Knowledge is not enough – We must (Help) do

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Disclosures

- Professor, Family Medicine, University of Colorado Anschutz School of Medicine
- Senior Advisor to the President, American Board of Family Medicine
- I have no relationships with pharmaceutical or medical device companies to disclose.

- Think about one of your recent CME activities developed because of a need to change practice

Outline

- Outcomes – what are we trying to achieve?
- What “works” in CME
- CME and Quality Improvement
- Beyond one and done: Longitudinal educational interventions
  - Concept and design
  - Evaluation frameworks

CPD Outcomes Frameworks

Miller	Moore (w/Price modification)		Kirkpatrick
	7	Community Health	Results
	6	Patient Health	
Does Applies/ Shows How	5	Performance	Behavior (Transfer)
Knows How	4	Competence (shows how)	
Knows (and remembers!)	3E	Collaborative/interprofessional knowledge (knows who)	Learning
	3D	Systems knowledge (knows where)	
	3C	Conditional knowledge (knows when)	
	3B	Procedural Knowledge (knows how)	
	3A	Declarative knowledge (knows what)	
	2	Satisfaction	Reaction
	1	Participation	

What Works in CME

- Interactive
- Case based
- Reflective
- Opportunities to practice
- Multimodal
- Longitudinal (multiple exposure), spaced, spiraled education
- Reinforced

- Davis & Mazmanian 1999
- Cochrane 2002 & 2008
- Marinopoulos 2007
- Cervero 2015

CME and Quality Improvement (QI)

(CME) "consists of educational activities which serve to maintain, develop, or increase the knowledge, skills, ***and professional performance*** and relationships that a physician uses to provide services for patients, the public, or the profession. " --

ACCME

(QI) "...consists of ***systematic and continuous*** actions that lead to measurable improvement in health care services and the health status of targeted patient groups." --

Health Services Research Administration

CE and QI

CE is a form of education activities which focuses on **maintaining and improving the knowledge, performance and professional development** of licensed physicians and health care professionals

QI aims to **improve processes and outcomes** of health care by making health care services more **efficient and effective.**

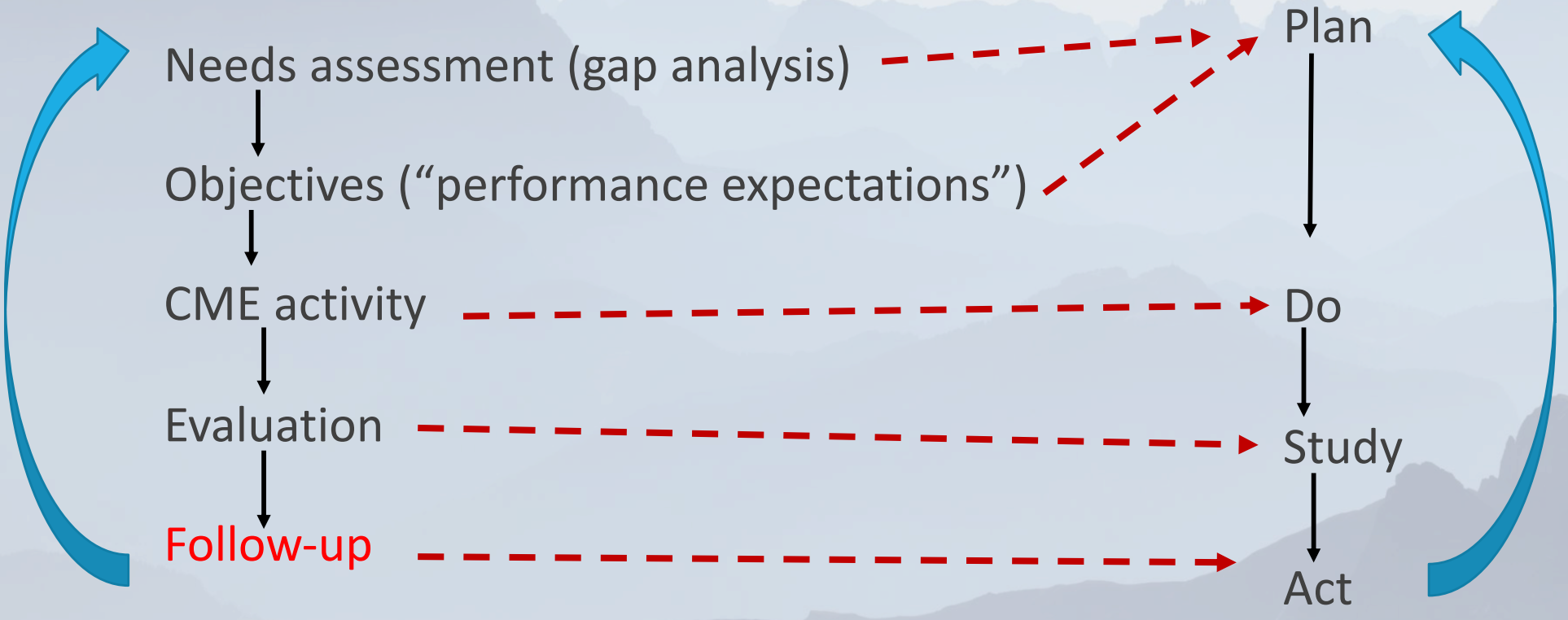
Kitto, 2011

CME and QI: Common goals, but different

- Both aim to (ultimately) facilitate physician performance
- Both face “check the box” mentality among some physicians
- CME is not QI
  - but it can be an important part
  - CME (and knowledge) foundational & necessary but not sufficient
- Each is better with the other

CME & Some forms of QI Are Related

Price D, Medical Teacher 2005 (updated 2011)



