Learner Assessment

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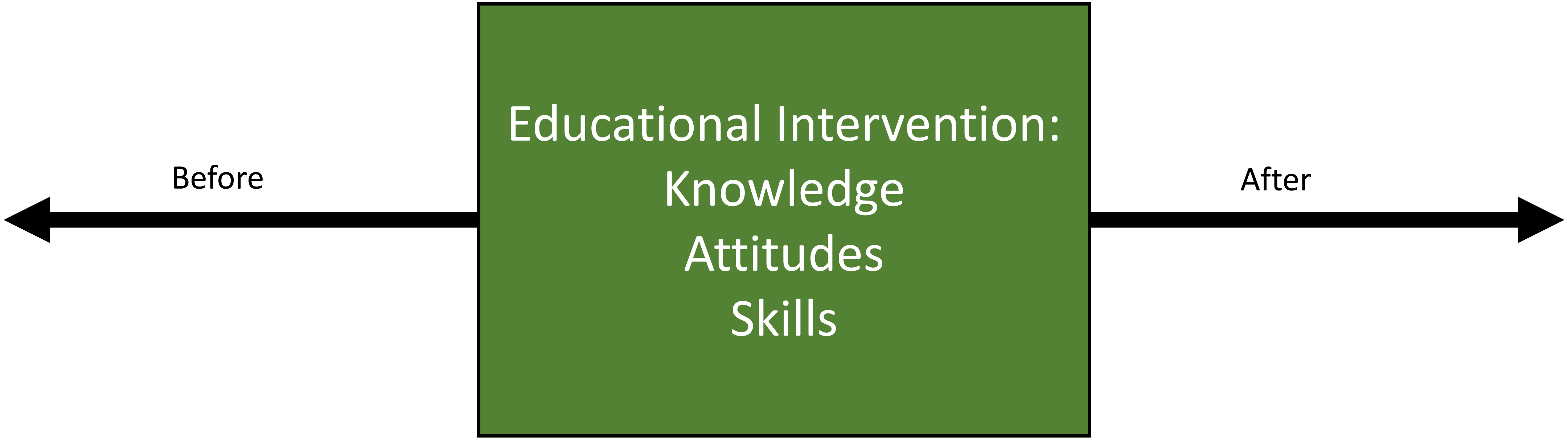
Society of Academic Urologists 2017

Goals for Today:

- Purpose and role of assessment
- Framework for assessment of learners
- Practical application


Educational Intervention:
Knowledge
Attitudes
Skills
Before
After

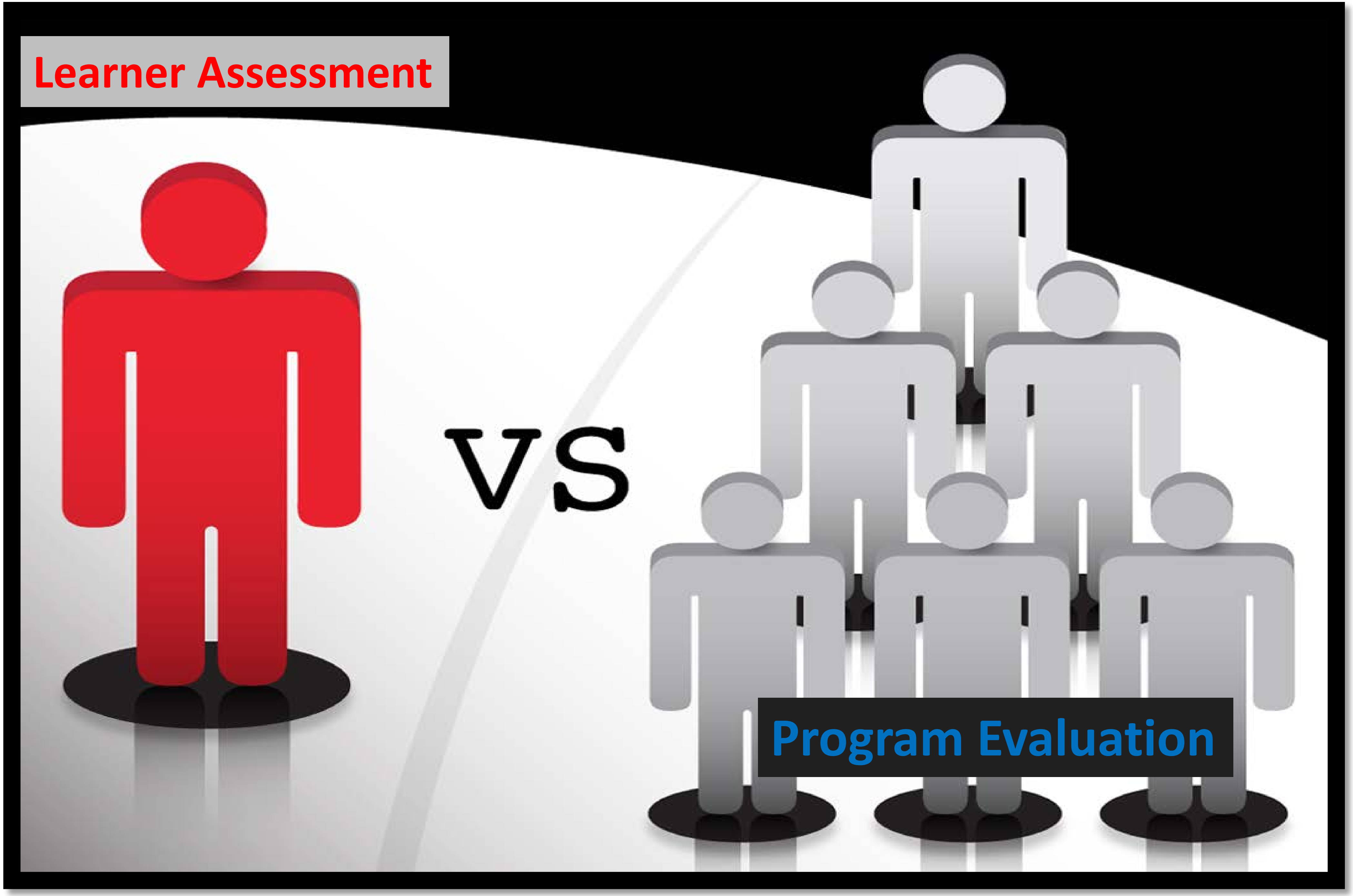
Why we assess:

- ✓ Feedback to improve performance towards competence
- ✓ Protect patients by ensuring competent health care workforce
- ✓ Choose amongst applicants for positions

