RISE OF COMPETENCY-BASED MEDICAL EDUCATION

DEVELOPING AND ASSESSING COMPETENCIES FOR TEACHERS AND CAREGIVERS SERVING INFANTS AND TODDLERS

ERIC HOLMBOE

OUTLINE

- Historical and current context for competency-based approach to medical education
- Shift of education and regulation to a continuous quality improvement approach
  - Milestones
- Early signals: neurosurgery

HISTORICAL AND CURRENT CONTEXT

EARLY SIGNALS: QUALITY & SAFETY

- Increasing pockets of evidence and concern arise around the quality and safety of healthcare in the 1960s and 1970s
  - A.L. Cochrane: Effectiveness and efficiency
  - J. Wennberg: Unjustifiable regional variations in care delivery
 - R. Brook: medical errors

EARLY PRINCIPLES

- World Health Organization (**1978**):
  - *"The intended output of a competency-based programme is a health professional who can practise medicine at a defined level of proficiency, in accord with local conditions, to meet local needs."*

McGaghie WC, *Miller GE, Sajid AW, Telder TV. Competency-based Curriculum Development in Medical Education. World Health Organization, Switzerland, 1978.*
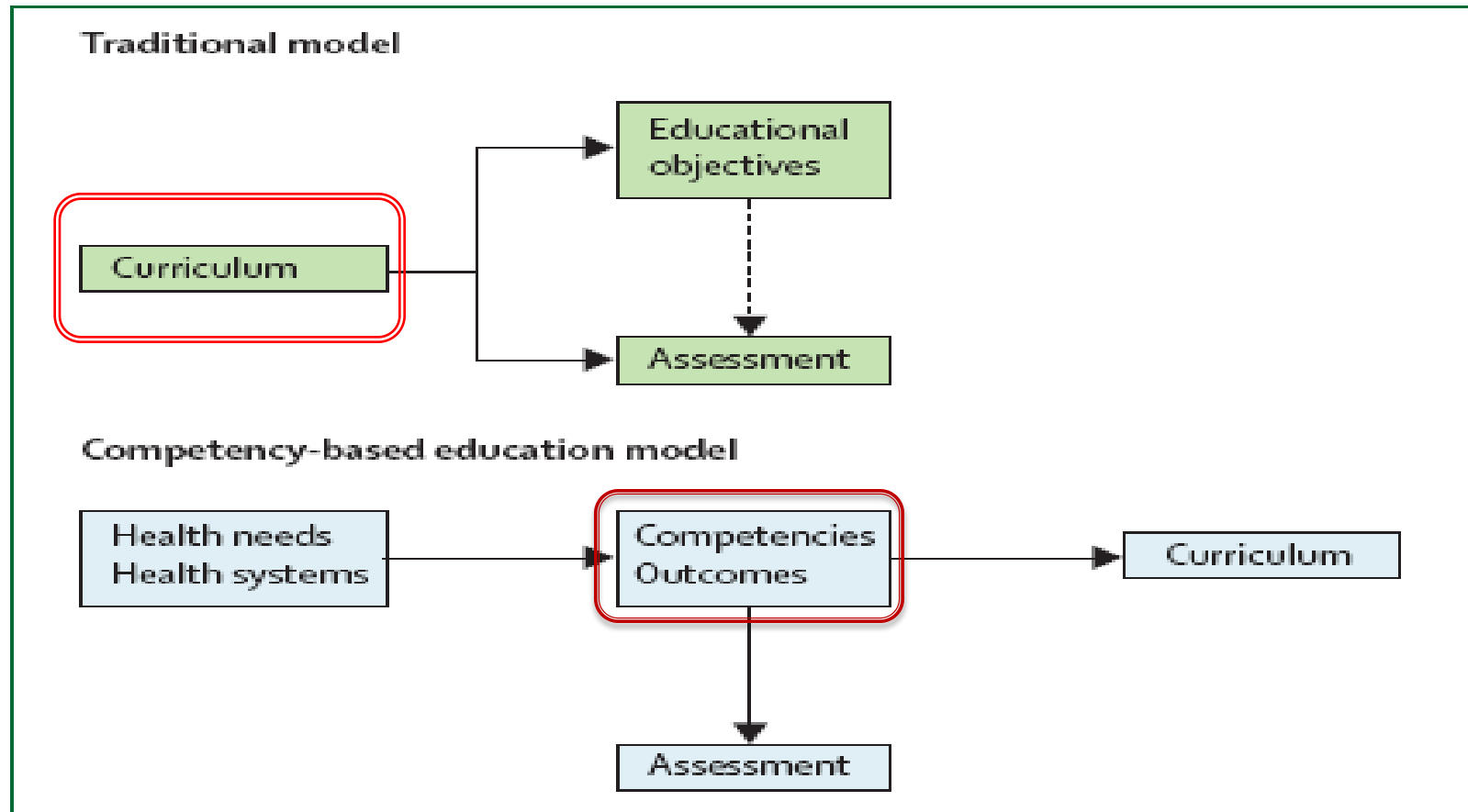
CONTEXT 1999-2001
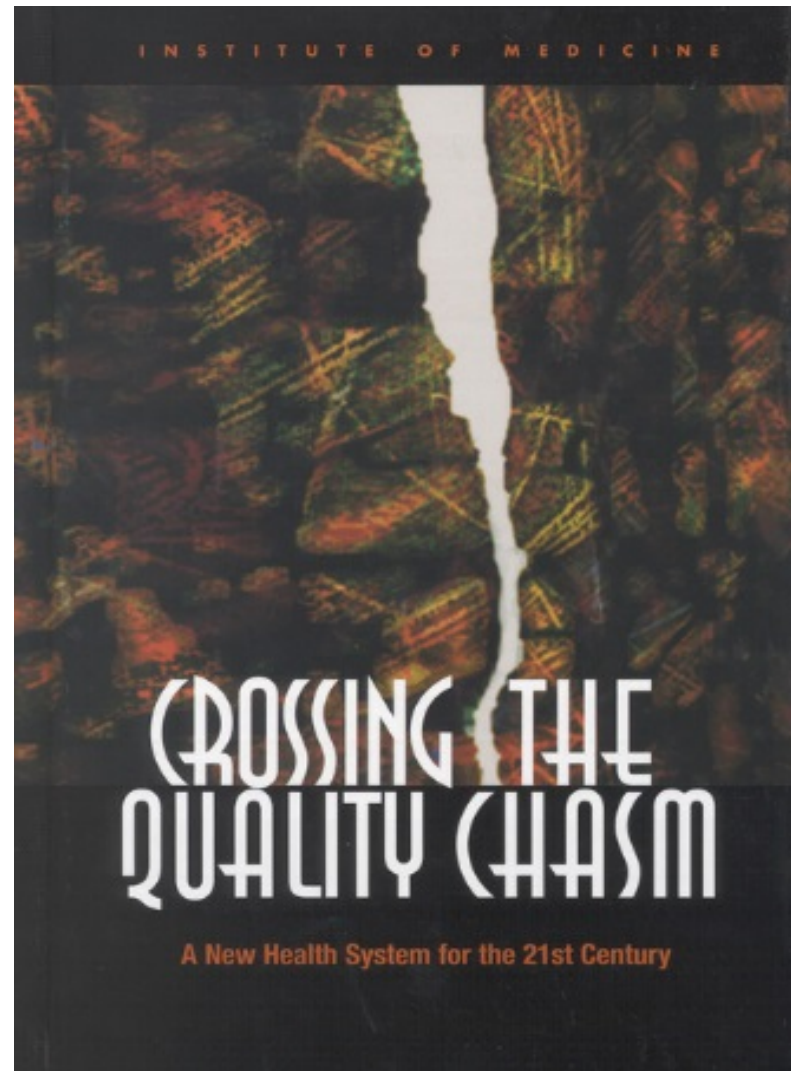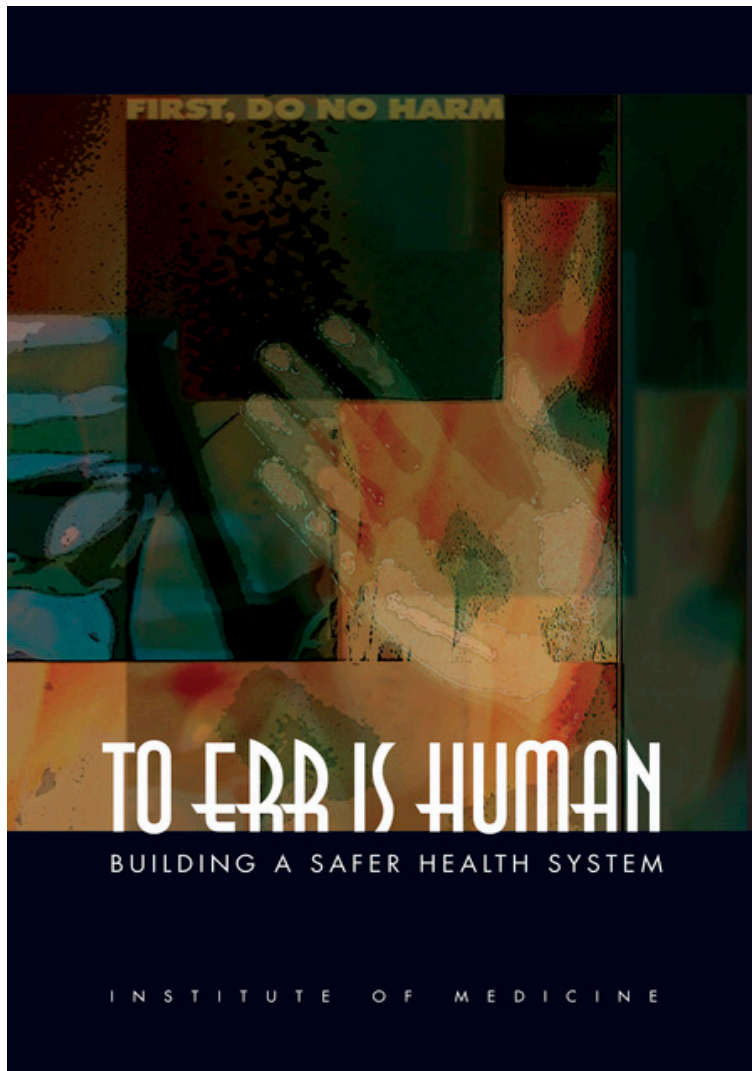
OUTCOMES AND COMPETENCIES

U.S. COMPETENCY JOURNEY: PHASE 1

Dates	Event/Change
1994	ACGME begins work on developing competencies
1999	Six general competency framework approved by ABMS/ACGME
2001	Launch of Outcomes Project

