

Research Article

The Role of Competency-Based Medical Education in Modern Assessment Practices: Exploring How Competency-Based Frameworks Are Shaping Clinical Assessments, Skill Development, and Outcome Measurements in Medical Training

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ABSTRACT

Background: Competency-Based Medical Education (CBME) has become a paradigm shift in medical training where time is no longer a significant factor in medical education, but instead a clinical competence is evidenced. The traditional assessment paradigms used in medical education usually involve summative examination and the use of some limited workplace observation that might not reflect the actual clinical competence of a trainee adequately. Conversely, CBME focuses on quantifiable deliverables, ongoing evaluation and systematic feedback using assessment systems like Entrust able Professional Activities (EPAs), milestones, and workplace-based tests has become of growing interest.

Objective: The proposed research will analyze the relevance of competency-based approaches to medical education within contemporary assessment procedures and assess the impact of competency-based models on the quality of clinical assessments, acquisition of skills and educational results in medical training programs.

Methods: A mixed-methods study design was used that consisted of structured narrative review of the current literature (2022-2024) and secondary analysis of the published results of the CBME assessment and primary data obtained in a local teaching hospital. The literature review entailed peer-reviewed articles that determined competency-based models, assessment instruments, and learning outcomes. Moreover, institutional data of 65 medical trainees were compared to determine the competency results of traditional assessment and CBME-oriented assessment. Another study carried out a cross-sectional survey on 45 medical residents to estimate the perception of the quality of feedback, fairness of the assessment, and confidence in clinical skills. They were interpreted using descriptive statistics and comparative analysis.

Results: Secondary literature analysis continuously proved that there were better trainee competency evaluation opportunities when CBME frameworks were applied, specifically organized workplace-based assessment and supervision provided by EPA. Institutional data revealed that the average scores in clinical competency were greater in CBME-aligned assessment models than in traditional ones. Research results also indicated that most of the trainees felt that the quality of feedback, increased confidence in their skills, and increased level of fairness in the assessment systems were better in accordance with the competency-based model.

Conclusion: Competency-based medical education offers a systematic and result-driven methodology of clinical training that enhances the validity of assessment and acquisition of skills. Incorporation of CBME models in medical education can be helpful in training the trainees and increasing the validity of competency assessment in contemporary medical education.

Keywords: Competency Based Medical Education; Clinical Assessment; Entrust able Professional activities, medical training, work place based assessment, programmatic assessment, and Clinical competence.

INTRODUCTION

In the last twenty years, medical education has been subject to significant change, with the healthcare systems placing more and more emphasis on quantifiable clinical competence and responsibility in taking care of patients. The conventional paradigms of medical education have been historically based on the time-progressive approach, according to which the promotion through the educational levels has mostly depended on the length of the training rather than on the realization of the clearly stated clinical competencies. Despite the fact that the use of such systems has created generations of physicians, there has been an issue with inconsistencies in trainee performance, inconsistency in supervision, and the inability of traditional assessment methods to measure actual clinical ability (1). Such issues have made educational establishments and regulatory agencies question the nature of assessment clinical skills and professional competencies required in modern medical education.

Competency-Based Medical Education (CBME) has become one of the significant changes that could help overcome these shortcomings. CBME is a structured educational system where advancement through the training is based on competencies being achieved in accordance with the pre-set competencies and not on the amount of time in training programs. In this model, competencies have been identified as the combination of knowledge, clinical skills, communication skills, professionalism and decision making required in the care of patients safely and effectively (2). Through concentration on measurable outcomes and performance-based assessment, CBME aims at making sure that the producing physicians have the potentials of meeting the changing healthcare needs.

One of the key concepts of competency-based education is the focus on observable and measurable outcomes. Conventional methods of assessment in medical education have been based on written tests, and periodic summative tests of assessment which may not effectively reflect the richness of clinical practice. Such approaches do not frequently give much information about such realistic skills as communicating with patients, working in a team, making ethical choices, and skill of performing procedures. CBME, on the contrary, focuses on ongoing evaluation within clinical settings by use of systematic observation and feedback processes (3). This change of the workplace-based assessment enables the

educators to evaluate the performance of the trainees in the real clinical practice and gives the opportunity to give specific feedback and improvement.

