

ACGME Milestones Project: Lessons Learned and What's Next

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Topics for Discussion

- Milestones Background – a recap
- How the Milestones Were Developed
- Phase 1 Data
- Current and Prospective Research
- Milestones 2.0

Milestones Background – What?

- Description of the performance levels residents are expected to demonstrate for skills, knowledge, and behaviors in the six competency domains
- Framework of observable behaviors
- One indicator of a program's educational effectiveness

Milestones Background – What?

- What do they know? (Medical Knowledge)
- What can they do? (Patient Care)
- How do they conduct themselves?
(Interpersonal and Communication Skills,
Practice-based Learning and Improvement,
Professionalism, and Systems-based Practice)

Milestones Background – Why?

- Fulfill the promise of the Outcome Project
- Increased use of educational outcome data in accreditation
- ACGME accountability to public
- Support the educational process

Milestones Background – How are they used?

ACGME

- Accreditation – continuous monitoring of programs; lengthening of site visit cycles
- Public Accountability – report at a national level on competency outcomes
- Community of practice for evaluation and research, with focus on continuous improvement

Residency Programs

- Guide curriculum development
- More explicit expectations of residents
- Support better assessment
- Enhanced opportunities for early identification of under-performers

Milestones

Certification Boards

- Potential use – ascertain whether individuals have demonstrated qualifications needed to sit for Board exams

Residents

- Increased transparency of performance requirements
- Encourage resident self-assessment and self-directed learning
- Better feedback to residents

Milestone Development – Who?

Working Group

- Review Committee
- Certification Boards
- Program Directors
- Residents/ Fellows
- Specialty Societies

Advisory Group

- Leaders within the specialty community

Milestone Development – How?

Milestone Description: Template				
Level 1	Level 2	Level 3	Level 4	Level 5
What are the expectations for a beginning resident?	What are the milestones for a resident who has advanced over entry, but is performing at a lower level than expected at mid-residency?	What are the key developmental milestones mid-residency? What should they be able to do well in the realm of the specialty at this point?	What does a graduating resident look like? What additional knowledge, skills & attitudes have they obtained? Are they ready for certification?	Stretch Goals – Exceeds expectations
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

Milestone Development – How?

- Each specialty began the same way with a review of available documents:
 - Program Requirements
 - Certification Exam Outlines
 - Competency Statements created by specialty groups
 - National Curricula
 - Milestones created by other specialties

Milestone Development – How?

- Brainstorming of topics that were important to resident education
- Drafting, rejecting, redrafting, etc
- Development of what the Working Group believed was a near final product
- Review by the Advisory Group and Review Committee
- Survey of Program Directors
- Final edits and publication

FUN FACT – Number of Volunteers

There were **916** volunteers who created all the milestones!



That is **3** times as many current RRC members that are serving at the ACGME

FUN FACT – Number of Meetings

It took about **100** meetings to create the milestones!



Lightning strikes the earth approximately **100** times every second!

FUN FACT – Number of Institutions Represented

There were representatives from over **250** different institutions!

There are **250** toothpicks in a standard box



FUN FACT – Number of Volunteer Hours

It took over **1500** volunteer hours to create all the milestones!



It takes **1500** flight hours to become a certified pilot

FUN FACT – Number of Milestone Threads

There were **1916** milestone threads created!



There are over **1900** types of edible insects in the world

VALIDITY

Validity of Milestones Data

- Evidence of progression in NAS*
 - to support CBME
 - comprehensive approach to competencies
 - “entrustability”
 - how do we know this is working?
 - CQI approach
- Assessment validity framework
 - validity depends on research and CQI model

*Nasca *et al.* The Next GME Accreditation System: Rationale and Benefits. *N Engl J Med*, 366:1051-6;2012.

Milestone Database

- *Dec 2013 = 5 specialties*
- June 2014 = 8 specialties
- *Dec 2014 = 90 specialties*
- June 2015 = 96 specialties
- *Dec 2015 = 140 specialties*
- June 2016 = all specialties reporting Academic Year-End

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Number of Residents

AY 2013-14 (i.e. single data point = June 2014)

- 1) Neurosurgery (NS, N = 1,272)
- 2) Orthopedic surgery (OS, N = 3,574)
- 3) Emergency Medicine (EM, N = 5,806)
- 4) Diagnostic Radiology (DR, N = 4,686)
- 5) Urology (URO, N = 1,167)
- 6) Internal Medicine (IM, N = 23,915)
- 7) Internal Medicine / Pediatrics (IM/PEDS, N = 1,448)
- 8) Pediatrics (PEDS, N = 8,837)