Related Key Concepts

Assessment vs Evaluation

Formative vs Summative Assessment

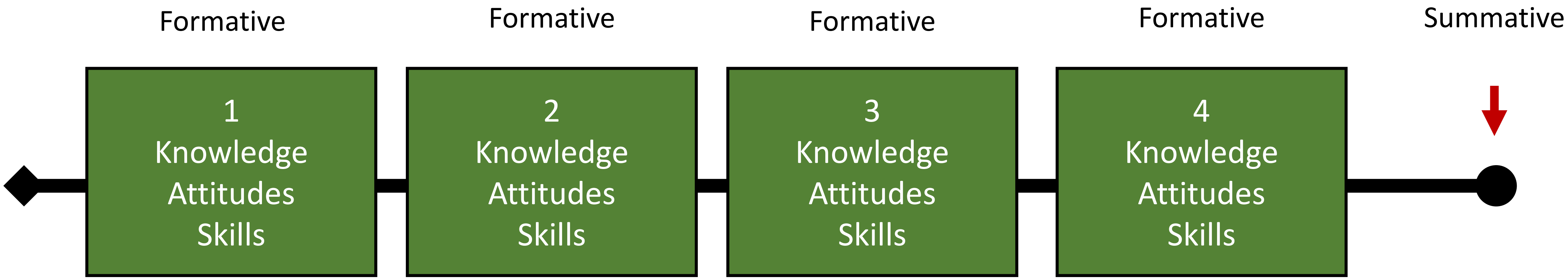

Learner Assessment
VS
Program Evaluation

Formative Assessment

- Goal: Improvement
- Lower stakes
- Tools less rigorous
- Think…Feedback

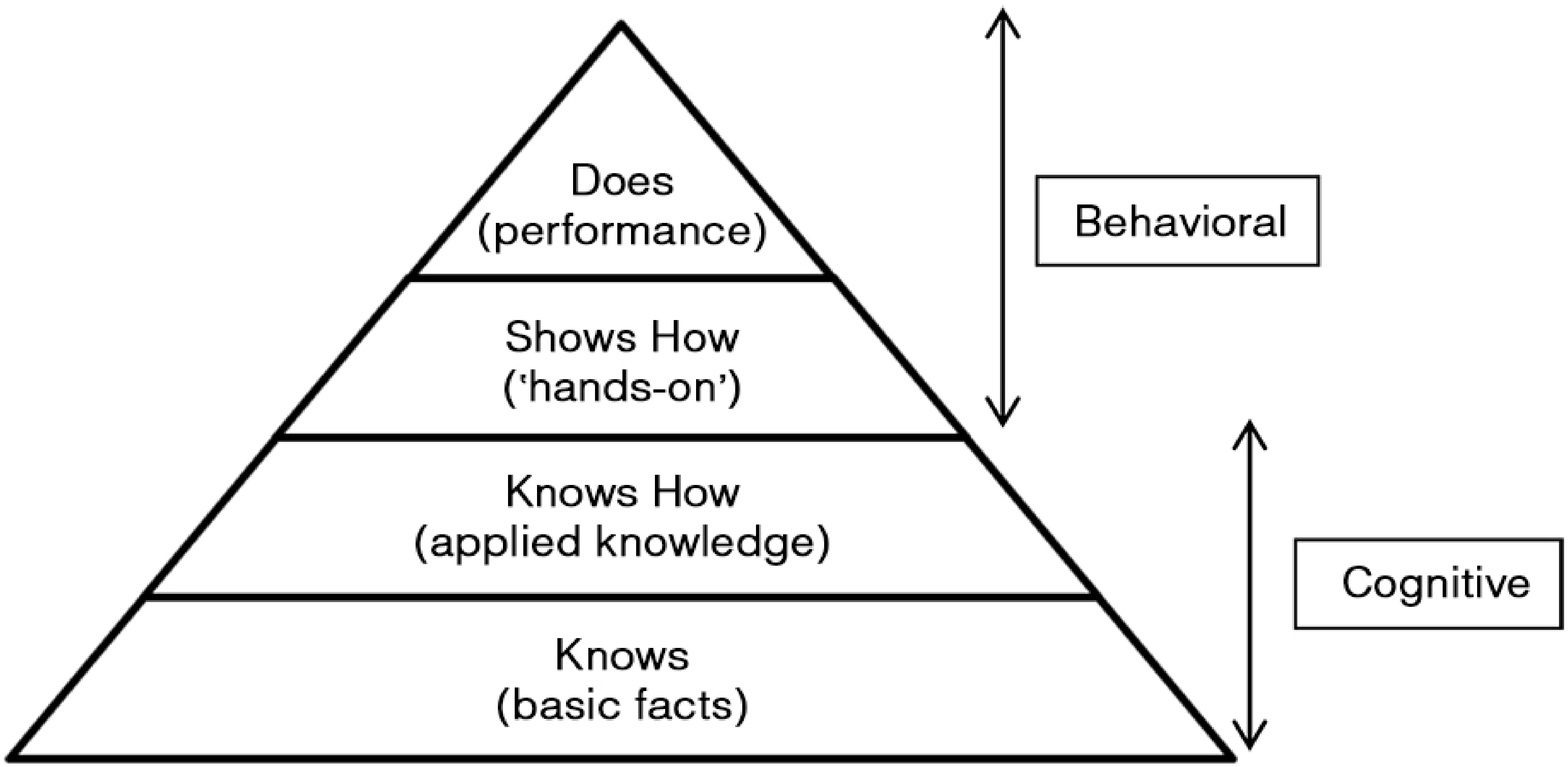
Summative Assessment

- Goal: Judgment
- Higher stakes
- Tools should be valid and reliable
- Think…Clinical Competency Commitee



Framework for Assessment

Learner Assessment – Miller’s Pyramid



Miller, GE. The Assessment of Clinical Skills/Competence/Performance, Academic Medicine, 65:9, S63-S67

