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# Why Competency-Based Continuing Education Has Not Scaled: A Structural Analysis of Adoption Barriers in Accredited CE

Joanna Nolte
Renew Now CE

Competency-based education (CBE) has gained traction in higher education, yet adoption in continuing education (CE) for licensed health professionals remains limited despite sustained advocacy. The factors driving this gap have not been systematically quantified. This analysis asks whether the limited adoption of outcomes-based CE (OB-CE) at provider scale reflects structural constraints rather than provider resistance, specifically whether statutory time-based credit requirements create a barrier that advocacy cannot overcome, and whether OB-CE's human verification model presents a workforce demand incompatible with accredited CE at scale. Publicly available accreditation data were used to classify 443 American Nurses Credentialing Center (ANCC) providers and 187 Joint Accreditation providers by type. Each category was assessed for the likelihood that learners are subject to statutory time-based credit requirements as a condition of license renewal. An estimated 85–90% of providers in both datasets serve learner populations with statutory time-based credit requirements. Providers in these categories cannot decouple from time-based credit without eliminating the utility of their services. At the ecosystem level, implementing OB-CE's required human verification for 15.5 million learners would require approximately 3,886 dedicated full-time nurse planners, positions that do not exist. Competency-based CE frameworks requiring full decoupling from time face a structural adoption ceiling set by statute, not provider willingness. Bridging approaches integrating competency verification within existing time-based infrastructure may offer a more viable path to scaled adoption.

*Keywords:* competency-based education, continuing education, contact hours, outcomes-based CE, accreditation, implementation barriers, structural determinants, time-based credit, AI in assessment

The author has no known conflict of interest to disclose. Correspondence concerning this article should be addressed to Joanna Nolte, MSN, APRN, ANP-BC, FNP-BC. Email: joanna@renewnowce.com

The philosophical case for measuring learning by demonstrated competency rather than elapsed time is well established in the health professions education literature. This principle has driven substantial reform in graduate medical education, where entrustable professional activities (EPAs) and competency frameworks have been implemented across residency programs (Kitto et al., 2024). It has also informed higher education reform, with institutions adopting competency-based degree programs that allow learners to progress on mastery rather than seat time (Kelchen, 2015; Nodine, 2016).

In continuing education for licensed health professionals, the reform landscape looks notably different. Despite parallel efforts by major accreditation bodies to promote outcomes-based measurement, adoption at commercial provider scale remains limited. ANCC introduced its Outcomes-Based CE (OB-CE) Model in 2019, offering a framework for awarding CE credit based on demonstrated competency in addition to accepting contact hours (Graebe, 2019). IACET published Guidelines for Competency-Based Learning in 2024, describing a framework that emphasizes mastery of competencies and is not time-based, while simultaneously stating its intention to maintain the existing CEU-based standard due to the broad recognition of that standard in statute, rule, regulation, and policy (IACET, 2024). Both organizations have acknowledged the need for change while maintaining existing time-based infrastructure.

Six years after OB-CE was introduced, systematic data on commercial-scale adoption do not exist. The ANCC 2023 Annual Impact Report, the organization's primary public reporting document, reported 91,290 accredited activities and 526,120 nursing contact hours but contained no data on OB-CE Level Credits awarded, activities utilizing the OB-CE model, or providers implementing outcomes-based credentialing (ANCC, 2023). The omission of OB-CE data from the annual report, four years after the OB-CE Model Manual was published, is consistent with minimal adoption at the provider level. Notably, the ANCC Nursing Activity Reporting System (NARS), through which providers submit annual activity data, treats OB-CE credit reporting as optional, indicating that the field need not be completed by providers that did not use OB-CE (ANCC, n.d.). Contact hours, by contrast, are a required reporting field.

This article examines that gap: the structural relationship between statutory time-based credit requirements and the operational reality facing the majority of accredited CE providers who cannot decouple from them. The analysis draws on implementation science frameworks that distinguish between cultural or awareness barriers, which respond to education and advocacy, and determinant barriers, which are structural constraints embedded in systems that providers do not control (Nilsen, 2015).

