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# Training Future Family Physicians to Become Master Adaptive Learners

Louito Edje, MD, MHPE; David W. Price, MD

**ABSTRACT:** This article examines the use of a concept that teaches learners how to learn in the context of family medicine residency training. We describe the four phases of this master adaptive learning framework and its place in educational theory and adaptive expertise, its implications for graduate medical education training and Accreditation Council for Graduate Medical Education competencies, as well as its role in imprinting family medicine residents for career-long learning. We lay out pragmatic strategies supporting this concept with a proposed curricular format for training in family medicine, including small group teaching methods, didactics, the clinic visit, faculty development and an optimal learning environment.

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Consider you are traveling on a preset course to a destination only to encounter a problem that obstructs the road ahead. This obstruction has occurred recently enough that there is no official detour or paved exit from your location. You need to find an off-road route to continue your journey. You prepare, mapping an alternate route, and decide you need resources such as fourth gear for the unknown terrain. You learn which resources are useful in the process, and adapt to arrive at your final destination.

The ability to adapt to novel clinical problems and practice challenges is important for family physicians because more than 50% of late-career, practicing family physicians have worked in more than three different clinical practices and their patient populations have changed significantly in the process.<sup>1</sup> Additionally, with the acceleration of new

knowledge facing physicians, the ability to adapt practice to maintain expertise is a skill that ideally could be taught in residency. Like the traveler, a family physician may face clinical problems for which there are no known solutions. A clinical example of a detour is the alternate approach a learner might take for treatment of thrombosis in a patient with a concomitant, unexpected finding of thrombocytopenia. The learner may ordinarily consider as first-line therapy a certain class of thrombolytics (that has thrombocytopenia as a potential side effect), but now the learner must make a different choice to mitigate patient harm. The learner may also decide to add this alternative treatment as a new choice in his or her routine treatment compendium for all subsequent patients seen with a diagnosis of thrombosis.

The master adaptive learner (MAL) model provides an approach for learning and also aids adaptation of expertise over time.<sup>2</sup> There is no reference to MAL and graduate medical education (GME), or MAL and family medicine (FM), in the medical education literature. Thus, incorporation of MAL into residency training is yet unexplored and unevaluated.

In this article, we differentiate between routine and adaptive expertise; discuss the phases of the MAL concept and where it fits in education theory; consider its implication for GME, particularly for Accreditation Council for Graduate Medical Education (ACGME) competencies, and overall principles; and its implications on FM GME: curriculum, didactics, clinic visits, faculty development and clinical learning environments.

## The MAL Concept and Theoretical Framework

### *Routine and Adaptive Expertise*

Dreyfus and Dreyfus introduced a theory on expertise involving five stages of development as a learner moves from novice toward expert.<sup>3</sup> Ericsson believed time spent in deliberate practice in domains

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such as music, chess, and sports, was central to the development of expertise.<sup>4</sup> Gobert and Chassy subsequently described a theory of intuition as a perceptual process essential to the development of expertise.<sup>5</sup> Ultimately, routine expertise has become defined as the mastering of performance to the level of efficiency and accuracy based on skills and knowledge learned over time.<sup>2</sup> Routine experts efficiently address problems that have established solutions. In comparison, adaptive experts balance routine expertise in straightforward situations with the use of innovative problem solving in response to novel practice challenges.<sup>6</sup> For example, clinical flexibility of the family physician was celebrated in response to the first surge of the COVID-19 pandemic, as clinics transitioned to either all virtual or hybrid models of delivering care within weeks, while maintaining high levels of patient satisfaction.<sup>7</sup> Adaptive experts explore new concepts, ask questions which often lack known answers, invent new solutions, and are prepared to remain curious and effectively self-regulate their learning to proactively meet the changing needs of their future practice.<sup>8</sup>

### *The MAL Concept*

The MAL model is grounded in self-regulated learning theory, providing a foundation for adaptive expertise.

MALs go through four distinct phases: planning, learning, assessing, and adjusting. The model aligns with concept of practice-based learning and improvement and the plan-do-study-act (PDSA) cycle (Table 1).<sup>9</sup>

In the planning phase, learners identify knowledge gaps, heralded by what Schon described as a surprise, or Mezirow as a disorienting dilemma—an uncomfortable feeling of not knowing.<sup>10-12</sup> This cognitive dissonance is a key motivator for individuals to seek opportunities to address those gaps. Goal-setting and prioritization is critical as they search for learning resources. This is the time learners are most receptive to learning.<sup>13</sup>

Once resources have been selected, the learning phase occurs as new knowledge is used to decrease discomfort created by the previously identified gaps. Careful selection of evidence-based material is critical to this phase. During the third phase, learners determine if what was learned is useful. It is well established that physicians' self-assessment abilities are weak.<sup>14,15</sup> But, informed self-assessment, which incorporates objective data and external assessment, is more reflective of the learner's performance. Sargeant notes that a complex interplay of external and internal factors as well as tension within learners and the learning environment determine

whether individuals choose to ignore, reject, seek, or accept input from an assessor. Thus, feedback must be “clear, timely, specific, constructive, and preferably offered by trusted, credible supervisors in a safe environment, to inform a clinician's self-assessment.”<sup>16</sup>

During the fourth phase (adjusting), learners incorporate what has been learned into practice, deciding if this newly learned information should be applied to a single instance or if it is widely applicable to more than one patient or process.

Price articulated an adaptive cycle of continuing professional development for physicians that aligns with the PDSA model of quality improvement.<sup>17</sup> This model can also connect learning and doing in graduate medical settings. It can help residents function as part of their health system during their training and enable them to develop lifelong learning and improvement skills adaptable to a number of different practice systems or settings across their careers. It can thus be considered an adaptive cycle of continuous lifelong learning and improvement. At the point of care, a family physician (or resident) may experience a surprise of disorienting dilemma that identifies a knowledge or skill gap that could include requirements for improvement of knowledge (“knows what to do”), competence

**Table 1: MAL Phase and Strategy Aligned With Plan-Do-Study-Act**

| MAL Phase | Plan-Do-Study-Act | MAL Strategy   |
|-----------|-------------------|--|
| Planning  | Plan              | Questioning<br>Prioritizing<br>Goal-setting  |
| Learning  | Do                | Critical appraisal<br>Knowledge retrieval<br>Spaced repetitious learning<br>Collaboration<br>Elaboration<br>Concept interleaving |
| Assessing | Study             | Self-assessment<br>External feedback   |
| Adjusting | Act               | Individual<br>System   |

Abbreviation: MAL, master adaptive learner.

(“knows how to do”), or conditional knowledge (“knows when to do”). In the example of the traveler, the disorienting dilemma occurred as the traveler arrived at the obstruction on the highway. The traveler is in an unexpected situation and must reorient and adapt to move forward. This could be done through reading, consulting peers, or other more formalized educational activities. After deciding on a course of action and applying it to the care of the patient, patient data and subsequent progress is used as an indicator of progress. This cycle could continue until the patient reaches the desired outcome; the physician can then decide if the learnings should be more broadly applied to other patients. At the practice level, need for improvement in one’s professional practice can be identified from one or more sources, including quality process or outcome metrics, population health data, peer or patient surveys, patient safety events, other sources of big data, or recent tests of cognitive expertise.<sup>18</sup> If improvement opportunities are identified, causes of the gap

between current and desired performance could be explored, and opportunities for addressing the gap can be developed and addressed through mechanisms similar to those mentioned above. Learnings could then be implemented in practice, by systematically using structured practice improvement activities. Data would then be used to assess the outcomes of learning, and the cycle could be repeated until improvement goals have been achieved. This type of feedback can inform health systems improvement as well as individual improvement. Figure 1 shows how this adaptive cycle of lifelong learning and improvement aligns with concepts of MAL.

Though two different processes, this shows continuing professional development’s close alignment with MAL. They provide models for learning in residency that can be used beyond formal training.

### Learning After Formal Training

The formal training segment of a family physician’s career, through completion of GME, is highly

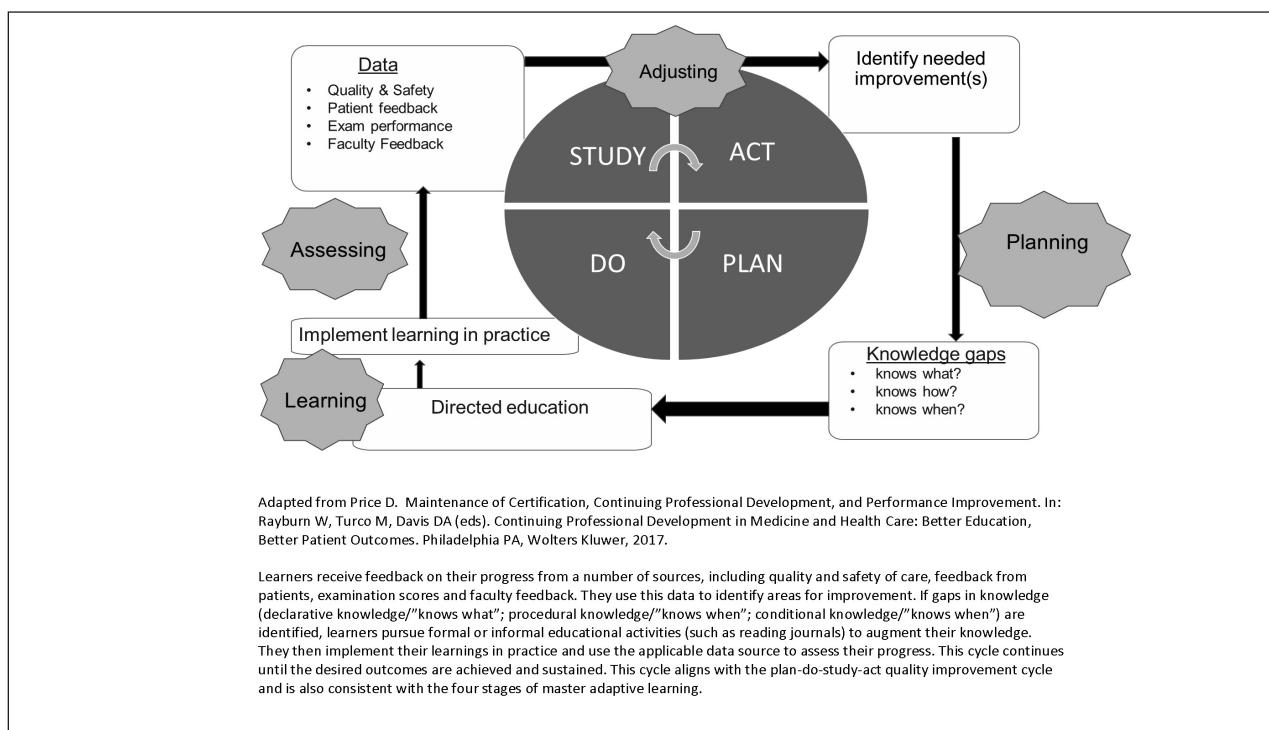
structured and carefully monitored (Figure 1).<sup>17,19</sup> Learning is context-dependent and less standardized after formal medical training.

Evidence suggests many clinicians may not be learning effectively in practice.<sup>8,20</sup> Ross et al have recently demonstrated that critical thinking skills in practicing family physicians are not as strong as those of residents, as evidence by lower scores on the California Critical Thinking Skills Test (CCTST).<sup>21</sup> Individual learning paths are not linear and may include regression. Experienced practicing physicians may return to the novice level as new knowledge is introduced or new conditions such as the COVID-19 pandemic arise.

### How MAL Applies to GME

GME is an ideal stage of medical training in which to use the concept of MAL because educational imprinting occurs in formative clinical experiences.<sup>22</sup> The ACGME/American Board of Medical Specialties (ABMS) competencies of medical knowledge, practice-based learning and improvement, system-based practice,

**Figure 1: Continuous Lifelong Learning and Improvement and the Master Adaptive Learner**



interpersonal and communication skills, and professionalism remain relevant for the family physician of the future, however specific overlaps between current competencies may be needed to support MALs. With the pace at which new knowledge is generated, consideration should also be given to a new competency of master adaptive learning. This competency could be assessed and included in the overall demonstration of readiness to practice independently. Table 2 illustrates how the MAL concepts align with these competencies.

### The Implications of MAL for Family Medicine GME

#### *The MAL Curriculum*

Teaching strategies that emphasize metacognition (an awareness of one's own thought processes), critical thinking, and self-reflection promote the MAL conceptual framework. MAL should not be taught just as a block didactic. Rather, the MAL concept could be introduced early in residency, and continually developed through individual and group learning. Learners then revisit, apply, and refine these skills to situations with increasing levels of complexity as they progress through training. Faculty can help

signpost the use of the model by reminding residents of opportunities to apply it in different situations and settings (Figure 2). Curiosity can be maintained by connecting previous experiences to new problems and making them personally relevant to the learner.<sup>30,31</sup> Additionally, curiosity is enhanced with introduction of new opinions.<sup>32</sup>

Group learning can utilize either problem-based learning (PBL) or team-based learning (TBL). PBL most closely aligns with the MAL concept,<sup>27,33</sup> with planning, learning, and assessing as key components. In this format, team-identified learning objectives are used as individuals

**Table 2: ACGME/ABMS Competencies in the Context of MAL**

| ACGME/ABMS Core Competencies | MAL  |
|------------------------------|--|
| Patient care                 | There will be an ongoing need for patient care competency across a spectrum of care settings and condition acuities. Family physician MALs will need to efficiently traverse from one area of expertise to another, and adjust their care of patients as their care settings and population(s) change over time. <sup>23</sup> They would be trained to effectively self-regulate their learning, aggressively seek and fill their patient care gaps as a matter of routine, and engage in the critical reflection required to continuously prioritize and update understanding of new practice challenges.  |
| Medical knowledge            | Medical knowledge would include mining, analyzing, interpreting and ethically utilizing big data, artificial intelligence, and data gathered by tools such as wearable technologies. Family physicians would effectively and efficiently self-regulate learning as a multitude of new diseases and treatments are continually discovered. Because critical thinking skills do not currently seem to improve during residency, <sup>20</sup> we could teach, and explicitly assess, critical thinking skills.   |
| Systems-based practice       | Systems-based practice would include health system science. We would prepare family physicians to be involved in medical staff structure and function to provide a primary care, patient-centered perspectives to gap-analyses performed by health systems for quality improvement, patient safety and enhanced patient experience. Formal training in personal and organizational leadership would be taught to facilitate MALs' interactions with inter-professional teams. It has been long established that access to primary care is associated with improved health outcomes and decreased cost, yet 30% of the US population has difficulty accessing primary care physicians. The percentage of family physicians providing care across all health care settings declined 26% between 2013 and 2019. There is a declining presence of family physicians in hospital-based care. <sup>24-26</sup> |

(Continued on next page)

Table 2: Continued

| ACGME/ABMS Core Competencies            | MAL   |
|---|---|
| Practice-based learning and improvement | Practice-based learning and improvement is consistent with lifelong learning <sup>27</sup> and perhaps the most intuitively-aligned competency with the MAL framework. Formal training during undergraduate and graduate medical education should prepare MALs to efficiently and effectively learn throughout their careers. Practice-based learning and improvement should enable critical reflection, clinical reasoning and informed self-assessment <sup>27</sup> —all critical to the development of MALs. Learners need just-in-time access to personal practice data enabling indicators of gaps and opportunities for improvement. Learners need to be taught how to access, analyze, and interpret this data.   |
| Professionalism                         | Professionalism would emphasize timely and meaningful responsiveness to needs of patients, teams, systems and populations. This includes advocacy of individual patients in their own care as well as advocacy of populations facing crises, such as the Flint Water crisis. <sup>28</sup> The MAL would be trained in to function in interdisciplinary teams which interact with patients in all settings in which they receive care regardless of the physician's ability to be physically present.   |
| Interpersonal skill and communication   | Interpersonal communication skills would be developed and assessed by real time interactions, use of high-fidelity simulation, and feedback from patients of various racial, ethnic, socioeconomic, gender identity and religious differences. This would enable the development of cultural humility and prepare future family physicians to recognize and address health care disparities and the social determinants of health in the communities in which they will work. <sup>29</sup> The MAL will need to understand, for example, what it is like to try to exercise in an unsafe community and understand challenges of maintaining a healthy diet while living in a food desert. The curriculum would include social justice and provide interfaces for learning within the patient's community to cultivate trust which may facilitate participation of marginalized populations in their care and in clinical research. |

Abbreviations: ACGME, Accreditation Council for Graduate Medical Education; ABMS, American Board of Medical Specialties; MAL, master adaptive learner.

