

## Review Article

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## Rethinking Training in Emergency Medicine: Time-based or Competency-Based Lens?

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### ABSTRACT

Time-based training requires Emergency Medicine residents to complete the required number of years in an accredited programme, without triggering the threshold for formal remediation. This will graduate them for independent practice. This is administratively clean, operationally predictable, and grounded in the reasonable assumption that clinical experience accumulates over time. Competency-based Emergency Medicine education, on the other hand, utilizes a structured framework of defined competencies, assessed through multiple methods over the course of training, with progression contingent on demonstrated achievement rather than elapsed time. It de-emphasizes time-based training and allows for greater accountability, flexibility and learner-centredness.

Against the evolving medical educational landscape and the critical need to future-proof Emergency Medicine residents for the rapidly progressive and disruptive practice, the question to consider is: which is the best model? In this paper, the author shares the argumentative logic for competency-based training, as well as the counter-argument supporting time-based training. This is followed by the suggestion for a hybrid model of training, in Emergency medicine residency.

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### Introduction

In 1904, The Council of Medical Education, USA (created by the American Medical Association) defined medical education as 2 years of training in human anatomy and physiology, followed by another 2 years of clinical work, preferably in a teaching hospital. This represents one of the earliest time-based training instructions for medical education [1,2]. In 1910, Abraham Flexner, an American educator and educational reformer, was commissioned by The Carnegie Foundation, with funding from The Rockefeller Foundation, to review medical education in the USA [2]. The conclusion then impacted medical education, as we know today. Flexner concluded that there is a need for: [2-4].

- Standardization in medical education
- Emphasis on ethics and professionalism and
- Focus on research, with the ability to integrate scientific discoveries and context-specific experimentation for continuous improvement of the process of medical practice. He proposed for physicians to “Think much and publish a little” [1].

Flexner also recognized that medical education had to be reconfigured in response to the changing scientific, social and economic circumstances, in order to flourish from one generation to the next [2,5].

Time-based training with its clearly defined structure and duration has been practised from historical times and had set the fundamental considerations in medical training. However, with time, development and evolution of medical education, technology adoption as well as changes in domains such as social needs and economic development, other models of training have either been considered, debated, partially adopted by some or implemented in hybrid formats [6,7].

The debate between time-based and competency-based models of medical training is not new. However, it has acquired renewed urgency in emergency medicine as the specialty has grown in complexity with intensified need for upliftment of quality and frontline clinical assessment to the point, where the assumptions underlying time-based training can be examined with a rigour previously unavailable. At its core, the debate turns on the question

pertaining to what should determine when a resident is ready for independent practice?

Time-based training answers this question with a calendar. A resident who completes the required number of years in an accredited programme, without triggering the threshold for formal remediation, is deemed ready. This is administratively clean, operationally predictable, and grounded in the reasonable assumption that clinical experience accumulates over time. (Table 1) Competency-based medical education utilizes an outcomes-based approach with a structured framework of defined competencies, assessed through multiple methods over the course of training, with progression contingent on demonstrated achievement rather than elapsed time. It de-emphasizes time-based training and allows for greater accountability, flexibility and learner-centredness. Residents will graduate based on demonstrated competence for unsupervised, independent practice. The timing of this graduation can be delayed or accelerated based on trustworthy assessment and regular reviews by the Clinical Competency Committee (CCC) [8-10]. (Table 1).

The training of Emergency Physicians (EPs) has undergone significant evolution over the past two decades, driven by the growing recognition that time spent in training programmes do not reliably predict clinical competence. Every day, in emergency departments across the world, patients arrive without warning or appointments. They present in an undifferentiated fashion and are often critically ill, placing themselves entirely in the hands of the EP on duty. That EP may be a senior consultant with decades of experience, or a resident in the final months of their residency programme, days away from independent practice. In either case, the patient has no means of knowing, and no practical recourse. They have to trust the system. Generally, that trust is not misplaced. Emergency Medicine training programmes globally, produce EPs who are, by any reasonable measure, competent and capable. The specialty has matured over the past three decades, developing robust training curricula, structured supervision frameworks and programmes of assessment with increasingly sophisticated approaches to clinical education. The system works. Yet, the question is not whether it works, but whether it works well enough, efficiently enough, and equitably enough for the demands of modern emergency medicine. If any, the argument for change is therefore one of optimisation, not rescue [9,11-13].

