

Issue Brief 10

Reinforcing the Value and Roles of Nurses in Diagnostic Safety: Pragmatic Recommendations for Nurse Leaders and Educators



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Reinforcing the Value and Roles of Nurses in Diagnostic Safety: Pragmatic Recommendations for Nurse Leaders and Educators

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Introduction

Diagnostic errors are common and costly, and they pose risk for serious patient harm.¹⁻³ In its landmark report *Improving Diagnosis in Healthcare*, the Institute of Medicine describes the need for a core diagnostic team composed of patients and families, physicians, nurses, and other healthcare professionals.¹ This approach calls for collaborative communication and teamwork among all members of the diverse diagnostic team and requires evolution of traditional roles, responsibilities, and competencies.

Diagnostic safety experts have made many recommendations to introduce and integrate team-based competencies in nursing and other allied health professional prelicensure education programs.⁴⁻⁸ However, nurses may have varying degrees of understanding regarding their roles in the diagnostic process, as we do not know the extent to which schools and colleges have incorporated these competencies and diagnostic safety content within their curriculums.

In addition, nurses who were formally educated before these recommendations were introduced may not know their value and roles as members of the diagnostic team. Therefore, codified approaches to heighten diagnostic safety awareness and structured support from nurse educators and leaders are critical to leveraging nurses' roles as essential participants in the diagnostic process.

This issue brief describes pragmatic approaches for nurse educators and leaders to convey the urgent need to improve diagnosis among their nurses and care teams and to guide nurses to embrace their leadership roles in the diagnostic process. Informed by the literature and professional experience, we offer action-oriented steps and learning strategies, including patient cases that facilitate discussion and promote problem solving, to recognize and encourage nurses as important contributors to reducing diagnostic errors and improving diagnostic safety.

Nurses' Roles in the Diagnostic Process

Traditionally, diagnosis has been viewed as a physician responsibility separate from what nurses can do per their scope of practice; however, nurses have always made contributions to the diagnostic process.^{9,10} In 2017, Gleason and colleagues presented a conceptual model that was developed to formalize nurses' engagement in the diagnostic process.¹⁰ Their conceptual framework included three interconnected spheres of role functioning: diagnostic triage, interprofessional teamwork, and patient empowerment.

Because nurses spend most of their time providing direct patient care, they have the greatest bedside presence of any healthcare team member and may discover or learn of information that is integral to making an accurate and timely diagnosis.¹¹ Nurses and other care team members also provide essential monitoring and surveillance of patients' conditions that may help clinicians confirm their working diagnoses or consider alternative diagnoses.

A recently convened expert panel further stressed the value of a team-based approach to reducing diagnostic errors, identifying the development of strategies to strengthen teamwork and engage patients as its top research priorities.¹² Nurses are key members of this team-based approach and well positioned to help reduce diagnostic errors and achieve diagnostic excellence.

Recognizing and Supporting Nurses in Diagnostic Safety

The recognition of nurses for their roles in diagnosis is critical to achieving diagnostic safety improvements and advancements. Contemporary recommendations from the diagnostic safety literature⁶⁻¹⁶ highlight actions nurse leaders and educators can take to improve diagnostic safety within four general domains:

1. Cultivating diagnostic safety culture,
2. Improving surveillance and reducing operational barriers to nurse participation in the diagnostic process,
3. Enhancing nurse, patient, and healthcare teamwork and communication, and
4. Building on nursing educational curriculums and interprofessional education (IPE) initiatives to provide further education and training.

Domain 1: Cultivating Diagnostic Safety Culture

Nurse leaders and educators are key to creating a common purpose and commitment to diagnostic improvement within their nursing and care teams.^{10,17} To create this commitment, all members of the interprofessional team must first identify and adopt a common language and conceptual model of the diagnostic process.⁹ Physicians and other providers may be unaccustomed to including nurses in existing discussions and reviews about diagnosis. Therefore, healthcare leaders should evaluate and ensure that the diagnostic process is consistently presented as a team effort in all employee onboarding, orientation, continuing education, programs, and conferences.