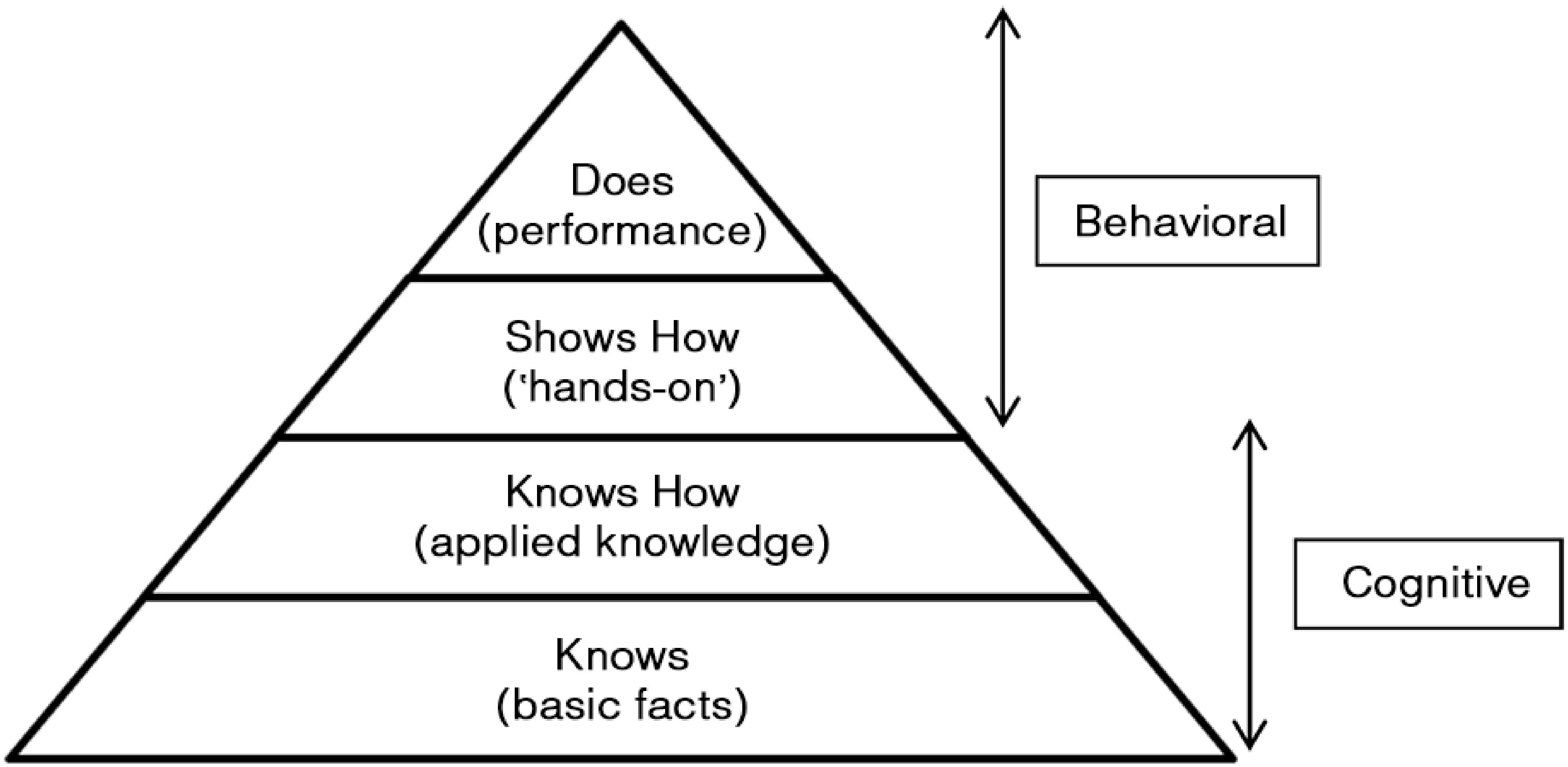
What are some examples of things that we observe our learners do in medical education?

What does clinical competence look like?

- Medical knowledge
- Patient care – clinical skills
- Communication
- Teamwork – Interprofessional or within ward teams
- Responding to feedback, self-assessment/reflection
- Leveraging resources in a system, Cost-Consciousness

→ "Core Competencies"

Learner Assessment – Miller's Pyramid



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The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL REPORT

The Next GME Accreditation System — Rationale and Benefits

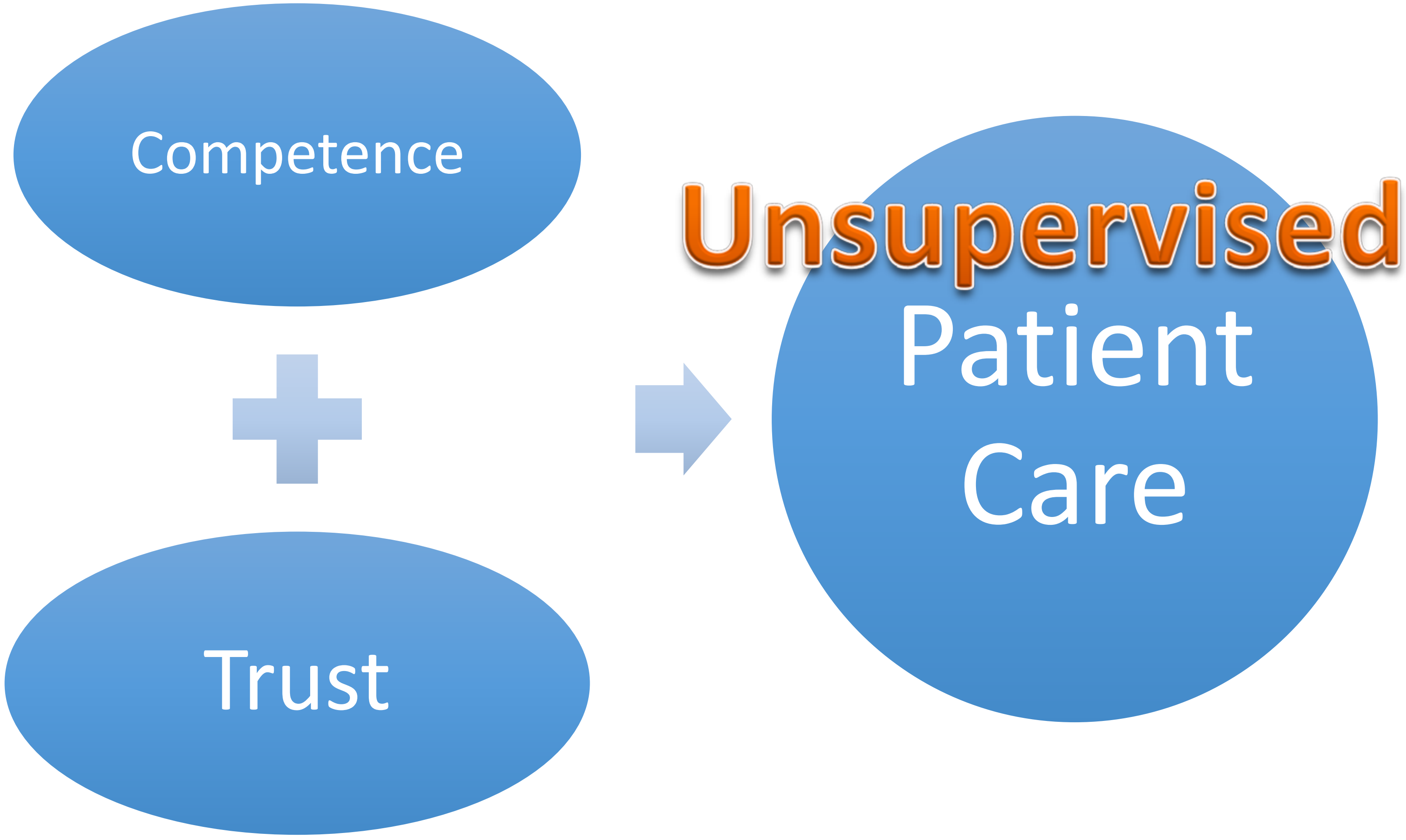
Thomas J. Nasca, M.D., M.A.C.P., Ingrid Philibert, Ph.D., M.B.A., Timothy Brigham, Ph.D., M.Div., and Timothy C. Flynn, M.D.