Langley, Berwick

Changing practice/improving outcomes is hard

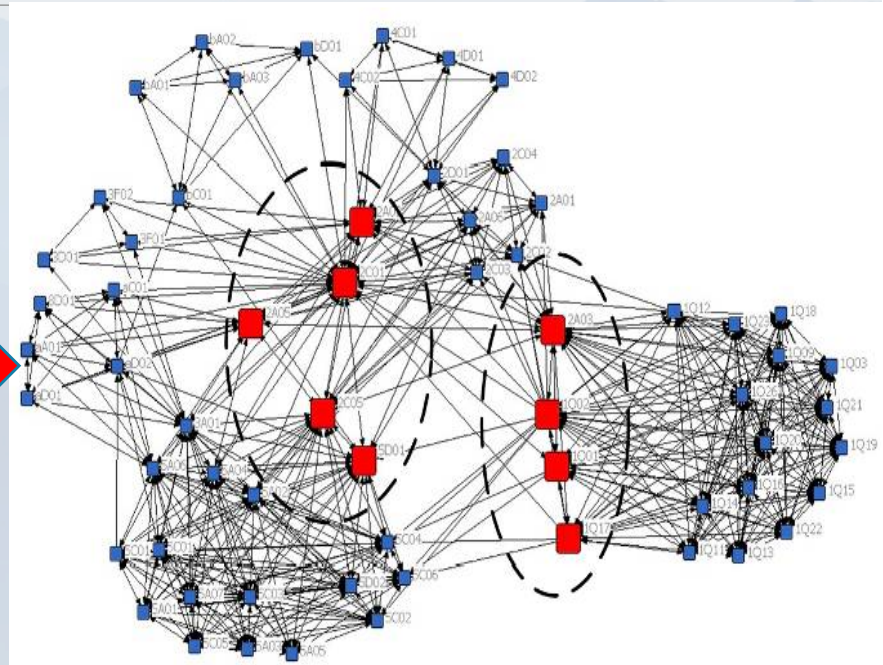
Minor Infection, Minor fracture	Treating patients with multiple comorbidities	Improving health of entire populations
SIMPLE	**COMPLICATED**	**COMPLEX**
(baking a cake)	(constructing a building)	(sustaining a business or raising a child)
LINEAR INSTRUCTIONS PREDICTABLE OUTCOME	EXPERTS COORDINATE MANY SETS of INSTRUCTIONS to ACHIEVE a SPECIFIED OUTCOME	INHERENT VARIETY and UNCERTAINTY in a DYNAMIC ENVIRONMENT Requires continuous INTERPRETING and SENSING; may lead to SURPRISE

adapted from *Getting to Maybe* by Westley, Zimmerman & Patton

Occam's Razor vs. Reality (Complex Adaptive Systems)

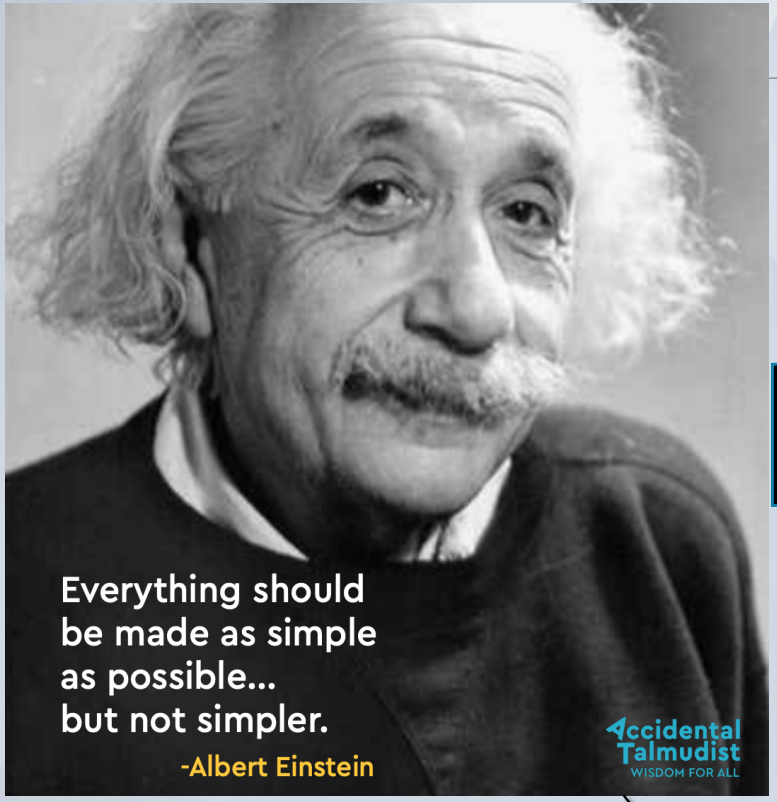
"All things being equal, the simplest solution tends to be the best one."

William of Ockham

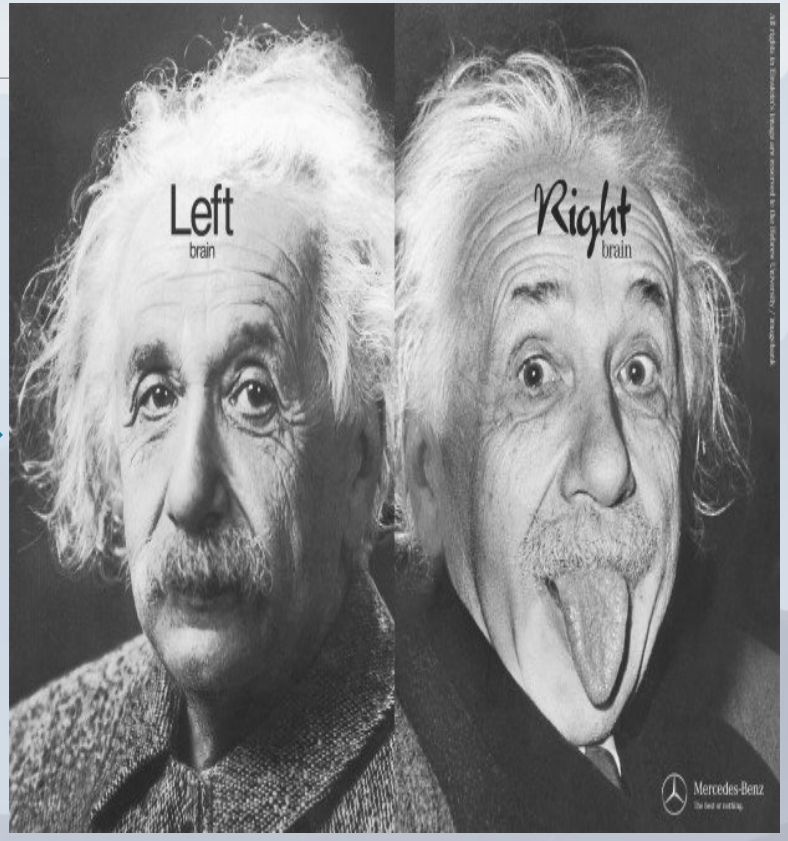


Li, Yongkui and Yujie Lu. "Complex Projects Organization Networking: Perspectives from Centrality, Centralization and Power." *2010 International Conference on Management and Service Science* (2010): 1-5.

