Improving Outcomes: The Critical Role of Health Professions Education

Physical Therapy Learning Institute

April 14, 2023

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Objectives

1) Discuss the link between outcomes-based education and improving care for patients, families, and communities

2) Discuss the role of educational program design in achieving desired outcomes

3) Discuss importance of the core components framework and programmatic assessment in supporting professional development

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Thank You
It Has Been a Very Difficult 3 Years
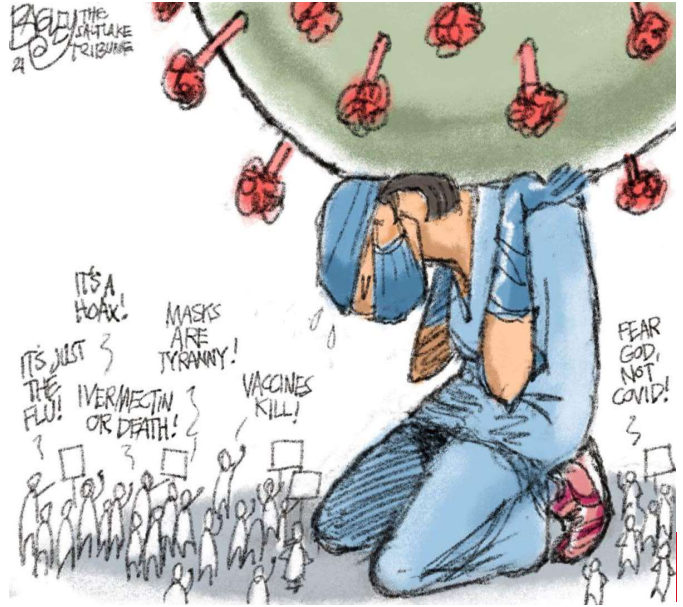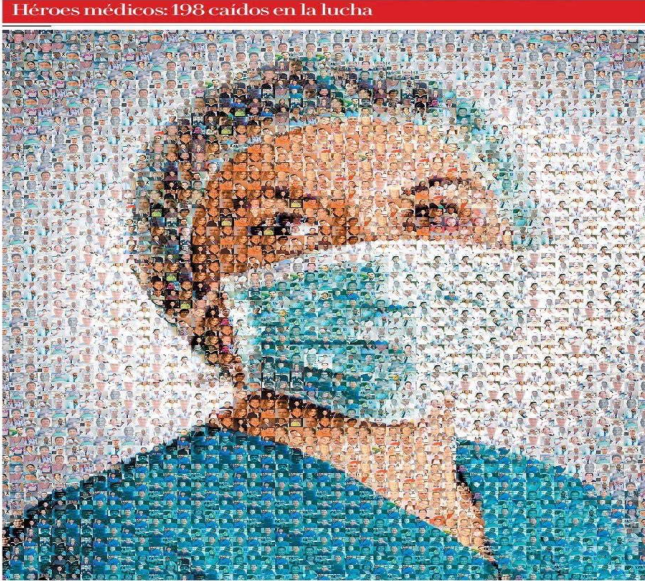
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Health Care System Performance Rankings: 2021

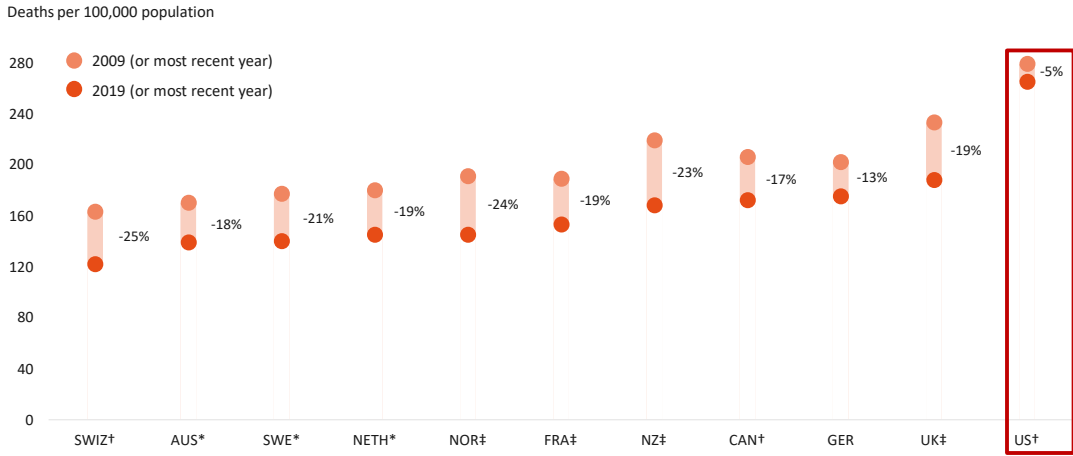|	AUS	CAN	FRA	GER	NETH	NZ	NOR	SWE	SWIZ	UK	US
OVERALL RANKING	3	10	8	5	2	6	1	7	9	4	11
Access to Care	8	9	7	3	1	5	2	6	10	4	11
Care Process	6	4	10	9	3	1	8	11	7	5	2
Administrative Efficiency	2	7	6	9	8	3	1	5	10	4	11
Equity	1	10	7	2	5	9	8	6	3	4	11
Health Care Outcomes	1	10	6	7	4	8	2	5	3	9	11

Commonwealth Fund. Mirror, Mirror. 2021

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EXHIBIT 8

Avoidable Deaths and Ten-Year Reduction in Avoidable Mortality Across Countries

Deaths per 100,000 population

- ● 2009 (or most recent year)
- ● 2019 (or most recent year)