Leaders can evaluate and revise everyday language and terminology to better recognize and reflect nurses' contributions to diagnosis in their current roles and responsibilities. For example, in settings such as primary care or the emergency department, replacing the term "triage" with "diagnostic triage" is one way to acknowledge how nurses who function in these roles contribute to the accuracy and timeliness of diagnosis.¹⁰ Similarly, referring to "point-of-care testing" as "diagnostic point-of-care testing" acknowledges how nurses' responsibilities extend beyond simply performing and initiating this type of task but also are key to diagnosing and monitoring disease.

Nurse leaders can also encourage and support nurses' participation in patient safety event reviews, diagnostic discussions with the medical or healthcare team, and existing diagnostic societies and groups (e.g., Society to Improve Diagnosis in Medicine [SIDM]). Engaging nurses in diagnosis also helps create a culture of diagnostic safety within the extended care team.

Nurses often serve as leaders of care teams composed of certified nursing assistants, medical assistants, environmental services workers, and other staff. Thus, they are well positioned to acknowledge and elevate the contributions and roles of other team members. For example, a nursing assistant who notices and immediately informs a nurse of a patient's low urine output can be recognized for their "good catch" and timely contributions to a new diagnosis of renal failure. Healthcare leaders are well positioned to cultivate diagnostic safety culture by proactively recognizing and celebrating the contributions that team members make to diagnosis in daily huddles, interdisciplinary rounds, and other team, staff, or leadership meetings.

Action Steps To Consider:

1. Provide a visualization of the Institute of Medicine's diagnostic process conceptual model in the staff break room and discuss with nurses and care team members.
2. Listen for and endorse examples of team members' contributions to the diagnostic process in daily huddles or interdisciplinary rounds.
3. Evaluate and replace everyday terms used to describe nurses' roles to better acknowledge their contributions to diagnosis.
4. Identify a diagnostic safety nurse champion and encourage their and other nurses' participation with SIDM or other diagnostic societies and groups.

Domain 2: Improving Surveillance and Reducing Operational Barriers

System surveillance is the “purposeful and ongoing acquisition, interpretation, and synthesis of patient data for clinical decision-making”¹⁸ and an important nursing intervention in diagnostic safety. Surveillance depends on nurses being able to leverage technologies, access data from multiple sources, and effectively collaborate with physicians and other healthcare team members as needed.¹⁹⁻²² Leaders are key to improving diagnostic safety efforts by supporting nurses' use of the new technologies, processes, and clinical information systems that enhance surveillance.¹⁹ In addition, they can work to optimize organizational features known to affect nurse surveillance capacity, such as staffing and the nurse practice environment.²³

Leaders can strengthen nurses' roles in the diagnostic process by hardwiring workflows to protect existing time (or create additional opportunities) for nurses to meaningfully collaborate and share their observations with other team members, patients, and families.^{4,10,24} Other action steps leaders can take to improve surveillance include formalizing use of diagnostic checklists²⁵; encouraging nurses and other team members to report diagnostic errors; and sharing system resources that improve diagnosis (e.g., obtaining second opinions, using health informatics tools, reviewing diagnostic performance data).¹⁰

Action Steps To Consider:

1. Ensure that nurses are regularly invited to and actively participate in interdisciplinary rounds or conferences.
2. Develop a quick reference (e.g., one-page handout or checklist) that identifies and shares available system resources for nurses to use in improving diagnosis.
3. Encourage nurses to report any identified diagnostic errors through established safety reporting mechanisms and chain of command.
4. Evaluate nurses' current work environments and identify opportunities and barriers to improving nurse surveillance capacity.
5. Create regular (e.g., biweekly or monthly) opportunities for nurses and other team members to debrief on surveillance events (e.g., communication delays, rapid response calls, transitions between care providers or settings, or “near-misses”). Discuss the associated tasks and thought processes taking place during those events.