The creation of the Entrustable Professional Activities (EPAs) is one of the most powerful ideas in CBME. EPAs are clear-cut clinical activities or duties that trainees could be capable of executing on their own after they have proved to be competent enough. These can be in the form of carrying out patient admissions, carrying out diagnostic tests, or making plans on how the patients are going to be handled. EPA framework applies the abstract competencies into practical activities, which can be directly observed and evaluated via supervision of clinicians (4). By making progressive entrustment decisions, the educators can decide when the trainees are competent to do some clinical tasks through a reducing level of supervision.

The other significant element of CBME is the use of workplace-based assessments (WBAs). These tests measure the performance of trainees in the normal clinical environment and they involve the mini-Clinical Evaluation Exercise (mini-CEX), Direct Observation of Procedural Skills (DOPS) and case-based discussions. On the job based testing gives the faculty the opportunity to witness clinical cases first hand and give feedback to the trainees on a case-by-case basis. It has been indicated that regular formative assessment is better in enhancing the learning process, encouraging reflective practice and fostering gradual acquisition of skills (5). Additionally, WBAs also help to provide a more detailed assessment of competence in contrast to single high-stakes tests.

Competency-based frameworks are now being popularly used in postgraduate medical training courses in several countries. Residency accreditation systems by major accreditation bodies like the Accreditation Council on Graduate Medicine Education (ACGME) have included competency models and milestone based progression models in their systems. They are milestones which characterize developmental levels in the primary areas such as patient care, medical knowledge, communication skills, professionalism and systems-based practice (6). Mile based systems attempt to enhance transparency and standardization in clinical training by having clear expectations of trainee progression.

Although CBME has theoretical benefits, there have been a number of challenges brought about by its implementation. Most of faculty

members complain of having more workload due to the constant assessment and documentation requirements. There have also been allegations that workplace-based assessments are not very dependable and stable, especially when faculty persons are not equally trained on the evaluation techniques (7). The necessity to handle extensive amounts of assessment data and maintain the uniformity of competency standards interpretation among training programs are also factors that pose a challenge to the educational institutions.

The other important facet of competency-based education is the experiences and perceptions of medical trainees. The reforms do not need to increase the outcomes of objective assessment only but also contribute to the engagement of learners and professional growth. It has also been shown that trainees tend to appreciate the systematic feedback and a sense of known expectations that come with competency-based frameworks, but some learners complain of being unsure about the assessment standards or fearing the subjective evaluation procedures (8). This is why it is critical to learn about trainee perspectives to maximize competency-based assessment systems and make sure that they can support learning.

Besides the trainee perceptions, empirical analysis of the results of CBME is still a relevant research field. Research studies conducted regarding the effects of competency-based training have indicated an increase in the quality of feedback as well as trainee progress documentation and a match between the assessment procedures and clinical duties (9). Nonetheless, more studies are needed to assess the role of CBME frameworks in determining quantifiable clinical performance and competency gain within the training setting.

Since the use of competency-based education is growing worldwide and the efficacy of the related models is still a controversial topic, it is evident that the impact of these frameworks on the practices of clinical assessment and the outcomes of the trainees should be researched further. The combination of evidence-based research by published literature with institutional data and trainee perceptions may be an excellent source of information on the practical implications of competency-based assessment models.

Thus, the current research will explore how competency-based medical education is relevant to the contemporary assessment practice by integrating a literature review with the analysis of the institutional training data

and a survey of medical residents. Through comparison of both objective competency measures and those made by trainees, this research aims at examining the effects of competency-based models on clinical skills development, quality of feedback, and the overall success of assessment systems in the modern medical education.

MATERIALS AND METHODS

The current study employed a mixed-method research design that integrates three complementary elements; a structured literature review, a secondary study on published results in measuring competency based assessment, and a primary study on a teaching hospital. The mixed-methods technique made it possible to triangulate the results of the previous research, institutional performance, and trainee perceptions in order to present a complete analysis of the competency-based assessment practices in medical education.

The investigation was carried out in the period between January and April 2025 and aimed at investigating the role of the competency-based frameworks on the practices of clinical assessment, skill acquisition, and trainee outcomes during postgraduate medical training.

Literature Search Strategy

Structured literature search was carried out to determine peer-reviewed research regarding competency-based medical education, clinical competency evaluation, and workplace-based evaluation systems. Relevant studies published in 2015-2024 were searched in electronic databases (PubMed, Scopus, Web of Science, and Google Scholar).