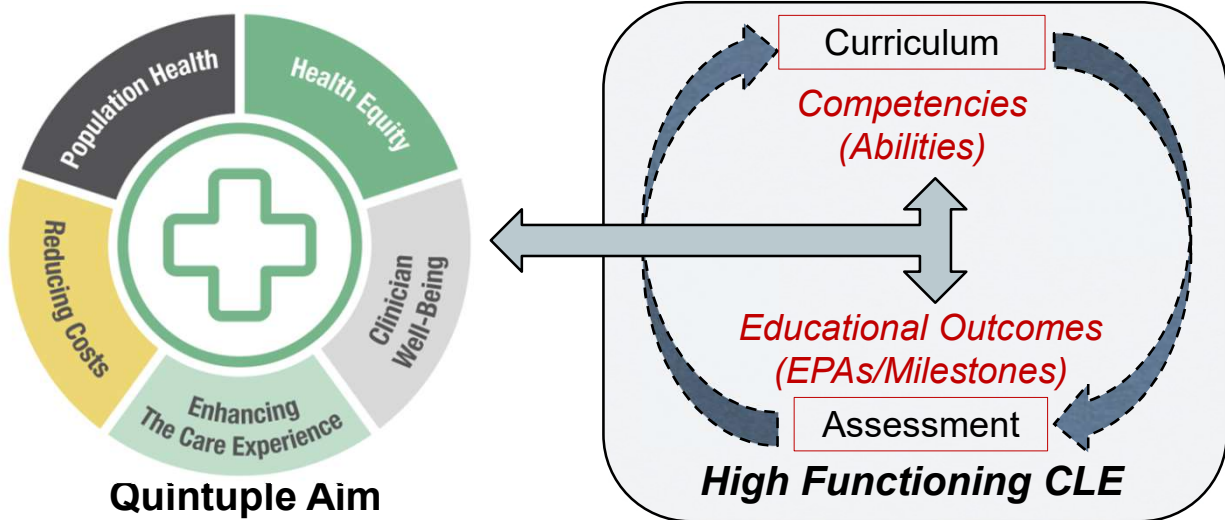| Country	Reduction
SWIZ†	-25%
AUS*	-18%
SWE*	-21%
NETH*	-19%
NOR‡	-24%
FRA‡	-19%
NZ‡	-23%
CAN†	-17%
GER	-13%
UK‡	-19%
US†	-5%

Notes: Health status: avoidable mortality. Data years are: 2009 and 2019 (Germany); * 2008 and 2018 (Australia, the Netherlands, Sweden); † 2007 and 2017 (Canada, Switzerland, US); and ‡ 2006 and 2016 (France, New Zealand, Norway, UK).
Data: Commonwealth Fund analysis of data from OECD Health Statistics, July 2021.

Source: Eric C. Schneider et al., Mirror, Mirror 2021 — Reflecting Poorly: Health Care in the U.S. Compared to Other High-Income Countries (Commonwealth Fund, Aug. 2021).

The Commonwealth Fund

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The Ultimate Goal of Health Professions Education

Population Health — Health Equity — Clinician Well-Being — Enhancing The Care Experience — Reducing Costs

Quintuple Aim

Curriculum

Competencies (Abilities)

Educational Outcomes (EPAs/Milestones)

Assessment

High Functioning CLE

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Outcomes-based Education: What is it?

- Central tenet: *start with the end in mind*
  - Focus on what type of health professional will be produced
  - Structure and process flow from the outcomes
- Educational outcomes should be "*clearly and unambiguously specified.*"
- These educational outcomes determine:
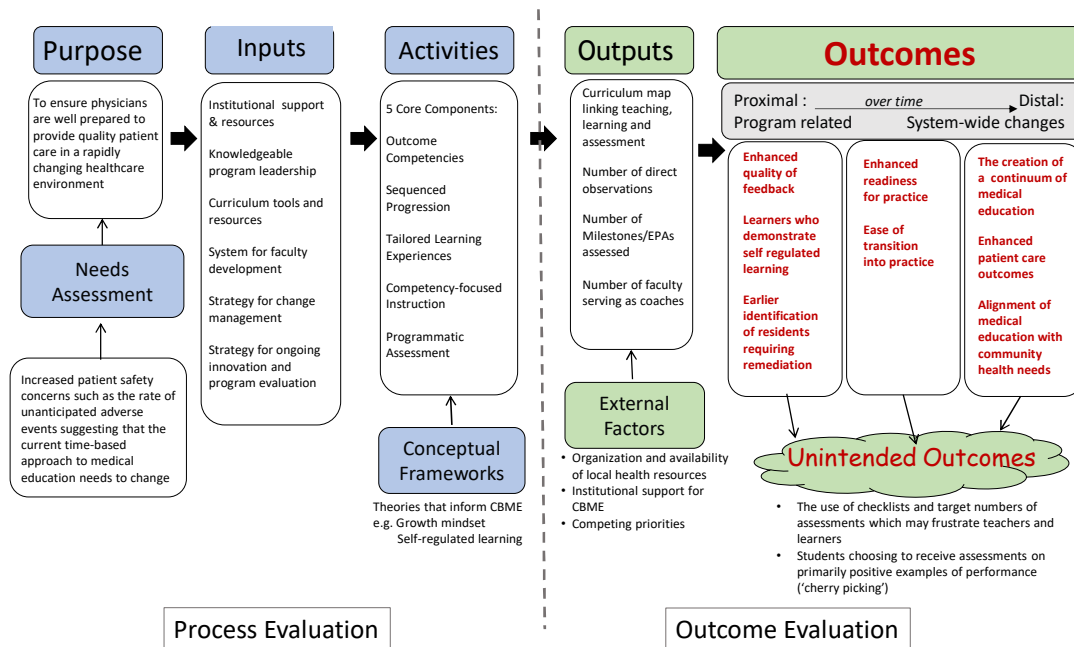 - Curriculum, assessment processes, and the learning environment

© AAFP: Collaboration Improves Patient Outcomes, Lowers Cost (aafp.org)

Harden RM. Outcomes-based education: Part 1-An introduction to outcomes-based education. Med Teach. 2009; 21: 7-14.

