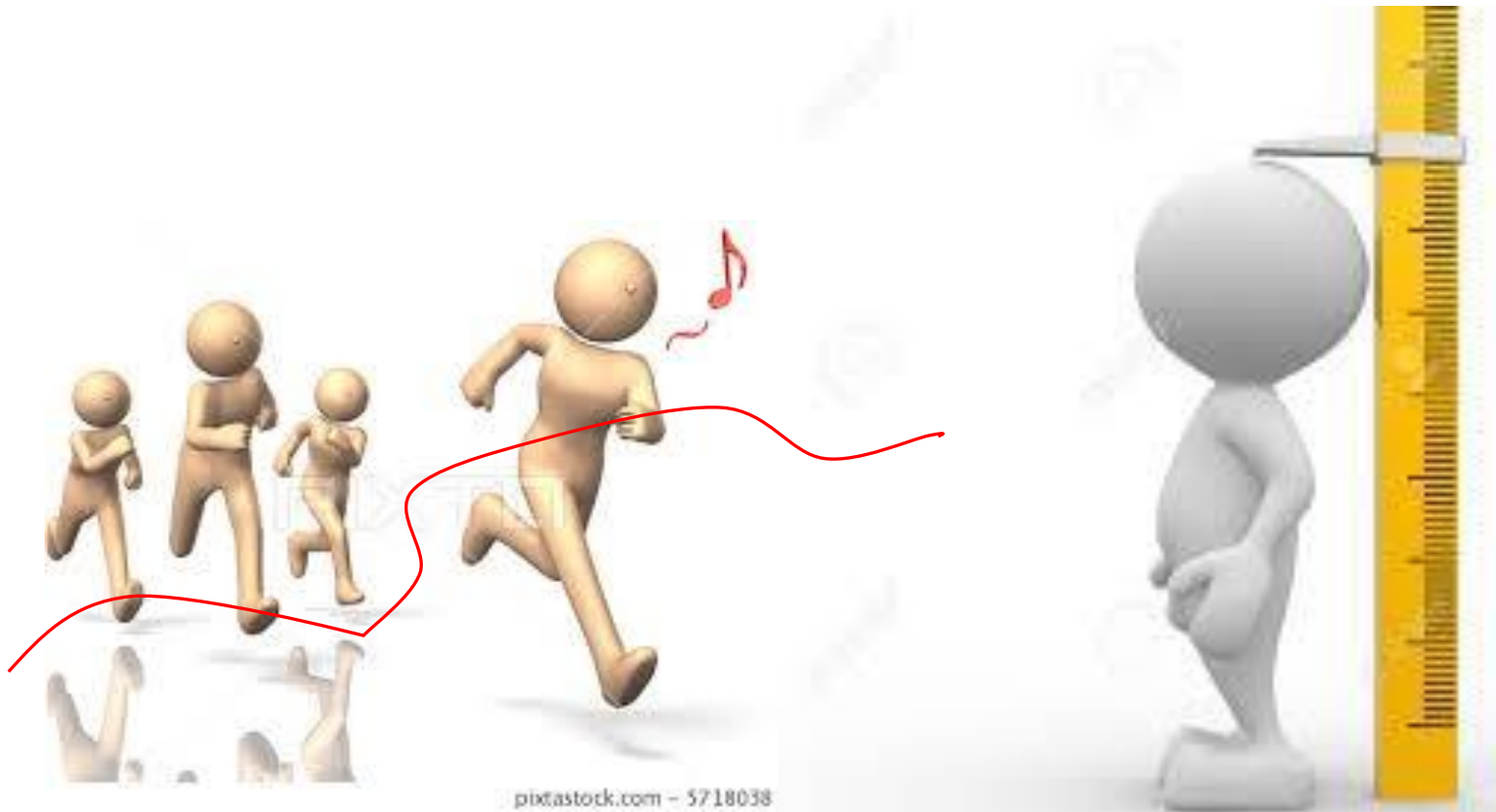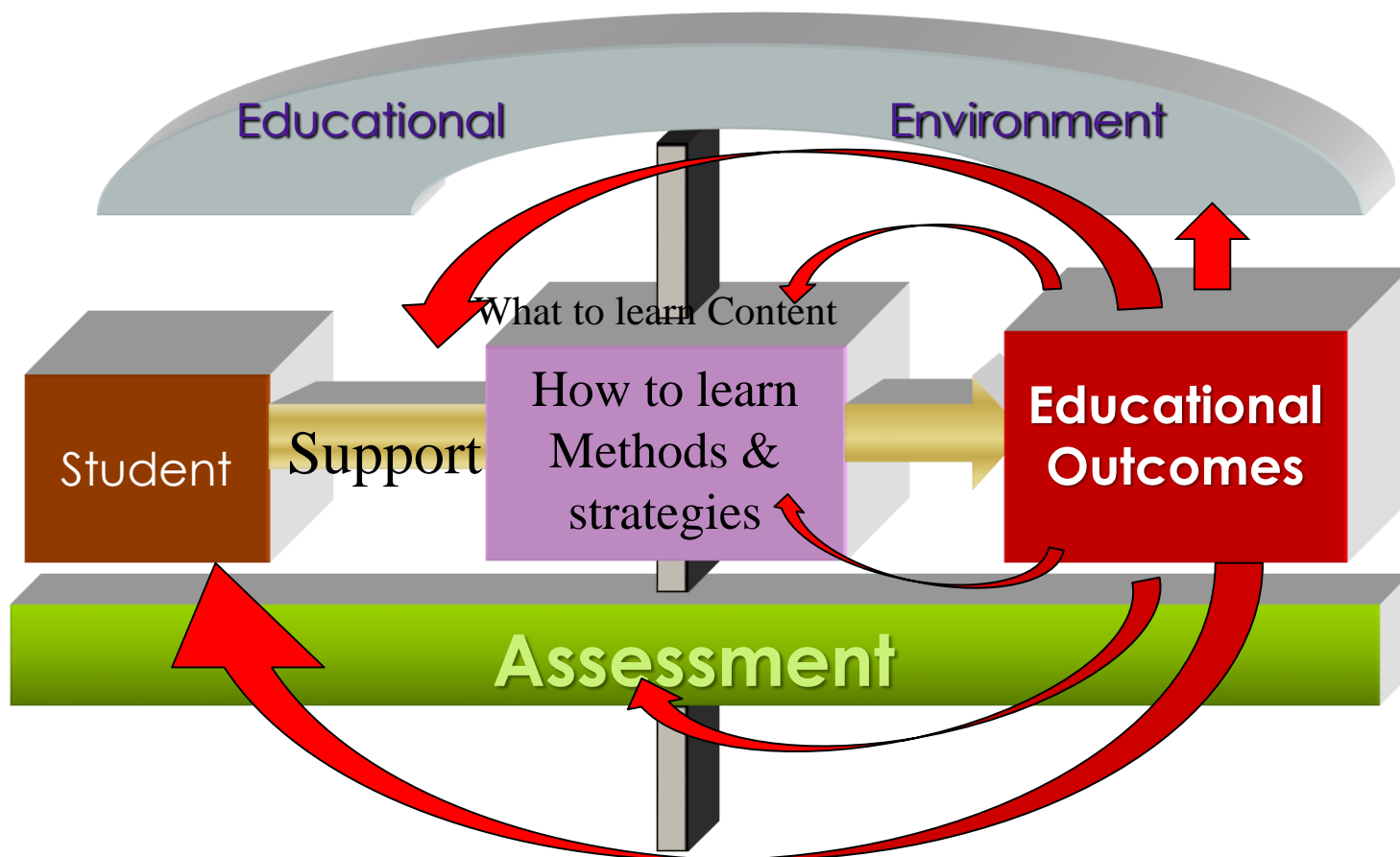# 臨床能力鑑定

