

ORIGINAL ARTICLE

National Recommendations for Implementation of Competency-Based Medical Education in Family Medicine

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ABSTRACT

Background and Objectives: New family medicine residency program and graduate board certification requirements necessitate a transition within programs to competency-based medical education (CBME) to ensure that the discipline is training physicians to meet America's health care needs. A task force formed by the Society of Teachers of Family Medicine (STFM) created recommendations for implementation of CBME.

Methods: The STFM CBME Task Force reviewed papers written by CBME experts and, through group discussions and consensus, drafted recommendations. Feedback on drafts of the recommendations was provided by leaders of the American Academy of Family Physicians, American Board of Family Medicine, American College of Osteopathic Family Physicians, Association of Departments of Family Medicine, Association of Family Medicine Residency Directors, North American Primary Care Research Group, and STFM.

Results: The STFM CBME Task Force created 12 recommendations to guide programs and one recommendation for the specialty of family medicine for implementation of CBME.

Conclusions: The transformation of the educational framework in family medicine to competency-based is a significant change for programs, learners, faculty, and staff. Residencies and family medicine organizations can reference these national recommendations as they incorporate CBME principles to advance residency education.

INTRODUCTION

Transformational accreditation requirements for family medicine education took effect on July 1, 2023, representing a

deliberate transition to competency-based medical education (CBME).^{1,2} Additionally, the Accreditation Council for Graduate Medical Education (ACGME) Family Medicine Review

Committee and the American Board of Family Medicine (ABFM) developed core outcomes of family medicine residency education, defining expectations for family medicine education and board certification (Table 1).¹

TABLE 1. Family Medicine Core Outcomes for Competency Attestation for ABFM Board Eligibility¹

1. Practice as personal physicians, providing first contact, comprehensive, and continuity care, to include excellent doctor–patient relationships, excellent care of chronic disease and routine preventive care, and effective practice management.
2. Diagnose and manage acute illness and injury for people of all ages in the emergency room or hospital.
3. Provide comprehensive care of children, including diagnosis and management of the acutely ill child and routine preventative care.
4. Develop effective communication and constructive relationships with patients, clinical teams, and consultants.
5. Model professionalism and be trustworthy for patients, peers, and communities.
6. Practice as personal physicians, to include care of women, the elderly, and patients at the end of life, with an excellent rate of continuity and appropriate referrals.
7. Provide care for low-risk patients who are pregnant, to include management of early pregnancy, medical problems during pregnancy, prenatal care, postpartum care, and breastfeeding, with or without competence in labor and delivery.
8. Diagnose and manage common mental health problems in people of all ages.
9. Perform the procedures most frequently needed by patients in continuity and hospital practices.
10. Model lifelong learning and engage in self-reflection.
11. Practice as personal physicians, to include musculoskeletal health, appropriate medication use, and coordination of care by helping patients navigate a complex health system.
12. Provide preventative care that improves wellness, modifies risk factors for illness and injury, and detects illness in early, treatable stages for people of all ages while supporting patients' values and preferences.
13. Assess priorities of care for individual patients across the continuum of care—in-office visits, emergency, hospital, and other settings, balancing the preferences of patients and medical priorities.
14. Evaluate, diagnose, and manage patients with undifferentiated symptoms, chronic medical conditions, and multiple comorbidities.
15. Effectively lead, manage, and participate in teams that provide care and improve outcomes for the diverse populations and communities they serve.

Abbreviation: ABFM, American Board of Family Medicine

The outcomes-driven model of CBME has long been promoted to provide better and safer care for patients. The model, proposed by leaders in family medicine, is now central to residency redesign aimed at addressing widening health disparities. This more flexible, learner-driven CBME model is meant “to meet the needs of our patients, communities, and health teams.”^{1,3}

To help programs move toward CBME, the STFM CBME Task Force created a set of recommendations that are expert-informed using the best available evidence. These recommen-

dations can guide programs through the transition, recognizing the varying levels of faculty knowledge and resources that training programs have.^{1,3–8} This paper offers aspirational yet achievable best practices to help programs move toward CBME adaptation (Table 2). The authors acknowledge that these recommendations are presented with the limited evidence available and offer them as initial guidance to assist programs as they incorporate facets of CBME into their programs and curriculum. The authors do not intend for programs to use these recommendations as a mandate, but as a resource and reference to support and cultivate the transition to CBME.