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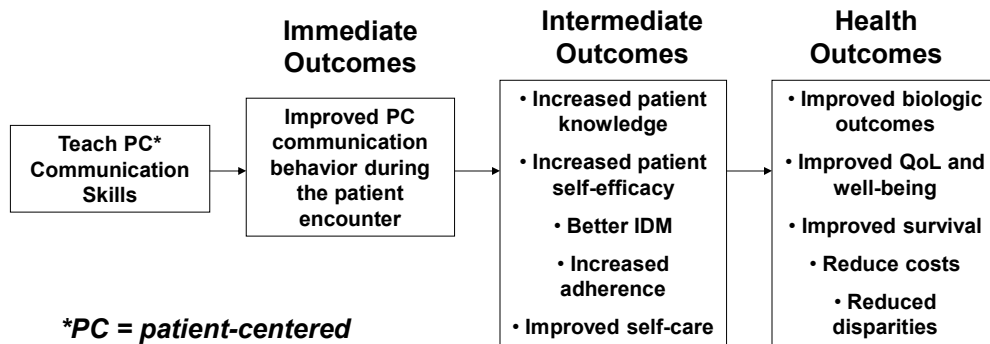# Education Logic Model: CBE

Purpose

To ensure physicians are well prepared to provide quality patient care in a rapidly changing healthcare environment

Needs Assessment

Increased patient safety concerns such as the rate of unanticipated adverse events suggesting that the current time-based approach to medical education needs to change

Inputs

Institutional support & resources

Knowledgeable program leadership

Curriculum tools and resources

System for faculty development

Strategy for change management

Strategy for ongoing innovation and program evaluation

Activities

5 Core Components:

Outcome Competencies

Sequenced Progression

Tailored Learning Experiences

Competency-focused Instruction

Programmatic Assessment

Conceptual Frameworks

Theories that inform CBME e.g. Growth mindset Self-regulated learning

Outputs

Curriculum map linking teaching, learning and assessment

Number of direct observations

Number of Milestones/EPAs assessed

Number of faculty serving as coaches

External Factors

- Organization and availability of local health resources
- Institutional support for CBME
- Competing priorities

Outcomes

Proximal : ———*over time*———> Distal:
Program related   System-wide changes

Enhanced quality of feedback

Learners who demonstrate self regulated learning

Earlier identification of residents requiring remediation

Enhanced readiness for practice

Ease of transition into practice

The creation of a continuum of medical education

Enhanced patient care outcomes

Alignment of medical education with community health needs

Unintended Outcomes

- The use of checklists and target numbers of assessments which may frustrate teachers and learners
- Students choosing to receive assessments on primarily positive examples of performance ('cherry picking')

Process Evaluation

Outcome Evaluation

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Link Between Communication and Outcomes

	Immediate Outcomes	Intermediate Outcomes	Health Outcomes
Teach PC* Communication Skills →	Improved PC communication behavior during the patient encounter →	• Increased patient knowledge • Increased patient self-efficacy • Better IDM • Increased adherence • Improved self-care →	• Improved biologic outcomes • Improved QoL and well-being • Improved survival • Reduce costs • Reduced disparities

*PC = patient-centered

Levinson W, Lesser CS, Epstein RM. Developing Physician Communication Skills for Patient-centered care. Health Affairs. 2010; 29: 1310-18.

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Achieving Outcomes: CBME

*An approach to preparing [health professionals] for practice that is fundamentally oriented to graduate outcome abilities and organized around competencies derived from an analysis of **societal and patient needs**.*

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

Frank et al. Toward a definition of CBME. Med Teacher 2010

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"Time" Still Matters

- In OBME/CBME, time is viewed as a *resource* and not an *intervention/measure*
  - Time is too often used as a proxy for competence (measure lens)
- Shortening training is *not* the primary goal of OBME/CBME
  - Time should be used wisely
  - The amount of "training time" required should be based on outcomes
- The core principles of CBME can still advance GME within "fixed" program lengths, designing outcomes-based flexibility within a residency/fellowship

Achieving the Desired Transformation: Thoughts on Next Steps for Outcomes-Based Medical Education. Acad Med. 2015 Sep;90(9):1215-23.

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Core Components Framework

| Outcome Competencies	Sequenced Progression	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 progressively*</u>.	Learning experiences <u>*facilitate*</u>…	Teaching practices <u>*promote*</u>…	Assessment practices <u>*support & document*</u>…
		….the developmental acquisition of competencies.		

Van Melle E, et. al. A Core Components Framework for Evaluating Implementation of Competency-Based Medical Education Programs. Acad Med. 2019 Jul;94(7):1002-1009.

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Philosophical Principles of CCF

Grounded in a "growth" mindset:

- Forms the basis for significantly redesigning assessment practices, instructional methods and learning experiences
- Focused on promoting learner growth and development through frequent formative assessment
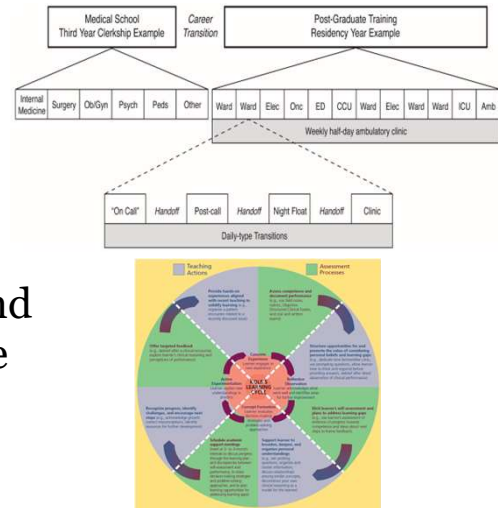
Van Melle E, et. al. A Core Components Framework for Evaluating Implementation of Competency-Based Medical Education Programs. Acad Med. 2019 Jul;94(7):1002-1009.

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Philosophical Principles of CCF

- Rich in feedback/coaching individualized to the learner and grounded in the desired competencies.
- Provides rich and diverse learning experiences, steeped in clinical practice where learners can stay *as long as required*
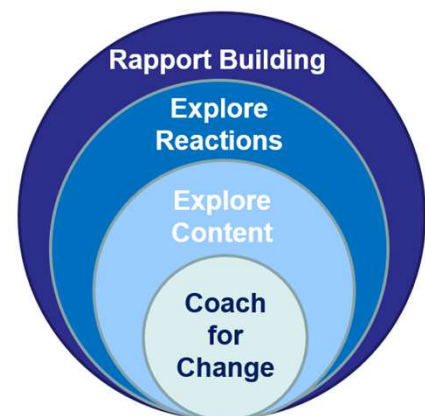
Van Melle E, et. al. A Core Components Framework for Evaluating Implementation of Competency-Based Medical Education Programs. Acad Med. 2019 Jul;94(7):1002-1009.

