



Recognizing Excellence in Diagnosis: National Pilot Survey Report

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About The Leapfrog Group

The Leapfrog Group is a nonprofit watchdog organization that serves as a voice for health care consumers and purchasers, using their collective influence to foster positive change in U.S. health care. Leapfrog is the nation's premier advocate of transparency in health care—collecting, analyzing and disseminating data to inform value-based purchasing and improve decision-making.

Through the annual Leapfrog Hospital Survey and Leapfrog Ambulatory Surgery Center (ASC) Survey, Leapfrog sets national standards for safety and quality and publicly reports hospital and ASC progress on meeting those standards. In addition, Leapfrog issues the biannual Leapfrog Hospital Safety Grades in which an "A," "B," "C," "D" or "F" is assigned to all general hospitals and represents their track record for keeping patients safe from accidents, errors and infections. Thousands of employers and other purchasers, along with coalitions of consumer advocates, use Leapfrog ratings to make good decisions. Employers and purchasers also use Leapfrog's ratings to structure health benefits to reward excellence.

Executive Summary

In the decades since its founding in 2000, Leapfrog has served as the nation's voice for patient safety and transparency, building on burgeoning fields of health services research and measurement science to drive improvement in country's health care. Over the past four years, Leapfrog noted growing research on diagnosis as a critical element of patient safety, and with funding from the Gordon and Betty Moore Foundation began working to develop standards and recognize excellence in protecting patients from harm due to diagnostic error. This is a report of a pilot survey assessing hospital progress in implementing practices known to address the problem.

In 2015, the National Academy of Medicine (NAM) issued a call to action to improve diagnosis, warning that virtually every American will suffer the consequences of a diagnostic error at least once in their lifetime and noting that 250,000 hospital inpatients will experience a diagnostic error every year. Inspired by the NAM report, Leapfrog and researchers at The Johns Hopkins University conducted research of our own and found that hospitals were aware of the problem of diagnostic errors but unsure where to start to solve it.

To address that challenge, Leapfrog led an intensive effort involving key stakeholders reviewing the research and distilling the most effective practices for hospitals to address the problem. With guidance from the Society to Improve Diagnosis in Medicine (SIDM), Johns Hopkins Medicine, and others, Leapfrog published a report summarizing the findings: *Recognizing Excellence in Diagnosis: Recommended Practices for Hospitals*. The report presented best-in-class, evidence-based, practical steps hospitals could immediately begin implementing to reduce the incidence and severity of diagnostic errors.

Immediately after publishing the *Recommended Practices* report, Leapfrog began recruiting hospitals to participate in a pilot survey to assess current progress in implementing these practices. Nearly 100 hospitals completed the pilot, reporting their progress in implementing each of the 29 recommended practices and offering feedback on the practices themselves.

This report tells us how far hospitals have come. We note several key findings:

- **The goals of the Recognizing Excellence in Diagnosis project resonated with hospitals:** Hospitals that participated in the pilot survey agreed that public reporting is a fundamental precursor to any meaningful change.
- **Hospitals are receptive to tackling the problem of diagnostic error and exploring opportunities for improvement:** For each of the 29 practices, 60% or more hospitals responded that they were either already implementing or preparing to implement the practice, and the average percent of hospitals responding "Not Under Consideration" for a practice was 15%.
- **Progress varies considerably and full implementation is lacking:** Most participants were open to the practices recommended by Leapfrog and were taking at least preliminary steps to implement them. However, attainment of full implementation was rare, and many practices were not being widely considered for adoption.
- **As this is a new area for hospitals, they will need specific guidance on what steps they need to take for improvement:** Hospitals requested a hierarchical classification of practices that would describe a sequence of implementation.

- **These findings are from a cohort of top performing hospitals volunteering for the pilot, and the results are not generalizable:** Hospitals included in our sample were generally high performing on other measures of quality of care collected by The Leapfrog Group. Though not generalizable, the findings offer important insights on the progress among hospitals most motivated to improve diagnosis and most successful at achieving excellence in other aspects of quality and safety.

Based on these results from the National Pilot Survey, Leapfrog will develop survey questions for the 2024 Leapfrog Hospital Survey that will assess hospitals' progress in implementing a limited number of recommended practices. The survey questions will reflect tangible actions hospitals should take to reduce diagnostic errors.

Background

Safe, high-quality hospital care begins with patients receiving the right diagnosis, communicated accurately and in a timely manner. In practice, this process too often fails. Communication breaks down, diagnoses are inaccurate or informed by incorrect information, and patients suffer. Experts estimate that nearly every American will be harmed by at least one diagnostic error in their lifetime. Over the past two decades, our knowledge of how to improve diagnosis in different health care settings has grown substantially, driven in large part by a deeper understanding of how diagnostic errors arise and the realization that many can be prevented.

This report is funded by the Gordon and Betty Moore Foundation as part of a larger initiative, Recognizing Excellence in Diagnosis. It is led by The Leapfrog Group in partnership with the Society to Improve Diagnosis in Medicine; Hardeep Singh, MD, MPH, a patient safety researcher at the Center for Innovations in Quality, Effectiveness and Safety based at the Michael E. DeBakey VA Medical Center and Baylor College of Medicine; Mark L. Graber, MD, FACP, founder and President Emeritus of SIDM; and Matthew Austin, PhD, associate professor at the Johns Hopkins Medicine Armstrong Institute for Patient Safety and Quality.

In 2022, Leapfrog published the *Recognizing Excellence in Diagnosis: Recommended Practices for Hospitals*, featuring 29 recommended practices and two promising practices that can substantially reduce harm to patients from diagnostic errors in hospitals, including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient. The recommended practices were identified based on a combination of literature reviews, references to authoritative reports such as guidance issued by the Agency for Healthcare Research and Quality, and interviews with subject matter experts. Leapfrog then convened a multistakeholder Advisory Group (composed of clinical experts, patients, performance measurement experts, and health care purchasers) to refine practice statements for clarity and specificity, and winnow down the number of practices based on a prioritization exercise.

The recommended practices are meant to be implemented in high-risk areas throughout the hospital where diagnostic errors are common, including the emergency department (ED); inpatient units (e.g., labor and delivery units, critical care units); and departments central to the diagnostic process such as radiology, laboratory medicine and pathology. Each practice reflects the latest evidence on what hospitals can and should do to improve diagnostic safety and quality, which has been guided and refined with input from a multistakeholder Advisory Group. The resources and strategies that accompany each practice serve as concrete examples for those working to implement the practice, but hospitals should not be limited to the specific examples in this report.

After publishing the report, 115 hospitals volunteered to participate in a national pilot survey to evaluate their progress in implementing the 29 recommended practices as well as gather structured and unstructured qualitative feedback on the practices themselves.

This report summarizes the findings of our pilot survey as we assessed a diverse national sample of hospitals on their progress toward implementing the 29 practices.

The Pilot Survey

Goals and Objectives

The goal of the pilot survey was to assess hospitals' understanding of, and progress in implementing, the 29 recommended practices identified by the Advisory Group and published in the *Recognizing Excellence in Diagnosis: Recommended Practices for Hospitals* report. To do so, Leapfrog designed a survey instrument that provided hospitals with pre-defined response options and allowed them to provide additional unstructured feedback on their knowledge and implementation of each practice along with responses to open-ended questions about the catalysts and barriers to practice implementation.

Survey Content

In the *Recommended Practices* report, the 29 recommended practices are divided into two domains representing two substantively different areas of hospitals' approaches to reducing errors in diagnosis: Leadership & Systems and the Diagnostic Process. Therefore, the survey was broken into 2 surveys to avoid biasing the results from respondent fatigue. Hospitals were randomly assigned to one survey administered via Qualtrics but permitted to change surveys upon request. Hospitals could elect to complete both surveys. Hospitals were asked to evaluate their progress in implementing the recommended practices using the following Implementation Scale:

1. **Not Under Consideration**: No one at our hospital has initiated any discussions about implementing this practice.
2. **Exploring and Preparing**: One or more individuals at our hospital have discussed the practice and started engaging additional staff and senior administrative leadership around implementation of some or all elements of this practice.
3. **Planning and Resourcing**: Our hospital has an implementation strategy, and the necessary resources (staff and budget) are in place to implement some or all elements of this practice in the next 12 months.
4. **Implementing and Operationalizing**: Our hospital has recently implemented some or all elements of this practice in one or more departments or units.
5. **Fully Implemented and Evaluating Impact**: Our hospital has fully implemented ALL elements of the practice in ALL applicable departments or units (e.g., both in the emergency department AND all applicable inpatient or outpatient units) or hospital-wide and is monitoring our progress and outcomes.

Participants were also asked to respond to five open-ended free text response questions to gather qualitative feedback on the pilot program from participants. The questions were:

1. From your perspective, which single practice will drive the greatest improvement in reducing errors in diagnosis (including delayed, wrong or missed diagnoses and diagnoses not communicated to the patient) at your hospital?
2. From your perspective, which single practice will have the least impact on reducing errors in diagnosis (including delayed, wrong or missed diagnoses and diagnoses not communicated to the patient) at your hospital?
3. What are the main barriers your hospital faces in implementing one or more of the recommended practices?
4. What would accelerate the implementation of one or more of the recommended practices?
5. Who was part of the team that completed the Pilot Survey (titles/roles, not individual names)?

Participants completed their respective survey(s) from November 1 through December 31, 2022. Leapfrog hosted a kickoff webinar and three one-hour “office hours” sessions to answer questions and clarify elements of the survey instrument. Following the close of the surveys, hospital characteristics and quality performance metrics of Domain 1 respondents and Domain 2 respondents were compared to each other and to all short-term acute care hospitals to understand the representativeness of the sample. Quantitative responses were analyzed to assess overall progress in implementation of each practice and between hospital types, and qualitative responses were analyzed to assess respondents’ interpretation of the practices. The full surveys are included in Appendices B and C.

Roundtables

As another method of collecting qualitative feedback from hospitals, Leapfrog hosted three Roundtables with participating hospitals. In addition to giving open-ended comments, participants were prompted to identify any key terms or definitions provided in the survey that were confusing, identify any of the recommended practices that were difficult to understand, discuss the implementation scale, and identify resources needed to expand adoption of recommended practices at a national level.

