

# Allowing medical students to contribute to patient care: the role of Entrustable Professional Activities

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## Overview

- Competency-based medical education
- Entrustable professional activities
- Levels of supervision
- Entrustment decisions
- Ad hoc versus summative entrustment decisions
- Sources of assessment information to support decisions
- EPAs and entrustment for undergraduate and postgraduate trainees
- Some notes about EPA-based restricted license for student-doctors

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## Would you trust your loved ones to this trainee? Certification decisions in postgraduate anaesthesia training

Gersten Jonker<sup>1,\*</sup>, Annelot Ochtman<sup>1</sup>, Adrian P. Marty<sup>2</sup>, Cor J. Kalkman<sup>1</sup>, Olle Ten Cate<sup>3</sup> and Reinier G. Hoff<sup>1</sup>

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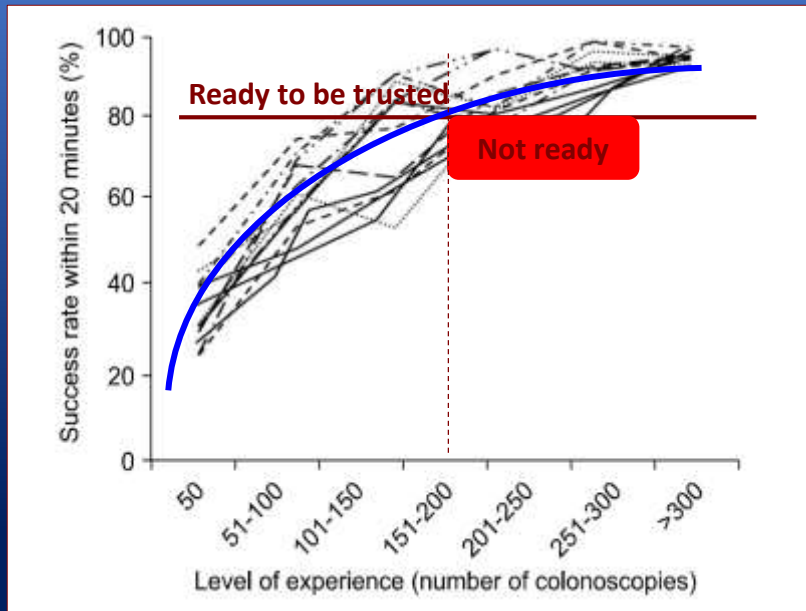


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## Essence of competency-based medical education

- **CBME**: Education, aimed at a standard level of proficiency for all graduates
- **Critical features** of CBME:
  - a. Clear description of standards for a “good physician/specialist”
  - b. Assessment of all medical trainees using these standards
  - c. Competence, not time, is primary reason to finalize training

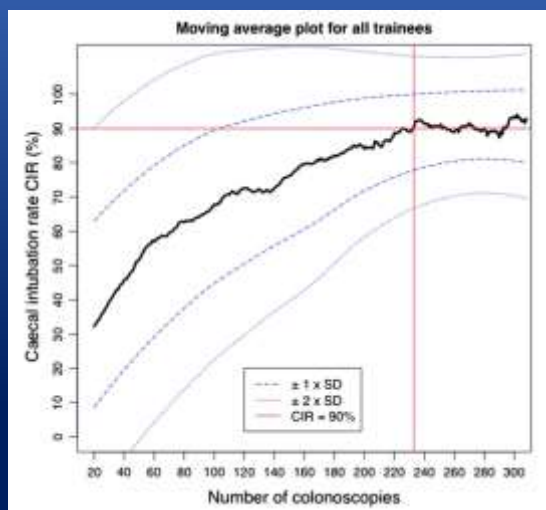
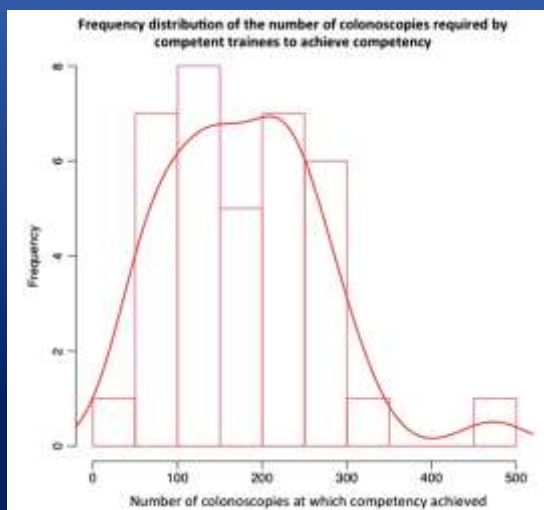
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Chung et al 2010

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## Time-to-competence varies among trainees



Ward et al 2014, GUT

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# CBME: appreciation and challenges

General acceptance of CBME worldwide, but..

- Competency *frameworks* can become analytical and detailed
- Competencies are sometimes rather abstract and general
- Clinical teachers often struggle with assessment