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Thinking Developmentally:
Progressive Sequencing and
Tailoring of Learning and Teaching

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CCF: Theory and Evidence Informed

Sequenced Progressively	Tailored Learning Experiences	Competency-focused Instruction
• Expertise Theory • Entrustment • Surface & Deep Approaches to Learning • Mastery-based Learning	• Situated Learning • Deliberate Practice • Self-regulated Learning • Workplace-based Learning • Professional Identity Formation	• Zone of Proximal Dev't • Constructive Friction • Learner-Centered Teaching • Cognitive Apprenticeship • Coaching Theory • Growth Mindset

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Stages Model of Development: Dreyfus

Developmental Stage
Novice
Advanced beginner
Competent
Proficient
Expert

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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"*

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

PEAK

SECRETS FROM
THE NEW SCIENCE
OF EXPERTISE

Anders Ericsson
and Robert Pool

"[Peak] offers an optimistic anti-determinism that ought to influence how people educate children, manage employees, and spend their time. The good news is that to excel one need only look within." – *THE ECONOMIST*

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4/14/2023
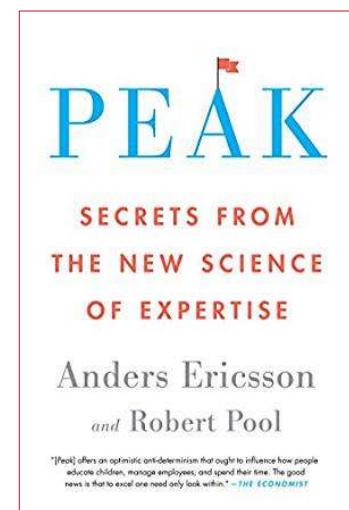
Mastery-based Learning

- Excellence is expected and achievable by all learners who are able, motivated and work hard.
- Little to no variation in measured outcomes.
- Learning in any domain, depends on learning a sequence of less complex components.
- If learners receive optimal quality of instruction and learning time required, the majority of learners should attain mastery.

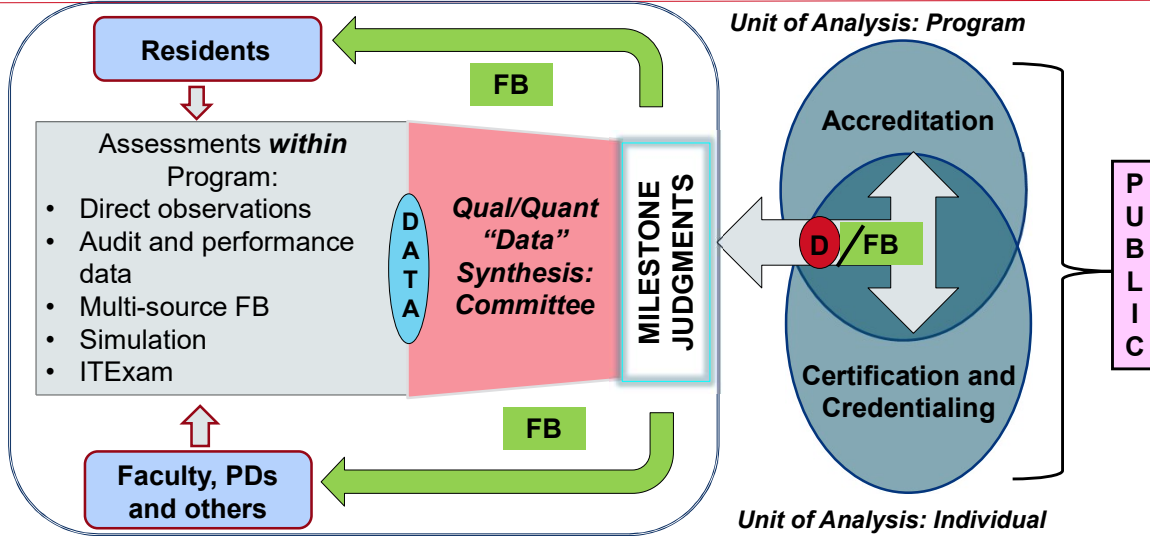**McGaghie WC. Mastery Learning: It Is Time for Medical Education to Join the 21st Century. Acad Med. 2015;90:1438–1441.**

