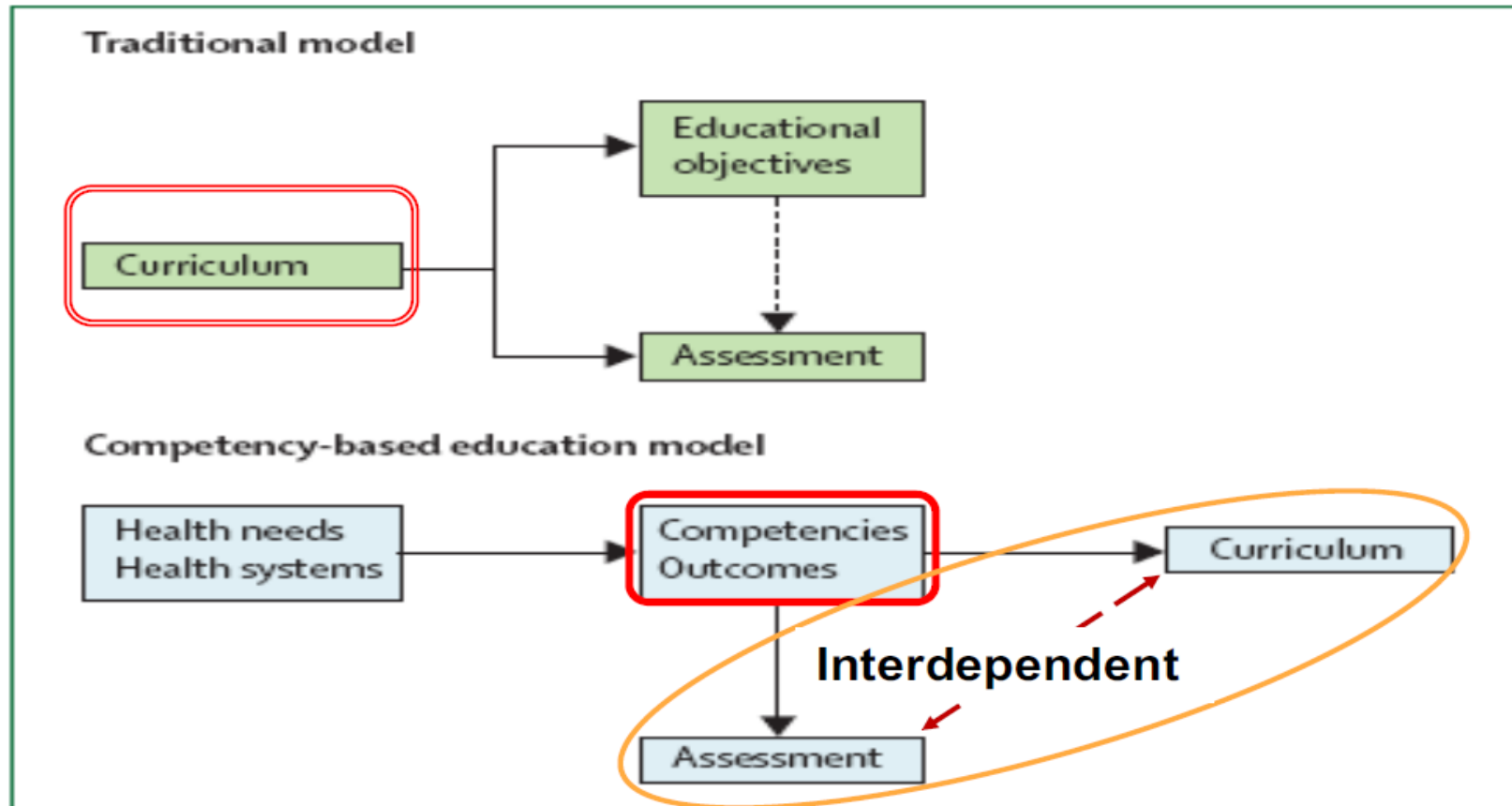# Systematic approach to program assessment

รศ.พญ.โสมรัชช์ วิไลยุค

ศ.คลินิก พญ.กาญจนา ตั้งนรารัชชกิจ

ภาควิชากุมารเวชศาสตร์ คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี

Start with System Needs
(which are really patient needs)