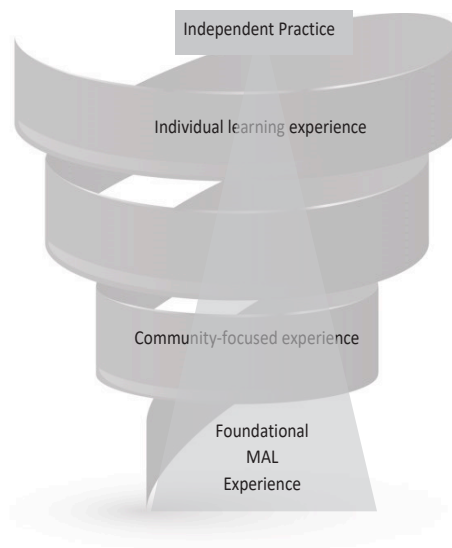
engage in self-study on a particular topic or case, then convene in small groups to apply their learning. An example of PBL could include managing blood pressure in an elderly patient with renal disease. Objectives may include choice of safest medication and dose. Team members would individually decide how they would manage, then reconvene and discuss with the small group. Curiosity and growth mindset are also cultivated in PBL.<sup>34</sup> In TBL, learners work on the same problem together from the outset. In either format, smaller group size enables individualized

faculty-learner interaction as well as peer feedback. The MAL concept can be applied in response to individual learning needs that are identified while caring for patients or populations of patients. Both teaching methods are didactic in nature and can be incorporated into specific curricula. For example, if a residency had “Cardiology Tuesdays” during which the focus of didactic learning would be cardiology, both PBL and TBL could be used to engage learners to approach unexpected cardiac problems with novel solutions. These

methods are conducive to multiple phases of MAL.

### **MAL Concept in the Clinic Visit**

The family practice clinic visit is the optimal learning environment for MALs. Well-trained faculty would be able to signpost and identify teachable moments while creating a safe space in which learners are challenged to activate the MAL cycle. Observation of learner skills, with timely feedback, may contribute to the external component in the informed self-assessment phase

**Figure 2: MAL Curriculum of Family Medicine Residency Education**

Abbreviation: MAL, master adaptive learner.

The residency curricular structure ideal for the MAL in family medicine would have core foundational experiences that occur throughout training. Community-focused experiences would also be longitudinal with an expanding exposure. Individualized experiences would be introduced part way through training and grow in number as the learner progresses toward independence. The individualized training experience overlays a broadening community-focused exposure.

of MAL. Learners can be prompted to think aloud as they tackle both routine and unexpected clinical problems. Beyond direct clinical problem-solving, this setting also provides opportunities for faculty and upper-level residents to role-model skill acquisition. Clinical reasoning can be communicated to the learners while faculty are demonstrating specific skills. Learners can be encouraged to question the faculty during the role-modeling. For example, while demonstrating how to do a punch biopsy, if a faculty wanted to emphasize the importance of depth perception, he or she may signal the appropriate depth has been reached by stating one should feel a change in resistance of the instrument as it is entering subcutaneous tissue. The faculty may then ask what the learner thinks causes the change in resistance. The faculty may also ask the learner what he or she would do next if the change

in resistance was not felt or identify an area of the body in which punch biopsies would not be recommended, such as an eyelid, where depth is critically important. Or, the faculty may ask in what other situations this procedure would be ideal aside from removing concerning skin lesions. In another example, learners can also be empowered to learn from each other. In this case, two residents may be seeing their own patients in a clinic session. Resident one is an osteopathic resident who knows how to do suboccipital release for a patient with a headache. Resident two, who has been allopathically trained, has a patient with a headache unresponsive to standard pharmacotherapy. Resident two is feeling a gap (Schoen surprise) in his ability to help the patient. It is then the resident is most ready to learn new information and techniques.<sup>13</sup> This resident knows Resident one is in clinic and asks him/her to teach

suboccipital release on his patient. Resident two now has a new skill which he/she may try on subsequent patients, as appropriate.

### **The MAL Learning Environment**

Teachers and teaching institutions can contribute to an environment that enables MALs to thrive. Most faculty have not yet been trained in MAL; adaptive educators must therefore be selected and developed. Adaptive educators demonstrate a growth mindset, authenticity, resilience, trustworthiness, tolerance for ambiguity, expertise, humility and honesty.<sup>35</sup> They may role-model their own acquisition of new knowledge; express their thought processes explicitly (think out loud); describe how they critically appraise literature to arrive at evidence-based decisions; signpost the use of the MAL model; set clear expectations; prompt learners to articulate their problem-solving processes; provide feedback on



observations and allow the learner to articulate how to improve; and reward curiosity. They may support learning by helping learners thrive in interprofessional, team-based, case-based, and problem-based learning, as well as individual coaching with an emphasis on deliberate practice. Faculty development should focus on coaching more than teaching and emphasize that each learner needs to learn how he or she thinks.

Institutional leadership may integrate partners committed to the development of MALs. Institutional culture that supports MALs may value discussion, vulnerability, patient safety, accountability, teaching, ambiguity tolerance, flexible processes, closed-loop communication, and quality improvement. Resources supporting MALs should be both human and material, including considerations of time, space, data, adaptive educator development, and medical informaticists. Institutional and residency leadership could facilitate MAL by acknowledging the need to explore workflow-based strategies as part of a normal work day. An organization's transparency in responses to medical errors can set a tone for MALs regarding the receptiveness to learn from mistakes. This, in turn, can create an environment in which learners feel like value-added members of care teams who are comfortable identifying personal and institutional gaps and learning to fill those gaps with appropriate guidance.

GME communities within health systems should welcome MALs and provide adaptive learning environments commensurate with their level of progression through training.<sup>36</sup> MALs who have been well supported in the undergraduate medical education environment should be received into the next level of formal training by adaptive educators who are familiar with a culture of curiosity in which vulnerability is embraced; where there is receptiveness to feedback and nurturing of new ideas that challenge existing knowledge.

## Conclusion

Testing and evaluation is needed on incorporation of MAL concepts into FM residency education. Piloting and assessing ways to allow time for critical reflection as part of workflow could be promising areas for GME scholarship.

The MAL model is ideal for the core values that ground family physicians in a rapidly changing environment. For the MAL model to be effective, it must reside in a health care ecosystem of engaged stakeholders beyond core FM graduate medical educators. They should understand and appreciate the MAL model and its implications for developing a highly skilled workforce. MALs are well suited to improve processes within learning organizations. Real-time or just-in-time access to practice data is needed so learners can receive external indicators of their gaps and fill those appropriately. This environment would also need to foster curiosity, teaching on how data could be mined, analyzed, interpreted, and utilized by learners. A MAL-centric institutional culture should reflect a fearless, nurtured curiosity. The tenets of such organizational culture should be made standards of institutional accreditation.

By the time they leave training, MALs should have gained deep conceptual and practical knowledge and skills so they are well prepared for future learning. These skills should be durable across practice models and health care ecosystems. This does not imply family physicians should leave training "knowing everything." Rather, MAL skills should enable family physicians to effectively and efficiently learn as they encounter new patient and community needs and as their practices change and mature over time. As MALs, they will enhance their contributions to the interprofessional, team-based care they deliver to all their patients. It is important that our trainees are able to demonstrate FM core values, remain pluripotent, and adapt, so they are able to consistently provide

high-quality care in any number of teams, systems, and communities over the course of their career.

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## Proposed Requirements for Behavioral Health in Family Medicine Residencies

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**F**rom our beginnings we understood the need to address behavioral health concerns as a normal part of primary care, and so required behavioral scientists in each program's core faculty. This was a great first step, but we know more now, and are long overdue for an overhaul of our behavioral curriculum.

What is behavioral health? Here we follow the shorthand convention established by the Joint Principles Working Party<sup>1</sup> that includes attention to (1) symptoms of psychosocial distress that cause functional impairment; (2) psychological symptoms and psychiatric disorders; (3) substance use disorders; and (4) health behavior change.

We know that when the primary care we offer patients is comprehensive, addressing most of their health concerns, it produces better outcomes.<sup>2</sup> No single gesture more greatly expands comprehensiveness in primary care than routinely including patients' behavioral health concerns. We also know that every problem and concern we see in family medicine has a behavioral dimension.

Two principles of human health bear on this update. The first is the indivisibility of the behavioral and the physical, neither of which can be understood or managed apart from the other. Attempts to do so will fail, resulting in inferior care. This is no longer a controversial proposition,<sup>3</sup> but we often practice and teach as if this were not true. The so-called physical and the so-called psychological coexist, each only with the other. The subject of our health ministrations is the person, the whole person,

in whom any disease or disorder is embedded, not merely the disease or disorder itself.

This does not mean we should stop treating illnesses in our patients. Learning to identify and manage diseases is a precondition for competence as a primary care clinician, but it is only a precondition. Our usual family medicine patient has a set of health concerns consisting of five or six active problems, previous experiences with these problems, preferences, opinions, convictions, habits, strengths, fears, family issues, cultural contexts, personal difficulties, and so on. Our therapeutic approach must be toward that entire complex, toward a comprehensive personal care plan, and not just the diagnoses that can be pulled from it. We cannot win health one disease at a time. That said, a number of common behavioral conditions such as depression, generalized anxiety disorder, or posttraumatic stress disorder warrant disease-specific mastery. These conditions fit into the disease-specific curriculum alongside such diseases as type 2 diabetes, asthma, and osteoarthritis.

The second principle is the biopsychosocial model, formulated by George Engel in 1977.<sup>4</sup> This model threads through family medicine literature and curricula, but too often we have ignored its implications in practice. This model stands against the biomedical model, which reduces diseases to organ dysfunction,

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intracellular disturbances, and molecular or genetic derangements. Engel taught us that this biomedical approach only accounts for a fraction of the factors that affect health, whereas psychosocial factors—our thoughts, our feelings, our beliefs, the supportiveness or toxicity of our social networks, our education, our income, our race, our gender, and so on—these psychosocial factors actually account for most of the variation in our health. We will not be fully effective in family medicine until we ground ourselves in the biopsychosocial, at the nexus where all health vectors converge—how relationships affect immune function, how poverty and racial bias affect mortality, how physician communication affects patient satisfaction and adherence, and so on.<sup>5</sup>

Adopting the biopsychosocial model makes us more effective, but it is more difficult, consisting as it does of so many more variables to account for. More difficult, that is, until we learn to practice in teams. Team-based primary care is no longer controversial as a general proposition,<sup>6</sup> but we have been careless about how we understand, constitute, and operate teams. If we accept the evidence regarding the advantages of addressing most or all of a patient's health concerns, that most patients have behavioral health concerns, and that behavioral health concerns are inextricably intertwined with all other health concerns, then it follows that embedded, integrated behavioral clinicians must be core members of the primary care team—clinicians such as psychologists or social workers or psychiatrists or psychiatric nurse clinicians or others. Regardless of discipline, these clinicians must understand the pace and workflow of primary care, the common behavioral issues that arise in this setting, and the principles of team-based care. Team members work together with the patient to formulate, operate, monitor, and adjust the patient's personal care plan. They do this together, by such means as care team meetings, sharing a common medical record, regularly negotiating the best next steps in patients' care, and otherwise jointly taking responsibility for the patient's health.

The constitution and operation of teams consisting of coequal partners in the care process is known as integrated care. There are a number of models of integrated care. The most extensively studied is the Collaborative Care Model (CCM), initially developed to deal with depression in the elderly, but later extended to other age groups and other mental disorders comorbid with chronic medical conditions.

The CCM uses a psychiatrist consultant and a social worker or nurse care manager who finds patients through the use of the PHQ-9. The care manager and the primary care clinician, with consultation from the psychiatrist, then provide treatment for the patient. This model is supported with solid evidence of effectiveness and cost-effectiveness from many randomized clinical trials.<sup>7</sup> The CCM has significant real-world limitations and has not sustained well as a stand-alone model with general use in the field. It's great for dealing with single problems such as depression, or anxiety, or even depression plus diabetes, but it is not the kind of integrated team that is capable of responding to the wide, unpredictable range of behavioral concerns necessary when rendering whole-person care.

A more broad and widely deployed model is Integrated Behavioral Health (IBH). The evidence for its effectiveness is less compelling than that for the CCM because this model is more difficult to evaluate, but high-fidelity evaluations are beginning to appear in the literature.<sup>8</sup> This model has enjoyed explosive growth in primary care in recent years because of its flexibility and sustainability—and complementarity to the CCM model when appropriate. Some version of this team-based model will likely become the norm for advanced primary care practices in the United States. The continuity clinics of all family medicine residencies should support team-based care of this kind.

It is fair to say that the continuity practice is itself the heart of the curriculum for educating family physicians. This model of practice should be characterized by team-based care, but also by attention to most or all health concerns, an adaptive capacity to deal with unanticipated problems, a commitment to continually improving workflows, care processes, and health outcomes, and by embedding in the communities in which our patients live. Prototypes and working models for this kind of practice are in the field today.<sup>9</sup>

Finally, we must realize that our responsibility is not merely to prepare family physicians to address their patients' health concerns in an integrated, team-based way, but ultimately to prepare the primary care workforce, including behavioral health clinicians. A behavioral clinician can only learn how to function as a primary care clinician in a primary care setting; there is literally nowhere else in the world to learn this. It thus follows that residency programs must train residents with

strong identities as family physicians but also create an interprofessional training ground to prepare primary care teams.<sup>10</sup> This is essential if primary care is to be the foundation of our country’s health care, to truly advance the health of our people.

What does all this say about how we prepare residents for practice? Table 1 outlines the current ACGME Program Requirements for Graduate Medical Education in Family Medicine, their curriculum, and their practices,

and contrasts these with recommendations for new core requirements that comport with contemporary evidence and best practices. These recommendations are within the reach of all existing residency programs. Should these recommendations become our new baseline requirements, we would almost immediately enjoy an improvement in physician satisfaction and the quality and effectiveness of the practice of family medicine in the United States.

**Table 1: Comparison of ACGME Program Requirements for Behavioral Health Care vs Recommended New Requirements**

| Section                      | Current ACGME Review Committee Requirements  | Recommended New Requirements  |
|------------------------------|--|---|
| <b>Resident Competencies</b> |  |   |
| IV.B.1.c.                    | Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. (Core) | Residents must demonstrate a working knowledge of the basic sciences applicable to the practice of family medicine: the biomedical, clinical, epidemiological, behavioral, and social sciences, and their use in patient care. (Core)                                       |
| IV.B.1.b.(1)(a)              | Residents must demonstrate competence to independently:  | Residents must demonstrate competence to independently:   |
| IV.B.1.b.(1)(a)(iii)         | Diagnose, manage, and coordinate care for common mental illness and behavioral issues in patients of all ages. (Core)  | Diagnose, manage, and coordinate care for common mental illness and behavioral issues in patients of all ages. (Core)   |
| IV.B.1.b.(1)(a)(iv)          | Assess community, environmental and family influences on the health of patients. (Core)  | Describe and apply the biopsychosocial model of health to patients; specifically to assess behavioral, community, environmental and family influences on the health of patients, and integrate those with biomedical influences. (Core)                                     |
| IV.B.1.b.(1)(a)(v)           | Use multiple information sources to develop a patient care plan based on current medical evidence. (Core)  | Use multiple information sources to develop a personal care plan for patients based on current medical evidence and the biopsychosocial model of health. (Core)   |
| IV.B.1.b.(1)(a)(vi)          | Identify and address the biopsychosocial and spiritual dimension of suffering in patients throughout the course of their illness, including during end-of-life care. (Core)                                  | Identify and manage all significant life transitions in their full biopsychosocial and spiritual dimensions, including birth, the transition to parenthood, and end-of-life for patients and families. Address these issues proactively with advanced care planning. (Core) |
|                              |  | Address suffering in all its dimensions for patients and families. (Core)   |
| IV.B.1.b.(1)(a)(vii)         | Address end-of-life issues with their patients and their families prior the end stages of life. (Core)   | [Addressed above]   |
| IV.B.1.b.(1)(a)(viii)        | Assist patients with advance care planning that reflects the individual patient’s goals and preferences. (Core)  | [Addressed above]   |

(Continued on next page)

Table 1: Continued

| Section                       | Current ACGME Review Committee Requirements  | Recommended New Requirements  |
|-------------------------------|--|---|
| <b>Faculty and Curriculum</b> |  |   |
| IV.C.18.                      | There must be a structured curriculum in which residents are educated in the diagnosis and management of common mental illnesses. (Detail)                                       | There must be a structured curriculum in which residents are educated in the diagnosis and management of common mental illnesses. (Core)  |
| II.B.2.j.                     | There must be faculty members dedicated to the integration of behavioral health into the educational program. (Detail)   | There must be faculty members knowledgeable about and dedicated to the integration of behavioral health into ordinary primary care and the residency curriculum. (Core)   |
| IV.C.17.                      | The curriculum must be structured so behavioral health is integrated into the residents' total educational experience, to include the physical aspects of patient care. (Detail) | The curriculum must be structured so that behavioral health is integrated into all aspects of patient care and practice management. (Core)  |
| <b>Practice</b>               |  |   |
|                               |  | Residency continuity clinics must be characterized by team-based care, by attention to most or all of patients' health concerns, by an adaptive capacity to deal with unanticipated problems, by a commitment to continually improve workflows, care processes, and health outcomes, and by embedding in the communities in which patients live. (Core) |
|                               |  | Residency continuity clinics must include supervised learners from other disciplines, particularly the behavioral disciplines, as part of the multidisciplinary primary care team. Family medicine teams must train together as teams. (Core)   |

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## Family Medicine's Critical Role in Building and Sustaining the Future of Hospital Medicine

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**H**ospital care costs represents the lion's share of health care spending in the United States. Since 1970, the annual cost of hospital care has increased from \$9 billion to current spending of over \$1.1 trillion.<sup>1</sup> The advent of hospital medicine, the discipline dedicated to caring for adults hospitalized for nonobstetric medical conditions, largely arose from the desire to control the cost of inpatient care, reduce patients' length of stay, and promote patient safety.

