

i The Alliance for Academic Internal Medicine Faculty Development Toolbox provides peer-reviewed tools to enhance faculty written qualitative feedback and assessment of learners.

For a complete list of resources, visit www.im.org/qualfeedback

Title: Society to Improve Diagnosis in Medicine – Assessment of Reasoning Tool

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Brief Description: The Society to Improve Diagnosis in Medicine – Assessment of Reasoning Tool (ART), user's guide, and faculty development videos are intended to help clinical teachers assess student and resident oral presentations for clinical reasoning content and provide a structure for written assessments and a guided feedback conversation.

Background of SIDM Assessment of Reasoning Tool:

Internal medicine clerkships, residencies, and fellowship programs seek to document [milestones linked to core competencies](#). Clinical reasoning is among the most important milestones, but is difficult to document because of limitations in current assessments,¹ variability of definitions and conceptualizations of clinical reasoning,² and faculty lack of familiarity with clinical reasoning concepts and terminology.³ These barriers make it challenging for frontline preceptors to provide specific written feedback, which guides learner development and informs the documentation of clinical reasoning milestone achievement by program directors.

The Society to Improve Diagnosis in Medicine Education Committee developed an easy-to-use [Assessment of Reasoning Tool](#) (ART) that clinical teachers can use to assess the clinical reasoning conveyed during a learner's oral presentation. In one page, the ART identifies **key domains of the clinical reasoning process**: data gathering, problem representation, prioritization of the differential diagnosis, diagnostic evaluation, and reflection on the diagnostic process. Teachers can use the language provided in the ART for each of these domains to guide written assessments which outline strengths and areas of improvement.

The ART establishes boundary conditions of clinical reasoning for the observation and delineates specific actions which can be used to **guide conversations with learners** and **can be reported on evaluation forms** (e.g. "Gave an accurately ranked ddx including most likely diagnosis, however, also pursued non-essential testing for unlikely and less important conditions.").

The SIDM Education Committee developed a schematic [user's guide](#) and five short animated faculty development [videos](#). Each video highlights one of the five domains covered in the ART and gives examples of high- and low-performing learners to help guide and standardize faculty assessments of learners. These videos review important clinical reasoning concepts and equip faculty members who may not feel prepared to provide specific written feedback about clinical reasoning.

Learning Objectives (of a faculty development session)

This faculty development workshop instructs faculty on how to provide better assessments for better feedback. It also allows educator groups to develop a shared mental model of diagnostic reasoning to provide consistency in feedback to learners at their institution. Specific objectives are for faculty members to:

- Provide specific and actionable feedback to a learner through deliberate assessment.
- Use an effective tool to assess diagnostic reasoning and to structure and tailored feedback
- Standardize assessment structure and format across evaluators.

Equipment Required: AV equipment to display on-line videos

Materials Required: Paper or electronic versions of the training program’s evaluation form/platform

Setting: Faculty development session

Total preparation time: For session instructor, 1 hour

Total time commitment for learner: 120 minute in-person session (learner = faculty member attending the session)

Ideal audience size: 6-10 faculty members

Is activity a one-time activity or a series of activities? -- one time, although a follow-up session after the ART has been used by faculty members would be beneficial

Intended Faculty Audience:

• Community Faculty	• University Faculty
• Volunteer Faculty	• Hospitalist
• General Internist	• Specialist
• New Faculty	• Experienced Faculty
• Outpatient Faculty	• Inpatient Faculty
<p>Comments: The ART is intended for any faculty member who analyzes oral presentations for clinical reasoning and decision making.</p>	

Delivery Type:

- Didactic training (faculty development) session

PREPARATION

Desired Background/Qualifications for Instructor or Facilitator:

A facilitator of a faculty development session that introduces the ART and provides practice opportunities to use the ART should have a basic understanding of clinical reasoning concepts including hypothesis-driven data collection, problem representation, illness scripts, prioritized differential diagnosis, high-value testing, and metacognition.

A faculty developer can learn about these concepts from resources in the [SIDM Clinical Reasoning Toolkit](#). Additional training and experience with cases of diagnostic error can be sought from the [ACP-SIDM Getting It Right](#) virtual patient cases to improve diagnosis.

In addition, the faculty developer leading the session should be skilled in small group facilitation techniques and the delivery of real-time feedback to faculty participants. The faculty developer should also be familiar with the current evaluation platform used by the program.

Preparatory Steps

Preparations and Considerations	Description
1.	There are no required preparatory activities for this workshop for the faculty attendees.
2.	An optional activity would be to review the resources in the SIDM Clinical Reasoning Toolkit or to review the ART website and videos .

ACTIVITY

Didactic Training

Steps	Description	Estimated Time	Slide Number
1	Welcome participants and introduce clinical reasoning and diagnostic error as a quality and safety issue	5 minutes	
2	Introduce ART and review 5 clinical reasoning concepts	15 minutes	
3	Hypothesis directed data collection – review ART anchors, watch video, and then role play a learner presentation (in pairs). 1 participant then reports the reasoning of the other participant (from the role play) using the ART anchors and <i>the current program evaluation form or internal medicine milestones</i> ; the other participant then provides feedback on the written summary.	20 minutes	Video #1
4	Problem representation – same procedure	20 minutes	Video #2
5	Prioritized differential diagnosis – same procedure	20 minutes	Video #3
6	High value testing – same procedure	20 minutes	Video #4
7	Metacognition – same procedure	20 minutes	Video #5
8	Conclusion – each attendee provides reflection and verbal commitment on where and how they will use the ART to improve their documentation of clinical reasoning	20 minutes	

FOLLOW UP

Didactic Training

Steps	Description	Estimated Time
Evaluation and Assessment	A fully developed faculty development program will ideally include workplace-based assessment of faculty teachers using the ART anchors during oral feedback conversations and in written evaluations. This could be part of a broader faculty coaching program.	
Dissemination of Results		

EVALUATION AND OUTCOMES

Source	Description
	A validation study of the tool is currently being conducted by Satid Thammasitboon, MD, MHPE, Associate Professor of Pediatrics at Baylor College of Medicine and chairman of the SIDM Education Committee's Subcommittee on Assessment.
	In addition to this study, SIDM faculty with expertise in clinical reasoning education have employed the ART as a teaching tool at their institutions. Faculty and learners identified the ART as effective at improving assessment and feedback.

FURTHER STUDY/REFERENCES:

1. Ilgen JS, Humbert AJ, Kuhn G, Hansen ML, Norman GR, Eva KW, Charlin B, Sherbino J. Assessing diagnostic reasoning: a consensus statement summarizing theory, practice, and future needs. *Acad Emerg Med*. 2012 Dec;19(12):1454-61.
2. Young M, Thomas A, Lubarsky S, Ballard T, Gordon D, Gruppen LD, Holmboe E, Ratcliffe T, Rencic J, Schuwirth L, Durning SJ. Drawing Boundaries: The Difficulty in Defining Clinical Reasoning. *Acad Med*. 2018 Jan 23.
3. Audétat MC, Dory V, Nendaz M, Vanpee D, Pestiaux D, Junod Perron N, Charlin B. What is so difficult about managing clinical reasoning difficulties? *Med Educ*. 2012 Feb;46(2):216-27.