July 2023

To: Family Medicine Leadership Consortium
From: Linda Montgomery, MD, and Mary Theobald, MBA
Re: National Guidelines for Implementation of CBME in Family Medicine

Request for FMLC:

Provide input on the attached draft guidelines.

Background

The ACGME Family Medicine Program Requirements that went into effect in July 2023 require changes in how education is delivered and assessed. The STFM CBME Task Force developed the attached (draft) guidelines to help family medicine residency programs implement and get institutional support for implementing ACGME requirements for competency-based education and assessment.

Following review by the STFM Board of Directors and the Family Medicine Leadership Consortium, these guidelines will be refined and published.

National Guidelines for Implementation of CBME in Family Medicine

Draft. More will be added about methodology. References will be formatted.

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The following guidelines were created by the Society of Teachers of Family Medicine (STFM) Competency Based Medical Education (CBME) Task Force, which includes family medicine faculty, program directors, a program coordinator, a resident, and an STFM staff member. The STFM CBME Task Force reviewed many seminal papers about CBME in family medicine and other specialties to formulate the recommendations presented. The task force also garnered ideas and input from family medicine leaders, faculty, coordinators, and residents, plus representatives from pediatrics, surgery, and Canadian family medicine at a CBME Summit in January 2023. Consensus was reached by the task force at a task force meeting in June 2023 and subsequent virtual communications.

These guidelines have been reviewed by leaders of the American Academy of Family Physicians (AAFP), the American Board of Family Medicine (ABFM), the American College of Osteopathic Family Physicians (ACOFP), the Association of Departments of Family Medicine (ADFM), the Association of Family Medicine Residency Directors (AFMRD), NAPCRG, and STFM. Note that this review is in progress.

These guidelines should be considered by family medicine residency programs, sponsoring institutions, universities, and the family medicine specialty organizations as they implement strategies to transition to competency based medical education.

1. Assessment should be frequent, across the continuum of care, and must include direct observation, along with a variety of other assessment methods.

As medical education shifts from a standardized, fixed-time training model, assessment methods need to shift to supporting a time-variable, fixed outcome model.[1] In this model, assessments should support the developmental process, using a combination of low and high-stakes assessments, based on multiple methods of assessment and should be work-based, to reflect the complexity of family medicine.[1-3] Assessments also need to be collected frequently, meeting minimum requirements for quality, but can range broadly in how the learner demonstrates this.[2-3]

1) Carracioa C, Lentz A, and Schumacher DJ. Dismantling fixed-time, variable outcome education: abandoning 'ready or not, here they come' is overdue. Perspectives Med Ed. 2023 12(1):68-67 https://doi.org/10.5334/pme.10
2) Fitzgerald JT, Burkhardt JC, Katsen SJ et al. Assessment challenges in competency-based education: A case study in health professions education. Med Teach. 38:5.482-490 doi10.3109/0142159X.2015.1047754
3) Norcini J, Anderson MB, Bollela V et al. 2018 Consensus framework for good assessment. Med Teach. 2018 40(11): 1102-1109

2. Residents should be assessed on their ability to meet core outcomes using a 5-level entrustment scale.[1,2]

The goal of residency education is for residents to achieve the competence necessary to enter practice as unsupervised physicians. During residency, residents "should move through graduated levels of supervision based on their ability to care for patients, and the intensity of supervision should be informed by valid workplace-based assessment." The ACGME Family Medicine Review Committee and the American Board of Family Medicine have set expectations for residency programs to assess residents on a set of Core Outcomes.[3] Assessment of and feedback to residents about their developing skills is a key component of competency-based education.[4] Entrustability scales "align assessment with clinical

practice."[5] "Aligning rating scales to the construct of clinical independence, or entrustability, may improve score reliability and assessor discrimination, reduce assessor disagreement, and be more cognitively aligned with the reality map of the assessors (i.e., resonate with raters' experiences of what they can assess)." [4] "Entrustability scales naturally focus feedback on a trainee's readiness for independent practice rather than on a trainee's deficiencies or his or her ranking with respect to peers."[6] A five-level entrustment framework has been widely recommended.[1]