Family physicians are a growing part of the hospital medicine workforce,<sup>2</sup> and while we remain the minority relative to internal medicine, we bring a valuable and distinct perspective. Our training in the biopsychosocial model contextualizes patients and their illness, which promotes inquiry into the drivers of hospitalization. Further, family medicine's strong emphasis on outpatient medicine makes the pitfalls of transitions of care more visible. Finally, family physicians are responsible stewards of resources. In providing high-value care for less cost and in practicing judicious restraint in ordering diagnostic testing, family physicians are a key partner in addressing rising costs and preventing iatrogenic harm.<sup>3</sup> In turn, our specialty must work to retain our position in hospital medicine. The wards offer unparalleled training ground for family medicine (FM) residents to gain comfort in managing medically complex patients, a key skill for primary care. Furthermore, the inclusion of inpatient medicine in FM's scope of practice provides unique insights that are vital to our role in shaping the future of the profession

through participation in research, hospital administration, and health policy.

However, sustaining family physicians in hospital medicine roles requires a specialty-wide alignment and revised approach. In this commentary, we present a vision for the future of family medicine's role in hospital medicine and its implications for residency training. Inclusive in our discussion are the various roles family physicians take in caring for admitted adult patients (apart from rounding solely on one's own primary care patients), ranging from full-time hospitalists to those who incorporate it as part of full-spectrum FM. We draw upon lessons learned from our work at Boston Medical Center (BMC) to illustrate key facets of the practice of hospital medicine. BMC is New England's largest safety-net hospital and the training site for the Boston University FM residency.

Our hospitalist model at BMC is built upon the three pillars of our specialty: continuity, patient-centeredness, and clinical excellence. Established in 2007 as a regionalized 26-bed unit, our attendings are fully dedicated to patient care and resident teaching while on service for 7-day stretches. The inclusion of hospitalists in our model is intentional given their benefits to resident education and in modeling this potential career path.<sup>4</sup> While our service

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is separate from internal medicine teams, we strive to maintain a strong alliance to the mutual benefit of both services and hospital efficiency. For example, as COVID-19 cases rose in Boston in spring 2020, we worked alongside internal medicine to create 14 COVID-19 care teams, one-third of which were run by our service.

### Continuity

FM-led hospital medicine services should retain the principle of continuity and caring for a defined population. Our model focuses on providing inpatient care for patients of the Boston HealthNet, an alliance between BMC and 14 local community health centers (CHCs). Defining this smaller population relative to the overall inpatient census creates more opportunity to care for patients across multiple hospitalizations and incentivizes efforts to prevent readmissions. Further, most of our attendings and residents provide outpatient care at these same CHCs, which improves understanding of the resources each offers. We have developed systems to streamline scheduling posthospital follow-up appointments and facilitate communication between primary care providers and inpatient teams. To reduce patient handoffs we also care for our patients who require step-down level of care.

### Patient-Centeredness

Patient-centered inpatient care requires effective communication with patients, caregivers, and other loved ones (with consent). Hospital medicine teams should be trained in counseling techniques that incorporate patient preferences, such as shared decision-making, implement strategies to combat disparities from provider bias, such as antibias training, and ensure use of interpreters for patients with limited English proficiency. On our service at BMC, we include documentation of health care priority in admission workflows and include

in progress notes when loved ones were last updated.

In line with the biopsychosocial model, FM should continue to create multidisciplinary inpatient care environments to address patients' holistic needs. Involvement of nurses, pharmacists, social workers, and consult services that cater to specific needs, such as addiction medicine, is essential. Both regionalization—localizing each team's patients one geographic unit—and daily interdisciplinary huddles to review the plan for each patient can facilitate teamwork. Such supports are especially essential at discharge when patients and caregivers may feel overwhelmed. The BMC FM inpatient unit designed Project RED to improve the discharge process through involvement of nurse educators and pharmacists, which improved patient satisfaction and reduced re-admission rates by approximately 30%.<sup>5</sup>

### Clinical Excellence

While it is beyond the scope of this article to provide an exhaustive review of criteria for clinical excellence in hospital medicine, we summarize systems resources and care principles that guide our inpatient unit and BMC in Table 1. While there is a lack of evidence in the published literature comparing FM and internal medicine hospital medicine programs in terms of quality and patient satisfaction, our metrics at BMC remain on par with or exceed those of other general medicine services. Generating and publishing comparative outcomes should be a priority of our specialty.

### Implications for Residency Training

There is significant heterogeneity in the rigor of hospital medicine training in FM due to differences in clinical volume, acuity, diversity, and performance of residency program training sites. Reforming training requirements is a necessary step to expand FM's role in hospital medicine. Table 2 presents our recommendations for revisions to the Accreditation

**Table 1: Fundamentals of Clinical Excellence in Hospital Medicine**

- Judicious use of diagnostics and therapeutics to prevent iatrogenic harm and waste
- Integration of evidence-based medicine and clinical guidelines with patient preferences
- Minimize patient length of stay through efficient, team-based care
- Effective collaboration with specialist consultants
- High-fidelity admission and discharge medication reconciliation processes
- Patient safety practices (including structured patient handoffs, medical error reporting systems)
- Evaluation of performance according to core metrics:
  - 30-day readmission rate
  - Risk-adjusted mortality rate (adjusted for diagnosis)
  - Average length of stay (adjusted for diagnosis)
  - Percentage of patients who attend primary care follow up within 7-14 days)



**Table 2: Current Accreditation Council for Graduate Medical Education (ACGME) Program Requirements for Inpatient Training in Family Medicine and Proposed Revisions**

| <b>Current Requirements</b>  |
|--|
| <p>Residents must have at least 600 hours (or 6 months) and 750 patient encounters dedicated to the care of hospitalized adult patients with a broad range of ages and medical conditions.</p> <ul style="list-style-type: none"> <li>• Residents must have at least 100 hours (or 1 month) or 15 encounters dedicated to the care of intensive care unit patients.</li> <li>• Residents must provide care to hospitalized adults during all years of the program.</li> </ul>  |
| <b>Proposed Revisions</b>  |
| <p>Residents must have at least 600 hours (or 6 months) and 1,000 patient encounters dedicated to the care of hospitalized adult patients with a broad range of ages and medical conditions guided by the Society for Hospital Medicine's Core Competencies.<sup>6*</sup></p> <ul style="list-style-type: none"> <li>• Residents must have at least 100 hours (or 1 month) or 15 encounters dedicated to the care of intensive care unit patients.</li> <li>• Residents must provide care to hospitalized adults during all years of the program.</li> </ul> <p>Training must include exposure to family medicine inpatient attendings, ideally on inpatient units that are family medicine led.</p> <p>Programs must provide documentation on how the inpatient service prioritizes patient centeredness, continuity, and clinical excellence.</p> <ul style="list-style-type: none"> <li>• Residents must participate in discharge planning as part of a multidisciplinary team.</li> <li>• Programs must report the inpatient service's performance on the core metrics outlined in Table 1.</li> </ul> |

\*The Society for Hospital Medicine's 2017 Core Competencies outlines 52 clinical conditions, procedures, and health system features within hospital medicine that were developed to complement ACGME Milestones revisions in 2012.

Council for Graduate Medical Education (ACGME) Program Requirements for inpatient training in FM. First, given the expansion of the field of hospital medicine, we recommend that the minimum encounter requirements be increased from 750 to 1,000. By not increasing the time requirement, programs would have flexibility to determine how they can best meet the higher volume target, such as by prioritizing lower-acuity encounters as through placing residents in hospital observation units.<sup>6</sup> Second, the ACGME should anchor the inpatient medicine competencies to the Society for Hospital Medicine 2017's Core Competencies, which outline 52 clinical conditions, procedures, and health system features whose mastery is essential to hospital medicine, while also adding additional emphasize on continuity, patient-centeredness, and clinical excellence in line with the values of the specialty.<sup>7</sup> In this spirit, we believe that residents should train on inpatient units that are FM-led. Our model has shown that this is feasible even at large academic medical centers where many FM programs have their residents train on internal medicine teams. These reforms would better allow classification of residency programs according to strength of inpatient training and help potential employers determine whether

graduates are prepared to practice as independent hospitalists. In turn, the number of hospital medicine fellowships for FM should increase to ensure all trainees have a path to become competent hospitalists.

### Conclusion

As the American health care system continues to careen towards uncontrollable costs, family physicians are a critical part of the delivery of hospital care and must lead efforts to smooth transitions of care, improve quality, control costs, and eliminate health disparities. We believe that the hospital care model developed at BMC can help guide other hospitals, leaders in graduate medical education, and policy makers as they look to improve health care's future.

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## Women Deserve Comprehensive Primary Care: The Case for Maternity Care Training in Family Medicine

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**F**ifteen years ago, I was a young, passionate family physician starting my first faculty job in a residency program in Manhattan where I was going to train residents to deliver babies. I wrote “Why Pregnancy Care Should be an Essential Part of Family Medicine Training”<sup>1</sup> during my orientation. What I wrote then still stands now:

- Some in family medicine are advocating to eliminate maternity care as a family medicine requirement due to the decline in family physicians performing deliveries and the increasing difficulties for programs to meet training requirements.
- The primary benefit of maternity care training for all family medicine residents is to produce family physicians who can provide comprehensive primary care to patients of all genders across the life spectrum.
- Training in maternity care helps to differentiate family medicine from other primary care specialties.

While working in Manhattan, I came to the realization that many people in New York City desperately needed access to high-quality, patient-centered maternity care and that those services could best be provided by family physicians working at federally-qualified health centers (FQHCs). Over the years, several residents who matched to our program ended up wanting to be trained to deliver comprehensive maternity care despite their original intentions. Now, I work at my residency alma mater: a Massachusetts FQHC that serves

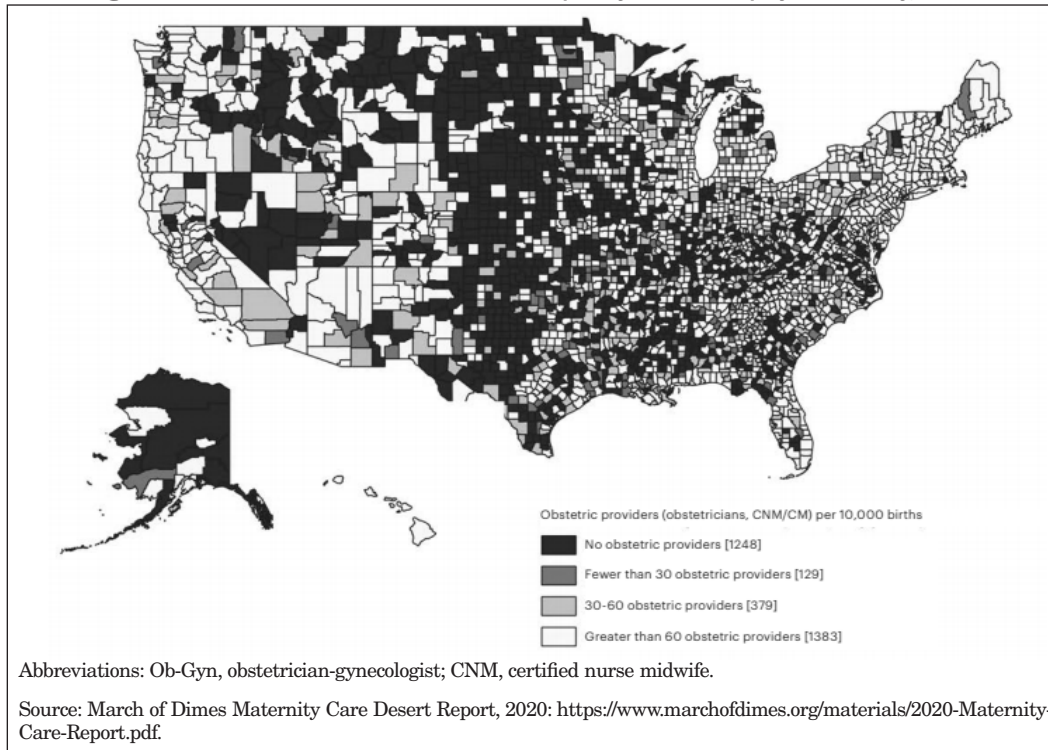
the needs of a community with no historical access to prenatal care until they developed their own family medicine maternity practice. Despite training in an urban setting only 25 miles from Boston, over 60% of our graduates deliver babies as part of their practice. Despite these examples of family physicians wanting to deliver high-quality, high-touch maternity care to their communities, there continues to be a decline in maternity care provision and other reproductive health services by family physicians across the United States.

### What Does Society Need From Family Medicine?

Our health care system is dysfunctional and inefficient and provides poor outcomes that are worse for women, rural Americans, and people of color. Nearly half of the counties in the United States have no obstetrician-gynecologist, leaving rural and urban underserved communities with no services (Figure 1). The United States has rising maternal mortality, which disproportionately affects rural and Black, indigenous, and people of color (BIPOC), patients. Much of this increase in maternal mortality stems from underlying physical and mental health conditions as well as structural issues including food insecurity, housing, transportation, racism, and lack of access to health care. Considering these disparities, we

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**Figure 1: Distribution of Obstetric Providers (Ob-Gyn and CNM) by US County, 2017**

must ask ourselves, “who provides primary care for women?” Comprehensive primary care for women requires a physician who can care for women’s most common health needs, which includes family planning, preventive health care for cancer and cardiovascular diseases, and perinatal health care. Ideally this includes the care of children as well, as many women (especially women of color) will seek care for their children rather than themselves.<sup>2</sup> Family medicine is poised to provide comprehensive primary care to all women and their children.

### What Should We Teach and How Should We Teach It?

While many within our specialty can agree on the societal need for more family physicians to be providing comprehensive primary care for women, many program directors face structural barriers within their institutions and communities to providing the necessary training. These challenges are real, but in order to improve the health outcomes of our communities, we need to push our institutions to be part of the solution, and training regulations are a critical tool to do this.

The crux of the controversy is that programs struggle with patient and procedure volumes and with finding faculty to teach residents these skills. After the adoption of the

2014 ACGME Family Medicine Requirements (which eliminated targeted numbers of deliveries), there has been a 22% decline in deliveries performed by family medicine residents. Based on several studies,<sup>2-4</sup> the following factors are associated with graduates including maternity care in their practices and should guide our approach to creation of evidence-based requirements:

- Caring for prenatal patients in continuity during training;
- Significant labor and delivery experience;
  - Residents with more than 80 deliveries during training were significantly more likely to be performing deliveries in practice; and
- Family medicine role models training residents in maternity and newborn care.