The findings presented here are estimates derived from publicly available data and carry methodological limitations described in detail in the methods section. They are offered not as definitive findings but as a preliminary quantification of a constraint that has been acknowledged in the literature but not systematically analyzed.

## Defining the Operational Features of Competency-Based and Time-Based Credit

Because this analysis turns on the operational incompatibility between two credentialing systems, it is worth defining the features that distinguish them before examining adoption. Competency-based education in an accreditation context is characterized by three operational elements. First, assessment requirements: credit is contingent on a learner demonstrating a defined competency rather than on participation, which requires an assessment method capable of producing evidence of mastery. Under the ANCC OB-CE Model, verification at higher credit levels relies on direct human assessment through observation, return demonstration, dialogue, or portfolio review, with self-report explicitly excluded as a basis for credit (ANCC, 2019). Second, decision-rules for mastery: a competency-based activity must specify, in advance, the performance threshold a learner must reach and the criteria by which a planner judges that the threshold has been met, such that credit is awarded on a pass/attain determination rather than on completion. Third, operational definitions of credit: in the competency-based model, the unit of credit is the verified competency itself—an OB-CE Level Credit, which by design cannot be converted to or from a contact hour (ANCC, 2019).

The time-based model that dominates accredited CE operationalizes credit differently. Here the unit of credit is the contact hour (or, under the IACET standard, the CEU), defined by elapsed instructional time rather than demonstrated outcome. A contact hour represents a fixed quantum of structured learning activity, and assessment, where present, typically functions as a participation or comprehension check (such as a post-test) rather than as a mastery gate. Credit is awarded for completion of the time-defined activity. This is the unit that state licensing statutes recognize, and it is the operational definition against which the competency-based unit must compete. The structural distinction relevant to this analysis is therefore not philosophical but definitional: the two systems award fundamentally different units of credit, measured by different instruments, on the basis of different decision-rules—which is precisely why a provider cannot satisfy both within a single operational pathway without building parallel infrastructure.

## The Two-Track Problem in Accredited CE

Accreditation bodies have responded to the competency-based movement by creating parallel credentialing systems. ANCC's OB-CE framework requires full decoupling from time-based credit: an OB-CE Level Credit cannot be converted to a contact hour, and a contact hour cannot generate an OB-CE Level Credit (ANCC, 2019). IACET's 2024 Guidelines for Competency-Based Learning similarly announce a separate accreditation program for competency-based learning programs, running alongside the existing CEU standard.

The practical consequence of this design, however, is that providers who wish to offer competency-based CE must build and maintain a second, parallel operational system while continuing to operate the first. Whether any provider can actually

sustain that depends on a simple question: do their learners need the contact hour regardless of what else accompanies it?

## Methods and Classification Approach

**The Structural Barrier: A Quantitative Analysis**

Two publicly available datasets were used. The first is the ANCC directory of accredited organizations, which lists providers holding ANCC accreditation in Nursing Continuing Professional Development. The second is Joint Accreditation's published income and provider data for 2024, which categorizes jointly accredited organizations by type.

ANCC-accredited organizations classified as 'Provider' (excluding Practice Transition Accreditation Programs, Approvers, and Advanced Practice Provider Fellowship programs) were categorized by organizational type. Categorization relied primarily on organizational name, supplemented by publicly available information about an organization's primary function where the name alone was ambiguous. Categories included commercial CE and education companies; professional and specialty associations; hospital and health systems; university and academic institutions; government and public health organizations; and unclassified or other.

Each category was then assessed for whether the learner populations characteristically served by that provider type are subject to statutory requirements for time-based credit as a condition of professional license renewal.