Frenk J, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. Lancet. 2010

Lining Curriculum & Assessment

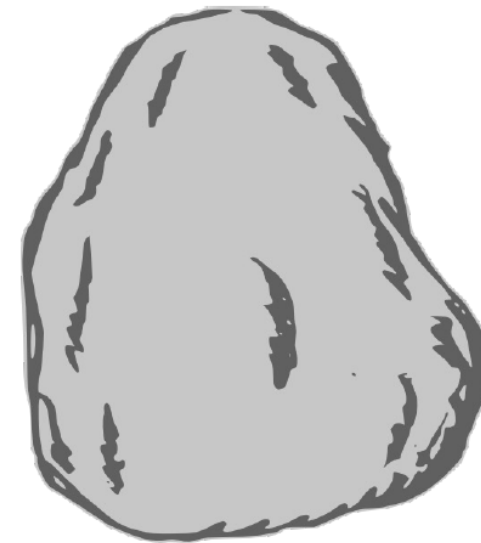**Curricula come in all sizes**

Curricula

One lecture
One chalk talk
A one day retreat

Curricula

Two week rotation in MICU
Quality improvement project
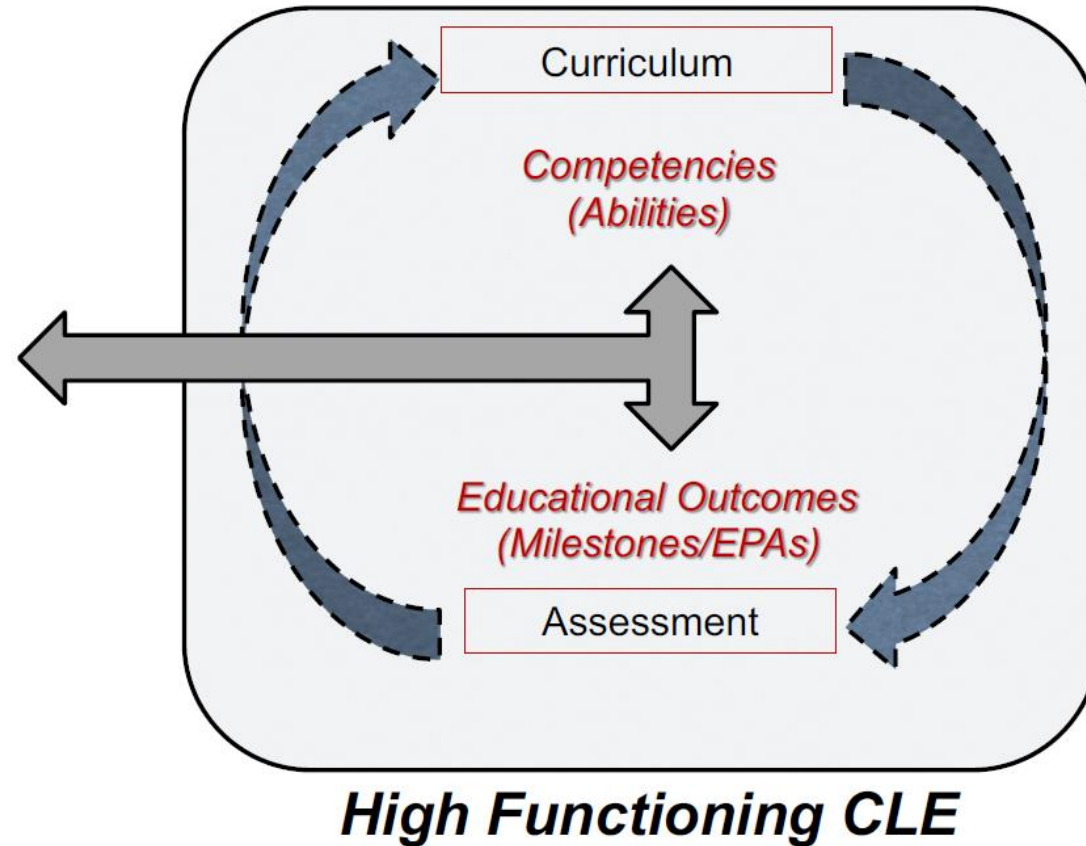*Simulation training for LPs*
Weekly continuity clinic over a year

Curricula

Program Curricula
- *A 3 year residency*
- *A 4 yr med school*
- *An MPH program*

The Ultimate Goal of CBME

Outcomes

Improved Clinician Experience

*Better Outcomes

*Lower Costs

*Improved Patient Experience

Quadruple Aim

Curriculum

Competencies (Abilities)

Educational Outcomes (Milestones/EPAs)

Assessment

High Functioning CLE

CBME; Competency-based medical education

CBME

Today?

An approach to preparing physicians for practice
that is fundamentally oriented to graduate outcome abilities
and organized around competencies
*derived from an analysis of **societal and patient needs**.*
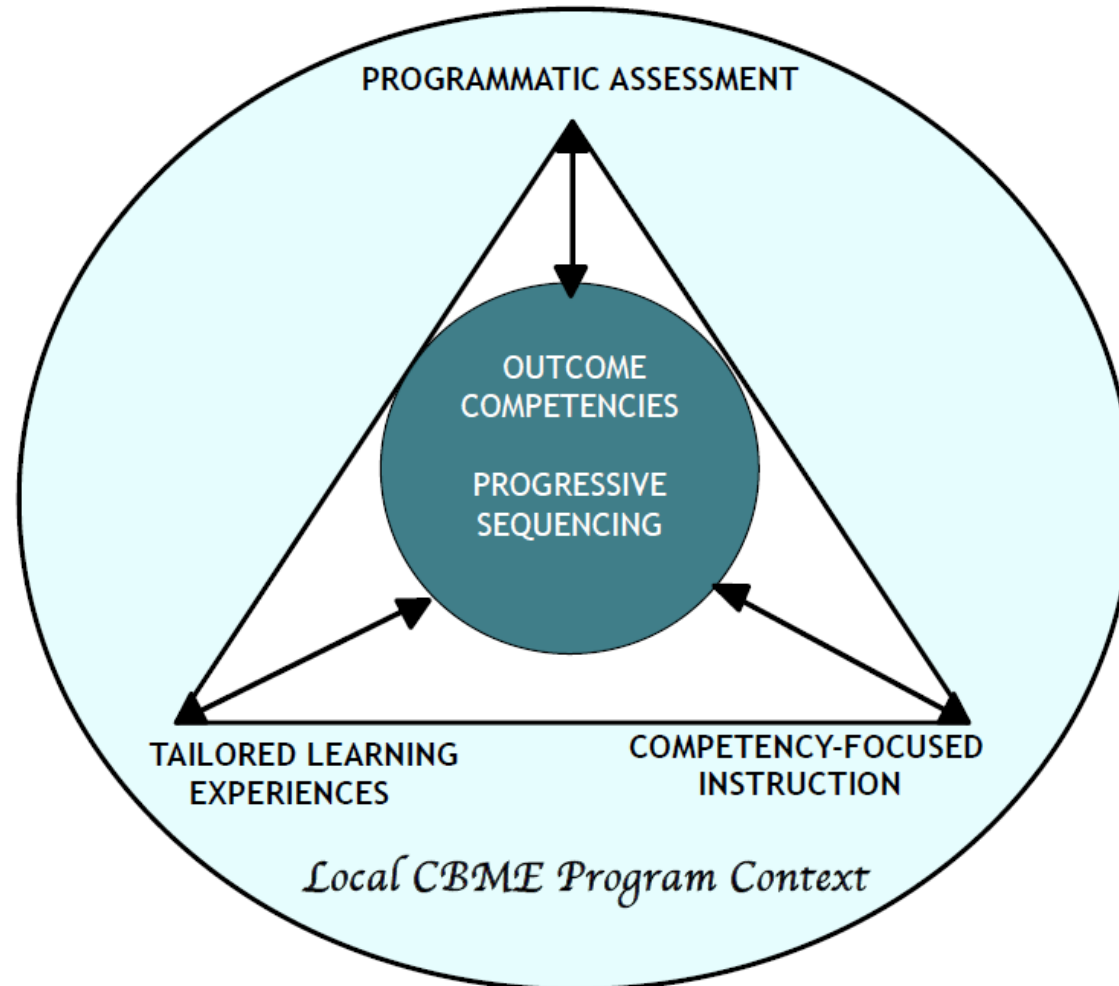
Frank et al. Toward a definition of CBME. Med Teacher 2010