OBME: START WITH SYSTEM NEEDS

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

U.S. GENERAL COMPETENCIES FRAMEWORK

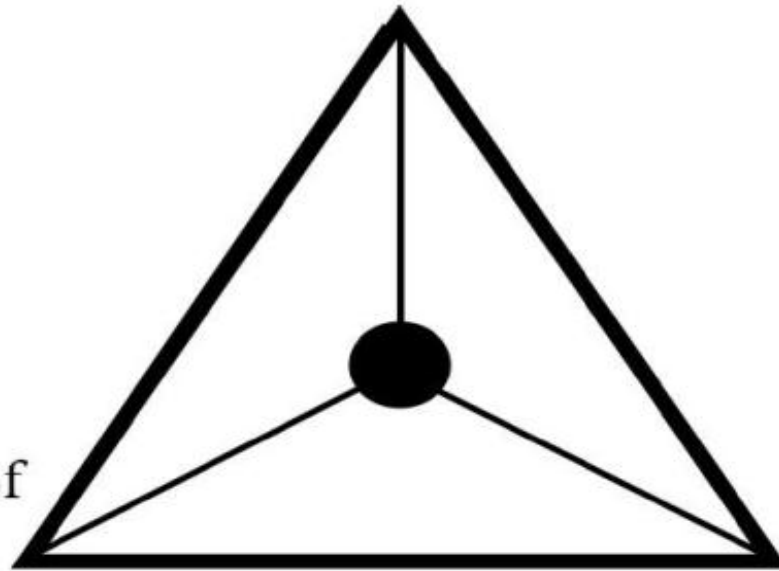| General Competencies |
|:---:|
| Patient Care |
| Medical Knowledge |
| Professionalism |
| Interpersonal Skills & Communication |
| Practice-based learning & Improvement |
| Systems-based Practice |

THE ULTIMATE OUTCOMES FOR CLINICAL CARE & EDUCATION

Health of a Population

Experience of Care
- Safe
- Effective
- Patient centered
- Efficient
- Timely
- Equitable

Per Capita Cost

The IHI *Triple*Aim

Better care for individuals, better health for populations, lower per capita costs
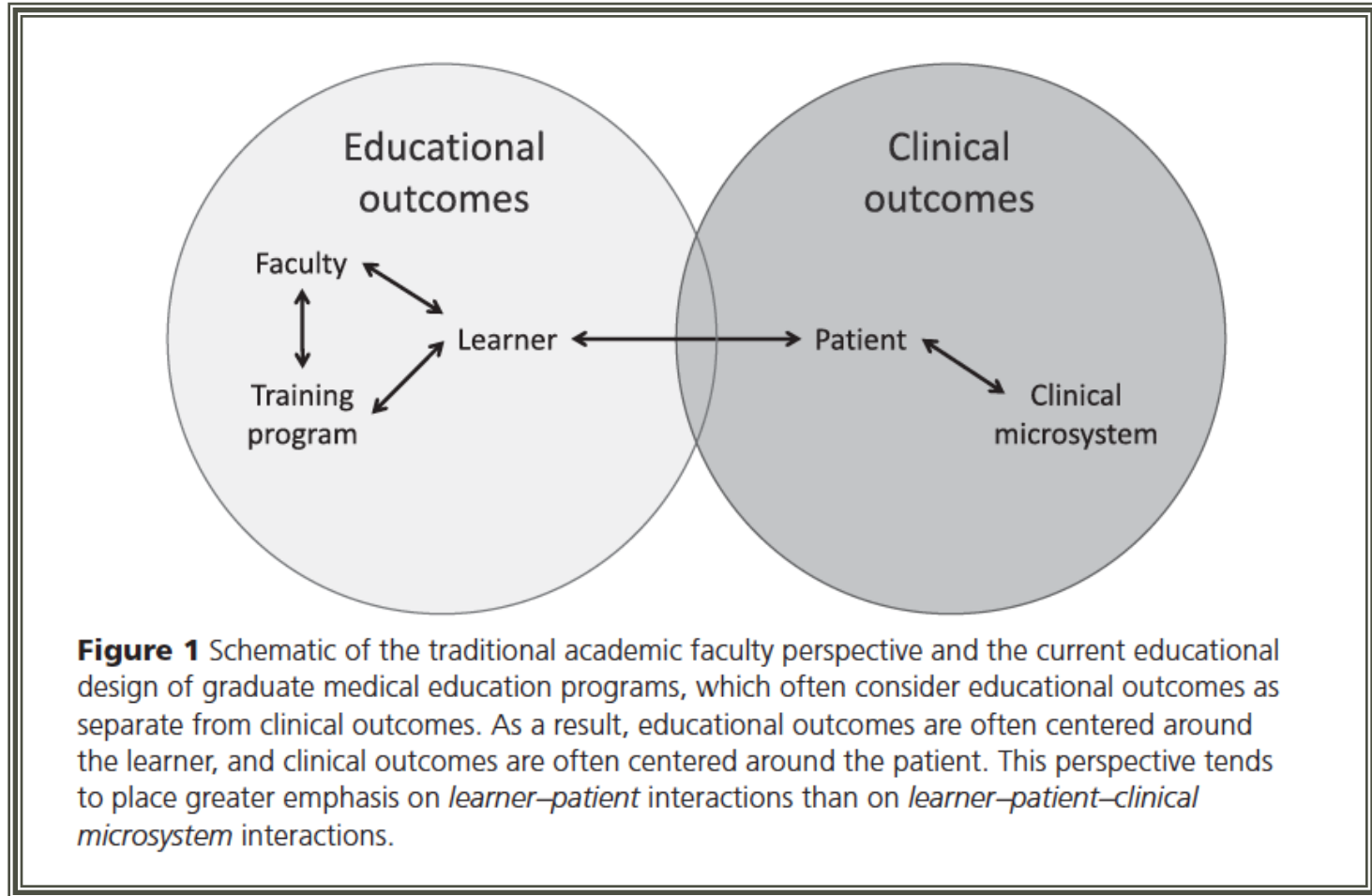
TRADITIONAL PERSPECTIVE

Figure 1 Schematic of the traditional academic faculty perspective and the current educational design of graduate medical education programs, which often consider educational outcomes as separate from clinical outcomes. As a result, educational outcomes are often centered around the learner, and clinical outcomes are often centered around the patient. This perspective tends to place greater emphasis on *learner–patient* interactions than on *learner–patient–clinical microsystem* interactions.