Complex heath problems won't be solved by "too simple" solutions



"Elegant enough"



Paraphrased (no evidence he actually said this….)

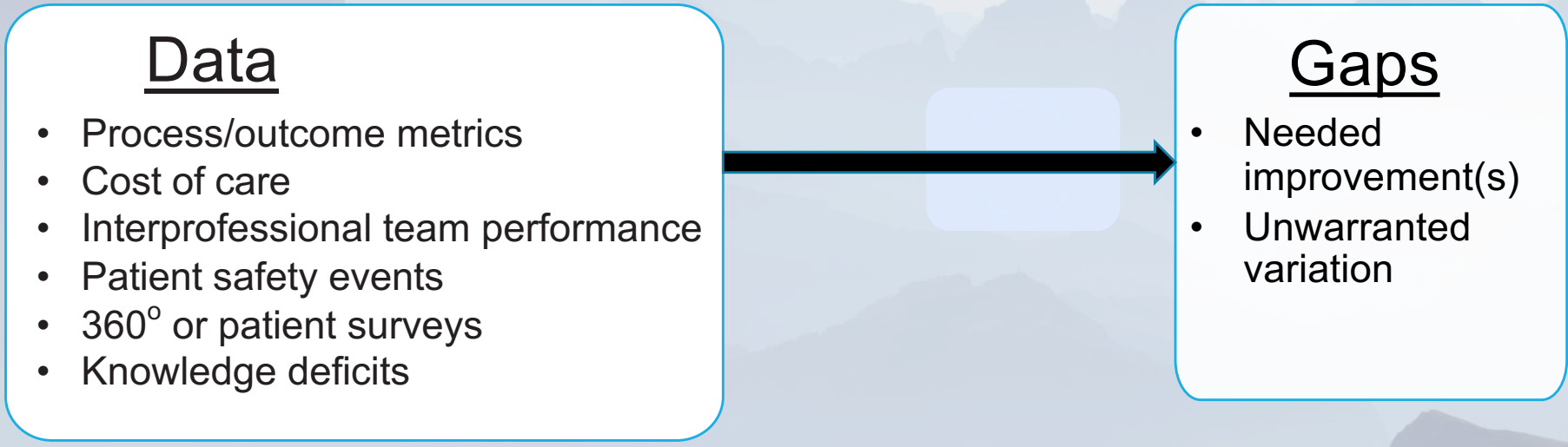
Meaningfully addressing complex problems requires:

- Longitudinal initiatives, not a one-and-done activity
- Truly interprofessional learning
  - Not just knowledge
  - Not just “parallel” play – “by the team, for the team, to improve the team(work)”
- Explicitly and intentionally linking learning to doing
- Mutual, multifaceted collaboration among experts & stakeholders
- Spiraling and reinforcement

High level pre-planning questions

- What's the problem you are trying to solve?
- Who are the stakeholders?
- Who is the target audience (most in **need**)
- Is it complicated or complex?
- What is your definition of success? (backwards planning)

A Model for Longitudinal CME



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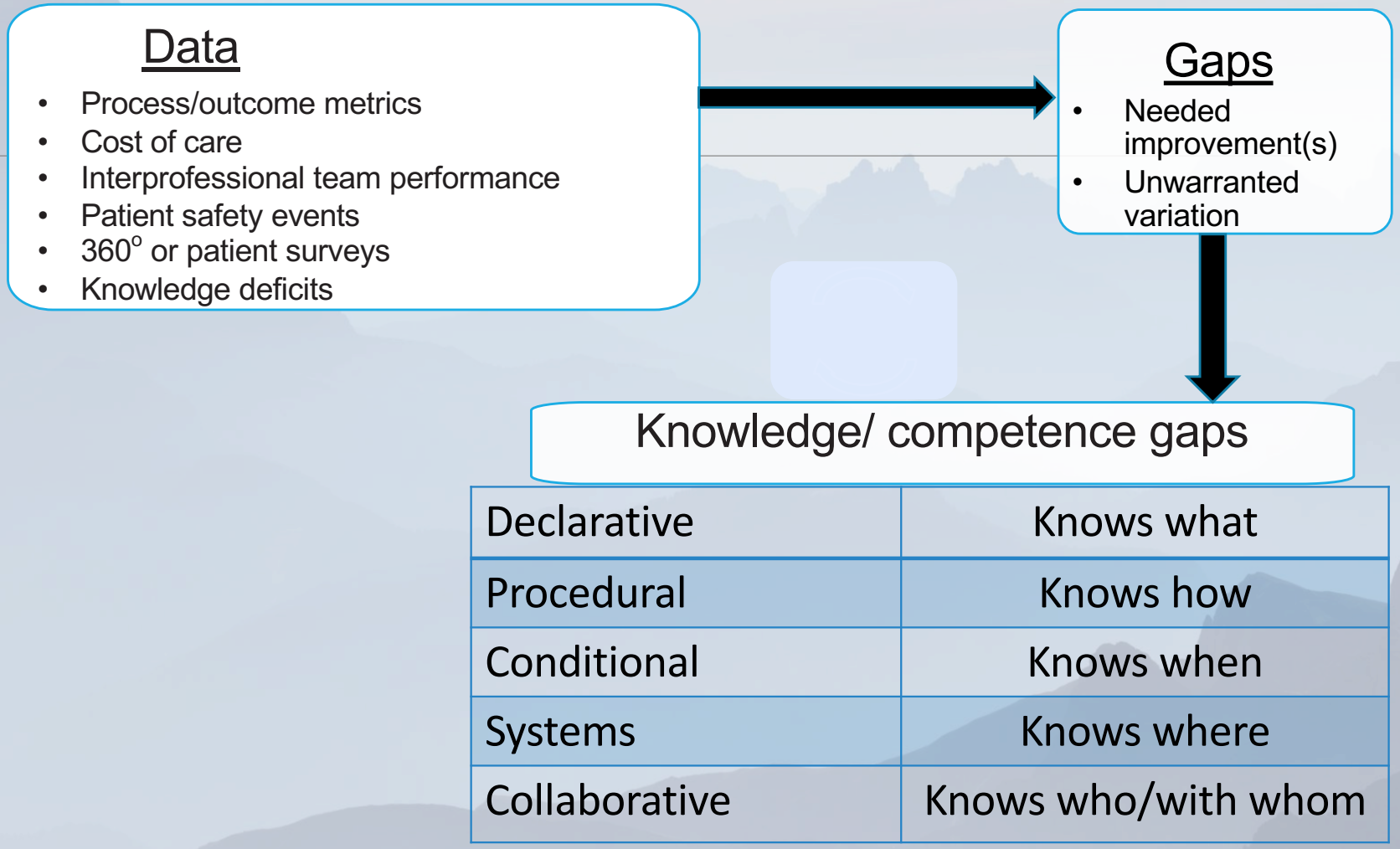
A Model for Longitudinal CME