It de-emphasizes time-based training and promises greater accountability, flexibility and learner-centeredness

Core Components Framework (CCF)

Outcome Competencies	Sequenced Progressively	Tailored Learning Experiences	Competency-focused Instruction	Programmatic Assessment (using Systems Thinking)
Competencies required for practice are <u>clearly articulated.</u>	Competencies and their developmental markers are <u>sequenced</u> progressively.	Learning experiences <u>facilitate</u> the developmental acquisition of competencies.	Teaching practices <u>promote</u> the developmental acquisition of competencies.	Assessment practices <u>support & document</u> the developmental acquisition of competencies.

CBME Requires an Integrated Approach

PROGRAMMATIC ASSESSMENT

OUTCOME COMPETENCIES

PROGRESSIVE SEQUENCING

TAILORED LEARNING EXPERIENCES

COMPETENCY-FOCUSED INSTRUCTION

Local CBME Program Context

2017 CBME Workshop| ICBME COLLABORATORS

General Competency Framework

General Competencies
Patient Care and Procedural Skills
Medical Knowledge & Clinical Reasoning
Professionalism
Interpersonal Skills & Communication
PBL & I
Systems-based Practice

CanMEDS
Health Advocate
Medical Expert
Professionalism
Communicator
Collaborator
Scholar
Leader

What other frameworks?

Competency: A Definition

An <u>observable ability</u> of a health professional, integrating multiple components such as knowledge, skills, values and attitudes.

Frank, JR, Snell LS, ten Cate O, et. al. Competency-based medical education: theory to practice. Med Teach. 2010; 32: 638–645

Thinking Developmentally

Progressive Sequencing and Tailoring of Learning and Teaching

Ericsson:

Deliberate Practice

"Individualized training activities especially designed by a **coach or teacher** to improve specific aspects of an individual's performance through **repetition** and successive refinement...

To receive maximal benefit from feedback, individuals have to monitor their training with full concentration, which is effortful and limits the
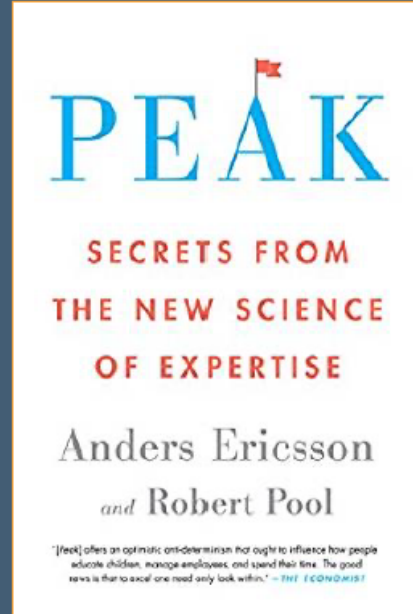
Deliberate Practice

Requires a field that is reasonably well developed. *Clear mental representations of the tasks of the field are essential.*

Requires a teacher who can provide practice activities that can help learners improve their performance.

Mental representation = ระบบการจัดเก็บข้อมูลในสมองในรูปแบบที่เราสามารถเรียกกลับมาใช้ได้อย่างมีประสิทธิภาพที่สุด

กิจกรรมการเรียนรู้รายบุคคล จำเป็นต้องมีการออกแบบโดยครู หรือ โค้ช เพื่อพัฒนาส่วนเฉพาะของ performance ผ่านการทำซ้ำ ๆ และปรับปรุงจนสำเร็จ เพื่อให้ผู้เรียนได้ประโยชน์สูงสุด ต้องได้รับการ feedbackและการติดตามการฝึกฝนที่ทำด้วยความตั้งใจเต็มที่