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Learning Curves and Developmental Models
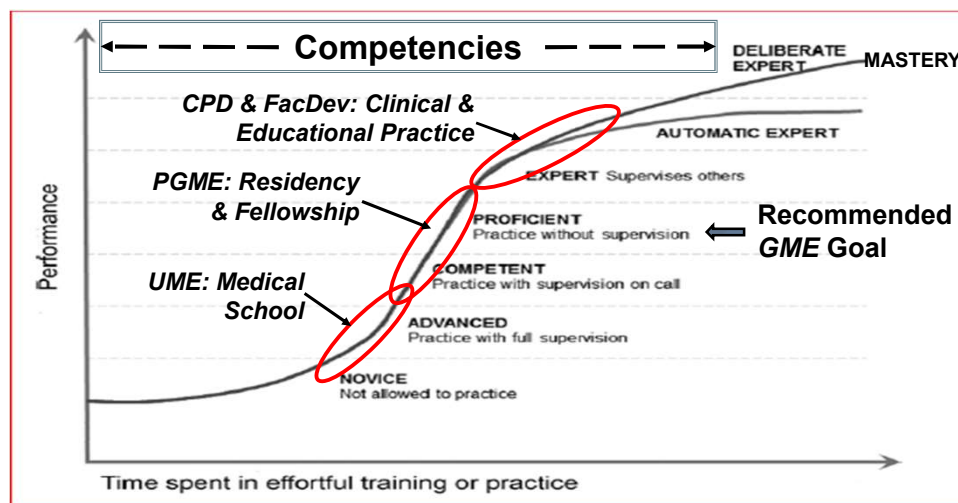
Pusic M et. al. Acad Med. 2014
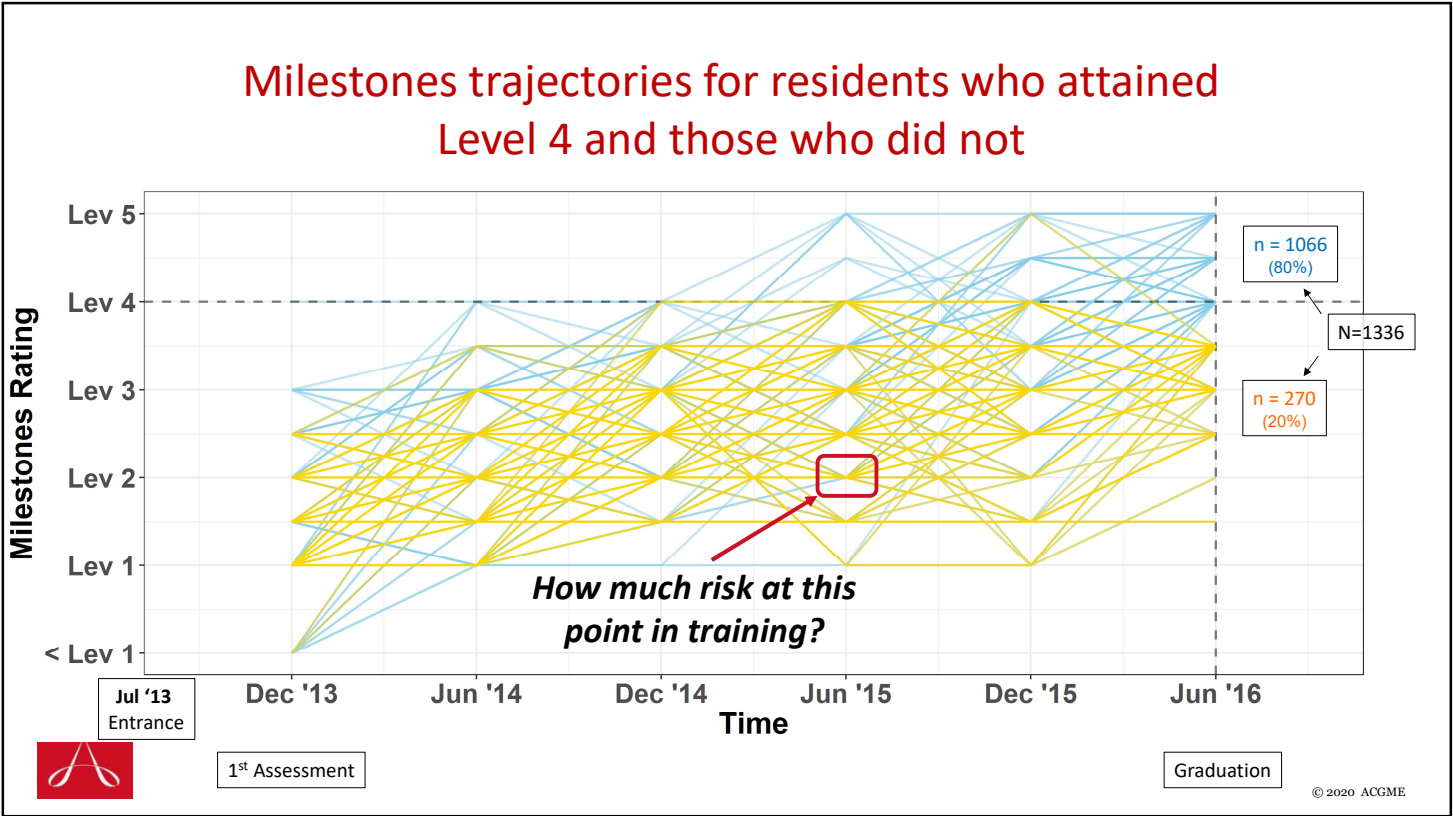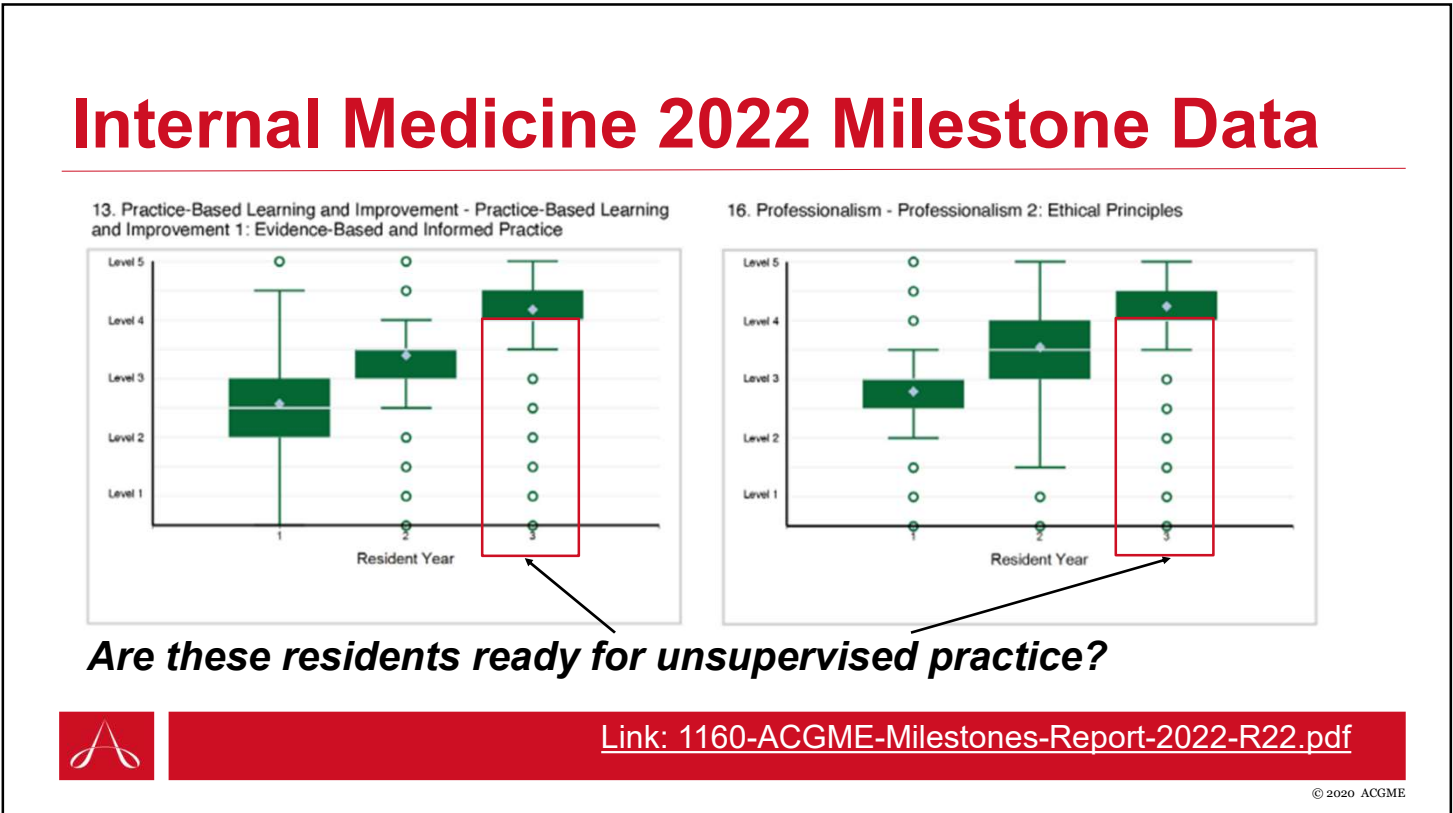
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Programmatic Assessment System in GME