NEEDED PERSPECTIVE
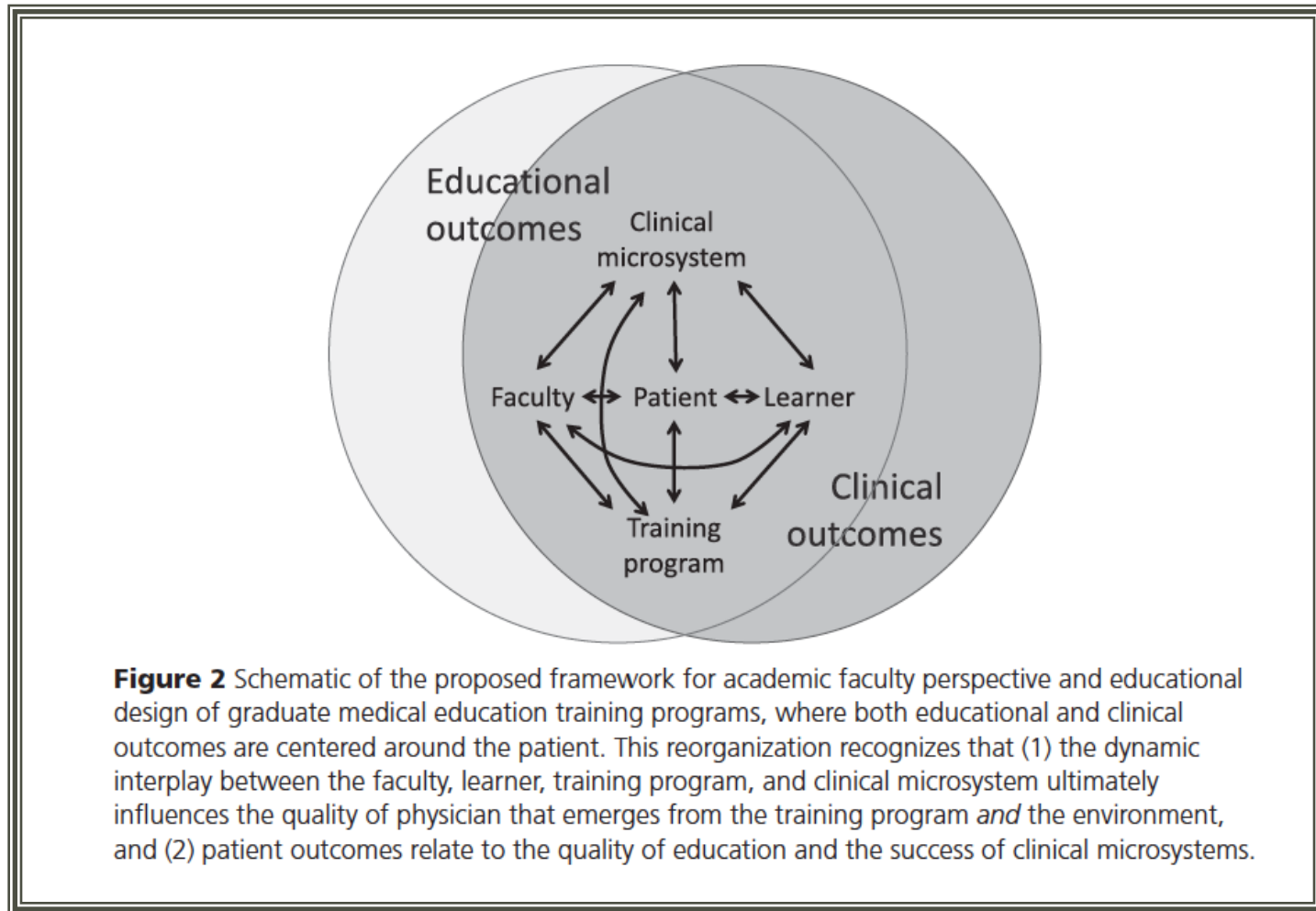
Figure 2 Schematic of the proposed framework for academic faculty perspective and educational design of graduate medical education training programs, where both educational and clinical outcomes are centered around the patient. This reorganization recognizes that (1) the dynamic interplay between the faculty, learner, training program, and clinical microsystem ultimately influences the quality of physician that emerges from the training program *and* the environment, and (2) patient outcomes relate to the quality of education and the success of clinical microsystems.