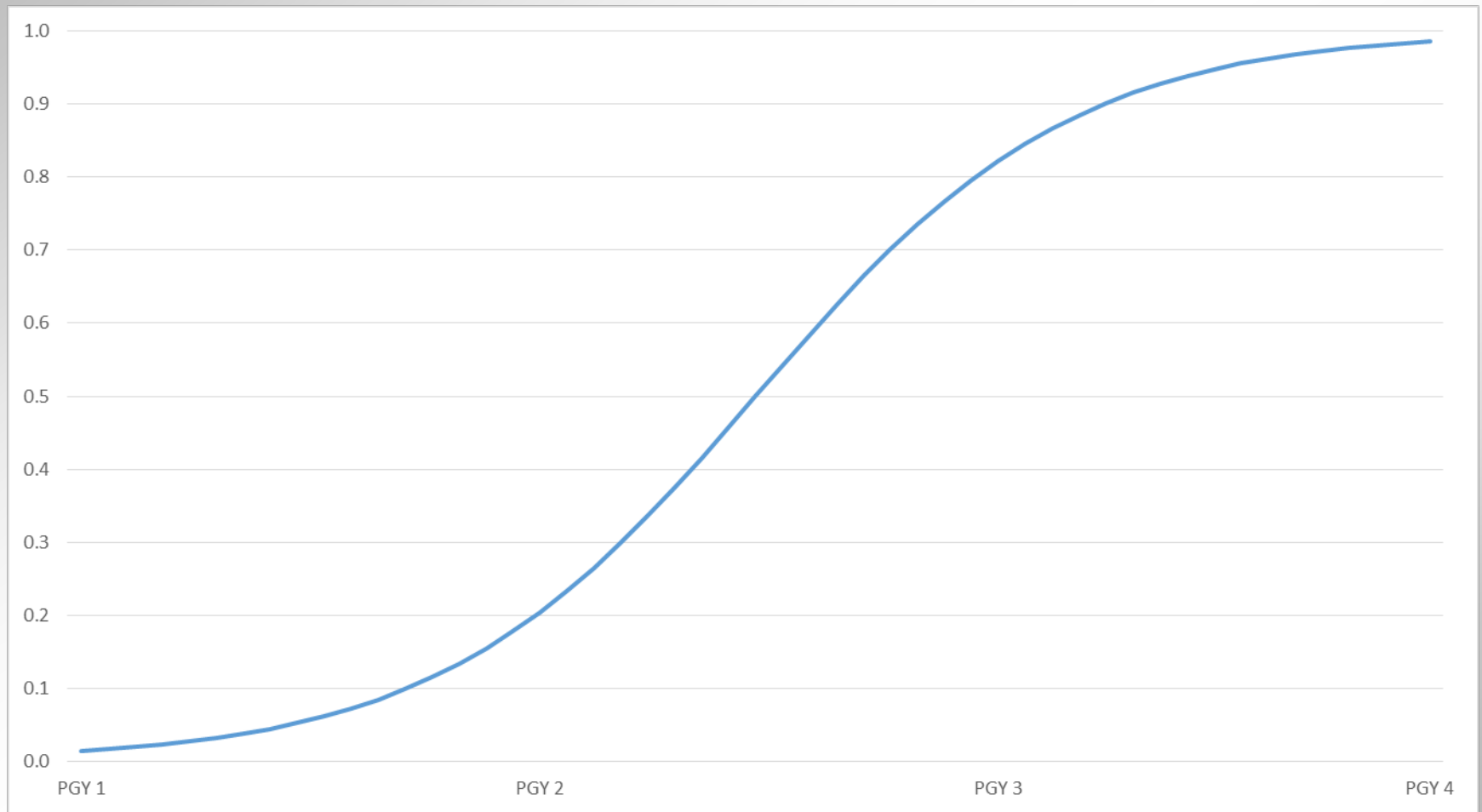
Milestones

- How do we know we're improving?