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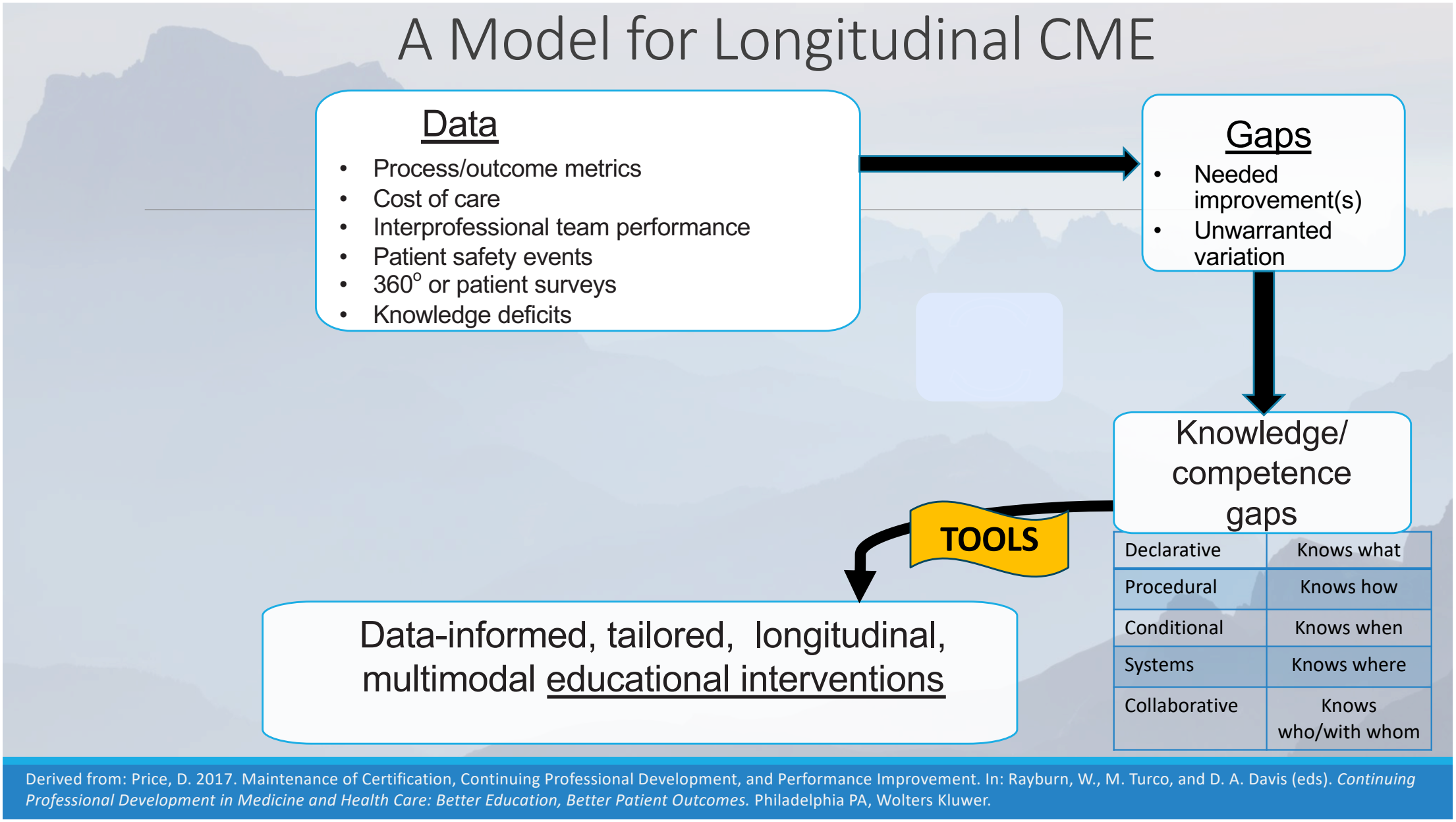

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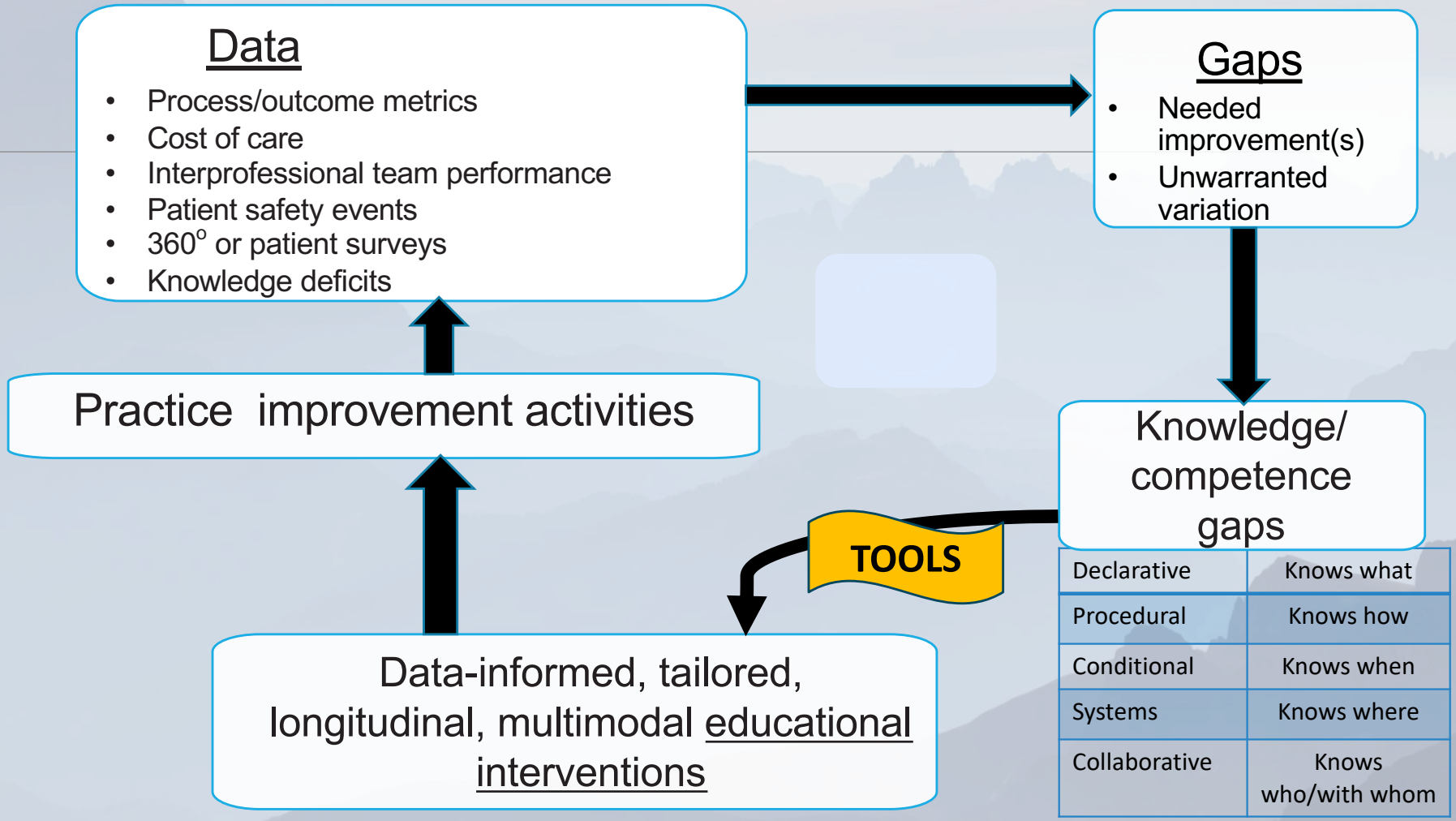