Domain 3: Enhancing Teamwork and Communication Between Nurses, Patients, and the Healthcare Team

Communication breakdowns are a leading cause of diagnostic errors.²⁶ Nurse leaders and educators can reinforce the importance of using communication tools, such as Situation-Background-Assessment-Recommendation (SBAR),²⁷⁻³⁰ to structure communication with physicians and other diagnostic team members and reduce adverse events. Nurse leaders and educators can work with nurses to evaluate current communication processes, identify communication standards for their workflow and setting, and promote nurses' commitment and adherence to communication best practices.

For example, leaders in ambulatory care settings can map out a typical patient's experience from check-in, checkout, and followup and identify barriers to information sharing between team members and opportunities to close communication gaps. Similarly, nurse educators can evaluate their team's awareness of and adherence to communication best practices and work to identify individual nurses or staff members that may require further training or support.

Action Steps To Consider:

1. Reinforce the use of communication tools (e.g., SBAR) to nurses and other care team members in their daily practice.
2. Establish 5 to 10 minutes in huddles or staff meetings for nurses to discuss their experiences and perspectives on teamwork and communication.
3. Map out a typical patient's experience throughout the clinic or unit and identify ways to close communication gaps and achieve communication best practices. For example, solicit nurses' feedback on the use and effectiveness of text-paging or messaging platforms; establish communication standards about how nurses share and receive feedback on patient concerns with the primary care provider; and identify workflow opportunities for nurses and other team members to review patient cases and receive second opinions.
4. Introduce the TeamSteps® for Diagnosis Improvement program or *Toolkit for Engaging Patients To Improve Diagnostic Safety*, if applicable, to healthcare providers, leaders, and staff members.

Nurse leaders and educators can also introduce any of the free, publicly available, and downloadable programs and training materials developed by the Agency for Healthcare Research and Quality (AHRQ) to improve diagnostic communication between patients and the healthcare team. The [TeamSteps® for Diagnosis Improvement program](#),³¹ for example, is an evidence-based program that can be taught in classroom settings or as individual self-paced learning modules. The program introduces diagnosis concepts and skills and can help raise diagnostic safety awareness among nurses and other healthcare members.

In addition, the [Toolkit for Engaging Patients To Improve Diagnostic Safety](#)³² was designed to prepare patients, families, and providers to work together as partners to improve diagnostic safety. This toolkit consists of two strategies: the Be the Expert on You Note Sheet,³³ which can be given to patients ahead of a clinic visit and helps prepare them to share their personal health story clearly and concisely; and 60 Seconds To Improve Diagnostic Safety, which includes training materials to support providers in deeply and reflectively listening to patients' stories, uninterrupted.

Domain 4: Building on Nursing Education Curriculums and Interprofessional Education To Provide Additional Diagnostic Safety Training

Many prelicensure and graduate degree programs have undertaken collaborative approaches through interprofessional education (IPE) to develop healthcare students as future interprofessional team members and better address patients' complex medical issues.³⁴⁻³⁶ With the release of the American Association of Colleges of Nursing 2021 *Essentials*, it is a requirement that essential core competencies in nursing curriculums include aspects of nurses contributing as team members to diagnoses and patient safety.³⁷

To identify knowledge gaps and improvement opportunities, nurse leaders and educators can choose among several tools and instruments to evaluate nurses' perceptions of teamwork (e.g., *TeamSTEPPS Teamwork Perceptions Questionnaire*³⁸; *TeamSTEPPS Team Assessment Tool for Improving Diagnosis*³⁹). Another option is to develop surveys to assess nurses' awareness and knowledge of diagnostic safety. Educators can also choose among several learning strategies to introduce or emphasize diagnostic safety to practicing nurses in their specific environments, thus building on the themes of teamwork and diagnosis in nursing curriculums and IPE (Table 1).