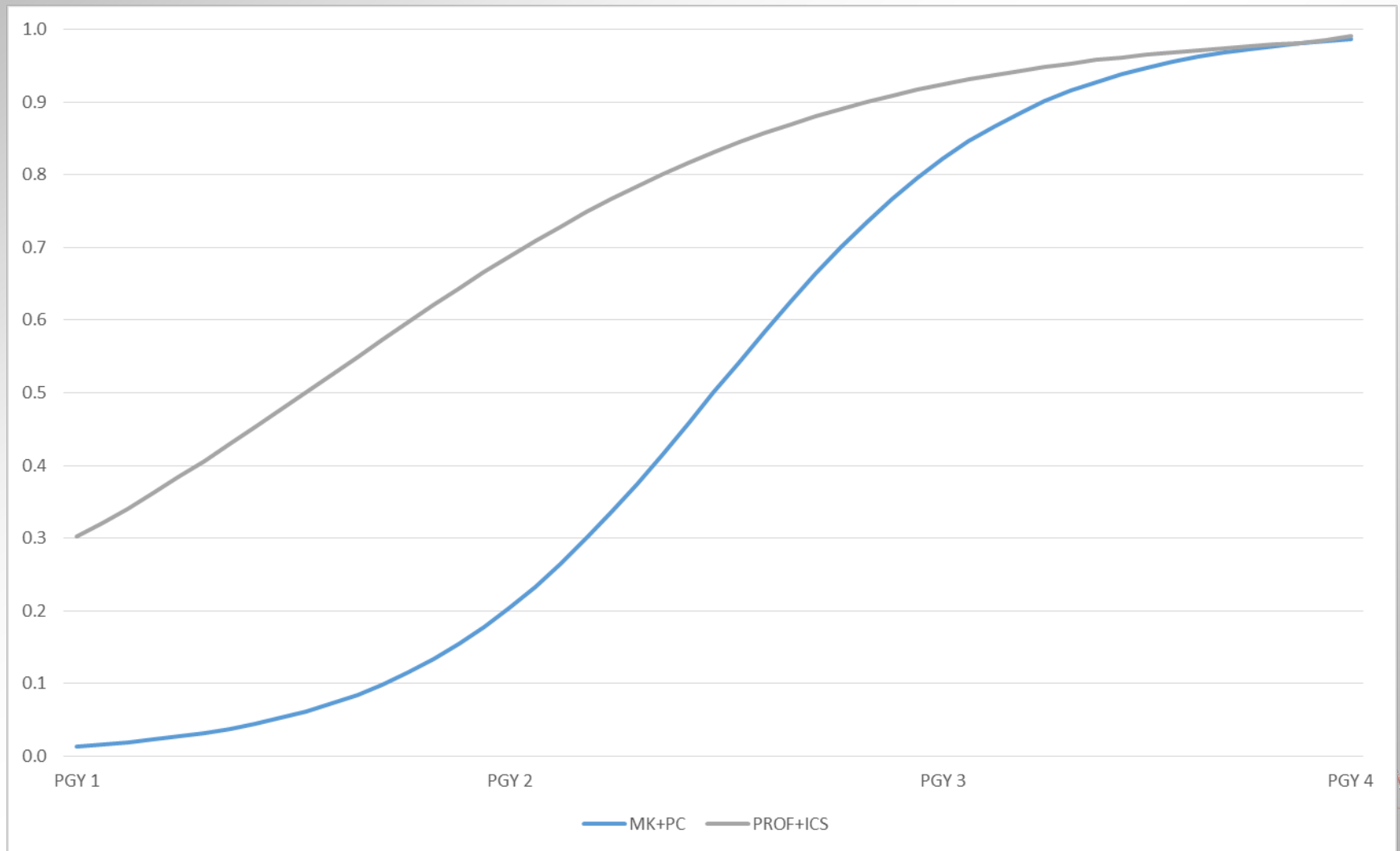
Data Extraction and Analysis

- For each resident (across all PGY-levels), we determined whether they had attained the recommended Level 4 (or higher) for all sub-competencies within a core competency.
- Then we determined the percentage of residents within a specialty who attained Level 4 across all programs.

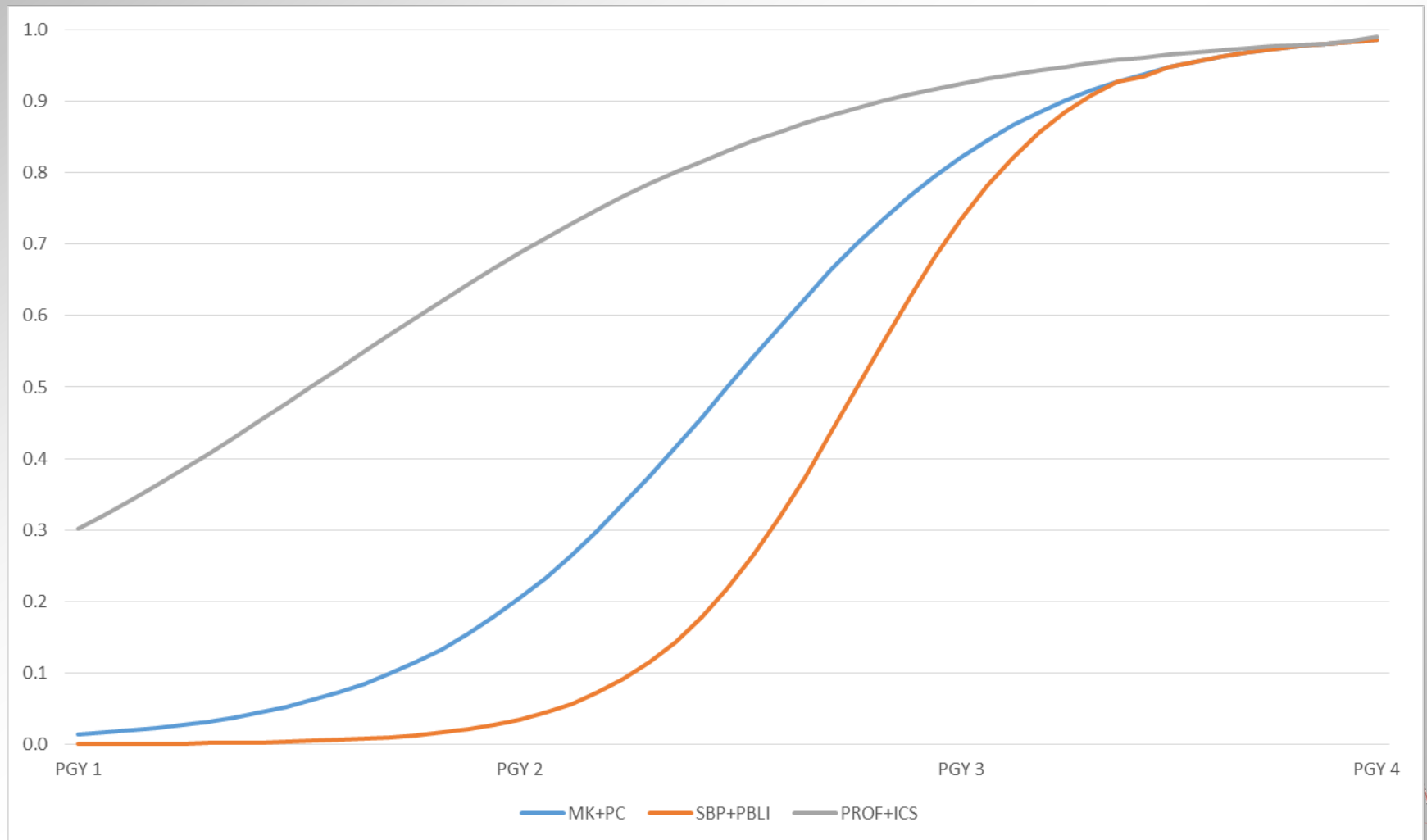
Learning Curves (theoretical)