This classification was performed by the author using organizational name as the primary sorting criterion, supplemented by publicly available organizational descriptions. It does not reflect self-reported data from the organizations, formal survey data, or validation by independent reviewers. Classification certainty varies substantially by category; cells in the tables below note where estimates carry meaningful uncertainty. The 85–90% summary estimate reflects a range intended to account for this uncertainty, not a precise calculated value. This analysis should be interpreted as a structured preliminary estimate rather than an empirically validated finding, and replication using primary data collection methods is warranted.

**Findings: ANCC-Accredited Providers**

Of 444 ANCC-accredited provider organizations in the United States, the estimated distribution by organizational type and statutory dependency on time-based credit is presented in Table 1.

**Table 1**
*Estimated Distribution of ANCC-Accredited Providers by Organizational Type and Dependency on Time-Based Credit*

| Provider Type | Count | % of Total | Tied to Time-Based Credit? |
|---|---|---|---|
| Commercial CE / education companies | 126 | 28.4 | Yes. These organizations exist to serve learners completing CE for license renewal. Contact hours are the core deliverable. |
| Professional / specialty associations | 66 | 14.9 | Yes. Members complete CE through their association to satisfy state board renewal requirements. |
| Hospital / health systems | 121 | 27.3 | Predominantly yes. Licensed staff require contact hours for renewal under state law, though some internal training may fall outside statutory mandates. |
| University / academic institutions | 68 | 15.3 | Partially. External CE offerings directed at licensed professionals require hours. Internal academic programs may not. |
| Government / public health | 4 | 0.9 | Variable. Excluded from the primary estimate. |
| Other / unclassified | 58 | 13.1 | Predominantly yes, based on available organizational profiles. This category carries the highest classification uncertainty. |

*Note.* Provider type was determined by the author using organizational name and publicly available information about primary organizational function. It was not validated through survey, self-report, or independent review. See the Limitations section for further discussion.

Commercial CE providers and professional associations (192 organizations, 43.3%) are definitively tied to time-based credit. These organizations exist to serve learners who need contact hours for license renewal. This portion of the estimate carries the highest classification confidence.

Hospital and health systems (121 organizations, 27.3%) are classified as predominantly hours dependent. Licensed nursing and allied health staff at these organizations are subject to state board renewal requirements regardless of how internal education is structured. The proportion of any given hospital system's CE activities that fall under statutory hours requirements versus non-credentialed internal training is not determinable from public data.

University and academic institutions (68 organizations, 15.3%) are treated as partially hours-dependent, reflecting only their external CE offerings directed at licensed professionals.

Combined, an estimated 85–90% of ANCC-accredited providers serve learners who require time-based credit by statute. The range reflects classification uncertainty in the hospital, academic, and unclassified categories.

**Findings: Joint Accreditation Providers**

The Joint Accreditation ecosystem presents a parallel picture at larger scale. In 2024, 187 jointly accredited provider organizations delivered over 123,000 accredited activities and recorded 34 million learner interactions (Joint Accreditation, 2024; Murry et al., 2026). The distribution by provider type, shown in Table 2, reveals a similar structural dependency on time-based credit.

**Table 2**

*Estimated Distribution of Joint Accreditation Providers by Organizational Type and Dependency on Time-Based Credit*

| Provider Type | Count | % of Total | Tied to Time-Based Credit? |
|---|---|---|---|
| Publishing / education companies | 57 | 30.5 | Yes. Commercial education organizations are structurally dependent on the credit-hour model. |
| Professional membership organizations | 21 | 11.2 | Yes. Members renew licenses through association-provided CE. |
| Hospital / healthcare delivery systems | 49 | 26.2 | Predominantly yes. Licensed staff require hours for renewal under state law. |
| School of medicine / health sciences | 36 | 19.3 | Partially. External CE offerings require hours. Internal academic programs may not. |
| Voluntary health organizations | 9 | 4.8 | Variable. Insufficient public data to classify uniformly. |
| Government / military | 8 | 4.3 | Variable. Excluded from primary estimate. |
| Other | 7 | 3.7 | Variable. Excluded from primary estimate. |

*Note.* Counts are drawn from the 2024 Joint Accreditation data report (Joint Accreditation, 2024). Classification of dependency on time-based credit was performed by the author and was not independently validated.