U.S. COMPETENCY JOURNEY: MILESTONES

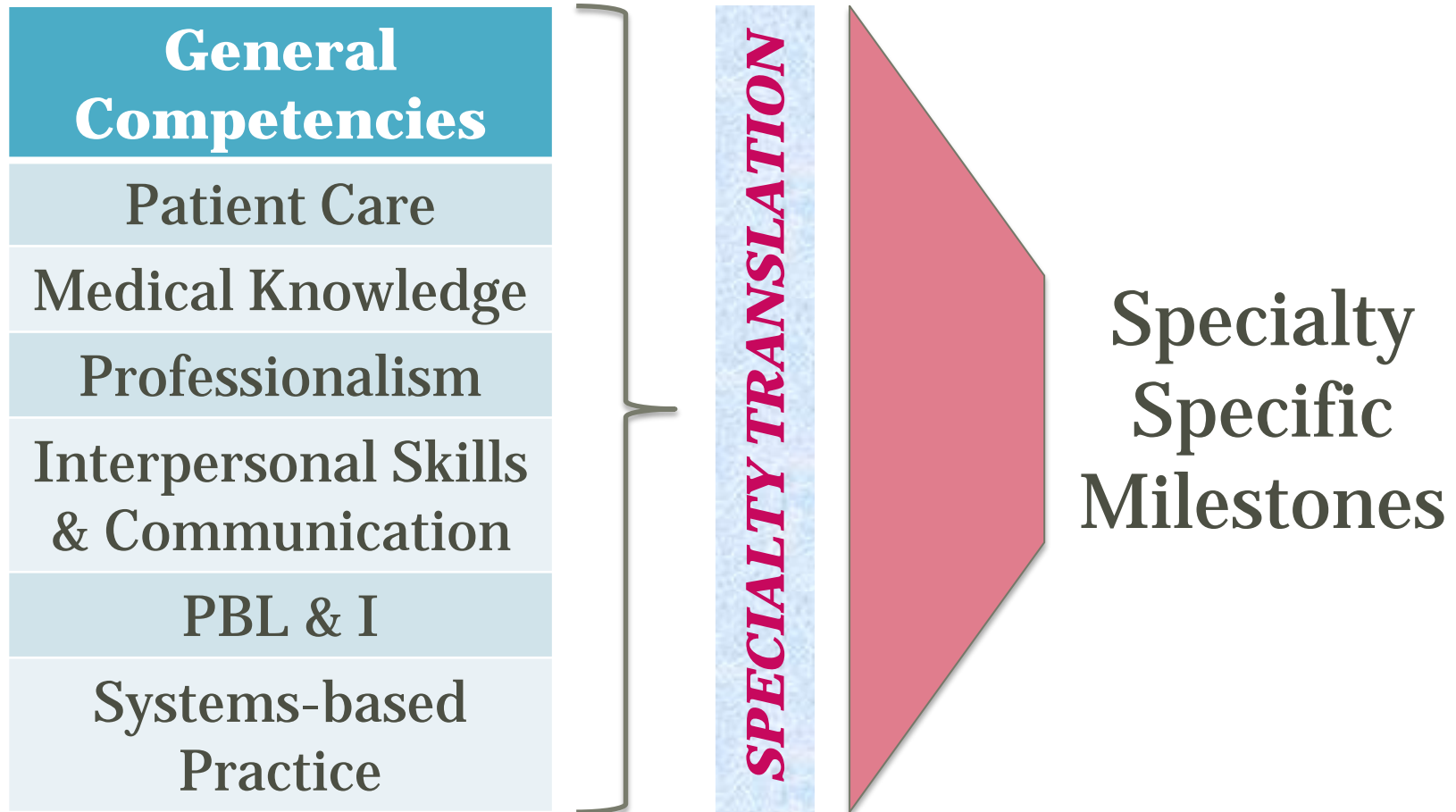| Dates	Event/Change
2007	First Milestone summit – Internal Medicine
2009	First Milestones published
2010-13	Milestone sets created for all specialties
2013	First 7 specialties start using and reporting Milestones
2014	All specialties fully in system

Competency

Sub-competency

Developmental Progression or Set of Milestones

PC1. History (Appropriate for age and impairment)				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Acquires a general medical history	Acquires a basic physiatric history including medical, functional, and psychosocial elements	Acquires a comprehensive physiatric history integrating medical, functional, and psychosocial elements Seeks and obtains data from secondary sources when needed	Efficiently acquires and presents a relevant history in a prioritized and hypothesis driven fashion across a wide spectrum of ages and impairments Elicits subtleties and information that may not be readily volunteered by the patient	Gathers and synthesizes information in a highly efficient manner Rapidly focuses on presenting problem, and elicits key information in a prioritized fashion Models the gathering of subtle and difficult information from the patient