TABLE 2. National Recommendations for Implementation of CBME in Family Medicine

1. Programs should create learning environments that support residents in the development of the characteristics of a master adaptive learner (MAL) with the use of individualized coaching, reflection, and faculty development.
2. Programs should provide residency administrators/coordinators adequate time and training to implement and manage tracking systems for competency-based medical education assessment.
3. Programs should engage residents in tailoring elective time to meet individual educational goals and to progress toward competence in the family medicine core outcomes.
4. Programs should foster a culture of reflective feedback conversations.
5. Resident assessment should occur frequently throughout the continuum of care using multiple modalities, with most assessments being grounded in direct observation.
6. Throughout training, a five-level entrustment framework should be used to assess residents on their progression toward entrustability.
7. Programs should provide residents updates on their progress toward the family medicine core outcomes based on holistic resident review done by the Clinical Competency Committee at least every 6 months.
8. Programs should provide dedicated time for structured, ongoing faculty development in the implementation of competency-based medical education.
9. Programs should engage faculty and residents to create an assessment system that minimizes the assessment burden on faculty and residents.
10. Programs should provide faculty development in coaching skills to engage residents in their self-regulated learning.
11. Individualized learning plans should be created with all residents during the first 6 months of residency and updated quarterly throughout training, with interval coaching/advising to facilitate growth.
12. Individualized learning plans should include specific, measurable, attainable, relevant, time-bound, inclusive, and equitable (SMART-IE) objectives that are aligned with the family medicine core outcomes.
13. Relevant stakeholders in family medicine graduate medical education should collaborate to develop and implement a mobile application to streamline the ability of faculty to provide real-time feedback to and assessment of residents.

Abbreviation: CBME, competency-based medical education

METHODS

In early 2023, STFM convened a task force to develop a plan for faculty development and to identify and create tools for residency programs to use when transitioning to CBME.⁹ Members were selected through an open call for applications. Selection

was guided by the desire to bring together individuals with diverse educational roles, geography, experiences, and identities.⁹

The CBME Task Force convened in June 2023 to review multiple sources of literature on CBME history, theory, principles, and practice. The literature review included articles written by CBME experts within family medicine and other medical specialties. Recommendations were drafted through group discussions and consensus with feedback by leaders of the American Academy of Family Physicians, American Board of Family Medicine (ABFM), American College of Osteopathic Family Physicians, Association of Departments of Family Medicine, Association of Family Medicine Residency Directors, North American Primary Care Research Group, and STFM.

RESULTS

Thirteen recommendations, guided by the best available evidence, task force expertise, group consensus, and input from leaders of family medicine organizations were formulated to guide transition to CBME in family medicine residency programs.

Recommendations for Programs With Rationale

1. Programs should create learning environments that support residents in the development of the characteristics of a master adaptive learner (MAL) with the use of individualized coaching, reflection, and faculty development.

CBME shifts the educational emphasis to a more learner-centered model.⁶ Incorporating MAL, a framework from self-regulated learning theory, supports the development of the lifelong learning skills required by ABFM in the core outcomes.^{1,10–14} Although other frameworks exist, MAL has been specifically encouraged by both ABFM and ACGME.^{13,14}

Programs can support MAL by fostering environments that encourage inquiry and discussion, and allow learners to use uncertainty as a motivator for growth.^[12–15]^{12–14} Building the capacity to remain in a growth mindset is a foundational skill that supports mastery learning and deliberate practice.^[15] Academic coaches may facilitate the development of these skills, but many faculty lack experience in coaching, ensuring faculty development around MAL, acting in the role of coaches, and acquiring coaching skills.¹⁵

Faculty can role model MAL characteristics while promoting learning environments that are adaptable to learner needs.^{16,17}

2. Programs should provide residency administrators/coordinators adequate time and training to implement and manage tracking systems for competency-based medical education assessment.