Learning Curves and Developmental Models
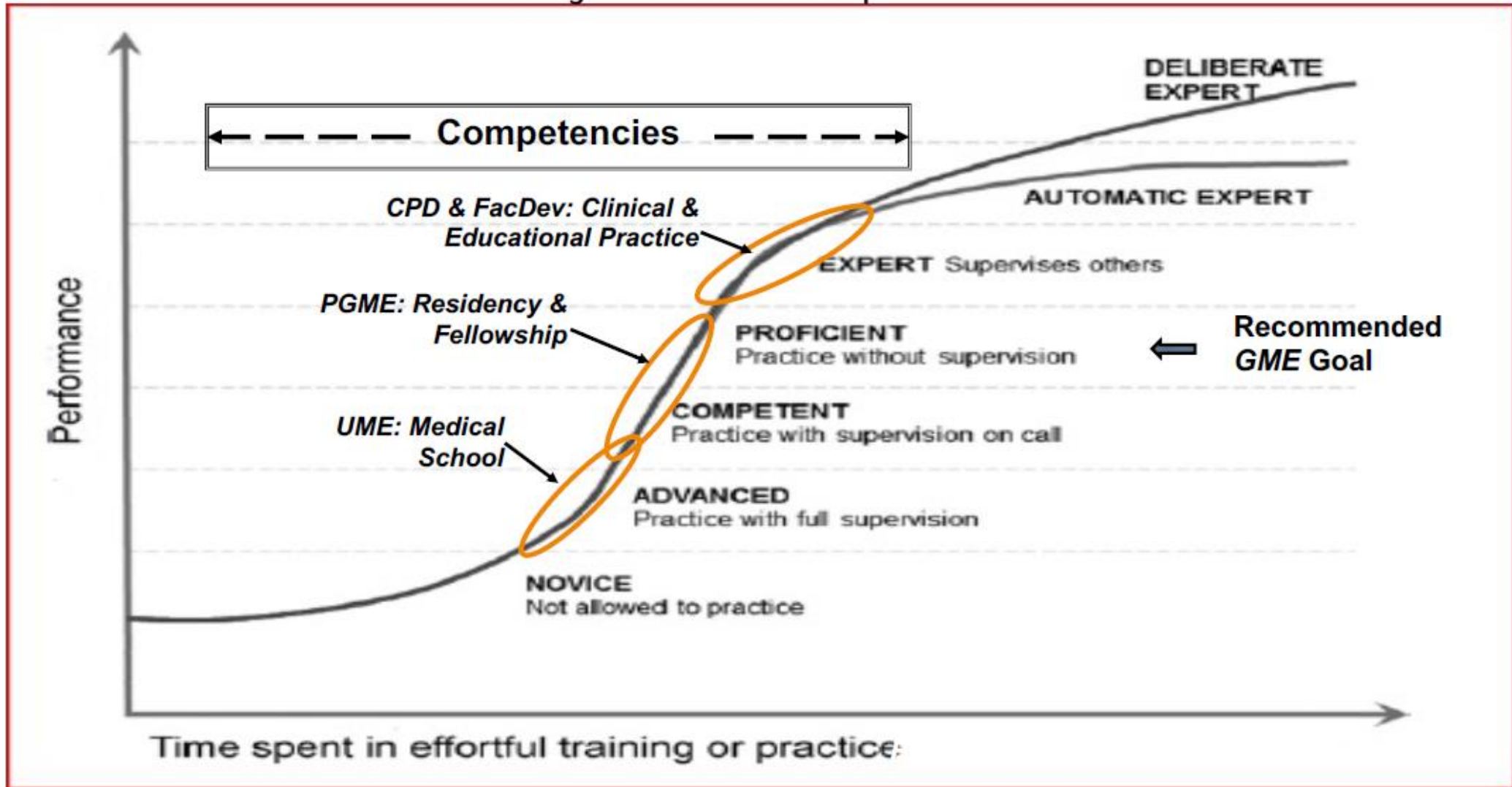
GME= Graduate medical education
-Prepares doctors for medical practice

Thinking Developmentally

Competency Milestones

For Residents & Fellows

Milestones in GME

- Describe performance levels for skills, knowledge, attitudes, and behaviors in the competency domains.

- Provide a framework of observable behaviors and attributes associated with learners' **development** as physicians.

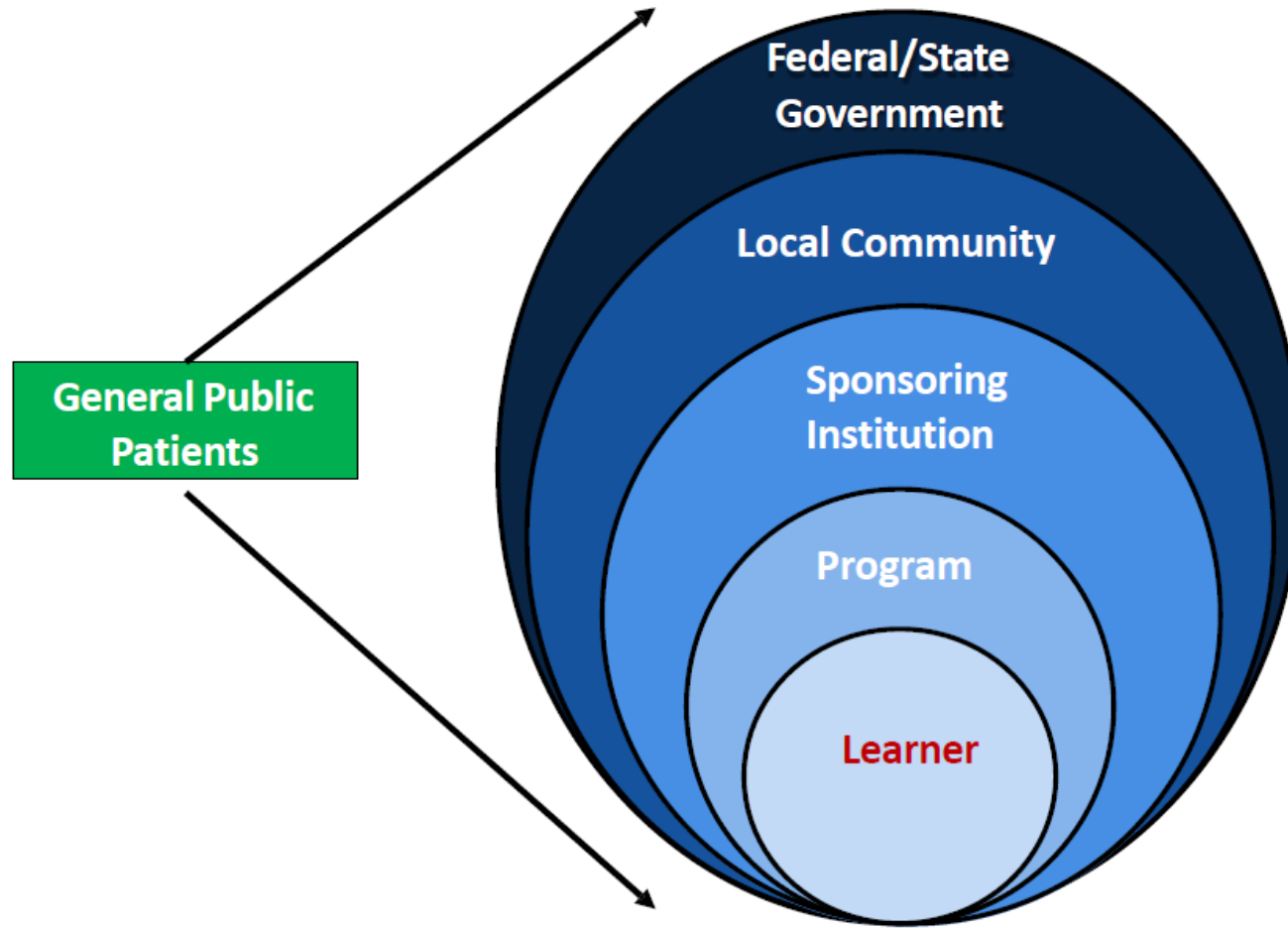- Competencies are *interdependent* and help programs to prepare learners to deliver high quality, safe health care.