Specific Milestone

MILESTONES: GENERAL TO SPECIALTY-SPECIFIC

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

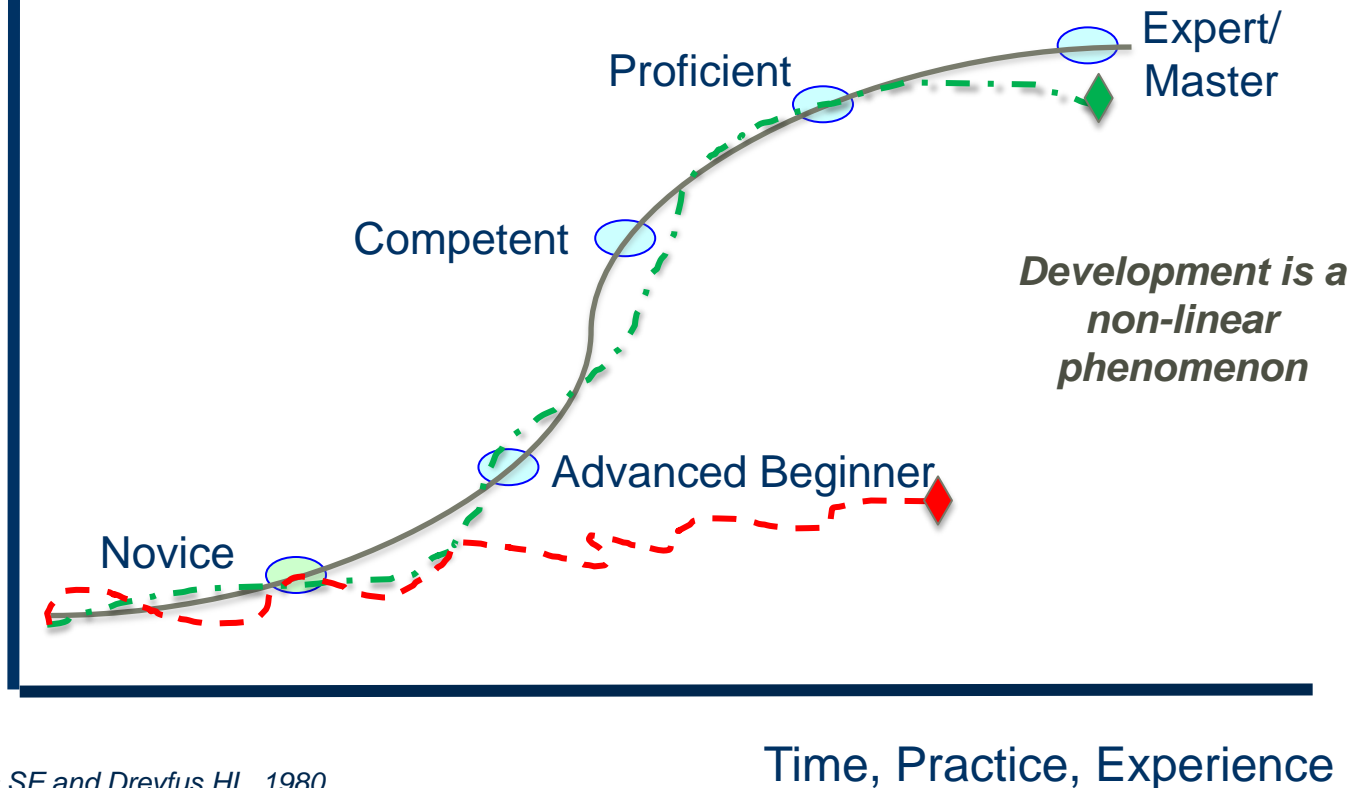**SPECIALTY TRANSLATION**

Specialty Specific Milestones

COMPETENCIES AND MILESTONES

- Competencies define the core *abilities* of the individual (i.e. educational outcomes)

- Competencies are needed by the individual in order to effectively perform the professional activity.

- Milestones simply describe in narrative terms the developmental trajectory of a competency

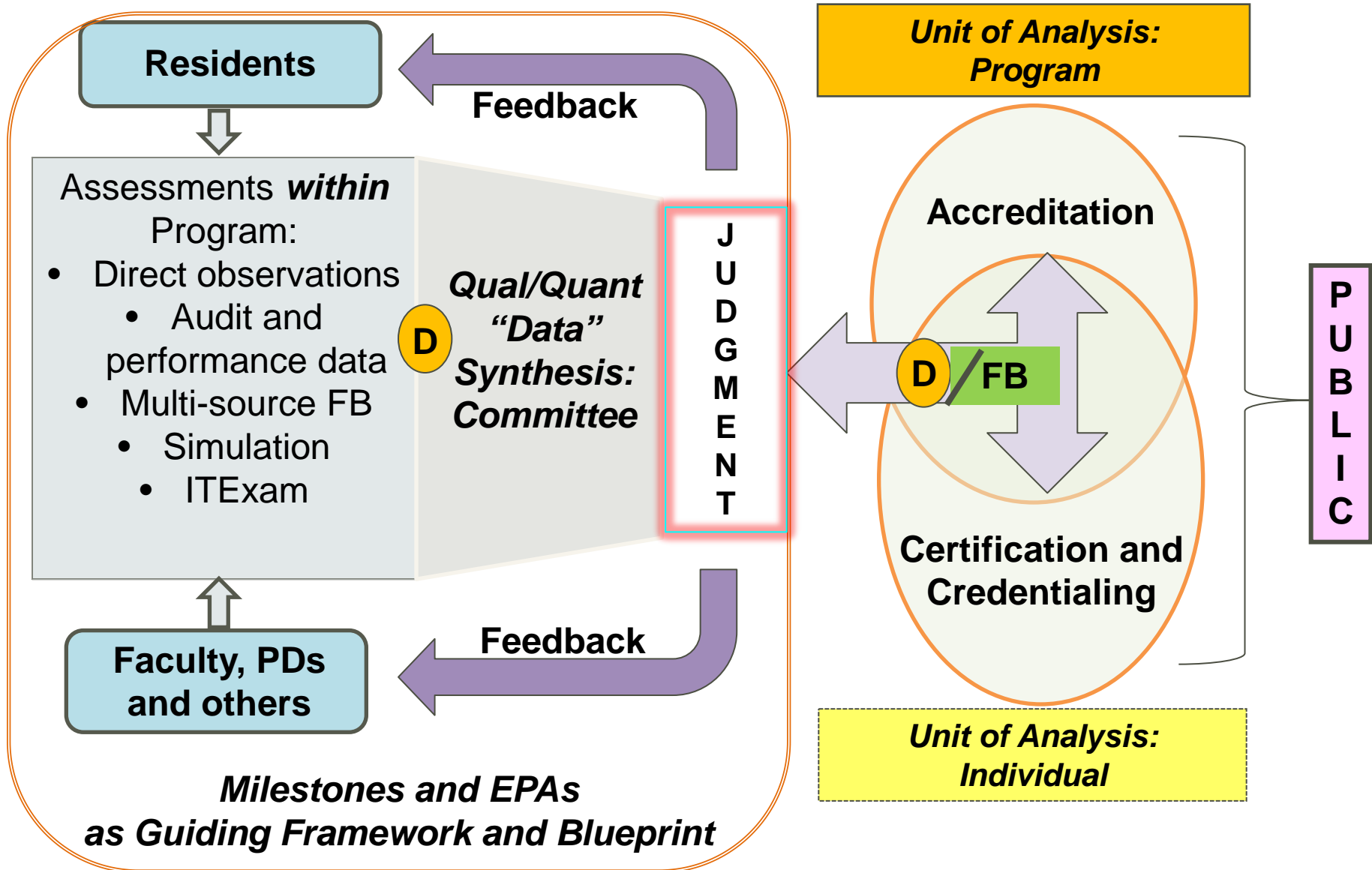# PROFESSIONAL DEVELOPMENT: DREYFUS MODEL