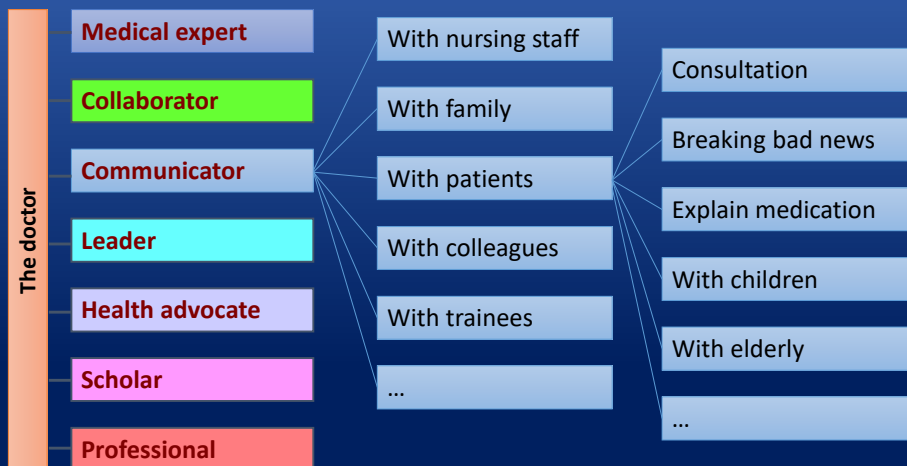
## The promise, perils, problems and progress of competency-based medical education

Claire Touchie<sup>1,2</sup> & Olle ten Cate<sup>3</sup>

*Medical Education* 2016; 50: 93–100

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## The analytic approach to CBME



Pangaro & ten Cate 2013

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## The analytic approach to CBME: the CanMEDS 2015 version

Role	161 key concepts	28 key competencies	116 enabling competencies	434 milestones (excl CPD)
Medical expert	16	5	21	77
Communicator	27	5	18	66
Collaborator	21	3	8	47
Leader	19	4	13	68
Health Advocate	14	2	13	24
Scholar	39	5	27	85
Professional	25	4	16	67

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### Measurement of the General Competencies of the Accreditation Council for Graduate Medical Education: A Systematic Review

Stephen J. Lurie, MD, PhD, Christopher J. Mooney, MA, and Jeffrey M. Lyness, MD

*Academic Medicine,*  
2009

“[there is] no evidence that current measurement tools can assess [...] competencies independently [...] Further efforts are unlikely to be successful, ..

..[So, use] competencies to guide and coordinate [...] evaluation [...] rather than develop instruments to measure [...] competencies directly”

Something was lacking: a strong link to the *work* of clinical practice

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# Entrustable Professional Activity (EPA)

- **Definition:** Unit of professional practice (a task or responsibility) that can be fully entrusted to a trainee, once he or she has demonstrated the necessary competence to execute this activity unsupervised
- **Purpose:** To operationalize competency-based medical education through a stepwise and safe engagement of trainees in clinical practice – with a progressive (bounded) autonomy
- **Applicability:** Created for PGME, now used in all health professions

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## All EPAs require multiple competencies

	EPA1	EPA2	EPA3	EPA4	EPA5
Medical expert	++	++	+		++
Collaborator	+		+	++	
Communicator	+	++			+
Leader		+	++	++	
Health advocate	+		++	+	
Scholar	+				++
Professional	+	+	+		

Recommendation: focus assessment on EPAs; use competencies for feedback

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# Competencies ↔ EPAs



Person



Competencies	EPAs
person-descriptors	work-descriptors
knowledge, skills, attitudes, values	essential units of professional practice
<ul style="list-style-type: none"> <li>• content expertise</li> <li>• health system knowledge</li> <li>• communication ability</li> <li>• management ability</li> <li>• professional attitude</li> <li>• scholarly skills</li> </ul>	<ul style="list-style-type: none"> <li>• discharging patient</li> <li>• counseling patient</li> <li>• leading family meeting</li> <li>• designing treatment plan</li> <li>• Inserting central line</li> <li>• Resuscitating patient</li> </ul>

the *ability* to do something successfully or efficiently\*

that *something* that is (trusted to be) done successfully or efficiently; permission requires qualification



Work



\*Oxford dictionary

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## Does it fit?



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## Operationally defining 'competent'

When a professional activity is mastered..

- ...at a **threshold** level
- ...that permits **trust**
- ...to act **unsupervised**



Competent: *stage* in a developmental continuum

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## Growth of competence over time

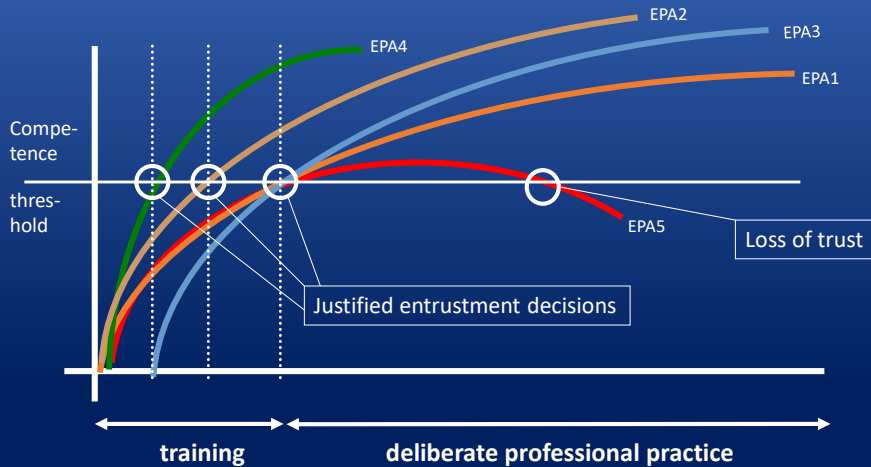


Dreyfus & Dreyfus 1986; ten Cate et al, 2010

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## Competency curves of one trainee for various EPAs



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## Entrustment decisions: Five levels of supervision, reflecting increasing trust in trainee autonomy

1. Be present but no permission to enact EPA
2. Practice EPA with direct (pro-active) supervision
3. Practice EPA with indirect (re-active) supervision
- [threshold]-----
4. Unsupervised practice allowed (distant oversight)
5. May act as the supervisor for junior learners