The transition to CBME will require changes in curriculum, implementation of individualized learning plans (ILPs), and increased frequency in the number of assessments of residents, adding to the program coordinator's workload.^{18,19} Differently defined roles and skills for program administrators and coordinators may be needed.^{19,20} For example, increased focus on tracking CBME outcomes and assessments may call

for program administrators to be equipped with skills in informatics and learning analytics.^{19,20} Programs may need to provide training and time to assist administrative staff with the transition to support programmatic assessment.

3. Programs should engage residents in tailoring elective time to meet individual educational goals and to progress toward competence in the family medicine core outcomes.

CBME shifts the focus from a faculty-driven curriculum to a more learner-focused education based on agreed-upon outcomes and milestones.²¹ Electives serve dual roles in meeting learner needs by providing experiences to develop expertise for future practice and filling gaps in education due to unpredictable clinical experiences. Electives allow residents to meet individual educational needs without the stigma of formal remediation, acknowledging that competence develops at different rates and in different ways.²² Elective planning should be done by the resident and advisor, informed by performance and assessment data and input from the Clinical Competency Committee (CCC).^{23,24} The collaboration between resident and advisor, with CCC feedback, should create electives that serve as individualized experiences targeted at competency needs. Such tailored learning experiences align with CBME tenets as described in Van Melle's framework.²⁵

4. Programs should foster a culture of reflective feedback conversations.

CBME requires a multifaceted program of assessment with robust feedback as an integral component of the learning experience.²¹ Learners and faculty should develop reflective practices to foster a culture of feedback dialogue. Effective feedback involves building relationships between learner and faculty, exploring learner reactions, communicating an understanding of feedback received, and faculty guiding toward performance change.²⁶

For feedback conversations to be meaningful, they must be timely, based on direct observation, and specific.²³ However, stopping to provide feedback can disrupt clinical workflows, and most clinical areas are not ideal for sensitive and emotionally charged conversations. To support productive feedback conversations, programs should create regular, dedicated times within clinical experiences for faculty to provide formative feedback.²³ Faculty should receive formal training and direct observation to improve their feedback skills, and learners should be encouraged to seek out timely, specific feedback.²⁷

5. Resident assessment should occur frequently throughout the continuum of care using multiple modalities, with most assessments being grounded in direct observation.

Successful implementation of CBME requires a robust assessment process. Learners must have multiple opportunities to demonstrate competence through varied methods.^{28,29} Assessments should be frequent, and both learners and faculty should know how and when they will occur.³⁰ These assessments can include direct observation assessments, rotation evaluations, case-based discussions, in-training exams, chart audits, quality/safety metrics, and patient experience surveys. Direct observation, defined as the observation of trainees

during patient care and other clinical opportunities, is a key component of CBME and workplace-based assessments, providing real-time feedback and informing both improvement and advancement decisions for residents.³¹ Direct observation can vary in implementation, including observations of aspects of a clinical encounter and videotaping.³¹

6. Throughout training, a five-level entrustment framework should be used to assess residents on their progression toward entrustability.

The concept of entrustment links physician-specific activities with resident readiness to perform those activities without supervision.³² Entrustment of learners to perform such activities helps to link milestones to clinical practice.³³ The 15 family medicine core outcomes, defined by ABFM, are required for board eligibility. To sit for the ABFM board certification exam, residents will need to be assessed as entrustable in each core outcome.¹ While final entrustment is a discrete decision, a resident attains expanded autonomy in a stepwise fashion on the way to that final, discrete entrustment decision.³² Entrustment scales used during training provide faculty and residents with insight into progress toward core outcomes. Throughout training, an entrustment framework should be used to assess residents' progression toward readiness for independent practice.³⁴ Numerous entrustment scales exist, each sharing a clear identification of the type of supervision required for a resident entrusted at each level.³⁵ Although entrustment scales can range in defined levels, five-level scales are common and generic five-point scales have been developed for graduate medical education that allow for inclusion of the four levels of supervision identified by ACGME and the addition of entrustment to supervise others (Table 3).^{2,35} Each level requires a discrete decision, supported by a variety of assessments, which individually may not necessarily use an entrustment scale but are incorporated into a programmatic system of assessment.^{33,36} Whenever possible, data from learning management systems, electronic health records, and patient registries should be included.³⁷

TABLE 3. Generic Entrustability Scale Appropriate for GME

Level	Value
1	Resident able to participate as an observer only
2	Resident able to participate with direct supervision
3	Resident able to participate with indirect supervision
4	Resident able to participate without supervision
5	Resident able to supervise others

Abbreviation: GME, graduate medical education

7. Programs should provide residents updates on their progress toward achieving the family medicine core outcomes based on holistic resident review done by the Clinical Competency Committee at least every 6 months.

