

i *The Alliance for Academic Internal Medicine Faculty Development Toolbox provides peer-reviewed tools to enhance faculty development and engagement.*

Title: Clearing the Error: Identifying Trainee Cognitive Bias to Reduce Diagnostic Error

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Brief Description:

Diagnostic error is a common and under-recognized component of patient safety. Many physicians have received limited training in causes of diagnostic error or cognitive bias. Even fewer have received training on how to address diagnostic error and cognitive bias with trainees. This workshop focuses on how to identify types of cognitive bias that trainees utilize when caring for patients and how to provide feedback about the diagnostic process to the learners. The session begins with an overview of common types of cognitive bias and then provides a structured approach to a feedback discussion with a trainee about cognitive bias. Participants will receive pocket cards defining cognitive biases common in clinical learning environments, and a summary of the structured approach to feedback. Thereafter, participants analyze case examples to identify the specific cognitive biases at play in each clinical situation and practice providing feedback using the suggested approach. Finally, participants consider how to integrate cognitive bias teaching and feedback into their programs.

Learning Objectives (please provide at least two learning objective):

- Describe the relationship between cognitive bias and diagnostic error in medicine.
- Apply knowledge of at least four types of cognitive bias to example clinical cases.
- Formulate an approach to providing constructive feedback to trainees in cases of potential cognitive bias.

Equipment Required:

- Cognitive bias PowerPoint slides
- Pocket card (approach to feedback; types of cognitive bias)
- Packet with cases and questions (blank, for participants)
- Packet with cases and questions (with answers, for facilitators)
- Projector and screen
- Microphone

Total preparation time: 3 hours

Total time commitment for learner: 1 hour

Ideal audience size: 25 to 50

Is activity a one-time activity or a series of activities: one-time

Intended Faculty Audience:

<ul style="list-style-type: none"> Residency Program Directors, Associate Program Directors, core faculty, etc.
<ul style="list-style-type: none"> Medicine Clerkship Directors, core faculty
<ul style="list-style-type: none"> Faculty Development leaders
<ul style="list-style-type: none"> Fellowship Program Directors, core faculty

Delivery Type

- Didactic training (first portion of workshop session)
- Other (please describe): Group workshop activities (case-based exercises with subsequent answer reporting and discussion).

PREPARATION
Desired Background/Qualifications for Instructor or Facilitator:

- Interest in cognitive bias
- Understanding of the material in the slides and handouts
- Role as a teacher of students, residents, fellows, or faculty
- Ideas for local implementation of cognitive bias teaching if no program currently exists

Preparatory Steps

Preparations and Considerations	Description
1.	Read and understand the material in the slides and handouts.
2.	Consider reading the additional references listed.
3.	Invite intended audience members, aiming for 25 to 50 participants.
4.	Select space that allows audience to transition to small groups.
5.	Prepare description of local cognitive bias programming and/or ideas for local implementation, to promote end-of-session discussion on these topics.

ACTIVITY

Based on the delivery mode(s) selected above, complete the following table(s) below

Didactic Training

Steps	Description	Estimated Time	Slide Number
1	Introduction of speakers, Financial disclosure	1 minute	1-2
2	Learning objectives, Outline	2 minutes	3-4
3	Introduce diagnostic error and cognitive biases	14 minutes	5-22
4	Introduce workshop portion, pass out pocket cards	1 minute	23

5	“Three R’s” approach to feedback on cognitive bias	3 minutes	24-29
6	Introduce case discussion process, goals, and rules; break into small groups	2 minutes	30
7	Case 1: identify cognitive biases present (small group)	2 minutes	31
8	Case 1: develop feedback for trainee	8 minutes	31
9	Case 1: debrief (feedback in large group discussion)	4 minutes	32
10	Case 2: identify cognitive biases present (small group)	2 minutes	33
11	Case 2: develop feedback for trainee	8 minutes	33
12	Case 2: debrief (feedback large group discussion)	4 minutes	34
13	Local implementation of cognitive bias teaching	3 minutes	35-37
14	Take-home points	1 minute	38
15	Questions / Answers	4 minutes	39
16	Provide handout with additional cases and suggested answers	1 minute	39
Total		60 minutes	

FOLLOW UP

Didactic Training

Steps	Description	Estimated Time
Evaluation and Assessment	Real-time feedback regarding types of cognitive biases present and the approach trainee feedback is provided after each case discussion within the session.	8 minutes
Evaluation and Assessment	One week after the session, send an email to all participants summarizing the session’s take-home points, additional reference materials they may access if there are ongoing questions, and the answers to any questions that arose during the session for which the facilitator did not have immediate answers.	30 minutes

EVALUATION AND OUTCOMES

Source	Description
Survey	<p>Written questions provided to workshop participants, at the end of the session, to evaluate satisfaction with the material and teaching, key take-home points, suggestions for improvement.</p> <p>This workshop was part of a faculty development series in medical education (learning to teach). At the conclusion of the series,</p>

	<p>participants were surveyed regarding satisfaction and confidence, answering on a five-point Likert scale (n=11 respondents). Results demonstrated high levels of teaching confidence (4.55), career development confidence (4.64), and overall satisfaction with the series (4.82).</p>
<p>Knowledge Assessment Questions</p>	<p>Provide participants a written, three-question quiz before and after the workshop, to assesses knowledge of content taught during the session. At this workshop, knowledge scores improved from pre- to post-session.</p> <ul style="list-style-type: none"> • Mean pre-session score (proportion of answers correct) = 0.42 (SD=0.15). • Mean post-session score = 0.81 (SD=0.21); p <0.001. • Absolute mean score difference = 0.38

FURTHER STUDY/REFERENCES:

1. Ball JR, Balogh E. Improving Diagnosis in Health Care: Highlights of a Report From the National Academics of Sciences, Engineering, and Medicine. *Annals of Internal Medicine*. 2016, 164(1).
2. Ogdie AR, et al. Seen through their Eyes: Residents’ Reflections on the Cognitive and Contextual Components of Diagnostic Errors in Medicine. *Academic Medicine*. 2012; 87(10): 1361-1367.
3. Royce CS, Hayes MM, Schwartzstein RM. Teaching Critical Thinking. A Case for Instruction in cognitive Biases to Reduce Diagnostic Errors and Improve Patient Safety. *Academic Medicine*. 2019;94(2):187-194.