In 1999, the Accreditation Council for Graduate Medical Education (ACGME) introduced the six domains of clinical competency to the profession,[1] and in 2009, it began a multiyear process of restructuring its accreditation system to be based on educational outcomes in these competencies. The result of this effort is the Next Accreditation System (NAS), scheduled for phased

LIMITATIONS OF THE CURRENT SYSTEM

When the ACGME was established in 1981, the GME environment was facing two major stresses: variability in the quality of resident education[8] and the emerging formalization of subspecialty education. In response, the ACGME's approach emphasized program structure, increased the

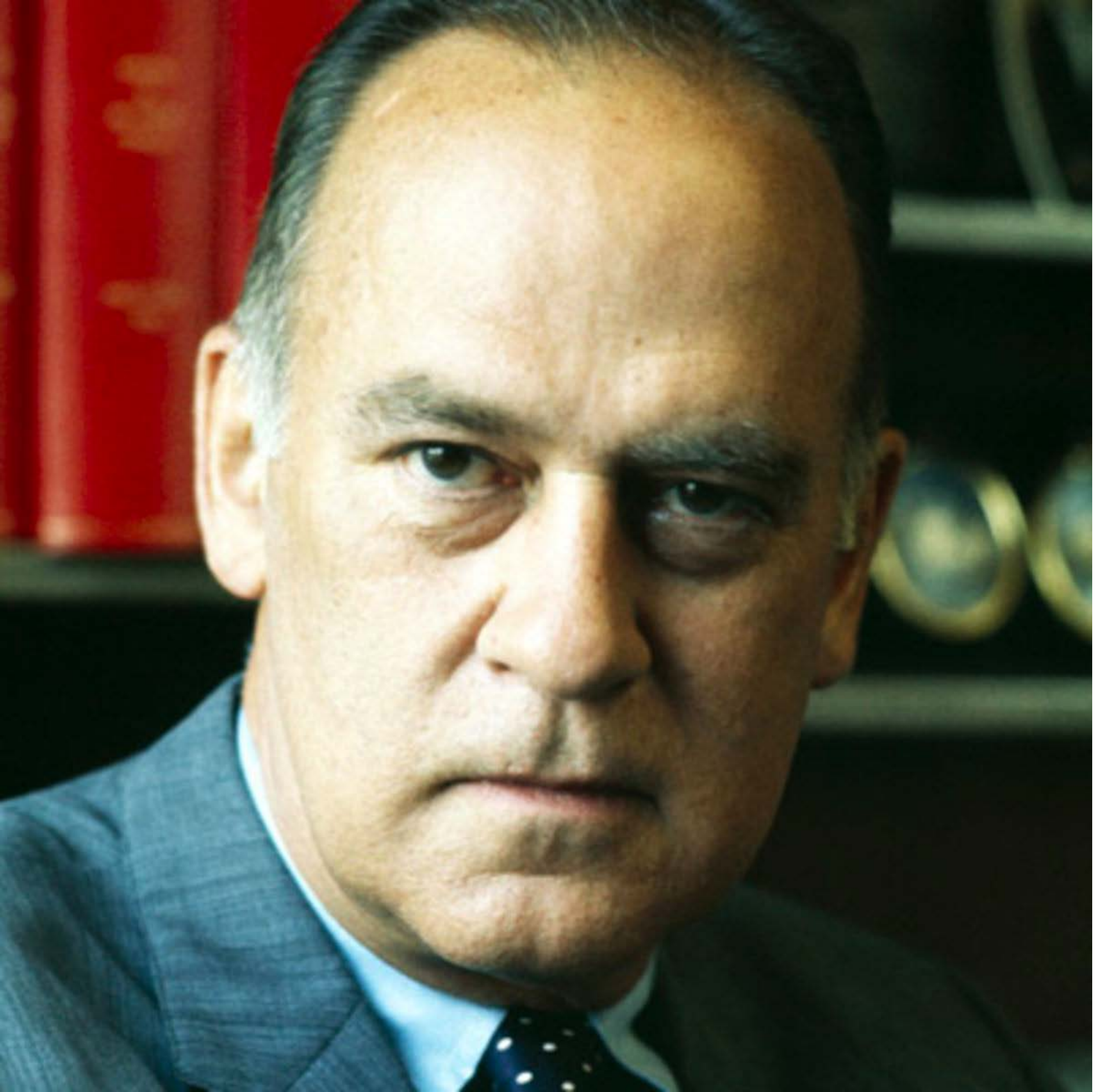
Fundamental Premise




PRUDENTIAL CENTER
BOSTON
EST. 1630
Mile
26
BOSTON ATHLETIC ASSOCIATION
BOSTON MARATHON
John Hancock
John Hancock

Milestones

How do you know when a learner has achieved a milestone or competence?



“I’ll know it when I see it.”