### Recommendations for ACGME Requirements

The ACGME defines the floor for the minimum training that residency programs must provide, while the American Board of Family Medicine (ABFM) defines the minimal training required for individual physicians to be board certified. The idea of one minimum for the purposes of ACGME accreditation has been a barrier to the tiered training idea that has been promoted in the specialty<sup>3</sup> and reflects

somewhat the current reality. Unless the ACGME is willing to provide flexible guidelines that reflect the current uneven need for comprehensive maternity care training, we will need to use variable pathways for focused practice recognition with the ABFM<sup>5</sup> to provide realistic training requirements for residents that will guide programs and health systems to trust in the competency of our graduates. Figure 2 gives my recommended language to the ACGME for new maternity care training requirements. Since maternity care is an essential component of women's health, these

recommendations reflect this, but also attempt to strike a balance with the reality of regional variations and emphasize training that enhances the care for all women, even if deliveries are not incorporated into future practice. I recommend minimum requirements for all programs that focus on attaining competencies to care for all women in the outpatient setting, and additional requirements for enhanced training for competency in intrapartum care and surgical maternity care that would be recognized by the ABFM with focused practice recognitions. All programs have a minimum

**Figure 2: Recommended ACGME Maternity Care Requirements**

All residents must be competent to care for women who are pregnant including obtaining the following competencies:

- Diagnose pregnancy and manage early pregnancy loss including diagnosis of ectopic pregnancy, and options counseling.
- Low-risk prenatal care
- Care of common primary care conditions during pregnancy
- Postpartum care including screening and treatment for postpartum depression, breastfeeding support, and family planning

All residents must have documented attainment of the above competencies including completion of the following clinical experiences:

- Complete two months (or 200 hours) of training on labor and delivery. During these rotations residents must:
  - Be involved in the labor management and perform at least 25 deliveries during this time (Core)
  - Care for postpartum women (Core) including care for mother-baby pairs (detail)
- Care for pregnant women in the outpatient setting (core) with at least 150 encounters
  - Must include routine prenatal care (core) including care of the same pregnant woman over time (detail)
- Care for postpartum women in the outpatient setting (core) with at least 15 encounters

All family medicine residencies are required to have at least one faculty member with privileges to provide intrapartum and newborn care in a hospital or birthing facility (Core).

Residents who plan to have the option to incorporate intrapartum maternity care and vaginal deliveries (and related procedures) must complete the following additional training:

- Complete at least four months (or 400 hours) of training on labor and delivery and perform or directly supervise at least 80 deliveries (with at least 50 vaginal deliveries)

Resident who plan to have the option to incorporate high risk maternity care and surgical deliveries must complete the following additional training:

- Complete at least seven months (or 700 hours) of training on labor and delivery
  - Perform or directly supervise at least 80 vaginal deliveries (Core)
  - Perform or directly supervise at least 100 cesarean deliveries as primary surgeon (Core)
    - At least 40 of these must be repeat cesarean sections (core)
- Care for low and high risk pregnant women in the outpatient setting with at least 250 encounters (core) of these at least 100 encounters including high-risk pregnancies (core)

Residency practice quality measures related to competency in maternity care include:

- proportion of patients initiating prenatal care in first trimester
- primary cesarean section rate
- proportion of postpartum mothers using only breastmilk to feed their infants at hospital discharge
- proportion of postpartum mothers screened for depression.

number for deliveries and are required to have a family physician with intrapartum and newborn care privileges. Such requirements protect more programs from losing their ability to provide a minimum level of training than harm the long-term accreditation of programs who cannot meet these requirements. It also holds the standard for best training based on the available evidence.

The additional training for deliveries can be integrated into residency training or as a separate fellowship. Both levels would be recognized by the ABFM with separate focused practice recognitions. It is critical that we do not require a separate fellowship for intrapartum maternity care within family medicine. This will lead to fewer family physicians meeting this need and further specialization within the discipline, at a time when our maternity deserts need family physicians with a broad scope of practice that would be narrowed if we moved to a fellowship training model.

### Conclusion

Maternity care continues to be a defining and essential feature of our specialty. No other specialty cares for the mother-baby dyad throughout the perinatal period and no other specialty routinely provides comprehensive primary care for women. If our society and the health care system want to address the inequities in health outcomes, particularly for rural and BI-POC women, we must embrace this challenge

and train the next generations of family physicians to provide this care.

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## Community: The Heart of Family Medicine

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**ABSTRACT:** Family physicians have the privilege of caring for patients throughout their lifespan and witness the impact all facets of life have on the health of individuals and the health of communities. The importance of engaging the community in the success of population-based initiatives to drive social change has been proven repeatedly and family medicine residencies should include community as the fifth “C.” At a minimum, this includes incorporating the following three recommendations: (1) define community on initial accreditation, at self-study, and whenever major community changes occur; (2) utilize a community needs assessment as part of goal setting of activities with Annual Action Plan; and (3) evaluate residents and faculty on understanding of and cooperation with community needs. We must highlight engagement with the community as a central aspect of family medicine so that all programs focus on this important aspect of our work.

As a nation, we have unfortunately seen decreasing life expectancy since 2014 along with increasing clarity that our health outcomes are poor. We also acknowledge disparities in education, housing, economic opportunity, and access to justice.<sup>1,2</sup> Although not strictly health care, these disparities impact patients’ health and we cannot see improvement in health without understanding their significance. A nearly 20-year gap exists in life expectancy at birth amongst counties with the highest and lowest life expectancy rates.<sup>3</sup> We family physicians have the privilege of caring for patients throughout their lifespan and witness the impact all facets of life have on the health of individuals and the health of communities. We must take action to improve health for all. The American Board of Family Medicine shared the premise “that the personal physician should play a critical role in rebuilding a health system that can address the Triple Aim.” Additionally, a survey of American Academy of Family Physicians indicated that family physicians want to address the socially-determined health needs of our patients, but face barriers in doing so.<sup>1</sup> Family physicians want to do this work. How do we train them to be successful?

Across disciplines, the importance of engaging the community in the success of population-based initiatives to drive social change has been proven repeatedly. When initiatives are conducted without community collaboration, they are perceived in a top-down manner and are more likely to fail. Israel et al and Minkler et al demonstrated nine principles of community-based participatory research. Additionally, Barnes and Schmitz recommend certain factors exist for community engagement to achieve positive and enduring social change. These principles focus on the definition of the community, methods of collaboration, engagement and education, use of relevance, use of iterative processes, dissemination of results, sustainability, cultural humility, and validity.<sup>4,5</sup> Family medicine should participate in these efforts for social change to positively affect health. Therefore, our education must teach residents how to first identify, and then engage the community so residents may collaborate on effective population-based initiatives. Family

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medicine residency programs should include a fifth “C” for Community as an important tenet of training and should at a minimum follow three overall recommendations as listed in Table 1.

### Define a Community

The term community has many different connotations. Community is complex and most importantly meets the shared needs of a group of people.<sup>6</sup> Each residency’s community will have different needs and will change over time. In some instances, community may be defined by geographic location, particularly in a rural setting. In urban and suburban areas, a community may be defined by location, but also may be defined by specific characteristics such as patients living at less than 200% of the poverty level within certain zip codes, or immigrant persons living in a specific geographic area. At times, the population and community may overlap, though they are not the same. In medicine, we often discuss population health with panel medicine, but this is not always the community truly served by the residency program. Each residency program must clearly define the community they are serving with the program evaluation committee (PEC) at minimum upon initial accreditation, and as part of their self-study. They should also consider revisiting it every 5 years if the surrounding community has changed. For example, the impact of telehealth has increased the geographic reach for many programs, significantly broadening communities. In some instances, programs may identify more than one community due to more than one continuity location or distance of main hospital, and this should be clearly indicated. Clearly defined communities for each program ensure common understanding and will impact how residencies choose which activities and projects will best fit their needs.

### Use Community Needs Assessment to Define Activities

Once a program defines a community, clear attempts to assess the needs for and ability to participate in the community should be made.

Full initiatives including a needs assessment, community engagement, evaluation, and lasting change are likely not achievable for individual residents within the short time frame of residency education. However, there are a variety of ways in which community engagement can be achieved and measured within a residency program. Community as a requirement must be flexible and allow for innovation. It should allow for different levels of the residency’s involvement in the community over time as meaningful relationships evolve over time. Aspects demonstrating involvement with and education about community include education of principles, exposure/engagement, and advocacy. Some opportunities could be longitudinal in nature and some could be brief experiences included in didactics and block rotations. The PEC should take an active role in ensuring the program’s incorporation of community, as is demonstrated in Table 2. Utilizing the PEC goals, the program should ensure a variety of activities to focus on the community. Table 3 gives possible activities, though the list is not exhaustive. Although during residency residents will best learn to care for the community they serve, training should include how to engage any community that residents may serve, so that family physicians are flexible throughout their careers as they have career transitions or their surrounding community changes.

### Resident and Faculty Evaluation

Evaluations of each resident can be expanded to include a focus on community in several competencies. Within the Practice-Based Learning and Improvement Milestone, residents are currently assessed on the understanding of how evidence can be tailored to specific patients. This area should be enhanced to assess residents’ knowledge of how guidelines and interventions impact different communities. This competency can also be expanded to suggest a goal of a process improvement activity based on a community needs assessment. The Systems-Based Practice competency is another space where a focus on community may be enhanced. Already including advocacy, this Milestone includes aspects of

**Table 1: Minimum Recommendations for Community Incorporation**

- |  |
|--|
| <ol style="list-style-type: none"> <li>1. Define community served by residency program on initial accreditation, at self-study, and when major community changes.</li> <li>2. Utilization of community needs assessment as part of goal setting of activities with annual action plan.</li> <li>3. Evaluate residents and faculty on understanding of and cooperation with community needs.</li> </ol> |
|--|



**Table 2: Program Evaluation Committee's Responsibility Concerning Community**

1. Define the residency's community
2. Utilize community needs assessment to identify areas of opportunity for program as part of annual goal setting.
3. Evaluate program's effectiveness at meeting community needs during annual program evaluation.

**Table 3: Community Activity Opportunities**

1. Participation in local department of public health meetings:
  - a. Observation
  - b. Provide testimony
2. Advocacy with local officials about health needs of community:
  - a. Meetings with local officials
  - b. Letters to the editor and op-eds
  - c. Appropriate engagement with social media
3. Creation of and participation in Patient education groups, activities, social media:
  - a. Education sessions hosted at community organizations
  - b. Participation in health fairs
  - c. Health education group at clinic – in person and/or virtual
4. QI project based on local public health needs Assessment
  - a. Disparities calculator amongst disease states within clinic or hospital
  - b. Assessment of social determinants of health needs in clinic or hospital
  - c. Utilization of geomapping software to identify specific interventions
5. Partnership with community organization for research, intervention, or organized activity:
  - a. Health screenings
  - b. Food pantry
  - c. Care in shelters or other congregated facilities
6. Didactic education:
  - a. Process of identification of community served
  - b. Education on community based participatory research principles
  - c. Education on principles of community engagement
  - d. Community organizations presenting ongoing projects, resources, and opportunities
  - e. Journal club evaluation of guidelines with impact on the residency community

Abbreviation: QI, quality improvement.

integration with local, state, and federal health leaders. This could be expanded to include incorporation of community groups and agencies and advocacy on local, state, and federal levels based upon the needs of the community. Program directors also should expand faculty evaluations to assess these same competencies.

In the previous project about the future of family medicine, the definition of family physicians included adaptations to the unique needs of patients and communities. As such, many of the recommendations made are educational opportunities that many programs have already begun to incorporate. We must, however, highlight engagement with the community as a central aspect of family medicine so that all programs focus on this important aspect of our work.

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## Multimorbidity and Resident Education

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**M**ultimorbidity is defined as the cooccurrence of two or more chronic conditions, and is sometimes described similar to complex care, or in reference to “medically complex patient populations.”<sup>1,2</sup> Across multiple health care settings and a wide range of populations, a small number of patients account for the majority of health care expenditure. In the United States, almost 50% of the spending is by 5% of the population.<sup>3</sup> Patients incurring these high costs have more chronic conditions and a higher rate of complex and severe conditions. Stated from the patient’s perspective, multimorbidity refers to people who have long-term conditions, living with multiple health conditions and having multiple health needs.<sup>2</sup> People with multimorbidity have complex care needs<sup>4</sup> and are high utilizers of medication, primary care visits, multiple specialist visits, emergency room visits, and hospitalizations.<sup>5</sup> Rates of multimorbidity are increasing<sup>4</sup> and will be important for family physicians of the future to address.

Patients with multimorbidity have a high risk of mortality and poorer quality of life.<sup>4</sup> More than 50% of people who are age 65 years or older have multimorbid conditions.<sup>1</sup> Multimorbidity increases with age, yet the total number of individuals with multimorbidity is greater in those who are less than 65 years of age than above age 65, with multimorbidity occurring 10-15 years earlier in those who are socioeconomically deprived. Mental health disorders are more prevalent as the number of physical morbidities increases and are more

prevalent in more deprived than less deprived people.<sup>6,7</sup>

A systematic review of care received in the Veterans Administration (VA) system in 2010 suggests that specialist coordination, medication reconciliation, elimination of redundant testing, self-management support, and incorporating patient preference and functional ability when developing care plans is necessary in managing patients with multiple chronic conditions.<sup>3</sup> Primary care clinicians are considered by the World Health Organization primer on multimorbidity to be best situated to meet these challenges.<sup>8</sup> Family physicians provide comprehensive, coordinated, and person-centered care over a period of time to a defined population; this family- and community-oriented care leads to natural expertise in complex care and management of multimorbidity. Family physicians may use consultants for assistance with specific organ system-focused diseases, yet it is the family physician who can put the whole picture together, whether managing and reconciling medications, addressing the behavioral aspects that affect health, or helping connect patients to resources they need in their homes. Addressing patients’ multimorbidity needs must be embedded in family medicine residency training.

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### What Does Multimorbidity Care Look Like?

Care of patients with multimorbidity requires both comprehensiveness—the ability to consider and manage a broad range of problems—and continuity—the relationship that creates a deeper understanding needed to manage a patient's unique complexity. Multimorbidity care naturally occurs in multiple settings—office/clinic, inpatient, skilled nursing facility, home care, and more. Patients with complex medical problems are the ones who most need care in different settings. One aim is to help patients and families manage their health to minimize the need for hospitalization and/or emergency department care, which also helps curb healthcare costs. However, when a patient does require hospital or emergency department care, managing the transition of care out of these settings is important to prevent future readmissions and emergency department visits during this fragile time for the patient. Care management services with communication with the patient or caregiver within 2 business days after discharge and a primary care follow-up visit with interprofessional team support can improve care and lower costs.<sup>9</sup> This highlights that the comprehensive continuity care delivered by family physicians as part of an interprofessional team ensures the patient's needs are met.

Patient-centered team-based care, including integrated behavioral health, care coordination, health educators, pharmacists, and other health professionals, has increased over the past few years, especially in advanced payment care models. Where practices are

too small for comprehensive coordinated care, knowledge of community resources for patient referrals serves a similar function. In large or small settings, family physician practices must form networks with community partners to reduce disparities and improve access. As patient populations age and the number of conditions contributing to multimorbidity rises, family physicians need expertise in population health, learning to use robust data to manage patient panels. Patient risk stratification, based on multimorbidity data, will help family medicine practices identify patients at highest risk for whom proactive care coordination and connection to community resources could prevent multimorbidity complications. Family physicians must be able to provide equitable health care for all patients and be prepared to have meaningful discussions about quality and goals at the end of life. Family medicine practices must engage and activate patients, their family members, and their caregivers to be active partners in promoting health and improved outcomes. The ultimate aim is improved health care, improved health outcomes, and lower costs.