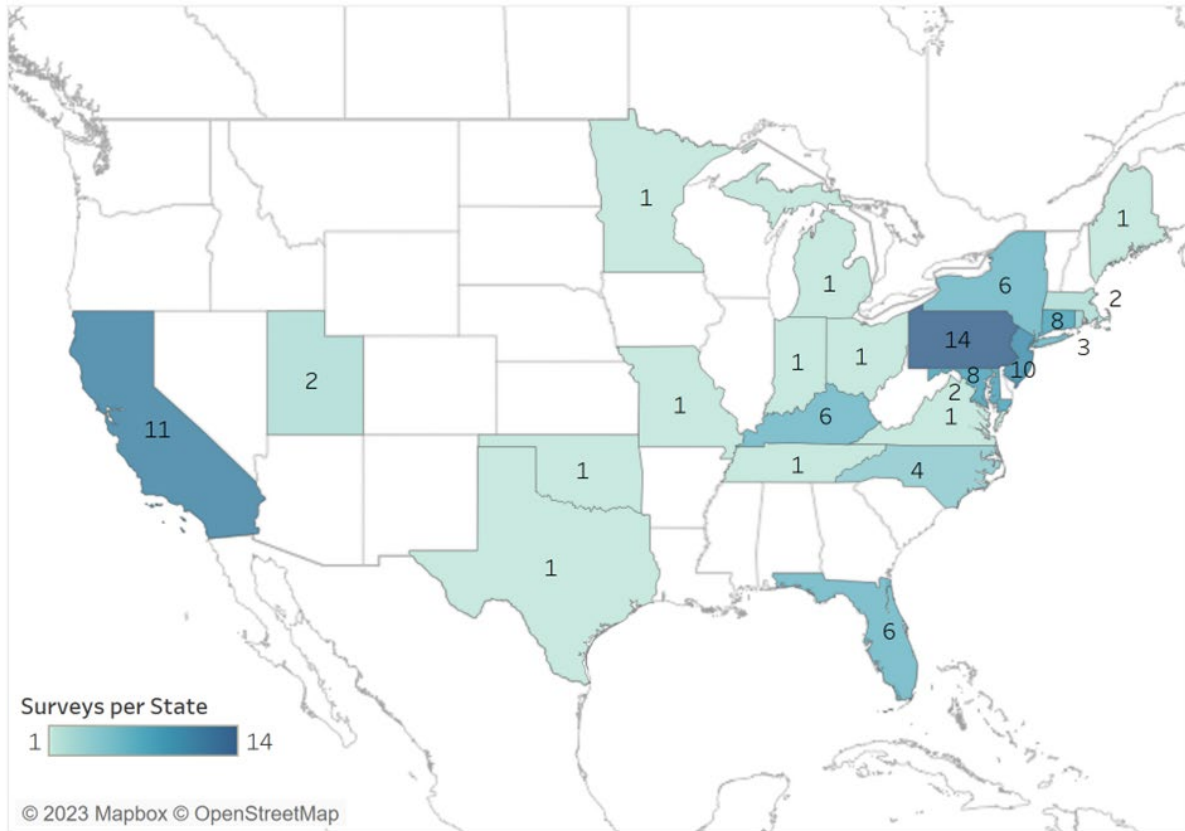
Participating Hospitals

Leapfrog invited all 2,300 hospitals that participate in the Leapfrog Hospital Survey, as well as subscribers to the Society to Improve Diagnosis in Medicine’s newsletter and members of the Advisory Group for the project. Initially, 115 hospitals volunteered for the pilot, and 95 ultimately submitted a pilot survey.

The 95 participating hospitals came from 23 states (see Figure 1), with 50 hospitals completing the Leadership Systems Survey, 42 hospitals completing the Diagnostic Process Survey, and 3 hospitals completing both Surveys. Participants included:

- 96% short-term acute care hospitals
- 4% pediatric hospitals
- 95% located in urban areas
- 66% teaching hospitals
- 20% safety-net hospitals

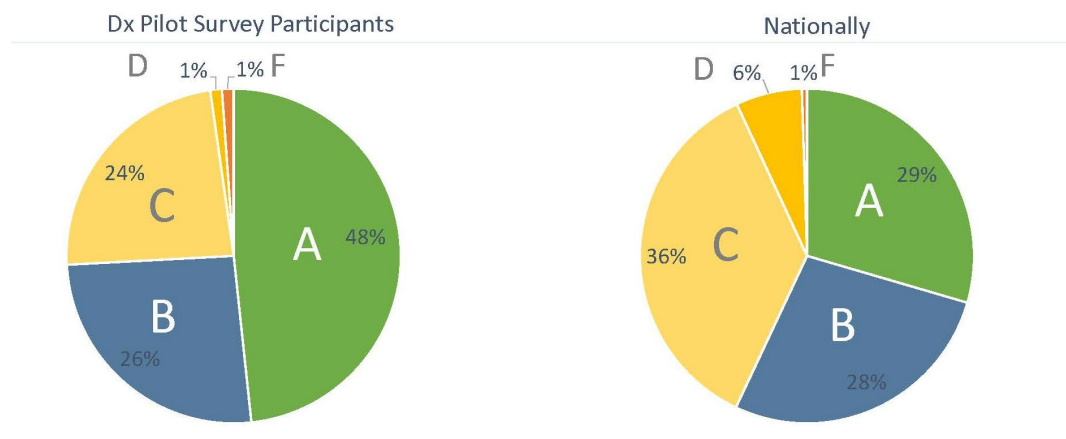
FIGURE 1. PILOT SURVEY PARTICIPATION ACROSS 23 STATES



From November 1 to December 31, 2022, 95 Hospitals completed either the Leadership Structures and Systems (Domain 1) Survey (16 practices) or The Diagnostic Process (Domain 2) Survey (13 practices) or both Surveys to evaluate their progress in implementing the recommended practices. Hospitals hailed from 23 states. A darker color indicates more submissions from the state.

Pilot participants generally scored higher on patient safety measures than typical U.S. hospitals, consistent with our expectation, as hospitals that volunteered the time and effort to participate tend to be exceptionally motivated around quality and safety. Accordingly, we found that participants were almost twice as likely to have earned an “A” in the fall 2022 Leapfrog Safety Grade than the national average of U.S. hospitals (see Figure 2).

FIGURE 2. COMPARING LEAPFROG HOSPITAL SAFETY GRADES AMONG SURVEY PARTICIPANTS AND NATIONALLY, FALL 2022



The breakdown above shows the percentage of “A,” “B,” “C,” “D” and “F” grades among Pilot Survey participants eligible for Safety Grades (n=89) and all hospitals that received a Safety grade (n=2,861) in fall 2022. Leapfrog assigns Hospital Safety Grades to nearly 3,000 short-term acute care hospitals twice per year.

Likewise, participants generally scored much higher on the process and structural measures used in the Hospital Safety Grade, relative to the national average in fall 2022. These measures are derived from the Leapfrog Hospital Survey and are considered key indicators of hospitals’ ability to prevent medical errors.

As shown below in Table 1, the average score among Pilot Survey participants for the Computerized Physician Ordering Entry (CPOE) and Bar Code Medication Administration (BCMA) measures was near 100, the highest possible score which corresponds to the hospitals having achieved rigorous Leapfrog Standards. Leapfrog’s CPOE Test evaluates the ability of each hospital’s CPOE system to alert prescribers to frequent serious medication errors known to cause harm to patients. The BCMA systems are electronic scanning systems that use a bar code on a patient’s ID bracelet and the medication package to help ensure the right patient gets the right medication at the right time.

The average score for the ICU Physician Staffing (IPS) measure among pilot Survey Participants was 94 points, 27 points higher than the average score for all hospitals (see Table 1). The IPS measure assesses whether the ICU is staffed with specialized intensivist physicians, and whether other evidence-based protocols are followed.

TABLE 1. AVERAGE PERFORMANCE ON THREE IMPORTANT LEAPFROG HOSPITAL SURVEY MEASURES

<u>100 possible points</u>	Pilot Survey Participants	National Average
Average Computerized Physician Order Entry Score	99.2	87.0
Average Bar Code Medication Administration Score	98.3	87.0
Average ICU Physician Staffing Score	93.9	66.8

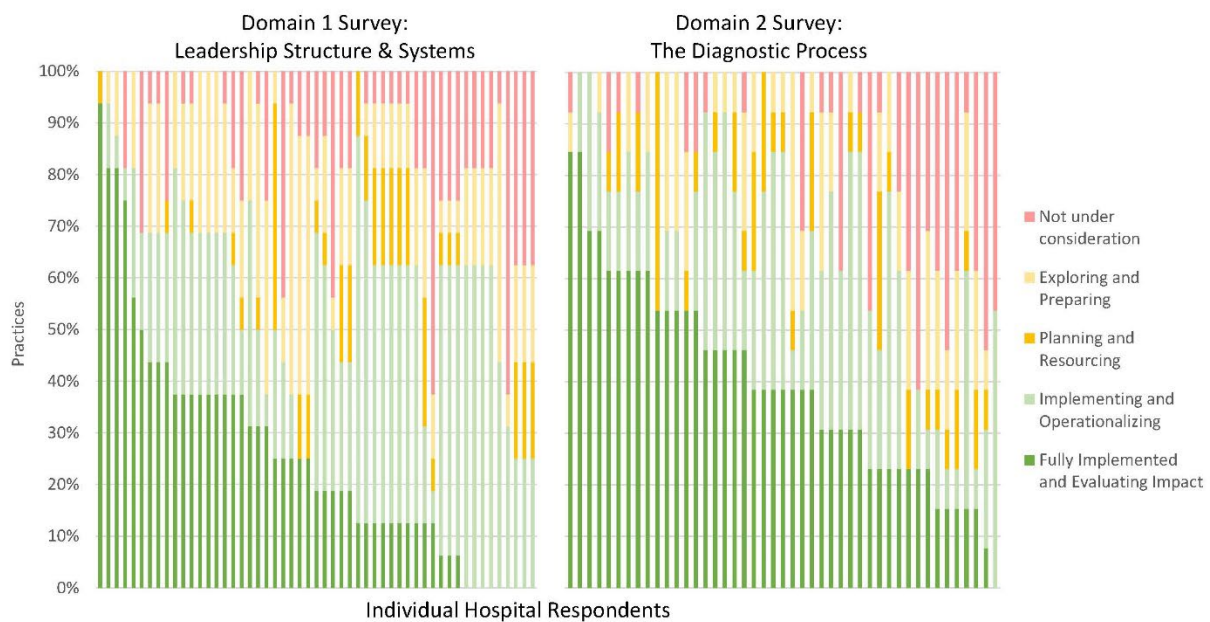
Hospitals achieving the Leapfrog Standard in Computerized Physician Ordering Entry (CPOE), Bar Code Medication Administration (BCMA), and ICU Physician Staffing receive 100 points in the Hospital Safety Grade. Effective use of these systems and procedures are associated with a reduction in medical errors.

