

## REVIEW ARTICLE

## MEDICAL EDUCATION

# Advancing Diagnostic Excellence through Medical Education in Diagnostic Equity

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**D**IAGNOSTIC ERROR — A LONG-STANDING QUALITY AND SAFETY PROBLEM receiving increasing recognition — encompasses the spectrum of mistakes and inappropriate delays in identifying and communicating accurate diagnoses.<sup>1</sup> Diagnostic errors are often hidden and challenging to measure<sup>1,2</sup>; however, researchers are now successfully doing just that.<sup>3-7</sup> Until recently, studies addressing diagnostic error largely overlooked ways in which interpersonal and systemic racism and other forms of oppression (e.g., ableism and sexism) may contribute to these errors (see the glossary in the Supplementary Appendix, available with the full text of this article at [NEJM.org](http://NEJM.org)). A growing literature regarding inequities in diagnosis — disparities in occurrences of diagnostic error that disproportionately affect persons in relation to their social identities — is raising awareness about this previously obscured issue.<sup>8-13</sup>

Figure 1 depicts the ways in which implicit bias (including stereotypes) that leads to false assumptions about an individual patient, combined with inattention to systemic and structural factors affecting the patient's health, can set the stage for diagnostic error for that patient and, in a ripple effect, for others in the community. Figure 1 also offers strategies for mitigating the risk of diagnostic error.

In parallel with increased attention to diagnostic error, medical education has also increased its focus on health equity, bringing lessons from generations of social justice movements and decades of research on health inequities and strategies to promote health equity in medical education.<sup>18-25</sup> The demands of medical learners and an ever-expanding evidence base fuel this momentum.<sup>26</sup> In this article, we review the ways that attending to the intersection of clinical-reasoning education and health-equity education — centering on the emerging concept of diagnostic equity — can support diagnostic excellence.<sup>27</sup> We present strategies drawn from the literature on diagnostic reasoning, health equity, implicit bias, structural competency, and health care communication to guide clinician-educators and educational programs in supporting equity in the diagnostic process.

## DIAGNOSTIC-REASONING AND HEALTH-EQUITY EDUCATION

To address diagnostic errors, many institutions are moving away from traditional apprenticeship models of diagnostic education and toward explicit education on the diagnostic process and deliberate practice of foundational diagnostic-reasoning skills. Curricula focusing on the diagnostic process (a core element of clinical reasoning) are increasingly present in medical education.<sup>28-32</sup>

Academic medicine has begun to acknowledge the role that medical education has played in contributing to and sustaining false, harmful beliefs about social

## KEY POINTS

**ADVANCING DIAGNOSTIC EXCELLENCE THROUGH MEDICAL EDUCATION IN DIAGNOSTIC EQUITY**

- Diagnostic inequities — the disproportionate burdens of diagnostic errors that are linked to patients' social identities (e.g., race, ethnic group, and gender) — are an important quality and safety problem standing in the way of diagnostic excellence.
- Medical education is one important lever that can support diagnostic equity by means of enhanced training; progress in medical education must be integrated with improvements in the closely linked clinical and research enterprises.
- A model to support education in diagnosis that integrates equity should include interventions on intrapersonal, interpersonal, systemic, and structural levels.
- Such a model should include teaching about diagnostic inequities; discussing diagnosis as a contextual, collaborative process; infusing clinicians' cognitive processes with equity considerations; creating opportunities to learn and practice equitable diagnostic communication; and modeling strategies to empower the full diagnostic team.
- Clinician–educators can draw on their expertise in and familiarity with communication and teamwork to model and teach about diagnostic equity.

identities such as race and gender and in propagating biased clinical approaches that perpetuate health care inequities.<sup>33,34</sup> Antioppressive medical education identifies the ways in which racism and other forms of oppression affect health and health care, and it dismantles biased and inaccurate medical knowledge while teaching strategies that support health equity. For example, education that disentangles race from biology and identifies race as a social construct ensures that we focus on racism (not race) as a root cause of health disparities.<sup>35</sup> Education that separates biologic sex characteristics from the social identity of gender enables an inclusive, nonbinary understanding of gender, ensuring that persons across the gender spectrum have access to appropriate health care and paving the way for nuanced research approaches.<sup>36</sup>

Education that is focused on equity must be understood not as a separate, siloed area, but rather as a key domain that should inform learning about basic science, research, and clinical care. Educators have an opportunity to build on the momentum around health-equity education to integrate equity across all aspects of medical education.

#### A NEW DOMAIN: EDUCATION FOR DIAGNOSTIC EQUITY

As educators address the intertwined considerations that diagnostic reasoning, clinical communication, and approaches to antioppressive education present, attention to the emerging conceptual framework arising in the overlap among these areas — the domain of diagnostic equity<sup>27</sup> — is needed (Fig. 2). Education on diagnostic equity can prepare learners to address the complex issue of diagnostic inequities to improve diagnostic accuracy for all.