Supreme Court Justice,
Potter Stewart
1964

Types of Assessment

Norm-Based Assessment

Compares one individual’s performance to that of **others**

Criterion-Based Assessment

Compares an individual’s performance to a **set of pre-developed standards**

Norm-based Assessment

- Compares one individual’s performance to that of others

Example:

The overall effectiveness of Dr. Tad-y’s session today is:

Poor		Fair		Excellent
1	2	3	4	5

Norm-based Assessment

Pros

- Easy to understand
- Commonly used

Cons

- Provides no information about specific aspects of performance
- Relies on the experiences and expectations of the evaluator
- Hard to standardize; low rater agreement

Criterion-Based Assessment

- Compares an individual's performance to a set of pre-developed standards

Example:

Please rate Tad-y's ability to facilitate the discussion:

Did little to lead or facilitate the discussion	**Effectively facilitated discussion, encouraging the participation of everyone in the group**	**Dominated the discussion, preventing others from effective participation**

Criterion-Based Assessment

Pros

- Provides specific feedback
- Rater is responsible for observing and recording specific behaviors- NOT GRADING
- Higher rater agreement

Cons

- Hard to develop
- Requires training/ education to complete
- Criteria may change

Developmental Schemes

PC7. Performs laparoscopic/ro			
Has not achieved Level 1	L	4	Level 5
	Manipulate equipment for *routine* robotic assi direct supe defined in t Requireme	aroscopic n trument orrect epth, and *tine* cases ne ocedures nce	Manipulates laparoscopic and/or robotic equipment with appropriate instrument selection and correct force, speed, depth, and distance for a majority of ***routine* and complex cases**

The Urology Milestone Project

A Joint Initiative of

The Accreditation Council for Graduate Medical Education

and

The American Board of Urology

ACGME

THE AMERICAN BOARD OF UROLOGY
AUA
AAGUS ACS
SUU AACU
AAP
Inc 1935

August 2016

Developmental Schemes – Urology Milestones

Level 1: The resident demonstrates milestones expected of an incoming resident.

Level 2: The resident is advancing and demonstrates additional milestones.

Level 3: The resident continues to advance and demonstrate additional milestones; the resident demonstrates the majority of milestones targeted for residency in this sub-competency.

Level 4: The resident has advanced so that he or she now substantially demonstrates the milestones targeted for residency. This level is designed as the graduation target.

Level 5: The resident has advanced beyond performance targets set for residency, and is demonstrating "aspirational" goals which might describe the performance of someone who has been in practice for several years. It is expected that only a few exceptional residents will reach this level.

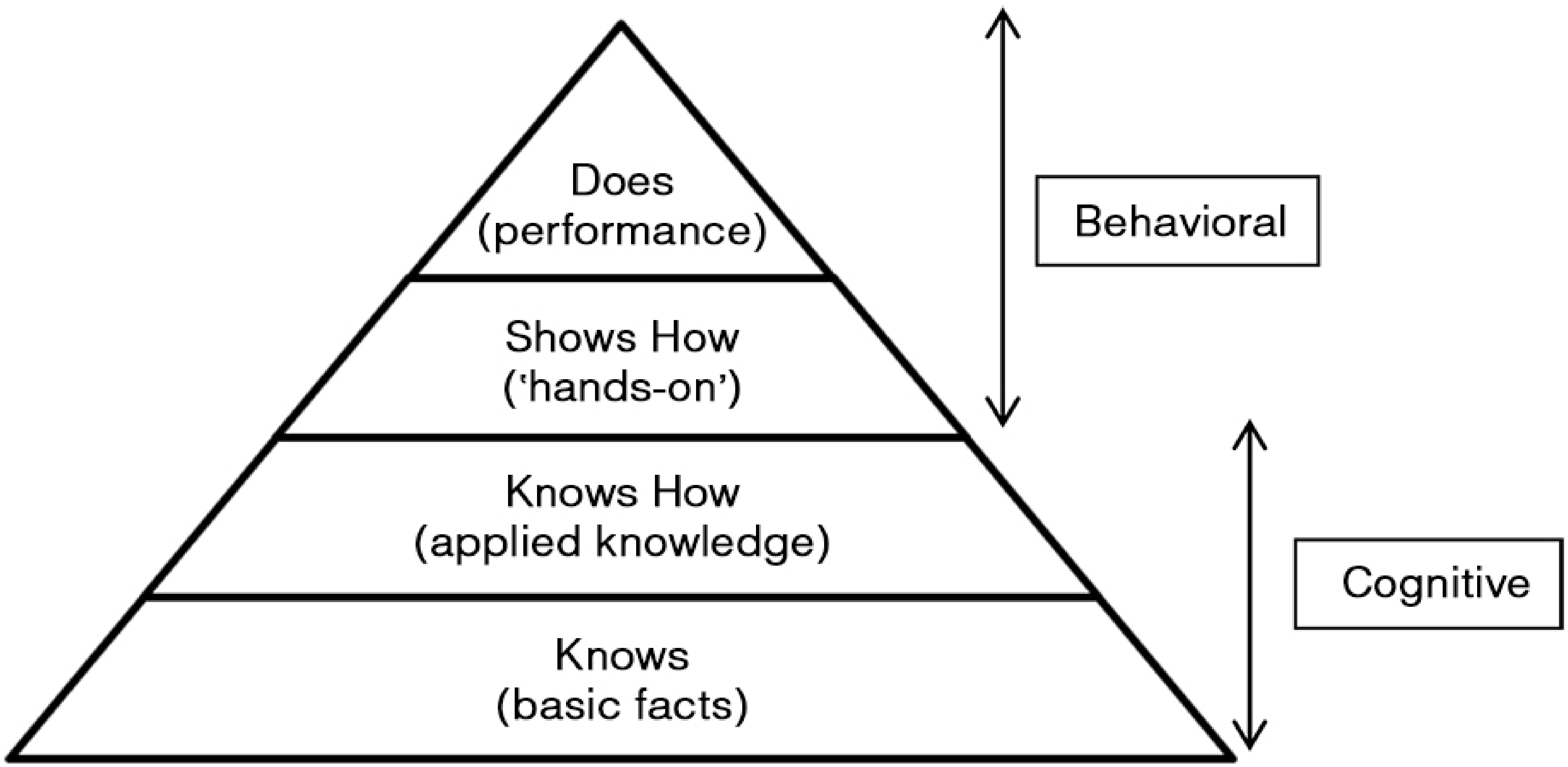
Developmental Schemes – Urology Milestones