Results

Hospital Progress on Diagnostic Error

Hospital responses varied widely, and full implementation of recommended practices was lacking, especially Domain 1: Leadership Systems. Within that domain, several hospitals indicated they had fully implemented up to 13 of the 16 practices (81%), while most hospitals had fully implemented less than 5 (31%). Generally, hospitals were further along in implementing Domain 2: The Diagnostic Process. The average hospital in Diagnostic Process Domain had fully implemented 5 of the 13 practices (38%). Nonetheless, a quarter of hospitals in that domain were not considering at least 4 of the 13 practices (see Figure 3).

FIGURE 3. PROGRESS OF INDIVIDUAL HOSPITAL RESPONDENTS IN IMPLEMENTING THE RECOMMENDED PRACTICES



Each bar represents a single hospital’s response to the entire survey.

To quantify the pilot survey’s categorical responses, points were assigned to the five possible response options on the Implementation Scale (which ranged from “Not Under Consideration” to “Fully Implemented and Evaluating Impact”). While the five distinct categories were found to be useful when looking at an individual hospital’s progress, consolidation into three categories allowed practices to be compared more easily. The three categories were then assigned points. Five (5) progress points were assigned if the hospital reported "Fully Implemented and Evaluating Impact" or "Implementing and Operationalizing." Two (2) progress points were assigned if the hospital reported "Planning and Resourcing" or "Exploring and Preparing." Zero (0) progress points were assigned if the hospital reported "Not Under Consideration." The choice to assign an additional point to hospitals that had implemented a practice assumed that the barriers in moving from a position of planning to implementing a practice were higher than moving from not considering to exploring a practice.

The average number of progress points for each practice are listed in Table 2.

TABLE 2. LEVEL OF PROGRESS NATIONALLY BY PRACTICE

Practice	Implementation Score (0 lowest to 5 highest)	
2.1C	Ensure medical interpreters are available	5
2.2A	Ensure access to radiology experts	4.9
1.2E	Openly communicate diagnostic errors to patients	4.8
1.3B	Make it easy for patients and family caregivers to report diagnostic errors and concerns	4.8
1.2D	Make it easy for hospital staff to report diagnostic errors and concerns	4.7
1.4B	Measure and monitor diagnostic safety outcomes	4.4
2.2F	Implement and monitor adherence to diagnostic guidelines	4.4
2.2D	Provide knowledge resources to clinicians	4.2
1.4C	Optimize the electronic health record to support accurate and timely diagnosis	4.1
1.3C	Encourage patients to use patient portals	4
2.3B	Communicate clear instructions to patients discharged with an uncertain diagnosis	4
1.3D	Empower patients and family caregivers to escalate care	3.9
1.5A	Dedicate time for analysis and learning	3.9
2.3C	Communicate clear instructions to patients discharged with pending test results	3.9
1.2B	Promote teamwork	3.6
2.1B	Correct inaccurate diagnosis and data in the EHR	3.5
2.2B	Jointly review diagnostic discrepancies	3.5
1.1C	Communicate progress of diagnostic safety programs	3.4
2.2C	Provide needed diagnostic expertise for patients admitted to the emergency department	3.4
2.3A	Manage diagnostic uncertainty at handoffs	3.3
2.3D	Implement “closed loop” communication	3.2
1.1A	Establish goals for patient engagement, communication, and teamwork	3.1
1.2C	Target training and education to nurses, pharmacists, and allied health professionals	2.7
2.1A	Train clinicians and others involved in the diagnostic process to collect accurate health information	2.7
1.1B	Convene a multidisciplinary team to promote diagnostic safety and quality	2.4
1.3A	Help patients and their family caregivers communicate complete and accurate information	2.4
2.2E	Train clinicians to recognize and minimize cognitive errors	2.3
1.2A	Demonstrate commitment to diagnostic excellence through CEO leadership	1.8
1.4A	Conduct a risk assessment	1.8

Five (5) progress points were assigned if the hospital reported "Fully Implemented and Evaluating Impact" or "Implementing and Operationalizing." Two (2) progress points were assigned if the hospital reported "Planning and Resourcing" or "Exploring and Preparing." Zero (0) progress points were assigned if the hospital reported "Not Under Consideration." Hospital Systems with duplicate submissions were removed, and the average progress points by practice was calculated.

Key Gaps in Implementation

Greatest Gap in Progress: Senior Leadership Engagement

The practices with the lowest level of progress toward implementation are concerned with senior leader accountability. Examples include the following:

- establish goals for patient engagement, communication, and teamwork
- convene a multidisciplinary team to promote diagnostic safety and quality
- demonstrate commitment to diagnostic excellence through CEO leadership
- establish goals for patient engagement, communication, and teamwork

These findings suggest that strong support from senior leadership is the leading gap in implementation of practices to reduce diagnostic errors.

This finding is consistent with current commentary from the Agency for Healthcare Research and Quality (AHRQ) on the gap in leadership buy-in to efforts to reduce diagnostic errors:

“Despite the need, health care leaders have not been the target audience for much of the diagnostic safety improvement work to date, despite their central role in past safety and quality improvement successes. Therefore, the gap in leadership recognition, prioritization, and investment to address diagnostic safety is not surprising. Best in class diagnostic performance requires both clinical and administrative leadership, but clear guidance for leaders on this topic has been elusive.”ⁱ

Gap in Engagement of Patients and Families

Fewer than one third of respondents indicated that senior administrative leaders had set a goal to partner with the hospital’s Patient and Family Caregiver Advisory Council (PFAC), and just five hospitals indicated having set a goal to involve a PFAC member in a hospital-wide committee working to reduce errors in diagnosis. In addition, in Practice 1.2A, just one hospital reported sponsoring an all-staff event in partnership with the hospital’s PFAC to announce a new initiative to advance diagnostic excellence, and in Practice 1.3D: Encourage Patients to Use Patient Portals, hospitals were much less likely to report partnering with their PFAC to improve uptake of the patient portal. In qualitative feedback from the Roundtable sessions, Leapfrog learned that many hospitals suspended meetings for their PFACs during the COVID-19 pandemic and, in several cases, have not had the bandwidth to resume them.

Gap in Training and Education

Another key area where surveyed hospitals reported less progress was in practices related to training and education of staff, including Practice 2.2E: Train Clinicians to Recognize and Minimize Cognitive Errors (2.3 points); Practice 1.2C: Target Training and Education to Nurses, Pharmacists, and Allied Health Professionals (2.7 points); and Practice 2.1A: Train Clinicians and Others Involved in the Diagnostic Process to Collect Accurate Health Information (2.7 points). Two of these three practices were among the most commonly cited by hospitals as practices that would have the *least* impact on

reducing diagnostic errors; low implementation progress may be due to perceived low return on investment.

Gap in Assessing Risk

Finally, Practice 1.4A: Conduct a Risk Assessment was tied for least implementation among the 29 practices. One factor affecting the findings is that the only standardized tool specific to assessing risks related to diagnostic errors is the Safer Dx Checklist, a tool that was published in June 2022. Few hospitals would have had the opportunity to deploy the tool by the time the survey was administered in November 2022.

Promising Examples of Implementation Progress

Some practices showed strong progress toward widespread implementation, including Ensuring Medical Interpreters Are Available (5 points), Ensuring Radiology Experts Are Available (4.9 points), and Openly Communicating Diagnostic Errors to Patients (4.8 points). These are strong examples of surveyed hospitals being willing to invest in the resources and expertise to facilitate high-quality diagnostic care. However, as noted elsewhere, national performance on these indicators may be lagging the performance of this cohort of high-achieving hospitals. Moreover, in each of these practices, the uptake on resources and strategies suggests that even once a practice is fully implemented, there are additional opportunities for hospitals to assess the quality of these practices.

Participating hospitals also indicated significant progress in implementing practices related to bi-directional communication with patients regarding diagnostic errors, both in Openly Communicating Diagnostic Errors to Patients (4.8 points) and in Making It Easy for Patients and Families to Report Diagnostic Errors (4.8 points). These are promising advances in patient-centered care, and successes in this domain could translate to valuable building blocks for successive efforts: For example, communication with patients regarding diagnostic errors can help foster an open and transparent culture of safety that includes the diagnostic process, and patient- and family-reported diagnostic errors can serve as a valuable resource for hospitals looking for data on which to base their quality improvement efforts in diagnosis.

New Resources and Strategies Identified

In addition to identifying their progress in implementing each practice, participating hospitals that responded that they were at least “Exploring and Preparing” for implementation of a given practice were asked to select one or more of the practice-specific resources and strategies that they had used to implement the practice. These practice-specific resources and strategies were derived from the *Recommended Practices* report. Participants were also asked to write responses in free text to indicate resources and strategies they used but that were not listed as response options. In many cases, participants identified resources and strategies that were novel to *Recommended Practices* report but that were consistent with the intent of the recommended practice for which they were proposed as a viable implementation strategy.

For example, nearly half of participants responding to Practice 1.2C: Target Training and Education to Nurses, Pharmacists, and Allied Health Professionals had modified existing structures designed to enhance patient safety, such as courses on interdisciplinary communication or interprofessional patient rounds to encourage, to focus on reducing diagnostic errors (e.g., by focusing on the early identification of sepsis).

Likewise, most participants who have implemented Practice 1.2D: Make It Easy for Hospital Staff to Report Diagnostic Errors and Concerns and Practice 1.2E: Openly Communicate Diagnostic Errors to Patients leveraged existing patient safety focused structures to include reporting and disclosure around diagnostic errors. However, in both cases, just half of those are engaged in constructive processes to review the specific incidence and impact of diagnostic errors.

In the 2024 update of the *Recommended Practices* report, Leapfrog will incorporate these and other new resources and strategies to serve as a tool for hospitals looking for additional pathways to implementing practices.

General Commentary from Participating Hospitals

The pilot survey, Roundtable sessions, and other informal sessions invited participants to answer open-ended questions on implementation of the recommended practices to prevent diagnostic errors.

Key comments are summarized below.

From your perspective, which single practice will drive the greatest improvement in reducing errors in diagnosis (including delayed, wrong or missed diagnoses and diagnoses not communicated to the patient) at your hospital?