In diagnostic-reasoning education, the reasoning process should be explicitly connected with antioppressive principles across interpersonal, systems, and structural levels (e.g., mitigation of implicit bias in interpersonal interactions and clinical decision making and physician-advocacy strategies to encourage institution-level collection of data to identify diagnostic disparities). Education on clinical communication — integral to the diagnostic process — should provide skill-building opportunities in communicating across differences and building patient–clinician partnerships.<sup>37–39</sup>

Educators can expand diagnostic-reasoning curricula by incorporating discourse about diagnostic inequities and skills needed to achieve diagnostic equity. Such expanded curricula could

#### Figure 1 (next page). A Missed Diagnostic Opportunity.

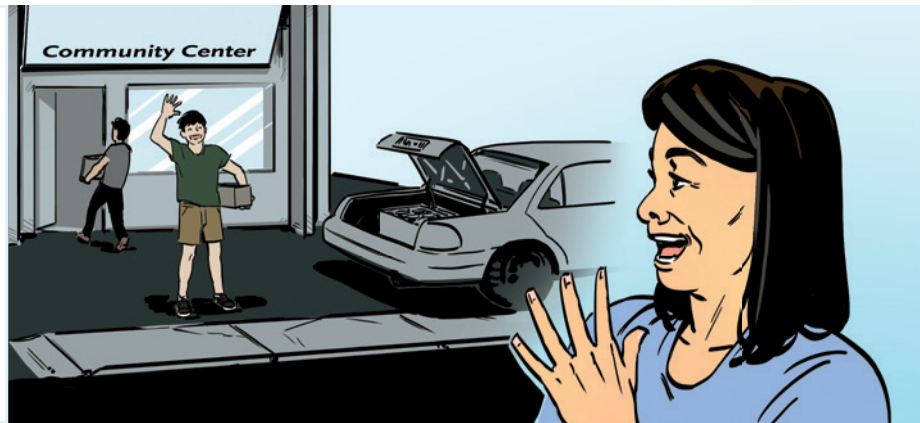
Clinicians can reduce the incidence of missed opportunities by pursuing IBRM training,<sup>14</sup> asking open-ended questions,<sup>15,16</sup> building rapport with patients using relationship-centered communication,<sup>16</sup> and getting to know each patient as a unique individual.<sup>17</sup> Example phrases adapted from the Relationship-Centered Communication approach of the Academy of Communication in Healthcare.<sup>16</sup> EMR denotes electronic medical record.

**Ms. Phuong's neighborhood****Structural barriers:**

- Effect of historical redlining has led to inadequate transportation options, health centers, and pharmacies

**Strengths:**

- Active community center
- Supportive neighborhood-run groups (e.g., gardening and exercise groups)

**Dr. Solas' Clinic****Challenges:**

- Understaffed and underfunded
- High staff turnover

**Strengths:**

- Committed core staff
- Established continuous quality-improvement processes

The clinic is overbooked...

I'll be late getting home again tonight.

**Missed Opportunities:**

- Gathering detailed, disaggregated clinic data on diagnostic error and creating EMR-linked alerts or dashboards to highlight high-risk encounters can help clinicians recognize situations vulnerable to diagnostic error.



Finally able to take off work to get here.

I was disappointed to miss my visit last month, but the 1.5-hour commute to the clinic is so difficult...

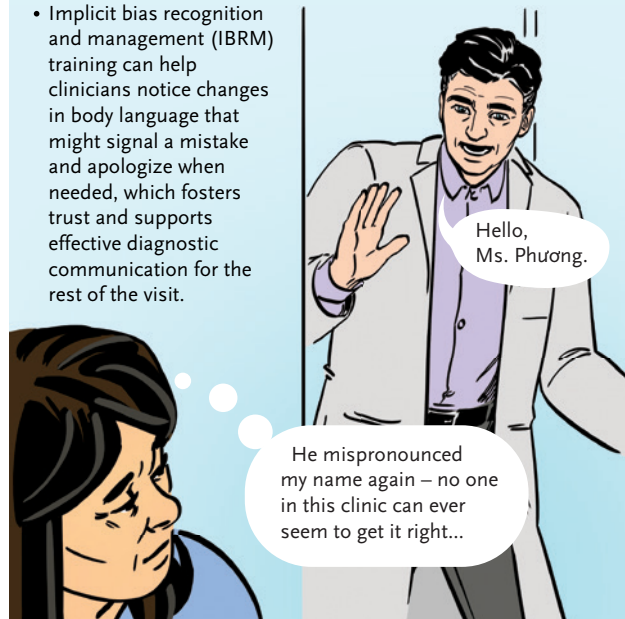
This hand pain is making typing harder; I hope it won't lead to more time off work.

