Exploring Creative Solutions to Clinical Reasoning Assessment:

The NBME OSCE for Clinical Reasoning Creative Community

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Disclosures

The presenters have no financial interest or affiliation concerning material discussed in this presentation.

Learning Objectives

01

Identify the challenges associated with the assessment of clinical reasoning.

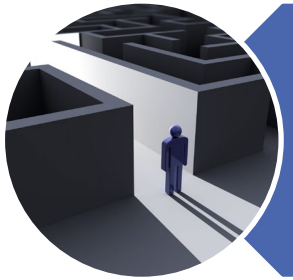
02

Describe the goals and process of the NBME OSCE for Clinical Reasoning Creative Community, and how this work may benefit the larger medical education community.

03

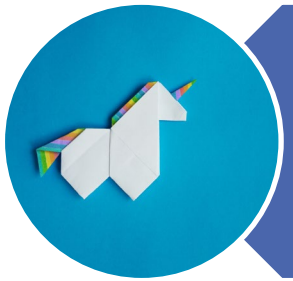
Discuss the pros and cons of strategic directions and/or preliminary solutions generated by the Creative Community.

CLINICAL REASONING



What are the challenges you face with assessing clinical reasoning (CR)?

What limitations or barriers have you encountered with using OSCEs to assess CR?



What is your “pie in the sky” / what tools or resources do you wish you had for CR assessment?

ABOUT THE CREATIVE COMMUNITY

Goal and Processes

WHY OSCE?

OSCEs provide standardized scoring of observable clinical activities and patient care tasks

55% of medical schools expect to expand their use of OSCEs in the future	Educators are actively exploring opportunities to enhance their OSCEs	Most appealing OSCE enhancement is "helping students identify gaps in their clinical skills"

WHY CLINICAL REASONING?

Educators consistently rate clinical reasoning as their highest priority for assessment

Assess using multiple methods:

1. Written (MCQs)
2. Simulated (OSCE)
3. Workplace-based

More than **80%** of medical schools rely on OSCEs to assess clinical reasoning (the most used method)

OSCEs are rated higher than 2D-avatars, 3D-avatars and written cases to assess clinical reasoning skills

CREATIVE COMMUNITY

OSCE for Clinical Reasoning

Launched in May 2022

10 US medical schools

A diverse group of schools and lead faculty members were selected

Engagement of student and staff perspectives from each school

Laurie Caines, M.D. - University of Connecticut School of Medicine

Analia Castiglioni, M.D. - University of Central Florida College of Medicine

Sharon Dowell, M.B.B.S., M.S - Howard University College of Medicine

David Gordon, M.D. - Duke University School of Medicine

Khadeja Johnson, M.D. - Morehouse School of Medicine

Matthew Kelleher, M.D., M.Ed. - University of Cincinnati College of Medicine

Debra Klamen, M.D., M.H.P.E. - Southern Illinois University School of Medicine

Kristen Mitchell, D.O - University of New England College of Osteopathic Medicine