Table 1. Recommended Diagnostic Safety Learning Strategies for Practicing Nurses

Learning Strategy	Advantages	Disadvantages	Examples
Handouts/printed materials	Presents key concepts initially and can be useful for later reference materials	Limited interaction with learners; may not convey nuances of diagnostic safety; quantity of information may be overwhelming.	Provide graphic overview of diagnostic process; distribute education newsletters and fliers to nurses.
Lectures/ presentations	Good for primary explanation and clarifying diagnostic concepts	Teacher centered, not as learner centered.	Present diagnostic safety content in staff meetings, programs, and conferences.
Computer-assisted instruction (e-learning)	Good for initial instruction and future reference	Learners may experience computer or technical difficulties in accessing or completing material; inconclusive outcomes. ⁴⁰	Develop self-learning modules about diagnostic safety.
Test-based online learning	Helps identify gaps in knowledge and determine ongoing educational needs; provides actionable data	Questions may be difficult to create; learners may not enjoy the learning.	Several online platforms are available to help educators create this type of tool.
Small group teaching session	Increases student engagement, improves knowledge retention, and promotes peer discussion	Can be time consuming; team members may not all participate.	Present diagnostic safety case, facilitate discussion, and encourage a structured approach to problem-solving.
Simulation exercises	Useful in fostering teamwork and clinical reasoning; the closest to real-life experiences	Learners may feel put on the spot or uncomfortable; resource intensive.	Practice assessing deteriorating patient and communicating patient assessment findings to physician.

Action Steps To Consider:

1. Assess nurses' knowledge and perceptions of teamwork and diagnostic safety.
2. Use assessment results to identify opportunities for improvement.
3. Focus on key diagnostic safety concepts and interventions that are essential and feasible for nurses in your specific clinical setting.
4. Select and implement the most effective learning strategy for your target learners.

Using Patient Cases for Learning

Storytelling is a powerful form of communication and can serve as a catalyst for safety and healthcare change.^{41,42} Patient cases based on real-life experiences can be incorporated into any chosen learning strategy and can enhance student learning by imparting relevance, aiding connections between theory and practice, and improving clinical performance, attitudes, and teamwork.⁴³⁻⁴⁶

Patient cases that specifically illustrate the nurse's role in the diagnostic process can be used to introduce diagnostic concepts, facilitate conversation about nurses' roles in the diagnostic process, and identify barriers and opportunities for improving diagnostic safety. Table 2 presents suggested steps for presenting and debriefing patient cases to enhance nurses' learning about diagnostic safety.

Table 2. Suggested Steps To Use Patient Cases for Diagnostic Safety Learning

Getting Started	Presenting Case Studies	Debriefing and Next Steps
<ul style="list-style-type: none">• Identify key diagnostic safety concepts and interventions essential for nurses in a specific clinical setting.• Develop objectives for foundational learning sessions.• Recruit/engage nurse "early adopters" for initial training.• Schedule and hold training session.	<ul style="list-style-type: none">• Describe the diagnostic process and provide a conceptual model.• Present case studies or vignettes.• Allow learners to verbalize ideas and suppositions about the structure of the problem.	<ul style="list-style-type: none">• Allow participants time for inquiry and reflection.• Debrief to support self-reflection and behavior change without blaming.⁴⁷• Document and evaluate responses to key discussion questions (see Appendix A).• Summarize key takeaways.• List specific actions or next steps for diagnostic improvement.

Several sources can be used to identify cases that illustrate nurses' role in the diagnostic process, including:

- Vignettes, such as the examples presented at the end of this section or on the SIDM website⁴⁸ and AHRQ's Patient Safety Network,⁴⁹ can be used to elucidate nurses' everyday contributions to the diagnostic process.
- Individual institutions' data sources, such as patient safety event reporting, patient reports, and clinician reports, can be used to identify additional diagnostic case studies.
- The Measure Dx resource,⁵⁰ a guide developed by AHRQ and partners, provides guidance for organizations and healthcare team members to detect, analyze, and learn from diagnostic safety events in their day-to-day operations.

Any safety events or “good catches” identified from these data sources can be used as diagnostic safety case studies for educating nursing and interprofessional teams.