**Missed Opportunities:**

- Recognizing that multiple risk factors for diagnostic error are present could prepare Dr. Solas to mitigate those risks when seeing an unfamiliar patient with a new concern.
- Clinics could build in alternative mechanisms to address preventive care to maximize in-person time during visits that involve complex symptoms, diagnostic uncertainty, and risks for diagnostic error.

**Missed Opportunities:**

- Asking patients how they'd like to be addressed clarifies their preference for first or last name and ensures correct pronunciation.
- Implicit bias recognition and management (IBRM) training can help clinicians notice changes in body language that might signal a mistake and apologize when needed, which fosters trust and supports effective diagnostic communication for the rest of the visit.



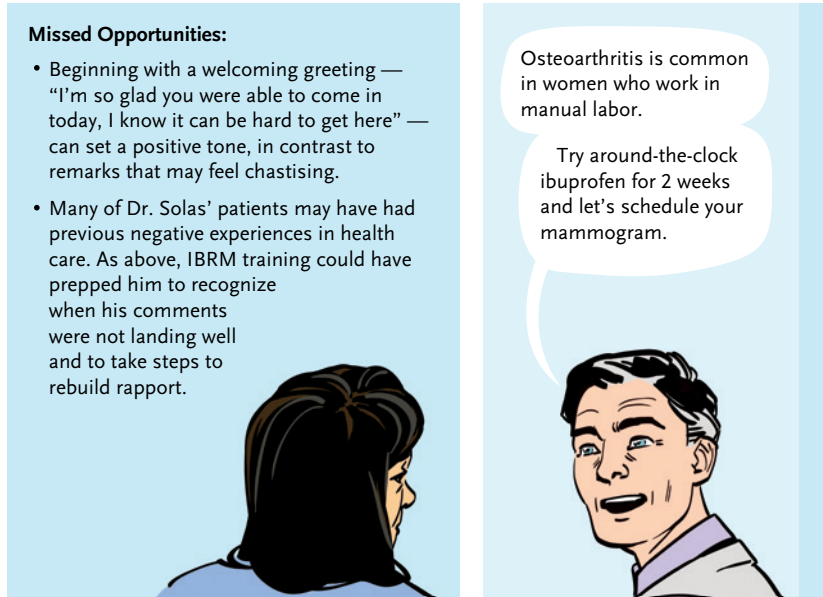


You were a no-show last month... it's really important to prioritize your health. I understand that you're having hand pain?

Just what I need today — to be scolded — like the last time I was here. Doctors are always making assumptions about people who look like me...

**Missed Opportunities:**

- Confirmatory, closed-ended questions can limit history taking. Dr. Solas could start with open-ended questions — “Can you tell me all about your symptoms?” — which support patients in sharing more of their story.
- Although time-pressured physicians worry that asking open-ended questions will take too much time, the benefits of eliciting a full history at the outset of a patient's diagnostic journey are worth the initial investment in time.



**Missed Opportunities:**

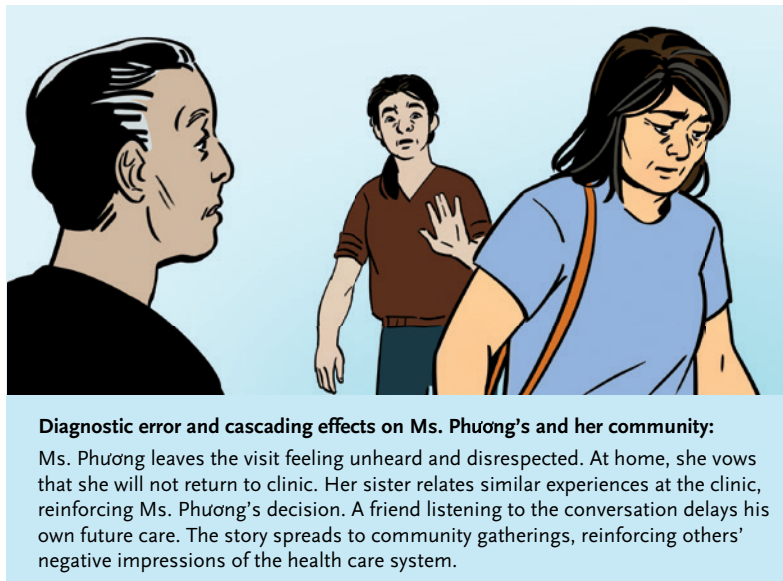
- Beginning with a welcoming greeting — “I'm so glad you were able to come in today, I know it can be hard to get here” — can set a positive tone, in contrast to remarks that may feel chastising.
- Many of Dr. Solas' patients may have had previous negative experiences in health care. As above, IBRM training could have prepped him to recognize when his comments were not landing well and to take steps to rebuild rapport.

Osteoarthritis is common in women who work in manual labor.

Try around-the-clock ibuprofen for 2 weeks and let's schedule your mammogram.