To effectively self-reflect, create ILPs, and cocreate their education in alignment with ABFM expectations, residents need access to multisource assessment data and an analysis of

their progress.³⁸

The CCC, required by the ACGME to review residents at least semiannually, is the logical body to track and document resident progress toward achieving the family medicine core outcomes.²⁴ To provide the necessary progress updates, the CCC must have ample data for synthesis to track and document resident progress as well as a robust system of programmatic assessment.³⁶ Data may include various assessment types, multiple assessors, and reflective components to evaluate self-learning and communication skills. A resident portfolio offers a platform to collect this data and discuss resident accomplishments, areas of growth, and progress toward graduation.^{37,38} Iterative ILPs can support the CCC in enhancing self-regulated learning and setting stretch goals.^{37,39,40} The semiannual progress update should include a summative assessment synthesizing all data, mapped to the core outcomes, to give a clear picture of progress and entrustment toward competence.^{37,39,40}

Intentionally developing a system of programmatic assessment that aggregates individual assessments and other data used to inform progress within a defined time frame supports the work of the CCC as well as encourages a learner-centered model of education.³⁶

8. Programs should provide dedicated time for structured ongoing faculty development in the implementation of CBME.

Medical educators have shifted from summative and time-based resident assessments to assessing residents on milestones and competencies.^{41–43} The next evolutionary step of assessment using the CBME framework requires faculty to adapt to new assessment strategies, coaching techniques, formative feedback, and resident engagement in self-reflective learning and goal development.^{41–43} Faculty development should introduce CBME, how to incorporate it into the residency curriculum, and how to teach, assess, and provide feedback within a CBME system.^{43,44} Faculty also should develop a shared mental model of resident competence to support the CCC in making consistent decisions and communicating program expectations to residents.^{45,46} Additionally, faculty training should focus on coaching, emphasizing a shift from performance to growth mindset for lifelong learning.⁴⁷

9. Programs should engage faculty and residents to create an assessment system that minimizes the assessment burden on faculty and residents.

Assessment burden has been documented as a significant barrier in the implementation of CBME for residents and faculty.^{48,49} Enhancing faculty understanding of CBME assessment, providing training in assessment tools, and using handheld assessment tools that fit into clinical workflows can help ease the burden. Programs should consider supplementing direct observation assessments with easily accessible methods, such as quality/safety metrics and chart audits, that limit disruptions to clinical workflows.⁴¹ Creating more reflective, low-stake assessments and involving residents in designing the assessment system have been suggested as ways to lessen

the assessment burden on residents.^{48–51}

10. Programs should provide faculty development in coaching skills to engage residents in self-regulated learning

When possible, programs should incorporate coaching into their overall advising and mentoring model.⁵² Coaching is different from advising and mentoring, as it is a collaborative effort that allows the learner to be the expert for goal-setting and change, while the coach acts as a guide and asks questions.^{53,54} Coaches work with learners by guiding review of assessments, assisting learners in identifying needs, overseeing plans to achieve competencies and goals, and helping learners be accountable. Coaching is a part of developing master adaptive learners.¹⁵ Because coaching involves an extensive, evolving dialogue over time, faculty should be given time for faculty development in coaching and time to work with each assigned resident to adapt to their changing educational needs.⁵⁵

11. Individualized learning plans should be created with all residents during the first 6 months of residency and updated quarterly throughout training, with interval coaching/advising to facilitate growth.

The new ACGME family medicine program requirements set expectations for each resident to have an ILP focused on their future practice goals.² Self-directed, lifelong adaptive learning has been recognized as a crucial competence for family physicians.⁵⁶ This includes identifying learning needs, finding resources to meet those needs, and evaluation of achievement.^{51,57,58} ILPs should be updated frequently, with learners reflecting on progress and updating goals.⁵⁹ Reflection on individual learning goals, guided by a faculty member/coach, can be useful to residents, program directors, and CCCs.^{40,58} Coaching and advising are integral components of residents' professional identity formation and development as lifelong learners.⁶⁰

12. Individualized learning plans should include specific, measurable, attainable, relevant, time-bound, inclusive, and equitable (SMART-IE) objectives that are aligned with the family medicine core outcomes.