The Following Sections share the Argumentative Logic for Competency-Based Training, followed by the Counter-Argument for Time-Based Training. This is followed by the Suggestion for Considerations for a Hybrid Model of Training.

### **The Argumentative Logic for Competency-Based Training Time-Based Training Works, But Poorly at the Margins**

Time-based training works for most residents [14-17]. However, the problem lies at the extremes of the performance distribution. Within any cohort of emergency medicine residents, at equivalent stages of their training, there exists substantial variations in clinical competence [18,19]. Some consolidate the core competencies of the specialty well ahead of schedule, yet the architecture of time-based progression offers them no mechanism to advance. They continue in supervised roles not because supervision is clinically warranted, but because the calendar has not yet permitted otherwise. The costs here include delayed workforce contribution, perhaps reduced residents motivation, and the subtle messaging that demonstrates ability is less important than elapsed time [14,20].

At the other end of the distribution, the consequences are more serious. Residents who have not yet consolidated critical competencies in resuscitation, procedural skills, or the management of undifferentiated critical illness, can complete time-based training and enter independent practice, provided they have not triggered the threshold for formal remediation. The system's safeguards are designed to catch egregious underperformance, not to detect the subtler but clinically meaningful gaps that can persist in a resident who is present, engaged, and broadly functional. In emergency medicine, where a single high-stakes encounter can determine whether a patient lives or dies, that residual uncertainty is not a theoretical concern. It may be a patient safety issue that a well-designed competency-based system is specifically structured to address [19].

It is also important to understand that competency-based training does not claim that time contributes nothing to the development of clinical competence. Accumulated experience, pattern recognition, and professional maturity all develop over time. What it claims is that time alone is an insufficient and imprecise guarantor of readiness, and that the variation among residents at equivalent time points is evidence that the system is not currently equipped to detect or correct [21-23].

### **The Foundational Assumption: Time-Based Training May Lack Validation**

Time-based training rests on an assumption that a defined period of supervised clinical exposure will reliably produce a defined level of competence. This assumption is not unreasonable, on the surface. Clinical medicine is learned through practice. Adults learn through active problem-solving, which takes time. The difficulty is that this assumption has never been rigorously validated, largely because for most of medical education's history, the tools required to interrogate it, did not exist. Now, the emergence of structured workplace-based assessment, simulation-based performance metrics, and longitudinal outcome data, has changed this. There is now the capacity to measure competence with a degree of granularity that was previously unavailable [21-24]. Studies have demonstrated wide variation in clinical competence among residents and trainees at equivalent stages of training across multiple specialties, including emergency medicine [10-12,23]. If time were a reliable proxy for competence and if the assumption that underlying time-based training were sound, we would not expect to see this variation. The fact that this is observed consistently suggests that the relationship between time and competence is not strong [16,17].

This is not just an academic observation. Training programmes make high-stakes decisions about progression, the level of supervision a resident requires and readiness for independent practice, all on the basis of time served. If the foundation of these decisions is empirically weak, the decisions themselves are less defensible than assumed. Competency-based training responds to this with a direct measure of demonstrated performance against explicit, contextually appropriate standards [14,15,17]. This is not a radical proposition. It is the application to training, of the same evidentiary standard applied to clinical practice.

### **The Evolution of Emergency Medicine**

The specialty of emergency medicine has evolved substantially relative to the training model designed to produce EPs. Time-based training frameworks were largely established during a period when the scope of emergency medicine was narrower,

procedural demands more limited, and its role within the broader health system, less complex. The specialty has since transformed in ways that have profound implications for what a competent EP must be able to do [17,25-27].

Contemporary emergency medicine encompasses point-of-care ultrasound as a routine diagnostic and procedural tool; resuscitative interventions (that were once confined to intensive care or surgical settings), the management of increasingly complex geriatric, psychiatric, and medically complex presentations; and systems-level leadership responsibilities during mass casualty events, pandemic responses, and major incidents. Each of these domains represents a discrete and assessable competency cluster. Each requires not merely exposure but deliberate, structured development and verified achievements [17,25,28,29].