Unit of Analysis: Program

Residents

FB

Assessments *within* Program:
- Direct observations
- Audit and performance data
- Multi-source FB
- Simulation
- ITExam

DATA

Qual/Quant "Data" Synthesis: Committee

MILESTONE JUDGMENTS

Accreditation

D /FB

Certification and Credentialing

PUBLIC

FB

Faculty, PDs and others

Unit of Analysis: Individual

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ACGME

What The Graduate Medical Educational System Is Producing

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Milestones trajectories for residents who attained Level 4 and those who did not

How much risk at this point in training?

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Internal Medicine 2022 Milestone Data

Are these residents ready for unsupervised practice?

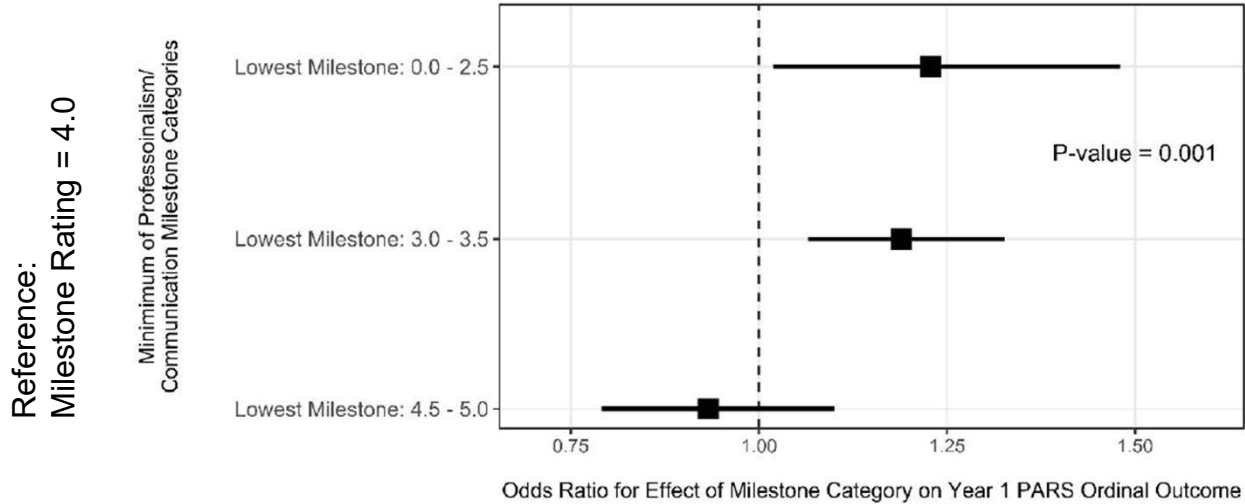Link: 1160-ACGME-Milestones-Report-2022-R22.pdf

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Adjusted Effect of Minimum Professionalism/Communication Milestone Category on PARS Year 1 Index Score Category

Han M, Hamstra SJ, Hogan SO, et. al. Trainee Physician Milestone Ratings and Patient Complaints in Early Post-Training Practice. JAMA NetW Open. 2023; In press.

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"Every System is Perfectly Designed to Get the Results it Gets"

We have multiple, ongoing examples of a "fixed-time" GME system persistently producing variable outcomes

Is This Really What We Want?

Arthur Jones. In Hanna, DP. Designing Organizations for High Performance. 1988. Addison-Wesley [now Prentice Hall].
Also variously attributed to W. Edwards Deming, Donald Berwick, and Paul Batalden. See
https://www.ihi.org/communities/blogs/origin-of-every-system-is-perfectly-designed-quote and https://deming.org/quotes/10141/
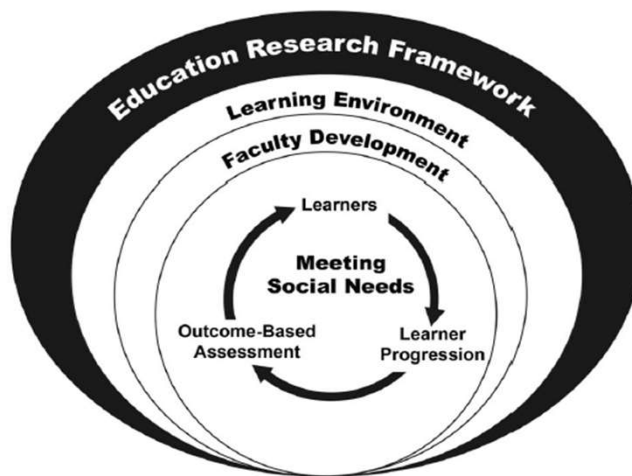
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**Studying Complex Interventions
and Phenomena to Improve Outcomes**

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Competency-Based Education in Physical Therapy:
Developing a Framework for Education Research

Figure 1. A Framework Representing Areas for Education Research in Competency-Based Education in Physical Therapy.