Best practices in self-regulated learning involve resident reflection and development of ILPs that contain goals and detailed objectives.⁴¹ Residents should be involved in setting their own goals, with the understanding that assessment and feedback provide opportunities for growth and improvement. Objectives provide details on how a goal will be achieved.⁶¹ The SMART-IE structure should be used to form objectives that are specific, measurable, attainable, relevant, time-bound, inclusive, and equitable.

Recent medical education literature in the wake of Black Lives Matter and other race-conscious movements have stressed the importance of incorporating an equity and inclusion lens in medical training to prepare health care providers to address the unique and often disparate health needs of patient populations.⁶²

Over the past year, legislation that restricts diversity, equity, and inclusion training and programs has been intro-

duced at both the federal and state levels. Programs should follow their institutional policies, while educating residents to care for the diverse needs of communities as required in the family medicine program requirements.²

Recommendation for the Specialty With Rationale

13. Relevant stakeholders in family medicine graduate medical education should collaborate to develop and implement a mobile application to streamline the ability of faculty to provide real-time feedback and assessment of residents.

CBME is highly dependent on the direct observation of learners with point-of-care feedback.⁶³ Convenient, reliable, valid assessment tools are needed to document faculty observations in order to provide real-time assessment and feedback.⁶⁴ Faculty development on the use of a common assessment tool can contribute to a shared understanding of what is being measured and how rating scales are meant to be used.⁶³ Mobile applications for documentation of point of care—direct observation of residents in several specialties, including internal medicine and surgery—have been studied and found to be reliable methods of assessment, improving on previous barriers of efficiency and quality of other forms of assessment.^{63–66}

DISCUSSION AND CONCLUSIONS

In the United States, family medicine is one of the first disciplines in graduate medical education to institute competence requirements for both program accreditation and board eligibility.^{1,55} While the research in the United States on CBME theories and models is robust, limited data exist on implementation practices and results from implementation. These recommendations intend to provide programs with initial guidance on best practices in the transition toward implementing CBME. This is the first national CBME recommendation publication created specifically by experienced family physician educators who know the discipline and its strengths, challenges, and requirements. The recommendations can assist programs in implementing changes to meet ACGME and ABFM requirements and to gain institutional support for this new educational model, including adequate time for faculty and administrator development, and additional time needed for resident coaching, engagement, and assessment.

These recommendations have several limitations. Given that the charge to transition to CBME is relatively new to the discipline of family medicine, we identified a dearth of evidence-based scholarship in CBME. The recommendations, therefore, are primarily based on expert opinion using the best evidence available to date. Another limitation is the composition of the authoring task force. Although STFM attempted to choose members with a diversity of roles and experiences, the authors were self-identified volunteer experts. Another limitation was the noncomprehensive assessment of the literature used to form the recommendations. The authors relied on experts in the field to provide important articles but did not use identified methodology to survey the CBME literature.

The STFM CBME Task Force recognizes that implementing CBME will be a challenge for many programs and considers these recommendations an initial resource with future work focused on detailed implementation processes and results. The task force encourages programs to consider these recommendations in accordance with the needs of their individual communities, institutions, educators, and learners. Programs can consider implementing these recommendations at different stages, incorporating a variety of resources already in use or in development in their programs. To assist with implementation, the task force has developed a new toolkit at stfm.org/cbmetoolkit that includes many resources and specific tools to educate faculty, residents, and staff about CBME and possible implementation best practices for their programs. Examples in the toolkit include an ILP template, an assessment starter kit, and faculty development presentations.

The growth of CBME in family medicine will continue to introduce important questions for our discipline to answer. They include whether a CBME model produces physicians to meet societal needs and how time-variable training can be woven into a residency framework to reach the higher ideals of CBME. More immediately, future studies should focus on implementation patterns and results using these and other CBME resources to help guide next steps in CBME implementation within family medicine. We encourage future refinement of the recommendations by family medicine educators as they learn what is needed and effective.

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