PC7. Performs laparoscopic/robot-assisted surgical procedures.					
Has not achieved Level 1	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
	Manipulates laparoscopic equipment ***as assistant*** for ***routine*** cases without robotic assistance under direct supervision (as defined in the Program Requirements) *Example:* *Holds the laparoscope for laparoscopic renal cyst decortication and uncomplicated simple nephrectomy*	Manipulates laparoscopic equipment with correct force, speed, depth, and distance ***as assistant*** for ***routine*** cases *Example:* *Functions as first assistant for a laparoscopic nephrectomy*	Obtains access and insufflate abdomen for ***routine*** cases Manipulates laparoscopic equipment with appropriate instrument selection and correct force, speed, depth, and distance for a portion of ***routine*** cases, as appropriate for level of education *Examples:* *Obtains routine access to the peritoneal cavity with establishment of pneumoperitoneum* *Assists and inserts trocars at the appropriate locations for procedures appropriate for level of education* *Performs some portion of a laparoscopic surgery appropriate for level of education*	Manipulates laparoscopic and/or robotic equipment with appropriate instrument selection and correct force, speed, depth, and distance for ***routine*** cases Performs routine laparoscopic procedures with independence *Example:* *Laparoscopic radical nephrectomy for a 7cm renal mass*	Manipulates laparoscopic and/or robotic equipment with appropriate instrument selection and correct force, speed, depth, and distance for a majority of ***routine*** **and complex cases** *Examples:* *Robot assisted laparoscopic radical prostatectomy* *Robot assisted laparoscopic pyeloplasty*

Comments:

Practical Application

Learner Assessment – Miller's Pyramid



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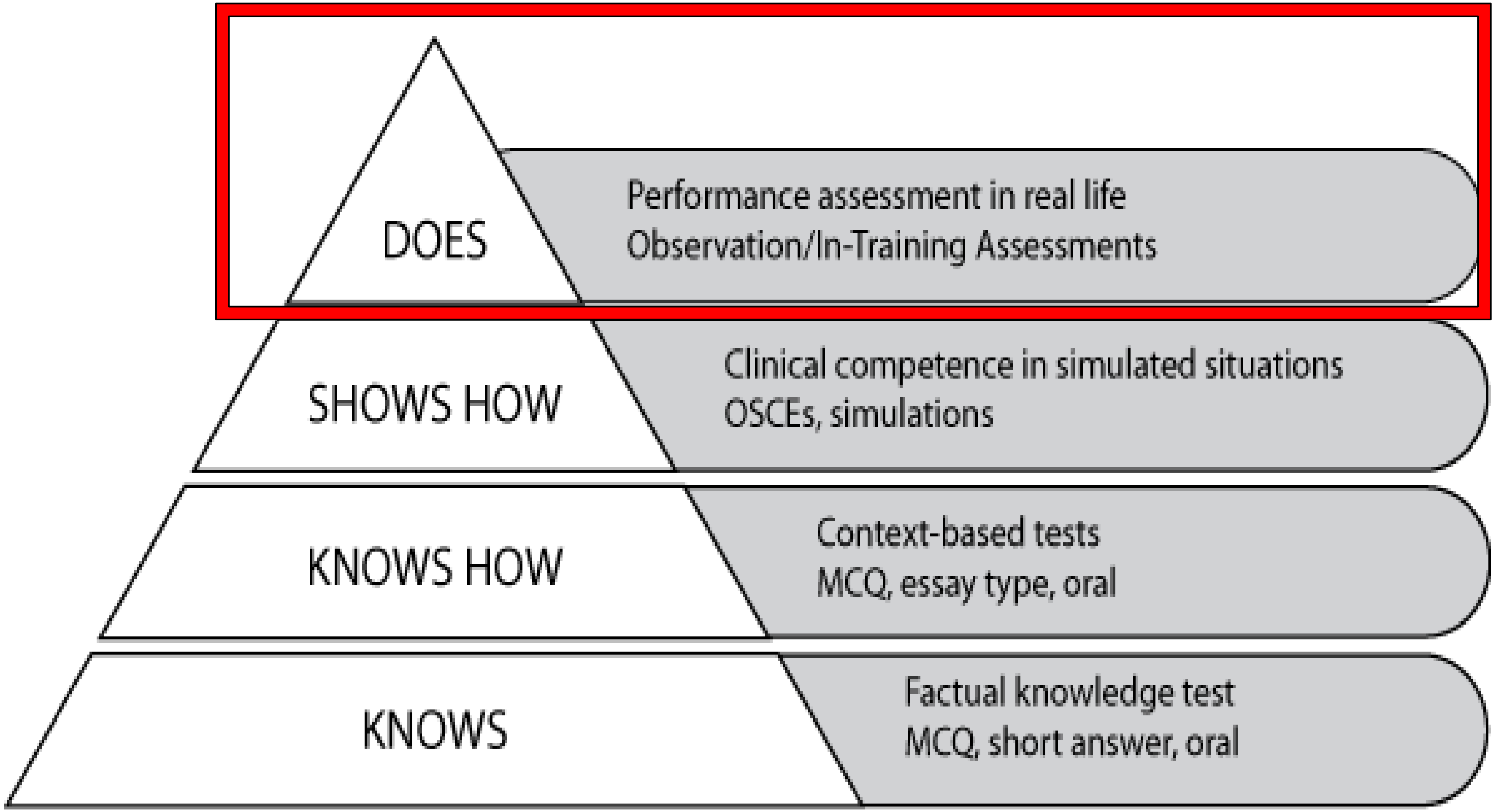
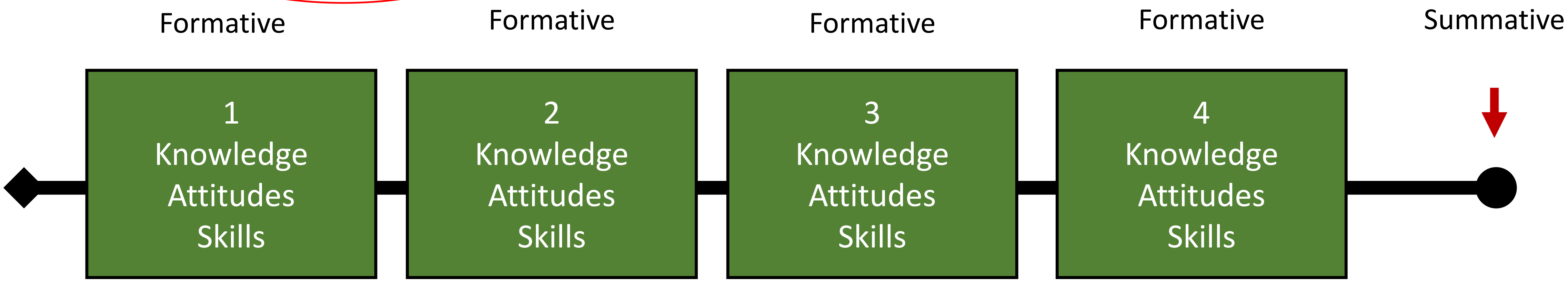
Tools for Assessment