1) Cate OT. A primer on entrustable professional activities. Korean J Med Educ. 2018 Mar;30(1):1-10. doi: 10.3946/kjme.2018.76. Epub 2018 Feb 28. PMID: 29510603; PMCID: PMC5840559.
2) Ten Cate O. Nuts and bolts of entrustable professional activities. J Grad Med Educ. 2013 Mar;5(1):157-8. doi: 10.4300/JGME-D-12-00380.1. PMID: 24404246; PMCID: PMC3613304.
3) https://www.annfammed.org/content/21/2/191
4) Kogan JR, Conforti LN, Iobst WF, Holmboe ES. Reconceptualizing variable rater assessments as both an educational and clinical care problem. Acad Med. 2014 May;89(5):721-7. doi: 10.1097/ACM.0000000000000221. PMID: 24667513.
5) Rekman, Janelle MD; Gofton, Wade MD, MEd; Dudek, Nancy MD, MEd; Gofton, Tyson PhD; Hamstra, Stanley J. PhD. Entrustability Scales: Outlining Their Usefulness for CompetencyBased Clinical Assessment. https://med.virginia.edu/faculty-affairs/wp-content/uploads/sites/458/2016/04/Materials-Ovid-Entrustability-Scales-Outlining-Their-Usefulness-for-Competency-Based-Clinical-Assessment..pdf
6) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10042560/

3. A common CBME assessment technology platform should be available for all programs to use for real-time assessment of and feedback to residents.

"Outcomes-based medical education is highly dependent on the observations and judgment of faculty."[1] Convenient, reliable, valid assessment tools can be used to document faculty observations in order to provide real-time assessment and feedback to residents.[2] There is an identified need to simplify frontline assessment to be more intuitive for assessors to complete. This could be done "by designing collection forms that use task-based components and that incorporate language that aligns with how supervisors make everyday judgments of learners."[3] Implementation of and faculty development on the use of a common, validated assessment tool can contribute to a mutual understanding among faculty of what is important to assess and document.[1]

Using a common platform for data collection that provides opportunities for assessment improvement by both the specialty and individual programs. "Programs of assessment potentially allow residencies or fellowships to strengthen the rigor and accuracy of trainee assessment by allowing for more perspectives and voices within the data, for larger population-level analyses of achievement to unveil systemic biases, and for program evaluation to identify gaps in training programs."[3]

1) Holmboe, Eric S. MD; Batalden, Paul MD. Achieving the Desired Transformation: Thoughts on Next Steps for Outcomes-Based Medical Education. Academic Medicine 90(9):p 1215-1223, September 2015. | DOI: 10.1097/ACM.0000000000000779
2) https://www.simpl.org/simpl
3) Chan TM, Sebok-Syer SS, Cheung WJ, Pusic M, Stehman C, Gottlieb M. Workplace-based Assessment Data in Emergency Medicine: A Scoping Review of the Literature. AEM Educ Train. 2020 Nov 5;5(3):e10544. doi: 10.1002/aet2.10544. PMID: 34099992; PMCID: PMC8166307/

4. Programs should mitigate bias in resident assessment by using assessment tools that focus on specific, observable learner skills and also by providing faculty/resident development in the use of valid, reliable assessment tools.

"Bias may result in differences in assessment at all stages of medical education." A goal of CBME is to eliminate or reduce bias in assessment by focusing on discrete behaviors and the desired outcomes of learning. CBME assessment centers on observation and rating of specific skills, within frameworks.[1]

1) Weber DE, Kinnear B, Kelleher M *et al.* Effect of resident and assessor gender on entrustment-based observational assessment in an internal medicine residency program [version 1; peer review: 2 approved with reservations]. MedEdPublish 2021, 11:2 (https://doi.org/10.12688/mep.17410.1)

5. Clinical Competency Committees should make summative entrustment decisions based on information from multiple sources and raters.[1]

Clinical competency committees should strive to deliver "defensible decisions, accurate reporting on trainee performance to the ACGME, and useful formative learning plans for trainees."[2] Having multiple sources assess residents results in a variety of perspectives that has "potential to provide richer data about a resident's performance." Decisions should be made collectively after clinical competency committees review a resident's entire portfolio.[3] Whenever possible, data from learning management systems, EHRs, and patient registries, should be incorporated.[4]

1) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4857524/
2) https://meridian.allenpress.com/jgme/article/13/2s/59/464377/The-Science-of-Effective-Group-Process-Lessons-for
3) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5734320/
4) https://macyfoundation.org/assets/reports/publications/macy_monograph_2017_final.pdf

6. Programs must provide dedicated time for structured, ongoing faculty development in and implementation of resident assessment, competency based medical education, coaching, and advising.