Publishing and education companies combined with professional membership organizations (78 providers, 41.7%) are classified as entirely dependent on the time-based credit model. Adding hospital and healthcare delivery systems raises the total to 127 providers (67.9%). When schools of medicine and health sciences are included for their external CE function, the estimated proportion of the Joint Accreditation ecosystem structurally tied to time-based credit reaches approximately 80–90%, consistent with the ANCC analysis.

This consistency across two independently derived estimates provides additional support for the overall finding, though both estimates rest on the same classification assumptions and therefore do not constitute independent replication.

**Why This Constraint Is Not Temporary**

State board statutes requiring contact hours or CEUs for license renewal are codified in administrative code across all 50 states, the District of Columbia, and U.S. territories. These requirements were established over decades through individual state legislative and regulatory processes. Modifying them would require coordinated legislative action across multiple jurisdictions, a process measured in years to decades. Accreditation bodies can change their own standards, but they do not control state licensing law. This is what makes it a structural barrier rather than a cultural or awareness problem: the constraint sits in systems that providers and accreditation bodies do not control, and no amount of education or advocacy alone can change it (Nilsen, 2015).

Research on the adoption of other healthcare innovations illustrates the same pattern. Studies of competency-based curriculum adoption in health professional education have found that institutional and structural factors, not content quality or faculty awareness, are the primary barriers to scaling beyond early adopters (Lee et al., 2021). Similarly, literature on the adoption of clinical decision support systems in electronic health records has identified structural constraints such as workflow incompatibility and system-level incentive misalignment as more significant barriers than individual user resistance (Jung et al., 2020). In both cases, adoption efforts that treated the barrier as primarily cultural or informational had limited success until structural factors were addressed.

**The Operational Cost of Running Parallel Systems**

For an accredited CE provider to offer pure competency-based CE alongside existing time-based offerings, the following operational investments would typically be required:

- Continuing maintenance of the existing contact hour infrastructure, including course development to accreditation criteria, time calculation documentation, and certificate generation, because learners still need hours to satisfy board requirements.
- Construction of a separate competency-based assessment and documentation system meeting OB-CE or competency-based learning standards, including competency mapping, assessment design, and learner record management.

- Qualified personnel for both systems. ANCC accreditation requires nurse planner involvement in activity development. A separate OB-CE activity requires its own unique planning process.
- Dual quality assurance, dual documentation, and dual reporting structures.
- Pricing that reflects the cost of both systems, in a market where learners have no financial incentive to pay a premium for a competency credential that their state board does not accept in lieu of hours.

The result is increased operational burden without a corresponding revenue pathway. This is a financial barrier, not a quality or awareness problem. It does not indicate that providers are indifferent to incorporating competency outcomes; rather, it reveals the costs required to offer this parallel system. Implementation science distinguishes between barriers that respond to knowledge or attitudinal interventions and barriers that require structural redesign to address (Nilsen, 2015). The parallel-systems cost structure falls in the second category.

The operational cost analysis above addresses infrastructure and documentation. But there is a more fundamental constraint that has not been examined in the literature: the human labor required to implement OB-CE verification at the volume the ANCC ecosystem actually serves.

The ANCC 2023 Annual Impact Report provides the relevant scale figures: 444 accredited providers delivered 91,290 accredited activities to 15,542,591 nurses, awarding 526,120 nursing contact hours (ANCC, 2023). That translates to an average of approximately 206 activities and 35,000 learners per provider per year.

The OB-CE Model Manual specifies that competency verification at Levels 3 through 5 requires direct human assessment. Self-report is not accepted. The nurse planner must verify that the learner has demonstrated competency through methods such as observation, dialogue, return demonstration, or portfolio review (ANCC, 2019). This is by design: the human verification layer is what gives OB-CE its measurement integrity. It is also what makes it unscalable at the volumes the accredited CE system actually operates.