Nasca, TJ et. al. The Next Accreditation System. NEJM. 2012.366:1051-1056

ACGME Milestone Example

Patient Care 1: Care of the Acutely Ill Patient

Generates differential diagnosis for acute presentations		...nizes ...rgent ...oordinates ...gnostic	Mobilizes the multidisciplinary team to manage care for simultaneous patient visits	Efficiently manages and coordinates the care of multiple patients with a range of severity, including life-threatening conditions
Recognizes role of clinical protocols and guidelines in acute s...	Develops management plans for patients with common acute conditions	Implemen... ...agement plans for patients with complex acute conditions, including stabilizing acutely ill patients	Independently coordinates care for acutely ill patients with complex comorbidities	Directs the use of resources to manage a complex patient care environment or situation
... ...ss i... process		Incorporates psychosocial factors into management plans of acute illness for patients and caregivers	Modifies management plans for acute illness based on complex psychosocial factors and patient preferences	Implements strategies to address the psychosocial impacts of acute illness on populations

> **Level 4 is the *recommended* graduation goal ≈ proficiency**

> ***Focus the assessment on the <u>narrative</u>, not the number***

Comments:

Not Yet Completed Level 1 ☐
Not Yet Assessable ☐

Programmatic Assessment

Nested Relationships

- Learners are *nested* within programs that are *nested* within institutions, all embedded within a community
- These interdependent relationships can affect both educational and clinical outcomes

©2020 ACGME

Assessment System

Supervision across the educational continuum

Assessment System

*A **group of people** who work together on a regular basis to* perform assessment and provide feedback to a population of trainees over a defined period of time.

The assessment program must ultimately

Group of people share

- Educational goals and outcomes

- Linked assessment and evaluation processes

- Information about trainee performance

- A desire to produce a trainee truly competent (at a *minimum*) to enter practice or fellowship at the end of training

Assessment system

OPD & IPD

Assessments *within* program:

Direct observation
End of rotation evaluations
Audit or performance data
Multi source evaluations
Simulation
Medical Knowledge exams
chart stimulated recall
self assessments

Trainee

Faculty

FB

FB

Data

qual/quan data synthesized by a committee

Developmental judgements
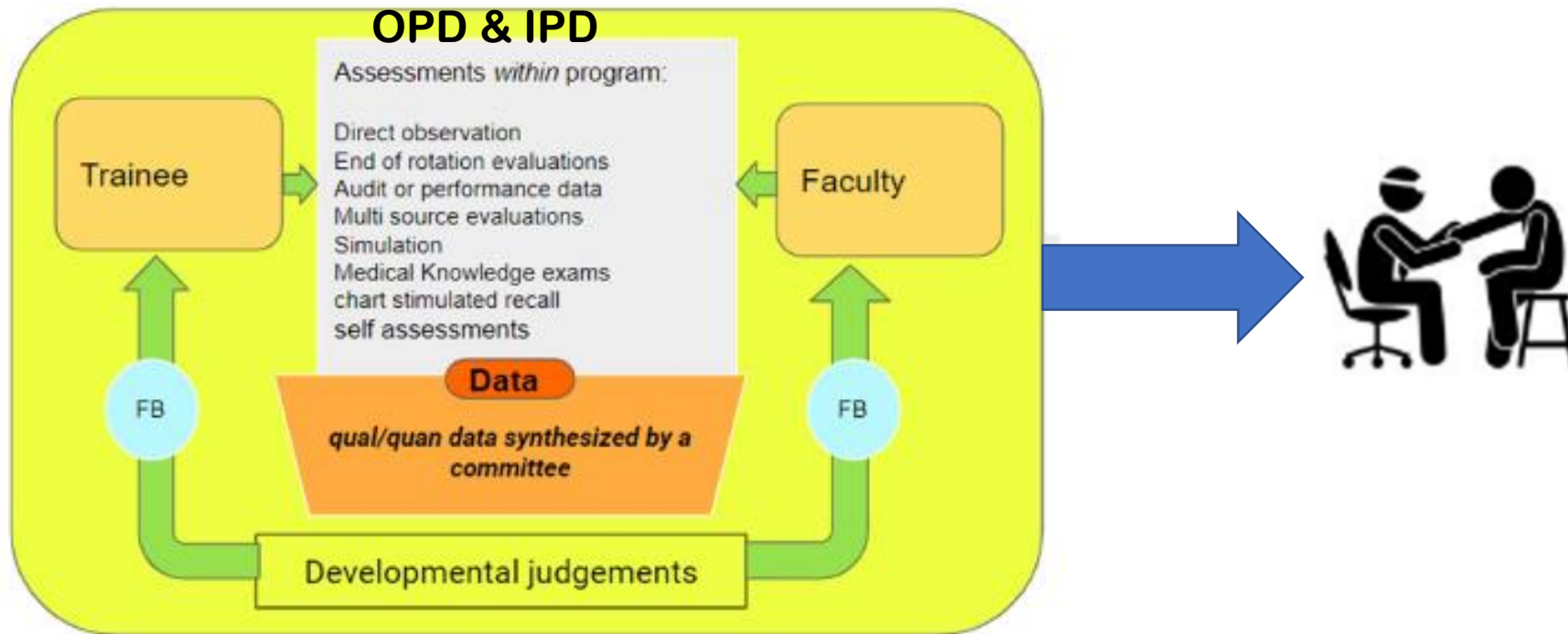
- The integrated activities have a common goal
- Goal of CBME is maximizing educational and health and healthcare outcome
- Programs are embedded in the system