Formative Assessment

- Goal: Improvement
- Lower stakes
- Tools less rigorous
- Think…Feedback



Formative Assessment – Tools

- Technical skills: Objective Structured Assessment of Technical Skills (OSATS), direct observation, simulation labs, Crowd-sourced assessment?
- Nontechnical skills: 360 feedback, direct observation - NOTSS

UROLOGY – Technical Skills Checklist (1 point for each action):

Action		Yes	No	N/A
Demonstrates understanding of principles of Veress needle access for pneumoperitoneum				
	aspiration test, drop test			
	observes initial pneumo pressures (<10)			
Recognizes vasovagal response and stops insufflation (+/- attempts desufflation)				
Demonstrates proper sequence of renal vessel ligation (artery before vein)				
Demonstrates appropriate ligation of artery (stapler OR 2 stay Weck/1 go Weck OR 3 stay clips/2 go clip)				
Demonstrates safe transection of artery (stapler OR cuts ½ way before complete transection after clips)				
Recognizes venous bleeding & communicates appropriately				
	notifies anesthesia and RN team			
	asks for open tray availability			
	asks about pRBCs and/or vascular sx consult			
Demonstrates appropriate initial management of venous bleeding				
	applies direct pressure			
	increases pneumoperitoneum			
	places additional assistant ports			
	makes use of assistant to help with bleeding			
Demonstrates appropriate management of renal vein laceration				
	exploration of injury site			
	appropriate use of lap instruments			
	obtains adequate proximal control			
	obtains adequate distal control			
	uses appropriate tension/pressure on vein			
Obtains definitive control of renal vein injury (stops all bleeding)				
Appropriate & timely decision to convert to open (if necessary)				

Overall, how did this student perform (technically) during this simulation?

1	2	3	4	5
Unable to achieve satisfactory performance, needs significant improvement	**unable to achieve satisfactory performance, needs minor improvement**	**satisfactory performance**	**demonstrates above avg performance**	**demonstrates superior performance, mastery learning of skills**

Lee, et al. J Urology 187 (4), 2012

Sample of Checklist Scoring (5 of 24)	
1. Selects appropriate suture	0 1
2. Avoids excessive trauma / handling of artery with instruments	0 1
3. Guides suture down to desired position following bites	0 1
4. Uses correct needle angle >80% time.	0 1
5. Follows curve of needle on entrance / exit > 80% time	0 1

Vascular Anastamosis Station

OSATS, Helen MacRae, University of Toronto

Sample of Global Rating (3 of 5)

Respect for tissue

1	2	3	4	5
Frequently caused damage by inappropriate use of instruments		Careful handling of tissue but occasionally caused inadvertent damage		Consistently handled tissue appropriately with minimal damage to tissue

Time and motion

1	2	3	4	5
Many unnecessary moves		Efficient time/motion but some unnecessary moves		Clear economy of movement and maximum efficiency

Flow of Operation

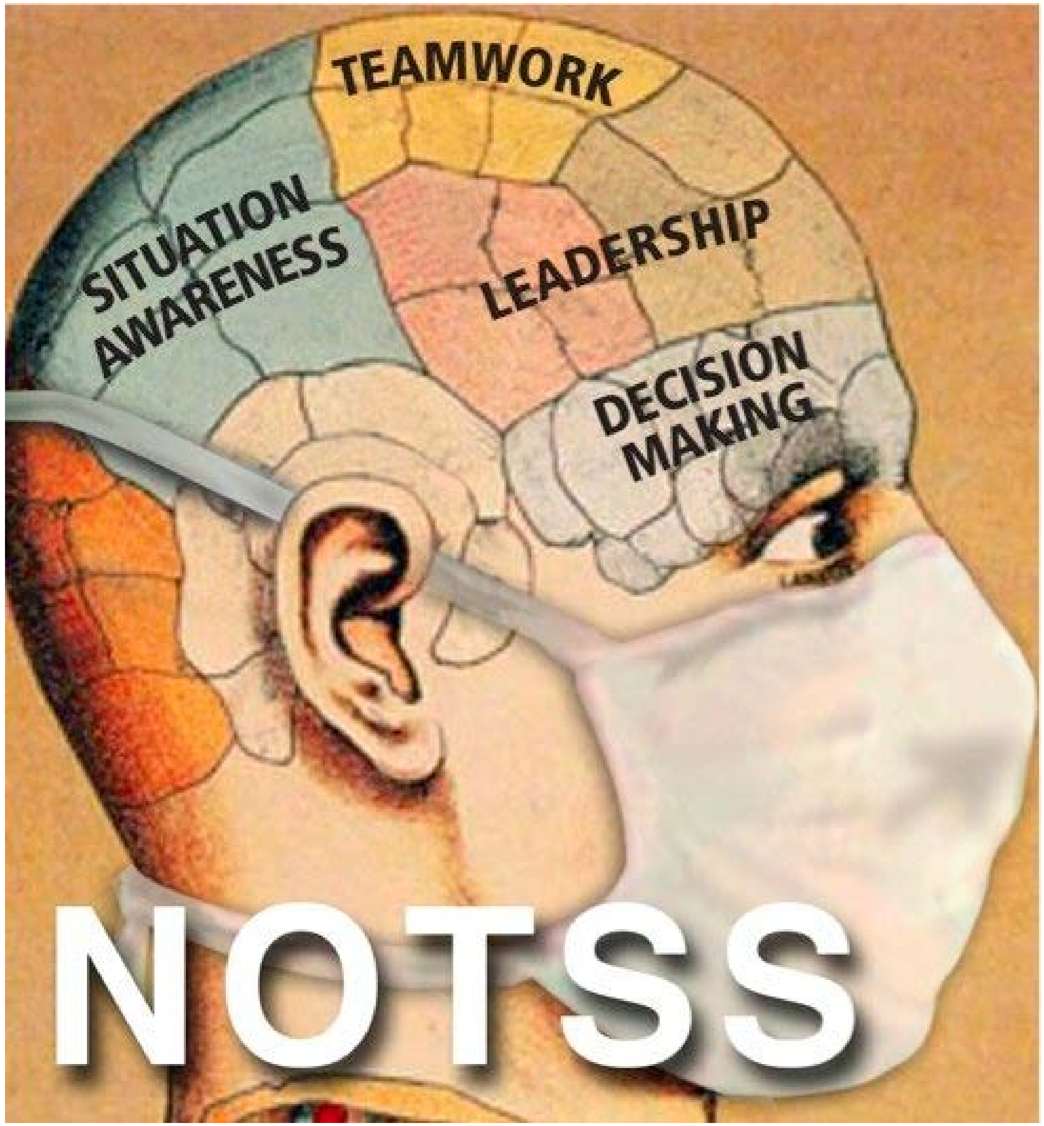
1	2	3	4	5
Frequently stopped operating and seemed unsure of next move		Demonstrated some forward planning with reasonable progression of procedure		Obviously planned course of operation with effortless flow from one move to the next

Vascular Anastamosis Station

OSATS, Helen MacRae, University of Toronto

Non-Technical Skills for Surgeons (NOTSS)

- Situation Awareness
- Decision Making
- Communication
- Team Leadership



https://www.notss.org/

Formative Assessment – Successes and Challenges?