Nurse educators can use patient cases to facilitate discussion and promote problem solving about diagnostic safety issues. To foster reflective thinking and reinforce key learning concepts, educators can use debriefing with “good judgment,” acknowledging that their view may not be the only one and sharing their expertise only to promote learners’ self-reflection and facilitate group discussion.^{47,51}

Appendix A presents a list of questions designed to promote discussion and critical thinking about diagnostic safety. These questions are organized and aligned with the 12 key competencies for high-quality diagnosis that were reviewed and refined by an interprofessional consensus group convened by SIDM in 2019.⁵²

Patient Safety Vignettes

Vignette 1: Behavioral Changes in an Elderly Patient

A certified nurse assistant in an assisted living facility observes an elderly male patient becoming increasingly agitated and reports this assessment to the patient’s assigned nurse. The patient has a medical history significant for dementia and prostate cancer. The nurse obtains vital signs and performs a mental status exam, noting a change from the patient’s baseline. The nurse assesses the patient’s shift intake and output, noting that the patient has not voided in over 8 hours. She also performs a bladder scan to assess for urine retention. She contacts the physician, notifies her of the mental status change and decreased urine output, brings up the possibility that these changes may be due to a urinary tract infection, and clarifies the next steps and plan of care.

Vignette 2: A “Frequent Flier” in the Emergency Department

A patient presents to the emergency department with loss of consciousness. The admitting physician describes the patient in his notes as a “frequent flier who has presented to the emergency department today and several times throughout the year with alcohol intoxication.” In completing the patient’s admission data, the nurse learns from the patient’s wife that the patient has been unemployed and had been drinking to cope with his stress but has recently expressed “giving up on finding a job and not wanting to be here anymore.” The nurse asks the patient’s wife if she has ever asked her husband additional questions about suicide. She contacts the physician, notifies him of the suicidal ideation, and requests further evaluation and precautions for the patient when he awakens.

Vignette 3: Split Medical Care

A nurse is completing intake information for an older female patient complaining of lightheadedness with a past medical history of congestive heart failure, hypertension, hyperlipidemia, and gout in an urgent care clinic. The nurse learns that the patient splits her time visiting her two children and that her medical care is managed in two different states. The nurse contacts both children separately and asks for a list of the patient’s current medications, performs a medication reconciliation, and discovers that the patient is receiving several similar antihypertensive medications.

Conclusion

Nurses are essential contributors to the diagnostic process and are in prime positions to facilitate improvements in diagnostic safety. Nursing leaders and educators are critical to recognizing nurses for their diagnostic contributions and leading future efforts to reduce diagnostic error and provide safe, effective care to patients.

Although frameworks are being developed in formal nursing education programs to emphasize training in diagnostic safety and quality, nursing leaders and educators need practical tools and action steps to build diagnostic safety awareness and to explain nurses' roles within the diagnostic team. Nurses' awareness and knowledge of diagnostic safety can be rapidly enhanced by using existing diagnostic safety resources and integrating contemporary recommendations and efforts with available learning modalities in clinical settings. Patient cases obtained from the literature, online sources, and organizations' data sources can be included in any learning modality and can enhance learning, initiate discussion about diagnostic safety, and promote efforts toward achieving diagnostic safety excellence.