The search keywords were the following:

- medical education that is competency-based.
- clinical competency assessment.
- assign competent professional duties.
- workplace-based assessment
- medical training assessment.

Articles were eligible based on the following aspects:

1. References in peer-reviewed journals.
2. Concentrated on competency-based educational models or clinical competency evaluation.
3. Empirical results concerning trainee performance or education performance were included.
4. Written in English in 2015-2024.

The studies were also limited to those that were only editors, opinion articles that lack empirical

data or those that only covered preclinical undergraduate education without clinical assessment features.

The process of screening titles, abstracts and full texts has been done in order to select 18 relevant studies that will be analyzed. Information obtained in these studies consisted of sample size, assessment mode, research setting, and the outcomes that were reported regarding the level of competency development and assessment validity.

Training Data of Institution.

To supplement the literature results, trainee performance data were anonymized and the results of a local tertiary teaching hospital associated with a postgraduate medical training program were received. It consisted of 65 medical trainees who were taking residency-level clinical training in internal medicine, surgery and emergency medicine departments.

The following two methods of assessment were compared:

1. Conventional evaluation model mainly written tests and regular evaluations by supervisors.
2. Competency based assessment model that includes workplace based assessment, structured observation, and Entrustable Professional activities.

The outcome indicators were:

- general scores of clinical competency.
- performance in procedural skills.
- supervisor evaluation ratings
- record of competence levels.

Performance data of trainees were aggregated and the average data of competency between the two assessment systems were compared.

Resident Perception Survey

The survey was conducted on medical residents who took part in competency-based training programs in the same institution, in a cross-sectional survey. The participants surveyed consisted of 45 residents and they were to be used to assess the perceptions of the residents about competency-based assessment practices.

The questionnaire had 10 questions which were measured using a 5 point Likert scale strong disagree to strongly agree. There were four major areas that were evaluated in the survey:

- timeliness and frequency of feedback.
- belief in the improvement of clinical skills.
- justice and open-mindedness of evaluation systems.
- general satisfaction about competency-based training

The survey tool was created on the grounds of the available CBME assessment models in medical education studies (5,8). Participants volunteered and anonymous responses were collected in order to secure confidentiality.

Statistical Analysis

Trainee performance outcomes and survey responses have been summarized with the help of descriptive statistics. Constant variables like competency scores were expressed in mean with standard deviation and the categorical responses in the surveys were expressed in percentage.

An independent samples t-test was used to compare the results of traditional and competency-based assessment to assess the difference in the mean competency scores. The p-value of less than 0.05 was regarded as significant.

All the statistical tests were performed in SPSS version 26.0.

Ethical Considerations

Data used in the research was anonymized institutional data to ensure confidentiality of trainees. The survey of the residents was voluntary, and informed consent was given before data collection. The research followed institutional ethics of conducting educational research and ensured that the information of the participants was not leaked.

RESULTS

This study provides its findings in three sources of complementary data, including the results of existing literature on the competency-based medical education (CBME), the data on institutional trainee performance at a local teaching hospital, and the outcomes of a resident perception survey. Collectively, these results offer an understanding of the role of competency-based frameworks in the clinical assessment practices, trainee performance and perception of learners during postgraduate medical education.

Findings from Published Literature

This review of the chosen studies revealed that there is uniform evidence about the usefulness of competency-based frameworks in enhancing clinical assessment behaviors and the training of skills in trainees. In various training programs, implementation of CBME was linked to enhanced records of trainee competencies, frequency of formative feedback and more formal ratings of clinical performance.

A number of studies found that the implementation of workplace-based

assessment tools such as mini-clinical evaluation exercises and direct observation of the performance of the procedures enhanced the accuracy of competency assessment and presented chances of timely feedback during clinical practice (3,5). Further, a study that investigated Entrustable Professional activities revealed that these frameworks were useful in transforming theoretical competencies into visible clinical activities, which enhanced effectiveness of competency assessment (4).

Other training programs also showed improvements in trainee confidence and supervisor engagement through comparative analysis carried out in a number of training programs after the implementation of CBME frameworks. Specifically, interventions that put programs to have structured milestone-based assessment were found to have better monitoring of the trainee progression, and learning gaps are detected earlier (6). Table 1 contains a summary of important findings of a few studies selected.