Traditional models for medical educators are focused on summative assessment of the learner, and acquisition of medical knowledge by the learner.[1] With the shift to competency based medical education, faculty will require training in new teaching techniques across novel domains of medical practice and new assessment strategies.[2-3] The basics of faculty development should include an introduction to CBME, information as to how it is being incorporated into residency curriculum, and guidance on methods of learner assessments.[1] Faculty development should also include the development of a shared mental model of resident competence, as this will support the CCC in making more consistent decisions and communicating with residents more clearly the program's expectations.[6-7] The Coalition for Physician Accountability UGRC Review Committee recommends that targeted coaching by qualified educators begin in undergraduate medical education and continue during graduate medical education, focused on professional identity formation and moving from a performance to a growth mindset for effective lifelong learning. Educators should be astute to the needs of the learner and be equipped to provide assistance to all backgrounds."[8]

1) Soleas E, Dagnone D, Stockley D, Garton K, van Wylick R. Developing Academic Advisors and Competence Committees members: A community approach to developing CBME faculty leaders. Can Med Educ J. 2020 Mar 16;11(1):e46-e56. doi: 10.36834/cmej.68181. PMID: 32215142; PMCID: PMC7082482.
2) Dath D, Iobst W, Collaborators IC. The importance of faculty development in the transition to competency-based medical education. Med Teach. 2010;32(8):683-686.
3) Sirianni G, Walcott S and Glover Takahashi S. Collective Wisdom in Faculty Development for Competency-Based Medical Education: A Needs Assessment and Survey [version 1]. MedEdPublish 2021, **10**:152 (https://doi.org/10.15694/mep.2021.000152.1)
4) Yunyongying, Pete, et al. "The Next Accreditation System: Faculty Development Needs in Competency based Medical Education." *SGIM FORUM*. Vol. 37. No. 5. 2014.
5) https://www.acgme.org/milestones/resources/clinician-educator-milestones/
6) Holtrop JS, Scherer LD, Matlock DD, et al. The Importance of Mental Models in Implementation Science. Front Public Health. 2021;9:680316
7) Edgar L, Jones MD Jr, Harsy B, et al. Better Decision-Making: Shared Mental Models and the Clinical Competency Committee. J Grad Med Ed. April 2021 Supplement.
8) Brydges R, Boyd VA, Tavares W, Ginsburg S, Kuper A, Anderson M, Stroud L. Assumptions About Competency-Based Medical Education and the State of the Underlying Evidence: A Critical Narrative Review. Acad Med. 2021 Feb 1;96(2):296-306. doi: 10.1097/ACM.0000000000003781. PMID: 33031117.

7. Programs must create learning environments that support learners in the development of the characteristics of a master adaptive learner (MAL) – curiosity, motivation, growth mindset, and resilience – with the use of individualized learner coaching, learner reflection, and faculty development.

The MAL model describes the process of developing the skills for lifelong, self-regulated, self-directed learning. This process has four continuous, integrative phases (Planning, Learning, Assessing, Adjusting) that are impacted by learner characteristics (Curiosity, Motivation, Growth mindset, Resilience) and supported by coaching[1]. It is important that learning environments support residents in their MAL journey and programs should employ strategies that encourage the use of metacognition and autonomous motivation.[2-3] Building the capacity to remain in a growth mindset is a foundational skill as it supports both mastery learning and deliberate practice[3]. Faculty should role model the same MAL characteristics, while promoting a learning environment that is adaptable and flexible to the learner's needs.[4-6]