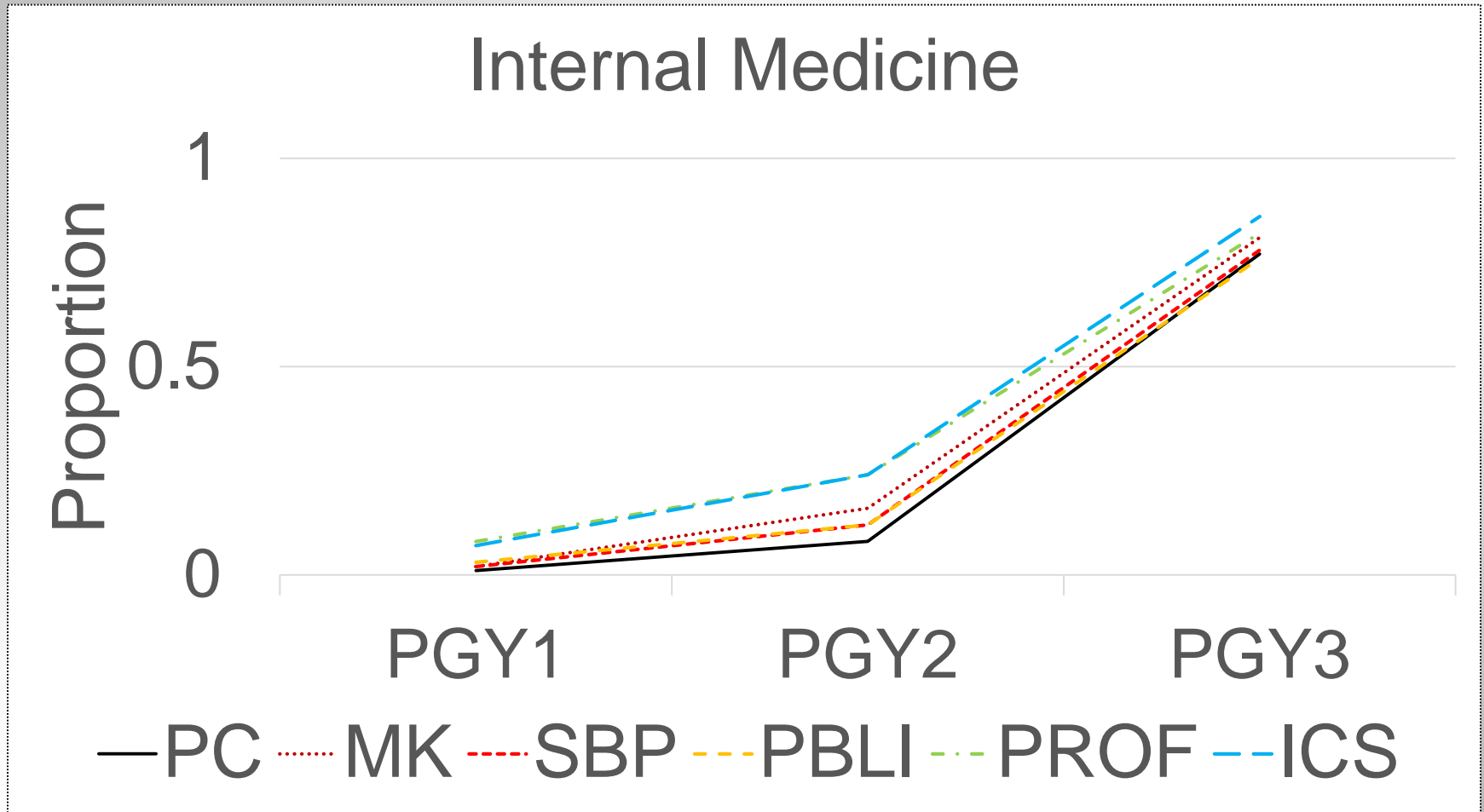
Learning Curves (theoretical)