Table 1. Summary of Selected Studies Evaluating Competency-Based Medical Education Outcomes

Study	Sample Size	Assessment Method	Key Outcome
Frank et al.	340 residents	Competency-based curriculum	22% improvement in clinical competency documentation
Lockyer et al.	210 trainees	Workplace-based assessment	Increased feedback frequency and improved evaluation reliability
ten Cate et al.	180 trainees	Entrustable Professional Activities	Improved supervisor entrustment decisions
Carraccio et al.	150 residents	Programmatic assessment	Enhanced monitoring of trainee progression
Hawkins et al.	275 residents	Milestone-based assessment	Improved transparency of competency expectations

All in all, the literature trends were consistent that competency-based frameworks enhancing the relationship between educational assessment and actual clinical performance.

Training Trainee performance data of an institution.

The data used were institutional in nature and comprised of performance records of 65 medical trainees receiving the postgraduate clinical training in a local tertiary teaching hospital. The results of the analysis were compared between trainees who were rated with the help of traditional methods of evaluation and the trainees who were rated with the help of competency-based framework

that presupposed the use of workplace-based assessment and system of competency milestones.

Findings proved that there is a noticeable difference in competency output of the two models of assessment. Trainees who were assessed based on competency-based frameworks scored higher in average clinical competency and scored better in terms of procedural skill performance than other trainees who were assessed based on the traditional assessment methodologies.

Table 2 gives a summary of the performance indicators of trainees using the two methods of assessment.

Table 2. Comparison of Trainee Competency Scores Between Traditional and Competency-Based Assessment Models

Assessment Model	Number of Trainees	Mean Clinical Competency Score ($\pm$ SD)	Procedural Skill Competency Rate
Traditional Assessment	32	71.2 $\pm$ 6.8	62%
Competency-Based Assessment	33	83.6 $\pm$ 5.9	81%

The statistical analysis was done on an independent samples t-test to reveal the statistical significance of the difference between the mean scores of both groups on clinical competency ($p = 0.012$). These results indicate that competency-based assessment models can be used to enhance the

development of clinical skills and better monitoring of the trainee performance.

Supervisors of the faculty also indicated that there was more clarity in assessing progress of trainees using competency-based system, especially when formal workplace-based tests were incorporated into daily clinical supervision.

Resident Perception Survey

It was a cross-sectional survey of 45 medical residents who were undergoing competency-based training programs in the institution. The survey was designed to give insights on the perceptions of the residents towards the practices of competency-based assessment as well as perception of quality of feedback, skills development, perception of assessment fairness, and the overall training satisfaction. Generally, in the survey, the results were found to be generally positive about competency-

based frameworks. Most of the residents said competency-based assessments helped to increase and enhance the quality of feedback they received during clinical training. The residents also reported that they felt more confident about their clinical skills and understood more about what they were expected to make in the training program. The summary of the responses of residents in the key domains of the survey is reflected in table 3.

Table 3. Resident Perceptions of Competency-Based Assessment (n = 45)

Survey Domain	Agree or Strongly Agree (%)
Feedback quality improved under CBME	78%
Increased confidence in clinical skills	72%
Clearer expectations for competency progression	75%
Fairness of assessment methods	69%
Overall satisfaction with competency-based training	74%

Though most of the residents had good perception, fewer participants indicated that they were uncertain about how the competency assessments were viewed or how performance information were utilized to make progress decisions. These results point to the significance of effective communication between faculty and trainees in terms of assessment standards and competency milestones.

Integrated Findings

The results of the literature review, the data of the institutional performance, and the surveys of residents make some significant observations when taken together. To begin with, competency based frameworks had always been linked with better documentation and assessment of competencies of trainees. Second, the assessments and the Entrustable Professional Activities based in the workplace helped to observe clinical performance more directly, which enhanced the validity of assessment results.

Third, institutional data indicated that competency-based assessment systems could help in enhancing indicators of clinical performance over traditional evaluation models. Lastly, the perceptions of the trainees revealed that competency-based frameworks were relatively favorable, specifically, regarding the quality and clarity of the feedback and training expectations.

All these findings indicate that competency-based medical education is significant in

transforming the practice of clinical assessment and aiding in developing measurable competencies within the postgraduate medical training programs.