Ten Cate et al 2010

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## Levels of supervision



### 1. Observation only

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## Levels of supervision



### 2. Direct, proactive, supervision

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## Levels of supervision



### 3. Indirect, reactive, supervision

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## Levels of supervision



### 4. Oversight – distant supervision

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## Levels of supervision



### 5. Supervise a junior learner

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## An individualized workplace curriculum

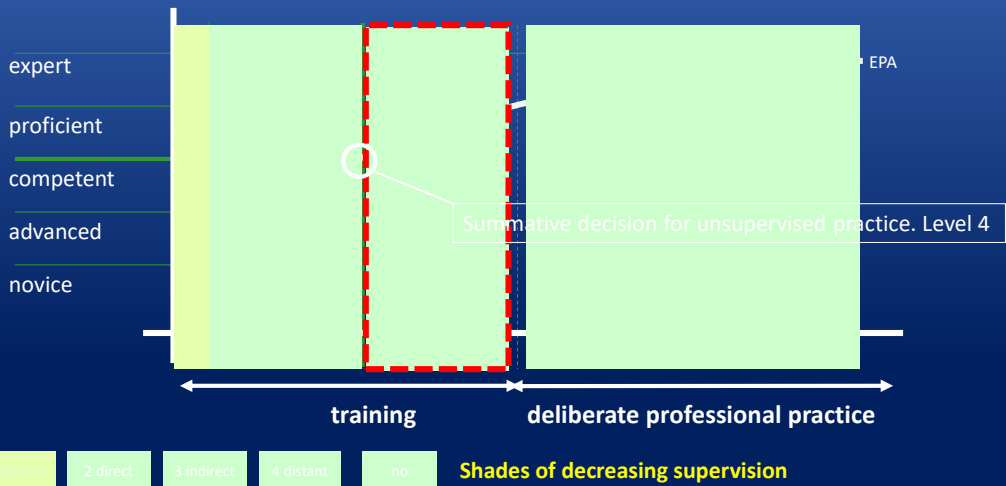
### Graded supervision allows for

- 1 Observing the activity
- 2 Acting with direct, pro-active supervision present in the room
- 3 Acting with (re-active) supervision available within minutes
- 4 Acting unsupervised, i.e. under clinical oversight
- 5 Acting as the supervisor to a junior

Portfolio of:	PGY1			PGY2			PGY3			PGY4		
<i>trainee Jones</i>												
EPA a	1	2	2	2	3	4	4	5				
EPA b	1	1	2	2	2	3	3	4				
EPA c	2	2	3	4	5	5	5	5				
EPA d	2	3	4	4	4	4	5	5				

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# Growth of competence – decrease of supervision



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# Step-wise, legitimate participation in health care



Step by step,  
EPA by EPA

1. Observe only
2. Act with direct supervision
3. Act with indirect supervision
4. Act unsupervised



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# Entrustment decision making as an approach to assessment

RIP OUT

## Entrustment as Assessment: Recognizing the Ability, the Right, and the Duty to Act

Olle ten Cate, PhD

*Journal of Graduate Medical Education, 2013*

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Invited Commentary

## Entrustment Decisions: Bringing the Patient Into the Assessment Equation

Olle ten Cate, PhD

*Academic Medicine, 2017*

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# The purpose of workplace-based assessment: *Retrospective or Prospective?*

Does the student show mastery of the content, taught in courses and rotations?



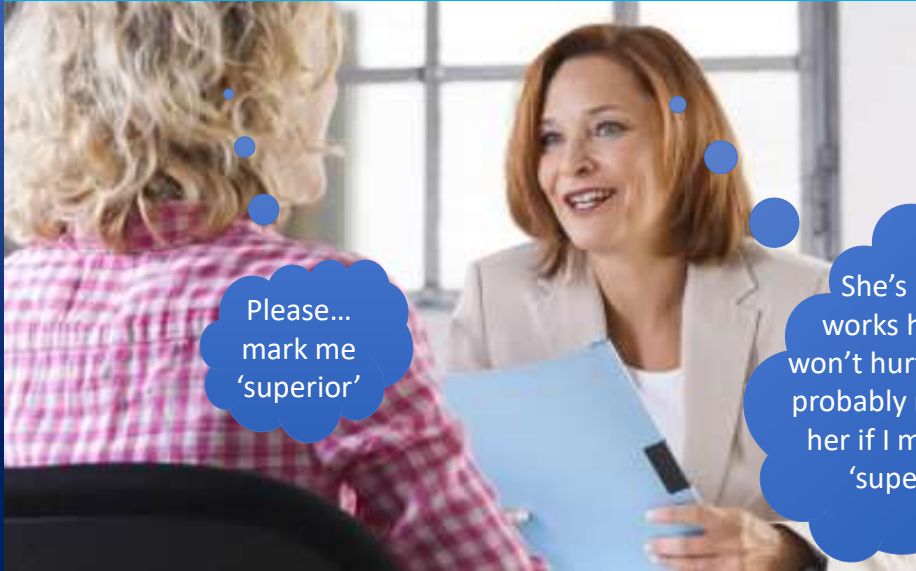
Is the student ready to assume the expected future responsibilities?