1) Cutrer WB, Pusic MV, Gruppen LD et al. The Master Adaptive Learner. The AMA MedEd Innovation Series. 2020. Elsevier.
2) Auerbach L, Santen SA, Cutrer WB et al. The educator's experience: Learning environments that support the master adaptive learner. Med Teach. 2020;42(11):1270-1274.
3) Richardson D, Kinnear B, Hauer K, et al. Growth mindset in competency-based medical education. Med Teach. 2021;43(7):751-757
4) Kusurkar RA, Orsini C, Somra S et al. The effect of assessments on student motivation for learning and its outcomes in health professions education; a review and realist synthesis. Acad med. DOI: 10.1097/ACM.0000000000005263
5) Edje L and Price DW. Training Future Family Physicians to Become Master Adaptive Learners. Fam Med. 2021;53(7):599-66.
6) Cutrer WB, Miller BM, Pusic MV et al. Fostering the Development of Master Adaptive Learners: A Conceptual Model to Guide Skill Acquisition in Medical Education. Acad Med. 2017;92:70-75.

8. Individualized learning plans should be created by residents during the first six months of residency and reviewed quarterly throughout residency, with interval coaching to facilitate growth.

Graduate medical education has been shifting towards the need for physicians to develop learning skills that promote parsing and acquiring information as clinical situations present themselves[1]. As part of this transition, self-directed learning has been recognized as a crucial competence that supports this need[2-3]. It includes identifying learning needs, finding resources to meet those needs, and evaluation of their achievement[3-7]. An ACGME executive summary on ILPs supports the need for individualized learning plans to be completed by all residents as a method of demonstrating professional competence[7]. Guidelines provided by the executive summary include reflection of strengths and growth edges, generation of goals based on the core competencies, and explicit plans to achieve these goals[7]. Continuous reflection of individual learning plans with the resident and a faculty mentor will be a vital part of integration and assessment.[7-8] Coaching and advising are integral components of residents' professional identity formation and development as a lifelong learner.[9]

1) Parsell G Contract learning, clinical learning, and clinicians. Postgrad Med J. 1996; 72:284-289
2) Stacy Potts, Grant S. Hoekzema, Colleen K. Cagno, Eileen Anthony; Shaping GME Through Scenario-Based Strategic Planning: The Future of Family Medicine Residency Training. *J Grad Med Educ* 1 August 2022; 14 (4): 499–504. doi: https://doi.org/10.4300/JGME-D-22-00505.1
3) Jocelyn Lockyer, Carol Carraccio, Ming-Ka Chan, Danielle Hart, Sydney Smee, Claire Touchie, Eric S. Holmboe, Jason R. Frank & on behalf of the ICBME Collaborators (2017) Core principles of assessment in competency-based medical education, Medical Teacher, 39:6, 609-616, DOI: 10.1080/0142159X.2017.1315082
4) William F. Iobst, Jonathan Sherbino, Olle Ten Cate, Denyse L. Richardson, Deepak Dath, Susan R. Swing, Peter Harris, Rani Mungroo, Eric S. Holmboe, Jason R. Frank & for the International CBME Collaborators (2010) Competency-based medical education in postgraduate medical education, Medical Teacher, 32:8, 651-656, DOI: 10.3109/0142159X.2010.500709

5) McDermott MM, Curry RH et al. Use of learning contracts in an office-based primary care clerkship. *Med Educ*.1999;33:374-381.
6) Parsell G. Handbooks, learning contracts, and senior house officers: a collaborative enterprise. *Postgrad Med J*.1997;73:395-398.
7) Accreditation Council for Graduate Medical Education (ACGME). https://www.acgme.org/globalassets/pdfs/milestones/guidebooks/individual-learning-plans.pdf
8) Accreditation Council for Graduate Medical Education (ACGME). https://www.acgme.org/globalassets/PDFs/Milestones/Guidebooks/AssessmentGuidebook.pdf
9) https://physicianaccountability.org/wp-content/uploads/2021/08/UGRC-Coalition-Report-FINAL.pdf

9. Individualized learning plans should include Specific, Measurable, Attainable, Relevant and Time bound (SMART) objectives that can be mapped to the Family Medicine Core Outcomes.