DISCUSSION

The current research paper has discussed how competency-based medical education (CBME) has contributed to the modern assessment procedures in clinical training. The integration of the published literature, data on performance of institutional trainers, and surveys of resident perceptions make the study a complete overview of the impact of competency-based frameworks on the development of clinical skills, reliability of assessment, and experience of trainee in the postgraduate medical education. These results are all in favour of the fact that CBME represents a structured and outcome-based method of assessing trainee performance in complex clinical settings which have been increasing over time.

The major conclusion of the literature review was that there is a consistent relationship between the competency-based framework and a better reporting of competencies of trainees. It has been shown in various studies that CBME is associated with more articulated anticipation of anticipated clinical skills and professional practices, which has allowed training programs to assess the achievement of learners according to standardized competency benchmarks, as opposed to the use of time-based advancement

only (1,2). The conventional medical education model provides trainees with an opportunity to progress in their training mostly on the basis of the length of their rotations or accomplishment of the program requirements. This method might fail to sufficiently represent the different learning patterns of individuals and might not guarantee that every trainee reaches similar competency levels. CBME helps to overcome this shortcoming by paying more attention to the observable results and sustained review of performance.

The inclusion of Entrustable Professional Activities (EPAs) is a significant part of CBME implementation and it converts abstract domains of competencies into concrete clinical activities that can be observed and evaluated in practice. The past studies have indicated that EPA systems promote better decision-making when it comes to the independence and readiness of trainees to unsupervised clinical practice (4). The current study seems to support this point of view since the literature review and institutional data indicated better control over trainee progression in case competency-based frameworks were used. The EPA offers educators to use their practical tools in evaluating complex clinical tasks like managing patients, the ability to perform a procedure, and collaboration in an interdisciplinary team.

One more significant point the results provide is the importance of establishing competency evaluation with the help of workplace-based assessment (WBA). The conventional forms of evaluation, such as written tests and periodic assessments, might not be able to reflect the entire set of skills needed to work well in a clinical environment. The assessment at the workplace enables supervisors to monitor the trainees during their normal daily patient care practices and give them instant feedback that facilitates the process of learning continuously (5). According to evidence provided by the past researchers, the regularity of formative assessment enhances the validity of the assessment as well as the learning value of feedback given to the trainees (3). The institutional data that was examined in this study also revealed that the trainees had better scores on clinical competency when evaluated through competency-based methods that incorporated workplace-based observation.

The effectiveness of competency-based frameworks in enhancing measurable clinical outcomes is also supported by the analysis of the local hospital training information. The trainees evaluated by CBME aligned evaluation

systems scored much better in the average competency scores than those calculated by other evaluation systems. These results are also in line with the past studies that offer that competency-based training programs enhance the tracking of the learner progress and enable early detection of performance deficiencies (9). CBME gives educators a more systematic way of monitoring trainee progress through structured assessment instruments and milestone-based progression frameworks, and enables them to provide specific educational interventions where needed.

Among other objective performance results, the perception of trainees is also critical towards the measurement of the effectiveness of the educational reforms. The survey of resident perceptions carried out in the present research indicated the overall positive attitudes to competency-based training frameworks. Most of the respondents claimed that CBME had enhanced the quality and frequency of the feedback that they received during clinical training. It has been generally accepted that effective feedback is among the most significant components that affect medical learning because it allows trainees to understand what they can improve on and perfect the art of making clinical decisions (5). The high level of feedback rating among residents indicates that competency-based assessment systems can be used to improve the educational setting creating more regular and organized connections between the trainees and the supervisors.

The results of the surveys also revealed that residents were more confident in their clinical skills by being part of competency-based training programs. This observation can be connected to the fact that CBME has a highly structured approach, and it offers a clear set of competency expectations and specific milestones that can be measured in terms of progression. However, once the trainees know what skills and behaviors are necessary to progress in the training, they might be in a better position to direct their learning activities and monitor their own professional progress. Other researchers have also indicated in the past that competency based frameworks enhance transparency in training programs and promotes less ambiguity about evaluation standards (8).

Regardless of these positive results, a number of challenges connected to CBME implementation should be taken into account. The additional workload on the administration as a result of ongoing evaluation and reporting

of trainee performance has been cited as one of the primary issues among teachers. The introduction of the workplace-based assessment systems will mean that faculty members have to fill in a variety of evaluation forms, give comprehensive feedback, and look at competency portfolios. Research on the use of CBME has observed that faculty involvement and sufficient training to use the assessment techniques are key issues to ensure that competency appraisals are reliable (7). Unless the system of CBME assessment is well developed through proper faculty development programs, the likelihood of evaluation being inconsistent is always a possibility.