A training model organised around time made reasonable sense when the competency profile of an EP was more homogeneous and predictable. It makes considerably less sense when the depth and breadth of required competencies have expanded to the point where no fixed duration of training can reliably guarantee that every domain has been adequately developed. The mismatch between the complexity of modern emergency medicine and the bluntness of the time-based instrument. It represents a structural problem that requires a structural solution. Competency-based training, with its explicit mapping of training to defined competency domains and its requirement that each be demonstrated rather than merely encountered, is potentially the solution [30,31].

### **“Incentives” with Time-Based Training**

Time-based training can create an incentive structure for both residents and faculty responsible for their development. The progression in a time-based system is largely guaranteed by the passage of time. In the absence of catastrophic failure, the system inadvertently reduces the urgency of deliberate, structured skill development. The resident who is present, clinically functional, and broadly liked by colleagues, may progress through a time-based programme regardless of whether his development has been systematic or his competency gaps have been identified and addressed. The incentive to seek out challenging cases, request targeted feedback, or engage in deliberate practice may be real but may not be structurally enforced [12,29]. This dynamic is compounded by the relentless clinical demand of the emergency department environment. Faculty operating under significant service pressure have limited time and cognitive bandwidth for structured teaching and assessment [25]. In a time-based system, the path of least resistance for both residents and faculty is to prioritise throughput over pedagogy, to treat clinical encounters as service events rather than learning opportunities, and defer the conversations about performance gaps to a later stage that, in practice, may never arrive or arrive late. This is not a criticism of the individuals involved but a recognition that systems shape behaviour, and that a system which does not require demonstrated competence as a condition of progression will not reliably produce it [18-20,30].

Competency-based training reorients this incentive structure by making competence the explicit and non-negotiable goal of every clinical encounter [32-34]. The entrustable professional activity (EPA) framework creates a shared language between resident and faculty, that transforms clinical work from an undifferentiated stream of cases into a structured series of learning and assessment opportunities [32]. Faculty are asked not merely to supervise but to make explicit, documented entrustment decisions, whether a resident has demonstrated sufficient competence in a

defined domain to be entrusted with increasing autonomy. This accountability structure does not eliminate the pressures of a busy emergency department, but it does create a countervailing force against the drift toward service provision at the expense of education.

### **Workforce Inefficiency**

The argument for competency-based training is not only educational and ethical, but also pragmatic. In health systems under sustained workforce pressure, time-based training is, by design, inflexible. Every resident in a five-year programme occupies the post for five years, regardless of whether their individual trajectory of development would support earlier completion or requires extended consolidation. At the population level, this inflexibility may have real costs.

Consider someone who achieves the competency profile of an independent EP at four years. Under a time-based system, that individual spends a fifth year in a supervised training role, contributing to the workforce at a level below his actual capability, occupying a training post that could be allocated to another resident, and potentially experiencing the motivational costs of enforced dependency beyond the point at which it is clinically warranted [20]. For someone who requires six years to consolidate the same competency profile safely, he may be released into independent practice at five years, not because he is ready, but because the programme has ended. The workforce gains an EP but the population may gain a risk [35].

Competency-based training addresses both inefficiencies simultaneously. By allowing training duration to flex around the individual’s demonstrated trajectory of development, it creates the conditions for earlier completion where this is genuinely warranted, and vice versa. With a very robust assessment programme, not only can competence be proved, but we can also identify areas of deficiencies and target remediation which can help struggling residents improve their performance more efficiently. This will encourage them to take more ownership and be more self-directed in their training, as with appropriately increased quantity and granularity of feedback from assessments, they can more readily identify their areas of weakness and focus on these in their learnings. Thus competency-based learning helps in promoting reflective practice and aids in life-long learning as well. The aggregate effect, is a more efficient conversion of training investment into safe, capable independent EPs. In a specialty facing significant workforce shortages in many health systems globally, this efficiency is key [30,36,37].