### What Does Residency Training in Multimorbidity Look Like?

Family medicine residencies need to take the responsibility to deliberately train the family physicians of the future to be experts in tailored, patient-centered care approaches for people with multiple conditions. Table 1 lists elements of training needed to address multimorbidity, including how residents will learn. Addressing complex patient needs should be a

**Table 1: Multimorbidity Training Elements**

| Multimorbidity Training Element          | Relationship to Multimorbidity                               | How Residents Will Learn  |
|--|--|---|
| High-functioning practice                | Whole-person care to address multiple morbidities            | Practice in high-functioning environment: whole-person care approach with interprofessional teams in a value-based payment system   |
| Comprehensiveness (condition management) | Ability to manage multiple conditions simultaneously         | <ul style="list-style-type: none"> <li>Perform a thorough interaction assessment of the patient's conditions, treatments, constitution, and context</li> <li>Prioritize health problems, taking patient's preferences into account</li> </ul> |
| Comprehensiveness (location-based)       | Ability to manage multiple conditions in multiple care sites | Provide care in multiple types of sites (office, hospital, nursing facility, home, etc)   |

(Continued on next page)

Table 1: Continued

| Multimorbidity Training Element                  | Relationship to Multimorbidity  | How Residents Will Learn  |
|--|---|---|
| Continuity (resident perspective)                | Repeated relationship to understand patient's unique complexity, to provide whole-person care                   | Manage assigned patient panel with a mix of patients at different risk-stratification levels and follow those patients in multiple care sites |
| Continuity (patient perspective)                 | Trusted relationship with the health care team to define and attain goals of care                               | Repeat visits over time to help patients refine and attain their care goals   |
| Team-based care                                  | Access to behavioral health care coordinators, health educators, pharmacists, other health professionals        | Help to lead, build, support and optimize the work of an interprofessional team   |
| Transition of care                               | Attention to health care needs at fragile transition times by an interprofessional team shortly after discharge | Participate in transition of care for their continuity patients with team-based support   |
| Care coordination                                | Care connected to health system and community resources   | Participate in team-based care with care coordinators   |
| Technology                                       | Enhances access and communication   | Manage assigned patient panel through use of telehealth, patient portals, smartphone apps, resource and patient management systems            |
| Point-of-care and evidence-based tools           | Enhanced information for decision-making  | Utilize real-time point-of-care tools to assist in information mastery  |
| Shared decision-making                           | Support patients and families with complex needs, including care goals and end-of-life decisions                | Communicate options to patient, family, other caregivers; identify care goals with patient  |
| Patient and family activation                    | Support patients with complex needs   | Individualize patient management according to patient and family goals; communicate and connect to resources with team-based support          |
| Data management                                  | Use of data to identify high risk populations and conditions and opportunities for quality improvement          | Utilize patient care data to analysis and improve care of patient panel   |
| Patient risk stratification                      | Data and tools to identify higher risk patients   | Manage patient panel, reach out to higher risk patients with team-based support   |
| Population management                            | Data and resources for outreach to highest risk populations   | Manage patient panel through data analysis, community resource connections and team-based support   |
| Practice quality improvement                     | Improve the processes to assist complex patients  | Analyze data, conduct plan-do-study-act cycles  |
| Address health equity in community               | Address root causes of multimorbidity   | Analyze community data, identify needed changes to increase equity  |
| Community outreach                               | Help define community health goals  | Become acquainted with the community and advocate for resources   |
| Prevention of chronic diseases and complications | Reduce multimorbidity   | Identify how community, adverse childhood events, racial disparities, mental illness and addiction intersect and advocate for changes         |
| Advanced payment and care delivery systems       | Resources for team-based care and population management available, cost containment                             | Participate in advanced care practice environments  |

significant focus of family medicine residency training and practice, with team-based support. Instead of patient encounters alone, resident experience should be measured by patient panel management, with patients from a mix of risk stratification levels, cared for by the resident in multiple care sites according to the patient's needs. The concept of patient encounters should be broadened to provide increased continuity and access through telehealth, patient portals, asynchronous communications, and other resource and patient management systems. Residents who learn optimal rates and indications for referrals and to minimize polypharmacy will be learning habits leading to improved care and lower costs in their patient populations for decades to come. To successfully manage patients with multimorbidity, the fundamental skills residents must learn are to assess potential interactions of the patient's chronic conditions, elicit patient priorities and preferences, and individualize patient management.<sup>2,10</sup>

Residents need training in high-functioning practice environments. Many of the practice building blocks designed by Bodenheimer and colleagues align with the principles needed to treat patients with multimorbidity, including comprehensiveness and care coordination, team-based care, and population management.<sup>11</sup> While family medicine residency training should continue to be primarily ambulatory, to provide the best continuity, residents must be trained to deliver care in multiple sites, from office to hospital to home, and more. Additionally, to tackle the challenges of multimorbidity, residents must become experts in managing costs and functioning in advanced payment/delivery systems.

Beyond care for individuals with multimorbidity, residents need to understand the population they intend to serve, learn to help define health goals for their community, and connect patients to community resources for healthier living. Prevention of chronic disease and promotion of wellness to prevent multimorbidity should be incorporated into the resident's practice. To understand the complexity and root causes of multimorbidity, residents must learn how community, adverse childhood events, racial disparities, mental illness, and addiction intersect.

In conclusion, the US population has become sicker and health care much more expensive. Family physicians, as trained experts in the four C's of primary care—first-contact care, continuity, comprehensiveness, and

coordination of care<sup>12</sup>—are particularly well positioned to address the challenges of multimorbidity, the complex care of people with multiple chronic conditions. When the next generation of family physicians are taught to be part of the solution to multimorbidity management through whole-person and interprofessional team-based care, they will be leaders in efforts to improve health care, improve health, and lower costs.

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## Professionalism in an Era of Corporate Medicine: Addressing Microlapses and Promoting Microacts as a New Model

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Professionalism is the basis of medicine's contract with society. It demands placing the interests of patients above those of the physician, setting and maintaining standards of competence and integrity, and providing expert advice to society on matters of health.<sup>1</sup>

Thus states the ABFM *Guidelines for Professionalism, Licensure, and Personal Conduct*. However, the new health care environment poses new professionalism challenges. The last 20 years has seen a shift toward corporate medicine, with most family physicians employed by an organization. The result has been a loss of autonomy and an increase in dual agency, in which physicians are tasked with upholding the best interests of patients while also meeting the financial goals of the institution. As we consider how best to assure that family medicine residency programs facilitate the development and further inculcate traditional qualities of professionalism, it is clearly necessary to recognize the shortcomings of such definitions—and current Accreditation Council for Graduate Medical Education (ACGME) program requirements—and create an approach to professionalism that best serves the public and recognizes the physician and the patient are no longer the only stakeholders in the room.

Professionalism requirements must also reflect, however, the effect of idealized projections of professionalism on physician well-being. There is a demonstrable risk of exploitation

of physicians by organizations, that rely on physician professionalism to meet corporate goals<sup>2</sup> while at the same time diminish the physician's ability to navigate the four classic principles of medical ethics: patient autonomy, beneficence, nonmaleficence, and justice. We therefore need to develop new educational and evaluation strategies and then standardize their implementation using our specialty's next generation of ACGME program requirements.

### How Has the Modern Dialogue Developed?

Traditional professionalism definitions are typically a list of prohibited behaviors, rather than aspirational concepts or positive exemplars, and assume an autonomous physician in medical practice. These “macrolapses” (Table 1) are typically addressed well in traditional professionalism training, are covered by existing codes of ethics, are individual-focused, and when present often lead to licensure or board sanctions.

Institutions, rather than peers, increasingly police professionalism to identify and address these unprofessional behaviors. However, the erosion of professional autonomy requires reexamining and redefining professionalism on a more granular level. In family medicine, comprehensive care, first-contact care, coordination of care, and continuity of care—the

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**Table 1: Selected Examples of Professionalism Macrolapses**

- Lack of empathy, compassion, caring, honesty, trustworthiness, humility, accountability
- Fraud/criminal actions
- Boundary violations—intimate/inappropriate relationships with patients or staff
- Professional incompetence/lack of adequate competence
- Impairment/not seeking help for substance misuse—alcohol, illegal drugs, mind-altering drugs
- Not intervening/reporting professionalism violation
- Inappropriate prescribing or recommending interventions primarily for financial gain
- Lack of respect for patients and coworkers
- Disparaging others due to market competition
- Misreporting of resident duty hours
- Not staying current/not being engaged in continuous professional development (reading outside of work, active learning)
- Spreading non-evidence-based disinformation to the public via media outlets or public officials
- Lack of respect for patient autonomy
- Not recognizing limitations/not referring when appropriate

pillars of effective primary care—are sailing on a windswept sea of corporatization, consolidation, consumerism, and commercialization that promotes transactional rather than relationship-based care. Relationship-based care may be becoming more and more difficult for the public to actually obtain. As a result, repetitive, insidious microlapses (Table 2) are much more common, are often ignored and typically missed in training, go undetected in practice, and yet collectively may harm patients at least as much as macrolapses.

These microlapses result from daily, repetitive, under-the-radar, often unobserved microtraumas—the slings and arrows of current primary care practice that are more like repetitive strain injuries than an acute fracture. Faced with a multitude of tasks without the time to perform them, residents create self-protective shortcuts to navigate these simultaneous and conflicting demands, often resulting from the dual agency of trying to serve the patient, the employer, and/or the insurer. Like football players' chronic traumatic encephalopathy, microtraumas occurring in daily practice often lead to a sort of "chronic traumatic deprofessionalization" characterized by professionalism microlapses, and in severe cases, macrolapses.

We are still training residents in professionalism as if medicine was baseball, a team sport but largely based on individual successes or failures in a pastoral atmosphere with no clock. Instead, clinical practice needs to be envisioned as aligning with football, another team sport with important individual actions, but in which success is largely based on collective, coordinated actions in a microtraumatic,

time-pressured atmosphere. We are currently training residents for the wrong sport.

### **Where Should Professionalism Fit in Residency Education?**

Residencies need to improve sentinel reporting systems (as is done for patient safety) during precepting supervision to identify the inevitable formative microlapses of each resident rather than focusing mostly on judging macrolapses committed by "bad apples." A safe learning environment and trust are essential in making this successful.

Similarly, microacts of professionalism need to be better surfaced for positive reinforcement and peer role modeling. Making the extra phone call to a patient, going the extra mile covering call for a peer when needed, and other similar actions must be more consistently identified and reinforced. Required 360-degree reviews, reflective writing, and guided discussions could all contribute to this.

Professionalism expectations should also clearly state what to exclude, such as whether physicians are responsible or should be held accountable for addressing social determinants of health (SDH) when not provided the resources to do so.<sup>3</sup> Defining corporate health care systems', insurers', and government's potentially distinguishable primary accountabilities in this area would better serve the public than ascribing SDH-driven clinical measures to individual physicians or their practices.

While didactic teaching sessions can be used to explore the philosophical concepts of professionalism and to convey the traditional "don'ts," teaching cannot be "do as I say, not as I do." Professional behavior, leading to the

**Table 2: Selected Examples of Professionalism Microlapses**

| <b>Autonomy</b>  |
|--|
| <ul style="list-style-type: none"> <li>• Shared decision-making (eg, cancer screening, etc) with patients is not done or given short-shrift</li> <li>• Disrespect of patients with addictions or other conditions that engender judgmental opinions</li> <li>• Inadequate respect for cultural values when caring for patients</li> <li>• Failing to excuse parent from exam room for adolescent visit</li> <li>• Expressing anger at patient for declining suggested treatment</li> <li>• Passively “firing” patient for poor health habits</li> <li>• Ordering a genetic test, procedure, or imaging study without discussing potential consequences</li> <li>• Not referring to another clinician to prescribe contraceptives because of personal moral beliefs</li> <li>• Allowing undue influence by adult children in decision-making for competent older patients</li> </ul>  |
| <b>Beneficence</b>   |
| <ul style="list-style-type: none"> <li>• Referral to specialists prior to adequate workup because it is faster/easier</li> <li>• Not ordering most beneficial drug for patient to avoid Prior Authorization paperwork</li> <li>• Prioritizing clinical measures over patient needs at a visit because of financial or “quality indicator” implications</li> <li>• Within team-based care, delaying needed treatment changes for someone else to do</li> <li>• Having a rigid 9 to 5 approach, ignoring patient needs</li> <li>• Prescribing influenced by pharmaceutical representative relationships or incentives</li> <li>• Referring exclusively within physician employer preferred network regardless of patient need</li> <li>• Not communicating anxiety-laden test results to patients in a timely manner</li> <li>• Not adequately communicating patient information to specialist consultants</li> <li>• Inappropriately limiting patient concerns addressed within an office visit to decrease work</li> </ul>   |
| <b>Nonmaleficence</b>  |
| <ul style="list-style-type: none"> <li>• Providing overly generous school or work notes or writing prescriptions (antibiotics, pain medications) to improve patient satisfaction scores or to avoid conflict</li> <li>• Not completing patient charts in a timely manner/suboptimal attention to electronic health record inbox</li> <li>• Overdiagnosis or overtreatment of hypertension or diabetes mellitus so measure averages/profile looks better</li> <li>• Trading some professional reputation for money (pharmaceutical companies, other entities)</li> <li>• Treating self or family</li> <li>• Inappropriate copying and pasting of previous electronic health record notes</li> <li>• Documenting review of systems and physical exam findings that were not done to boost billing</li> <li>• Not sleeping enough/practicing self-care when have the opportunity to do so</li> <li>• Patient visit “churning”– unnecessary office visits to increase relative value units</li> <li>• Not taking the time to double check/look something up when needed</li> </ul> |
| <b>Justice</b>   |
| <ul style="list-style-type: none"> <li>• Embellishing prior approval or medical equipment paperwork</li> <li>• Providing differential treatment or access to care management based on patient’s health insurance</li> <li>• “Cherry picking” or “lemon dropping” patients to improve quality measures, time/workload, utilization scores, or financials</li> <li>• Not providing office-based procedures patients lack access to because not reimbursed enough</li> <li>• Writing notes to airlines for travel with comfort animals without a justifiable medical condition</li> <li>• Lack of appropriate social distancing/mask wearing/vaccination during a pandemic</li> <li>• Overprescribing of antibiotics leading to community drug resistance</li> <li>• Not appropriately advocating to the insurer, patient’s employer, or other outside entity for patient</li> </ul>  |

formation of a professional identity, is best taught daily through role modeling, guided actions, and feedback, with particular emphasis on developing reflective clinical practice.<sup>4</sup> These approaches require an attention to the culture that undergirds each residency’s community of practice, which should include an atmosphere of inquiry, leadership by example, and opportunity for discussion and individual

reflection. Family medicine’s own unique identity helps form and exists in parallel with the resident’s individual professional identity.<sup>5</sup>

Although helpful to consider as a discrete competency to highlight its importance, professionalism underlies and is interwoven within the other five ACGME general competencies. Residency milestones are inherently a professionalism-based construct. These milestones



also role model continuous professional development, self-assessment, and openness to feedback as necessary long beyond residency.

The task of professional identity formation (especially in the last 2 years of medical school and first year of residency) is often one of idealism colliding with the realities of health care environments. Residents must navigate and reconcile the world of what should be with the world as it is. Assessment of how well or poorly this is navigated is notoriously difficult without universally-accepted tools. Opportunities for guided reflection, both on an individual and team/class level, are necessary.

### **Specific Suggestions for the Family Medicine Review Committee**

Although professionalism is the foundation upon which all other general competencies are built, current ACGME program requirements in this area are limited. Over the past decade, interest in professionalism at the undergraduate medical education level, including Liaison Committee on Medical Education (LCME) standards<sup>6</sup> for medical schools' teaching of professionalism, has not been matched at the graduate medical education level. Notably, LCME requirements include promoting positive acts of professionalism. Revised ACGME requirements should likewise further emphasize the learning environment for residents working in a dual agency health system, particularly if professionalism is recognized as a necessary mitigating force for the public's benefit against the excesses of unrelenting corporatization.

The basic tenets to advance family medicine GME training in professionalism are (1) the need for an explicit curriculum with intentional optimization of faculty role modeling and faculty development in this area; (2) recognition and discussion of microlapses and microacts, together with a system of identifying and tracking in a safe community of practice; and (3) engineering such that these occur without significant added resource utilization, including faculty and resident time.

Balint groups are focused on the interpersonal aspects of working with patients to better understand patient and physician feelings. Cruess' formulation of professionalism<sup>7</sup>—that it is a combination of ethical beliefs, specific behaviors and development of professional/specialty identity—are often somewhat

tangentially and unintentionally explored in residency Balint sessions, but many programs do not require attendance nor offer them. Balint-like professionalism group sessions should be required. Reflective practice needs to become a more explicit part of required curriculum, through narrative medicine, group case-based sessions, advisor-advisee meetings, and perhaps most importantly, in clinical precepting sessions. Professionalism challenges for residents are often currently not adequately identified nor discussed in a hurried, time-compressed learning environment that devolves to ethically unexamined shortcuts and working at a transactional level.