The following practices received the most indications of support, organized from the most supported to the least supported of those cited. Note that most practices (21 of 29 recommended practices) were not cited as driving the greatest improvement.

1. 2.2E: Train Clinicians to Recognize and Minimize Cognitive Errors
Note: Participants emphasized the aspect of the practice focused on adopting decision support tools
2. 2.3A: Manage Diagnostic Uncertainty at Handoffs
3. 2.3D: Implement “Closed-Loop” Communication
Note: Participants in the Roundtable sessions also strongly supported process and structures to facilitate “closing the loop”
4. 1.2B: Promote Teamwork
5. 1.1B: Convene A Multidisciplinary Team to Promote Diagnostic Safety and Quality
Note: Participants emphasized the aspect of the practice focused on conducting root cause analyses of cases of diagnostic errors
6. 1.4B: Measure and Monitor Diagnostic Safety Outcomes
7. 1.2D and 1.3B: Make It Easy for Hospital Staff to Report Diagnostic Errors and Concerns and Make It Easy for Patients and Family Caregivers to Report Diagnostic Errors and Concerns
8. 2.1B: Correct Inaccurate Diagnoses and Data in the Electronic Health Records (EHR)

Participants also highlighted a “Promising Practice” from the *Recommended Practices* report that was not formally surveyed: “Providing Feedback to Clinicians.”

From your perspective, which single practice will have the least impact on reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient) at your hospital?

The following practices were cited as the least impactful on reducing diagnoses, organized from the practice most often cited by participants as having the least impact on reducing errors in diagnosis

(number one in the list below, Train Clinicians to Recognize and Minimize Cognitive Errors), to the practice most rarely cited by participants as having the least impact (number 6 below, Manage Diagnostic Uncertainty at Handoffs). As above, note that most practices (23 of 29 recommended practices) were not cited as having the least impact.

1. 2.2E: Train Clinicians to Recognize and Minimize Cognitive Errors
 5. Note: Participants emphasized the aspect of the practice focused on cognitive bias training
2. 1.2A: Demonstrate Commitment to Diagnostic Excellence Through CEO Leadership
 5. Note: Participants in the Roundtable sessions indicated that commitment could be signaled by senior administrative leadership at the hospital in a number of ways that were not originally described in the practice, such as an investing time and resources into attaining high-visibility safety programs
3. 1.2C: Target Training and Education to Nurses, Pharmacists and Allied Health Professionals
4. 1.1C: Communicate Progress of Diagnostic Safety Programs
 5. Note: Participants in the Roundtable sessions indicated that additional real-world examples of successful implementation were needed for other hospitals to emulate this practice
5. 1.3D: Encourage Patients to Use Patient Portals
6. 2.3A: Manage Diagnostic Uncertainty at Handoffs

What are the main barriers your hospital faces in implementing one or more of the recommended practices?

Participants cited a variety of barriers, including the following:

- staffing, staff time and turnover
- electronic health records
- community resources
- pandemic
- budget
- finding physician champions
- culture change

During the Roundtables, participants reinforced the importance of the design and implementation of EHRs as a critical barrier to implementation of many of the practices.

What would accelerate the implementation of one or more of the recommended practices?

Respondents primarily cited public reporting, elevating diagnostic safety and quality as an organizational priority and fostering individual physician buy-in to hospital programs to reduce diagnostic errors as the key drivers that would accelerate the implementation of the identified recommended practices. Indeed, over a dozen respondents indicated that they had selected and empowered a local “champion” of diagnostic excellence.

During the Roundtables, participants cited the pilot survey itself as a useful catalyst for elevating the importance of diagnostic safety and quality on the broader patient safety agenda for the hospital and as a priority for senior administrative leadership.

Who on the hospital's team completed the Pilot Survey?

There were two primary variations of responses to this question. Most respondents identified a large multidisciplinary team that responded to the Pilot Survey, with seven or more participants and several members of the hospital's senior administrative leadership. For example, at one responding hospital the team included the Chief Medical Office, Vice President of Informatics, Patient Safety Manager, Patient Experience Manager, Managers in the Emergency Services Department, Managers of various specialty services including Radiology and the Laboratory, the Care Coordination Director and representatives from the hospital's Patient and Family Caregiver Advisory Council.

In some instances, respondents included only select staff from the hospital's quality department, such as the Manager and Director or the Chief Medical Officer, Vice President of Quality, and Director of Quality.

Our interpretation of these responses is that they are consistent with response coordination strategies for hospitals completing the Hospital Survey, with some additional personnel involved in the process owing to their specialized knowledge in areas that are more heavily implicated in reducing and mitigating diagnostic errors, such as emergency services. The involvement of high-level leadership is encouraging and suggests interest from senior leaders even if full engagement as reported above is still lagging.

Roundtable Results

Several key themes emerged from the Roundtable Sessions, including:

A critical effort: Hospitals are largely supportive of this direction by Leapfrog and agree this is an important area of care that should be given more attention.

Too many practices: Some participants expressed anxiety about the number of recommended practices and recommended Leapfrog strike a cautious balance between adding new assessments to the Hospital Survey even as longstanding measures continue to be assessed. Participants also suggested that many of the practices included several components, but not all may have been implemented uniformly throughout the hospital. The pilot survey could not capture this issue because the questions were phrased in "all-or-none" style. Finally, participants also recommended a gradual phase-in of recommended practices into the Hospital Survey, recognizing that much of this work is new to hospitals and that hospitals continue to struggle with ongoing staffing issues as a result of the COVID-19 pandemic.

Some commenters praised the number of recommended practices of options: Some participants were strongly supportive of the number of practices included, as well as the number of resources and strategies available for each practice. They interpreted these many different elements of improving diagnostic safety and quality as presenting an opportunity to carefully select from among a broad range of choices to find the implementation path that best suits the unique circumstances of the hospital and their leadership.

Diagnosis specificity: Participants identified many efforts that are a routine component of hospital care, such as conducting risk assessments, may not be specifically tailored to diagnostic quality and safety as indicated in a given recommended practice, but might touch on diagnosis in the ordinary course of business. For instance, as indicated above, hospitals leveraged existing patient safety focused structures

to include reporting and disclosure around diagnostic errors, but without either specifically soliciting reports of those errors or adopting diagnosis-specific techniques to analyze the root causes of what led to those errors.

Discussion of Results

The goals of the Recognizing Excellence in Diagnosis project resonated with participating hospitals.

Hospitals that participated in the pilot survey and Roundtables agreed that the issue of diagnostic excellence is important and public reporting is a fundamental precursor to any meaningful change. There was agreement that public reporting by Leapfrog and others will be an important incentive to hospital leadership to prioritize diagnosis and will in turn drive a groundswell of support by practicing physicians.

Hospitals are receptive to tackling the problem of diagnostic error and exploring opportunities for improvement.

Hospitals consistently indicated they are mostly at least preparing to implement the recommended practices outlined in the report. For each of the 29 practices, 60% or more hospitals responded that they were either already implementing or preparing to implement the practice. The average percent of hospitals responding “Not Under Consideration” for a practice was 15%. This finding was consistent with qualitative feedback from the Roundtable sessions, where hospitals were largely supportive of this direction by Leapfrog and agreed this is an important area of care that should be given more attention.

Progress varies considerably and full implementation is lacking.

Most participants were open to the practices recommended by Leapfrog and were taking at least preliminary steps to implement them, as indicated in both the quantitative survey findings and the qualitative results from the Roundtables. However, progress toward **full** implementation varied considerably, and many practices were not being considered. Participants in the Roundtables cited resource constraints and multiple competing priorities as rationales for not considering these practices.

Hospitals have made more progress in addressing gaps in the diagnostic process (Domain 1) than implementing leadership structures and systems to support improved diagnosis (Domain 2).

On average, hospitals reported implementing 9 of the 16 practices (56%) in Leadership Structures and Systems and 8 of the 13 practices (62%) in The Diagnostic Process, despite practices concerned with The Diagnostic Process generally being more staffing- and resource-intensive. Hospitals therefore have an opportunity to address gaps at the senior administrative leadership level to make rapid progress on improving diagnostic safety and quality.

A phased approach to the implementation of the 29 recommended practices may be needed.

Though there was disagreement among participating hospitals about whether Leapfrog presented too many recommended practices or not, hospitals clearly communicated that they did not have the staffing or resources to attempt implementing all the practices simultaneously or even a majority of these practices. Hospitals indicated that graduated and phased approaches were appropriate models.

First, hospitals requested a hierarchical classification of practices that would describe a sequence of implementation—in other words, clear guidance on which practices to implement first and what practices might naturally follow. Hospitals also clearly indicated a need to incorporate new efforts to reduce diagnostic errors into their broader longstanding initiatives to improve patient safety writ large. In many cases, that is an appropriate and effective approach; in other instances, Leapfrog will clearly identify where initiatives should be specifically and exclusively focused on diagnostic excellence.

Limitations

The findings identified in this report should not be interpreted as an empirical survey of a fully representative sample of hospitals nationwide. The finding that most hospitals that participated in the pilot have made considerable progress toward implementing these practices likely largely overstates national progress, because by virtue of volunteering for the pilot these hospitals demonstrated unique motivation to address diagnostic error. Hospitals included in our sample were also higher performing on average than other hospitals on measures of quality of care collected by The Leapfrog Group. Given the participating hospitals are high performing and highly motivated, it is likely that national performance on implementation is at least somewhat lower than our survey results would indicate.

Feedback from participants in the roundtables suggested that the different implementation status choices were not always selected consistently across all pilot survey respondents. Although we attempted to ameliorate this data quality issue by grouping responses into three instead of the original five categories, it is possible that implementation was systematically under- or over-reported.

A more general limitation of this project as a whole is that our work is concentrated in the hospital setting. As originally stated in the *Recommended Practices* report, our project does not address ambulatory care settings, where most diagnoses are made. The focus of this project is care delivered in hospitals, including both inpatient and outpatient units, especially the emergency department. Some of the practices included in the report may have applicability to ambulatory care, especially those concerning closing the loop in the communication of test results. However, a major nationwide reduction in diagnostic errors will necessarily involve concomitant efforts in primary care delivery outside the walls of the hospital.

Next Steps: The 2024 Leapfrog Hospital Survey and the Updated Recommended Practices Report

Based on these results from the National Pilot Survey, Leapfrog will identify develop survey questions in the 2024 Leapfrog Hospital Survey that will assess hospital's progress in implementing a limited number of recommended practices. In alignment with feedback and findings in this report, Leapfrog will streamline the number of included practices and, where warranted based on expert opinion and emerging literature, reduce the components of some multipart practices to improve feasibility. The survey questions will reflect tangible actions hospitals should take to reduce diagnostic errors and will be published along with the full 2024 Leapfrog Hospital Survey on April 1, 2024.