Learning Curves (theoretical)



Residents Attaining Level 4 or Higher



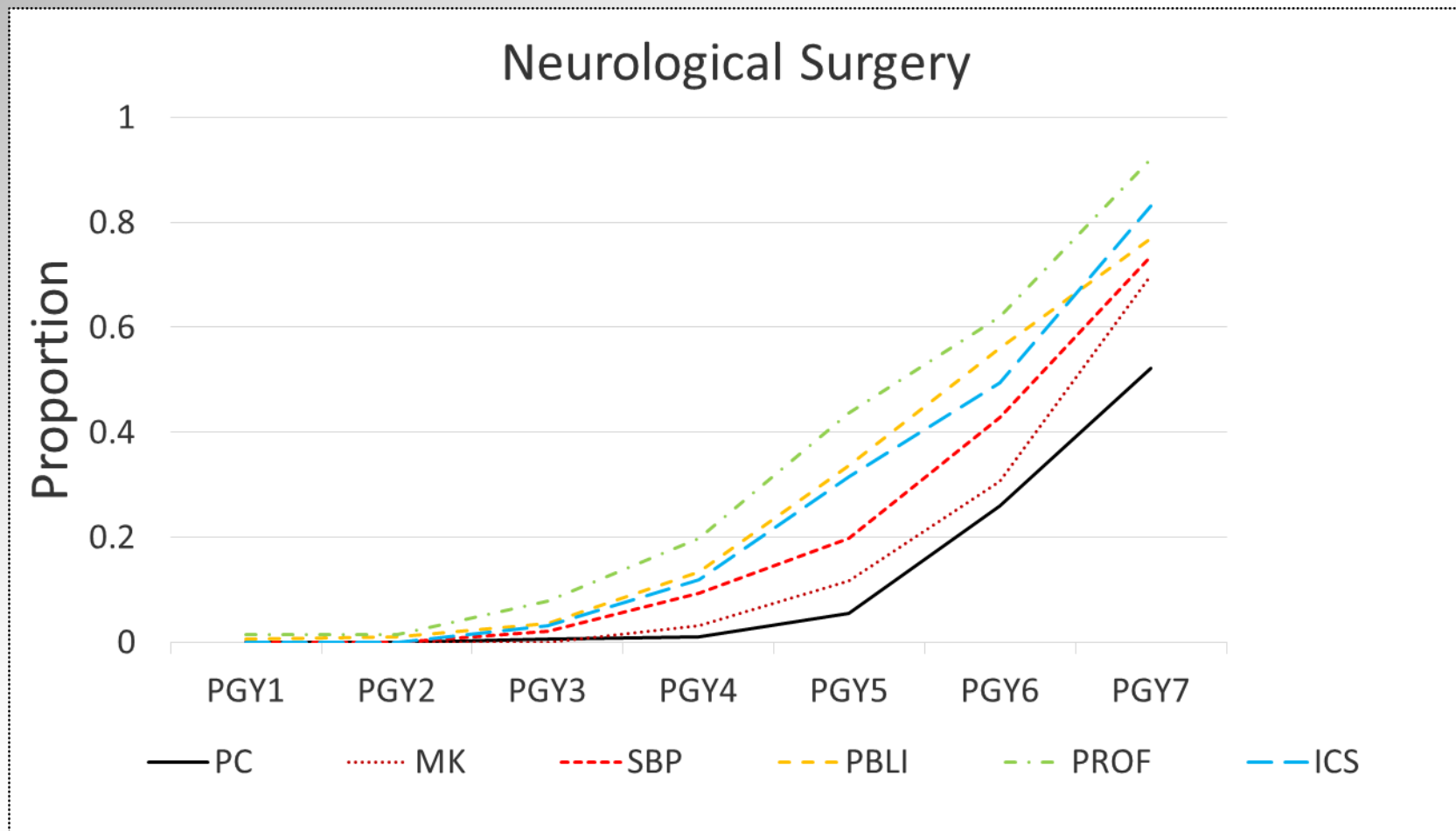
Residents Attaining Recommended Graduation Targets

Percent of Senior-most Residents who Attained Level 4 or Higher

	IM (N=7157)	DR (N=1140)	NS (N=113)	URO (N=279)	OS (N=691)
PC	77%	85%	54%	77%	60%
MK	81	83	72	93	65
SBP	78	79	73	76	87
PBLI	76	83	77	75	89
PROF	82	85	92	81	89
ICS	86	86	83	82	89

*PC-patient care; MK-medical knowledge; SBP-systems-based practice;
PBLI-practice-based learning and improvement; PROF-professionalism;
ICS-interpersonal and communication skills.*

