

Milestone-specific, observed data points for evaluating levels of performance (MODEL) assessment strategy for anesthesiology residency programs

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Original Article

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Abstract

Background: Anesthesiology residency programs will be expected to have Milestones-based evaluation systems in place by July 2014 as part of the Next Accreditation System.

Methods: The San Antonio Uniformed Services Health Education Consortium (SAUSHEC) anesthesiology residency program developed and implemented a Milestones-based feedback and evaluation system a year ahead of schedule. It has been named the Milestone-specific, Observed Data points for Evaluating Levels of performance (MODEL) assessment strategy.

Results: The “MODEL Menu” and the “MODEL Blueprint” are tools that other anesthesiology residency programs can use in developing their own Milestones-based feedback and evaluation systems prior to ACGME-required implementation. Data from our early experience with the streamlined MODEL blueprint assessment strategy showed substantially improved faculty compliance with reporting requirements.

Conclusions: The MODEL assessment strategy provides programs with a workable assessment method for residents, and important Milestones data points to programs for ACGME reporting.

Key words: Next Accreditation System, Milestones-based anesthesiology resident evaluations and Milestone specific, observed data points for evaluating levels of performance (MODEL)

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Introduction

The Accreditation Council for Graduate Medical Education (ACGME) unveiled the Core Competencies in 1999 and required residency programs to begin using them as part of resident evaluation in July 2002. Seven years later, the ACGME launched an overhaul of the accreditation system to emphasize *outcomes* and functional implementation of the competencies. This resulted in the Next Accreditation System (NAS) and specialty-specific Milestones—observable, developmental steps in resident’s progression from *beginner* to *expert*.¹ The NAS focuses on outcomes-based accountability to the public. The Milestones facilitate outcomes tracking in the form of measurable resident achievement.

The existing medical literature contains surprisingly little on the subject of incorporating the ACGME Milestones into resident feedback and evaluation—and even less as it relates specifically to anesthesiology. In fact, our literature search yielded only two articles that discuss Milestones in the context of anesthesiology programs^{2,3}. Neither of them specifically addresses feedback and evaluation. The only published example of Milestone-based resident feedback we could find comes from a plastic surgery program⁴, but it focuses more on the use of handheld technologies than on Milestone-based feedback itself. Other papers discuss the development and incorporation of Milestones into program-specific curricula^{5,6,7,8,9}, but there is nothing on the subject of Milestones-based feedback and evaluation. This manuscript aims to fill that gap in the literature.

The San Antonio Uniformed Services Health Education Consortium (SAUSHEC) anesthesiology residency program developed and implemented a Milestones-based feedback and evaluation system one year ahead of schedule. We did this with two primary objectives in mind. The first was to allow our faculty an entire year to familiarize themselves with the Milestones and our redesigned feedback and evaluation instruments. Specific faculty development sessions played a role in this familiarization, but equally important was the extended opportunity for “trial and error” and self-education by the individual faculty members themselves. The second objective was to afford our Clinical Competence Committee (CCC) the opportunity to complete two six-month Milestones reporting practice cycles prior to ACGME-required implementation in July 2014. With this being uncharted territory, we knew that there would be important lessons learned with each “dress rehearsal”. We wanted to have a “tried and tested” evaluation system in place before our first Milestones reporting to the ACGME in December 2014.

In this report, we describe the process of developing our Milestone-specific, observed data points for evaluating levels of performance (MODEL) feedback/evaluation system, provide an overview of the various instruments being employed, and report initial data on faculty compliance.

MODEL Menu

The NAS and specialty-specific Milestones prompted us to perform a careful analysis of our feedback and evaluation system. We started by creating the MODEL Menu (see Table 1), which lists our previously existing assessment mechanisms along the horizontal axis and the 25 Anesthesiology Milestones² along the vertical axis. For each Milestone, we placed an “X” in the box of every assessment mechanism with the *potential* to capture meaningful data. Our purpose was to determine if all of the Milestones *could be* assessed using current mechanisms, versus having

to create new ones. As Table 1 demonstrates, we felt that all 25 Milestones could be captured using our current processes, as evidenced by the fact that there was at least one “X” (and usually several) next to each Milestone.

MODEL Blueprint

We then decided which assessment method(s) for each Milestone *should be* used within our residency program. Our goal was to create streamlined assessment instruments (for purposes of faculty buy-in and compliance) that could still capture an appropriate number of observations for each Milestone. Tables 1 and 2 demonstrate this point. Although “Faculty Evaluation” is identified as a potential assessment method for 20 of the Milestones on the “MODEL Menu”, we wanted a more manageable and user-friendly “Daily Faculty Feedback” instrument. Therefore, we eliminated eight Milestones that (although *potentially* observable in this setting) we felt were better captured through other mechanisms. This left us with 12 Milestones (see Table 2) for faculty observations, which we felt was much more realistic.