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## Psychology of traditional workplace assessment



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## Psychology of *EPA-based* workplace assessment



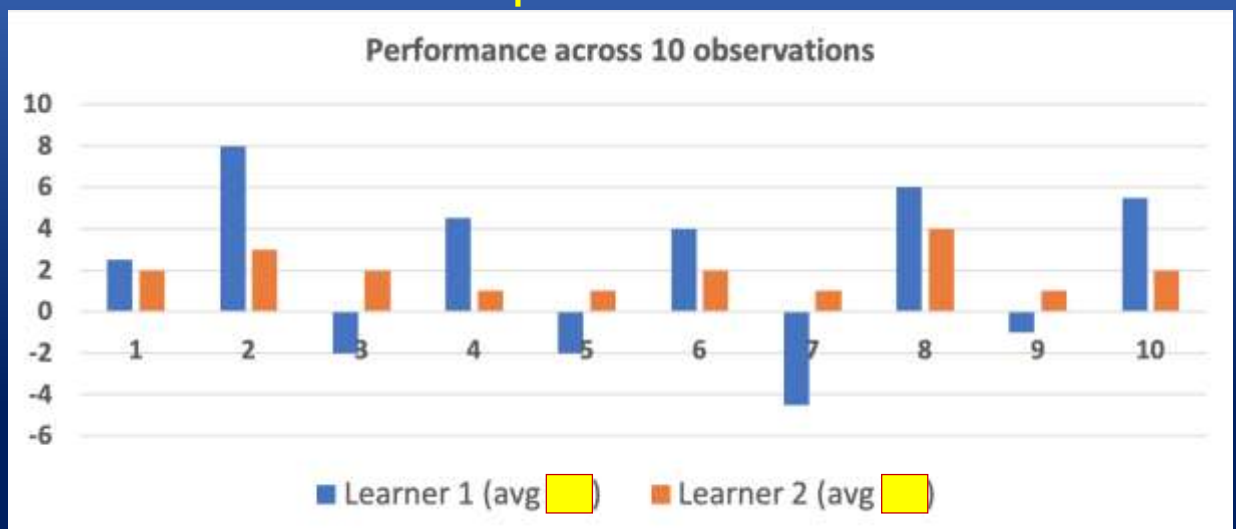
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## The trust concept in EPA-based assessment

- Trusting someone is making yourself **vulnerable**
- Accepting the **risk** that adverse events *could* happen
- Graduates will be certified for activities supervisors may **not have observed** and learners may not have encountered
- Entrustment decisions require estimation of **adaptive competence** to cope with unfamiliar situations
- Trust involves more than an average of past performances

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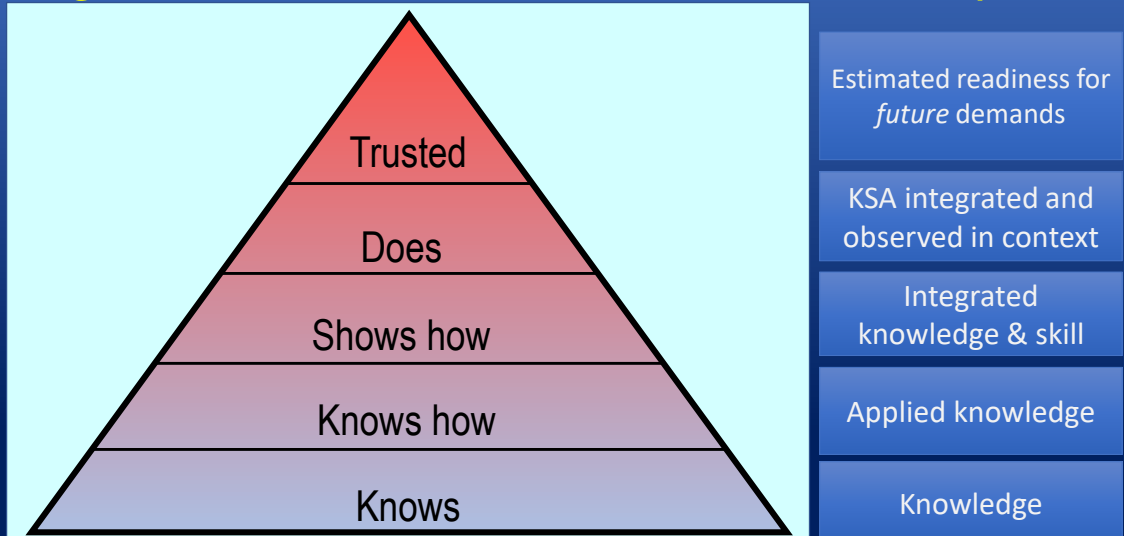
## Who would you trust most for the next patient?



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## Is reporting what a learner 'does' really the highest level of assessment we should aspire to?



*Academic Medicine, 2021*

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## What factors determine entrustment decisions?

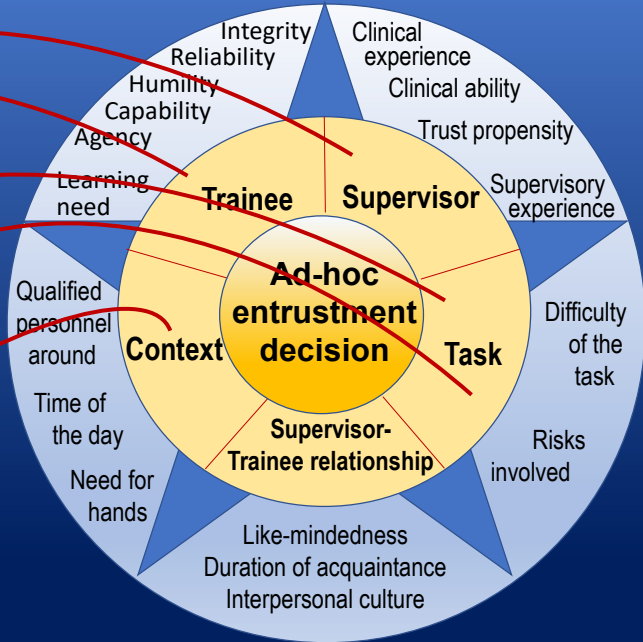
“Can I trust this student to attend to this patient now?”