Residents Attaining Level 4 or Higher

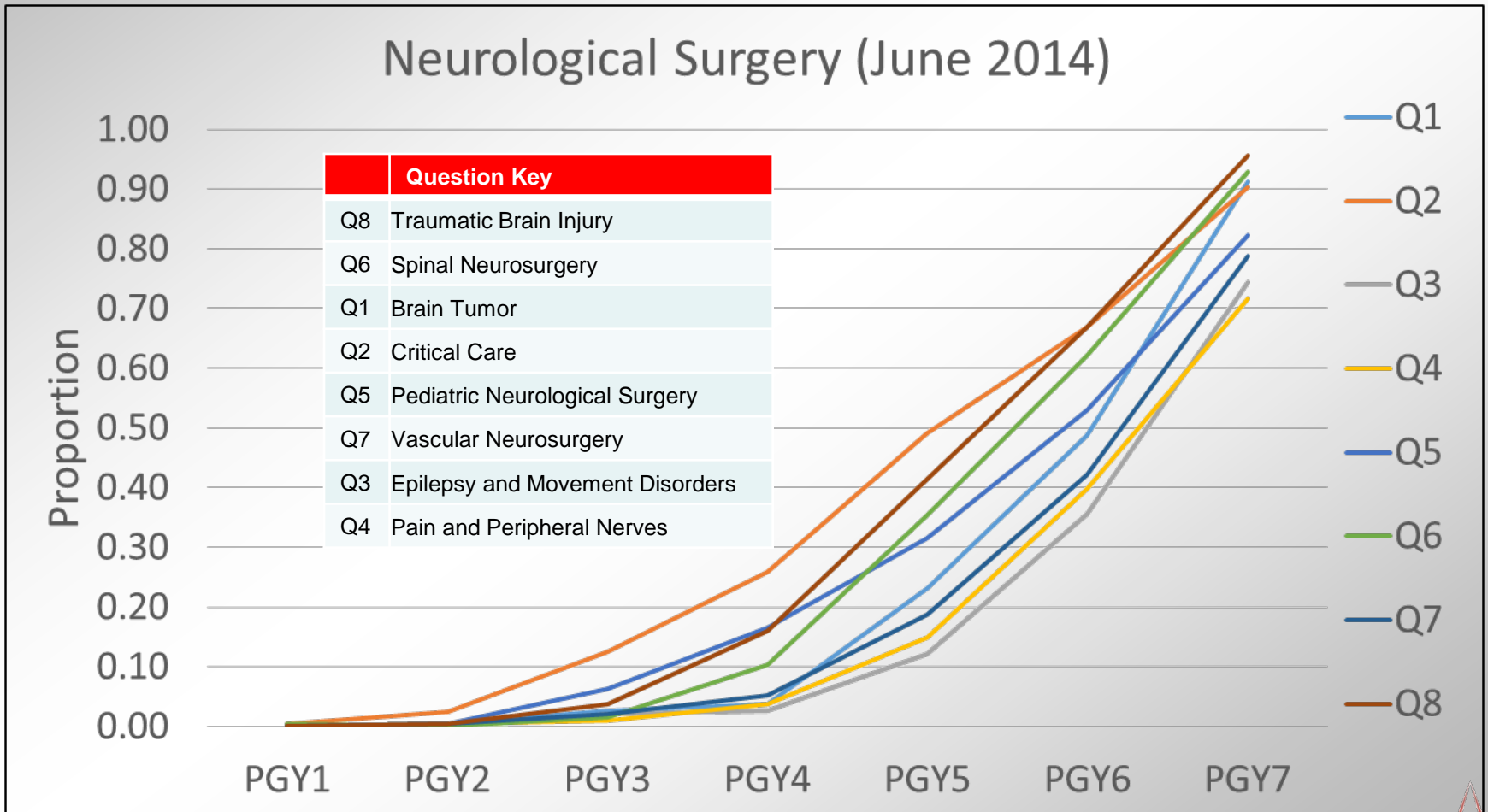


Possible Interpretation:

- Neurological Surgery
 - Competence in PC is the most difficult to attain. This may represent differences in clinical experience for selected sub-competencies
 - thus, the full achievement of Level 4 in the Patient Care competency may be impossible for those residents.

Neurological Surgery

Level 4 Attainment per Patient Care Sub-Competency



RESEARCH

Advisory Groups:

- Analytic
 - John Norcini (FAIMER)
 - Reed Williams (SIU/IU)
 - Rachel Yudkowski (UIC)
 - Ara Tekian (UIC)
- CCC
 - Karen Hauer (UCSF)
 - Kathy Andolsek (Duke)
 - Jamie Padmore (Medstar Washington)
 - David Berg (Yale)

Selected Research Projects in Progress

- Emergency Medicine initial validity study
 - Factor structure supported three factor design of EM certification (in press)¹
 - Expected correlation between ITE and MK milestones
- Exploring ITE and milestones associative studies with ABFM and ABPeds
- Neurosurgery PD and resident survey of first year experience
- Hauer - IM CCC experience studies