Because microlapses are so common, numerous opportunities for improving professionalism training exist if the events can be surfaced. Specific suggestions (Table 3) most notably focus on:

1. Facilitated reflective practice educational sessions and more granular evaluation;
2. Direct precepting and shadowing to better identify microlapses and positive microacts;
3. A new Milestones section focusing on microlapses and microacts;
4. Required curriculum on identifying daily inherent business/medical professionalism conflicts;
5. Training in positive microacts that eliminate/minimize the practice environment's structural barriers to professionalism, perhaps best thought of as "professionalism continuous quality improvement."

Other remaining questions to inform a revision of program requirements include the role of learned helplessness in deprofessionalization and the potential positive role of a deeper understanding of generalism. Does family medicine still have a shared set of values in these areas? As the specialty grows older, most faculty and residents do not know the history of the specialty, what were the unique aspects of professionalism that family medicine founders brought to the table, and why they did so. This lack of knowledge may come up in subtle ways that impact professional beliefs and ultimately actions. A targeted educational requirement would be helpful in developing and positively affecting family medicine professional identity. Such an educational requirement could clarify our specialty's self-identity and even facilitate needed health care reform to benefit the public.

**Table 3: Specific Suggestions for the ACGME Review Committee-Family Medicine**

- Require FMP precepting encounter evaluations include specific professionalism microact and microlapse items
- Require some direct video FMP precepting sessions in all residency years (microacts and microlapses are often not identified in the resident reporting method of precepting)
- Require FMP shadowing sessions of selected faculty to surface microacts and discuss microlapse near misses for faculty-resident discussion
- Actively identify and discuss professionalism challenges inherent in practice policies and operations at required residency business meetings (eg, implications of “improving payer mix” vs access) and “professionalism continuing quality improvement” actions
- Require intentional, explicit, and documented (core) faculty development in teaching professionalism and specifically train to assess microacts and microlapses for Milestones
- Require documented resident attendance at Balint-like professionalism reflective group sessions
- Require a specific faculty member(s) to lead professionalism curriculum (including reflective practice sessions, faculty development sessions, promoting seminal articles, implementing tools)
- Require didactic session(s) on professionalism microacts and microlapses (eg, electronic health record copying and pasting misuse, review of systems/physical exam false documentation to increase billing level, etc)
- Require social media training that includes online professionalism concepts
- Require implicit bias training with pre/post-session measurement
- Maintain current Professionalism section’s overarching requirements (eg, commitment to lifelong learning, accurate reporting of work hours, work environment, wellness, etc)
- Require training in use/misuse of clinical measures and their positive/negative effects on professionalism; teach use of comprehensive primary care-oriented measures<sup>8</sup> (eg, the PCPCM)
- Require explicit curriculum on intellectual basis of generalism and history of family medicine
- Professionalism Milestones—incorporate new section focusing on health care system-generated or facilitated microacts and microlapses, including a Supplemental Guide section to provide examples
- Eliminate use of “provider” in all ACGME RC-FM requirements and communications (this is a deprofessionalizing term when professional identity formation is still ongoing)

Abbreviations: FMP, family medicine practice; ACGME RC-FM, Accreditation Council for Graduate Medical Education Review Committee-Family Medicine; PCPCM, Person-Centered Primary Care Measure.

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## The Role of Rural Graduate Medical Education in Improving Rural Health and Health Care

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One out of five people live in rural America. There is a widening gap for all-cause mortality rates in rural areas that is linked in part to physician shortages.<sup>1</sup> Moreover, rural counties with majority Black or indigenous populations suffer the highest rates of premature death.<sup>2</sup> Evidence is mounting that the current pandemic has exacerbated these conditions. Family physicians need to be prepared to assume the roles and take the actions that have the greatest impact. Graduate medical education (GME) of family physicians must attain educational quality, but must also go beyond this to become a promoter of the partnerships necessary to find community-based solutions. In doing this we will be returning to our roots of formal community-based education and socially-accountable GME.

Rural communities are diverse but at the same time collectively possess unique characteristics. Strong rural communities offer an existing local fabric of resilience to effectively provide maximal care in an isolated or resource-lean environment.<sup>3</sup> Investment in rural GME is an investment in rural communities.

Correcting the existing workforce shortages in rural America with intentional family medicine GME will save lives while contributing to the economic basis of local health care, keeping both patients and health care economic investment close to home. Literature exists addressing the rural placement rates as related to admission of students,<sup>4</sup> undergraduate medical education,<sup>5</sup> recruitment, and retention strategies employed.<sup>6</sup> As we take up our role

in GME for rural practice,<sup>7</sup> the core concept of situational adaptation applies. In residency training, contextual competence yields confidence. This adaptive confidence for practicing in rural places results in recruitment and retention, resiliency, and increased satisfaction in rural practice. Place-based training has demonstrated favorable workforce outcomes for rural practice, for example, as evidenced by the outcomes of 1+2 Rural Training Tracks (RTTs).<sup>8,9</sup>

### Training With and For Rural Communities

Community competence in family medicine is grounded in the effectiveness of primary care. Evidence for this is perhaps best recognized in the work of Barbara Starfield's four "Cardinal C's of Primary Care."<sup>10</sup> When applied to rural and remote practice, the delivery of primary care brings both unique challenges and advantages.

As an a priori example, applying the Starfield "C" of first-contact availability in rural settings must include the golden hour of trauma care but should also address golden hours of maternity care. The Improving Access to Maternity Care Act<sup>11</sup> calls for designation of maternity care target areas, and family physicians must be prepared to serve to improve maternal and neonatal outcomes. Family physicians will continue to be called to operate at the top of their license and to the extent of

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their training. Rural comprehensiveness is defined by the immediate needs of the patient, at the first point of contact. We must train family physicians to anticipate and adapt to what telemedicine does not accomplish as well as to how it can be a tool to augment the skills they have otherwise gained in their training.

Likewise, the Starfield “C’s” of continuity and coordination remain central to everyday rural primary care and yet uniquely demand competence for effective transitions between local care and urban-based tertiary care. Decisions involving transport and timing across many miles and the risks of environmental conditions require an educated and informed perspective. The best decisions require the rural competency of integrity, and recognizing your own limits.

These and other examples demonstrate ways in which competence must be considered in rural context.<sup>12</sup> The applied skills and aptitudes of the successfully trained rural family physician will be guided by these same principles of primary care, although through a rural lens.

Development of competence as a rural family physician should particularly emphasize training of resident physicians as “master adaptive learners.”<sup>13</sup> Being prepared for the infrequent or unanticipated patient care need, potentially combined with a resource-limited setting requires the rural competencies of agency and courage in addition to comprehensiveness.<sup>12</sup> When measuring quality in health care and education, we often rely on outcome measures. However, while simply increasing the volume of training may produce reliable outcomes in similar circumstances, we as educators must also design and implement process measures for the quality outcomes of the master adaptive learner that become evident in a dynamic, resource-limited environment. A well-trained family physician must possess both skill sets, with just enough volume-based experience and also the capability to adapt patient care to the circumstances in the moment that best meet the needs of the patient who is actually in front of them. Thus, the well-prepared rural family physician will be able to shift the context of care to have competence for the situation within their own rural community. This is the value of the rural family medicine generalist, providing just the specialized care their community needs.

## Recommendations

Program requirements fit for purpose will involve rural track models (including RTTs) and rural 4-4-4 programs associated with critical access (CAH) and sole community hospitals (SCH). The substantial integration of rural tracks and programs in association with larger hospitals and institutions should include time for subspecialty experiences and bidirectional integration of didactic teaching through use of technology. Sponsoring institution and health care system support of faculty development and faculty recruitment will be particularly important. Studies suggest that rurally-located programs, such as rural training tracks, would benefit from both financial and programmatic support, including flexibility in program design and targeted technical support in areas such as scholarly activity.<sup>14</sup> These findings align with the recent Council on Graduate Medical Education policy brief related to rural health, recommending the linking of GME funding to programs that yield a high return on investment for rural communities, such as the Rural Residency Planning and Development program funded by Health Resources and Services Administration.<sup>15</sup>

The Review Committee for Family Medicine standards should be amenable to the innovations and adaptability of rural programs, while graduates of rural programs should be expected to meet the accepted standards of all GME programs.<sup>16</sup> See Table 1 for specific recommendations.

Urban-located programs will likewise continue to contribute graduates to the rural family physician workforce. Flexibility allowing for rural rotations promotes not only a concentrated period for learning rural-applicable skills, but also contextual learning, reinforcing the master adaptive learner elements of the curriculum. Innovation in resource-limited environments is a learned skill and develops from reflective practice. As a curricular example, shared didactics and case presentations between rural and urban locations highlight both rural-specific skill sets and shape the culture in the curriculum, recognizing that care occurs in the context of resources and community. This encourages faculty and residents alike to ask the question, “What if this care were happening in a rural place?” Curricular requirements should prepare all family medicine graduates to acutely assess, stabilize, and triage patients for treatment and/or transfer in the context of place and local resources.

**Table 1: Recommendations for ACGME Family Medicine Residency Program Requirements**

| ACGME Program Requirements for FM  | Recommendation  |
|--|---|
| III.B.4 Accredited “1-2” programs must have at least two actively enrolled residents at each level. (Core) | With substantial program and social integration, allow flexibility to one actively enrolled resident at each level. |
| Distance between rural and urban training sites  | Allow flexibility with substantial integration and goal-oriented outcomes.  |
| Issues of reporting outcomes for small numbers of residents  | Consider a longer term of observation with active monitoring.   |
| Need for transparency, further study, and additional outcomes-based evidence                               | Increased accurate geocoding of training locations to include rural nomenclature                                    |

Abbreviations: ACGME, Accreditation Council for Graduate Medical Education; FM, family medicine.

## Conclusion

Further research is needed and a reflective practice is indicated. Even the definition of rurality itself, while important, remains challenging. Rural definitions should be specific to purpose and address a particular audience.<sup>17</sup> In as much as rural is diverse, our GME strategy must be unified. Understanding rural GME with a common nomenclature<sup>18</sup> and transparency will allow for further study and discussion. Family medicine residency education must be specific to fit and address health outcomes as the priority. Simply put, GME in and with rural communities will yield the best-trained physician workforce for our rural communities.

The evidence of the impact of rural Family Medicine GME should ultimately be better health and life in rural America. Likewise, the satisfaction our graduates experience in rural practice will be well grounded in their residency education.

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## Osteopathic Principles and Practice: Essential Training for the Primary Care Physician of Today and Tomorrow

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Osteopathic medicine's long history is deeply woven into the fabric of primary care in the United States. Since its humble beginnings in 1892 to its current training scope, involving over 150,000 doctors of osteopathy (DOs) and osteopathic medical students training at 38 colleges of osteopathic medicine in the United States,<sup>1</sup> the osteopathic profession has increased exponentially within the larger context of medical care. Today's modern landscape of both practice and training has seen osteopathic trainees and physicians work alongside their allopathic counterparts in every discipline in a collegial and coordinated manner. Single accreditation has created a new paradigm that has unified oversight of all residency training under one organization with initial success, and the logical next step is to integrate osteopathic training for all graduate medical education to better serve patients and society.

The implications of single accreditation for the osteopathic educational community have been far-reaching with second and third-order considerations. Obvious outcomes of this process were the acknowledgement of osteopathy within the overall competency-based educational framework of Core Competencies and Milestones. The American Council for Graduate Medical Education (ACGME), working in conjunction with the American Osteopathic Association (AOA) and its educational member affiliates, recognized that osteopathy must continue to meet the needs of physicians, faculty, residents, and students who ascribe to and practice osteopathy on behalf of society. Furthermore, it was recognized that traditionally

osteopathic-centered programs often have distinctive components and qualities that are unique to training, both from an aspirational and practical perspective. The immediate solution was to create the designation of "Osteopathic Recognition" to identify those programs that have chosen to continue (or newly take up) osteopathic training elements. Osteopathic recognition has been seen as critically important to the continuation of osteopathically distinct training for all invested stakeholders. The most recent data shows that Osteopathic Recognition has been an important designation for programs, with over 230 programs receiving this designation and another 220+ seeking it (accounting for 5% of all accredited residency training programs). Of these programs, almost two-thirds of them are in the discipline of family medicine, accounting for over 20% of all accredited family medicine programs in the United States.<sup>2</sup>

While Osteopathic Recognition has seen strong uptake within family medicine, many opportunities still exist to better cement osteopathy within the larger scheme of graduate medical education. To do this, we must ask and answer the critical question, "How does osteopathy as a distinct approach to medical care fit into the larger training framework established by the ACGME?" This has necessitated an examination of the essence of osteopathic medicine and how its value be identified for residency training and ultimately patient care. It is important to recognize that osteopathic

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From the American College of Osteopathic Family Physicians, Arlington Heights, IL.

medicine most clearly flows from the four osteopathic tenets that are central to the definition of osteopathy. These tenets, codified by Dr Andrew Taylor Still, are universal amongst osteopaths today and drive osteopathic approaches to patient care. They identify that a person's health and illness have physical, psychologic, and spiritual/emotional components, that the body's function and structure are intrinsically linked, and that the body can self-regulate and self-heal. Unlike other elements of osteopathic medicine (notably naming terminology for specific somatic dysfunctions and their relevant techniques), there is very little debate about these tenets or their wording, resulting in a universal adoption of them as unchanging elements of osteopathic medicine that define osteopathic principles and practice.<sup>3</sup> These tenets also help to identify guiding concepts for the practice of medicine, not just osteopathically, but for all practitioners. By considering what practical applications flow from these tenets, we can see that they represent cognitive approaches to diagnosis (eg, the presence of disease is the result of self-regulation gone awry; correcting such mechanisms can lead to normalization of the patient), considerations of specific treatment options (eg, physical manipulation of structure can lead to functional improvements of different physiologic elements), and holistic approaches when considering the overall patient experience (eg, considering psychological and emotional ramifications of both disease and treatment options).

The value of osteopathic principles is not simply aspirational or theoretical. The ability to manage patients' real physical concerns using distinct osteopathic techniques is an essential element of comprehensive patient care and a valuable tool for the general population. Consider, for example, musculoskeletal complaints, which are present in as much as 48% of the population,<sup>4</sup> account for as much as 3.4%-5.8% of the US gross domestic product<sup>5</sup> and are the second-most reported reason patients see primary care physicians (PCPs).<sup>6</sup> Osteopathic manipulative technique (OMT) has been shown to effectively treat many conditions such as low back pain with a reduced cost and need for concomitant medication use or medical intervention.<sup>7</sup>

The osteopathic approach to caring for the patient predates more than just simple technique. Rather, it suggests elements germane to all care provided by all practitioners for any patient. Osteopathy provides a rubric within its templates to combat the fragmentation

of care phenomenon that has dominated the practice of medicine for the last three decades. As noted in the literature, successful strategies to combatting fragmentation include a patient-centered approach that identifies both physical comfort and emotional well-being as top priorities.<sup>8</sup> Other sources identify aspects of osteopathic tenets (such as helping patients with the mental and socioemotional components of active health care and reducing dependency on specialist-centered care) in solutions to this problem.<sup>9</sup>

As we move forward and consider how graduate medical education has successfully integrated traditionally osteopathic training programs into the larger framework of unified evaluation and assessment through Core Competencies, Milestones and Entrustable Professional Activities, we should equally begin to consider how the distinct osteopathic tenets have value for all clinical trainees, and that integrating these universally across training programs would benefit not only learners, but patients. Primary integration should be focused on attentiveness to the tenets themselves, for reasons postulated above, while secondary integration can be focused on specific modalities of treatment (such as osteopathic manipulative medicine) for those who are willing to learn and apply it. Osteopathic medicine (especially OMT) has been taught to MDs and allopathic residents for years within dual-accredited programs where MD and DO residents learned side-by-side and through focused workshops that have been provided for decades by institutions such as Harvard Medical School and the Michigan State University College of Osteopathic Medicine.<sup>10</sup> More recently, longitudinal curricula designed specifically to teach OMT to allopathic residents have been developed and found to be effective.<sup>11</sup>

By acknowledging the universality of osteopathic tenets in the overall care of society, we recognize the intrinsic value of keeping these ideas at the forefront of medical education and practice. Encoding it within the framework of teaching and training environments in an integrated fashion (Figure 1) ensures that tomorrow's doctors will be able to manage patients' needs in a collaborative and holistic approach that is better aligned with the idea of first doing no harm, and second, ensuring that we prioritize the human behind the conditions we treat. It is clear that osteopathic principles are not just for osteopaths; they are for everybody who holds these goals as primary points of focus.