### **The Patients We Serve Deserve Better Than “Good Enough”**

Emergency medicine exists to serve patients who arrive in extremis, unable to advocate for themselves, and entirely dependent on the competence of the EPs who manages them. These patients are in no capacity to assess the EPs credentials, request a second opinion before a resuscitation begins, or defer their care until a more experienced clinician is available. They receive whoever is on duty. They have to reasonably trust the system which trained that EP.

Time-based training offers patients an implicit assurance that the physician caring for them has completed a defined period of supervised clinical experience. It does not, and cannot, offer the assurance that the physician has demonstrated the specific competencies required to manage their particular presentation safely and effectively. Competency-based training offers a more meaningful assurance that the physician has been assessed against

validated standards across the full breadth of emergency medicine competencies, and has been found to meet them. That is a stronger guarantee of the two [14,16,17,30,38].

The shift to competency-based training in emergency medicine is, at its core, an ethical commitment as well. It is a commitment to making the assurance of clinical readiness explicit, verifiable, and grounded in demonstrated performance rather than elapsed time [30]. Time-based training works, but patients deserve a system that does more than “just work” or is “just good enough”.

### **Conclusion to the Argument**

The case for competency-based medical education in emergency medicine does not require us to condemn the time-based system that has brought the specialty to its current level of sophistication and safety. It requires only that we hold that system to the same standard of evidence and continuous improvement that we apply to clinical practice itself. Time-based training has served emergency medicine well. The question before us is whether it is still the best for EM, now and into the future.

### **The Counter Argument: Time-based Training is Working Fine**

Any intent to reform emergency medicine training must begin with an honest concession that time-based training works. Majority of EPs who complete structured residency or fellowship programmes under time-based frameworks go on to practice safely and effectively. Patients are treated, outcomes are achieved, and the specialty has grown in sophistication and stature under this model. To argue for change from this starting point is not to claim the system is broken. It is to claim that “working” and “working as well as we can” are meaningfully different standards. Our obligation is now to close the gap between the two.

### **Counter-Argument 1: Time Is Not an Arbitrary Proxy — It Reflects How Competence Actually Develops**

The most substantive defence of time-based training is not that time is a perfect measure of competence, but that time is a necessary prerequisite for the development of competence. Clinical expertise is not simply the accumulation of discrete, assessable skills. It is the integration of those skills into a coherent, adaptive, and contextually sensitive clinical identity [39]. This is what experienced EPs recognise as professional judgement. Cognitive scientists describe this in terms of pattern recognition, illness scripts, and the capacity for rapid, accurate decision-making despite uncertainties [38,40-42].

This kind of expertise cannot be rushed. The neurological and psychological processes through which pattern recognition develops are fundamentally time-dependent. It requires repeated exposure to clinical presentations across a wide range of contexts, acuities, and patient populations. It requires the experience of uncertainty, of being wrong or making mistakes and learning from them, of managing the emotional and cognitive demands of high-stakes decision-making [40, 43]. No assessment framework, however sophisticated, can verify that a resident has developed this depth of integrated clinical judgement after some years of training, simply because they have passed a series of milestone assessments. The concern is that competency-based training may be systematically unable to assess the dimensions of competence that matter most in emergency medicine, because these dimensions are emergent properties of extended experience rather than discrete, observable behaviours [12,29].

### **Counter-Argument 2: Competency-Based Assessment Tools May Not Be Completely Fit for High-Stakes Decisions**

This concerns the validity and reliability of the assessment instruments on which the entire competency-based training model depends. If competency-based progression is to replace time-based progression as the basis for decisions about residents advancement and readiness for independent practice, then the tools used to make those assessments must be demonstrably robust. The evidence suggests that, in their current form, many are not [18, 21, 22, 24, 30, 44-46].

Workplace-based assessment tools, including the mini-clinical evaluation exercise, direct observation of procedural skills, and case-based discussions, have been extensively studied, and the findings are not consistent [34,39,44-46]. Inter-rater reliability is consistently, modest. Assessor leniency and bias is well-documented, with faculty systematically rating residents higher than objective performance would warrant, particularly in contexts where the faculty has an ongoing supervisory relationship with the resident and where low ratings carry significant consequences for the resident’s progression [32,35,45-52]. The number of assessments required to achieve reliable conclusions about competence in a given domain is substantially higher than most programmes can practically deliver in practice. This can impose a significant burden on faculty and may result in deterioration of the quality of assessments, as it then becomes a “checking box” exercise, defaulting to a minimum effort completion [53, 54]. The validity of these tools, whether they actually measure what they claim to measure, and whether performance on them predicts real-world clinical outcomes, remains incompletely established [45-54].