Competency-based education in Physical Therapy (CBEPT)
Philosophy and Educational Design

Jensen, Gail M. PT, PhD, FAPTA; Jette, Diane U. PT, DSc, FAPTA; Timmerberg, Jean Fitzpatrick PT, DPT, PhD; Chesbro, Steven B. PT, DPT, EdD; Dole, Robin L. PT, DPT, EdD; Kapasi, Zoher PT, PhD, MBA, FAPTA; Lotshaw, Ana PT, PhD. Competency-Based Education in Physical Therapy: Developing a Framework for Education Research. Journal of Physical Therapy Education 36(4):p 334-340, December 2022.

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Changing Perspective:
Patients at the Intersection of Educational and Healthcare Outcomes
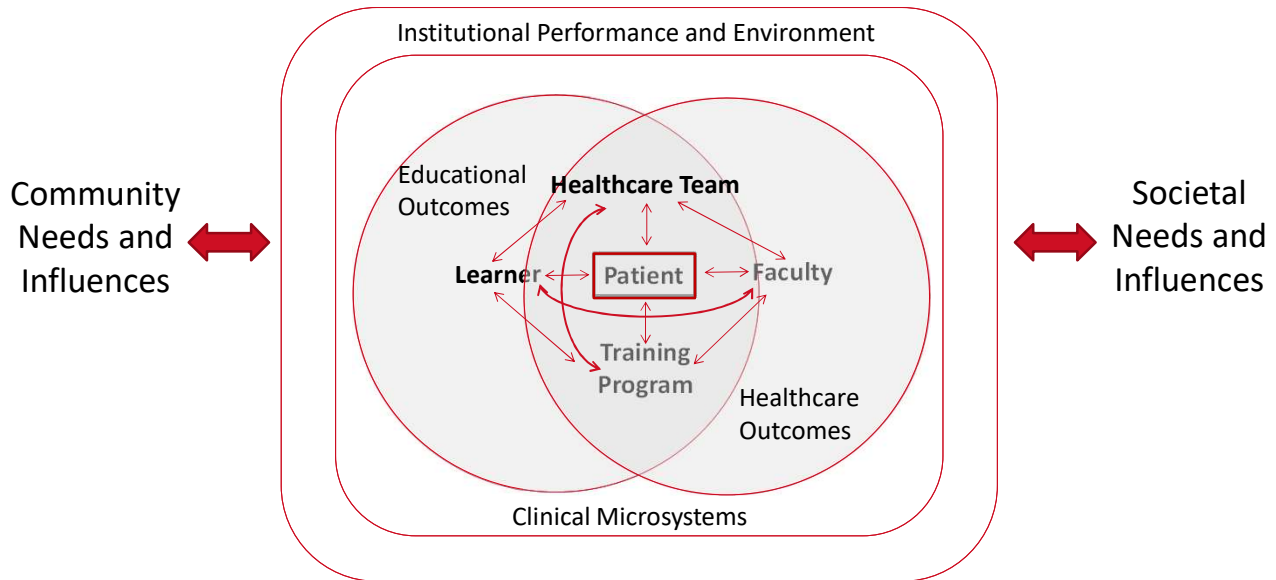
Wong BM, et. al. Acad Med. 2016; Holmboe ES and Kogan JR. Acad Med. 2022

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Training Environment and Future Practice

All these studies found an association between hospital level quality, safety or costs where the physician trained and their future practice after graduation:

- Asch (2009)
  - Obstetrical complications
- Chen (2014); Phillips (2017)
  - Costs of care in IM and FM practice
- Sirovich (2014)
  - Appropriate conservative management (on exam)
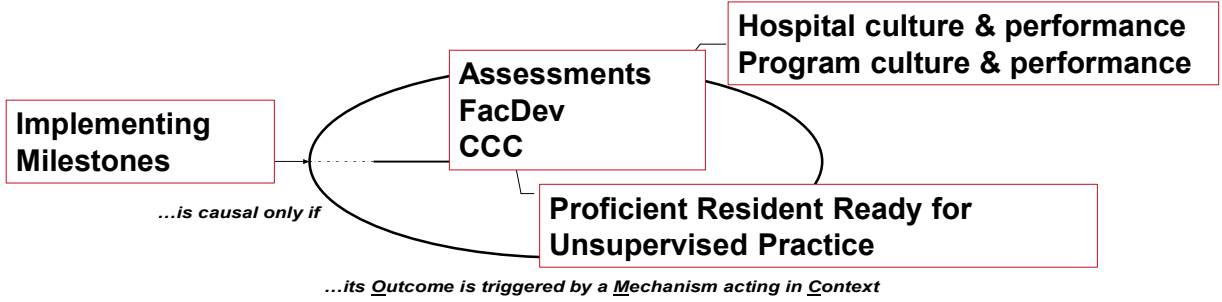- Bansal (2015)
  - Surgical complications