Supervisions across the educational continuum

The assessment system has......

The structure

To carry out assessment

Assessment Processes

Feedback
Stakeholder involvement
(Trainees, faculty, CCCs)
Rules and regulations
Division of labor

Assessment Tools

Utility of tools
How do they fit within the overall program?
Are they fit for purpose?

Time Based Structure vs. Outcomes (Competency) Approach

	Time based structure	Outcome-based
Driving force: process	Teacher	*Learner* & *the* **Patient**
Path of learning	Hierarchical (Teacher→student)	*Non-hierarchical (Teacher⟷student)*
Responsibility: content	Teacher	*Student and Teacher*
Goal of educ. encounter	Knowledge acquisition	*Knowledge application*
Typical assessment tool	Single subject measure	*Multiple measures*
Assessment tool	Proxy	*Authentic (real tasks of profession)*
Setting for evaluation	Removed (gestalt)	*Direct observation*
Evaluation	Norm-referenced	*Criterion-referenced*

Carracchio, et al. 2002.

Model of competence

No single method does it all
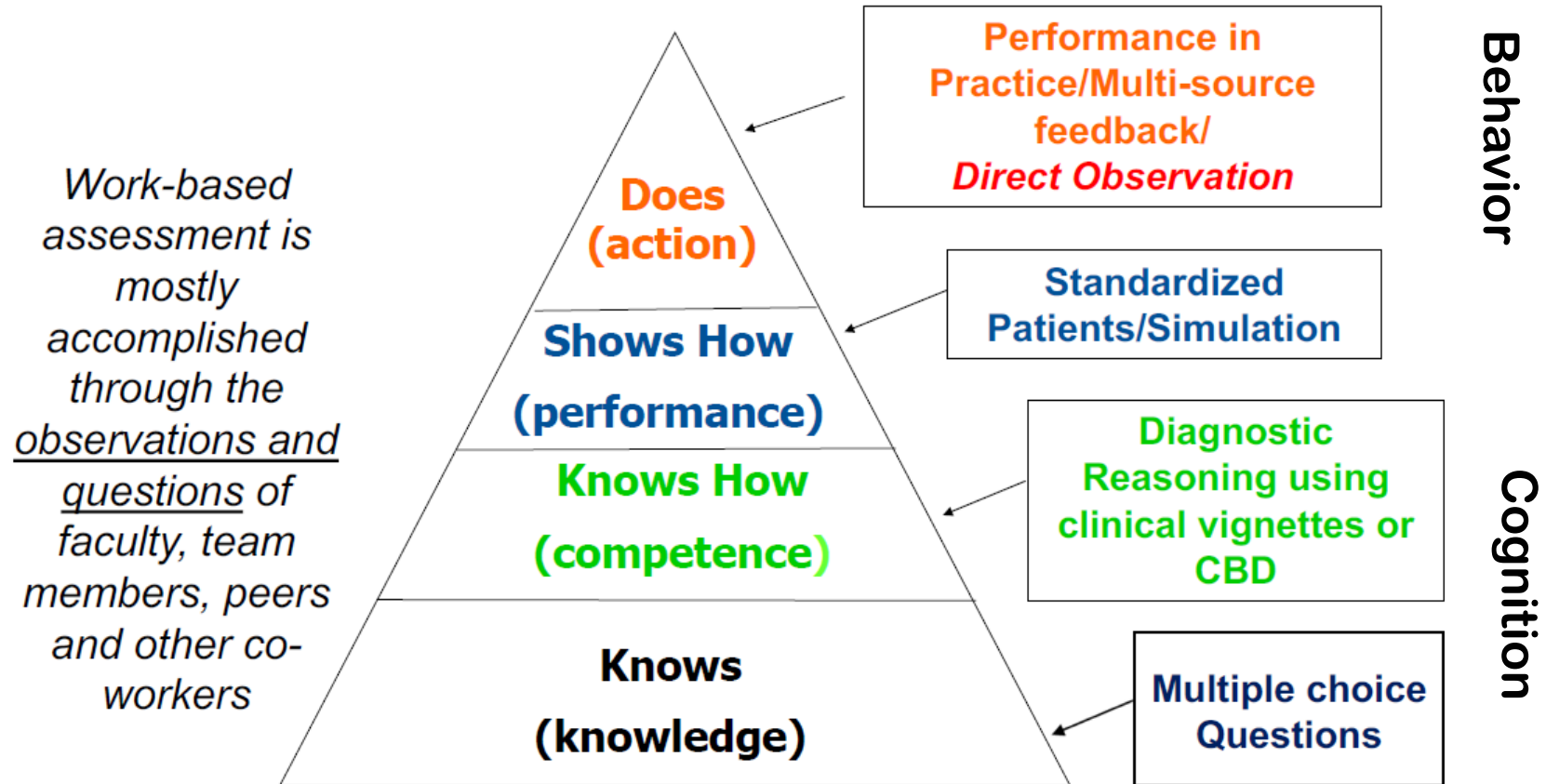
Workplace Based Assessment

