Implementing the Family Medicine Milestones Using an Iterative, Rapid-cycle Feedback Procedure

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ABSTRACT

While competency-based evaluations have been used for years to assess resident physicians' performance, specialty boards in the United States have recently developed new metrics that operationalize the six essential elements of clinical practice: patient care, medical knowledge, system-based practice, practice-based learning and improvement, professionalism, and communication. Collectively, these new metrics encompass the core competencies of the Accreditation Council for Graduate Medicine Education Milestones evaluation system. We describe a multi-year, multi-phase initiative to implement the Milestones standards in an academic family medicine setting. A curriculum assessment was performed to identify gaps. Instruments and processes were scrutinized, revised, and piloted. An iterative, rapid-cycle feedback procedure was employed to make continuous improvements and rectify identified deficiencies. Gaps were found in the areas of practice based learning and improvement, systems based practice, and the mechanisms for providing residents with performance-related feedback. Instruments and processes were revised and piloted during the 2013-2014 academic year. Using a consensus-based, iterative, rapid-cycle approach toward adopting the Milestones criteria can result in an improved assessment system that better meets residents' (and residency programs') needs, tracks progress over time, and fulfills accreditation requirements.

Keywords: *Family Medicine, Graduate Medical Education, Milestones, Process Evaluation, Residency*

I. INTRODUCTION

While competency-based evaluations have been used for many years to assess resident physicians' performance, specialty boards have recently developed new metrics that operationalize the 6 essential elements of clinical practice: patient care, medical knowledge, system-based practice, practice-based learning and improvement, professionalism, and communication.[1] Collectively, these new metrics encompass the core competencies of the Accreditation Council for Graduate Medicine Education (ACGME) Milestones evaluation system.[2,3] The Milestones for family medicine were released by ACGME and the American Board of Family Medicine in 2013,[4-6] and family medicine residency programs across the country began using the new standards for the first time during the 2014-2015 academic year. The new standards represent an important step forward in that they enable residency programs to better monitor a learner's progress over a developmental continuum; however, because the new standards require more detailed tracking over time,[1] evaluation systems—including their instruments and processes—must be updated to account for the increased complexity.

Seeking to maximize the potential benefits of the Milestones metrics while also attending to the reality of resource constraints, the University of Michigan (UM) Department of Family Medicine engaged the process of adopting the new standards as an impetus to innovate, improve efficiency, and better integrate new models of care into the residency curriculum.[7-10] This educational innovation describes the multi-year, multi-phase initiative to implement the Milestones standards, including the instruments and processes to improve efficiencies and quality of feedback to residents.

II. METHODS

In this study, the curriculum, instruments, and processes were the objects of investigation; as such, the study did not fit the definition of human subjects research. In accordance with UM Institutional Review Board procedures, this study was classified as exempt from review (per 45 CFR 46, 21 CFR 56 and UM policy).

In anticipation of the new Milestones standards, the UM Department of Family Medicine residency program leadership implemented a 30-month initiative to facilitate the transition. In autumn 2012, a curriculum assessment was performed to identify gaps and weaknesses. This assessment included an examination of the varied training experiences provided for in the curriculum, and focused on whether all essential elements of clinical practice were adequately addressed. Instruments and processes used to facilitate resident evaluations were scrutinized, revised, and piloted during the 2013-2014 academic year. During this period, an iterative, rapid-cycle feedback procedure was employed to make continuous improvements and rectify identified deficiencies. Used outright during the 2014-2015 academic year, instruments and processes continued to be modified when problems or potential improvements were identified. The Department's first Next Accreditation System report using the revised instruments was submitted in January 2015. Lessons learned over the 30 month period are broken down into three phases: pre-pilot, pilot, and post-pilot.