In emergency medicine, where the consequences of an incorrect entrustment decision are potentially catastrophic, these psychometric limitations are not minor technical concerns [12, 25, 26]. They are fundamental challenges to the credibility of competency-based training as a basis for high-stakes progression decisions [30]. A system that releases a trainee into independent practice on the basis of assessment data that is unreliable, biased, and of uncertain validity may not be safer than a system that uses time as its primary criterion.

### **Counter-Argument 3: Unsustainable Demands on Faculty and Systems**

This is an operational rather than philosophical consideration. Robust competency-based training requires substantial and sustained investment in faculty development, assessment infrastructure, and programme oversight. Faculty must be trained not only in clinical medicine but in the theory and practice of competency assessment, feedback delivery, and entrustment decision-making [18]. Assessment data must be collected, stored, analysed, and acted upon in ways that are timely, meaningful, and fair. Programme directors must have the capacity to identify residents whose trajectories are concerning and to intervene early and effectively [22, 23,30,55].

In the emergency department environment, these requirements collide with the realities of clinical practice in a variety of ways. Emergency departments are high-volume, high-acuity environments in which faculty are simultaneously responsible for patient care, resident supervision, departmental flow, and their own professional obligations. The cognitive and temporal demands of robust competency-based training, assessment tasks and duties (such as completing structured observation forms, providing detailed narrative feedback, participating in competency

committees, and engaging in the difficult conversations that remediation requires) are substantial [13,56-58]. In systems where these demands are not adequately resourced, competency-based training is implemented in name only, with the appearance of competency-based rigour masking an assessment process that is, in practice, no more discriminating than the time-based system [14,30,52].

Early implementation experience from programmes that have adopted competency-based training frameworks, including the Royal College of Physicians and Surgeons of Canada's Competence by Design, ACGME EPAs, The Dutch CBME and The Cincinnati Observable Practice initiative — have confirmed that assessor burden, inconsistent assessment quality, and the challenge of translating assessment data into meaningful progression decisions are among the most significant barriers to effective implementation [46-51,56]. These are not arguments against competency-based training in principle but are arguments for taking the implementation challenge seriously, and to not underestimate the gap between a well-designed competency framework on paper and a well-functioning competency-based programme in practice [30,35, 58].

**Counter-Argument 4: Time-Based Training Provides Workforce Predictability That Healthcare Systems Depend On** Health systems are complex, interdependent organisations that depend on predictable flows of trained personnel to maintain safe staffing levels, plan service delivery, and allocate educational resources. Time-based training provides this predictability in a way that variable-duration competency-based training, by design, does not. If training duration becomes genuinely individualised (eg. some residents completing in four years and others requiring six or seven years), the downstream effects on workforce supply, training post allocation, and service planning are significant and not straightforwardly manageable.

This concern is particularly acute in smaller health systems, regional and rural settings, as well as institutions, where workforce shortages are already a significant challenge. A training system that introduces additional variability into an already strained pipeline requires careful modelling of its workforce implications before implementation. Thus, the argument is not that workforce predictability should take precedence over training quality. It is that, reform proposals which do not take workforce implications seriously are inadequate, and that the transition from time-based to competency-based training must be managed with as much attention to system-level effects as well as individual resident outcomes [25,58,59].

### **Conclusion to the Counter-Arguments**

The challenges posed by the counter-arguments (ie. time-based training works) are predominantly challenges of Implementation and Investment. They are not fundamental objections to the competency-based training model itself. In this context, time-based training is able to address these challenges better [26].