The seven different Milestone assessment methods (see Table 2) that we selected for SAUSHEC Anesthesiology fall into three categories: (1) *direct faculty observations* (clinical settings, simulated environments, mock oral exams); (2) *anonymous multi-source evaluations* (peers, nurses, administrative assistants); and (3) *resident portfolio inputs* (quality improvement and patient safety projects, learning plans, systems-based analyses). While some of the Milestones are assessed by a single method (i.e. Patient Care Milestones 8, 9 and 10), others rely on several methods for thorough assessment (i.e. Interpersonal & Communication Skills Milestone 2).

The Importance of Faculty Observations

The Milestones are intended as *observable* steps in a resident’s professional development. Therefore, faculty observations are essential. We determined that 15 of the 25 Milestones were most easily assessed using direct faculty observations in (1) clinical settings, (2) simulated environments, and (3) mock oral examinations. As Table 2 demonstrates, many of those 15 Milestones appear on all three faculty assessment mechanisms, thus increasing the likelihood of capturing meaningful observations in those areas.

A challenge for anesthesiology residency programs is obtaining faculty buy-in and ensuring quality observations and documentation for the pertinent Milestones. Prior to designing Milestone-specific instruments, we looked at faculty compliance with our previously existing feedback mechanism (see Figure 1). For the eight months leading up to the creation of the MODEL system, our residents received an average of 2.5 daily written feedback entries per month. Going into the “MODEL development phase”, our goal was to significantly improve faculty compliance so that our observation-dependent instruments would be successful.

To this end, we convened an 8-person “MODEL working group”, consisting of resident and faculty volunteers. The group was tasked with three major responsibilities: (1) informally soliciting resident and faculty input regarding the current and proposed assessment systems; (2) determining the best instruments for assessing the Milestones; and (3) designing a user-friendly system that encouraged faculty compliance. Eight weeks later, after four face-to-face group meetings and regular electronic correspondence, the group reached a consensus on which Milestone-specific instruments to use (Table 2). They also agreed on an initial goal of at least five written feedback entries per resident (average) every month. Figure 1 shows the significant progress in faculty reporting of direct observations as the backbone of our MODEL assessment system.

MODEL Feedback Instruments

Our system emphasizes formative *feedback* over grades and performance labels. As such, we withheld the ACGME “levels of performance” and their corresponding word anchors from our feedback instruments (daily faculty feedback, simulation feedback, mock oral examination feedback) and reserved them for end-of-rotation and six-month evaluations. Our feedback instruments consist purely of setting-specific Milestones and comment boxes. In the clinical setting, faculty members are encouraged to select 3-4 pertinent Milestones (depending on the clinical environment) from the “Daily Feedback Instrument” (Figure 2) in which to make detailed observations for their assigned residents. At the end of each day, faculty members are encouraged to provide specific verbal feedback to their residents and to then document this feedback using “New Innovations” software (New Innovations, Inc. Uniontown, OH. www.new-innov.com). The purpose of the written feedback is two-fold: (1) it takes the place of verbal feedback if a faculty member and resident are unable to complete it for some reason; and (2) it enables the resident’s block evaluator—who may not work with the resident more than once or twice over the course of a rotation—to see how the resident is progressing and to make a final evaluation at the end of the month.

End-of-Month Evaluations and 6-Month Milestone Reports

Monthly evaluators analyze written *feedback* entries (daily faculty feedback, simulations feedback, mock oral examination feedback) and complete end-of-month *evaluations*, which summarize feedback trends and assign a “level of performance” (see Anesthesiology Milestones¹⁰) for each observable Milestone. “New Innovations” software (New Innovations, Inc. Uniontown, OH, www.new-innov.com) has made this extremely easy to accomplish with its customizable Milestone reports. Monthly evaluators determine a resident’s “level of performance” in a particular Milestone by combining their own observations of the resident that month with those of the other faculty who have provided written feedback. For those situations in which no written observations are made for a particular Milestone in a given month, the evaluator simply selects the “Not Observed” radio button.