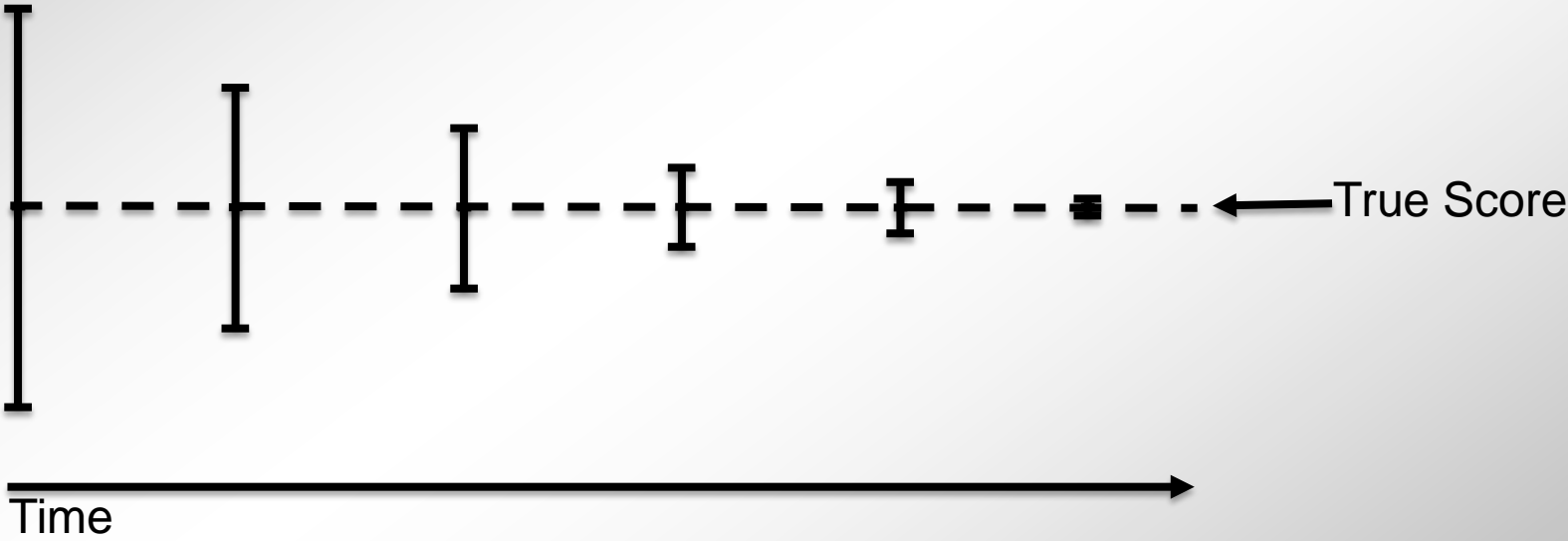
¹Beeson MS, Holmboe ES, Korte RC, Nasca TJ, Brigham T, Russ CM, Whitley CT, Reisdorff EJ. Initial Validity Analysis of the Emergency Medicine Milestones. *Acad Emerg Med*. 2015; in press.