More than knowledge, skill or specific proficiency

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“Can I trust  
*this* student to  
*attend* to *this*  
patient *now*?”



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## General qualities that enable trust in trainees in HP

1. **Capability** (knowledge & skill; experience; adaptive expertise)
2. **Integrity** (truthful, good intentions, patient-centered)
3. **Reliability** (conscientious, predictable, accountable, responsible)
4. **Humility** (observing limits, willing to ask help, receptive to feedback)
5. **Agency** (self-confident, proactive toward work, team, safety, development)

**Useful acronym:** think of **A RICH** *entrustment decision*

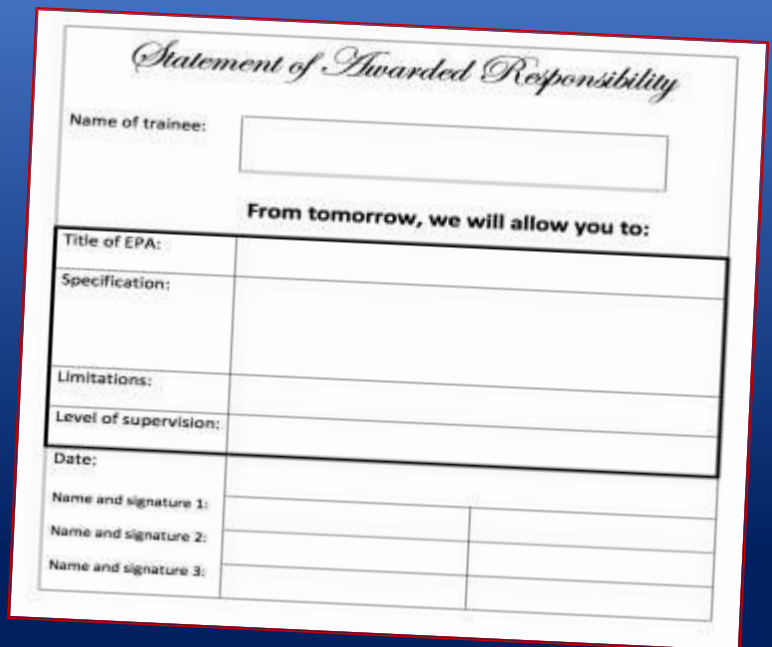
Based (not exclusively) on: Kennedy et al 2008; Dijksterhuis et al 2009; Sterkenburg et al 2010; Ginsburg et al 2010; Wijnen-Meijer et al 2013 (2x); Choo et al 2014; Tiyyagura et al 2014; Hauer et al 2014; Sheu et al 2016, 2017; Duijn et al 2018. See: ten Cate & Chen 2020

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## Ad hoc and summative decisions

**Ad-hoc decisions of entrustment** are individual decisions, occurring daily in clinical education.

**Summative decisions of entrustment** are team decisions, based on multiple workplace-based assessments and must lead to increased autonomy (sometimes called a STAR)



*Statement of Awarded Responsibility*

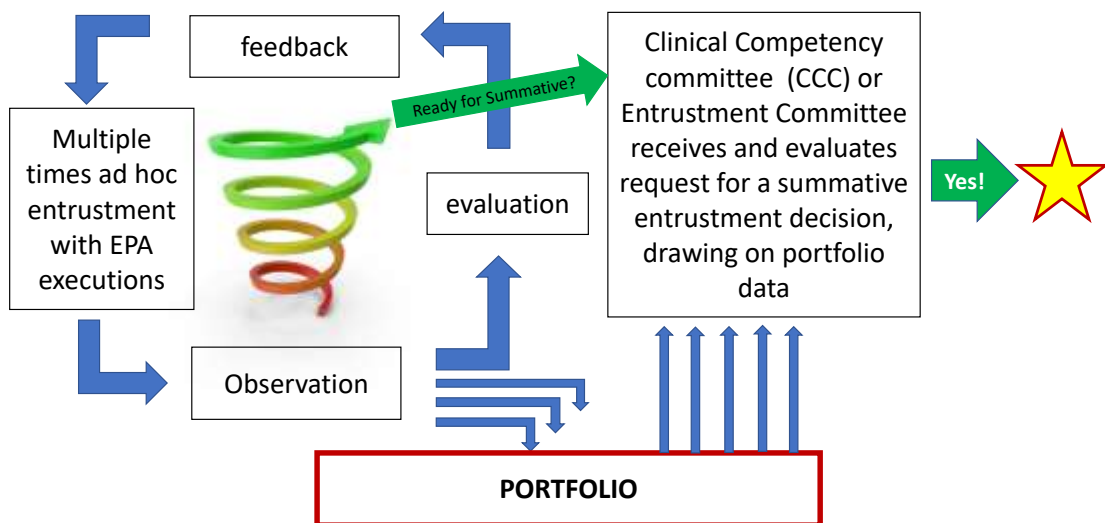
Name of trainee:

From tomorrow, we will allow you to:

Title of EPA:	
Specification:	
Limitations:	
Level of supervision:	
Date:	
Name and signature 1:	
Name and signature 2:	
Name and signature 3:	

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## The flow of workplace-based assessment data