EPAs and Competency milestones

蔡淳娟

2018/5/7

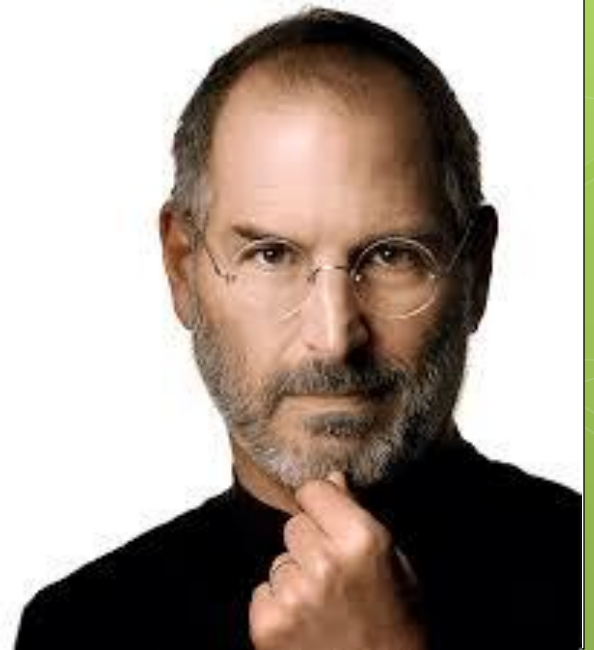# 傳統 vs. CBE

CBME, 成果導向的醫學教育

Complex medical education

Steve Jobs

"Simple can be harder than complex: You have to work hard to get your thinking clean to make it simple. But it's worth it in the end because once you get there, you can move mountains."

Where are you?

台灣兒科醫學會 Since 2008

1999 - Outcome Project Begins

- General Competencies Defined

- Increasing emphasis on educational outcomes (vs. process)

2001- Quadrads (Board, PD, RRC, Res) Convened

- Translate core competencies into specialty-specific competencies

- Portfolios were the next big hope

2002-2008 – Implementation of 6 Competency Domains

- Residency programs expected to develop instructional and assessment methods for integrating the competencies in their curricula

- ACGME assessment "toolbox" developed

Growth **Milestones**
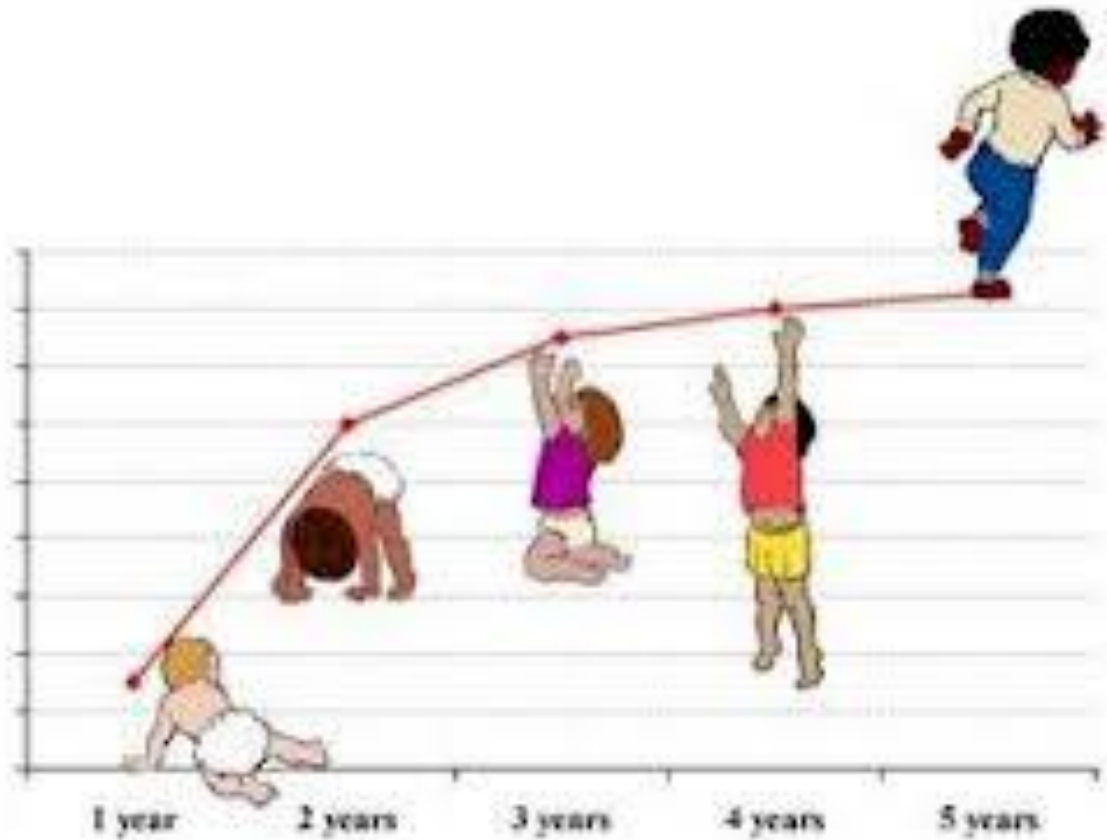
台灣兒科醫學會
一般醫學教育委員會

Council on General Pediatrics Education (CGPE)

◎ 最新消息
◎ 學習目標
　　醫師的專業素養
　　兒童操作型技術
　　健康諮詢
　　生長
　　發展
　　行為問題
　　營養
　　意外傷害及中毒的處置
　　青春期
　　週產期嬰兒與新生兒
　　兒童遺傳科(醫學遺傳學與畸形學)
　　常見之兒童急症
　　常見兒科慢性病症與失能
　　處方
　　水分與電解質輸液治療
　　兒童虐待
　　社區照顧者任務
◎ 學員程度
　　第七年醫學生
　　第一年住院醫師
　　第二年住院醫師
　　第三年住院醫師

兒童操作型技術 / Skills

項目	Y7/PGY1	R1	R2	R3
適應症	能說明操作技術的適應症	能獨立判斷操作技術的適應症並取得家屬同意		
執行	能夠正確執行下列技術： 1. 放置鼻胃管 2. 放置肛管 3. 無菌操作 4. 傷口換藥 5. 拆線 6. 基礎心肺復甦術	能夠正確執行下列技術： 1. 靜脈抽血與放置導管（IC） 2. 放置導尿管 3. 恥骨上膀胱穿刺 4. 動脈抽血 5. 腰椎穿刺	能夠正確執行下列技術： 1. 放置經皮式中央靜脈導管 2. 放置中央靜脈導管 3. 骨針 4. 氣管內插管 5. 肋膜液抽取 6. 胸管放置 7. PALS or APLS	能夠正確執行下列技術： 1. 交換輸血 2. 放置臍靜脈與臍動脈導管 3. 放置動脈導管 4. 放置中央靜脈導管 5. 腦室內穿刺
後續照顧	能夠說出監測併發症的項目	能夠偵測與處理併發症		