III. RESULTS

Pre-pilot phase. The most significant gaps identified by the residency leadership team during the 2012 curriculum assessment were in the areas of practice based learning and improvement, systems based practice, and the mechanisms for providing residents with performance-related feedback. In response to these findings, and in accordance with ACGME requirements, a Clinical Competency Committee (CCC) was created, its charge being to develop a strategy for rectifying the identified shortcomings, review all resident evaluations, report resident progress to the ACGME, and advise the residency director on residents' progress and promotion.[6] Membership of the CCC included the residency leadership (Director and Assistant Directors), chief residents, and other identified faculty and residents committed to the Milestones transition. Purposeful effort was made to ensure CCC representation from each of the Department's three inpatient services and two residency continuity clinics. Knowing that facilitating systemic change requires material resources, administrative support, and strong leadership,[3,11,12] the Department's executive leadership expressed its support for the CCC by offering a small stipend to faculty committee members and designating staff to the committee's work.

Among the first tasks of the CCC was to evaluate the instruments being used to measure residents' progress. It was discovered that the tools lacked the specificity and sensitivity to adequately track each of the essential elements over time. The written evaluation was subsequently overhauled so that its rating scale explicitly matched the Milestones scale. Likewise, every question was mapped to a specific Milestone, thus enabling a direct link (and thereby improved efficiency) between evaluations and the Next Accreditation System report.

Pilot phase. Recognizing that the new instruments bore little resemblance to their previous format, it was necessary to institute a faculty development process to ensure the instruments would be understood and properly used.[2,3,10,13-16] During the 2013-2014 academic year, an iterative, rapid-cycle feedback procedure was employed to solicit feedback from faculty and residents both on the instrument's content and ease of use.[17] This procedure not only enabled the CCC to make substantive improvements to the instrument and its associated processes, but familiarized faculty with the new system and identified those requiring additional training.

In a parallel process, the CCC revised the residency program's annual evaluation system, moving from a method that was mostly formative to one that is much more summative. The evaluations were also purposefully redesigned to contain detailed feedback on benchmarks specific to a resident's individual learning goals. Under the outgoing system, faculty reviewers were assigned to evaluate residents with whom they had no formal relationship outside of the preceptor role. The rationale behind this approach was based on the belief that social distance would enable reviewers to be more objective. However, based on feedback from faculty and residents alike, CCC members concluded that when a reviewer had fewer interactions with a resident, the evaluation itself tended to be more generic and therefore not as helpful as it could be. Under the new system, the CCC tasks each resident's faculty advisor to write the annual evaluation, including a summative, comprehensive assessment broken down by Milestone competency area. Because a faculty advisor has a formal relationship with the resident over the course of their training, the advisor is better positioned to have a more nuanced picture of the resident's interests, learning goals, and strengths/weaknesses. It is anticipated that this approach will better enable faculty advisors to give residents personalized feedback. Because this new process will also facilitate improved continuity (eg, the same advisor will complete each annual evaluation over the 3 year training period), it is further anticipated that the process will enable a longitudinal perspective of each trainee's developmental progress.

In addition to limitations associated with instruments and processes, the curriculum review revealed training- and assessment-related shortcomings in the areas of practice based learning and improvement, and systems based practice. The instrument- and process-related changes to resident evaluations helped to resolve much of the identified gap associated with practice based learning, as the updated approach—eg, using faculty advisors—explicitly addresses learner's strengths and weaknesses, and better aligns learning goals with training opportunities. Deficiencies in the areas of systems based practice and quality improvement were remedied by modifying the curriculum to better integrate new models of care. This integration largely focused on the patient-centered medical home, where learning objectives such as performance reporting, coordinated care management, preventive services, and patient-provider communication were more heavily emphasized.[18] Improved evaluation of these domains was also facilitated through newly implemented scholarly activities and practice management evaluations. For example, the practice management evaluation was changed to better incorporate a number of activities related to competency in the area of patient safety, such as a resident's presentation at a morbidity and mortality conference.

Post-pilot phase. The pilot phase of this initiative ended June 2014, 6 months before the first Milestones report was due to the ACGME. Between June and December 2014, while using the revised instruments and processes outright, the CCC continued to assess their overall usability, making changes when problems or concerns arose. The focus of these changes were not substantive, but instead addressed process- or efficiency-related issues such as simplifying language or clarifying text. Moreover, some instruments have been tailored to be more teacher/setting/role specific. For example, instruments used by clinic staff were revised so that the language better fits with the staffs' level of

training (eg, less medical jargon). Changes such as these were made to help increase the likelihood that residents will get useful feedback from multiple members of the interdisciplinary team.