Candace Pau, M.D. - Kaiser Permanente Bernard J. Tyson School of Medicine

Jan Veesart, M.D. - University of New Mexico School of Medicine

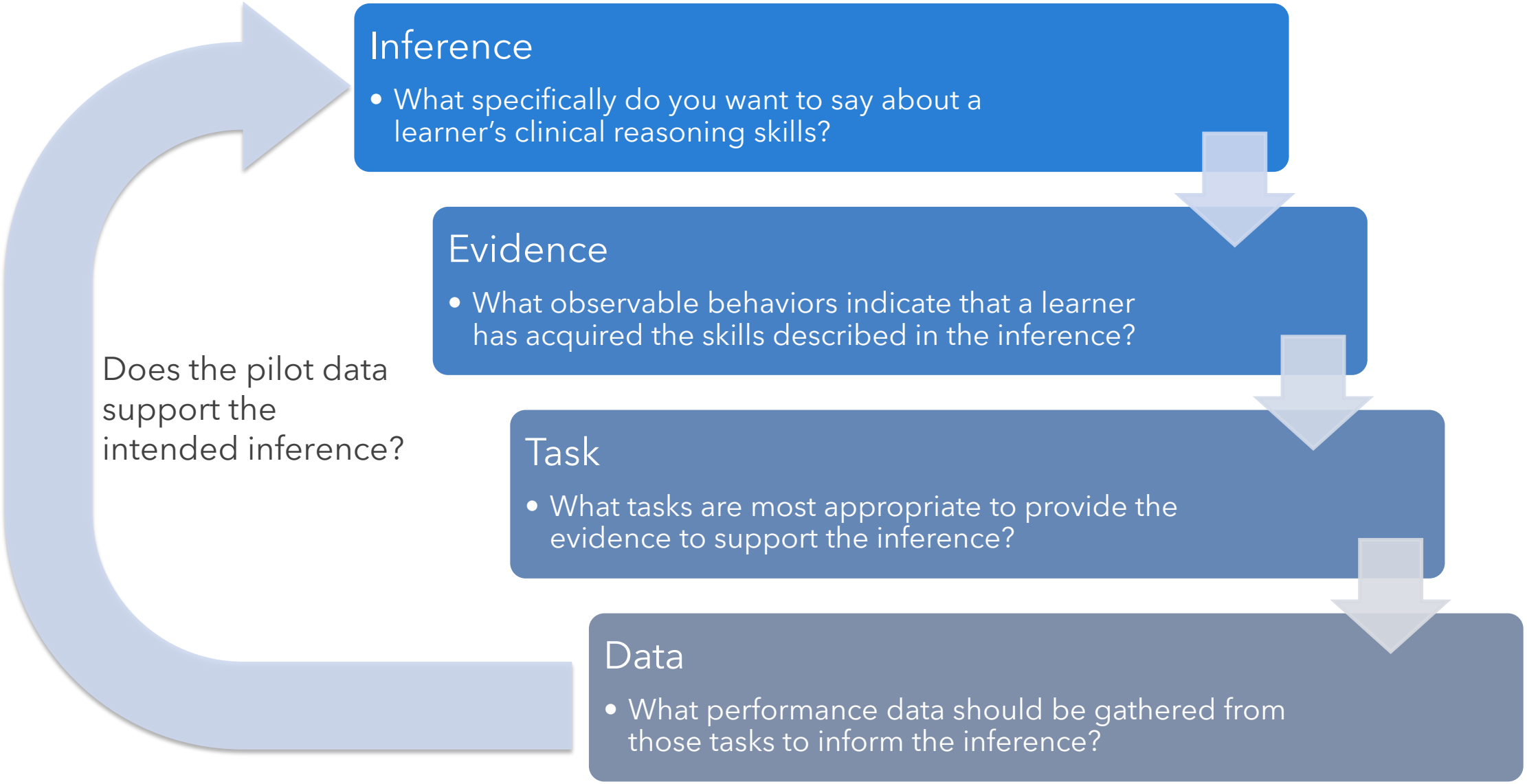
https://www.nbme.org/creative-community

COMMUNITY GOALS

- Co-creation: NBME's measurement expertise + subject matter expertise of the community members
- Research-oriented
- Evidence-centered

The Creative Community strives to create **novel and innovative solutions** to advance **clinical reasoning** in medicine, enabling all institutions to better **support learner skill development** across the **continuum of medical education** and training.

EVIDENCE-CENTERED APPROACH



PRELIMINARY OUTCOMES

Focus Areas & Solutions

Problem

- Learners receive insufficient feedback to effectively develop clinical reasoning skills

Gap

- Performance expectations for current CR assessments are focused on outcomes
- Learners receive little guidance regarding their CR processes, particularly hypothesis generation, which is not easily observed in traditional OSCEs
- Learners do not receive detailed feedback from summative OSCE assessments

Goal

- Design and develop formative clinical reasoning assessments solution, focused on CR process, to provide more specific feedback to support learner growth
- Pilot the assessment at Creative Community schools

TRADITIONAL

Clinical reasoning outcomes

- Most likely diagnosis
- Differential diagnosis
- Rationale for each diagnosis

Summative assessment

- MCQs
- Traditional OSCEs

What you got wrong…

CREATIVE COMMUNITY

Process to reach outcomes

- Process-based assessments

Focus on sub-competencies:

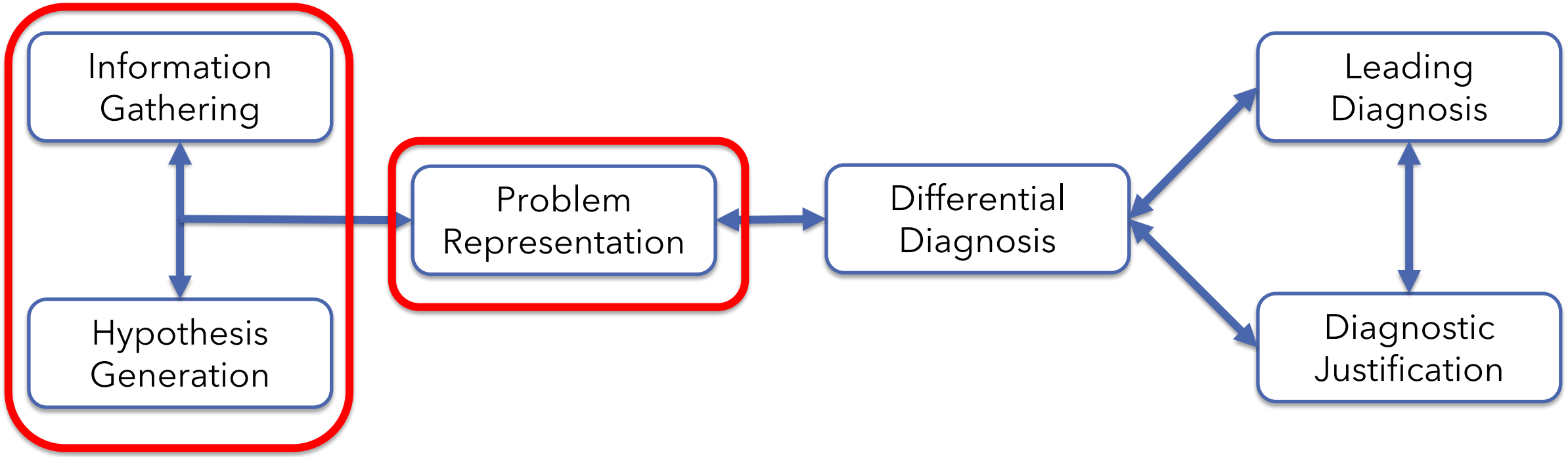
- Hypothesis-driven information gathering
- Problem representation

Formative assessment

- Feedback on skills

How you can improve…

CLINICAL REASONING FRAMEWORK



Level of learner: Ready for supervised practice

Acad Med. 2019;94:902–912.

PROBLEM REPRESENTATION

Claim	Evidence
The learner delivers organized and accurate content	Characterized by including pertinent patient characteristics and biopsychosocial risk factors Characterized by including pertinent positives/negatives Characterized by describing the illness time course
The learner concisely prioritizes key features.	Characterized by including key information Characterized by omitting extraneous information
The learner translates patient information into medical terms.	Characterized by using appropriate medical terminology Characterized by the appropriate use of semantic qualifiers
The learner iteratively updates the PR as new information is elicited.	Characterized by adjusting/revising problem representations as new information becomes available

HYPOTHESIS-DRIVEN INFO GATHERING

Claim	Evidence
The learner identifies relevant pre-encounter information to generate hypotheses.	Characterized by describing appropriate preliminary hypotheses prior to the start of the encounter Characterized by initial line of questioning that prioritizes the relevant information
The learner uses hypotheses to conduct a history.	Characterized by clustering questions that align with a specific hypothesis/illness script/diagnosis Characterized by discontinuing a line of questioning when evidence against a hypothesis/diagnosis exceeds that in support Characterized by listing the hypotheses/illness scripts/diagnoses considered during the patient interview
The learner appropriately adapts questions to elicited patient information.	Characterized by asking specific follow-up questions when discordant information is elicited Characterized by describing how patient information was used to support or refute hypotheses, or lead to alternative hypotheses
The learner explores relevant alternative hypotheses (avoids premature closure).	Characterized by asking questions about conditions that are most likely for the patient scenario Characterized by asking questions about relevant life-threatening or urgent medical conditions Characterized by identifying the relevant alternative hypotheses considered during the encounter Characterized by identifying the relevant life-threatening or urgent medical conditions considered during the encounter
The learner considers relevant biopsychosocial information to generate hypotheses.	Characterized by identifying the appropriate patient factors (behaviors, relationships, resources) for the presentation Characterized by identifying the patient's perspective on their current illness and/or goals for the visit Characterized by describing the hypotheses considered for the patient's unique characteristics
The learner determines the likelihood of a diagnosis based on patient information.	Characterized by identifying specific hypotheses and how patient information impacted their likelihood