RATERS

TOOLS
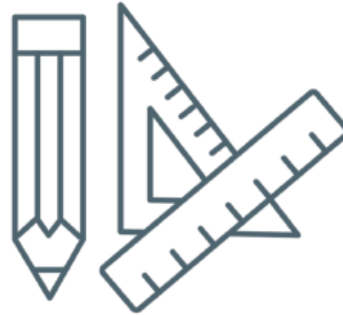
SETTINGS

Common assessment tools

- **Descriptive evaluation by teachers**
- **Record of clinical encounters**
- **External/internal evaluation**
  - **MCQ, MEQ**
  - **SAQ**
- **Simulations**
- **OSCEs**
- **Oral examinations**

- **Chart (record) reviews**
- **Standardized patients**
- **A-V reviews**
- **Educational prescription contracts**
- **Portfolio**
- **MSF (360) evaluation**
- **Patient logs**
- **Checklists**
- **Rating scales**
- **ITERs**

"Fit for Purpose"

Is the assessment method "fit for purpose"?

How will the method/tool help the program assess and provide feedback on professional development?

How does it fit within a program of assessment?

VALIDITY

Whether an instrument actually measures what it is purported to

RELIABILITY

Reproducibility of the results obtained from an assessment

Not reliable
Not valid

Reliable
Not valid

Reliable
Valid

Continuum of Stakes

No Stake	One data point	Intermediate	Very High Stake

Not decision oriented
- Focused on information
- Feedback oriented

Intermediate progress decisions:
- More data points needed
- Focus on diagnosis, remediation, prediction

Final decisions on promotion or selection:
- Many data points needed
- Focused on a (non-surprising) heavy decision

1 Mini-CEX

Semi-annual evaluation

FITAR

From CPM Van der Vleuten

Twelve Tips for Programmatic Assessment

1. Develop a master plan for assessment
2. Develop examination regulations that promote feedback orientation
3. Adopt a robust system for collecting information
4. Assure that every low-stakes assessment provides meaningful feedback for learning
5. Provide mentoring [advising] to learners
6. Ensure trustworthy decision-making
7. Organize intermediate decision-making assessments.
8. Encourage and facilitate personalized remediation
9. Monitor and evaluate the learning effect of the programme and adapt
10. Use the assessment process information for curriculum evaluation
11. Promote continuous interaction between the stakeholders
12. Develop a strategy for implementation

From Van Der Vleuten CPM, Schuwirth LWT, Driessen EW, Govaerts MJB, Heeneman S. Twelve Tips for programmatic assessment. Med Teach. 2015 Jul;37(7):641-646.

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Program Curriculum
- Technology factor
- Human factors
- CCC

Response Process:
Develop ways your assessment style helps the leaner assessment for learning

From Van Der Vleuten CPM, Schuwirth LWT, Driessen EW, Govaerts MJB, Heeneman S. Twelve Tips for programmatic assessment. Med Teach. 2015 Jul;37(7):641-646.

Principle for programmatic assessment
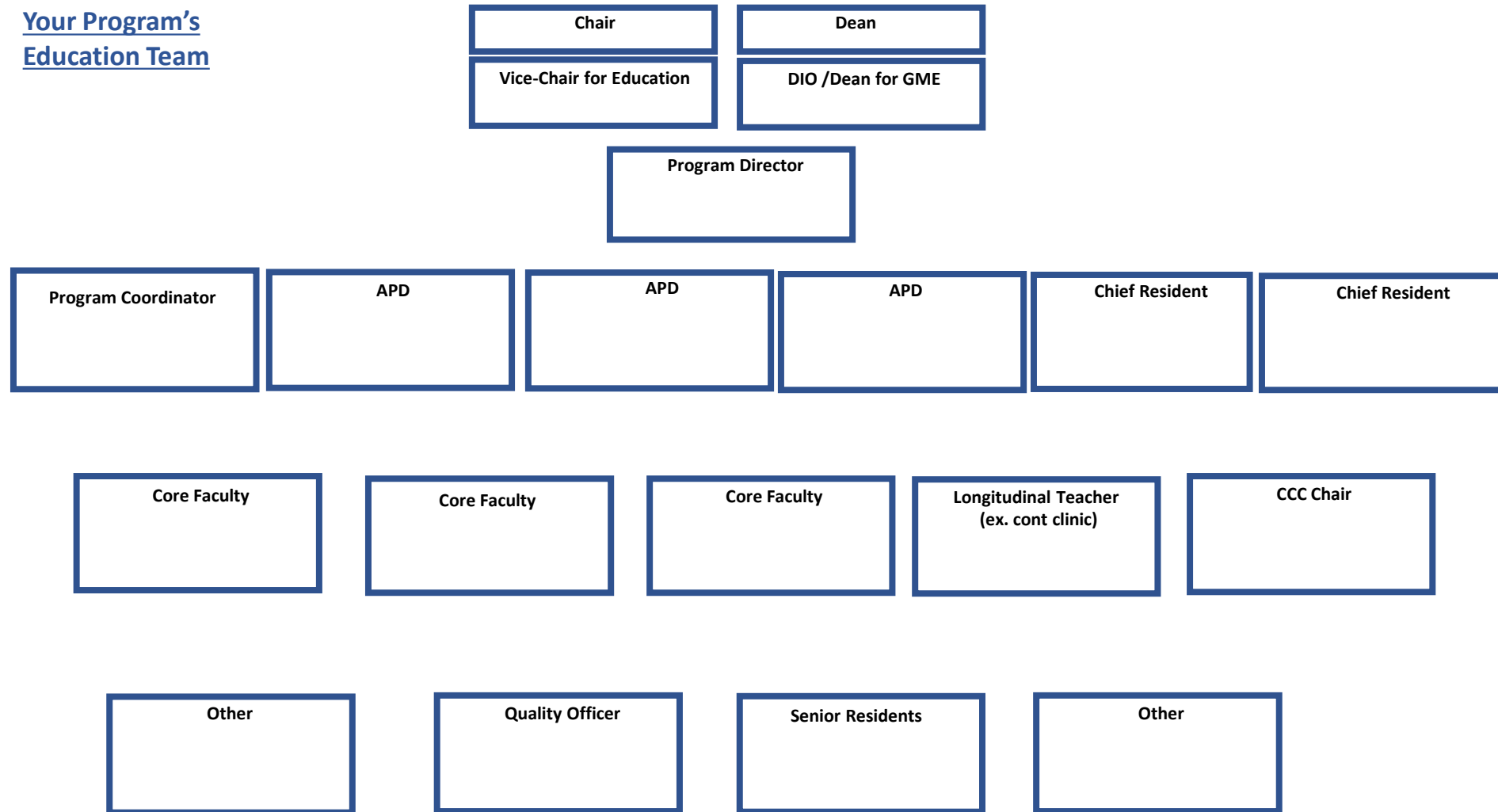## Ottawa 2020 concensus