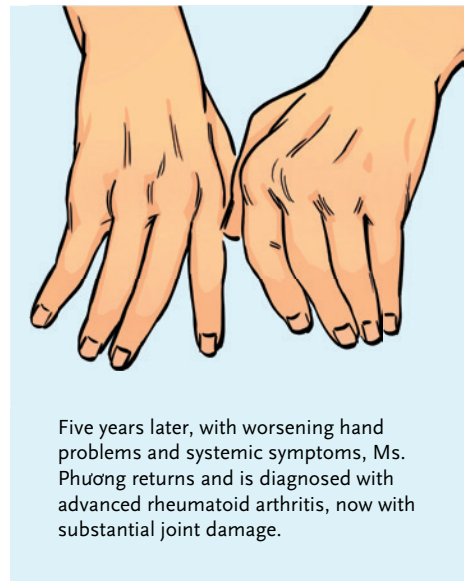
**Missed Opportunities:**

- Probably influenced by time pressure and implicit bias, Dr. Solas made incorrect assumptions that led to the wrong diagnosis — Ms. Phương works as an office administrator, not in manual labor, and has already tried ibuprofen without relief.
- Dr. Solas' assumptions have hurt his chances to build a trusting relationship with Ms. Phương. Although skipping a full history may have saved time initially, the cascading effects of the diagnostic error will quickly outweigh the minutes saved.
- The social history supports individuation — understanding patients as unique individuals counteracts stereotyping — and can also enhance “in-group” identification as shared experiences are uncovered, which builds empathy and supports effective health care communication.



**Diagnostic error and cascading effects on Ms. Phương's and her community:**

Ms. Phương leaves the visit feeling unheard and disrespected. At home, she vows that she will not return to clinic. Her sister relates similar experiences at the clinic, reinforcing Ms. Phương's decision. A friend listening to the conversation delays his own future care. The story spreads to community gatherings, reinforcing others' negative impressions of the health care system.



Five years later, with worsening hand problems and systemic symptoms, Ms. Phương returns and is diagnosed with advanced rheumatoid arthritis, now with substantial joint damage.



help learners build skills to minimize the effects of implicit bias and patients' previous negative health care experiences and to collaborate with interprofessional teams and community-based organizations to address the upstream social, systemic, and structural factors that contribute to diagnostic inequities.

#### CENTERING EQUITY: A NEW MODEL FOR DIAGNOSTIC EDUCATION

Evidence-based strategies to advance diagnostic equity are under development. Given the high stakes for patients, educators can harness the robust literature on diagnostic reasoning, health equity, implicit bias, structural competency, and health care communication to advance education now. Guided by these interconnected domains, we describe starting points for clinician-educators and educational programs to equip learners to advance diagnostic equity in collaboration with patients, their families, communities, and interprofessional team members. Below, we outline a path forward with examples of applications of each concept. Because a considerable portion of clinical learning is contextual and nonformal<sup>40</sup> — taking place when supervisors model clinical care — practical starting points for clinician-educators and educational programs (see Tables S1 and S2 in the Supplementary Appendix) are relevant for both improving patient care and enhancing education.

#### TRANSPARENCY: NAMING THE PROBLEM

Transparency — explicitly calling out oppression — combined with candor about the past and the current stage of change are critical to authentic antioppression efforts in medical education.<sup>41</sup> Specifically, educators must name and teach about the growing evidence base describing populations in which there is a disproportionate burden of diagnostic errors and the conditions under which these errors are often found.<sup>8-11,42</sup> Supported by educational programs that create space for this instruction and integrate foundational knowledge about diagnostic inequities into curricular objectives, clinician-educators can elucidate diagnostic inequities (e.g., Black persons are more likely than White persons to have a missed myocardial infarction) and discuss strategies to eliminate them.

#### DIAGNOSIS AS A CONTEXTUAL, COLLABORATIVE PROCESS

Recent literature on reasoning offers a nuanced, expansive view of the diagnostic process and the path toward diagnostic excellence embodied by the National Academy of Medicine model of the diagnostic process.<sup>1</sup> The National Academy of Medicine model engages the full diagnostic team in the path from the patient's initial symptoms, to accessing care, to diagnosis and communication of that diagnosis, to treatment and outcomes.<sup>1</sup> Using principles of contextualization of care and social cognitive theories, scholars have emphasized that the domains outside the clinician's head are not noise, but rather are key to the success or failure of the diagnostic process.<sup>43</sup>

Contextualization of care is a core clinical skill used in diagnostic reasoning to identify and incorporate a patient's relevant life circumstances into the diagnostic approach.<sup>44,45</sup> Emphasis on the contextual and collaborative nature of diagnosis is key to countering simplistic understandings of the diagnostic process as solely the purview of the individual physician's cognition. Making patients — rather than clinicians — the center of the diagnostic process, uplifting the role of interprofessional teams, and recognizing the effect of the environment in either supporting or impairing diagnostic excellence are foundational to diagnostic-equity education.<sup>1</sup>

Interpersonal factors also influence the patient-clinician encounter and therefore affect diagnosis.<sup>46,47</sup> Bringing equity considerations to diagnoses requires recognition that both patients and clinicians enter encounters with unique lived experiences that influence their perceptions of and approach to clinical interactions. Implicit biases may shape clinical encounters, and patients may perceive bias within clinical encounters on the basis of context cues in the environment.<sup>48</sup> Previous experiences with bias and discrimination in both health care and society can influence these perceptions.<sup>48</sup> Approaches to help learners build skills in mitigating the effect of implicit bias on clinical encounters are described below.