In addition, in July 2024 Leapfrog will publish a revised and updated version of *Recommended Practices* report to reflect findings from the pilot, newly published literature, and new existing resources and strategies.

Leapfrog and the many contributors to this work wish to thank the hospitals that participated in this pilot. They volunteered their time and attention to a new initiative generally outside the scope of their day-to-day work to improve patient safety. Their perspectives on our initiative, and the original thinking they brought to bear, inspire Leapfrog to imagine a brighter future of nationwide excellence in diagnosis, and a safer health care system for all.

Appendix

Appendix A – Hospital Recruitment and Analysis of Responses

Leapfrog invited all 2,300 hospitals that participate in the Leapfrog Hospital Survey, as well as subscribers to the Society to Improve Diagnosis in Medicine’s newsletter, to participate in the pilot survey. Additionally, some hospitals learned of the opportunity through Leapfrog’s network of Advisory Group experts and others working on this project and volunteered to participate. In August and September 2022, Leapfrog hosted six 30-minute informational webinars to offer prospective participants a detailed overview of the pilot survey process and expectations for participation and an opportunity to ask questions. Initially, 115 hospitals indicated that they would submit a pilot survey.

Pilot survey results were combined with data collected through the Leapfrog Hospital Survey to obtain characteristics of survey participants (e.g., bed size, teaching status, urban/rural status, safety net status and recent Safety Grade results). Using basic bivariate statistics, characteristics were compared between hospitals that completed the pilot survey to all hospitals that complete the Leapfrog Hospital Survey to determine the degree to which this sample was representative of all hospitals that complete the Leapfrog Hospital Survey. Domain 1 participants were also compared to Domain 2 participants to determine if a bias was introduced when hospitals failed to complete a Survey or changed domains.

Duplicate responses from hospitals of the same system were combined to ensure that a single system’s responses did not receive additional weight from completing the survey multiple times. Hospitals were encouraged to provide hospital-level data that was as specific as possible. Many hospitals chose to complete a single survey or multiple surveys with hospital specific details, despite being a part of a system. By removing identical responses, we hoped to remove any bias that may be introduced by a large system electing to submit the same survey responses for each location.

Appendix B – Full Survey Instrument – Organizational Leadership and Systems
Pilot Survey Questions

Respond to each of the following questions based on your hospital’s implementation progress at the time you are submitting the Pilot Survey.

Recommended Practice 1.1A

<p>1. As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.1A?</p> <p>Practice 1.1A: Senior administrative leaders both</p> <ul style="list-style-type: none"> • Establish separate goals for all the following: <ul style="list-style-type: none"> ○ Engaging patients, ○ Improving communication between patients and their care team, ○ Promoting better communication and teamwork between members of the care team to reduce errors in diagnosis, AND • Are held accountable for these goals in all the following ways: <ul style="list-style-type: none"> ○ Sharing these goals with the Board and throughout the organization, ○ Communicating progress towards meeting these goals at least annually to the Board, and ○ Including progress towards meeting these goals in the senior administrative leaders’ annual performance reviews, incentives, or compensation. <p><i>If “Not Under Consideration,” continue to question 2. Otherwise, move on to question 1a.</i></p>				
<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>

1a: Were any of the following resources or strategies used on your path to implement Practice 1.1A? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

○	<p>Senior administrative leaders use AHRQ’s Guide to Patient and Family Engagement or AHRQ’s Toolkit for Engaging Patients to Improve Diagnostic Safety to set goals that align with organizational priorities and needs related to patient engagement.</p>
○	<p>Senior administrative leaders set a goal to partner with the hospital’s Patient and Family Advisory Council (PFAC) to identify opportunities to reduce errors in diagnosis (including, delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient) and implement PFAC recommendations (e.g., recommendations on engaging patients in their own diagnosis, following up on pending test results at discharge, increasing interaction with the patient portal, giving patients opportunities to report diagnostic concerns).</p>

o	Senior administrative leaders set a goal to involve a PFAC member in another hospital-wide or departmental committee working to reduce errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient).
o	Senior administrative leaders use the American Institutes for Research Roadmap for Patient and Family Engagement in Healthcare or the Patient Safety Foundation’s Actionable Patient Safety Solution: Person and Family Engagement to design and implement programs to improve patient engagement at the hospital.
o	Senior administrative leaders use AHRQ’s TeamSTEPPS® for Diagnosis Improvement to set goals for staff training that align with organizational priorities and needs related to communication and teamwork between members of the care team .
o	Senior administrative leaders set a goal to measure and improve nurse and clinical pharmacist perceptions of being a valued member of the diagnostic team (e.g., the rate at which nurses and clinical pharmacists actively participate on rounds).
o	Senior administrative leaders monitor and display (e.g., internal newsletter or intranet) run charts that track percentage of staff trained using AHRQ’s TeamSTEPPS® for Diagnosis Improvement .
OTHER	_____

Recommended Practice 1.1B

2: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.1B?

Practice 1.1B: [Senior administrative leaders](#) convene a multidisciplinary team sponsored by the Chief Medical Officer, or other senior administrative leader, that meets all the following criteria:

- The team establishes a leader who regularly reports to the executive sponsor,
- At a minimum, the team includes representatives from nursing, pharmacy, laboratory medicine, radiology, and the ED,
- The team leader communicates quarterly with the Board and other [senior administrative leaders](#) on issues related to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient),
- The team leader convenes staff from key clinical departments (including at least, if applicable, ED, hospital medicine, pediatrics, surgery, radiology, and obstetrics, intake or transfer coordinators, case management, pathology, radiology, and laboratory) quarterly to discuss strategies to reduce errors in diagnosis issues and any lessons learned from specific patient cases,
- Designated members of the team collaborate with [others involved in the diagnostic process](#) to ensure [diagnostic errors](#) identified by the hospital undergo a root cause analysis and ensure the findings are shared with the staff involved in the case. If the patient was harmed, actions to prevent future similar errors are shared with the patient (and/or [family caregiver](#)), and
- Designated members of the team collaborate with other staff to evaluate the implementation of programs (e.g., [AHRQ’s TeamSTEPPS® for Diagnosis Improvement](#)) aimed at reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient) and to make recommendations for further training.

If “Not Under Consideration,” continue to question 3. Otherwise, move on to question 2a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>

2a: Was the following resource or strategy used on your path to implement Practice 1.1B? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital hired a physician dedicated full time to convene a multidisciplinary team and lead their work.
OTHER	_____

Recommended Practice 1.1C

3: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.1C?

Practice 1.1C: [Senior administrative leaders](#) communicate information regarding cases of errors in diagnosis, efforts to reduce errors in diagnosis, and the outcomes of those efforts both internally (e.g., hospital staff and hospital committees) and externally (e.g., patients and [family caregivers](#), the community, other institutions), and to the board of directors. This includes specific activities related to error reduction, the results of interventions that have been implemented, and lessons learned from analysis of [diagnostic errors](#).

If “Not Under Consideration,” continue to question 4. Otherwise, move on to question 3a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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3a: Were any of the following resources or strategies used on your path to implement Practice 1.1C? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Senior administrative leaders share information and updates on our hospital’s efforts to reduce errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), including lessons learned, goals, and programs through a monthly internal newsletter or the organization’s intranet.
<input type="radio"/>	Our hospital publishes information on lessons we’ve learned to reduce errors in diagnosis (such as learnings related to reducing delayed, wrong, or missed diagnoses, and reducing diagnoses not communicated to the patient), goals and programs on our website or through a community newsletter or annual report.
<input type="radio"/>	Our hospital highlights programs initiated to improve diagnosis (such as reductions in delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient) in press releases or at community events.
<input type="radio"/>	Our hospital shares information on efforts to improve diagnosis (such as learnings related to reducing delayed, wrong, or missed diagnoses, and reducing diagnoses not communicated to the patient) with other hospitals and organizations through quality reports or research results published in scientific journals.
OTHER	_____

Recommended Practice 1.2A

4: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.2A?

Practice 1.2A: The hospital CEO demonstrates a commitment to [diagnostic excellence](#) through a written or verbal commitment delivered to all staff, stating that the advancement of [diagnostic excellence](#) is a priority for the organization.

If “Not Under Consideration,” continue to question 5. Otherwise, move on to question 4a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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4a: Were any of the following resources or strategies used on your path to implement Practice 1.2A? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital’s CEO, in partnership with the hospital’s PFAC , sponsors an all-staff event to announce new goals or a new initiative to advance diagnostic excellence .
<input type="radio"/>	Our hospital’s CEO participates in a series of “town hall” style talks on diagnostic excellence .
<input type="radio"/>	Our hospital’s CEO identifies or designates “champions” of diagnostic excellence in high-risk departments (e.g., the ED, radiology, laboratory medicine, critical care) and introduces them to the organization as leaders of diagnostic-improvement projects.
<input type="radio"/>	Our hospital’s CEO writes a newsletter that is distributed to all staff or a blog on the intranet to share their commitment to diagnostic excellence .
OTHER	_____

Recommended Practice 1.2B

5: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.2B?

Practice 1.2B: [Senior administrative leaders](#) promote effective teamwork in diagnosis by instituting policies or protocols that encourage all the following:

- Diagnostic input and second opinions from [clinician](#) peers,
- Diagnostic input from nurses, pharmacists, and other clinical staff who touch the patient, and
- Communication among [clinicians](#) and [others involved in the diagnostic process](#) and staff in radiology and the clinical lab regarding test selection and test result interpretation.

If “Not Under Consideration,” continue to question 6. Otherwise, move on to question 5a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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5a: Were any of the following resources or strategies used on your path to implement Practice 1.2B? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="checkbox"/>	Our hospital designates individuals to be trained as facilitators using AHRQ’s Facilitator’s Implementation Roadmap . Trained facilitators then teach the TeamSTEPPS for Diagnosis Improvement course to small teams of clinicians and others involved in the diagnostic process .
<input type="checkbox"/>	Our hospital practices interdisciplinary patient rounding in inpatient and critical care units. As part of the practice of interdisciplinary rounding, nurses, pharmacists, and allied health professionals engage in the discussions and contribute to decisions about the patient’s diagnosis.
<input type="checkbox"/>	Physicians in the ED consult with colleagues, including nurses, pharmacists, radiologists, and laboratory staff before discharge or admission to an inpatient unit to get input on key diagnostic information.
<input type="checkbox"/>	Our hospital has a standard protocol in place where patients with an uncertain diagnosis at a specific point-in-time (48 to 72 hours after admission) automatically get a second review by a different clinical team.
<input type="checkbox"/>	Our hospital has a policy to include radiologists on tumor boards and in multidisciplinary conferences.
<input type="checkbox"/>	Pathologists provide feedback to other clinicians about test selection choices and successes and failures in interpretation of results
OTHER	_____

Recommended Practice 1.2C

6: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.2C?