2009. COMSEP

台灣兒科醫學會
一般醫學教育委員會

Council on General Pediatrics Education (CGPE)

週產期嬰兒與新生兒 / ISSUES UNIQUE TO THE NEWBORN

左側選單：

◎ 最新消息
◎ 學習目標
　醫師的專業素養
　兒童操作型技術
　健康諮詢
　生長
　發展
　行為問題
　營養
　意外傷害及中毒的處置
　青春期
　週產期嬰兒與新生兒
　兒童遺傳科(醫學遺傳學與畸形學)
　常見之兒童急症
　常見兒科慢性病症與失能
　處方
　水分與電解質輸液治療
　兒童虐待
　社區照顧者任務
◎ 學員程度
　第七年醫學生
　第一年住院醫師
　第二年住院醫師
　第三年住院醫師
◎ 相關連結

項目	Y7/PGY1	R1	R2	R3
周產期預防與處置	• 能完成病史的詢問(含:母親過去病史、懷孕史、用藥史, 妊娠糖尿病、高血壓、子癲前症有無, 生產前後的過程記錄) • 能說明那些是高危險妊娠的產婦 • 能說出apgar score的評分項目	• 完成新生兒復甦術的課程(NRP)並取得證照(指R1) • 能正確給予新生兒初步急救 (如:維持暢通的呼吸道、有效換氣) • 能說明新生兒復甦術中之外接流程與應準備設備(如:應準備的氣管內管size, 急救藥物的抽取與插管) • 以正確說出B族鏈球菌(GBS) 預防策略	• 能獨立完成進行進一步的新生兒急救,包括:呼吸道處置, 血管通路設置, 緊急輸液, 胸部按壓的適應症以及技巧, 急救藥物；包括羊水中有胎便新生兒的處理 • 可以正確說出產前使用類固醇等減少胎兒及新生兒死亡率的策略	• 能指揮醫療團隊進行新生兒急救stand-by，並對家屬解釋新生兒危急狀況 • 可對胎兒及新生兒在附件一列出之危險狀況時做評估及處理 • 可以在資深醫師指導下完成高危險妊娠產前照會工作 • 可完成高危險新生兒外會工作
正常新生兒照顧(註: 哺乳、Vaccine、生長、營養部分請參考健康諮詢一節)	• 能將新生兒歸類為preterm、term、post-term、SGA、LGA、AGA • 能說出現行新生兒篩檢的項目 • 能辨識新生兒黃疸及決定該如何處置	• 衛教家屬及給予諮詢---(正常新生兒餵食、體重、營養、嘔吐、預防注射、篩檢、黃疸、排泄) • 能正確說出新生兒輸液,營養的使用 • 能知道新生兒以及各年齡層嬰兒正常	• 能說出特殊嬰兒(如:打過IVIG、早產兒)疫苗注射的建議 • 能協助健兒門診的工作	• 能獨立從事健兒門診之業務 • 能決定新生兒出院計畫 • 可提供專業人員(外院醫師與護士)新生兒相關諮詢 • 可協助醫院母嬰親善的計畫

17 competencies
>300 subcompetencies

Multiple tools
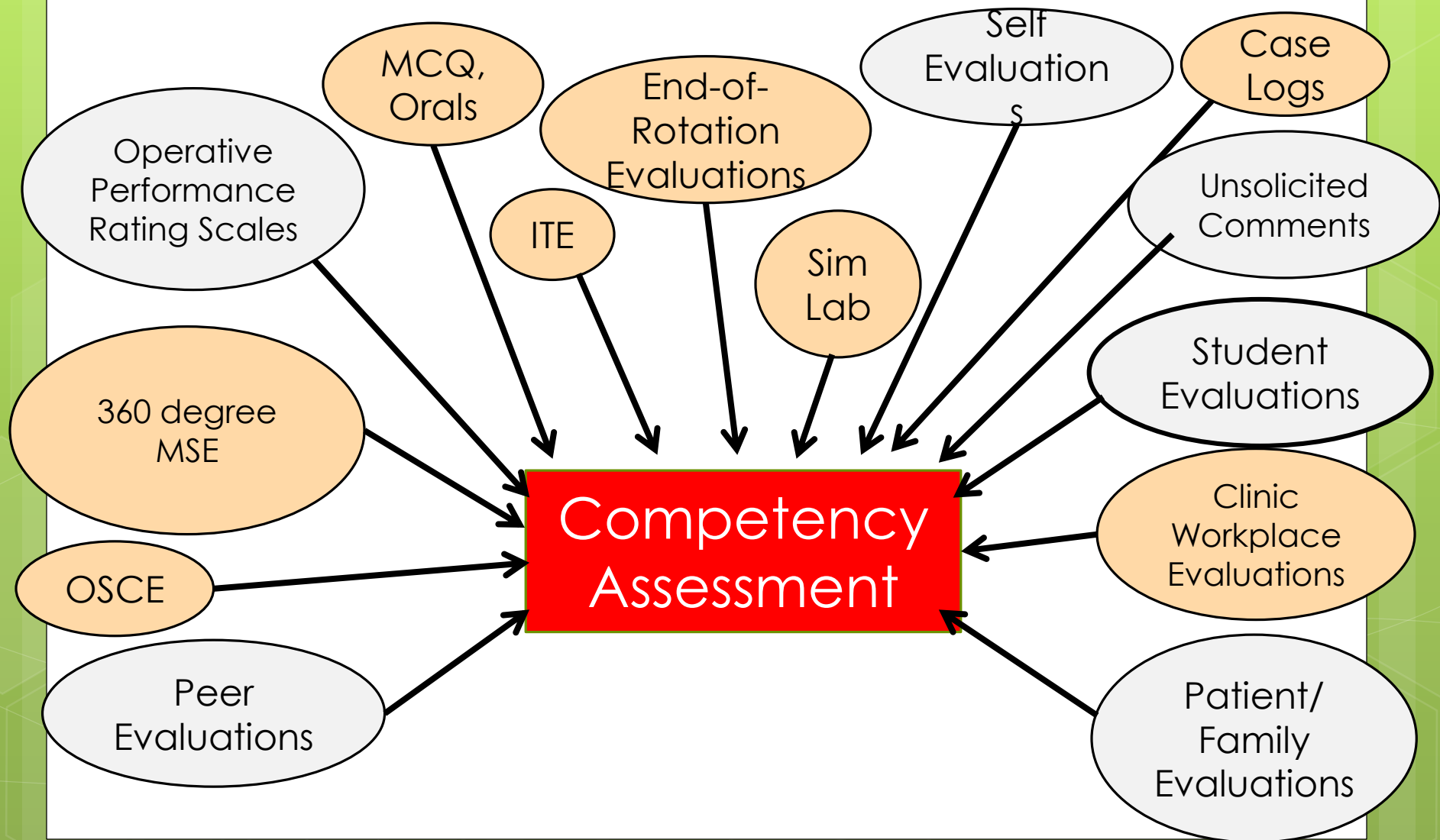
The Outcome Project had difficulty in measuring outcomes

Goals of Outcome Project:

- Expand outcome evidence for resident review, accreditation and certification
- Enhance public accountability

EPAs

Entrustable Professional Activities

Entrustable ?