**Figure 1: Sample of Osteopathic Principles Integrated Into Core Competencies for Resident Assessment**

| Summative Evaluation of Resident   |       |                                       |   |   |   |
|--|-------|---------------------------------------|---|---|---|
| Resident's Name: _____   | 1     | Significantly below standard          |   |   |   |
| Date of Evaluation: _____  | 2     | Below the standard                    |   |   |   |
| Academic Year: _____   | 3     | Meeting the standard of all residents |   |   |   |
| Advisor: _____   | 4     | Above the standard                    |   |   |   |
| PGY Year: 1 2 3  | 5     | Significantly above the standard      |   |   |   |
| <i>Please circle the appropriate number for each item using this scale. Please provide any relevant comments on the back of this form.</i>   |       |                                       |   |   |   |
| This resident:   | Scale |                                       |   |   |   |
| <b>Patient Care</b>  |       |                                       |   |   |   |
| Comprehensive medical interviews, physical exams, review of data and procedural skills. Diagnostic and therapeutic decisions are based on available evidence, sound judgment and patient preference.   | 1     | 2                                     | 3 | 4 | 5 |
| <b>Patient Care – Osteopathic Competencies</b>   |       |                                       |   |   |   |
| Document somatic dysfunction and its treatment as applicable to patient care. Incorporate osteopathic principles and practice in to all aspects of care, including information gathering, diagnosis development and treatment. Utilize listening skills and caring compassionate behavior (including appropriate touch) with patients. | 1     | 2                                     | 3 | 4 | 5 |
| <b>Medical Knowledge</b>   |       |                                       |   |   |   |
| Knowledge of basic and clinical sciences. Understanding of complex relationships and mechanisms of disease.  | 1     | 2                                     | 3 | 4 | 5 |
| <b>Medical Knowledge – Osteopathic Competencies</b>  |       |                                       |   |   |   |
| Understand and demonstrate the ability to apply integrative knowledge in a manner consistent with accepted standards. Perform critical appraisal of literature related to Osteopathic Principles and Practice.   | 1     | 2                                     | 3 | 4 | 5 |
| <b>Systems-based Practice</b>  |       |                                       |   |   |   |
| Utilizes outside resources. Uses a systematic approach to reduce errors and improve patient care. Assists in developing systems improvement.   | 1     | 2                                     | 3 | 4 | 5 |
| <b>Systems-based Practice – Osteopathic Competencies</b>   |       |                                       |   |   |   |
| Provide quality osteopathic health care and understand the role of osteopathic clinical practice in health care delivery systems.  | 1     | 2                                     | 3 | 4 | 5 |
| <b>Summative Comments:</b>   |       |                                       |   |   |   |
|  |       |                                       |   |   |   |
| <b>Practice-Based Learning</b>   |       |                                       |   |   |   |
| Evaluates own performance; incorporates feedback into improvement. Uses technology to manage information for patient care and self-improvement.  | 1     | 2                                     | 3 | 4 | 5 |
| <b>Practice-Based Learning – Osteopathic Competencies</b>  |       |                                       |   |   |   |
| Incorporate literature, research and up-to-date practice standards when caring for patients. Perform self-evaluation of osteopathic practice patterns and incorporate practice-based improvements activities systematically.   | 1     | 2                                     | 3 | 4 | 5 |
| <b>Interpersonal and Communication Skills</b>  |       |                                       |   |   |   |
| Establishes effective therapeutic relationships with patients and families. Demonstrates relationship building through listening, verbal and nonverbal skills. Educates and counsels patients, families and colleagues. Engaged.   | 1     | 2                                     | 3 | 4 | 5 |
| <b>Interpersonal Communication – Osteopathic Competencies</b>  |       |                                       |   |   |   |
| Demonstrate skills that enable effective discussion of osteopathic concepts and their role in patient care with all stakeholders (patients, families and other health care team members).  | 1     | 2                                     | 3 | 4 | 5 |
| <b>Professionalism</b>   |       |                                       |   |   |   |
| Demonstrates respect, compassion, integrity and honesty. Teaches/role-models responsible behavior. Commits to self-assessment and acknowledges errors. Considers needs of patients, families and colleagues. Arrives to work in a timely fashion, dresses appropriately and is well-prepared for the day.                              | 1     | 2                                     | 3 | 4 | 5 |
| <b>Professionalism – Osteopathic Competencies</b>  |       |                                       |   |   |   |
| Attend to issues of culture, age, gender, sexual orientation, disease state and mental/physical disabilities as they pertain to application of osteopathic practice. Demonstrate increased understanding of conflict of interest inherent to osteopathic clinical practice.  | 1     | 2                                     | 3 | 4 | 5 |

Based on formative review over the course of training the resident is able to care for patients in the discipline of Family Medicine:

Only with direct supervision  
 Only with indirect supervision  
 Independently


Based on formative review over the course of training the resident is able to care for patients in the domain of Osteopathic Principles & Practice:

Only with direct supervision  
 Only with indirect supervision  
 Independently

Advisor/Evaluator Signature \_\_\_\_\_ Date \_\_\_\_\_

Resident Signature \_\_\_\_\_ Date \_\_\_\_\_

Program Director Signature \_\_\_\_\_ Date \_\_\_\_\_



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## The Importance of Interprofessional Practice in Family Medicine Residency Education

Christine Arenson, MD; Barbara Fifield Brandt, PhD

**ABSTRACT:** The practice of family medicine is undergoing rapid transformation, with increasing recognition that family physicians can most effectively meet the needs of individual patients and populations within the context of highly effective interprofessional teams. A substantive evidence base exists to support effective workplace learning by practicing health care teams and learners, much of which has been developed in primary care teaching practices. A strong national consensus now emphasizes the importance of the interprofessional clinical learning environment, including in graduate medical education. Evidence for the impact of improved team function on quadruple aim outcomes is increasingly robust. The World Health Organization, Interprofessional Education Consortium, National Collaborative for Improving the Clinical Learning Environment, and National Center for Interprofessional Practice and Education have developed evidence-based approaches and tools for improving interprofessional collaboration to improve important health outcomes in the clinical learning environment. Embracing the practice as the curriculum and preparing our residency graduates to work within high-functioning interprofessional collaborative practice teams, family medicine has the opportunity to lead the way in demonstrating the value of effective interprofessional practice across health care settings, including virtual teaming, to improve the health of the communities we serve, and across the nation.

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### The Importance of Interprofessional Practice in Family Medicine Residency Education

Family medicine is rapidly transforming to meet the needs of patients and populations. New interprofessional collaborative practice models are incorporating critical building blocks such as team-based care, leadership at all levels, partnerships with patients, population management, and care coordination to achieve the goal of high-performing primary care.<sup>1,2</sup> Preparing family medicine residents for patient-engaged, interprofessional practice to achieve health equity is critical for contemporary family medicine residency education. Family medicine as a discipline must agree on principles and strategies for creating clinical learning environments where residents can

excel as effective members of collaborative interprofessional practice teams.

### Team-Based Care, Interprofessional Collaboration, and Teamwork

Primary care practice models are moving beyond traditional multidisciplinary practice with providers working side by side with little integration. In contrast, health care and family medicine are moving toward interprofessional practice models that incorporate different nonphysician health professionals<sup>3</sup> and nonprofessionals such as medical assistants.<sup>1</sup> However, terms such as “teams,” and “team-based

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care” are often used in the literature to describe very different types of interprofessional work.<sup>4</sup> The differences matter to health outcomes, and family medicine residents have the opportunity to experience and learn in a wide variety of interprofessional clinical settings. These range from interprofessional teamwork to interprofessional collaboration and coordination, as described in Table 1.

### Interprofessional Workplace Learning: Practice as Curriculum

Family medicine educators are increasingly recognizing the concept of “practice as curriculum,” positioning family medicine residency education precisely in the nexus of learning and primary care practice transformation.<sup>5-7</sup> Table 2 describes interprofessional education, interprofessional learning, and workplace learning, each of which support family medicine education and practice transformation.

The Interprofessional Education Collaborative (IPEC) has articulated four core competency domains for interprofessional collaborative practice: Interprofessional Teamwork and Team-Based Practice, Interprofessional Communication Practices, Roles and Responsibilities for Collaborative Practice, and Values and Ethics for Interprofessional Practice.<sup>8</sup> These four domains are envisioned within the context of patient- and family-centered practice that is community- and population-oriented.

In addition, the National Collaborative for Improving the Clinical Learning Environment (NCICLE) is an interprofessional forum committed to improving the educational experience and patient care outcomes within clinical learning environments. Convened by the Association for Graduate Medical Education, NCICLE’s work is informed by clinical learning environment review (CLER) visits at graduate medical education programs across the nation. NCICLE has identified characteristics of high-functioning interprofessional clinical learning environments: patient-centeredness, a continuum of learning, reliable communications, team-based care, shared accountability, evidence-based practice centered on interprofessional care.<sup>9</sup> These priorities reinforce the importance of “practice as curriculum” for family medicine education.

Important learning occurs at the nexus of education and practice, with residents and other team members sharing responsibility for learning and doing the work of patient-engaged interprofessional collaborative practice. IPEC and NCICLE frameworks inform didactic curriculum and simulation that prepare residents for authentic workplace learning that will improve quality, support practice transformation and drive health equity locally while preparing tomorrow’s family physician leaders.

**Table 1: Definitions of Team-Based Care**

| Term                            | Characteristics   | Examples  |
|---------------------------------|---|---|
| Interprofessional teamwork      | Shared responsibility for health outcomes, shared team identity and accountability, clear roles, defined processes and quality improvement to support teamwork, interdependence between team members over time  | <ul style="list-style-type: none"> <li>• Primary care teamlet</li> <li>• Small, integrated family medicine practice team</li> </ul>   |
| Interprofessional collaboration | Individuals have clear understanding of the roles and scope of practice of colleagues, established, effective communication strategies, and shared understanding of the goals and priorities of the patient but come together only intermittently for care of specific patients or issues | <ul style="list-style-type: none"> <li>• Referral to a pharmacist who supports an entire large family practice</li> <li>• Referral and close collaboration between the family physician and palliative care team for end of life care planning</li> </ul> |
| Interprofessional coordination  | Individuals recognize the limitations of individual members or teams engaged in care of a patient, and facilitate coordination of care between and among sites but with less well established communication strategies or shared care plans   | <ul style="list-style-type: none"> <li>• Referral to a community organization to provide in-home meals</li> <li>• Referral to a quaternary care center for specialized care not available in the local health system</li> </ul>                           |

Adapted from Reeves et al.<sup>4</sup>

**Table 2: Types of Interprofessional Learning**

| Type of Interprofessional Learning       | Definition   |
|--|--|
| Interprofessional education <sup>5</sup> | “Occurs when two or more professions learn with, about, and from each other to enable effective collaboration and improve health outcomes.” <sup>5</sup> The goal is to inform and enhance interprofessional collaborative practice to the benefit of individuals and populations. |
| Interprofessional learning <sup>6</sup>  | Learning arising from interaction involving members or students of two or more professions. It may be a product of formal interprofessional education, or it may occur spontaneously in the workplace or in education settings.  |
| Workplace learning <sup>6,7</sup>        | Different from formal educational activities, workplace learning can be viewed as untapped opportunities for learning and change that are part of everyday practice and often go unrecognized as learning.   |

### *Measuring Impact*

The 2015 Institute of Medicine report<sup>6</sup> on measuring the impact of interprofessional education advocates for the development of evidence for the virtuous cycle of learning and collaborative practice to improve patient outcomes. The National Center for Interprofessional Practice and Education has led development and dissemination of knowledge regarding effective interprofessional practice and education (the new IPE) to improve health outcomes.<sup>10</sup> Iterative developmental evaluation using a suite of validated tools to self-assess team functioning and patient and learning outcomes, allows real-time adjustments to support learning of individual team members, including residents, and ongoing interprofessional practice transformation.

### **Interprofessional Collaborative Family Medicine Practice**

Increasingly, family medicine teams include advanced practice providers, nurses, behavioral health providers, social workers, pharmacists, care coordinators, and community health workers. Family medicine residents must understand the roles of these professionals, as well as paraprofessional and nonprofessional team members such as medical assistants, peer educators, patient advisors, registrars, and others. Ambulatory care teams must address additional challenges as many family medicine practices are chronically under-resourced, with key members of the team missing, or present only virtually as the primary care team partners with other specialties and community resources to meet the comprehensive needs of each patient.

Patient care extends beyond the walls of our practices, and family medicine residents must broaden their perspective with a deep

understanding of multisector collaborations including home care providers, community-based agencies, schools, religious institutions, families, law enforcement, attorneys, and others who contribute to health and health equity for individuals and populations. This “community as curriculum” focus supports residents to learn, and practice to address, social determinants of health and health equity. Family medicine residents also experience working within teams in other settings including hospitals, delivery rooms, homes, and skilled nursing facilities. The critical common element of every care team must be the patient, including their family and community as appropriate, fully engaged in designing their health care. The family physician must be expert at helping each patient form the team they need, whether for wellness, acute care, or chronic disease management, across care settings and over the patient’s lifetime.

Physicians have historically been acculturated to take total responsibility for the care of their patients as the team leader. Effective interprofessional collaborative practice requires deeper engagement of all team members, including patients and families, with shared understanding of mutual roles, shared values and shared responsibility.

Future family physicians should be educated for interprofessional practice within the context of the important, ongoing work of practice transformation to achieve the Quadruple Aim and achieve health equity. Fiscella et al have identified six elements from team science that are “particularly relevant to primary care practice” and thus to family medicine residency education in interprofessional team-based practice, including understanding practice conditions that support effective teamwork; team cognition; leadership and coaching; cooperation

and team cohesion; coordination; and communication.<sup>11</sup> Multiple regional and national learning collaboratives, including the Veterans Affairs Centers of Excellence in Primary Care Education<sup>12</sup> and Improvement Cubed (I3) Collaborative<sup>13</sup> have demonstrated significant impact on outcomes for patients and teams and learning outcomes for interprofessional practice.

**Preparing Residents for Collaborative Practice**

The IPEC domains, informed by NCICLE’s insights around the interprofessional clinical learning environment, offer an opportunity to tailor family medicine residency curriculum that engages the entire practice team to develop the knowledge, skills, and attitudes critical to effective collaborative practice. Residents must then internalize these lessons through authentic practice-based learning, including working within interprofessional teams to design, implement, and assess quality improvement and practice transformation efforts with demonstrable impact on meaningful patient outcomes. Family medicine residents will benefit from opportunities to reflect on the wide variety of teams they encounter in training, including those that are high functioning and those with significant dysfunction, in order to recognize and adopt best practices for team performance in their future practice environments.

Many medical students are now exposed to these principles before residency. However, interprofessional education in undergraduate medical education remains uneven and largely classroom based. Family medicine residencies will need to assess core knowledge, skills, and attitudes for interprofessional practice at program entry and periodically throughout

the curriculum. While most education for interprofessional practice should occur in the context of patient care, practice improvement and population health, core didactic content remains essential preparation.

**Recommended Accreditation Standards**

While the current Family Medicine Milestones reference “mobilizing” or “leading” multidisciplinary teams and engaging patients, families, and community resources,<sup>14</sup> the language does not fully reflect contemporary understanding of patient-engaged interprofessional collaborative practice to achieve the Quadruple Aim.<sup>15</sup> Table 3 provides specific recommendations to fully prepare family medicine residents for patient-engaged interprofessional practice that promotes health equity.

Family medicine has provided significant leadership in the national movement toward interprofessional education to inform collaborative practice. This energy and expertise should be harnessed to create innovative models to educate family medicine residents for interprofessional practice and team-based care across health care settings. We have a unique opportunity to build on this foundation to practice “interprofessional practice by the zip code” that improves health and health equity of our local communities while preparing our graduates to be the collaborative practice leaders of the future.