- Technical vs Nontechnical skills
- Faculty, Peer, Non-physician involvement

Formative Assessment

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Summative Assessment

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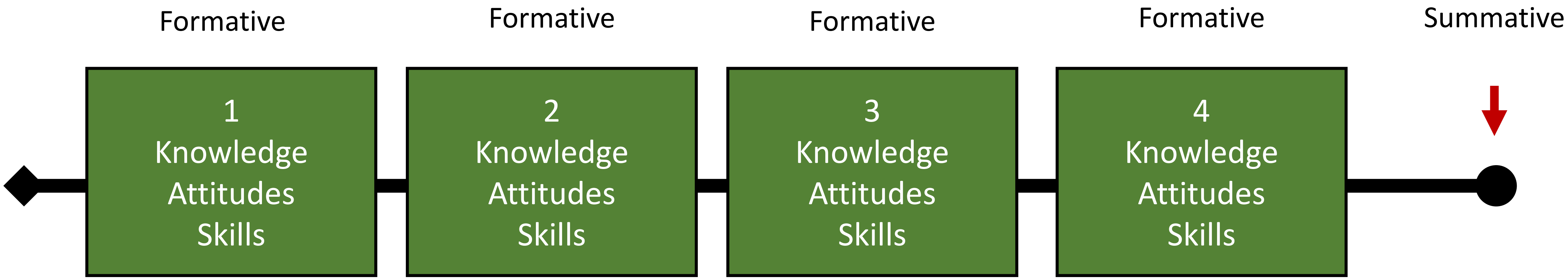

Summative Assessment – Tools

- Urology Milestones Project
- Clinical Competency Committee

Milestones Report

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Summative Assessment

Timing

- Less frequent – required twice a year
- Address the overall progress of resident – On track?

Input

- Core faculty
- Coordinators and administrators

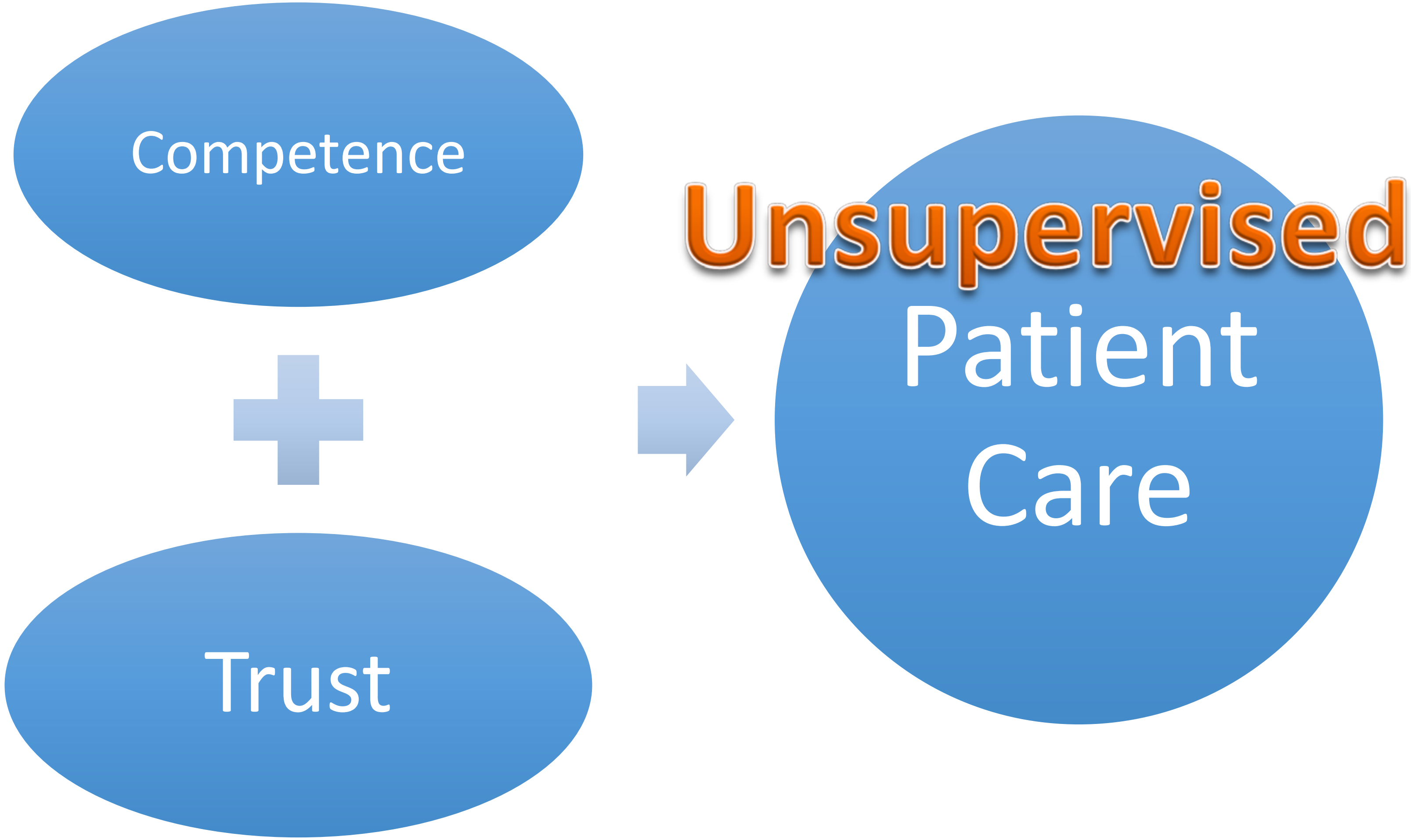
Summative Assessment

Clinical Competency Committee

- Decision: promotion, non-promotion, dismissal
- Identification and need for remediation
- Program director makes final decision

Summative Assessment – Successes and Challenges?

Fundamental Premise



Questions?

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