Taiwan RRC

		1	2	3	4	5	
V	4.2.b 工作環境 (專科自訂)	不完整		具備		審慎周延 成效卓越	工作環境:包括值班室、置物櫃、網路與參考書資源、照顧病床數(或其他替代指標)、生物安全性(biosafety)。
V	4.3 責任分層及漸進 (專科自訂)	1	2	3	4	5	住院醫師責任與能力分層漸進,需呈現在照護病人中(如:確實交班、堅守工作崗位等)。訓練單位有責任讓訓練完成的住院醫師在督導下具有獨當一面的能力,且具有對資淺住院醫師及醫學生的教學能力。

JCI

Intent of Medical Professional Education (MPE.4)

Supervision is required to ensure safe patient care and ensure that the training program is a learning experience for the medical student and resident trainee. The required level of supervision is consistent with the level of training and level of competence of the medical student and resident trainee. The organization understands that medical student and resident trainee competence cannot be assumed and must be demonstrated early in the training program.
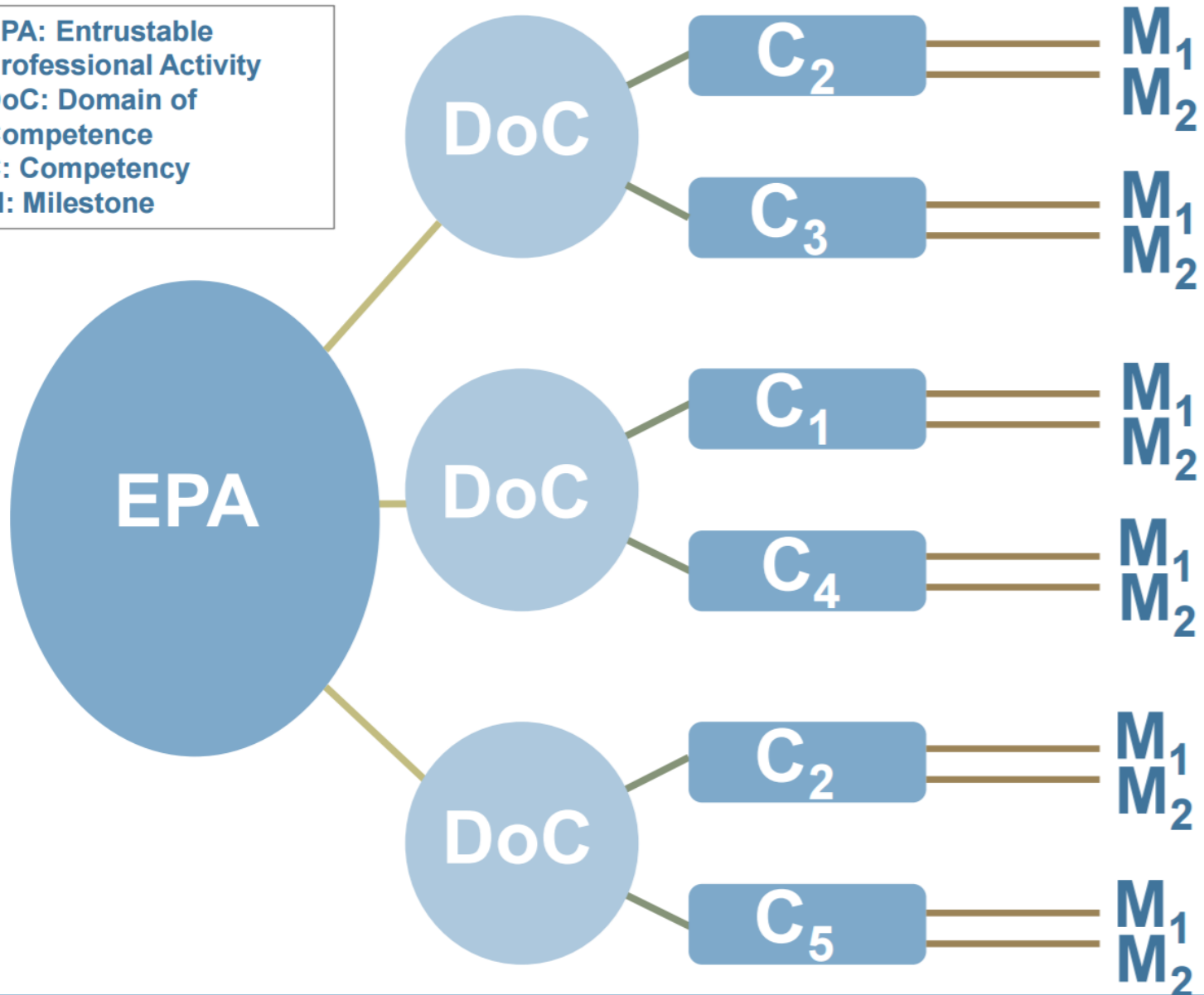
From Competencies to EPAs

EPA vs Competencies
(J Grad Med Educ. 2013 Mar; 5(1): 157–158.

EPAs	ACGME Competencies					
	MK	PC	ISC	P	PBLI	SBP
Performing an appendectomy	✓	✓				
Executing a patient handover	✓	✓	✓			✓
Designing a therapy protocol	✓				✓	
Chairing a multidisciplinary meeting		✓	✓	✓		✓
Requesting organ donation			✓	✓		
Chronic disease management		✓	✓	✓		✓

EPA: Entrustable Professional Activity
DoC: Domain of Competence
C: Competency
M: Milestone

Narrative description of a pre-entrustable learner

Narrative description of the entrustable learner

EPA worksheet

Step1. EPA Title	
Step2. Description of the activity	Brief overview and list of functions
Step3. Map to competency Domains	☐ MK ☐ PC ☐ PBLI ☐ ISC ☐ P ☐ SBP ☐ Personal & Professional Development ☐ Inter-professional Collaboration
Step4. Map to Critical Competencies	
Step5. Curriculum	
Step6. Entrustment Decisions	

7 items in EPAs

Guidelines for full Entrustable Professional Activities Descriptions

1. Title	Make it short; avoid words related to proficiency or skill. Ask yourself: Can a trainee be scheduled to do this? Can an entrustment decision for unsupervised practice for this EPA be made and documented?
2. Description	To enhance universal clarity, include everything necessary to specify the following: What is included? What limitations apply? Limit the description to the actual activity. Avoid justifications of why the EPA is important, or references to knowledge and skills.
3. Required Knowledge, Skills, and Attitudes (KSAs)	Which competency domains apply? Which subcompetencies apply? Include only the most relevant ones. These links may serve to build observation and assessment methods.
4. Required KSAs	Which KSAs are necessary to execute the EPA? Formulate this in a way to set expectations. Refer to resources that reflect necessary or helpful standards (books, a skills course, etc).
5. Information to assess progress	Consider observations, products, monitoring of knowledge and skill, multisource feedback.
6. When is unsupervised practice expected?	Estimate when full entrustment for unsupervised practice is expected, acknowledging the flexible nature of this. Expectations of entrustment moments can shape an individual workplace curriculum.
7. Basis for formal entrustment decisions	How many times must the EPA be executed proficiently for unsupervised practice? Who will judge this? What does formal entrustment look like (documented, publicly announced)?