A summary of the revised instruments are outlined in Table 1. All instruments are freely available online (https://drive.google.com/folderview?id=0BzmVdjzjIcc1NjJjNUFfR0d2Q1E&usp=sharing), and can be readily used and/or modified as desired.

IV. DISCUSSION

The UM Department of Family Medicine residency program used the Milestones initiative as an opportunity to assess its curriculum, revise its evaluation instruments, and update associated processes to both ensure compliance with the new metrics as well as identify areas requiring improvement. Importantly, this multi-year, multi-phase undertaking did not occur in an administrative vacuum: it was identified by the Department's leadership as a strategic priority, and both financial and administrative resources were committed to help ensure a smooth transition. These resources enabled the CCC to be more deliberative in its approach, nimble in its ability to change course, and better able to engage key stakeholders (ie, residents, faculty, and staff) throughout the process. Just as team-based care is a tenet of primary care, team-based assessment has significant advantages for resident evaluations: it not only helps residents get the feedback they need, it enables the provision of a comprehensive and summative evaluation. By strengthening the relationships between residents and their faculty advisors, evaluations now better reflect each resident's learning goals and interests. The general consensus among residency and departmental leaders has been that the upfront investment of resources not only yielded short-term returns (eg, completing the January 2015 Next Accreditation System report), but will continue to produce long-term dividends from the improved curriculum, instruments, and processes.

This educational innovation has a number of limitations worth noting. First, simply creating a more robust educational experience does not necessarily guarantee better physicians or improved patient care. Further research is needed to determine whether a Milestones-based education results in a better-prepared primary care workforce, and ultimately, better clinical outcomes.[2,19] And second, the instruments and processes described herein were created to meet the needs of a particular family medicine residency program. While all family medicine residency programs must utilize the same Milestones, findings may not be generalizable to all settings. Likewise, while all ACGME medical specialties are organized around the same 6 essential elements of clinical practice, lessons learned in family medicine may not readily translate to all other specialties. This said, we believe the general procedures characterized by the pre-pilot, pilot, and post-pilot phases can be easily modified to many specialties undergoing curricular- and evaluation-related improvements.

V. TABLE

Table 1. Instruments for Evaluating Family Medicine Residents Using the Accreditation Council for Graduate Medicine Education Milestones Criteria

INSTRUMENT	DESCRIPTION
Staff Evaluation	Clinic staff evaluation of resident professionalism and communication
Focused Evaluation (subspecialty)	Brief assessment utilized by off-service faculty
Inpatient Assessment	Comprehensive evaluation of inpatient adult medicine and pediatric skills

Obstetrics Evaluation	Comprehensive evaluation of obstetric and newborn pediatric skills
Outpatient Evaluation	Comprehensive evaluation of outpatient clinic skills
Patient Centered Observation	Direct observation of resident-patient interaction by faculty
Practice Management Evaluation	Evaluation of resident team leadership within a patient-centered medical home model
Procedure Evaluation	Evaluation of procedure-based care
Resident Annual Evaluation	Yearly, summative, comprehensive assessment of each resident
Scholarly Activities Evaluation	Evaluation of scholarly presentations
All instruments are freely available online (https://drive.google.com/folderview?id=0BzmVdjzjIcc1NjJjNUFfR0d2Q1E&usp=sharing), and can be readily used and/or modified as desired.	

VI. CONCLUSION

Using a consensus-based, iterative, rapid-cycle approach toward adopting the Milestones criteria—including diligent piloting, reviewing, and revising—can result in an improved assessment system that better meets residents' (and residency programs') needs, tracks progress over time, and fulfills accreditation requirements. While an upfront investment will likely be required to help facilitate the transition, the benefits of an improved system should yield dividends over the long term. Continuous quality improvement thru rigorous assessment and ongoing adjustment will be necessary to ensure the primary care workforce remains ready to meet patients' needs thru the 21st century and beyond.

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