

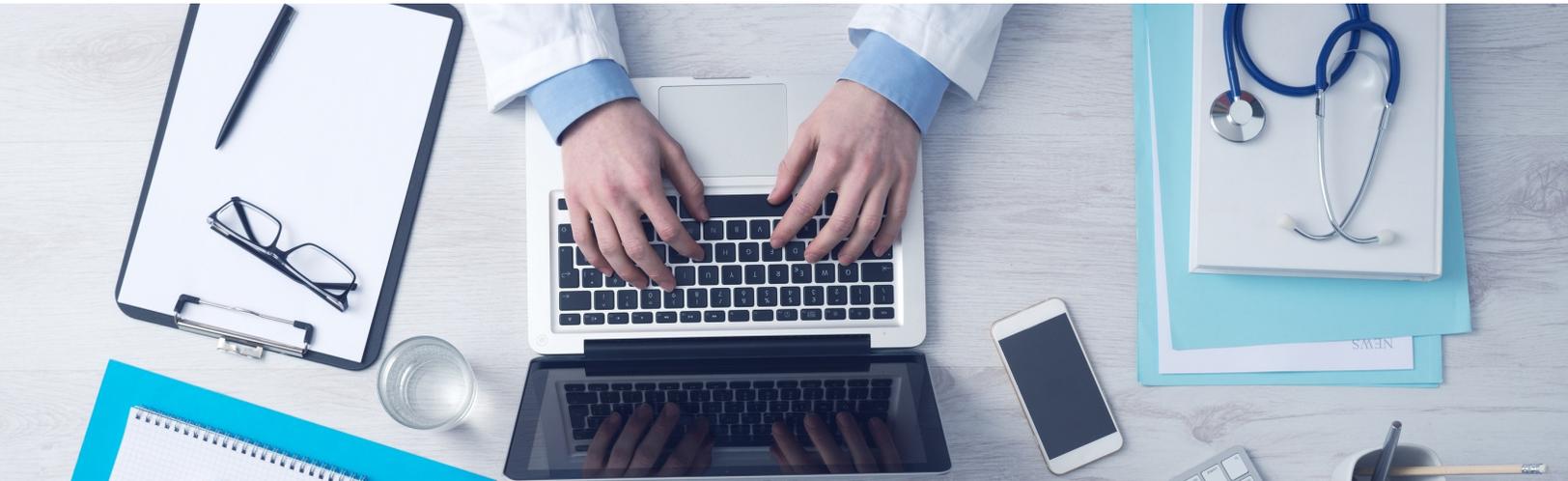


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PSLL MONTHLY NEWSLETTER

Patient Safety Learning Lab

Division of General Internal Medicine | Brigham and Women's Hospital



About Our Diagnostic Safety Interventions

The Patient Safety Learning Lab, or “PSLL,” at Brigham and Women’s Hospital seeks to reduce preventable harm and improve the safety of diagnosis and therapy in the hospital setting.

We are currently testing some of our interventions such as our Diagnostic Time-out card and Diagnostic Safety column integrated within our Quality & Safety Dashboard.

OVERVIEW

- Unpacking the Diagnostic Safety Column
- Case of the Month
- Building a Culture of Diagnostic Safety
- Interventions to Improve Diagnostic Safety

A Deeper Dive into our Dashboard

Unpacking the *Diagnostic Safety Column*



Diagnostic error risk is calculated by a logic built into the Dashboard and incorporates the following risk factors:

- High risk diagnosis on problem list (eg. ESRD, dementia, etc.)
- Language barrier
- OSH transfer
- 4 or more subspecialty consults
- Multiple ambulatory visits prior to admission
- Early readmission
- Recent ED visit for non-specific dx
- Multiple team changes
- Increasing O2 requirement
- Multiple blood gases within 24 hour period
- Sx-oriented or non-specific diagnosis > 24 hours after admission (eg. abdominal pain)
- High Epic Deterioration Index (EDI)

Diagnostic Error Risk = Risk Factor 1 + Risk Factor 2 + Risk Factor 3 + ...



GREEN = Little to no risk



YELLOW = Moderate risk



RED = High risk

The **greater number of risk factors** and/or **greater deterioration index** a patient has, the greater likelihood of diagnostic error risk.

Diagnostic uncertainty vs. diagnostic error: What is the difference?

Diagnostic uncertainty: a subjective perception of an inability to provide an accurate explanation of the patient's health problem

Diagnostic error: Missed, delayed, or incorrect diagnosis

- You may be sure of a diagnosis in the presence of an unrecognized diagnostic error. If a patient has risk factors for diagnostic error or is not improving as expected, you may need to revisit the diagnosis
- You may be uncertain of a diagnosis in the absence of a diagnostic error. Acknowledging and managing uncertainty, may prevent diagnostic error from occurring.

You may use a Diagnosis Time-Out in either scenario to mitigate the risk of diagnostic error.

What does the column indicate clinically? How do the flags inform patient care and decision making?