Competency-based education is built on the understanding that the "practice is the curriculum."[1] "It is in the practice—taking care of patients over time in continuity practice…—that critical attitudes and habits are developed."[1] Best practices in self-directed learning involve resident reflection and the development of action plans.[2] SMART objectives are "specific, measurable, achievable, relevant, and time-bound. SMART objectives provide the details for how a group or organization will achieve a goal."[3] Residents should know and be involved in setting "their competency targets and view assessment and feedback as welcome opportunities to receive critical coaching that allows them to progress toward their goals.[4]

1) Neutze D, Hodge B, Steinbacher E, Carter C, Donahue KE, Carek PJ. The Practice Is the Curriculum. Fam Med. 2021;53(7):567-574. https://doi.org/10.22454/FamMed.2021.154874.
2) https://www.acgme.org/globalassets/PDFs/Milestones/Guidebooks/AssessmentGuidebook.pdf, p. 19.
3) https://www.health.state.mn.us/communities/practice/resources/phqitoolbox/objectives.html#:~:text=A%20SMART%20objective%20is%20one,organization%20will%20achieve%20a%20goal.
4) https://macyfoundation.org/assets/reports/publications/macy_monograph_2017_final.pdf

10. Residents should incorporate justice, equity, diversity and inclusion (JEDI) principles into their individualized learning plans.

The International Competency-Based Medical Education (ICBME) Collaborators presented a charter for CBME at their 2013 summit,[1] in which they stressed the importance of medical education based on the health needs of the populations served. In summary, rather than following traditional Flexnerian educational practices of 2 years basic science immersion, followed by 2 years clinical experience, the ICBME collaborators imagined CBME users to "specify the health problems being addressed, identify the requisite competencies required of graduates for health-system performance, tailor curriculum to achieve competencies, then assess achievements and shortfalls." By re-centering learning from formulated blueprints to societal and learner needs, CBME promises greater accountability, flexibility, and learner-centeredness. Furthermore, by shifting the focus to understanding patient needs rather than predetermined systems expectations, CBME promises to make health care training safer and more effective for patients.

Recent medical education literature in the wake of Black Lives Matter and other racial-conscious movements have stressed the importance of incorporating a Justice, Equity, Diversity, Inclusion (JEDI) and Anti-Oppression lens in medical training to prepare healthcare providers to address the unique and often disparate health needs of their patient population.[2] CBME plays a vital role in understanding health needs and disparities in our diverse national and local patient populations, while also empowering both learners and educators to identify the requisite competencies and customize their curricula to achieve said competencies in JEDI and anti-oppression.

1) Advancing Competency-Based Medical Education: A Charter for... : Academic Medicine (lww.com)
2) Diversity Is Not Enough: Advancing a Framework for Antiracism in Medical Education : Academic Medicine (lww.com)

11. Each resident should be assigned a faculty coach/advisor. The coach can be a core faculty member or a trusted individual outside of the program. Each coach should be provided with the protected time to work individually with each resident assigned to them.

"The amount of assessment data collected about each resident, and hence the amount each resident needs to review, is increasing." Creating a longitudinal, educational partnership between a clinical faculty member and resident can increase residents' understanding of their progression toward competence. Coaching should be separated from formal assessment responsibilities.[1] an academic coach is defined as: "a person assigned to facilitate learners achieving their fullest potential. 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 more than offering advice.[3-4] Coaches work with learners by evaluating performance via review of objective assessments, assisting the learner to identify needs and create a plan to achieve these, and helping the learner to be accountable. Coaches help learners improve their own self-monitoring, while modeling the idea that coaching will likely benefit them throughout their career."[2] When possible, coaches should not be direct supervisors, to minimize bias and conflict. Because coaching involves an extensive, evolving dialogue over time, coaches should be given protected time and faculty development in coaching to adapt to the needs of each resident[5-6].