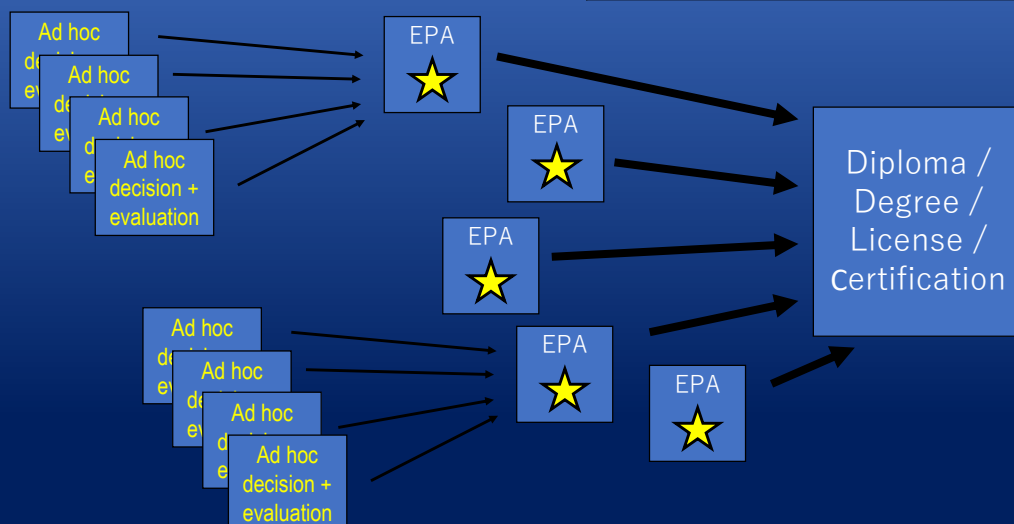


Young et al 2021

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	PGY1		PGY2		PGY3		PGY4	
EPA a	1	2	2	2	3	4	4	5
EPA b	1	1	2	2	2	3	3	4
EPA c	2	2	3	4	5	5	5	5
EPA d	2	3	4	4	4	4	5	5





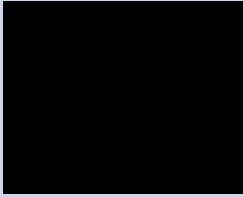

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## Critical features of an EPA-based program

- Individualized
- Time-variable; but variation only if so needed
- Stepwise, legitimate peripheral participation in health care
- Progress defined as: degree of autonomy in health care
- Autonomy expressed as degree of supervision needed
- Comparing and ranking of students is not a purpose (rather: coaching *all* students to meet competency standards is aim)
- Workplace-based assessment uses the four core approaches: observations, monitoring, discussions, product evaluation.

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# Four critical information sources -- modes of Workplace-Based Assessment

1. Direct, brief observations	2. Longitudinal observations	3. Case-based discussions	4. Product evaluation
			

Recommendation: draw from all 4 sources of information

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## 1. Brief, direct, observation

Direct or video observation:

- Bedside (MiniCEX)
- Consultation room
- Procedure (DOPS, OSATS)
- Morning rounds
- Handovers
- Any other brief situation in clinical practice



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# Recommended flow in direct observation

Mini-Clinical Evaluation Exercise (CCE)

Examiner: \_\_\_\_\_ Date: \_\_\_\_\_

Resident: \_\_\_\_\_ (C.C.A.) (C.E.) (C.E.A.)

Patient Problem/Dx: \_\_\_\_\_

Setting: ( ) Ambulatory ( ) Inpatient ( ) ED ( ) Other: \_\_\_\_\_

Patient: Age: \_\_\_\_\_ Sex: \_\_\_\_\_ ( ) New ( ) Follow-up

Complexity: ( ) Low ( ) Moderate ( ) High

Focus: ( ) Data Gathering ( ) Diagnostic ( ) Therapeutic ( ) Counseling

1. Medical Interviewing Skills (C Not observed) \_\_\_\_\_

2. Physical Examination Skills (C Not observed) \_\_\_\_\_

3. History and Physical Examination \_\_\_\_\_

4. Clinical Judgment (C Not observed) \_\_\_\_\_

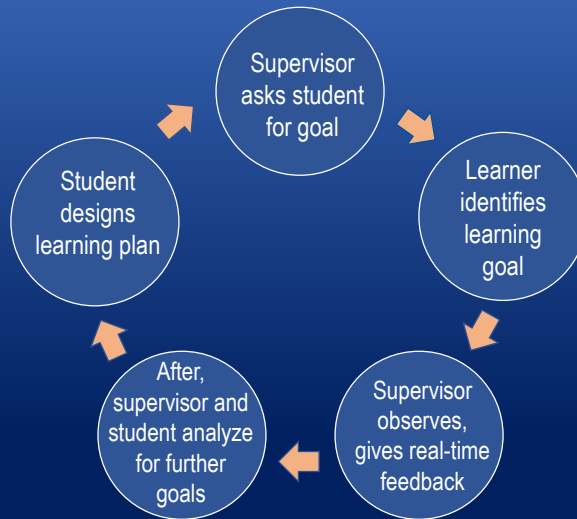
5. Counseling Skills (C Not observed) \_\_\_\_\_

6. Diagnostic/Therapeutic (C Not observed) \_\_\_\_\_

7. Overall Clinical Competence (C Not observed) \_\_\_\_\_

Mini-CCE Score: \_\_\_\_\_ (Mean: \_\_\_\_\_) (Range: \_\_\_\_\_)

Examiner Signature: \_\_\_\_\_ Resident Signature: \_\_\_\_\_



Kogan et al. 2017, Persp. on Med E

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## 2. Longitudinal Practice Observation

Single- or multi-source feedback

- Clinicians, nurses, other health professionals, peer learners, junior learners, patients
- Focus on general professionalism features for entrustment (capability, agency, reliability, integrity, humility)
- Recommended procedures:
  - Agreed-upon period (shift, week, rotation)
  - Observation should be unplanned; not scheduled
  - Observers may be chosen
  - Anonymized reporting
  - Narrative feedback better than scores
  - Use MSF report for facilitated feedback & action plan



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### 3. Case-based discussions and oral exams

- Purpose is not: providing feedback, but: testing knowledge, insight, and anticipated action
- CBD (British) ~ Chart-Stimulated Recall or CSR (American): is a conversation based on data in patient record to probe for clinical reasoning
- EBD = entrustment based discussion: conversation about actions, with 'what would you do if...?' questions to assess risks when considering entrustment

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### Entrustment-Based Discussion

- To evaluate risks before summative entrustment
- 10-15 min oral discussion, after a (critical) activity

#### Questions

1. **What have you done?**
2. **Probe for background understanding** (anatomy, physiology, tests, treatment)
3. **Aware of risks and potential complications?**
4. **What would you have done if.. ?** things had been different (unexpected patient, culture, medical history, lab or other findings, (lack of) cooperation, mental, physical abnormality, multimorbidity, etc)?