Consider a conservative estimate. If meaningful human competency verification requires 30 minutes per learner (accounting for the assessment interaction, documentation, and any follow-up), a single full-time nurse planner working 8-hour days across 250 working days per year could verify approximately 4,000 learners annually.

At the ecosystem level, verifying 15.5 million learners at 30 minutes each would require approximately 3,886 dedicated full-time nurse planners doing nothing but competency assessment. These are positions that do not currently exist anywhere in the accredited CE infrastructure.

At the provider level, the average accredited provider serving 35,000 learners per year would need approximately nine dedicated full-time nurse planners assigned exclusively to competency verification. For smaller commercial providers, this may represent more nurse planner FTEs than their entire existing staff. For larger providers serving hundreds of thousands of learners, the numbers scale proportionally.

Even at an aggressively optimistic estimate of 15 minutes per learner, barely sufficient for a meaningful competency dialogue, the ecosystem would still require approximately 1,943 dedicated full-time nurse planners.

The accredited CE ecosystem was not built to support a human verification workforce at this scale. These roles do not exist. Providers are not hiring for them. And the learners purchasing CE for license renewal are not paying prices that could sustain them. The economics make clear why OB-CE verification has not been implemented at commercial scale: the human labor model that gives the framework its integrity is the same feature that prevents its adoption.

This is the structural paradox at the center of the OB-CE adoption gap. The framework's quality depends on human verification. Human verification cannot scale to 15.5 million learners. And the framework cannot accept the alternative (self-report or automated assessment) without undermining the measurement integrity it was designed to protect.

**A Compounding Factor: AI-Driven Assessment Vulnerability**

The structural barrier described above has existed since competency-based CE frameworks were introduced. A more recent development has increased the urgency of addressing assessment quality in the time-based CE model specifically.

AI-driven tools capable of controlling web browsers and executing multi-step tasks within web applications have become substantially more capable and accessible over the past two years. Tools of this type are capable, in principle, of navigating an online CE course, responding to post-test questions, and generating a completion certificate without human learner engagement with the material. The extent to which such tools are used to complete CE courses is not documented in the peer-reviewed literature currently, and this article does not assert that such use is prevalent. The assertion is narrower: that the dominant assessment structures across accredited CE, whether multiple-choice post-tests or the subjective self-report surveys that account for 85% of competency outcome measurements in jointly accredited programs (Murry et al., 2026), are technically vulnerable to automation in ways that earlier delivery formats were not, and that this vulnerability should be considered in the design of assessment systems.

Published outcomes data from Joint Accreditation show 85% of learner competence measurements relied on subjective self-report (Murry et al., 2026). Learner performance measurements showed a similar pattern (86% subjective). Patient health outcomes, the highest-validity metric in healthcare education, were measured subjectively 82% of the time, with only 13% using objective data.

The limitations of self-reported competency assessment are documented in the clinical education literature. A study of colonoscopy competency self-assessment found only moderate agreement between self-assessed and externally rated performance (intraclass correlation coefficient 0.65), with novice practitioners showing systematic overestimation of their clinical skills (Scaffidi et al., 2018). Research in cognitive-behavioral therapy training has similarly found inconsistent correspondence between trainees' self-ratings and supervisor assessments, with patterns vary-

ing by skill level (McManus et al., 2012). These findings come from procedural and clinical skill contexts, not CE course completion. But they point to the same conclusion: self-report is a poor substitute for objective competency assessment.

Taken together, these factors—structural constraints on full decoupling, the operational cost of parallel systems, assessment vulnerability to automation, and documented limitations of self-report—suggest that the current CE model faces multiple simultaneous pressures that a bridging approach, rather than a replacement approach, may be better positioned to address.

**Cross-Profession Applicability of the Structural Barrier**

The structural constraint described in this analysis is not unique to nursing CE. With IACET joining Joint Accreditation in January 2026, the jointly accredited ecosystem extends across engineering, safety, construction, environmental, corporate, government, and military training contexts. In each of these fields, licensed or certified professionals are required to complete time-based training credits to maintain their credentials. The structural barrier identified here, the inability to decouple from time-based credit due to statutory requirements, applies across all of these professions. Any competency-based framework that requires full decoupling as a prerequisite faces the same adoption constraint regardless of the professional domain.