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Asking the Right Questions
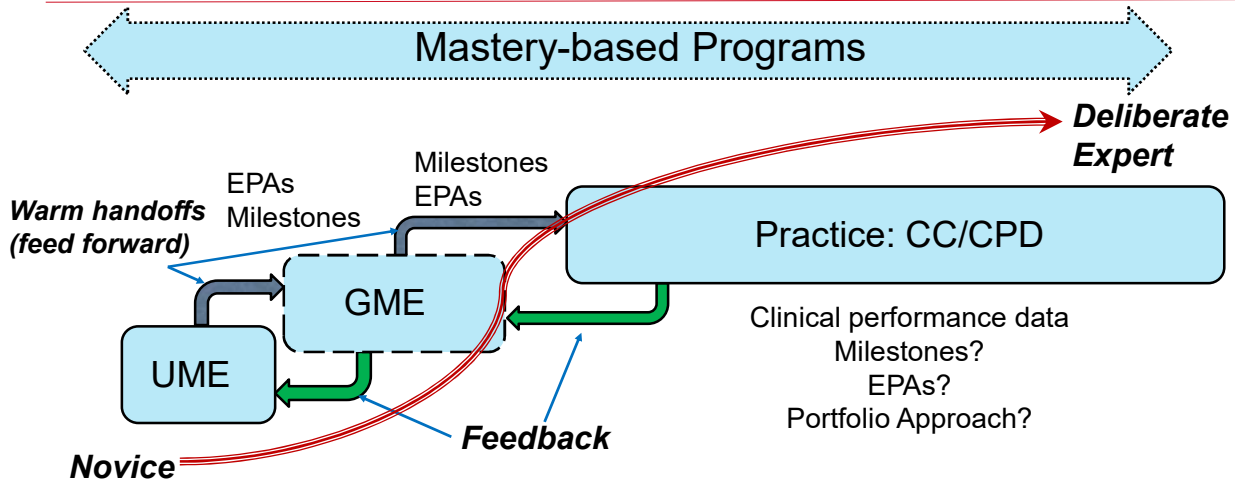
"What works for whom in what circumstances and why"

Hospital culture & performance
Program culture & performance

Assessments
FacDev
CCC

Implementing
Milestones

…is causal only if

Proficient Resident Ready for
Unsupervised Practice

…its Outcome is triggered by a Mechanism acting in Context

**Pawlson R & Tilley N. Realistic
Evaluation. Sage Pub. 1997**

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The Why: Connecting the Continuum

Mastery-based Programs

*Deliberate
Expert*

Milestones
EPAs

EPAs
Milestones

*Warm handoffs
(feed forward)*

Practice: CC/CPD

GME

Clinical performance data
Milestones?
EPAs?
Portfolio Approach?

UME

Feedback

Novice

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Moving Forward:
Challenges and Assumptions That Hold Us Back

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CBME Challenges

- Inertia, inertia, inertia
- Change management
  - Change is often more about loss of identity than change itself
- Competence in CBME
  - Faculty, learners, programs, and institutions
- Implementation knowledge and skills
- Changing rigid curricula

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Leadership is Dangerous

" People do not resist change per se. People resist loss. You appear dangerous to people when you question their values, beliefs or values of a lifetime. You place yourself on the line when you tell people what they need to hear rather than what they want to hear. Although you may see with clarity and passion a promising future of promise and gain, people will see with equal passion the losses you are asking them to sustain."

Heifetz R, Linsky M. Leadership on the Line.
Boston, Mass: Harvard Business Press; 2002. Pgs. 11-12.

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Lahey and Kegan

- The "Big Assumption"
  - Assumptions-taken-as-truth
  - *"Big assumptions are not so much the assumptions we have as they are the assumptions that have us."*

What assumptions exist in graduate medical education that have (and hold tight) the educational community?
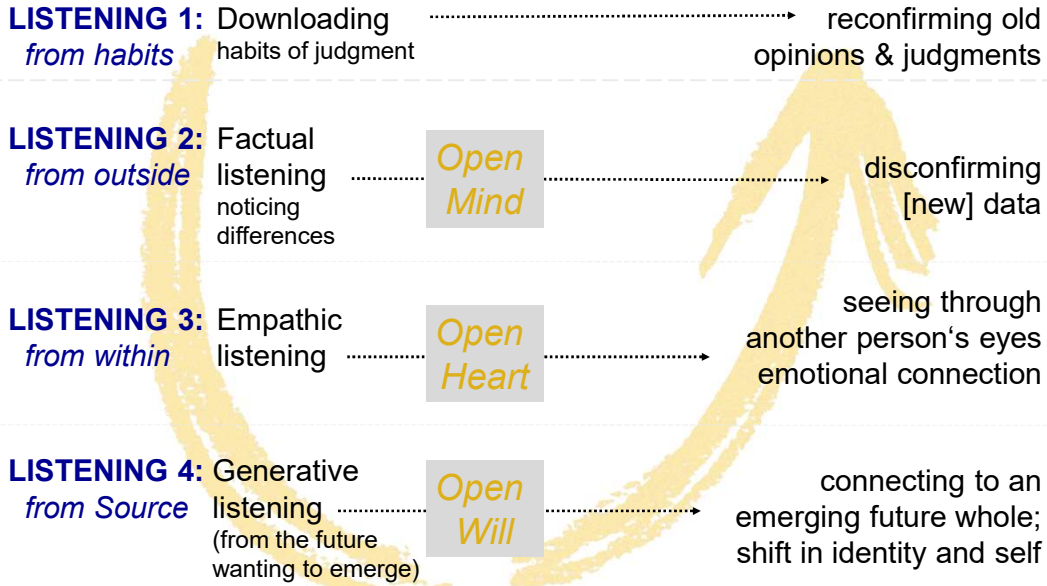
Lahey LL and Kegan R. How the Way We Talk Can Change the Way We Work. 2009.

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Theory U: Levels of Listening To Drive Change

LISTENING 1: Downloading
from habits habits of judgment ·······► reconfirming old opinions & judgments

LISTENING 2: Factual
from outside listening
noticing differences ·······► Open Mind ·······► disconfirming [new] data

LISTENING 3: Empathic
from within listening ·······► Open Heart ·······► seeing through another person's eyes emotional connection

LISTENING 4: Generative
from Source listening
(from the future wanting to emerge) ·······► Open Will ·······► connecting to an emerging future whole; shift in identity and self

Letting Go

Letting Something Better Emerge

Presencing Institute - Otto Scharmer - www.presencing.com/permissions/

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Thank you
Questions

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