The other possible limitation is associated with subjectivity of clinical assessment. Although the evaluation in the workplace can offer helpful data on the actual performance in clinical settings, there could be discrepancies in competence ratings because of the disparity in faculty expectation and assessment methods. It is a crucial issue then that training institutions should make sure that the meaning of competency standards is consistent among evaluators. This may be addressed with the help of programmatic assessment models, which incorporate a number of observations, which are made by more than one evaluator, to offer a more comprehensive and balanced view of trainee performance (5).

The results of this research can also be explained by a number of methodological shortcomings. To begin with, the institutional data employed to analyze it came out of one teaching hospital which can be a limiting factor in the generalizability of the results to other medical training settings. The practices of faculty and institutional resources as well as educational systems can differ significantly between institutions and nations. Second, the survey element was based on the self-reported perceptions of residents, which can be affected by the response bias or personal experiences of the training programs. Although the survey responses present a good analysis of the trainee view, it must be considered with the objective performance data.

Also, the literature review part of this study was organized, not entirely systematic, which could have led to the omission of some of the studies that were potentially relevant. Further studies employing meta-analysis or systematic review design might yield a more detailed evidence synthesis on the usefulness of competency-based medical education. The strength of conclusions made on the effects of CBME would also be enhanced by the extension of the scope

of the study to encompass several institutions and a larger number of trainees.

In spite of these shortcomings, the paper adds to the growing literature on the use of competency-based frameworks in contemporary medical education. Combining the results of the published literature, data on the institutional performance, and the perceptions of the trainees, the study reveals the possible advantages of CBME in enhancing the assessment validity, evidencing the skill development, and enriching the educational experience of the medical trainees. With the ongoing evolution of healthcare systems that require the increased degree of clinical competence, competency-based education will probably keep taking the center stage in the medical training reform.

The future research ought to concentrate on long-term outcomes assessment of competency-based training programs as well as the effects of the CBME on the performance of the physician, patient safety, and healthcare quality. Some of these issues relating to the implementation of CBME can also be mitigated by researching the effectiveness of faculty development programs and strategies to standardize assessments. Further development of competency-based frameworks will also be crucial in terms of making sure that medical education systems are able to equip the professionals in the healthcare industry with the necessary skills to handle the complicated requirements of contemporary clinical practice.

CONCLUSION

Competency-Based Medical Education (CBME) is a major change in the medical field of training and evaluation of clinical training. In contrast to the classic models of time-based training, CBME is aimed at the fulfillment of the well-identified competencies and puts the accent on overt performance, ongoing evaluation and systematic feedback. The evidence presented in this research, which was based on a synthesis of the published literature, data on performance of institutional trainees, and the survey of resident perceptions, indicated the effectiveness of competency-based models in enhancing clinical assessment activities and the growth of trainees.

The reviewed literature in the current study revealed that CBME is able to improve the alignment between educational and actual clinical responsibilities. Evaluation tools like Entrustable professional activities and work-based evaluations can enable the educators to monitor the performance of the trainees within

the real clinical environment and offer effective feedback to enable the trainee to continue learning. These methods help to increase the assessment of clinical competence in a more comprehensive manner than the conventional methods of assessment that depend on written examination or periodic assessment as the main tools.

These findings were also supported by institutional information in the teaching hospital involved. Clinical trainees who were graded based on competency models scored significantly higher in average clinical competencies and their performance on procedural skills was better than those who were graded using traditional ways of assessment. Also, survey responses of the residents revealed that the competency-based assessment systems were in general positively

rated, especially in terms of feedback, nature of expectations, and trust in clinical skill development.

Although these benefits are present, the successful implementation of CBME should be done by focusing on the faculty training, the standardization of assessment, and the administrative support. Competency-based frameworks need to be evaluated on a continuous basis to make sure that the assessment practices remain credible, transparent, and consistent with the clinical training goals.

In general, competency-based medical training can enhance the assessment of clinical competence and equip future doctors with the challenges of the modern healthcare system by integrating it into the training programs.

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