NAS AS CQI

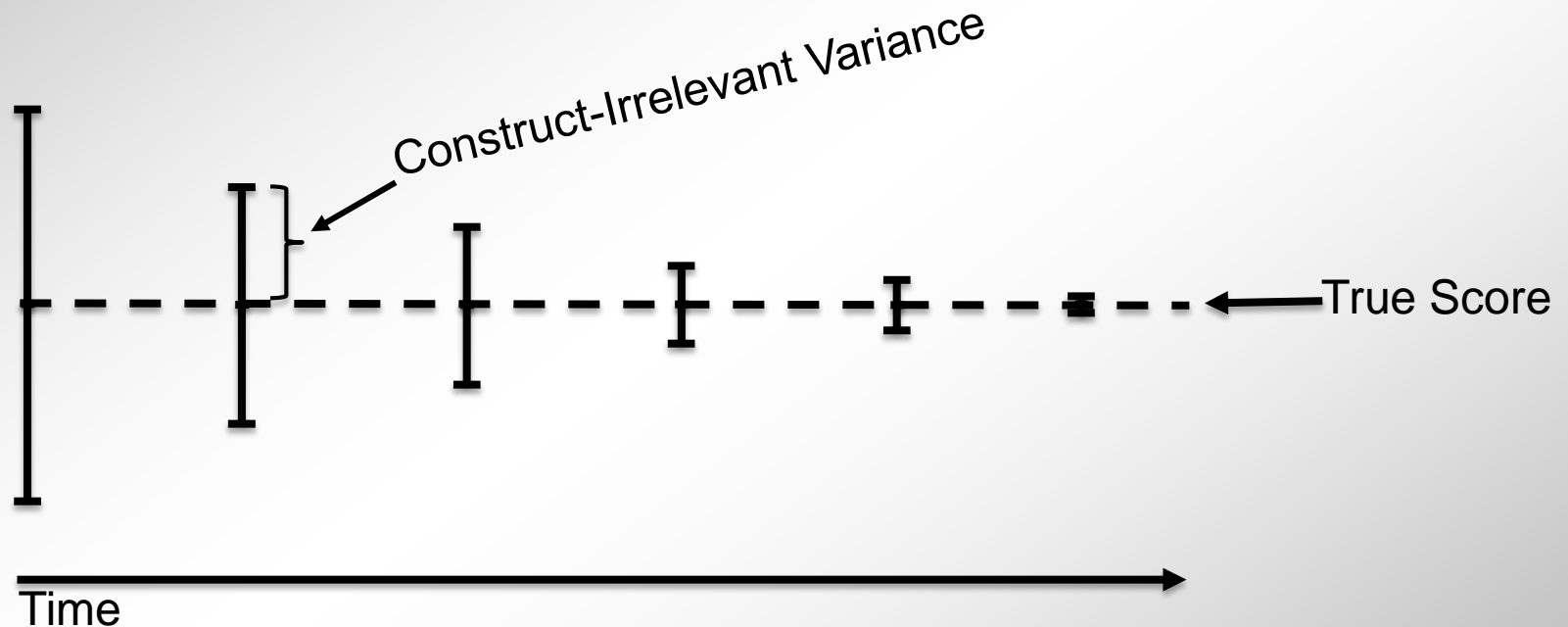
Supporting the CQI Vision of NAS

- Milestones data should never be used for high-stakes decisions by RRC's to accredit individual programs.
- Rather, in the spirit of CQI, it should be used for identifying gaps in training, or weaknesses in the data collection process to enhance the quality of the curricula and the validity of the data.
 - Bottom Line: the Milestones data should represent the resident's underlying ability or competency.
- Goal of Milestones:
 - to enhance the quality of the judgment of the resident's progression

Milestones CQI Process

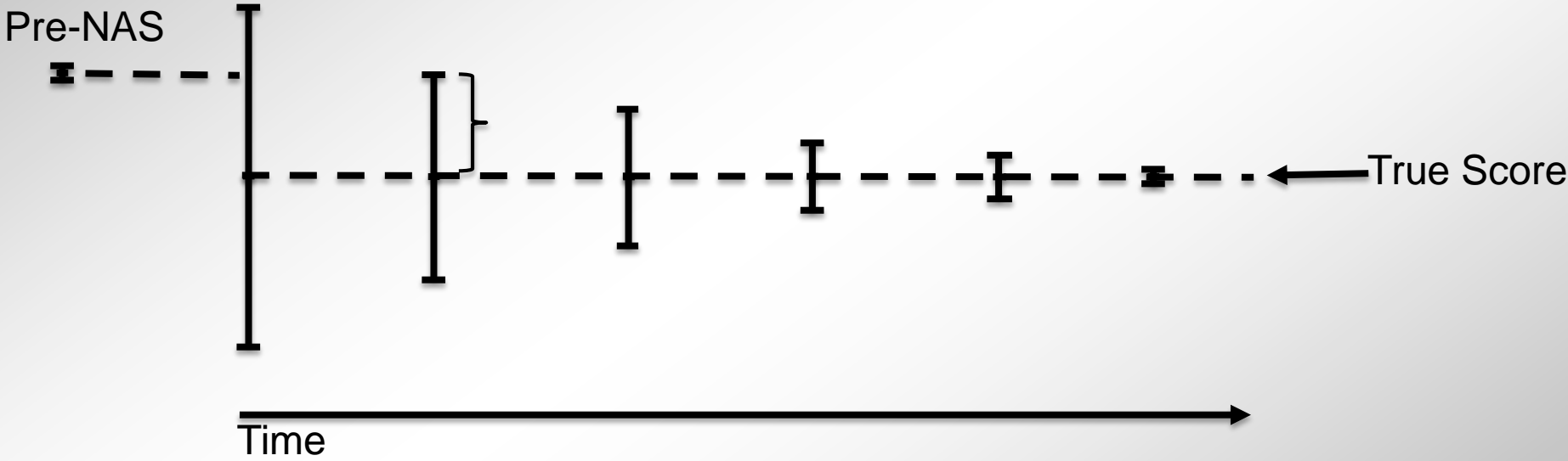


Milestones CQI Process



Putting processes in place to reduce “Construct-Irrelevant Variance”

Milestones CQI Process



What's Next? Milestones 2.0

- Data, comments and suggestions are continually being monitored
- Competency Crosswalk for Interpersonal and Communication Skills, Practice-based Learning and Improvement, Professionalism, and Systems-based Practice

What's Next? Milestones 2.0

- Milestones Summit with representatives from the ABMS Member Boards, AOA Certifying Boards and ACGME Review Committees
- Development will begin late 2016

Where do I find...?



Milestone Resources

Milestone Webpage:

<http://www.acgme.org/acgmeweb/tabid/430/ProgramandInstitutionalAccreditation/NextAccreditationSystem/Milestones.aspx>

Milestone FAQs:

<http://www.acgme.org/acgmeweb/Portals/0/MilestonesFAQ.pdf>

Clinical Competency Committee Guidebook:

<http://www.acgme.org/acgmeweb/Portals/0/ACGMEClinicalCompetencyCommitteeGuidebook.pdf>

We are here to help

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