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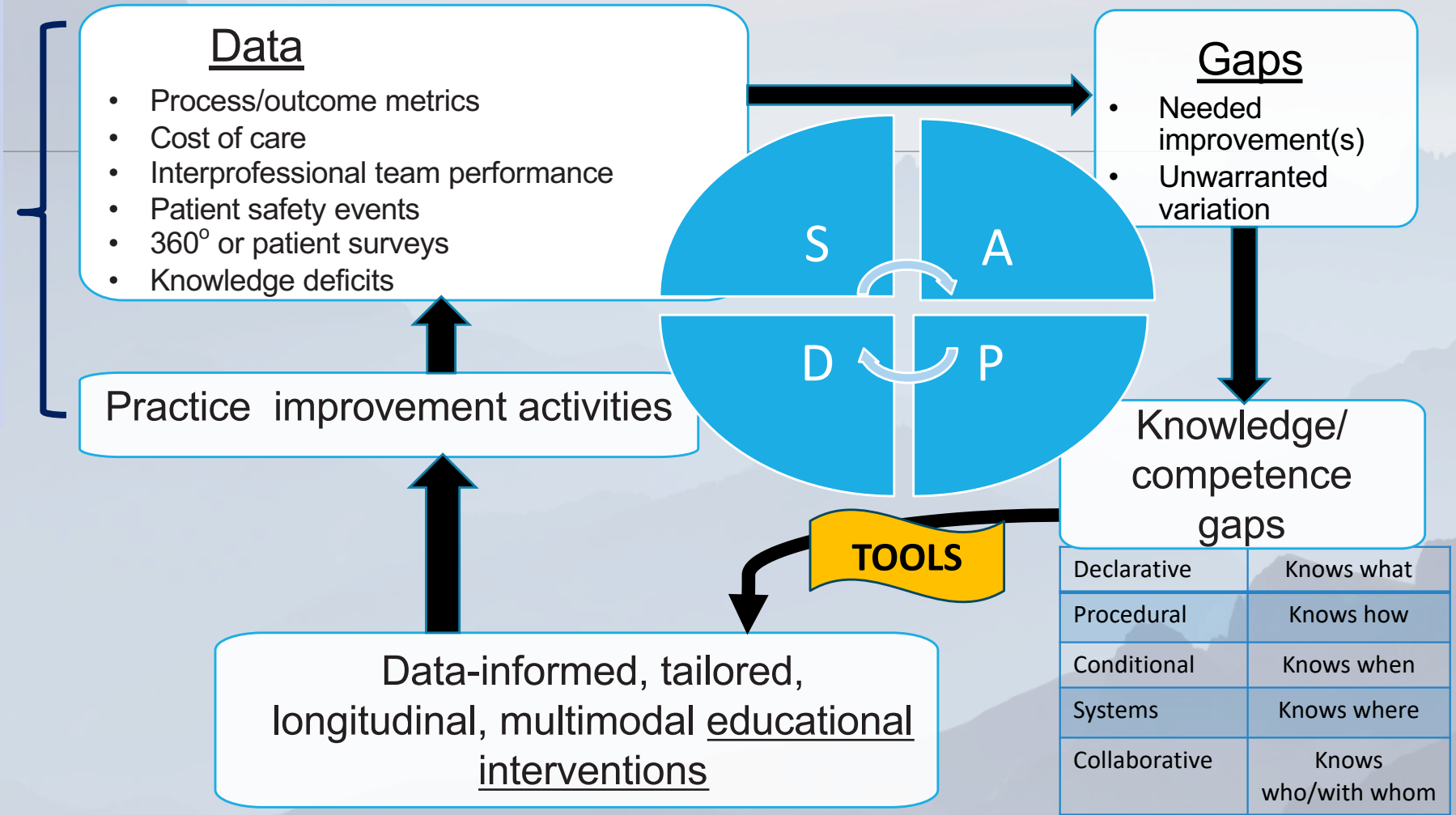
A Model for Longitudinal CME

- ↓ **variation**
- ↑ **efficiency**
- ↓ **costs**
- ↑ **patient outcomes**
- ↑ **population health**
- ↑ **clinician satisfaction retention**



Declarative	Knows what
Procedural	Knows how
Conditional	Knows when
Systems	Knows where
Collaborative	Knows who/with whom