Process-based Assessment

- Clustering
- Line of questioning
- Prompting
- Scoring rubric structured around subcomponents of IG, HG, PR

Data Representation

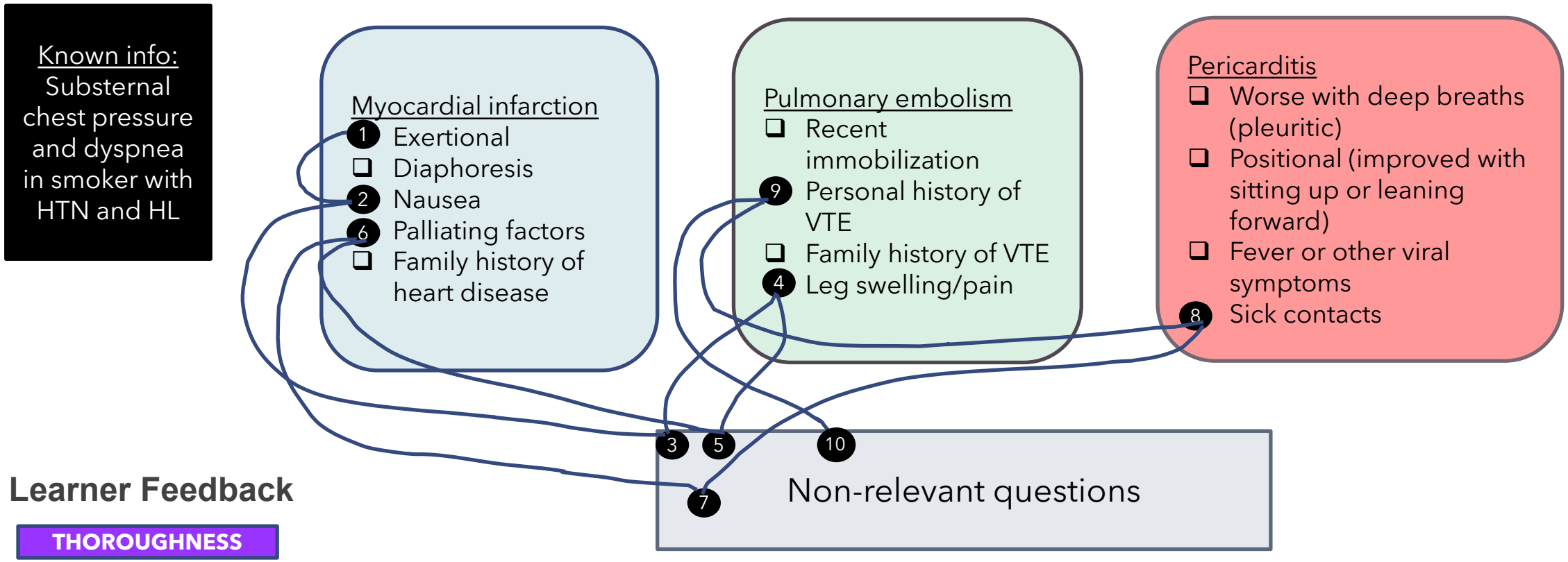
- Visual mapping
- Performance profiles

Ready for Supervised Practice

- Better measurement and determination
- Better feedback

PROCESS-BASED CHECKLIST

Hypothesis-Driven Info Gathering



Learner Feedback

- THOROUGHNESS
- EFFICIENCY
- ORGANIZATION

OUTCOMES & NEXT STEPS

Using the evidence-centered design principles

- Case development
- Assessment tool development

Proof of Concept Study

- Through small-scale pilots, a validity argument will be developed for the prioritized solution using Kane's framework.
- We aim to provide useful feedback to learners (skill development) and programs (continuous improvement).

Feasibility/Generalizability

- Diverse schools within the CC ensures wide range of learning environments and faculty and learner voices
- Assess further scale potential after piloting at CC schools

DISCUSSION

YOUR INPUT

What do you see as the pros and cons of how the Creative Community has structured and prioritized its work?

What are the perceived benefits and challenges of the proposed preliminary solutions?

How might you apply this work at your home institution?

INFORMATION

NBME Assessment Alliance

- https://www.nbme.org/research/research-collaborations

Join our email list for updates

- https://www.nbme.org/creative-community-updates