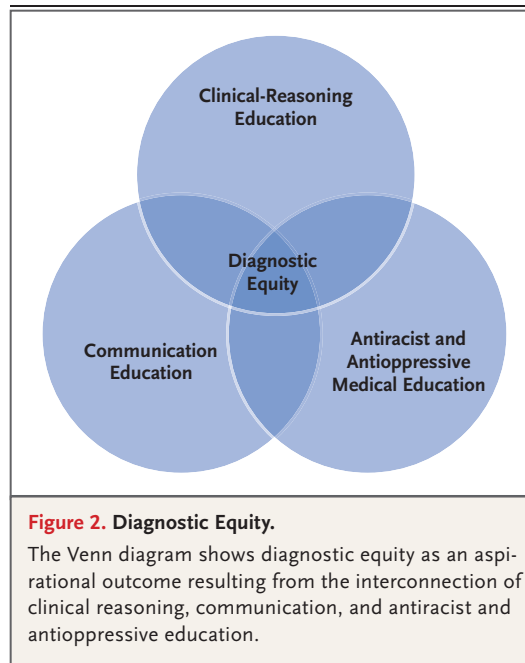
Advancing diagnostic equity requires medical education to integrate structural competency into reasoning education, recognizing health and illness as downstream consequences of policies, exposures, and systems (i.e., upstream factors) that affect individual persons and communities.<sup>49</sup>

Structural competency asks clinician–educators to broaden their view beyond individual behaviors that affect health (e.g., exercise) to recognize and address larger forces — beyond a single person’s locus of control — that shape and constrain behavior and influence health (e.g., access to safe green space for exercise). To optimally support health, both the barriers and the assets at the individual and community levels must be considered. Integrating structural competency into the diagnostic process encourages learners to consider the larger societal forces — the social and structural determinants of health (also known as modifiers or drivers of health) — that influence success or failure of the diagnostic process.

Many tools address social and structural modifiers of health.<sup>50–54</sup> For example, the Structural Vulnerability Assessment Tool provides a starting point for institutions to use when developing their own screening questions and follow-up inquiries.<sup>50</sup> To effectively implement these tools and avoid unintended harms, institutions must take the following steps: tailor questions in a culturally informed manner to align with the specific context, invest in linked clinician trainings and medical education curricula to ensure that topics are introduced in a trauma-informed way that recognizes their emotional weight, and ensure that adequate options for institutional and community-based referrals are available when clinicians identify areas in which patients need support.<sup>23</sup> Given the relevant expertise of social workers, nurses, and other colleagues, interprofessional teamwork is critical to effectively attend to social and structural factors in the diagnostic process. Clinician–educators can model collaboration with interprofessional colleagues in diagnosis and emphasize the systems issues that affect the success of the process by asking their learners, “How might we partner with our social work team to support Mr. Z’s diagnostic journey?”

#### THE DIAGNOSTIC-REASONING COGNITIVE FRAMEWORK: INCORPORATING EQUITY

Although this widened view of diagnosis enables us to recognize domains outside the individual clinician’s thinking that affect the diagnostic process, the clinician’s cognition remains important. Core components of this cognitive process



include problem representations, illness scripts, and diagnostic frameworks.<sup>55</sup> A problem representation is a concise, mental abstraction of a patient’s health issues. For example, to formulate a problem representation in the case of a previously healthy middle-aged man with recent day-care exposure, an acute productive cough, myalgias, and fever, the clinician would talk with the patient to understand the symptoms, the time course and tempo of the illness, and the patient’s relevant risk factors and other exposures. The clinician would then mentally search for a match between the patient’s problem representation and a diagnosis, comparing the patient’s problem with potential illness scripts — the mental index cards that summarize key information about diagnoses (e.g., the patient’s problem representation might match the clinician’s influenza script). If a close fit between a problem representation and an illness script cannot be identified, the clinician slows down and activates a diagnostic framework — approaching the diagnosis systematically by considering common diagnostic categories (e.g., reflecting on whether a patient’s acute kidney injury is prerenal, intrinsic, or postrenal) and generating a prioritized list of diagnostic hypotheses according to the degree of fit between each illness script and the problem representation, resulting

in a differential diagnosis. Experienced clinicians often conduct this process rapidly and subconsciously.