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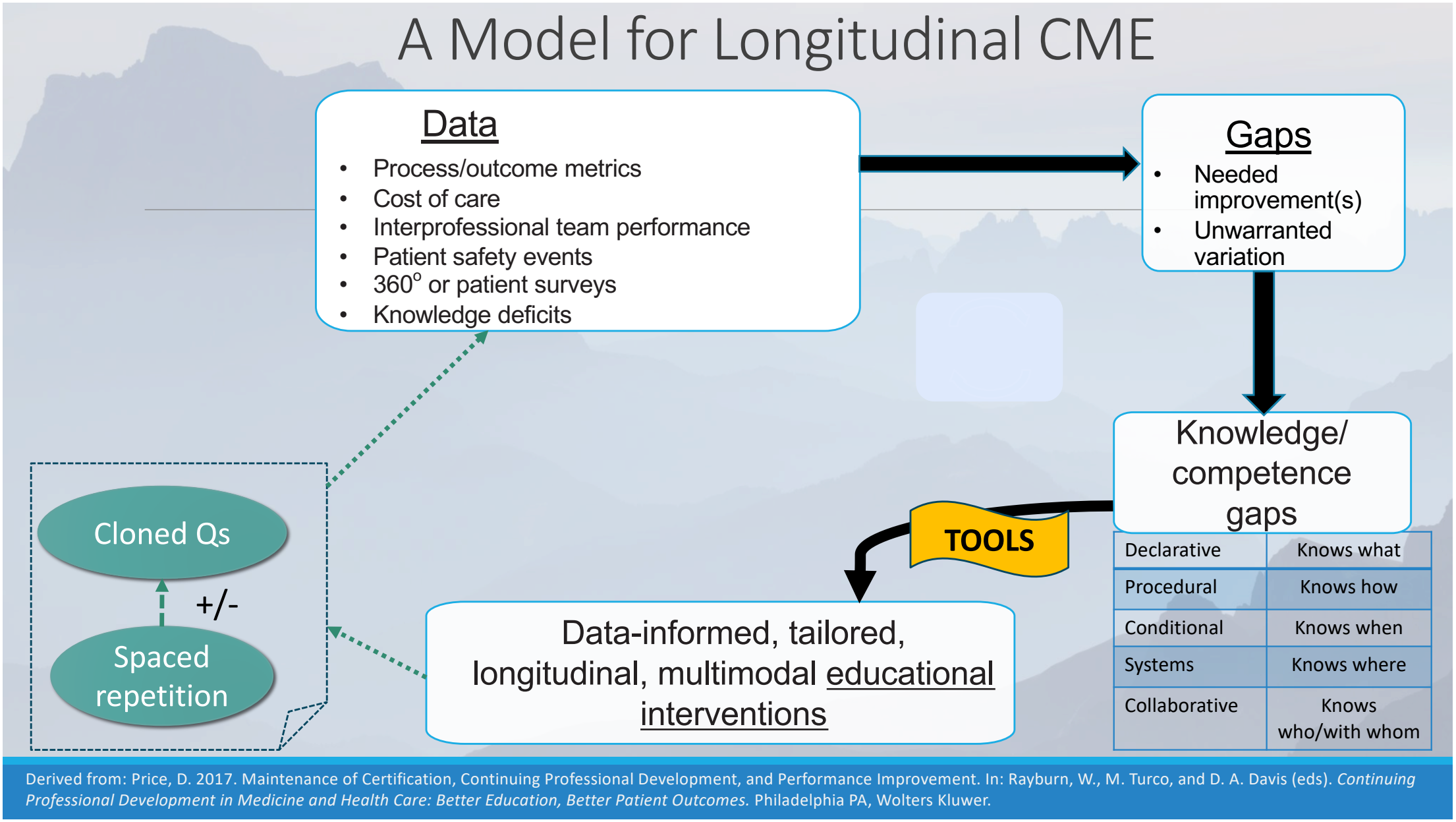
A Model for Longitudinal CME



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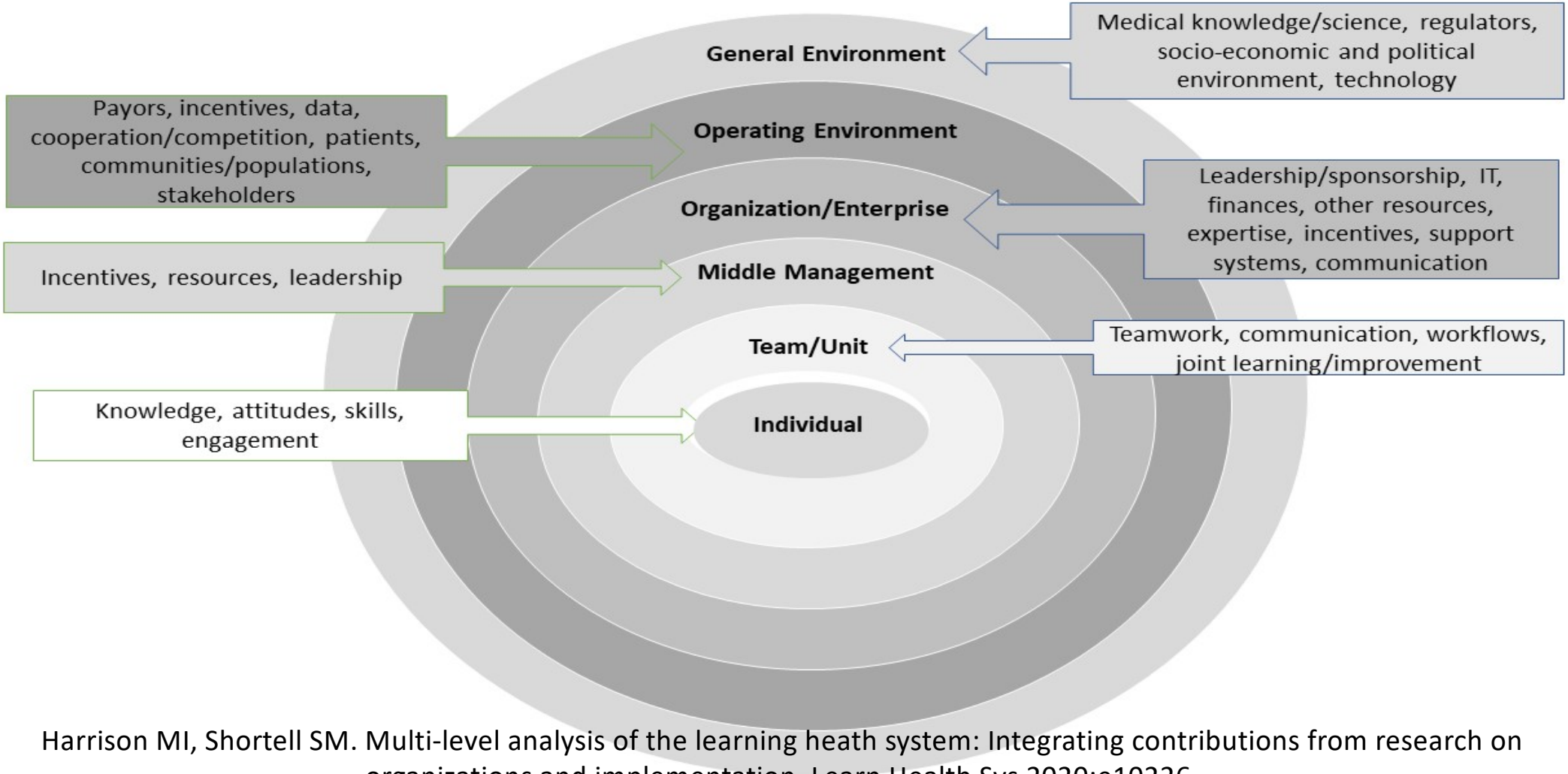
Context matters:
Multilevel Organizational (Socio-ecologic) Learning Framework