Practice 1.2C: The hospital targets training and education specific to the [diagnostic process](#) to nurses, pharmacists, and other allied health professionals.

If “Not Under Consideration,” continue to question 7. Otherwise, move on to question 6a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>

6a: Were any of the following resources or strategies used on your path to implement Practice 1.2C? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital ensures that nurses, pharmacists, and other allied health professionals are included in trainings on AHRQ’s TeamSTEPPS® for Diagnosis Improvement .
<input type="radio"/>	Our hospital has modified existing courses (e.g., courses on interdisciplinary communication identification of sepsis, or when to call a Rapid Response Team) to explicitly link the course content to the diagnostic process and through the delivery of the course ensures that nurses, pharmacists, allied health professionals, and staff from radiology and laboratory medicine understand their role in the diagnostic process .
<input type="radio"/>	Our hospital ensures that targeted training to nurses, pharmacists, and allied health professionals is applied during interprofessional patient rounds to ensure that all individuals participating in interprofessional rounding actively participate in the discussions and contribute to decisions about the patient’s diagnosis.
OTHER	_____

Recommended Practice 1.2D

7: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.2D?

Practice 1.2D: The hospital has a formal process in place for staff to report [diagnostic errors](#) and concerns (e.g., breakdowns in communication, breakdowns in the [diagnostic process](#)). The process encourages psychological safety for those sharing their cases and staff adoption (the process is safe and easy to use) and should include all the following:

- Staff training on how and when to report [diagnostic errors](#) and concerns,
- A formal protocol for investigating, responding to, and learning from staff-reported [diagnostic errors](#), concerns, or questions,
- A formal protocol for non-punitively notifying [clinicians](#) involved in the patient’s care and supportively engaging with them in any investigations,
- An emphasis on transparency, and
- A formal protocol for soliciting feedback from hospital staff on the psychological safety and usability of the process.

If “Not Under Consideration,” continue to question 8. Otherwise, move on to question 7a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>

7a: Were any of the following resources or strategies used on your path to implement Practice 1.2D? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital has an easy-to-use system to facilitate reporting of diagnostic errors and diagnosis-related concerns, either through a mobile application or hotline.
<input type="radio"/>	Our hospital uses its incident/event reporting system to include diagnostic errors and concerns, regularly reminds clinicians and other staff to use the system and reports out on usage statistics on a regular basis.
<input type="radio"/>	Senior administrative leaders regularly review the number and type of diagnostic errors and concerns being reported and provides retraining opportunities, reminders, and incentives (e.g., a component of performance evaluations) to encourage reporting of diagnostic errors and concerns by clinicians and others involved in the diagnostic process , if gaps in usage are identified.
<input type="radio"/>	Our hospital considers the terms and language used in the reporting process. For example, on an electronic reporting form, the term “ diagnostic error ” is rephrased as an “opportunity to make a more accurate or timely diagnosis” to encourage a broader range of reporting.
<input type="radio"/>	Our hospital pairs an easy-to-use electronic reporting system with a clinician champion who reinforces the importance of event reporting.

OTHER	
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Recommended Practice 1.2E

8: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.2E?

Practice 1.2E: The hospital has a formal process in place for notifying patients and/or their [family caregivers](#) when [diagnostic errors](#) resulting in harm have occurred.

If “Not Under Consideration,” continue to question 9. Otherwise, move on to question 8a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>

8a: Were any of the following resources or strategies used on your path to implement Practice 1.2E? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital includes diagnostic errors along with other adverse events in its existing communication and disclosure policy, with a particular focus on cases of delayed, wrong, and missed diagnoses resulting in harm.
<input type="radio"/>	Our hospital has a standard process to identify potential diagnostic errors and refers these cases for risk management review. Risk management applies a standard protocol to identify cases where the patient was harmed from a diagnostic error , and then initiates a root cause analysis. Staff trained in the AHRQ CANDOR program communicate with the patient and family caregiver throughout the process of disclosure, response, and resolution.
<input type="radio"/>	Our hospital is part of the Pathway to Accountability, Compassion and Transparency (PACT) Collaborative , or is implementing a Communication and Resolution Program consistent with the guidelines promulgated by Collaborative for Accountability and Improvement .
OTHER	_____

Recommended Practice 1.3A

9: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.3A?

Practice 1.3A: The hospital provides patients and their [family caregivers](#) with tools to help them communicate complete and accurate personal health information to the [care team](#).

If “Not Under Consideration,” continue to question 10. Otherwise, move on to question 9a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>

9a: Were any of the following resources or strategies used on your path to implement Practice 1.3A? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital uses the AHRQ Toolkit for Engaging Patients to Improve Diagnostic Safety, which includes deploying Be The Expert On You , a patient-facing strategy that prepares patients and their families to tell their personal health stories in a clear, concise way.
<input type="radio"/>	Our hospital includes links to evidence-based tools on its public website; for example, the Society to Improve Diagnosis in Medicine Patient’s Toolkit for Diagnosis , a patient-designed toolkit available in English or Spanish, that helps patients clearly communicate their symptoms and health information.
OTHER	_____

Recommended Practice 1.3B

10: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.3B?

Practice 1.3B: The hospital does both of the following:

- Provides patients and [family caregivers](#) with multiple channels (e.g., grievance process, ombudsman, patient-generated incident reporting, patient portal, patient survey) to report [diagnostic errors](#) and concerns, and
- Has a formal process in place to investigate and respond to the patient-reported [diagnostic errors](#) and concerns.

If “Not Under Consideration,” continue to question 11. Otherwise, move on to question 10a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>

10a: Were any of the following resources or strategies used on your path to implement Practice 1.3B? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital surveys patients to ask if they have identified errors in their electronic health record visit notes.
<input type="radio"/>	Our hospital maintains a patient experience department that ensures patients are encouraged and educated on how to report diagnostic errors and concerns via telephone, e-mail, or in-person visits, ensures patients who file a concern are contacted to follow-up, and ensures the concerns are logged in an incident reporting system.
<input type="radio"/>	Our hospital analyzes patient concerns submitted in free text fields from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey.
OTHER	_____

Recommended Practice 1.3C

11: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.3C?

Practice 1.3C: The hospital has a standard, hospital-wide process that allows patients and [family caregivers](#) to escalate care that includes all the following:

- A written policy specifying that a patient or [family caregiver](#) can initiate the [escalation of care](#),
- A formal process for notifying patients and [family caregivers](#), verbally or in writing, about the policy and how to activate the process for an escalation in care, and
- Training for [clinicians](#) and [others involved in the diagnostic process](#), so they know how to respond to a patient or [family caregiver](#) once the process for the [escalation of care](#) has been activated.

If “Not Under Consideration,” continue to question 12. Otherwise, move on to question 11a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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11a: Were any of the following resources or strategies used on your path to implement Practice 1.3C? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

o	Our hospital has a policy on the escalation of care and the use of rapid response teams that allows patients and family caregivers to initiate the process. Information about activating the process is shared with patients when they are admitted to the hospital, and staff are trained on how to respond once the process has been initiated.
o	Our hospital logs activation of rapid response teams and regularly reviews the log to identify patterns of activation and patient outcomes that could identify opportunities for local system improvement.
OTHER	_____

Recommended Practice 1.3D

12: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.3D?

Practice 1.3D: The hospital ensures that patients use the patient portal to review their test results and other diagnostic related information by doing all the following:

- Providing patients with written instructions in their preferred language for medical decision-making on how to access the portal during and after their hospital visit,
- Providing patients with access to the patient portal on tablets or other hospital-owned devices during their hospital visit (if applicable),
- Giving patients access to all the health information in their electronic medical records (with rare exceptions, for example to protect the privacy of a minor) without a fee and without delay,
- Regularly tracking patient use of the portal,
- Periodically soliciting feedback from patients on the usability of the portal, and
- Identifying barriers to use of patient portals and working to address them (e.g., language barriers, access to devices or internet).

If “Not Under Consideration,” continue to question 13. Otherwise, move on to question 12a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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12a: Were any of the following resources or strategies used on your path to implement Practice 1.3D? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital actively encourages patients to use the patient portal and develops a strategy for clinicians to recommend using the patient portal during and after the hospital visit to access progress notes, discharge summaries, and test result notifications.
<input type="radio"/>	Our hospital trains both administrative (e.g., registration staff) and clinical staff on use of the portal so they can assist patients who seek help.
<input type="radio"/>	Our hospital monitors use of the patient portal (e.g., how often patients read information about their test results) and seeks input from patients to improve use.
<input type="radio"/>	Our hospital partners with its PFAC to discuss strategies to improve patient use of the portal. This includes the hospital Chief Information Officer, or an equivalent, attending PFAC meetings to discuss this topic and working with the PFAC to identify avenues to communicate with patients in the broader community.
<input type="radio"/>	Our hospital partners with its patient portal vendor to build mechanisms for patients to report symptoms, outcomes, and electronically request modifications to the clinical information in the medical record, if these features are not already available.

o	Our hospital responds to inequities in patient portal use by implementing a policy expanding access to underserved communities, a mobile version of the patient portal, and/or a Spanish language version of the application.
OTHER	_____

Recommended Practice 1.4A

13: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.4A?

Practice 1.4A: The hospital conducts an annual risk evaluation using a standardized risk assessment tool (e.g., [the Safer Dx Checklist](#)) to identify gaps in staffing and clinical expertise, tools and technology, and communication and teamwork that contribute to errors in diagnosis.