An equity-focused, antioppressive diagnostic stance can strengthen these cognitive processes. To reduce the influence of false associations between biology and a patient's race and ethnic group and to mitigate the effect of bias on shaping diagnostic reasoning, race and ethnic group should not be included in initial descriptions of the patient or the patient's problem representation.<sup>56</sup> Instead, the patient's self-identified social identities and their context should be noted in the social history. Clinician-educators should point out to learners when illness scripts themselves encode biased, inaccurate information that may precipitate diagnostic errors (i.e., false linkages between race and illness can contribute to premature closure and inadequate diagnostic evaluation). To integrate structural competency into diagnosis, environmental and structural factors should be incorporated into illness scripts as strong risk factors for particular diseases (e.g., living in a previously redlined area [i.e., an area where services such as mortgages, insurance, and other financial services have been historically denied to residents on the basis of the neighborhood's racial or ethnic composition] is a risk factor for heat-related illness, given the typical lack of green space in those areas). Educational programs can incorporate community-based organizations into diagnostic-reasoning curricula to teach about community resources and assets that can support persons who are undergoing diagnostic evaluation.

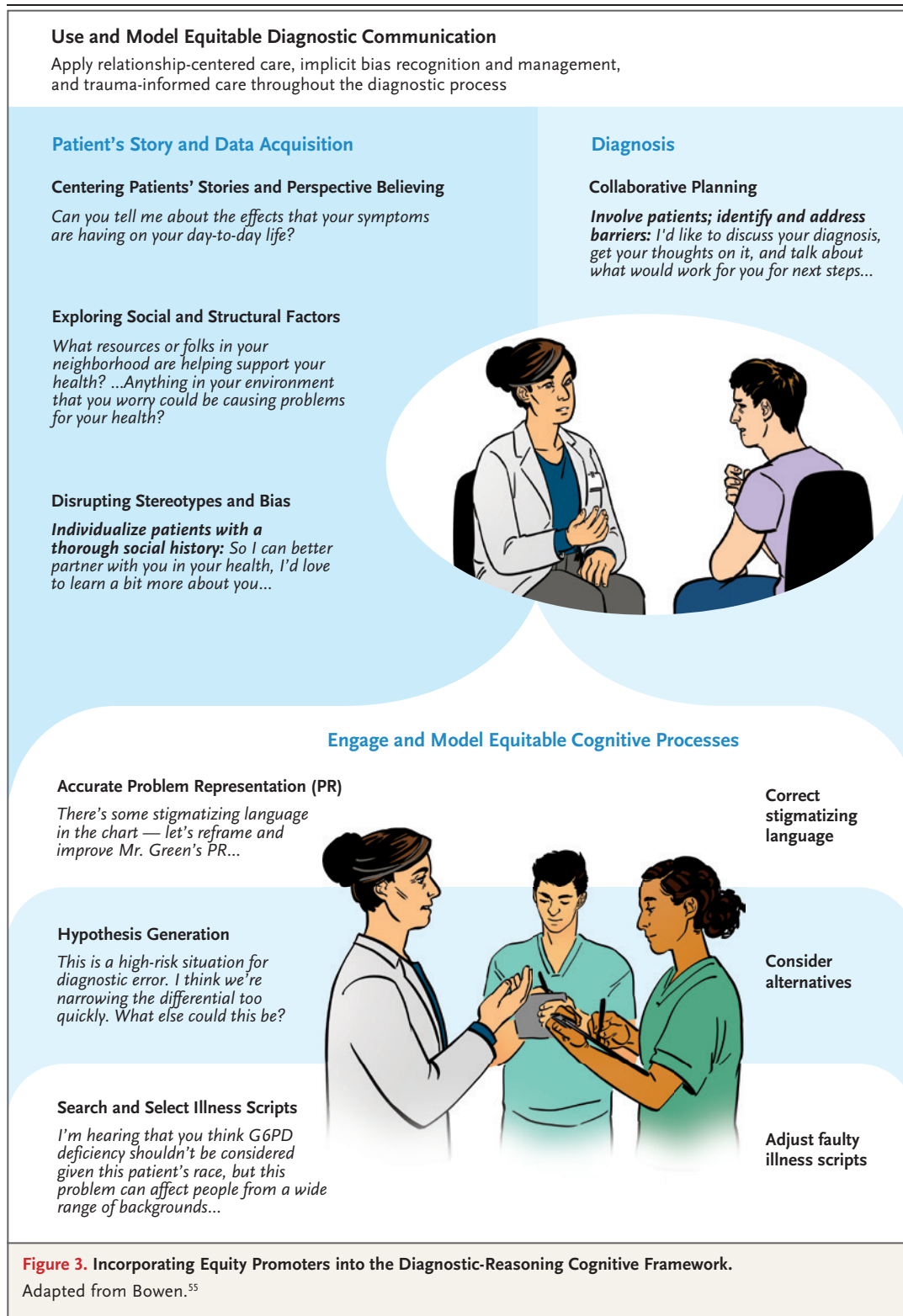
Strategies that empower clinicians to slow down and recognize when incomplete, biased, or inaccurate scripts are affecting diagnostic evaluation are under investigation. As a starting point, avoiding stigmatizing language about patients (e.g., in the medical record and clinical communication) and individualizing each patient (e.g., by means of thorough social history taking) can help reduce the risks of stereotyping.<sup>12,17</sup> Understanding patients' challenges and assets is an important part of diagnostic partnership — considering patients' goals and individual and community-based resources supports collaborative planning for diagnostic evaluations. Empathic, collaborative communication can foster person-

centered solutions anchored to the needs and values of each patient. Figure 3 shows how these equity promoters can be incorporated into the diagnostic-reasoning framework.