### **The Hybrid Model: Proposed Framework**

With the argument for competency-based training as well as its counter-argument which supports time-based training in EM, are we able to integrate the “best of both”? This will not be a simple binary process between two competing systems but requires deep thought and a more nuanced approach, which has to take into account the development realities of clinical expertise as well as the operational realities of EM training environments. The

proposed hybrid model seeks to combine the strengths of both approaches while mitigating their respective weaknesses. It is structured around four core principles as discussed below:

#### **Minimum Floor Time**

A purely competency-based training model, while theoretically appealing, risks producing trainees who have achieved defined milestones without sufficient breadth of clinical exposure. In emergency medicine, where the unpredictability of case mix is a defining feature, minimum floor time serves as a necessary safeguard. By mandating a baseline duration of clinical training, the hybrid model ensures that trainees are exposed to an adequate volume and variety of presentations, including low-frequency, high-acuity cases that may not arise within a compressed training window. This temporal floor is not a concession to tradition but a recognition that competence in emergency medicine is partly a function of accumulated experience [12, 60]. Minimum time requirements also provide residents with the opportunity to consolidate skills across different shifts, patient demographics, and clinical contexts, building the kind of adaptive expertise that competency assessments alone cannot fully capture [43,60].

There is also a more practical justification for sufficient floor time in emergency medicine specifically. The specialty encompasses a range of critical, low-frequency presentations such as major trauma (including Emergency Department thoracotomy decisions), paediatric resuscitations, serious toxicological emergencies, obstetric crises (including peri-mortem caesarean section) and others, that a resident must have encountered with sufficient frequency to develop reliable management competence. No assessment framework can verify competence in managing a presentation the resident has never seen, and no amount of simulation, however sophisticated, fully replicates the cognitive and emotional demands of managing a real patient in extremis. Thus, a minimum floor time is crucial and very practical indeed.

#### **Robust Faculty Development Training**

The success of a hybrid training model hinges critically on the quality of the faculty assessors. Competency-based progression demands that faculty move beyond summative evaluation towards continuous, structured workplace-based assessment. This shift requires deliberate preparation. Robust faculty development programmes must equip them with the skills to deliver meaningful feedback, conduct valid direct observation assessments, and make defensible progression decisions [34,44]. Without this investment, competency frameworks risk becoming bureaucratic exercises rather than genuine measures of resident readiness [30]. Faculty must also be trained to recognise and mitigate the influence of cognitive biases in assessment, and to engage constructively with residents who are not progressing as expected. In the emergency medicine context, where supervision occurs across a distributed, high-tempo environment, faculty development must also address the practical challenges of capturing assessment opportunities in real time [60,61].

#### **Programme-Level Oversight**

Individual assessments, however well conducted, are insufficient on their own to assure training quality. Programme-level oversight provides the structural architecture within which resident progress is monitored, trajectories and patterns are identified, and systemic issues are addressed. This includes the establishment of competency committees or progression boards that review residents' portfolios holistically, triangulating data from multiple assessors and assessment tools to arrive at robust judgements.

Programme oversight also serves a quality assurance function. It can identify training sites or faculty where assessment practices may be inconsistent. This can help ensure that the standards applied to progression decisions are equitable across the cohorts. In a hybrid model, oversight bodies must additionally monitor whether minimum time requirements are being met in a meaningful way, rather than simply logged, as well as whether the balance between time-based and competency-based elements is achieving its intended purpose. This continuous process can be time-consuming and labour intensive, but is a necessary intervention [61,62].

### Competency-Driven Progression

At the heart of the hybrid model is the principle that progression through training should ultimately be governed by demonstrated competence rather than just time served. Residents who achieve the requisite competencies ahead of schedule should be afforded the opportunity to advance, while those who require additional time to consolidate their skills should be supported to do so without stigma. In emergency medicine, competency-driven progression is operationalised through entrustable professional activities (EPAs) and milestone frameworks that define what trainees should be able to do independently at each stage of training. These frameworks must be grounded in the realities of emergency practice. It should reflect not only procedural skills but also clinical reasoning, resourcing under uncertainty, and the ability to function effectively in a team-based, time-pressured environment. When implemented well, competency-driven progression shifts the culture of training from one of passive time accumulation to more active, purposeful development [63]. It is also important that the high stakes summatives are still included as part of the programmatic assessment system (in competency-based training models). It should not be just multiple Workplace based and EPA assessments. Keeping these high stakes summatives can help complement the validity of the continuous work placed based assessments; it can also help with public accountability,

defensibility of progression decisions and can address some of the reliability gaps in workplace based assessments. Eventually, it is necessary to have enough data points to triangulate and give a good overall picture of competency in the resident.