If “Not Under Consideration,” continue to question 14. Otherwise, move on to question 13a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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13a: Were any of the following resources or strategies used on your path to implement Practice 1.4A? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital has a small team of clinicians and others involved in the diagnostic process from the major clinical services (e.g., emergency department, inpatient, radiology, laboratory medicine) complete the Safer Dx Checklist . <small>Error! Bookmark not defined.</small> Results from the checklist are used to develop goals and inform process improvements.
<input type="radio"/>	Our hospital conducts a hospital-wide assessment of diagnostic errors resulting in harm, including the frequency and severity assessment of each of those errors using a severity scale such as the National Coordinating Council for Medical Error and Reporting Index .
<input type="radio"/>	Our hospital conducts annual qualitative interviews with clinicians , including nurses and pharmacists, allied health professionals, and others involved in the diagnosis process to identify systemic problems in the diagnostic process .
OTHER	_____

Recommended Practice 1.4B

14: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.4B?

Practice 1.4B: [Senior administrative leaders](#) put processes and structures in place to identify, track, and analyze errors in diagnosis, including errors that result in harm or death, with a focus on high-risk areas of the hospital (e.g., ED, labor and delivery units, critical care units), and regularly communicate performance and progress on improvement initiatives with their board of directors.

If “Not Under Consideration,” continue to question 15. Otherwise, move on to question 14a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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14a: Were any of the following resources or strategies used on your path to implement Practice 1.4B? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Senior administrative leaders deploy electronic trigger tools to mine EHRs for diagnostic errors , assign individual case analysis to extract learnings, and share learnings and opportunities for improving the diagnostic process .
<input type="radio"/>	Senior administrative leaders ensure that data from incident reports, patient complaints, malpractice suits, and autopsies are used to identify diagnosis-related harm.
<input type="radio"/>	Senior administrative leaders take action to encourage both patient and staff-reported diagnostic errors and concerns and put systems in place for psychologically safe and easy to use reporting.
<input type="radio"/>	Senior administrative leaders can regularly monitor performance on nationally endorsed measures of quality of care in diagnosis (see examples on page 45 of the Recognizing Excellence in Diagnosis Recommended Practices Report).
OTHER	_____

Recommended Practice 1.4C

15: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.4C?

Practice 1.4C: The hospital has a process in place to identify and address features of the EHR (e.g., storage of laboratory results, workflows, display of patient data and messaging capabilities) that may contribute to [diagnostic errors](#).

If “Not Under Consideration,” continue to question 16. Otherwise, move on to question 15a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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15a: Were any of the following resources or strategies used on your path to implement Practice 1.4C? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	On an annual basis, our hospital actively seeks formal input from clinical staff on their satisfaction with the EHR and their recommendations to improve features that will reduce diagnostic errors and improve the diagnostic process . For example, these activities are performed as part of annual self-assessments based on the ONC-sponsored SAFER Guides .
<input type="radio"/>	Our hospital has a workgroup or small committee of both health IT and clinical staff that meets at least quarterly to discuss active concerns with the EHR’s configuration and how to address them.
<input type="radio"/>	In setting the annual IT budget for our hospital, administrators and budget managers ensure items that correspond to initiatives to resolve diagnostic safety issues identified in the EHR, and regularly review the items to ensure those funds are being disbursed.
<input type="radio"/>	Just-in-time decision support systems are used, when available, to support diagnosis for common medical complaints or scenarios. For example, the Pediatric Emergency Care Applied Research Network (PECARN) Clinically Important Traumatic Brain Injury decision tool is integrated within the emergency department’s EHR to help make decisions about neuroimaging for head trauma in children in the emergency department.
OTHER	_____

Recommended Practice 1.5A

16: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 1.5A?

Practice 1.5A: [Clinicians](#) and [others involved in the diagnostic process](#) have protected time to participate in activities that help improve the [diagnostic process](#), which at a minimum includes:

- Analyzing patient-reported concerns and diagnostic safety outcomes data,
- Documenting and sharing what is learned with others, and
- Using the documented information to develop and implement improvement activities.

If “Not Under Consideration,” continue to the Additional Questions. Otherwise, move on to question 16a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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16a: Were any of the following resources or strategies used on your path to implement Practice 1.5A? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	One or more clinicians from our hospitalist service or ED are allocated dedicated time to participate in diagnostic improvement activities. These individuals work with the safety, quality, and risk management staff to evaluate reports of diagnostic concerns, help conduct and analyze diagnostic safety checklists and surveys, and collaborate in developing improvement programs.
<input type="radio"/>	Clinicians and others involved in the diagnostic process have protected time to participate on interdisciplinary diagnostic safety teams and participate in team activities.
<input type="radio"/>	Clinicians and others involved in the diagnostic process have protected time to participate in training and educational programs.
OTHER	_____

Additional Questions (optional)

From your perspective, which single practice will drive the greatest improvement in reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient) at your hospital?

From your perspective, which single practice will have the least impact on reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient) at your hospital?

What are the main barriers your hospital faces in implementing one or more of the [recommended practices](#)?

What would accelerate the implementation of one or more of the [recommended practices](#)?

Who was part of the team that completed the Pilot Survey? (titles/roles, not individual names)

Appendix C – Full Survey Instrument – The Diagnostic Process

Pilot Survey Questions

Respond to each of the following questions based on your hospital’s implementation progress at the time you are submitting the Pilot Survey.

Recommended Practice 2.1A

<p>1. As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.1A?</p> <p>Practice 2.1A: Clinicians and others involved in the diagnostic process are trained in the use of evidence-based tools and strategies to collect complete and accurate personal health information from patients and family caregivers to facilitate a timely and accurate diagnosis.</p> <p><i>If “Not Under Consideration,” continue to question 2. Otherwise, move on to question 1a.</i></p>				
<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>

1a: Was the following resource or strategy used on your path to implement Practice 2.1A? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

O	Our hospital trains clinicians and others involved in the diagnostic process to use AHRQ’s Toolkit for Engaging Patients to Improve Diagnostic Safety , including the 60 Seconds To Improve Diagnostic Safety training, which prepares clinicians to practice deep and reflective listening for one minute at the start of a patient encounter.
OTHER	_____

Recommended Practice 2.1B

2. As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.1B?

Practice 2.1B: The hospital ensures that their EHR captures the correct diagnosis by having a process in place to review, update and correct inaccurate diagnoses on “problem lists” and elsewhere in the EHR.

If “Not Under Consideration,” continue to question 3. Otherwise, move on to question 2a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Full Implementation and Evaluation</i>
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2a: Were any of the following resources or strategies used on your path to implement Practice 2.1B? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

○	Clinicians throughout the hospital encourage their patients to review their problem list online to identify errors that need correction and provide instructions for patients to report errors so they can be corrected.
○	Clinicians in inpatient units, including critical care units, review problem lists with patients while on rounds and make corrections in real-time in the EHR.
○	Our hospital has a protocol that outlines what information to include on the problem list (and what to leave out), what to do with outdated information, and who is responsible for the list’s accuracy.
○	Our hospital uses an EHR capable of linking a problem on the problem list to its supporting progress notes, administrative data, and clinical data such as test results and symptom documentation.
○	Our hospital uses evidence-based guides to instruct clinicians on the proper use of “copy and paste,” such as the Emergency Care Research Institute (ECRI)’s Toolkit for the Safe Use of Copy and Paste .
OTHER	_____

Recommended Practice 2.1C

3: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.1C?

Practice 2.1C: Patients and [family caregivers](#) whose preferred language for medical information differs from their [care team](#) are provided with a professional medical interpreter (available 24 hours a day, 7 days a week), either on-site, via telephone, or via videoconferencing, to assist with obtaining complete and accurate health information from the patient and communicating complete and accurate information back to the patient.

If “Not Under Consideration,” continue to question 4. Otherwise, move on to question 3a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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3a: Were any of the following resources or strategies used on your path to implement Practice 2.1C? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	If available, our hospital matches patients whose preferred language for medical decision-making is not English with a certified bilingual clinician during diagnostic encounters.
<input type="radio"/>	Our hospital ensures that the clinicians responsible for the patient’s diagnosis have immediate access to professional medical interpreters to assist with obtaining the patient’s medical history and communicating further plans and diagnostic information back to the patient.
<input type="radio"/>	Our hospital contracts with a medical interpreter service provider that offers phone and/or video interpretation 24 hours, 7 days a week that clinicians can access through a phone number or through a secure application on their personal device or a hospital-provided device.
<input type="radio"/>	Our hospital makes video interpretation devices highly accessible to clinicians by making them widely available throughout the hospital.
<input type="radio"/>	Our hospital employs virtual translation services to provide medical interpretation when on-site interpreters are not available.
OTHER	_____

Recommended Practice 2.2A

4: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.2A?

Practice 2.2A: The hospital has access to a radiologist 24 hours a day, 7 days a week, either onsite or remotely, to read and interpret urgent and emergent imaging studies and provide timely input on imaging test selection.

If “Not Under Consideration,” continue to question 5. Otherwise, move on to question 4a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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4a: Were any of the following resources or strategies used on your path to implement Practice 2.2A? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital has intramural teleradiology arrangements (staff radiologists are available to read and interpret images from home) in place for all routine imaging (adult and pediatric) whenever a staff radiologist is off-site to allow for 24 hours, 7 days a week access to a radiologist.
<input type="radio"/>	Our hospital has extramural teleradiology arrangements (contracted radiologists are available to read and interpret images) in place for all neuroimaging and specialty imaging (pediatric imaging at a general hospital) that allows for 24 hours, 7 days a week access to a radiologist.
<input type="radio"/>	Our hospital has a program of ongoing review to evaluate the accuracy of the teleradiology provider, the accuracy of their readings and any diagnostic discrepancies, and a mechanism for providing feedback to the teleradiology provider.
OTHER	_____

Recommended Practice 2.2B

5: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.2B?

Practice 2.2B: The hospital has a quarterly process by which radiologists and pathologists identify cases where a pathology finding (e.g., biopsy, cytology, or autopsy results) is discrepant with clinical and/or imaging impressions and then jointly review and reconcile any discrepant findings.

If “Not Under Consideration,” continue to question 6. Otherwise, move on to question 5a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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5a: Was the following resource or strategy used on your path to implement Practice 2.2B? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital holds a quarterly conference where pathologists and radiologists review all biopsies of a certain case type and produce a single integrated report resolving any discrepant findings.
OTHER	_____

Recommended Practice 2.2C

6: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.2C?

Practice 2.2C: The hospital conducts a risk assessment of commonly misdiagnosed high-risk conditions in the ED to ensure it has access (on-site or remotely) to the clinical expertise and technologies needed to achieve timely and accurate diagnosis.