#### **BUILDING SKILLS FOR DIAGNOSTIC COMMUNICATION**

The history of an illness is key to diagnosis, with 70 to 80% of a diagnosis shaped by the patient's history.<sup>57-59</sup> Developing a shared understanding of a patient's illness experience is fundamental to diagnostic accuracy. Eliciting patients' full stories safeguards against jumping to conclusions informed by biased assumptions and allows clinicians to develop, in partnership with patients, thorough problem representations that support accurate diagnoses. Successful diagnosis requires effective communication about the most likely diagnosis and shared decision making about the diagnostic plan.<sup>60</sup> In short, effective communication is core to diagnostic excellence. Development of communication skills is therefore critical to diagnostic education. Although research into diagnostic communication is ongoing, ample evidence exists connecting communication to patient experience and outcomes.<sup>61,62</sup> Medical schools can integrate equity considerations into the time already dedicated to teaching foundational communication skills.<sup>63</sup> For example, to facilitate effective communication skills, educational programs should integrate simulated patients representing a diverse spectrum of identities into training scenarios.

Relationship-centered care is a starting point for equitable diagnostic communication, providing a framework for clinicians to recognize the expertise that patients bring to clinical encounters, get to know patients as individual persons (disrupting stereotyping), encourage patient input, and acknowledge the importance of addressing emotion in clinical conversations.<sup>16,64</sup> Relationship-centered care can be complemented by implicit-bias recognition and management to support equitable communication. Implicit bias recognition and management is an evidence-based, patient-informed, behavioral framework<sup>48</sup> that progresses beyond previous approaches, which aimed to reduce bias by increasing awareness and proved ineffective in creating lasting behavior change. When a patient perceives bias, training in implicit-





bias recognition and management equips physicians with skills to restore rapport — recognizing unintended effects of implicit bias, apologizing, partnering with the patient, and believing the patient's perspective.<sup>14,65,66</sup> The concept of perspective-believing acknowledges that lived experiences vary and therefore perspectives will vary, too, and facilitates respect and trustworthiness, especially with patients who encounter bias and discrimination.<sup>14,48</sup> Overlaying this skill set onto diagnostic encounters means building in opportunities for reflection during the visit, affording clinicians the opportunity to ask themselves whether they have noted changes in a patient's engagement (e.g., verbal or nonverbal cues) that may signal the effect of implicit bias on the interaction. Once the effect of implicit bias is noted, checking in with the patient, acknowledging their perspective, and offering an apology when needed can restore rapport and support continued clinician–patient partnership.<sup>14</sup> Training in implicit-bias recognition and management offers skills-based practice for these steps until they become second nature<sup>14</sup>; educators can begin by using existing teaching resources regarding implicit-bias recognition and management.<sup>67</sup>

Health-related stereotype threat involves awareness that stereotypes exist within health care about groups to which patients belong that can activate patients' concerns about inadvertently fulfilling those stereotypes.<sup>68–71</sup> Anxiety caused by these stereotypes may prompt some patients to actively work to avoid being stereotyped, potentially hindering diagnostic communication.<sup>72</sup> By learning to recognize and minimize the effect of health-related stereotype threat, clinician–educators can model strategies to empower patients and facilitate sharing of information and shared diagnostic decision making. Stereotype threat can be mitigated by creating identity safety<sup>73</sup> in clinical spaces by means of visible representation (e.g., waiting-room displays that include photos of persons representing many identities and signage emphasizing core values), recruiting a diverse clinical staff who are representative of the communities they serve, and ensuring opportunities for patients to affirm their own identities and health values by means of thoughtful intake forms and conversations with clinicians.<sup>69</sup> To advance skills in relationship-

centered communication, implicit-bias recognition and management, and mitigation of health-related stereotype threat, programs can provide training for clinician–educators and learners, with practice in simulated and real-world environments.