**Implications and Directions for Future Research**

If the estimate presented in this analysis is approximately correct—that 85–90% of accredited CE providers serve learner populations with statutory time-based credit requirements—then any competency-based framework requiring full decoupling from time is structurally limited to serving a minority of the accredited CE market, at least within the current regulatory landscape. This does not mean decoupled models lack value; it means their adoption ceiling is determined by structural factors that are not addressable through education or advocacy alone.

The path to scaled competency verification in CE may run through integration with the time-based model, not replacement of it. Bridging frameworks that preserve existing time-based infrastructure while layering on independently measured competency outcomes would allow providers to satisfy statutory requirements and deliver competency evidence within a single learning event, without the operational cost of maintaining two parallel systems. The development of such frameworks, and their empirical testing at commercial provider scale, represents a significant gap in the current literature.

Several research directions emerge from this analysis. First, replication of the provider classification using primary data collection methods, such as a direct survey of accredited providers regarding their statutory credit obligations, would strengthen or refine the estimates presented here. Second, examination of ANCC aggregate NARS data, if made available, could provide direct evidence of OB-CE adoption rates across the provider network. Third, the design and testing of bridging approaches that integrate competency verification within existing time-based CE delivery would address the practical question of whether scaled adoption is achievable under current regulatory constraints.

The author invites collaboration from accreditation researchers, adaptive learning platform developers, and CE providers interested in advancing this line of inquiry.

**Limitations**

Several limitations of this analysis should be noted explicitly:

- The provider classification was performed by a single reviewer using organizational name and publicly available descriptive information. It was not validated through primary data collection, independent review, or organizational self-report. Classifications in the hospital, academic, and unclassified categories carry meaningful uncertainty.
- The 85–90% estimate is a range reflecting that uncertainty, not a precisely calculated value. The true proportion could fall outside this range.
- The ANCC and Joint Accreditation provider populations partially overlap; some organizations hold both accreditations. The estimates were derived independently from each dataset and should not be treated as additive.
- The analysis does not distinguish between the proportion of a given provider organization's activities that are hours-dependent versus those that are not. A hospital system, for example, may conduct both accredited CE for licensed staff (hours-dependent) and internal competency-based training that does not require statutory credit. The classification reflects the organizational level, not the activity level.
- The claim regarding AI-driven assessment vulnerability is theoretical. Documented evidence of automated CE completion at scale has not, to the author's knowledge, been published in the peer-reviewed literature. The concern is raised as a design consideration, not an established prevalence finding.

## Conclusion

The competency-based education movement in health professions CE has produced compelling frameworks and sustained institutional advocacy. What it has not produced, at commercial provider scale, is broad adoption. This article argues that this gap reflects a structural constraint—the statutory embedding of time-based credit in professional licensure renewal across all U.S. jurisdictions—rather than primarily cultural or awareness factors.

This argument rests on a preliminary analysis of publicly available accreditation data, classified using a methodology with meaningful limitations. It should be understood as a structured estimate that invites replication, not a definitive finding.

The findings suggest that any competency-based CE framework that requires full decoupling from time has a built-in ceiling on adoption in regulated professions, and that ceiling is set by statute, not by provider willingness. Bridging approaches that integrate competency verification within existing time-based infrastructure, rather than requiring its replacement, may offer a more viable path to scaled adoption.

## References

American Nurses Credentialing Center. (2019). *Awarding credit for outcome-based professional development: Outcome-based CE model manual.* American Nurses Credentialing Center.