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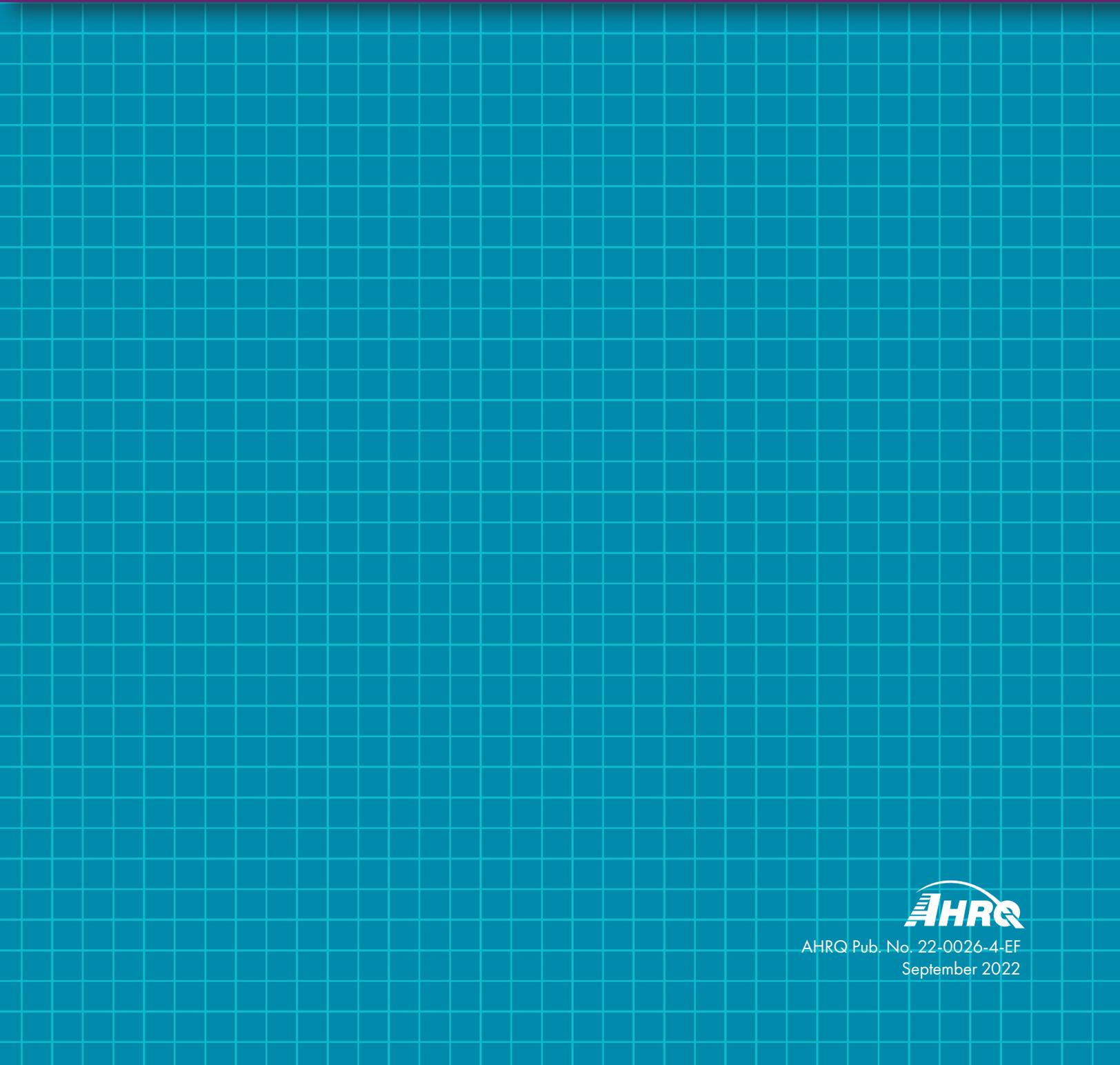
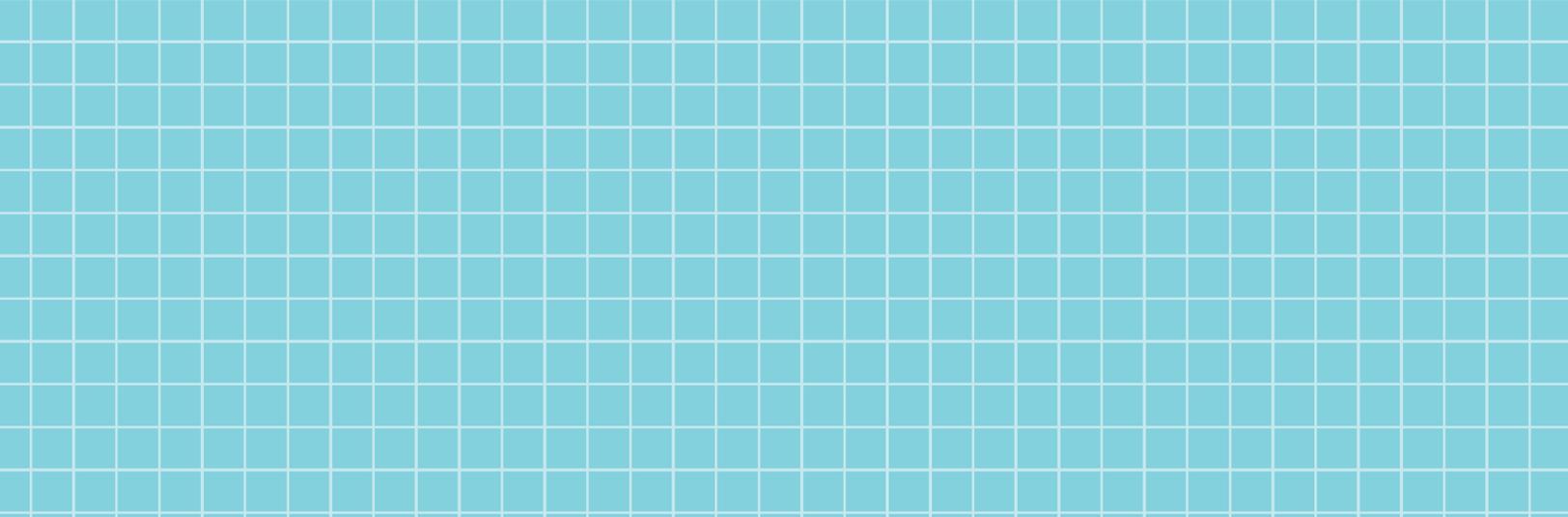
Appendix A. SIDM Competencies To Improve Diagnosis and Suggested Questions for Debriefing Case Studies

