies the best available evidence, integrated with patient preference, to the care of complex patients	Critically appraises and applies evidence even in the face of uncertainty and conflicting evidence to guide care, tailed to the individual patient	Coaches others to critically appraise and apply evidence for complex patients; and/or participates in the development of guidelines
☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:				

PBLI2 – Reflective Practice and Commitment to Personal Growth

Level 1	Level 2	Level 3	Level 4	Level 5
Accepts responsibility for personal and professional development by establishing goals	Demonstrates openness to performance data (feedback and other input) in order to inform goals	Seeks performance data episodically, with adaptability, and humility	Intentionally seeks performance data consistently with adaptability, and humility	Role models consistently seeking performance date with adaptability and humility
Identifies the factors which contribute to gap(s) between expectations and actual performance	Analyzes and reflects on the factors which contribute to gap(s) between expectations and actual performance	Analyzes, reflects on, and institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance	Challenges assumptions and considers alternatives in narrowing the gap(s) between expectations and actual performance	Coaches others on reflective practice
Actively seeks opportunities to improve	Designs and implements a learning plan, with prompting	Independently creates and implements a e learning plan	Uses performance data to measure the effectiveness of the learning plan and when necessary, improves it	Facilitates the design and implementing learning plans for others
☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:				

To develop consensus on the subcompetencies, the workgroup used 2 guiding principles: (1) milestones needed to be "specialty agnostic," and applicable to all specialties, and (2) to simplify resident/fellow assessment, the number of threads (the individual row devoted to the developmental progression of a theme across levels) within each subcompetency had to be kept to a minimum (with PBLI-1 having a single thread, and PBLI-2 having 3). As with all milestones, achieving Level 4 was set as the target for graduating residents.

The first subcompetency chosen was evidence-based and informed practice. The group thought it important to highlight the principles of evidence-based medicine, with a focus on integrating the best available evidence into clinical decisions, informed by patient values, and clinical expertise. The progression of skills for this subcompetency starts with the recognition of the importance of using clinical evidence and patient values in medical decision making (Level 1), followed by being able to articulate a clinical question (Level 2), followed by being facile in locating the evidence and applying it to the care of patients (Level 3). Level 4 indicates that a learner is able to appropriately apply the evidence to an individual patient, taking into account their unique needs and preferences. The Level 5 aspirational milestone is defined as being an advocate for evidence-based practice by developing guidelines or coaching others in their development.

The workgroup chose the subcompetency of reflective practice and commitment to personal growth (PBLI-2) as the essential quality necessary for lifelong learning, and selected language that would explicitly "differentiate" a trainee's progression across 5 levels. PBLI-2 entails 3 threads: (1) seeking performance data to inform professional goal setting; (2) analyzing the gap between expectations and actual performance, and instituting behavior change to reduce it; and (3) implementing an individual learning plan, and refining it by measuring against

performance data. The Level 1 verbs "accepts, "identifies," and "seeks" were selected to be

qualitatively different from the Level 5 verbs of "role models," "coaches others," and

"facilitates" (for others).

Draft versions of the proposed PBLI subcompetencies and milestones were shared with

more than 100 attendees at an ACGME Milestones Summit in late 2016. After review of the

comments gathered at the Milestones Summit, the group made minor revisions to the PBLI

milestones.

Feedback was then solicited through 5 surveys fielded via SurveyMonkey. Individuals

providing feedback could select to take a single survey for all 4 competencies, or an individual

survey for 1 competency. Surveys were designed to allow stakeholders to participate in the

area(s) in which they felt most comfortable or knowledgeable.

The surveys asked for respondents' role in graduate medical education, specialty (if

applicable), and the level of agreement (strongly agree, agree, disagree, or strongly disagree) for

3 statements about each subcompetency ("Should the subcompetency be used?" "Do you

understand what it is asking?" "Would you know how to assess it?"). A letter of invitation to

participate in the survey, with a link to the survey, was sent electronically to the e-mail addresses

included in the ACGME mail list, and was also posted on the ACGME website. Reminders to

complete the survey were included with the weekly ACGME e-Communications.

Results

A total of 1195 respondents completed the survey. Responses were analyzed by specialty

groupings (medical, surgical, and hospital-based), and by respondents' role in graduate medical

education.