### Conclusion

The evolution of emergency medicine training towards a hybrid model that integrates the structural predictability of time-based frameworks with the individualised rigour of competency-based progression represents a pragmatic and principled response to the complexities of modern medical education. Neither approach alone is sufficient. Time-based training offers consistency and administrative clarity but risks graduating trainees who have clocked the hours without truly mastering the craft. Pure competency-based models appears theoretically elegant but face real-world challenges around assessor variability, resource intensity, and the risk of trainees stalling at critical milestones. A hybrid model acknowledges these tensions and seeks to harness the strengths of both. For a specialty as demanding and high-stakes as emergency medicine, this balance is essential. Moving forward, the success of hybrid training will depend on several enabling conditions such as robust workplace-based assessment infrastructure, trained and calibrated faculty, transparent progression criteria, and an institutional culture that values genuine competency over the passage of time. Equally important is the commitment to ongoing evaluation of the model itself, ensuring that training outcomes translate into the clinical performance and patient safety standards that ultimately justify the enterprise. As emergency medicine continues to grow as a specialty across diverse health systems globally, a hybrid framework offers a scalable and adaptable blueprint. It can be contextualised to local needs without sacrificing the core principle that every resident who completes the programme is genuinely ready to practise independently.

**Table 1: Comparison of Time-based, Competency-based and Hybrid Model of Training in Emergency Medicine**

|                                           | Time-Based Training                                                  | Competency-based Training                                                             | Hybrid Model of Training                                                                                                                                                                                                  |
|-------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Core principle                            | Residents progress after completing a fixed duration (e.g., 5 years) | Residents progress upon demonstrating defined competencies, regardless of time taken  | Residents progress upon achievement of competencies but must fulfil a minimum required time                                                                                                                               |
| Progression criteria                      | Completion of required hours/rotations                               | Achievement of milestones and entrustable professional activities (EPAs)              | Achievement of milestones and EPA assessments and also completion of a minimum time period of training                                                                                                                    |
| Assessment focus                          | Summative exams at fixed intervals                                   | Continuous, workplace-based assessments (e.g., mini-CEX, DOPS, case-based discussion) | A programmatic assessment system of both continuous WBA and summative assessments after a minimum training period                                                                                                         |
| Flexibility                               | Low: all residents follow the same timeline                          | High: residents can progress faster or slower based on performance                    | Residents can progress faster or slower based on performance and having undergone a minimum period of training.                                                                                                           |
| Trainee variability                       | Assumes all trainees learn at the same pace                          | Acknowledges individual differences in learning trajectories                          | Acknowledges individual differences in learning trajectories                                                                                                                                                              |
| Accountability                            | Time served is the proxy for readiness                               | Demonstrated performance is the proxy for readiness                                   | A hybrid of minimal training time and demonstrated performance                                                                                                                                                            |
| Faculty role                              | Supervisors and teachers                                             | Coaches, assessors, and mentors                                                       | Coaches, supervisors, assessors, and mentors                                                                                                                                                                              |
| Risk of graduating underprepared trainees | Higher: resident can complete time without mastering skills          | Lower: graduation requires demonstrated competence                                    | Comparatively lowest as graduation requires both a minimal training time, demonstrated competencies and a programmatic assessment system with both high stakes summative assessments and continuous assessments e.g. WBA. |

|                           |                                                      |                                                     |                                   |
|---------------------------|------------------------------------------------------|-----------------------------------------------------|-----------------------------------|
| Administrative complexity | Lower: easier to plan rosters and training schedules | Higher: requires robust assessment infrastructure   | Similar to competency-based model |
| Resident autonomy         | Limited                                              | Greater: residents take ownership of their learning | Similar to competency-based model |
| Feedback culture          | Often periodic and formal                            | Frequent, real-time, and formative                  | Similar to competency-based model |

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