Competency	Suggested Questions
I. Individual Competency: Demonstrate clinical reasoning to arrive at a justifiable diagnosis (an explanation for a health-related condition)	
I-1. Accurately and efficiently collect key clinical findings needed to inform diagnostic hypotheses.	<ul style="list-style-type: none"> • What are the patient’s primary concerns and symptoms? • What do you think is going on with this patient? • Are your impressions consistent with those of the primary care provider/care team? If not, have you communicated your thoughts/questions to them? • What findings lead to the team’s potential diagnoses?
I-2. Formulate, or contribute to, an accurate problem representation expressed in a concise summary statement that includes essential epidemiological, clinical, and psychosocial information.	<ul style="list-style-type: none"> • How would you summarize the patient’s problem and your findings? • What tools do you have to help you organize your thoughts/findings (e.g., SBAR)? • How do your findings relate to other team members’?
I-3. Produce, or contribute to, a correctly prioritized, relevant differential diagnosis, including can’t-miss diagnoses.	<ul style="list-style-type: none"> • How confident are you about the diagnosis for this patient? • What else do you think could be going on with this patient? • Which current or new findings would need immediate attention and why?
I-4. Explain and justify the prioritization of the differential diagnosis by comparing and contrasting the patient’s findings and test results with accurate knowledge about prototypical or characteristic disease manifestations and atypical presentations, and considering pathophysiology, disease likelihood, and clinical experience.	<ul style="list-style-type: none"> • What are some more common health problems that can cause these findings? What are some more atypical health problems? • Have you identified findings or symptoms that do not fit the patient’s diagnosis? • What further tests or monitoring might be helpful to understand what is really going on with the patient? • What would you expect to see as the patient receives treatment for this diagnosis? Over what period of time?
I-5. Use decision support tools, including point-of-care resources, checklists, consultation, and second opinions to improve diagnostic accuracy and timeliness.	<ul style="list-style-type: none"> • What tools or resources were used to come up with this diagnosis? • What are some additional resources you and the team could use to ensure an accurate diagnosis? • What team members can you consult with to discuss your findings or concerns?
I-6. Use reflection, surveillance, and critical thinking to improve diagnostic performance and mitigate detrimental cognitive bias throughout the clinical encounter.	<ul style="list-style-type: none"> • Knowing what you know now, what additional questions would you ask to gather key information on this patient? What additional assessments would you perform? • How might you include the patient and family in the surveillance process? • What are some biases that might exist and affect decisions about this patient’s diagnosis?