**Table 3: Recommended Enhanced Accreditation Standards for Interprofessional Collaborative Practice and Teamwork Education in Family Medicine Residency Education**

| Current ACGME Family Medicine RCR Requirements <sup>14</sup>   | Recommended Enhancements  |
|--|---|
| <b>I. Oversight</b>  |   |
| I.D. Resources<br>I.D.1.a).(10) Each FMP site must involve all members of the practice in ongoing performance improvement and must demonstrate use of outcomes in improving clinical quality, patient satisfaction, patient safety, and financial performance. | Define “all members of the practice” to include nonphysician team members, such as but not limited to nurses, behavioral health providers, pharmacists, medical assistants, and patient and family advisory committees, community partners, and others who work within or partner with the FMP. |

(Continued on next page)

Table 3: Continued

| Current ACGME Family Medicine RCR Requirements <sup>14</sup>  | Recommended Enhancements  |
|---|---|
| <b>II. Personnel</b>  |   |
| <p>II.B. Faculty</p> <p>II.B.2.f) Regularly participate in organized clinical discussions, rounds, journal clubs, and conferences;</p> <p>II.B.2.g) pursue faculty development designed to enhance their skills at least annually</p> <p>II.B.3.c) Any nonphysician faculty members who participate in the residency program education must be approved by the program director.</p>  | <p>Faculty development should include activities designed to enhance interprofessional collaborative practice and teamworking skills and should include nonphysician faculty and experts.</p> <p>Require nonphysician faculty to role model interprofessional collaboration.</p>  |
| <b>III. Resident Appointments</b>   |   |
| <b>IV. Educational Program</b>  |   |
| <p>IV.B. ACGME Competencies</p> <p>IV.B.1.e). Interpersonal and Communication Skills: Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.</p> <p>IV.B.1.e).(1).(a) Communicating effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.</p> <p>IV.B.1.e).(1).(b) Communicating effectively with physicians, other health professionals, and health-related agencies;</p> <p>IV.B.1.e).(1).(c) Working effectively as a member or leader of a health care team or other professional group;</p> <p>IV.B.1.e).(1).(d) Educating patients, families, students, residents, and other health professionals;</p> <p>IV.B.1.e).(1).(e) Acting in a consultative role to other physicians and health professionals;</p> <p>IV.B.1.e).(2) Residents must learn to communicate with patients and families to partner with them to assess their care goals, including, when appropriate, end-of-life goals.</p> <p>IV.B.1.f). Systems-based Practice Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, including the social determinants of health, as well as the ability to call effectively on other resources to provide optimal health care.</p> <p>IV.B.1.f).(1).(d) Working in interprofessional teams to enhance patient safety and improve patient care quality</p> <p>IV.B.1.f).(2) Residents must learn to advocate for patients within the health care system to achieve the patient's and family's care goals, including, when appropriate, end-of-life goals.</p> | <p><b>Encourage nonphysician trainees to participate in clinical learning environments where family medicine residents are trained.</b></p> <p>Curriculum should include didactic, simulation and clinical experiences that include structured formal assessment and feedback of communication skills with patients, families, the public, physicians, other health professionals and community agencies.</p> <p>Curriculum should include the science of effective interprofessional collaboration and teamwork.</p> <p>Residents must serve as members and leaders of interprofessional quality improvement, practice transformation and/or other teams that include patients, families, and/or community members as full team members.</p> <p>Residents must participate as active members of the FMP patient and family advisory council.</p> |

(Continued on next page)

Table 3: Continued

| Current ACGME Family Medicine RCR Requirements <sup>14</sup>   | Recommended Enhancements  |
|--|---|
| <b>IV. Educational Program</b>   |   |
| <p>IV.C Curriculum Organization and Resident Experiences</p> <p>IV.C.1. The curriculum must be structured to optimize resident educational experience, the length of these experiences, and supervisory continuity.</p> <p>IV.C.1.b) Clinical experiences should be structured to facilitate learning in a manner that allows residents to function as part of an effective interprofessional team that works together longitudinally with shared goals of patient safety and quality improvement.</p> <p>IV.C.4. Each resident must be assigned to a primary FMP site.</p> <p>IV.C.4.d) Residents should participate in and assume progressive leadership of appropriate care teams to coordinate and optimize care for a panel of continuity patients.</p> <p>IV.C.22 Residents must have at least 100 hours (or one month) dedicated to health system management experiences</p> <p>IV.C.22.a) This curriculum should prepare residents to be active participants and leaders in their practices, their communities, and the profession of medicine</p> | <p>Residents must participate in regular (weekly or monthly) clinical care team meetings addressing management of the health of the assigned population/ panel of patients, reviewing workflows and engaging in ongoing quality improvement.</p>  |
| <b>V. Evaluation</b>   |   |
| <p>V.A. Resident Evaluation</p> <p>V.A.1.c).(1) Use multiple evaluators (eg, faculty members, peers, patients, self, and other professional staff members)</p> <p>V.A.1.c).(5) Must ensure interpersonal and communication skills assessment includes both direct observation and multi-source evaluation (including at least patients, peers, and nonphysician team members)</p>  | <p>Specific, structured feedback from patients and non-physician members of the interprofessional team, such as medical assistants, behavioral health providers, community health workers, nurses and others must be included in the CCC evaluation.</p> <p>Evaluation must include use of validated tools to assess the resident's demonstration of key competencies for interprofessional collaborative practice (ie, IPEC competencies).</p> |
| <p>V.C. Program Evaluation and Improvement</p>   | <p>Annual program evaluation must include annual assessment, using a validated instrument, of teamworking within the FMP, and should include a quality improvement plan for continuous improvement of the interprofessional collaborative environment.</p>  |

(Continued on next page)



Table 3: Continued

| Current ACGME Family Medicine RCR Requirements <sup>14</sup>   | Recommended Enhancements   |
|--|--|
| <p><b>VI. The Learning and Working Environment</b></p>   | <p><b>The learning environment should be evaluated in light of best practices for the interprofessional clinical learning environment.</b></p>   |
| <p>VI.A. Patient Safety, Quality Improvement, Supervision, and Accountability<br/>VI.A.1.a) Patient Safety</p> <p>VI.A.1.a).(1).(b) The program must have a structure that promotes safe, interprofessional, team-based care.</p> <p>VI.A.1.a).(3).(b) Residents must participate as team members in real and/or simulated interprofessional clinical patient safety activities, such as root cause analyses or other activities that include analysis, as well as formulation and implementation of actions.</p> <p>VI.A.1.b) Quality Improvement</p> <p>VI.A.1.b).(3).(a) Residents must have the opportunity to participate in interprofessional quality improvement activities.</p> <p>VI.A.1.b).(3).(a).(i) This should include activities aimed at reducing health care disparities.</p> | <p>The FMP must have a patient and family advisory council that meets at least quarterly, and which is actively engaged in identifying and addressing safety and quality improvement issues.</p> |
| <p><b>VI.E. Clinical Responsibilities, Teamwork, and Transitions of Care</b></p> <p>VI.E.2. Teamwork residents must care for patients in an environment that maximizes communication. This must include the opportunity to work as a member of effective interprofessional teams that are appropriate to the delivery of care in the specialty and larger health system.</p>   |  |

Abbreviations: FMP: family medicine program; CCC, ACGME Clinical Competence Committee; IPEC, Interprofessional Education Collaborative.

**PRESENTATIONS:** A brief overview of an earlier version of this commentary was presented on December 6, 2020 as part of the Starfield Summit: “Re-Envisioning Family Medicine Residency Education.”

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## How Do We Move the Needle?: Building a Framework for Diversity, Equity, and Inclusion Within Graduate Medical Education

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**D**iversity, equity, and inclusion are core values in medical education; however, the concepts as currently incorporated into educational models and requirements are limited, just scratching the surface of the actual need and aim. Fostering diversity recognizes and values individual and group differences such as race/ethnicity, socioeconomic status, education, age, gender, sexual orientation, gender identity and expression, disability status, religion, location, language, country of origin, familial status, and other personal experiences. Inclusion builds upon diversity by ensuring a culture of belonging, respect, value, and engagement for all. The lens of diversity requires inward reflection on who we are as a care team of residents, faculty, and clinical staff, as well as outward analysis and perspective on who, how, and what care we provide. From this viewpoint, we consider our alignment in our communities and embrace our differences in the role of achieving health equity—the highest level of health for all people. Inclusive excellence provides an active, substantive context in which diversity, equity, and inclusion integrates into institutional and programmatic mission, culture, operations, education, engagement, and quality improvement activities.

The Accreditation Council for Graduate Medical Education (ACGME) Family Medicine Requirements state sponsoring institutions (SIs) and programs must implement policies, procedures, and practices focused on systematic recruitment and retention of a diverse and inclusive workforce of residents, fellows, faculty, and staff; ensure residents demonstrate

competency in respect, responsiveness, and communication with diverse patient populations; and provide structured curriculum that addresses the social determinants of health (SDH) and health care disparities.<sup>1</sup> At an institutional level, the ACGME Clinical Learning Environment Review (CLER) furthers the mandate in requiring SIs and programs to engage residents and fellows within the hospital or health system infrastructure in the use of data to improve systems of care, reduce health care disparities, and improve patient outcomes.

Notwithstanding the current requirements, clinical learning environments (CLEs) are continually deficient regarding health care disparities' education, implementation, integration, and experiential learning.<sup>2,3</sup> Eliminating health care disparities involves understanding the population we serve and its intersection with structural racism and SDH while working with community partners to formally assess, analyze, and prioritize the needs of the population. Programs and institutions should critically evaluate and revise policies and practices with an antiracism framework and formulate an organizational strategy that engages the health care team, including residents, faculty, and members of the community, and creates targeted interventions with accountable measures towards an ultimate goal of sustainable health equity.

As a Black female physician and designated institutional officer, I share the struggle with engaging key stakeholders in programs and

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across the institution in integrating these concepts and actions into the organizational fabric and day-to-day program mission and activities. Moving the needle on diversity and inclusion requires a collaborative effort and buy-in from program directors, residents, fellows, faculty, staff, and senior administration. Without that collaboration, I run the risk of being perceived as driving a self-serving agenda and creating a checkbox, or meaningless initiative that is interpreted as “one more thing to do.”

Diversity and addressing disparities must not be a checkbox or an afterthought. Programs and CLEs often feel the administrative burden and challenge of meeting regulatory and accreditation requirements. In our next set of ACGME requirements, we can promote a longitudinal and integrated framework focused on four key areas: the individual, the program, the institution/organization, and the community (Figure 1). In each of these focus areas, utilizing data is the catalyst for driving diversity and disparities change. Each area interfaces with, relies on, and is accountable to the other areas.

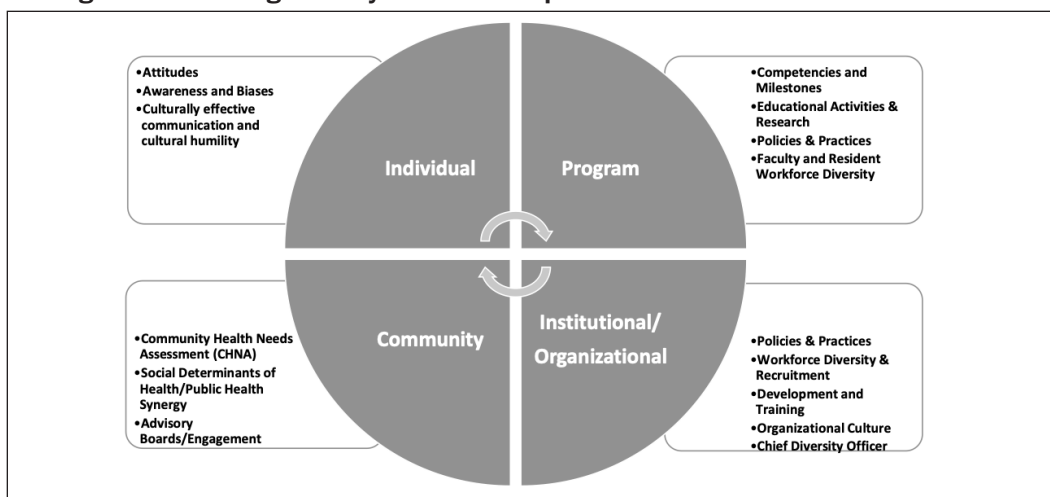
Transformation starts at the individual level. Each health care team member benefits from activities that promote self-awareness and self-identification of conscious and unconscious biases. Educational activities centered on implicit bias and cultural humility and competency need to be required, integrated, and longitudinal throughout residency training. As medical education leaders, we cannot bury these activities into an annually required educational module, but need to incorporate continuous, interprofessional, team-based, and experiential curricula allowing for

constant awareness and reflection. The crucial goal is cultural humility with culturally effective communication that is hardwired through continuous learning and growth centered on mutual respect and accountability. The adage of “know thyself” is the first step in wholly fulfilling our oath to be healers and to care for all humankind.

Program leadership and faculty need to be empowered to develop and implement formal residency program educational activities on diversity and inclusion, reducing health care disparities, and creating health equity that are specific to the population served, incorporates practice- and population-specific data, and includes longitudinal, experiential, community-based learning that translates directly into patient care. Thereby, faculty development in these key areas is requisite. Likewise, programs should consistently engage the interprofessional team in conducting comparative analyses of current policies and practices to identify areas of disparities, gaps, and biases as it relates to patient care and to team engagement.

Training a diverse physician workforce advances health equity and is a critical component in eliminating health disparities. Resident and faculty workforce diversity is a program imperative. The growth in underrepresented minority (URM) diversity in our medical school graduates continues to lag woefully behind other race and ethnic groups. This reality has a direct impact on URM representation in residency programs and in the composition of our practicing physicians, including our faculty numbers and medical education leaders. According to the Association of American Medical

**Figure 1: Addressing Diversity and Health Disparities Within Graduate Medical Education**



Colleges, medical school faculty continue to be predominantly White (64%) with only 9% URM faculty members, and significant underrepresentation at the professor and associate professor ranks. In 2019, only 6.2% of medical school graduates were Black or African American, around 5% Hispanic or Latino, 0.2% Native American or Alaska Native, and 0.1% Native Hawaiian or Pacific Islander.<sup>4</sup> Intentional diversity requires intentional recruitment. Strategies to recruit and retain a diverse and inclusive workforce of residents, fellows, faculty members, and staff should align with the needs of the community. Programs should define specific recruitment strategies for residents and faculty and continuously track, review, and evaluate their data and efforts to recruit and retain a diverse workforce.

Organizational diversity and graduate medical education diversity goals are not separate and distinct. A highly effective CLE and organizational culture embraces diversity by also supporting and protecting its team members with policies and practices that mitigate harassments, macroaggressions, and microaggressions through zero tolerance, team development, and training.<sup>5</sup> As a diverse faculty and team are essential to train, mentor, and retain a diverse group of residents, organizations should also provide the resources to support the residency programs and departments in efforts to recruit and retain a diverse workforce.

GME programs are socially accountable to the communities they serve, which requires direct community engagement and integrated, collaborative curricula responsive to the unique health care needs of the diverse patient populations being served.<sup>5</sup> The Community Health Needs Assessments is a valuable tool to integrate into program curricula making it tangible and applicable in education, practice, and quality improvement. Individuals, programs, and institutions must seek to understand local history, social and structural determinants of health, and directly involve community partners in designing a socially accountable, community-engaged diversity, equity, and inclusion curriculum. The DISCuSS model is one example that provides a framework of community engagement for curriculum development and implementation focused on health disparity. It incorporates the social accountability and diversity mandate, emphasizing the importance

of inclusiveness and collaboration with community stakeholders in the curriculum development process through five steps: (1) identify gaps, (2) search literature, (3) create a module with community engagement, (4) ensure sustainability through ongoing assessments, and (5) evaluate periodically for societal alignment and social accountability.<sup>4</sup>

Advancing diversity, equity, and inclusion and eliminating health disparities through graduate medical education requires an integrated, longitudinal, multifaceted approach involving stakeholders at the individual, program, institutional/organizational, and community levels. Programs and institutions should demonstrate targeted, community-aligned, longitudinal diversity, equity, and inclusion curricula; policies and strategies for recruiting, retaining, and supporting a diverse workforce that reflect the needs of the community; and formalized diversity, equity, and inclusion faculty development. Through a well-defined, collaborative strategy with continuous process improvement, residents, faculty, and other interprofessional team members can successfully engage in a CLE that epitomizes inclusive excellence.

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