If “Not Under Consideration,” continue to question 7. Otherwise, move on to question 6a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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6a: Were any of the following resources or strategies used on your path to implement Practice 2.2C? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital provides rapid access to experts in stroke diagnosis and appropriate diagnostic technologies. The hospital maintains 24 hours, 7 days a week access to neurological consultants (on-site or teleneurology) and neuroimaging (especially MRI). The hospital also deploys novel diagnostic tests (e.g., video-oculography) to facilitate remote eye movement assessment for posterior strokes.
<input type="radio"/>	Our hospital has a protocol for using teleneurology in the diagnosis of epilepsy. This protocol enlists experienced specialists in epilepsy and neurophysiology in reading EEG records in real-time where these experts would otherwise be unavailable.
OTHER	_____

Recommended Practice 2.2D

7: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.2D?

Practice 2.2D: The hospital integrates knowledge resources into the clinical workflow to help [clinicians](#) improve their diagnosis in real-time for cases where there is diagnostic uncertainty and educates and incentivizes (e.g., through a performance evaluation) [clinicians](#) to use these resources.

If “Not Under Consideration,” continue to question 8. Otherwise, move on to question 7a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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7a: Were any of the following resources or strategies used on your path to implement Practice 2.2D? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital provides all clinicians with online access to UpToDate, Micromedex, or equivalent medical knowledge resources.
<input type="radio"/>	Our hospital ensures that clinical decision support is available for clinicians considering which, if any, diagnostic tests or imaging studies may be appropriate.
<input type="radio"/>	Our hospital ensures that all clinical staff have access to one or more decision support resources during the diagnostic process .
<input type="radio"/>	Our hospital has a program to incentivize the use of medical knowledge and clinical decision support resources and monitors the efficacy and use of that program.
OTHER	_____

Recommended Practice 2.2E

8: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.2E?

Practice 2.2E: The hospital trains [clinicians](#) to optimize clinical reasoning in the [diagnostic process](#). This includes training on:

- Critical thinking,
- Avoiding and recognizing cognitive and affective bias, and
- Utilizing organizational resources (e.g., team input, second opinions, decision-support tools for diagnosis) to improve diagnostic performance.

If “Not Under Consideration,” continue to question 9. Otherwise, move on to question 8a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>

8a: Were any of the following resources or strategies used on your path to implement Practice 2.2E? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="checkbox"/>	Our hospital has a training program that highlights the importance of clinical reasoning and the cognitive process.
<input type="checkbox"/>	Our hospital utilizes one or more of the Society to Improve Diagnosis in Medicine’s checklists, mnemonics, and decision support tools in the Clinical Reasoning Toolkit to improve clinical reasoning.
<input type="checkbox"/>	Our hospital has implemented “ Take 2: Think Then Do ” program (or equivalent) to emphasize the value of a two minute “time out” for reflection to improve diagnosis.
OTHER	_____

Recommended Practice 2.2F

9: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.2F?

Practice 2.2F: The hospital deploys evidence-based clinical pathways for diagnosis in the ED and measures the consistency of their implementation and their impact on diagnostic performance (e.g., post-ED hospitalizations or mortality).

If “Not Under Consideration,” continue to question 10. Otherwise, move on to question 9a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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9a: Were any of the following resources or strategies used on your path to implement Practice 2.2F? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital engages ED clinicians to review and adopt one or more published national guidelines that address high-risk conditions and monitor the quality of care before and after via the ACEP Clinical Emergency Data Registry.
<input type="radio"/>	Our hospital has protocols in place to ensure ED staff follow appropriate evidence-based guidelines for stroke diagnosis, particularly posterior circulation stroke, such as the American College of Emergency Physicians guideline on evaluation of adult patients with suspected transient ischemic attack (TIA).
<input type="radio"/>	Our hospital deploys clinical care pathways that help clinicians consistently implement such guidelines and implements measures of stroke hospitalizations following ED treat-and-release visits to facilitate ongoing monitoring of diagnostic performance.
<input type="radio"/>	Our hospital shares clinical pathways with other hospitals in our region.
<input type="radio"/>	Our hospital has protocols in place to ensure that staff follow appropriate evidence-based guidelines for diagnosing sepsis, such as the Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock 2021 .
OTHER	_____

Recommended Practice 2.3A

10: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.3A?

Practice 2.3A: The hospital has a written policy that outlines the protocol(s) [care team](#) members should take when handing off patients with diagnostic uncertainty to the [care team](#) assuming responsibility for the next phase of care, including different units within the same hospital (e.g., emergency department to inpatient unit, hospital to skilled nursing facility, general hospital to free-standing pediatric hospital, hospital to primary care physician, to and from intensive care units, between specialty services, etc.).

If “Not Under Consideration,” continue to question 11. Otherwise, move on to question 10a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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10a: Were any of the following resources or strategies used on your path to implement Practice 2.3A? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="checkbox"/>	Our hospital implements evidence-based tools and resources to improve both verbal communication (e.g., AHRQ’s TeamSTEPPS® for Diagnosis Improvement or IPASS) and electronic communication (e.g., based on a self-assessment from ONC-sponsored SAFER Guide for Clinician Communication).
<input type="checkbox"/>	Our hospital regularly convenes a group of clinicians and administrators from neighboring facilities (e.g., nursing homes, primary and specialty care offices) to review and improve documentation and communication of uncertainty in diagnoses so the receiving facility can take the appropriate next steps.
<input type="checkbox"/>	Our hospital has a written policy documenting the protocol to transition the patient’s care to a primary care team that includes written communication of the most likely diagnosis and its degree of certainty.
OTHER	_____

Recommended Practice 2.3B

11: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.3B?

Practice 2.3B: For patients discharged home from the hospital or the ED with an uncertain diagnosis, or where potential diagnoses involve high-risk conditions, the hospital has a protocol that ensures patients receive both of the following:

- Discharge summary notes with available test results and any test results that are pending, and instructions on when the patient should follow-up, and
- Explicit, condition-specific instructions, in the patient’s preferred language for medical decision-making, on what to watch out for, when to return to the hospital, and how to get timely follow-up care, if needed.

If “Not Under Consideration,” continue to question 12. Otherwise, move on to question 11a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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11a: Were any of the following resources or strategies used on your path to implement Practice 2.3B? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital has amended our patient discharge protocol to add specific elements for uncertain or potentially high-risk diagnoses, which outlines the steps and instructions described in the practice statement.
<input type="radio"/>	Our hospital periodically conducts patient focus groups to ensure our protocol, as executed, is effective in helping patients and their family caregivers obtain test results that were pending at discharge and understand how and when to seek the next phase of care.
<input type="radio"/>	Our hospital has amended our patient discharge protocol to ensure discharge instructions are made available to the patient in the patient and/or family caregiver ’s primary language.
OTHER	_____

Recommended Practice 2.3C

12: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.3C?

Practice 2.3C: The hospital has a process and protocol in place to ensure that patients are discharged from the ED or hospital with both:

- A list of their lab and imaging test results and
- A list of any pending test results and written instructions, in the patient’s preferred language for medical decision-making, on how to obtain those results.

If “Not Under Consideration,” continue to question 13. Otherwise, move on to question 12a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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12a: Were any of the following resources or strategies used on your path to implement Practice 2.3C? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital implements a rigorous follow-up system for test results pending at discharge with a clear hierarchy of clinicians responsible for acting on results as they come in.
<input type="radio"/>	Our hospital has a standard set of clear instructions for patients to obtain pending test results, using input from patients and family caregivers , representatives from Laboratory Medicine and Radiology, and representatives from the ED and other relevant hospital departments (e.g., hospitalists).
<input type="radio"/>	Our hospital monitors test results pending at discharge before and after implementation of the new discharge instructions to ensure more patients are obtaining their pending test results once they are discharged home.
<input type="radio"/>	Our hospital implements an automated email or text message system that notifies patients when their pending test results are ready. Discharge instructions note that patients can expect the email notification.
OTHER	_____

Recommended Practice 2.3D

13: As it specifically relates to reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient), what is your hospital’s progress in implementing practice 2.3D?

Practice 2.3D: The hospital has a written policy that outlines the responsibilities of each [care team](#) member to ensure all critical and subcritical test results, including those pending at discharge, are viewed by the appropriate [care team](#) and communicated to the patient in an appropriate timeframe based on the result.

If “Not Under Consideration,” continue to question 14. Otherwise, move on to question 13a.

<i>Not Under Consideration</i>	<i>Exploring and Preparing</i>	<i>Planning and Resourcing</i>	<i>Implementing and Operationalizing</i>	<i>Fully Implemented and Evaluating Impact</i>
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13a: Were any of the following resources or strategies used on your path to implement Practice 2.3D? If you used a resource or strategy not listed here, select “Other” and provide a brief description.

Select all that apply.

<input type="radio"/>	Our hospital models its policy after the U.S. Department of Veterans Affairs national policy for the safe communication of test results to patients and clinicians , which includes national standards on timeliness of test result communication and informs performance measurement and quality improvement programs implemented across our system.
<input type="radio"/>	Our hospital uses a similar system to the Kaiser Permanente Southern California’s “SureNet” system, which uses an algorithm to proactively identify patients that are overdue for a follow-up of abnormal tests.
<input type="radio"/>	Our hospital reviews and adopts recommended practices on test result communication and follow-up found in the ONC-sponsored SAFER Guides .
<input type="radio"/>	Our hospital utilizes ECRI’s Closing the Loop Toolkit to communicate all patient data and health information requiring an action to the correct individuals so the appropriate next step can occur.
<input type="radio"/>	Our hospital manages incidental findings by adopting an electronic system to assist with tracking and following-up of clinician recommendations.
<input type="radio"/>	Our hospital adheres to the safety actions outlined in The Joint Commission Quick Safety Issue 52 to improve communication of test results and ensure patients understand any required next steps based on their results.
OTHER	_____

Additional Questions (optional)

From your perspective, which single practice will drive the greatest improvement in reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient) at your hospital?
From your perspective, which single practice will have the least impact on reducing errors in diagnosis (including delayed, wrong, or missed diagnoses, and diagnoses not communicated to the patient) at your hospital?
What are the main barriers your hospital faces in implementing one or more of the recommended practices?
What would accelerate the implementation of one or more of the recommended practices?
Who was part of the team that completed the Pilot Survey? (titles/roles, not individual names)

ⁱ Rosen M, Ali KJ, Buckley BO, Goeschel C. Leadership To Improve Diagnosis: A Call to Action. Rockville, MD: Agency for Healthcare Research and Quality; June 2021. AHRQ Publication No. 20(21)-0040-5-EF