Harrison MI, Shortell SM. Multi-level analysis of the learning heath system: Integrating contributions from research on organizations and implementation. Learn Health Sys 2020:e10226.

Consolidated Framework for Implementation Research

- 39 Constructs in 5 domains:
  - Intervention Characteristics
  - Inner setting (implementing organization)
  - Outer setting (external environment)
  - Individual characteristics (of those implementing a change)
  - Implementation Process

- Drawn from multiple theories including Transtheoretical Stages of Change and Diffusion of Innovation

- Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implement Sci. 2009;4:50.

RE-AIM

- Reach
- Effectiveness

- % attendance of the right audience
- Beyond pre/post test – did it change processes/outcomes of care

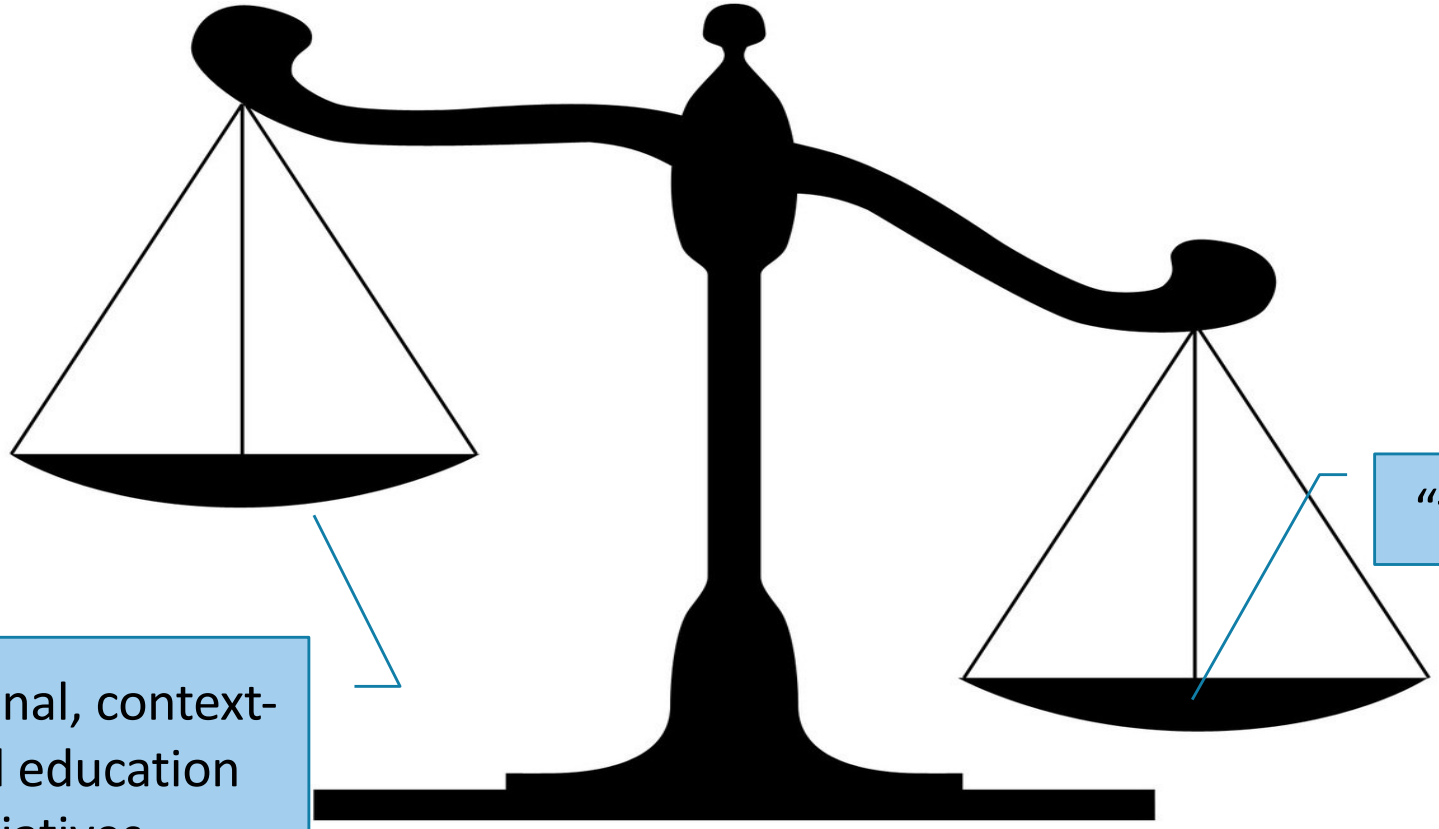
- Adoption
- Implementation
- Maintenance