Next…

1. Team
2. EPAs
3. Program (plus teaching strategies)
4. Assessment
5. Certification/ Accreditation
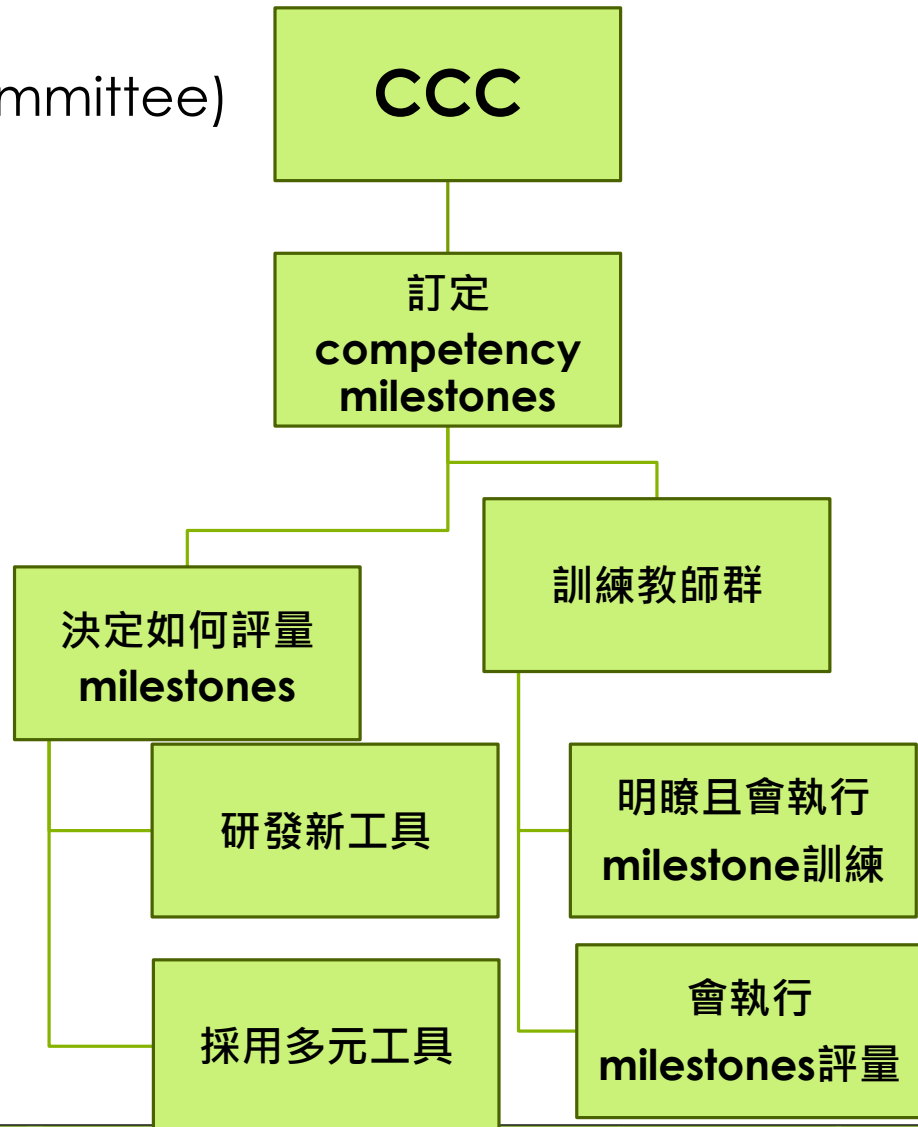
各專科醫學會是決定者

各專科學會應成立CCC
(Clinical Competency Committee)

1. 訂定competency milestones
2. 決定如何評量milestones
3. 訓練教師群

CCC

訂定**competency milestones**

決定如何評量**milestones**

訓練教師群

研發新工具

採用多元工具

明瞭且會執行**milestone**訓練

會執行**milestones**評量

由Clinical Competency Committee領導

訓練單位:

1) 遵循你/妳的專科醫學會所制定(由學會制定)

2) 決定如何評量這些能力指標

　(根據學會建議選擇評量工具)

臨床教師:

1.　了解該指標之定義，會說明之(narratives)
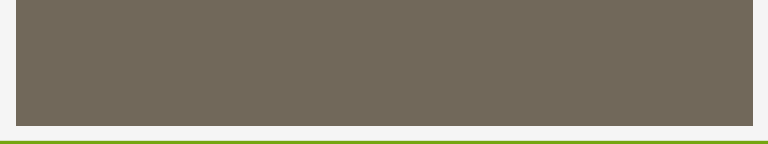
2.　有共識

3.　會使用assessment tools

Example

THE AMERICAN BOARD *of* PEDIATRICS

Certifying excellence in pediatrics – for a healthier tomorrow

EPA1~17

1. Provide consultation to other health care providers caring for children

2. Provide recommended pediatric health screening

3. Care for the well newborn

4. Manage patients with acute, common diagnoses in an ambulatory, emergency, or inpatient setting

5. Provide a medical home for well children of all ages. (Entrustment decisions for this EPA may require stratification by age group)

6. Provide a medical home for patients with complex, chronic, or special health care needs. (Entrustment decisions for this EPA may require stratification by age group)

7. Recognize, provide initial management and refer patients presenting with surgical problems

8. Facilitate the transition from pediatric to adult health care

9. Assess and manage patients with common behavior/mental health problems

10. Resuscitate, initiate stabilization of the patient and then triage to align care with severity of illness (Entrustment decisions for this EPA may require stratification by two age groups: neonate and non-neonate)

11. Manage information from a variety of sources for both learning and application to patient care

12. Refer patients who require consultation

13. Contribute to the fiscally sound and ethical management of a practice (e.g. through billing, scheduling, coding, and record keeping practices)

14. Apply public health principles and quality improvement methods to improve care and safety for populations, communities, and systems

15. Lead an interprofessional health care team

16. Facilitate handovers to another healthcare provider either within or across settings

17. Demonstrate competence in performing the common procedures of the general pediatrician

能力分級

- Level 1: 剛畢業之醫學生

- Level 2: 具部分能力之住院醫師

- Level 3: 具多半能力之住院醫師

- Level 4: 完訓住院醫師

- Level 5: 頗具經驗之主治醫師

階段性

描述可以被觀察到的行為能力(需與所擔負的職責/工作相符合)

Competency progression or set of milestones

Milestone 標題

Level 1	Level 2	Level 3	Level 4	Level 5
住院醫師之起步期能力?	稍深入些，具低中階程度?	中階住院醫師的milestone? 應該表現出什麼樣的醫療行為?	受訓結束時的醫療能力為何? 是否與其將獲得的證照相匹配?	超越期待的能力?