- A red or yellow flag means there may be a greater than average risk that the patient has a missed, incorrect, or delayed diagnosis during the hospital course.
- If the flag is red or yellow, and particularly if there is uncertainty,
 - **Consider taking a Diagnostic Time-Out**
 - **Update the hospital Principal Problem**
 - Review patient responses to our diagnostic questionnaire, and **communicate with the patient**



Please **update the hospital Principal Problem** to ensure optimal diagnostic risk stratification. Patients may view this in Patient Gateway alongside other health education materials. It is also accessible for review by other care team members via Epic.

Case of the Month

Case summary:

A 76-year-old woman with a history of gastric sleeve gastrectomy presented to an outside hospital with abdominal pain. She was in her usual state of health until four days prior to admission, when she started having intermittent colicky 8/10 abdominal pain. At the OSH, labs showed transaminitis, direct hyperbilirubinemia, and leukocytosis. Abdominal U/S demonstrated biliary sludge and thickening of the gallbladder; however, the CBD was not visualized. The patient was transferred to BWF for consideration of ERCP. Upon admission to Medicine, she was tachycardic (HR 110s), exhibited shallow breathing, diminished bibasilar breathing, and epigastric and RUQ tenderness to palpation. Labs showed TB 2.8, AST 175, ALT 163, alkaline phosphatase 110, leukocytosis 17.9K w/ left shift. She was started on Zosyn due to concern for early cholangitis, and a GI consult was ordered for consideration of ERCP. Overnight the patient developed fever and chills and complained of SOB.

The following morning, GI considered LFTs abnormalities were due to acute cholecystitis and recommended MRCP. MRCP revealed focal narrowing of the common bile duct at the cystic duct level with no visualized stone and extrinsic compression by adjacent inflammation. ERCP was deferred as there was no clear evidence of choledocholithiasis. On HD#3, LFTs and direct bilirubin continued to increase (TB 3.2 AST 233, ALT 247); thus, an ERCP was performed at this time and revealed pus and abundant sludge that was swept from the biliary tree, though no stone was observed. The patient was later transferred to main campus for cholecystectomy.

The patient had an uncomplicated postoperative recovery and was discharged home after normalization of LFTs and resolution of her symptoms.

Description of diagnostic error: Ruling out cholangitis as an etiology of obstructive jaundice due to the overweighing radiological absence of choledocholithiasis.

Outcomes & Events:

- Delayed ERCP, delayed transfer to main campus for cholecystectomy.

Most significant failures in the diagnostic process:

- Erroneous clinician interpretation of a test: Even though MRCP showed evidence of CBD narrowing and extrinsic compression of the biliary system, acute obstruction was ruled out, and ERCP was deferred.
- Suboptimal consultation: GI signed-off after interpreting MRCP results as no indication for ERCP and despite persistently abnormal LFTs.

Harm: Prolonged length of stay.

Cognitive biases present:

- Representativeness Restraint: Looking for classical presentations of disease rather than common atypical variants.
- Even though the patient did not meet strict biochemical criteria for emergent ERCP as per ASGE guidelines (T bili >1.8 but <4.0), she did have a clinical picture of cholangitis.
- GI team ruled out cholangitis early on due to the absence of choledocholithiasis, neglecting other potential causes of cholestasis like biliary strictures or extrinsic compression of the biliary system.

Lessons learned:

- Cholangitis is a clinical diagnosis made with the presence of fever, jaundice, and abdominal pain. 28-70% of cases are due to choledocholithiasis; however other causes include benign biliary strictures, flukes infection, malignancy, and extrinsic compression due to inflammatory syndromes (cholecystitis, pancreatitis, or Mirizzi syndrome due to impacted stone in the cystic neck) Kimura et al., J Hepatobiliary Pancreat Sur. 2007;14(1):15-26
- Diagnostic and management criteria should always be interpreted in light of the clinical picture of each individual patient. Criteria should not be strict mandates to generalize decision-making that could potentially delay care when a patient presents with an atypical presentation.



Building a culture of diagnostic safety: 5 Things YOU can do

- 1 Use the term "**working diagnosis**" to communicate that the diagnostic process is uncertain and evolving.
- 2 Communicate the degree of diagnostic uncertainty during hand-off.
- 3 Call a **Diagnostic Time-Out** when diagnostic uncertainty is present OR when there isn't uncertainty, but the patient has several risk factors for diagnostic error.
- 4 Provide feedback to your colleagues in a psychologically safe environment about the diagnostic process.
- 5 **Contribute to diagnostic safety research** by becoming a PSLC chart reviewer/adjudicator.

Click to watch our video outlining diagnostic errors and what we're doing to improve diagnostic safety!

**Download our
Diagnostic Time-Out here:**



**Attend our
Diagnostic Safety Workshops
to learn more!**

**Diagnostic Errors
Missed, Incorrect, or Delayed Diagnoses**



Keep an eye out for our weekly emails as you are coming onto your rotation or service! Users are also featured in our weekly usage reports! Thanks!



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