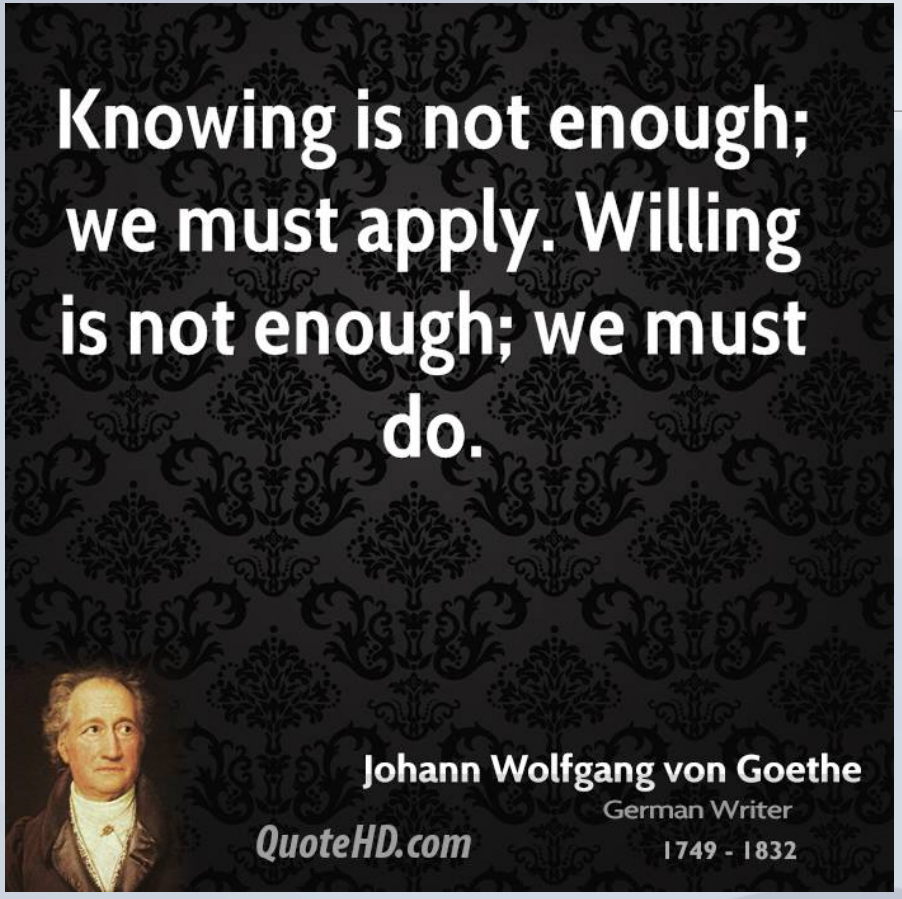
- Beyond “will you change your practice” (facilitators, barriers, self efficacy)
- Actual implementation in practice
- Did practice changes persist? Are outcomes improvements sustained?

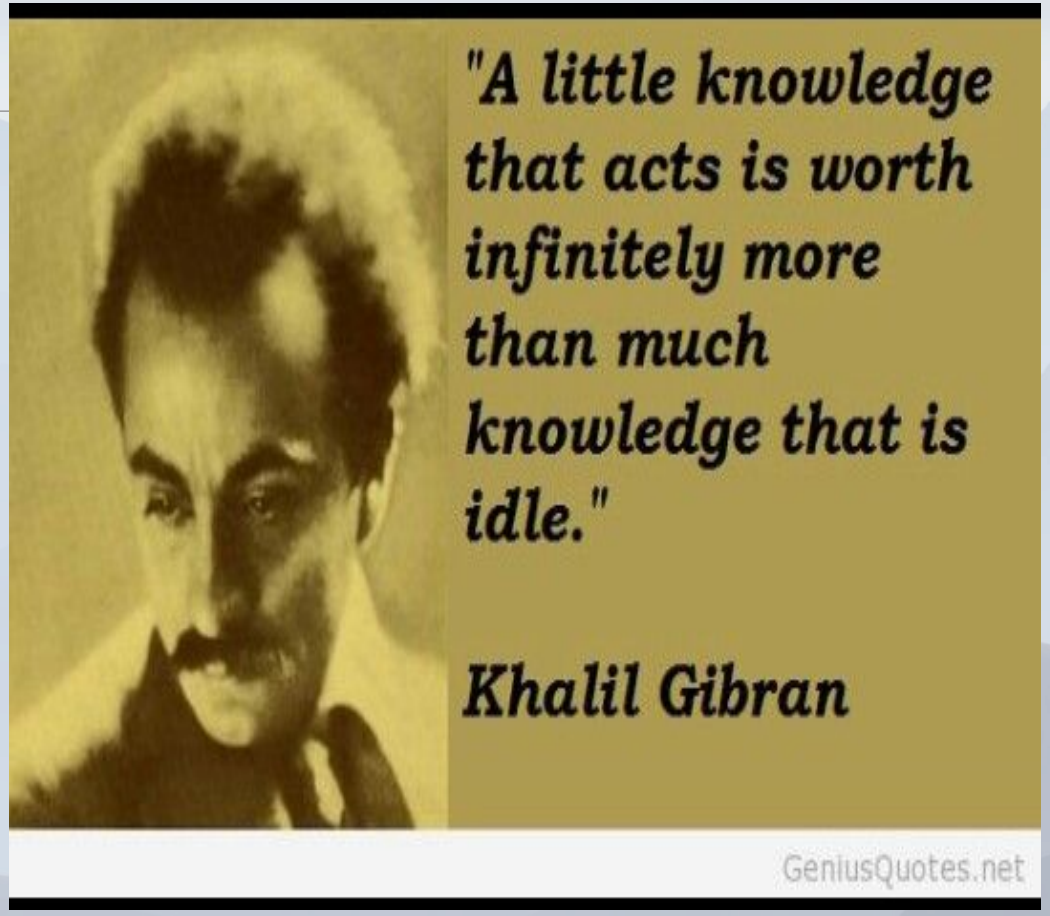
- Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. Am J Public Health. 1999;89(9):1322–1327.

- How could you turn your CME (example) into a longitudinal intervention?
- Questions?

Try it once…..


Longitudinal, context-focused education initiatives
"the usual"


Knowing is not enough; we must apply. Willing is not enough; we must do.
Johann Wolfgang von Goethe
German Writer
1749 - 1832
QuoteHD.com


"A little knowledge that acts is worth infinitely more than much knowledge that is idle."
Khalil Gibran
GeniusQuotes.net

Selected additional reading

- Price DW. To effectively address complex healthcare problems, continuing professional development must evolve. J Cont Educ Health Prof. J Cont Educ Health Prof. 2023 43(4S):S59-S63.
- Price D.W., D.A. Davis, and G.L. Filerman. 2021. “Systems-Integrated CME”: The Implementation and Outcomes Imperative for Continuing Medical Education in the Learning Health Care Enterprise. NAM Perspectives. Discussion, National Academy of Medicine, Washington, DC. https://doi.org/10.31478/202110a.
- Price DW, Wagner DP, Krane NK, Rougas SC, Lowitt NR, Offodile RS, Easdown LJ, Andrews MAW, Kodner CM, Lypson M, Barnes BE. What are the Implications of Implementation Science for Medical Education?. Med Ed Online 2015, 20: 27003. http://dx.doi.org/10.3402/meo.v20.27003.
- Price D. Continuing medical education, quality improvement, and transfer of practice. Medical Teacher 2005;27(3): 259-268.