#### THE VALUE OF THE DIAGNOSTIC TEAM IN DIAGNOSTIC-EQUITY EDUCATION

Effectively partnering across interprofessional teams is another important strategy to optimize the diagnostic process.<sup>1</sup> Highly functioning interprofessional teams, particularly ones that include persons with a range of social identities and perspectives, can help to identify and address the effect of bias on diagnosis and support equity. Educators can adapt simulation-based educational approaches to interprofessional communication to support diagnosis.<sup>74</sup> By establishing psychological safety in teams and articulating their own uncertainties, clinician–educators can empower team members to productively question one another to promote diagnostic excellence.<sup>75</sup>

The diagnostic team also includes patients and their communities.<sup>1</sup> Communication strategies such as the ones described above center patients' voices within clinical encounters. At a systems level, research that involves and is led by members of the community fosters respectful, community-based approaches<sup>76</sup> that can be used to support diagnostic equity, with community members collaborating with health care systems to identify solutions that align with the community's needs and build upon its assets. Educational programs can recognize the value of patients, communities, and interprofessional colleagues as members of the diagnostic team by longitudinally integrating them and their expertise into diagnostic-reasoning education (e.g., as lecturers and panelists).

#### MOVING FORWARD: ACTION ACROSS MANY LEVELS

Antioppression scholarship, activism, and health-equity frameworks teach us that meaningful change requires action across multiple levels: intra- and interpersonal, systemic, and structural.<sup>77</sup> Although important and necessary, interventions at purely intra- and interpersonal levels are insufficient because they cannot address systemic and

structural drivers of health. The domains described above and in the Supplementary Appendix elaborate approaches across these levels.

At the intra- and interpersonal levels, a focus on equity in diagnostic education requires exposing learners to knowledge and skills to support their clinical practice. The components of our model — teaching about diagnostic inequities; discussing diagnosis as a contextual, collaborative process; infusing clinicians' cognitive processes with equity considerations; creating opportunities to learn and practice equitable diagnostic communication; and modeling strategies to empower the full diagnostic team — necessitate skilled educators who can bring health equity to their teaching and tools informed by a wide range of patient perspectives. Equipping educators for this teaching is an essential system-level intervention.

At higher-order systems and structural levels, diagnostic-equity education includes opportunities to learn about clinicians' roles in systems change and advocacy (institutional, governmental, and societal) to affect the upstream factors that contribute to diagnostic inequities (e.g., access to care and toxic environmental exposures).<sup>78</sup> Institutional support for structural-competency training and collaboration with community partners to develop strategies to advance diagnostic equity is critical. Because structural viewpoints highlight injustices affecting health, this emphasis can contribute to clinician and learner burnout if not paired with opportunities to explore solutions.<sup>79</sup> Therefore, diagnostic-equity education must expose learners to opportunities for advocacy and civic engagement.

In addition to the domains discussed here, the role of artificial intelligence (AI) in diagnosis and diagnostic education warrants future discussion. Educators will need to consider both the potential promise and peril of AI in the realm of diagnostic equity and how to engage learners in applying a critical lens to proposed uses of AI in diagnosis. For example, although AI could play a systems role in identifying diagnostic disparities, if it becomes part of the diagnostic team, proactive, intentional equity considerations will need to be integrated to avoid perpetuating diagnostic inequities.<sup>80</sup>

Diagnostic-equity education is best approached as a process of colearning as opposed to the tra-

ditional model of expert supervisors imparting knowledge to novice learners.<sup>81</sup> Teaching strategies that value the expertise of learners and supervisors can mirror the desired collaboration between patients and clinicians as partners in the diagnostic process.<sup>82</sup> Educators can share that they are continuing to learn and can encourage colearning by raising open-ended questions about diagnostic equity with the clinical team, modeling openness to input from all team members, and emphasizing the importance of recognizing and preventing diagnostic inequities. As with approaches that are needed to empower the full diagnostic team, successfully inviting colearning with students and trainees requires educators to support an atmosphere of psychological safety and to model a growth mindset in which mistakes are welcomed as opportunities for learning.<sup>75,83</sup>

## CONCLUSION

Intentional integration of health equity into medical education involves building local expertise, managing resistance to change, and countering the inertia of large academic institutions. Without being intentional and rigorous in this pursuit, we risk perpetuating the status quo while simultaneously criticizing the lack of progress in years to come. We have an opportunity to contribute to a sustainable movement for change in medical education, which can support multipronged, interprofessional efforts aligning education, clinical practice, advocacy, and research with the aim of achieving health equity. Education focused on diagnostic equity is an important piece of this puzzle.

Embodying antioppressive approaches as educators requires actively working against entrenched systems and maintaining openness to continue learning from colleagues, students, trainees, and those seeking health care to facilitate personal and institutional growth. Although the specific focus on diagnostic equity is young, the health-equity field is not. We have drawn on and integrated lessons from the expansive literature on diagnostic reasoning, health equity, implicit bias, structural competency, and health care communication to develop a foundation for effective education in diagnostic equity. As healers and educators, we have an opportunity and

responsibility to keep pushing forward to enhance equity and justice in health care in collaboration with the communities we serve. Diagnostic equity is a critical domain in need of focused attention and ripe for action by means of medical education.

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