1. Every (part of an) assessment is but a **data-point**
2. Every data-point is **optimised for learning** by giving **meaningful feedback** to the learner
3. **Pass/fail** decisions are **not given on a single data-point**
4. There is a **mix of methods of assessment**
5. The method chosen should **depend on the educational justification** for using that method
6. The distinction between summative and formative is replaced by a **continuum of stakes**
7. **Decision-making** on learner progress is proportionally **related to the stake**
8. Assessment information is **triangulated across data-points** towards an appropriate **framework**
9. **High-stakes decisions** are made by in a credible and transparent manner, using **a holistic approach**
10. **Intermediate review** is made to discuss and decide with the learner on their **progression**
11. Learners have **recurrent learning meetings** with (faculty) mentors/coaches using a **self-analysis** of all assessment data
12. Programmatic assessment seeks to gradually increase the **learner's agency and accountability**

Heeneman, de Jong, et al (2021): Ottawa 2020 consensus statement for programmatic assessment – 1. Agreement on the principles, Medical Teacher

Linking curriculum and assessment –
AND starting with what the patient needs
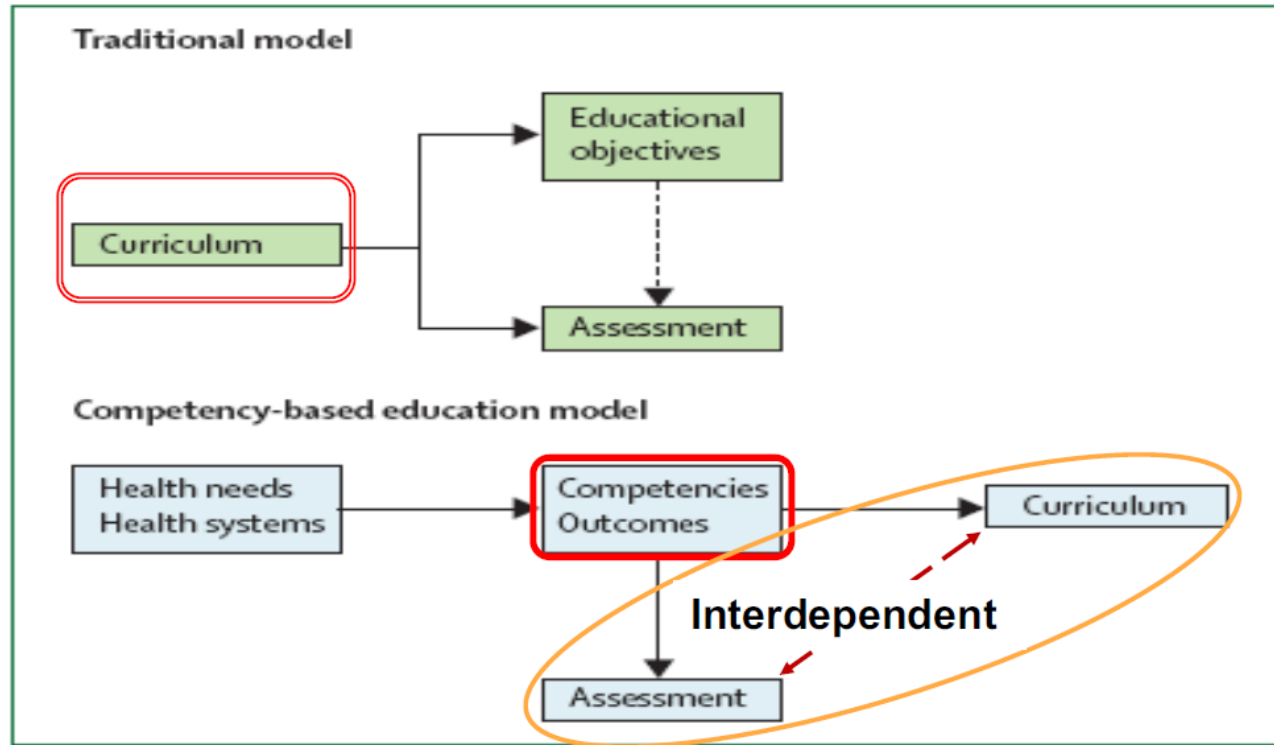
Frenk J, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. Lancet. 2010

Your Program's Education Team

Chair	Dean
Vice-Chair for Education	DIO /Dean for GME

Program Director

Program Coordinator	APD	APD	APD	Chief Resident	Chief Resident

Core Faculty	Core Faculty	Core Faculty	Longitudinal Teacher (ex. cont clinic)	CCC Chair

Other	Quality Officer	Senior Residents	Other

Thank you for your attention