Milestone

PC1. 病史詢問 (對各年齡層與失能者皆合宜)

Competency progression or set of milestones →

Level 1	Level 2	Level 3	Level 4	Level 5
一般病史詢問	包含身心靈層面病史，如: 醫療相關之心理、功能,及社會層面元素	必要時可以蒐集其他來源之資訊	能有效率地蒐集資訊，報告病史時能夠萃取相關資訊、依循重要性排序，及辯證之假設架構，具備對各年齡層及失能者的蒐集病史能力	有效率地蒐集與整理病人資料 能快速聚焦主要問題、將病史資料排序 潛在而困難獲取的病人資訊

能探知病人沒有說出來的病史資料

PC1. 病史詢問

Level 1	Level 2	Level 3	Level 4	Level 5
非常不足			幾乎可以獨立執業	獨立且表現優異
無法蒐集正確病史 無法以身體檢查確認病史 依據別人說的來得到病人資訊與鑑別診斷 無法辨識病人的主要問題 無法辨識危及生命的問題	有時無法蒐集正確病史、有時問診沒有系統 無法適切施行身體檢查，或漏失重要發現 有時可辨識病人的主要問題或鑑別診斷 包含身心靈層面病史，如: 醫療相關之心理、功能,及社會層面元素	總是可以向病人蒐集正確病史 必要時可以向其他來源蒐集資訊 總是可適切施行身體檢查 可由蒐集到之資訊辨識病人的主要問題	能有效率地蒐集資訊，報告病史時能夠萃取相關資訊、依循重要性排序，並依據辯證假設之架構進行資料蒐集。 能針對病人問題施行正確身體檢查 能分析資料產生鑑別診斷之順序，及問題列。 能有效使用病史與身體檢查減少不必要的檢查	有效率地蒐集與整理病人資料，以資鑑別診斷 能發現隱而未現的身體徵狀，能對各年齡層及失能者等潛在而困難獲取的病人資訊作病史蒐集 能探知病人不肯說的病史資料 能作模範、並教導如何有效使用病史與身體檢查，以減少不必要的檢查

Competency progression or set of milestones

EMERGENCY MEDICINE MILESTONES

PC1. Emergency Stabilization

Prioritizes critical initial stabilization action and mobilizes hospital support services in the resuscitation of a critically ill or injured patient and reassesses after stabilizing intervention.				
Level 1	Level 2	Level 3	Level 4	Level 5
Describes a primary assessment on a critically ill or injured patient Recognizes abnormal vital signs	Recognizes when a patient is unstable requiring immediate intervention Prioritizes vital critical initial stabilization actions in the resuscitation of a critically ill or injured patient Performs a primary assessment on a critically ill or injured patient	Discerns relevant data to formulate a diagnostic impression and plan Reassesses after implementing a stabilizing intervention	Manages and prioritizes critically ill or injured patients Recognizes in a timely fashion when further clinical intervention is futile Evaluates the validity of a DNR order Integrates hospital support services into a management strategy for a problematic stabilization situation	Develops policies and protocols for the management and/or transfer of critically ill or injured patients
○　　　　○	○　　　　○	○　　　　○	○　　　　○	○　　　　○
Comments:				

Suggested Evaluation Methods: SDOT, observed resuscitations, simulation, checklist, videotape review

EMERGENCY MEDICINE MILESTONES

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Simulation

( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )

Comments:

Suggested Evaluation Methods: SDOT, observed resuscitations, simulation, checklist, videotape review
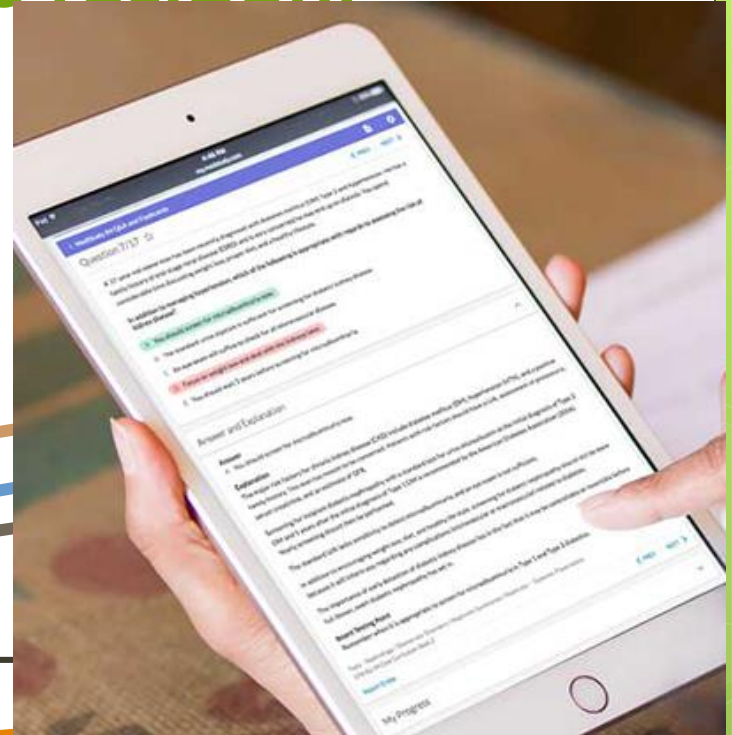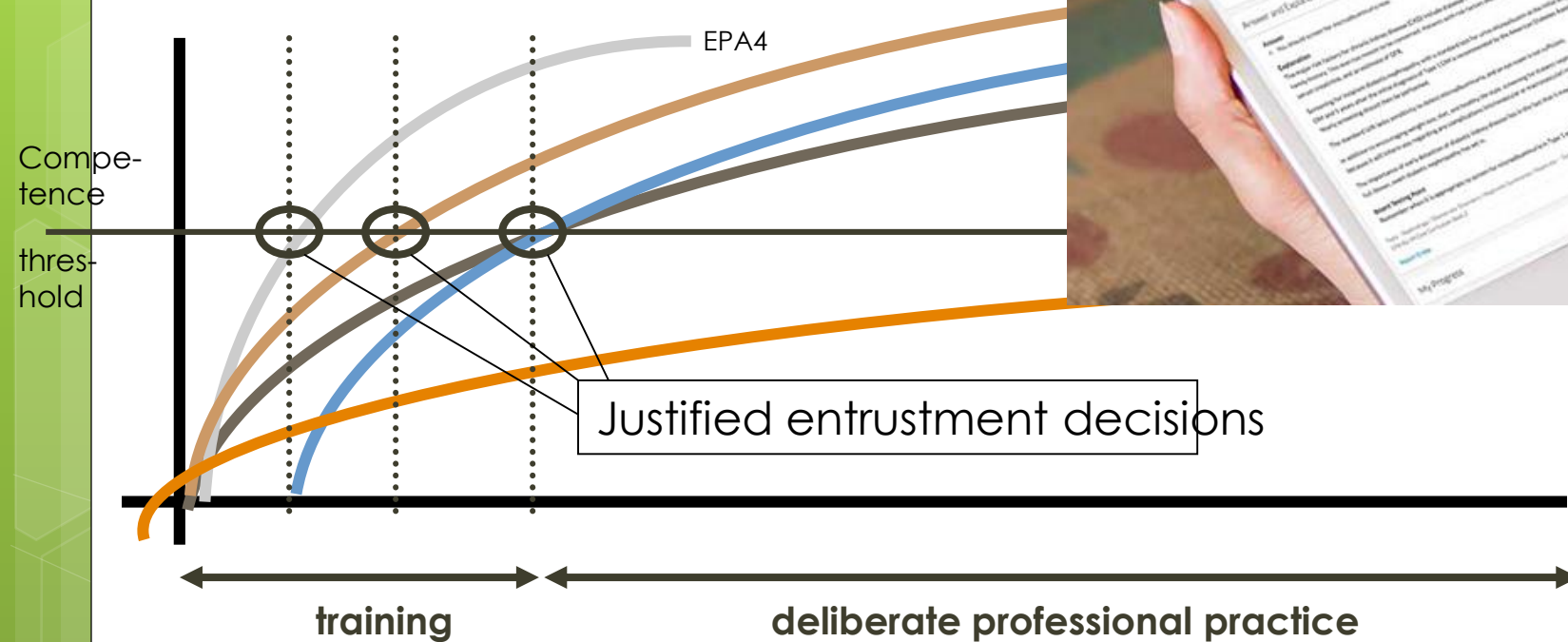
Multiple tools
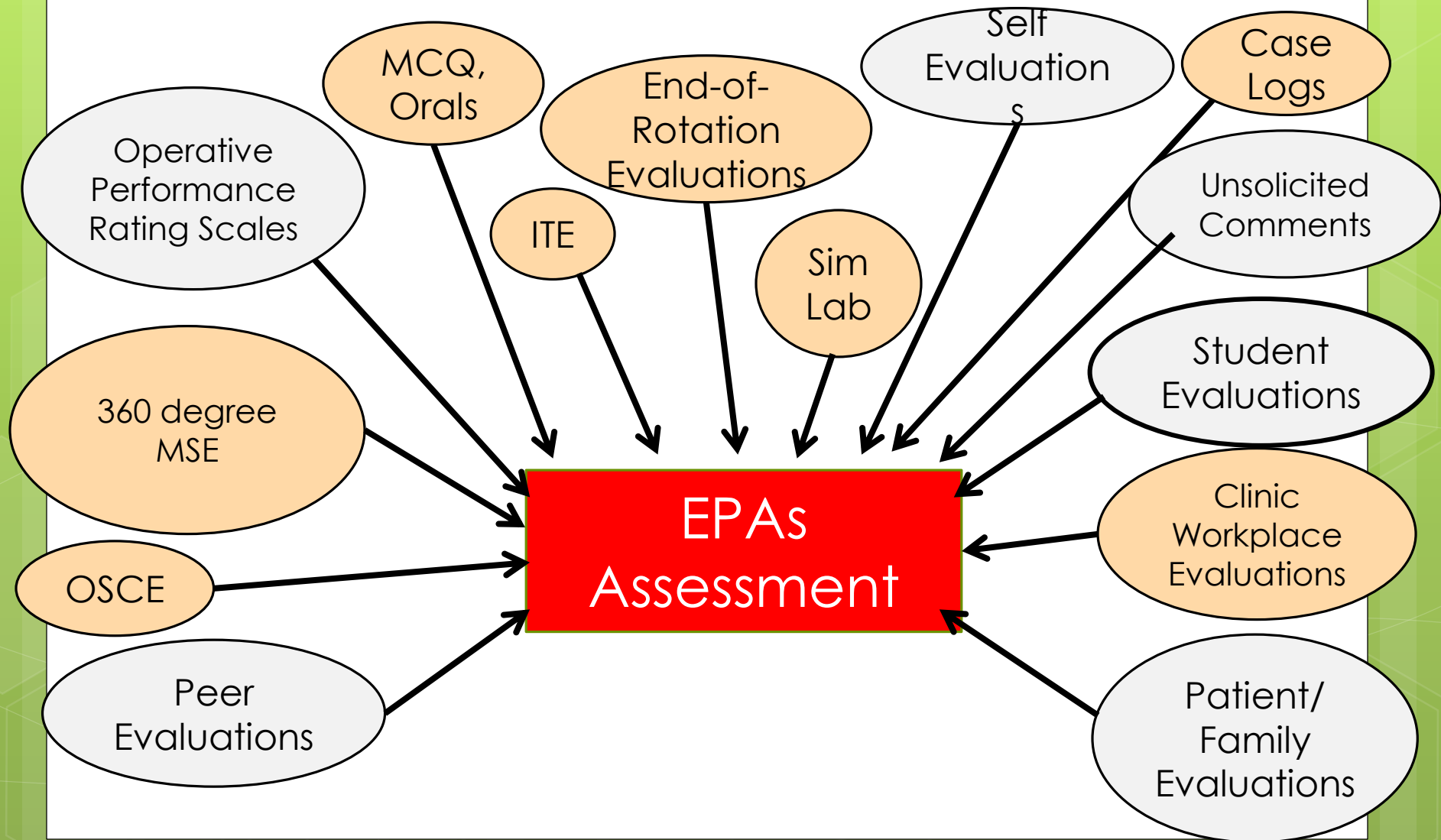
能力鑑定: **Acute Care EPA**

This is an 81 year old man who arrives to the urgent care clinic with shortness of breath. Where do you start? What questions do you ask? What labs do you order? What imaging do you obtain?

Others
- Continuity Clinic EPA
- Discharge Summary EPA**
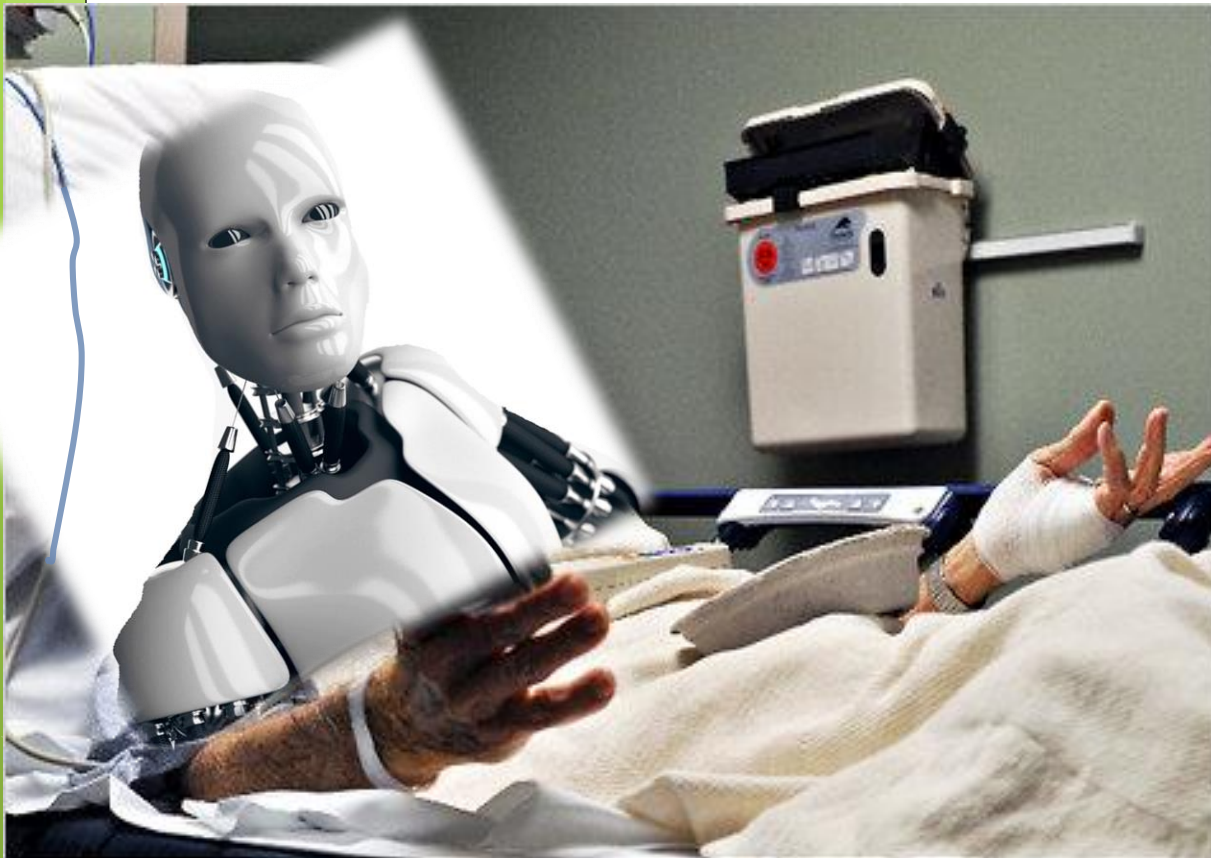- Serious Illness Communication**