1) https://link.springer.com/article/10.1007/s40596-022-01628-x
2) Deiorio NM, Skye E, Sheu L. Introduction and definition of academic coaching. In: Coaching in Medical Education. A faculty Handbook. American Medical Association; 2017:chap 1.
3) Lovell B. What do we know about coaching in medical education? A literature review. Med Educ. 2018;52:376-390
4) Reynolds AK. Academic coaching for learners in medical education: Twelve tips for the learning specialist. Med Teach. 2020;42(6):616-621
5) Baenzinger K, Chan M, and Colman S. Coaching in Postgraduate competency-based Medical Education: A Qualitative Exploration of Three Models. Acad Psych. 2023;47:10-17
6) Wolff M, Deioro NM, Juve AM, et al. Beyond advising and mentoring: Competencies for coaching in medical education. Med Teach. 2021;43(10):1210-1213

12. CBME should be implemented using a framework that facilitates bidirectional feedback between assessor and learner, but does not put undue burden on the learner as the driver of formal assessment completion.

A recent qualitative study of CBME implementation among Canadian surgical and anesthesia residents identified nine learner assessment burdens that arose with implementation of CBME including missed opportunities for self-regulated learning, lack of situational control, comparative assessment, lack of trust, constraints on time and resources, disconnects between teachers and learners, lack of clarity, unrealistic expectations, and limitations of assessment forms for providing meaningful feedback.[1] Interviewed residents stressed the difficulty of balancing assessment burden with clinical and other administrative tasks, while also indicating lack of trust with the competence committees that CBME ultimately was for their benefit. Additionally, a lack of autonomy and self-perceived unrealistic expectations further compounded learner's anxieties and mistrust in competency committees.

Family medicine residents are already facing enormous clinical and administrative burdens, exacerbated by the COVID-19 pandemic, racial movements, and environmental disasters over the past several years.[2] CBME, in its design, implementation, and assessment, has the potential of increasing the burden on residents who may already feel stretched thin. Our task force should therefore stress the importance of resident participation in program-level competency committees, dedicated resident training on CBME technologies used for assessment, expanded mental health support for residents who may already be burnt out, anxious, or depressed with residency workloads, and open, humble communication lines for residents to address and re-assess their own objectives and learning goals.

1) "The Most Crushing Thing": Understanding Resident Assessment Burden in a Competency-Based Curriculum | Journal of Graduate Medical Education (allenpress.com)
2) The impacts of the COVID-19 pandemic on the mental health and residency training of family medicine residents: findings from a nationwide cross-sectional survey in Turkey | BMC Primary Care | Full Text (biomedcentral.com)

13. At least every 6 months, programs should provide a progress report to each resident about their progress toward the Family Medicine Core Outcomes, including mapped ILP-based SMART objectives.
Beginning in June 2024, family medicine program directors will be required to attest to the American Board of Family Medicine that each resident has finished their residency and that the resident is competent in each of the core outcomes, which represent specific components of readiness for autonomous practice.[1] This attestation will be a component of the certification process.

1) https://www.jabfm.org/content/early/2023/06/30/jabfm.2023.230201R0

14. Programs should tailor elective time to facilitate residents' progress toward Family Medicine Core Outcomes when needed, as determined by the programs' Clinical Competency Committee.
Programs must utilize elective time as part of individualized learning plans to advance progress toward the Outcomes in pursuit of the development of Master Adaptive Learners. An elective is any rotation that is not required of everyone in the program.

1) https://www.acgme.org/specialties/family-medicine/program-requirements-and-faqs-and-applications/

15. Program administrators/coordinators should be given adequate time to implement and manage tracking systems for competency based medical education assessment.
Incorporating administrators/coordinators into the process of tracking CBME outcomes will be key to the success of monitoring resident progression toward graduation and independent practice.

Administrators/coordinators are mentors and a crucial support system during the learning that goes on in residency. Incorporating meetings with the administrator/coordinator to discuss CBME and the goals needed to achieve graduation status should become part of residency culture.

16. Clinical competency committees should comprise members with "with diverse backgrounds, genders, race/ethnicity, experiences, and workplace roles."[1]
"Diversity of opinion promotes dissent and invites varied opinions, which help the group consider multiple decision options and avoid premature closure."[1]

1) https://meridian.allenpress.com/jgme/article/13/2s/59/464377/The-Science-of-Effective-Group-Process-Lessons-for