*The Clinical Teacher, 2017*

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## 4. Product Evaluation

### Clinical documentation

- Logs of experience, e.g. Clinical Encounter Cards (CEC) every time a patient is seen (age, sex, setting, diagnosis, level of involvement, procedure, supervision)
- Entries into electronic health record
- Transfer / discharge summaries

### Written reports

- Clinical, Research, Policy, M&M, etc.
- Presentation slides (In writing / poster)



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## 4. Product Evaluation

### Clinical products, if applicable, e.g.

- Surgical, orthopedic, dental reconstructions
- Radiological or ultrasound images made

### Presentations (observed)

- Critically appraised topics and other EBM
- Research, clinical (local, national, international)
- Prepared teaching sessions for students (observed)



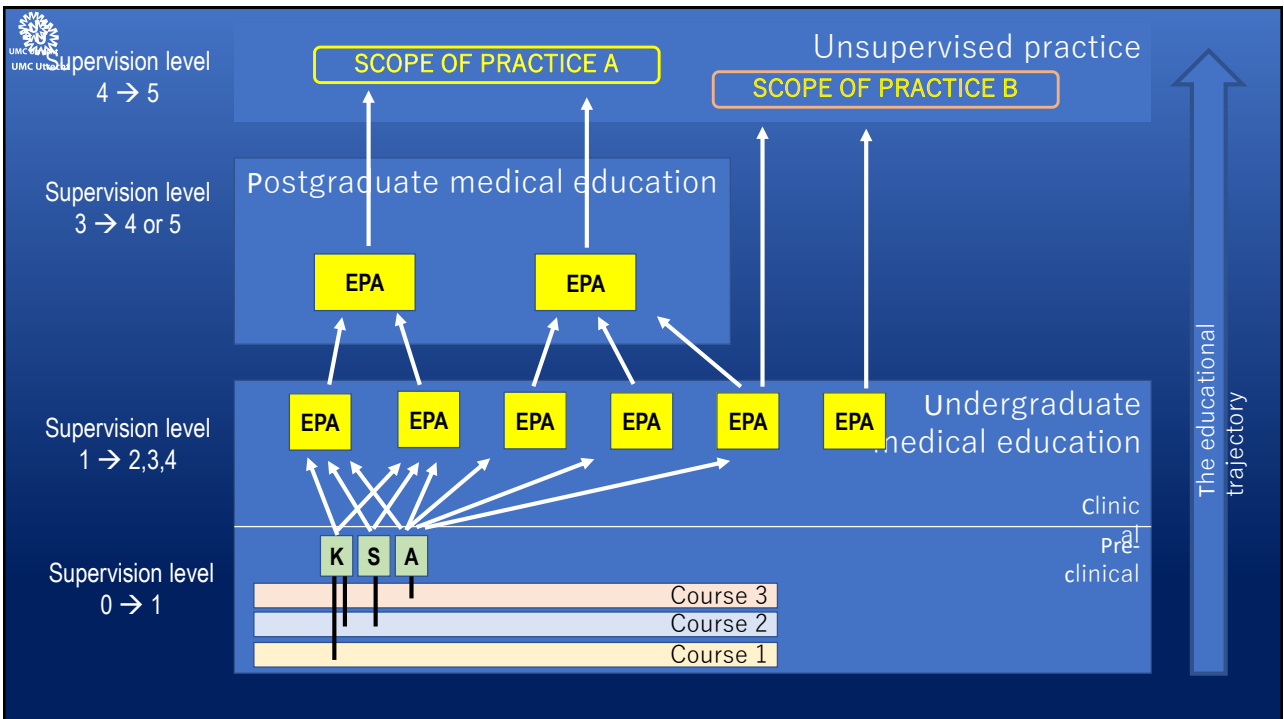
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## Some words on UME to PGME transition

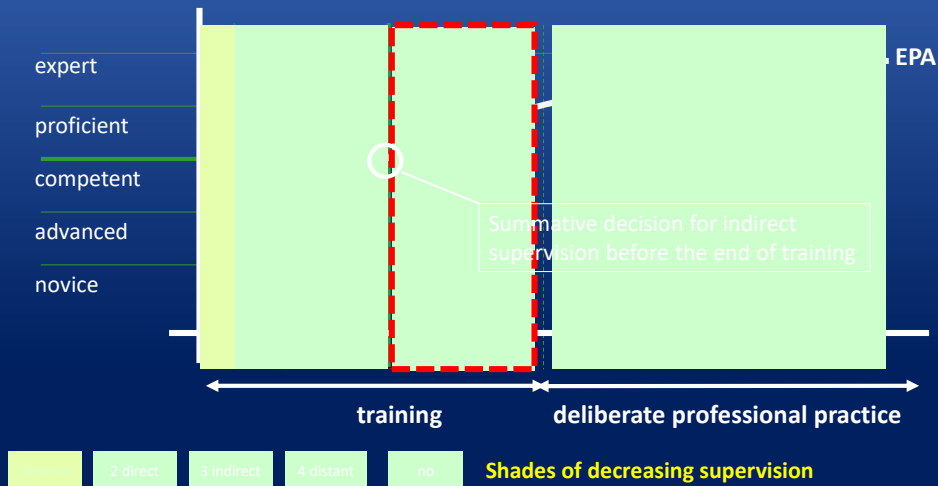
- General recommendation:
  - Prepare medical students for indirect supervision
  - Prepare residents for unsupervised practice
- When and how much autonomy for senior medical students and recent graduates is manageable and justified?
- Example: final year students as semi-physicians (sub-interns), and physicians not-(yet)-in-training in the Netherlands