MILESTONES Guiding an Integrated Curriculum and Program of Assessment

Expert/Master

Proficient

Competent

Development is a non-linear phenomenon

Advanced Beginner

Novice

Time, Practice, Experience

Dreyfus SE and Dreyfus HL. 1980
Carraccio CL et al. Acad Med 2008;83:761-7

THE ASSESSMENT "SYSTEM"

Residents

Feedback

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

D *Qual/Quant "Data" Synthesis: Committee*

J U D G M E N T

Faculty, PDs and others

Feedback

Milestones and EPAs as Guiding Framework and Blueprint

Unit of Analysis: Program

Accreditation

D /FB

Certification and Credentialing

Unit of Analysis: Individual

P U B L I C

RESIDENTS ATTAINING LEVEL 4 OR HIGHER: NEUROLOGICAL SURGERY

Neurological Surgery - 2014

None reach 100% in each competency

NEUROLOGICAL SURGERY

Neurological Surgery (June 2014)
Level 4 Attainment per Patient Care Sub-Competency

	Question Key
Q8	Traumatic Brain Injury
Q6	Spinal Neurosurgery
Q1	Brain Tumor
Q2	Critical Care
Q5	Pediatric Neurological Surgery
Q7	Vascular Neurosurgery
Q3	Epilepsy and Movement Disorders
Q4	Pain and Peripheral Nerves
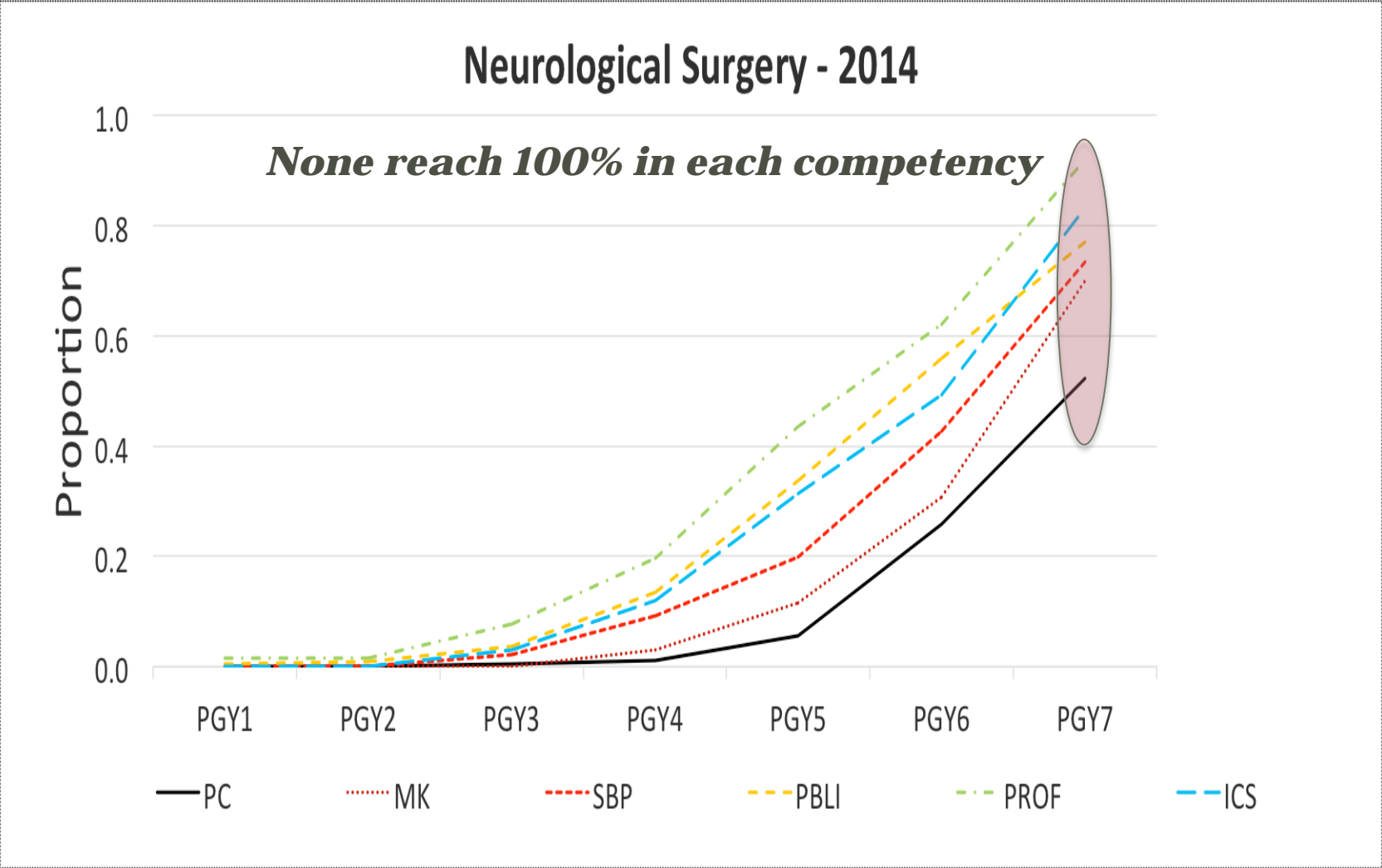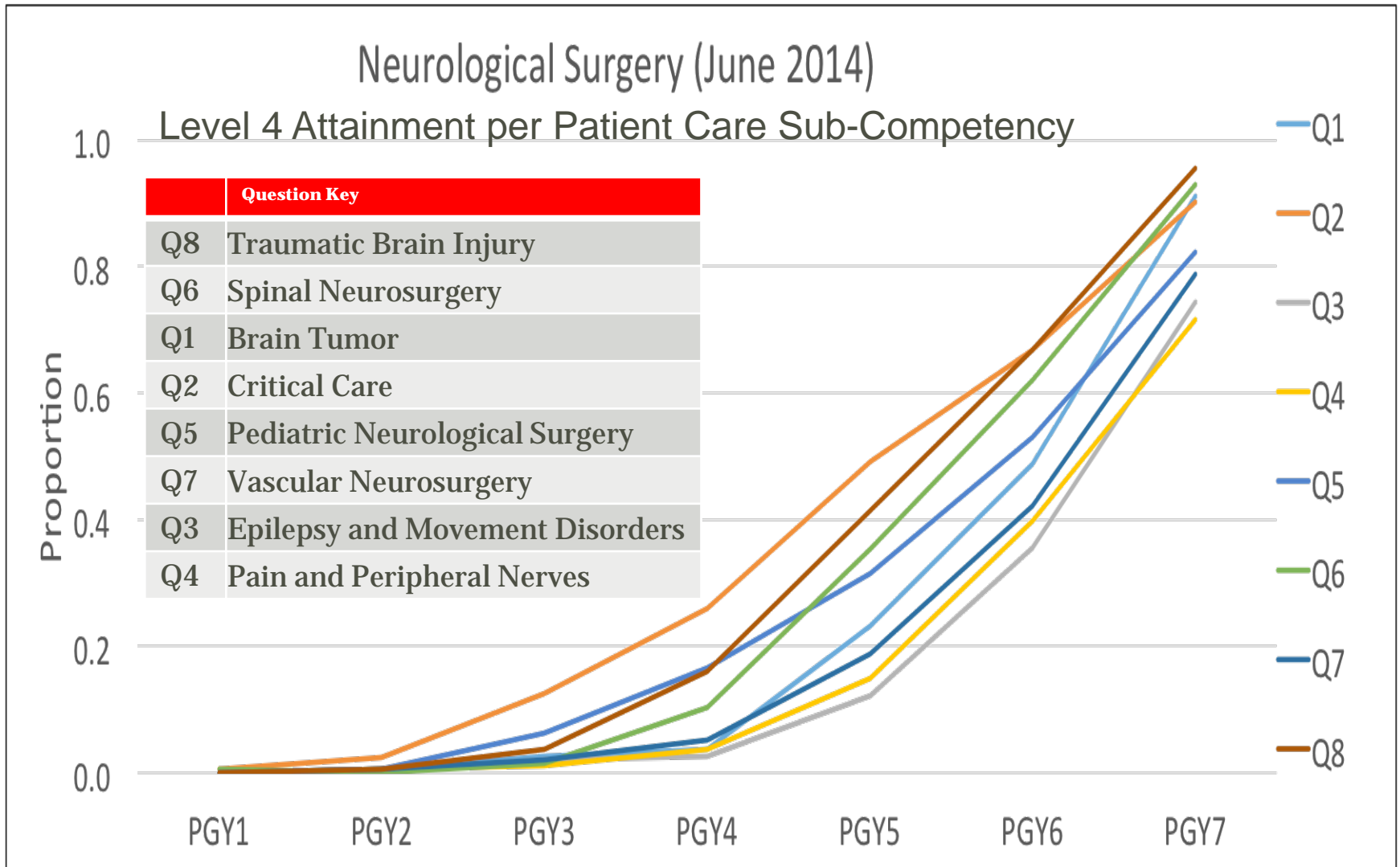
FOSTERING IMPLEMENTATION INTO PRACTICE

- Intervention characteristics
  - Relative advantage, adaptability, complexity
- Outer setting
  - Patient needs, cosmopolitanism, external policy
- Inner setting
  - Social architecture, culture, tension for change, relative priority, readiness, learning climate
- Characteristics of individuals
  - Safe efficacy, stage of change
- Process
  - Planning, engaging, opinion leaders, champions

Damschroder LJ, et. al. Fostering implementation of health services research findings in practice. Implementation Sci. 2009.

THANK YOU

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