Monthly evaluators are members of the Core Faculty. They are assigned 2 – 3 residents (all at the same level of training) for a 6-month period, during which time they complete all of those trainees’ monthly evaluations. We intentionally designed our system to mirror the semiannual ACGME Milestones reporting process. (Every December and July, evaluators produce preliminary Milestones Reports on their assigned residents and present them for discussion/approval to the Clinical Competence Committee. At that time evaluators use monthly evaluations, multi-source feedback, and resident portfolio submissions to determine the “levels of performance” that their residents have demonstrated in each of the 25 Anesthesiology Milestones over the preceding six-month period. Once approved by the CCC, these reports are submitted to the ACGME. Following each ACGME reporting cycle, monthly evaluators are assigned new residents for the subsequent 6-month period.

Conclusion

The MODEL assessment strategy provides daily feedback to residents and important Milestones data points to programs for ACGME reporting, while improving faculty compliance with daily assessments. Anesthesiology residency programs may benefit from our experience as they continue to develop their own instruments and processes for the Next Accreditation System.

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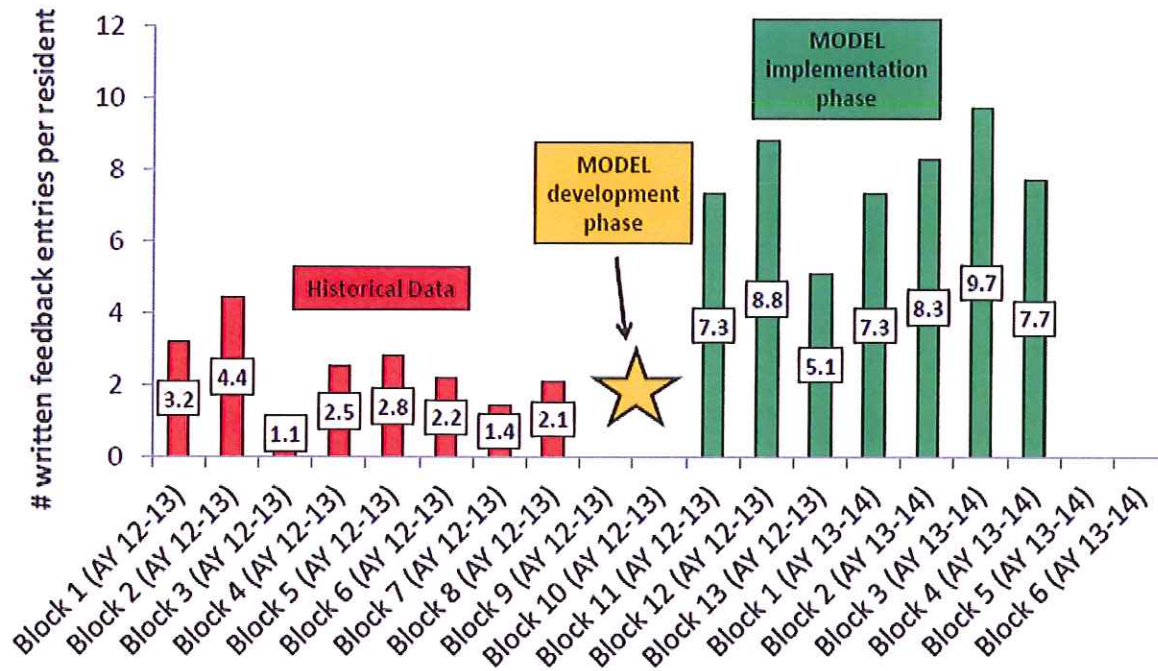
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Figures

Figure 1

Faculty Compliance Run Chart



”MODEL” Daily Feedback Instrument (modified)

Patient Care Milestone 1:
Pre-anesthetic patient evaluation, assessment, and preparation

Patient Care Milestone 2:
Anesthetic plan and conduct

Patient Care Milestone 3:
Peri-procedural pain management

Patient Care Milestone 4:
Management of peri-anesthetic complications

Patient Care Milestone 5:
Crisis management

Patient Care Milestone 8:
Technical skills—airway management

Patient Care Milestone 9:
Technical skills—use and interpretation of monitoring/equipment

Patient Care Milestone 10:
Technical skills—regional anesthesia

Medical Knowledge Milestone 1:
Knowledge as outlined in the ABA Content Outline

Interpersonal & Communication Skills Milestone 1:
Communication with patients and families

Interpersonal & Communication Skills Milestone 2:
Communication with other professionals (to included transitions in care)

Practice-Based Learning & Improvement Milestone 4:
Education of patients, families, students, and other health professionals