Competency	Suggested Questions
<p>T. Team-Based Competency: Partner effectively as part of an interprofessional diagnostic team. Communicate effectively and solicit information from all members of the team (including the patient and family) to create a shared mental model of a patient's illness and the plan for diagnostic evaluation.</p>	
<p>T-1. Engage and collaborate with patients and families, in accordance with their values and preferences when making a plan for diagnostic evaluation.</p>	<ul style="list-style-type: none"> • How well do you think the primary care provider/physician listened to and understood the patient's concerns? • How would you assess the patient and family's knowledge of the diagnosis? • What additional education or followup needs do you think this patient and family might have regarding their diagnosis or treatment plan? • Whom do you need to collaborate with when making a plan for this patient? • What would you tell patients or ancillary members of the care team to get them more involved in a culture of safety?
<p>T-2. Collaborate with other healthcare professionals (including nurses, physicians, physician assistants, radiologists, laboratory professionals, pharmacists, social workers, physical therapists, medical librarians, and others) and communicate effectively throughout the diagnostic process. Acknowledge and challenge authority gradients, especially between clinicians and patients/families, constructively.</p>	<ul style="list-style-type: none"> • How would you communicate the patient's problem and your findings to the diagnostic team? • What tools could you use to help you communicate your findings? • What are some of the communication modalities you have available to communicate your findings? • Would you want to facilitate a second opinion or consult another nurse? Would you want to involve another provider or healthcare team member? If so, how would you message that to the team? • What would you tell new nurses afraid to voice their concerns?
<p>T-3. Apply effective strategies at transitions of care to facilitate accurate and sufficient information transfer about the diagnosis, including any pending workup and areas of uncertainty. Close the loop on test result communication and clarify expectations with the team for test result followup.</p>	<ul style="list-style-type: none"> • How would you tell the patient about their next steps? • What resources would you recommend to the patient to learn more about their diagnosis? • What communication tools or strategies can be used to ensure that the other team is receiving complete and accurate information when the patient transfers? • What tools do you have to ensure that patient followup and any pending results are not forgotten?

Competency	Suggested Questions
S. System-Related Competency: Identify and understand the systems factors that facilitate and contribute to timely, accurate diagnoses and error avoidance.	
S-1. Discuss how human factors contribute to diagnostic safety and error by identifying how the work environment influences human performance. Take steps to mitigate common systems factors that detract from diagnostic quality and safety.	<ul style="list-style-type: none"> • Why do you think this patient was (or could get) misdiagnosed? • Who is responsible for ensuring that the diagnosis, results, or next steps are communicated to the patient? • What systems are in place here to ensure that appropriate followup has occurred? • What are some reasons an error could occur related to your work environment? • Have you and your team been able to speak up if you have concerns related to this patient diagnosis or situation? If not, what are your next steps to ensure they are heard?
S-2. Advance a culture of diagnostic safety that encourages open dialogue and continuous learning from analysis and discussion of excellent diagnostic performance, near-misses, and errors.	<ul style="list-style-type: none"> • How could your organization share the near-misses, errors, and excellent diagnostic performance from a clinical situation with one another? • What is the value in debriefing a clinical scenario to the organization? • Who should attend a debriefing of a clinical situation?
S-3. Disclose diagnostic errors and missed opportunities transparently and in a timely manner to patients, families, team members, supervisors, and appropriate quality and risk management staff.	<ul style="list-style-type: none"> • What problems or gaps do we have at our institution to prevent diagnostic errors like this from occurring? • How and to whom would you report this error [or missed opportunity]? • How would you respond to a difficult colleague who disagrees with transparency and disclosure? • What resources do you have to help you if you are feeling fearful or uncomfortable with decisions being made by anyone on the care team?

Source: Society to Improve Diagnosis in Medicine. Competencies & Learning Objectives: Consensus Curriculum on Diagnosis. <https://www.improvediagnosis.org/consensuscurriculum-competencies/>. Accessed September 2, 2022.



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