Competency curves of one resident

EPA4

Compe-
tence

thres-
hold

Justified entrustment decisions

training   deliberate professional practice

示範臨床能力等級之判定

Simulation:
a case of Respiratory distress

能力鑑定: Acute Care EPA

This is an 81 year old man who arrives to the urgent care clinic with shortness of breath. Where do you start? What questions do you ask? What labs do you order? What imaging do you obtain?

Others
- Continuity Clinic EPA
- Discharge Summary EPA**
- Serious Illness Communication**

49歲女性，因為三天來發生喘息「呼吸困難」，由先生陪伴進入急診。她過去有氣喘的病史，但這次喘得比以前都嚴重，無法入睡或平躺，她使用了氣喘吸入劑也沒有效。此外，沒有發燒，沒有畏寒，也沒有如腸胃道問題的症狀。3周前她因為盲腸炎引起腹膜炎入院，開刀後住了10天，因為腹痛幾乎整天臥床，才出院幾天就發生嚴重呼吸困難，她懷疑這是手術的併發症。

身體檢查

Vital sign:BT37.2° C, HR:128, BP:96/65mmHg, RR 26, O2 92%, RA etCO2 20
Gen: anxious, tearful, tachypneic, sitting up in bed
HEENT: normal
Neck: no JVD
CV: tachycardia (125/min), no murmurs
Lungs: clear
Abd: well healing midline abdominal incision(OP)
MS: no lower leg edema
Skin: no rashes
GU: deferred (no vaginal bleeding),
Neuro: normal
Psych: anxious

實驗室檢查

Chest xray: clear
EKG: incomplete RBBB
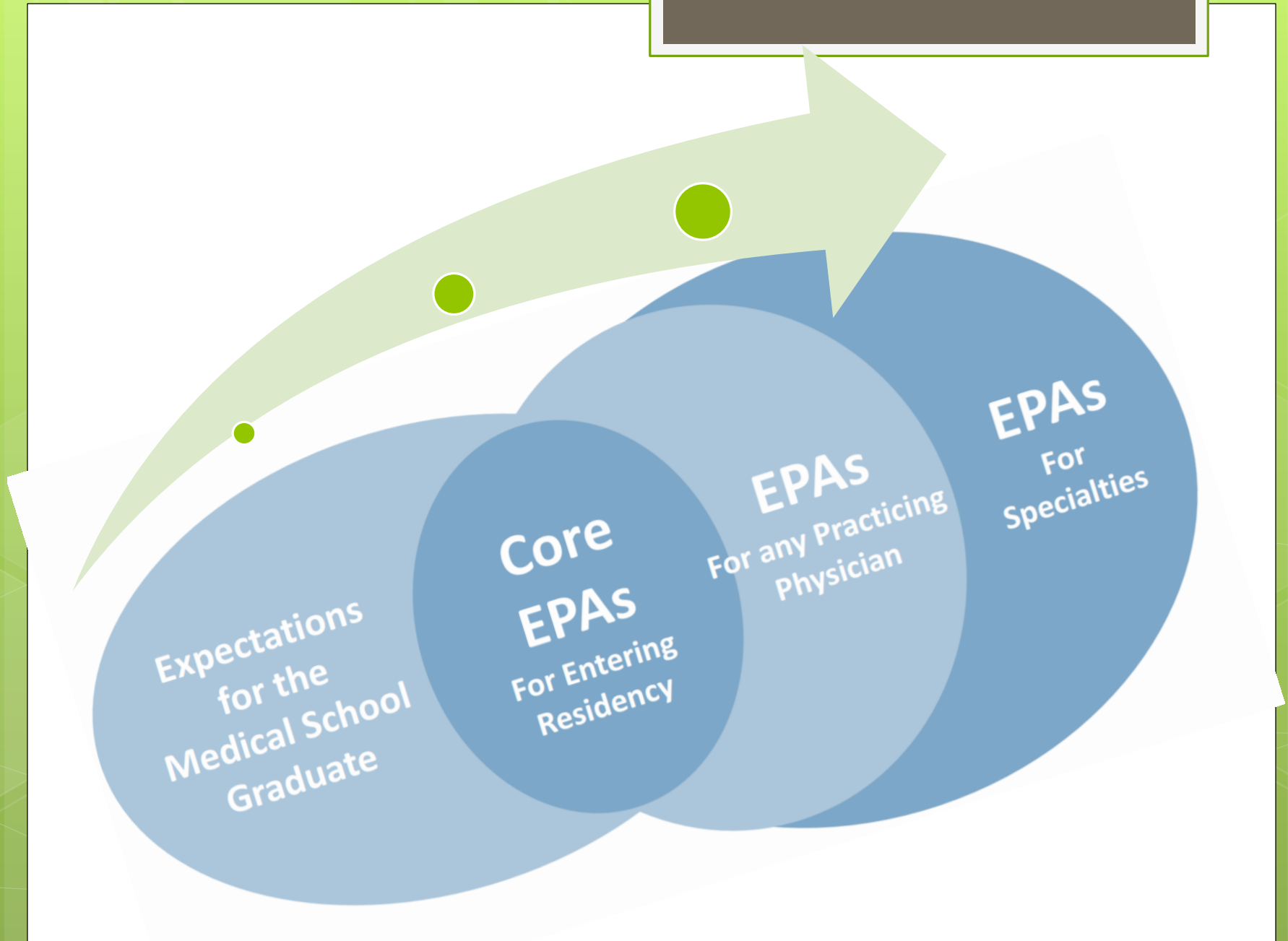CT/MRI: saddle PE with RV strain
Ultrasound (echo): RV strain

步驟一：決定此案例可以評定哪幾個「能力指標」

步驟二：依據急診醫學會公告的「能力指標」分別定義
Level 1~ level 5所預期的學員表現行為

步驟三：依據上述對學員表現行為定義之平等標準，觀
察學員在擬真中的表現，即可斷定其「能力等級」

Start with the END in mind

Stephen Covey
www.thevibrantcoach.com