American Nurses Credentialing Center. (2023). *2023 annual impact report: Nursing continuing professional development.* https://www.nursingworld.org/organizational-programs/accreditation/ncpd/

American Nurses Credentialing Center. (n.d.). *Annual reporting requirements: Nursing Activity Reporting System (NARS).* https://www.nursingworld.org/organizational-programs/accreditation/ncpd/annual-reporting-requirements/

Graebe, J. (2019). Continuing professional development: Utilizing competency education and the American Nurses Credentialing Center outcome-based continuing education model. *The Journal of Continuing Education in Nursing, 50*(3), 100–102. https://doi.org/10.3928/00220124-20190218-02

Graebe, J., Roy, J., & Morrison, C. (2025). Alternative credentials in ANCC Nursing Continuing Professional Development Accreditation: Advancing workforce readiness, equity, and lifelong learning. *The Journal of Continuing Education in Nursing, 56*(9), 353–357. https://doi.org/10.3928/00220124-20250814-02

International Accreditors for Continuing Education and Training. (2024). *Guidelines for competency-based learning.* https://www.iacet.org/standards/guidelines-for-competency-based-learning/

Joint Accreditation for Interprofessional Continuing Education. (2024). *2024 Joint Accreditation data report: Learning together, leading forward.* https://jointaccreditation.org/wp-content/uploads/2021/09/2024-Joint-Accreditation-Data-Report-Learning-Together-Leading-Forward_1081_20251008.pdf

Jung, S. Y., Hwang, H., Lee, K., Lee, H.-Y., Kim, E., Kim, M., & Cho, I. Y. (2020). Barriers and facilitators to implementation of medication decision support systems in electronic medical records: Mixed methods approach based on structural equation modeling and qualitative analysis. *JMIR Medical Informatics, 8*(7), e18758. https://doi.org/10.2196/18758

Kelchen, R. (2015). *The landscape of competency-based education: Enrollments, demographics, and affordability.* American Enterprise Institute for Public Policy Research. https://www.aei.org/research-products/report/landscape-competency-based-education-enrollments-demographics-affordability/

Kitto, S., Fantaye, A. W., Zevin, B., Fowler, A., Sachdeva, A. K., & Raiche, I. (2024). A scoping review of the literature on entrustable professional activities in surgery residency programs. *Journal of Surgical Education, 81*(6), 823–840. https://doi.org/10.1016/j.jsurg.2024.02.011

Lee, J., Tan, E., Barrow, J., Bocala, C., & Seymour, B. (2021). Crossing the innovation chasm: Identifying facilitators and barriers to early adoption of the Global Health Starter Kit curriculum. *Annals of Global Health, 87*(1), 113. https://doi.

org/10.5334/aogh.3356

McManus, F., Rakovshik, S., Kennerley, H., Fennell, M., & Westbrook, D. (2012). An investigation of the accuracy of therapists' self-assessment of cognitive-behaviour therapy skills. *The British Journal of Clinical Psychology, 51*(3), 292–306. https://doi.org/10.1111/j.2044-8260.2011.02028.x

Murry, L. T., Graebe, J., Holderly, M., Regnier, K., & Travlos, D. V. (2026). The value of interprofessional continuing education and Joint Accreditation. *Journal of CME, 15*(1), 2639199. https://doi.org/10.1080/28338073.2026.2639199

Nilsen, P. (2015). Making sense of implementation theories, models and frameworks. *Implementation Science, 10*, 53. https://doi.org/10.1186/s13012-015-0242-0

Nodine, T. R. (2016). How did we get here? A brief history of competency-based higher education in the United States. *The Journal of Competency-Based Education, 1*(1), 5–11. https://doi.org/10.1002/cbe2.1004

Scaffidi, M. A., Grover, S. C., Carnahan, H., Khan, R., Amadio, J. M., Yu, J. J., Dargavel, C., Khanna, N., Ling, S. C., Yong, E., Nguyen, G. C., & Walsh, C. M. (2018). Impact of experience on self-assessment accuracy of clinical colonoscopy competence. *Gastrointestinal Endoscopy, 87*(3), 827–836.e2. https://doi.org/10.1016/j.gie.2017.10.040