Data were analyzed by the percentage of agreement on whether respondents felt the subcompetency should be used, if they understood what it was asking, and if they knew how to assess it. The agreement level was based on the number of respondents who selected either "agree" or "strongly agree" for each statement. A statement that received over 85% of responses that were "agree" or "strongly agree" was considered a strong agreement. Statements that received between 75% and 85% were considered acceptable, while a statement with less than 75% agreement was considered to be in need of revision. In addition, responses below 75% in the "knows how" category were considered an opportunity to develop better evaluation tools. Levels of agreement are reported by roles (TABLE 1) and specialty discipline (TABLE 2).

The majority of responses for both PBLI subcompetencies were in the acceptable range (> 85% agreement) in both role and specialty categories. For example, 95% of all specialties understood PBLI-1, and 89% understood PBLI-2. Scores were lower in the "knows how to assess" category, especially in the PBLI-2 subcompetency, where 5 of the 9 respondent groups had less than 75% agreement.

TABLE 1

PBLI Survey Results Based on GME Role

		Program Director (n = 750)	Associate PD (N = 74)	CCC Chair (N = 59)	CCC Member (N = 107)	DIO (n = 53)	Faculty (n = 192)	Program Coord. (n = 237)	Institutional Coord. (n = 17)	Other (n = 58)
PBLI-1 (%)	1 – Should Use	87	93	89	90	92	89	94	100	94
	2 - Understand	95	96	94	91	96	94	96	100	96
	3 – Know How	83	78	72	84	88	80	87	100	81
PBLI-2 (%)	1 – Should Use	83	80	78	85	94	86	93	100	90
	2 – Understand	88	88	82	84	94	87	95	100	90
	3 – Know How	72	70	64	75	76	73	90	100	79

TABLE 2

PBLI Survey Results Based on Specialty Discipline

		All (n=1195)	Hospital (n=249)	Medical (n=577)	Surgical (n=205)
PBLI-1 (%)	1 – Should Use	89	87	90	91
	2 - Understand	95	95	96	97
	3 – Know How	83	78	85	84
PBLI-2 (%)	1 – Should Use	85	87	86	80
	2 - Understand	89	86	90	89
	3 – Know How	76	72	76	75

Discussion

The PBLI workgroup recognized that many medical educators, while understanding the broad concepts of PBLI, struggled with how to assess residents in this competency.

Use of content experts facilitated a more comprehensive understanding of informed self-assessment as a dynamic process in which individuals differentially access, interpret, and use internal and external information to inform self-perceptions of their performance; a process influenced by multiple factors and related tensions.[7,8]

To alleviate potential concerns whether two subcompetencies can adequately assess performance on a complex construct such as PBLI, it is important to note that the intent of the milestones was never to be comprehensive of all possible elements of a residency or fellowship program. Rather, the intent was to focus on the fundamental concepts that could be "biopsied" to allow for actionable decision making about a resident or fellow's progression, as well as the program quality. For example, reflection was seen as an essential component of informed self-assessment, as was the "preparation and engagement of supervisors and staff interested in supporting learning and improvement."[8]

The results of the public comment survey demonstrate that, while most educators believe that they should use and understand these 2 subcompetencies, they are less certain in their ability to assess them. There also appears to be greater comfort in evaluating evidence-based and informed practice (PBLI-1) than the reflective practice and commitment to personal growth (PBLI-2). PBLI-1 is based on evidence-based medicine, which is well-described and has existing evaluation tools.[9] PBLI-2 is novel, and a sizable percentage of responding program directors and clinical competency committee chairs reported they did not feel comfortable evaluating this subcompetency. Interestingly, as a group, DIOs were the most likely to understand and support

its use, and report they knew how to assess it. This may be due to DIOs engaging with residents with problem performance in this area, who come to their attention through the processes of remediation, academic probation, or dismissal. While poorly preforming residents may only appear infrequently in a single program, a DIO with oversight over many programs may have more experience with this group. That a concept is believed to be more difficult to measure does not diminish its importance. This reinforces the importance of faculty development and the need to design and widely disseminate tools that can be used by programs across specialties.[10–13]

Conclusion

The majority of stakeholders surveyed understood and believe they should use 2 new "harmonized" PBLI subcompetencies. Respondents indicated greater comfort with evaluating PBLI-1 (evidence-based and informed practice), compared to PBLI-2 (reflective practice and commitment to personal growth). Harmonizing the subcompetencies presents an opportunity for faculty development and dissemination of tools that can be used across specialties, particularly tools for PBLI-2, where effective, validated tools that provide actionable feedback to residents are lacking.

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