Table 1- MODEL Menu

		Assessment opportunities to consider							
Competency	Sub-competency (milestone)	Faculty evaluation	Peer evaluation	Nursing evaluation	Simulation evaluation	Oral exam	MCQ exam	Resident portfolio	Coord. input
Patient care	PC-1 Pre-anesthetic patient evaluation, assessment, and preparation	X			X	X			
	PC-2 Anesthetic plan and conduct	X			X	X			
	PC-3 Periprocedural pain management	X			X	X			
	PC-4 Management of perianesthetic complications	X			X	X			
	PC-5 Crisis management	X			X	X			
	PC-6 Triage/management of critically ill patient in non-operative setting	X				X			
	PC-7 Acute, chronic, and cancer-related pain consultation and management	X				X			
	PC-8 Technical skills—airway management	X			X	X			
	PC-9 Technical skills—monitoring/equipment	X			X	X			
	PC-10 Technical skills—regional anesthesia	X			X				
Medical knowledge	MK-1 Knowledge as outlined in ABA Content Outline	X			X	X	X		
Professionalism	PRO-1 Responsibility to patients, families, and society	X	X	X					X
	PRO-2 Honesty, integrity, and ethical behavior	X	X	X					
	PRO-3 Commitment to institution, department, and colleagues		X						
	PRO-4 Receiving and giving feedback	X			X	X			X
	PRO-5 Responsibility to maintain personal emotional, physical, mental health		X						X
Interpersonal & communication skills	ICS-1 Communication with patients and families	X	X	X	X				
	ICS-2 Communication with other professionals	X	X	X	X	X			
	ICS-3 Team and leadership skills	X	X	X	X				
Practice-based learning & improvement	PBLI-1 Incorporation of quality improvement and patient safety initiatives							X	
	PBLI-2 Analysis of practice to identify areas in need of improvement							X	
	PBLI-3 Self-directed learning							X	
	PBLI-4 Education of patients, families, students, residents, other health professionals	X	X						
Systems-based practice	SBP-1 Systems-based approaches to patient care	X						X	
	SBP-2 Coordination of patient care within the healthcare system	X						X	

Table 2- SAUSHEC Anesthesiology MODEL Blueprint	
Assessment Method	Anesthesiology Milestone Assessed
Daily faculty feedback (12)	PC-1: Pre-anesthetic evaluation, assessment, and preparation
	PC-2: Anesthetic choice and conduct
	PC-3: Periprocedural pain management
	PC-4: Management of perianesthetic complications
	PC-5: Crisis management
	PC-8: Technical skills—airway management
	PC-9: Technical skills—monitoring and equipment
	PC-10: Technical skills—regional anesthesia
	MK-1: Knowledge as outlined in the ABA Content Outline
	ICS-1: Communication with patients and families
	ICS-2: Communication with other professionals
	PBLI-4: Education of patients, families, students, residents, & other health professionals
Simulation feedback (8)	PC-2: Anesthetic choice and conduct
	PC-3: Periprocedural pain management
	PC-5: Crisis management
	MK-1: Knowledge as outlined in ABA Content Outline
	PRO-4: Receiving and giving feedback
	ICS-2: Communication with other professionals
	ICS-3: Team and leadership skills
	SBP-2: Coordination of patient care within the healthcare system
Mock oral feedback (7)	PC-1: Pre-anesthetic evaluation, assessment, and preparation
	PC-2: Anesthetic choice and conduct
	PC-4: Management of perianesthetic complications
	PC-5: Crisis management
	MK-1: Knowledge as outlined in the ABA Content Outline
	PRO-4: Receiving and giving feedback
	ICS-2: Communication with other professionals
Peer evaluation (6)	PRO-1: Responsibility to patients, families, and society
	PRO-2: Honesty, integrity, and ethical behavior
	PRO-3: Commitment to institution, department, and colleagues
	PRO-5: Responsibility to maintain personal emotional, physical, and mental health
	ICS-2: Communication with other professionals
	PBLI-4: Education of patients, families, students, residents, & other health professionals
Nursing evaluation (5)	PRO-1: Responsibility to patients, families, and society
	PRO-2: Honesty, integrity, and ethical behavior
	ICS-1: Communication with patients and families
	ICS-2: Communication with other professionals
	ICS-3: Team and leadership skills
Portfolio inputs (4)	PBLI-1: Incorporation of quality improvement and patient safety initiatives into practice
	PBLI-2: Analysis of practice to identify areas in need of improvement
	PBLI-3: Self-directed learning
	SBP-1: Systems-based approaches to patient care
Coordinator evaluation (3)	PRO-1: Responsibility to patients, families, and society
	PRO-4: Receiving and giving feedback
	PRO-5: Responsibility to maintain personal emotional, physical, and mental health