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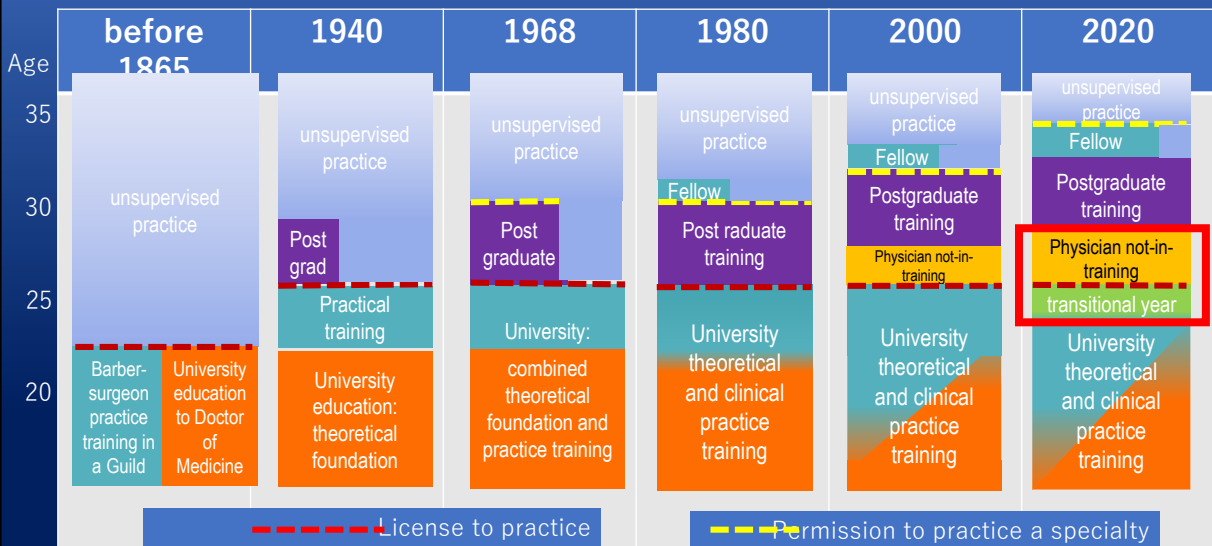
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# Growth of competence – decrease of supervision



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## A brief history of vertical integration in Dutch medical education



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A critical phase:

- **Transitional year** (final year of medical school) provides increased responsibility experience (small number of 'own patients' on the ward; basic clinical work under indirect supervision). Student are called "semi-physicians"
- **PNIT phase:** voluntary clinical experience after license; most work as junior hospitalists under indirect supervision
- EPA frameworks change: UME EPAs differ from PGME EPAs; PNIT does not use EPAs (yet)

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## Three recommended references about student responsibilities for medical students

### Legitimate workplace roles and activities for early learners

H. Carrie Chen,<sup>1</sup> Leslie Sheu,<sup>2</sup> Patricia O'Sullivan,<sup>3</sup> Olle ten Cate<sup>2,3</sup> & Arianne Teherani<sup>2</sup>

*Medical Education*, 2014

### The Case for Use of Entrustable Professional Activities in Undergraduate Medical Education

H. Carrie Chen, MD, MEd, W.E. Sjoukje van den Broek, MD, and Olle ten Cate, PhD

*Academic Medicine*, 2015

### Developing Entrustable Professional Activities for Entry Into Clerkship

H. Carrie Chen, MD, PhD, Margaret McNamara, MD, Arianne Teherani, PhD, Olle ten Cate, PhD, and Patricia O'Sullivan, EdD

*Academic Medicine*, 2016

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## Entrustment-supervision levels - more detailed scale

Generic ES scale	Chen-adapted ES scale
1 Not allowed to practice EPA	1a. Not allowed to observe 1b. Allowed to observe
2 Practice under direct (proactive) supervision	2a. As co-activity with supervisor 2b. Alone, but with supervisor in room, ready to step in as needed
3 Practice under indirect (reactive) supervision	3a. Supervisor immediately available, <i>all</i> findings double checked 3b. Supervisor immediately available, <i>key</i> findings double checked 3c. Supervisor immediately available, findings checked, but only on the student's request
4 Practice unsupervised	4a. Supervisor available by telephone 4b. No supervision available
5 Act as supervisor	-

Chen et al, 2015

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## EPA-based restricted license for student-doctors? Some recommendations.

1. Be very clear about the EPAs student-doctors are to be qualified for at which level of supervision (at a national level)
2. Individualize: not everyone may be ready for everything
3. Qualify for EPAs only after thorough assessment: entrustment must be grounded in valid summative decisions
4. Think of ePortfolios, digital badging and micro-credentialling to document
5. Make sure student-doctor phase is (also) a learning experience
6. Insurance is good but not enough: secure dependable and available supervision and guidance, as a safety net for errors
7. Be aware of risks: workplace distress (high job demands + lack of control + lack of support + bullying)

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