

# CRITICAL FINDINGS IN THE ERA OF CHAOS

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# Purpose:

Physician-to-physician communication as part of patient safety has been emphasized by the Joint Commission.

In our institutional Radiology Department operational standards, we have established which critical findings and imaging reports not expected in a diagnostic image performed in emergency care, hospitalized, or ambulatory patients need to be communicated immediately to the attending physician within one hour of imaging acquisition.

The completion of this standard needs to achieve 100% each month. Nonetheless, in the era of COVID-19, it has been hard to keep up with these standards given the uprise of ICU studies.

# Methods:

## Defining critical findings

- Pneumothorax or pneumomediastinum of recent onset
- Massive pleural effusion of recent onset
- Saddle pulmonary embolism in pulmonary bifurcation
- Endovascular or feeding devices mispositioned (example catheters or feeding tubes)
- Foreign bodies in cavities
- Signs of esophageal or intestinal perforation (pneumoperitoneum, contrast extravasation)
- Thrombosis and or vascular obstruction (arterial or venous) of recent onset including transplanted organs.
- Active extravasation from a blood vessel; active bleeding
- Central nervous system acute hemorrhage
- Acute cerebral ischemic stroke



# Methods:

- Every month, we conduct statistics on critical finding completion. After seeing a drop in this standard completion in three consecutive months, we decided to use the "5 WHY" and the fishbone strategies to solve this problem.
- We first asked radiologists why they thought critical finding reports were not being completed. After identifying the problem, we worked on creating a structured critical finding report to improve accessibility. We also made email follow-ups each month when essential findings were not reported within the hour to understand specific circumstances.

# Example of "5 whys" strategy

<b>DEFINE THE PROBLEM</b>	Decrease in operational standard completion			
<b>WHY IS THIS A PROBLEM?</b>	<p><b>PRIMARY CAUSE</b> Why is it happening?</p> <p>1 It is happening because there is a delay in reporting time</p> <p>Why is that?</p> <p>2 It is happening because ICU studies from the night shift are being reported the next day.</p> <p>Why is that?</p> <p>3 It is happening because there is a delay in critical findings report specially in the ICU studies</p> <p>Why is that?</p> <p>4 It is happening because there are more studies in the ICU due to COVID-19 pandemic</p> <p>Why is that?</p> <p>5 It is happening because routine chest X rays are being performed in the night shift</p> <p><b>ROOT CAUSE</b></p> <p>NOTE: If the final "Why" has no controllable solution, return to the previous "Why."</p>			
<b>CORRECTIVE ACTION TO TAKE</b>	<p><b>CORRECTIVE ACTION</b></p> <p>Structured report for reporting critical findings. Separate routine ICU chest X rays from "new event" x-rays. Stablish critical findings reporting time from the moment the study is opened by the radiologist and not from the moment it was taken. Emails will be sent to each radiologist and resident when the time limit is exceeded for feedback</p> <table border="1"><tr><td data-bbox="2275 1412 2842 1543"><b>PARTY RESPONSIBLE</b> Radiology resident</td></tr><tr><td data-bbox="2275 1543 2842 1675"><b>DATE ACTION TO BEGIN</b> Jan 2020</td></tr><tr><td data-bbox="2275 1675 2842 1806"><b>DATE TO COMPLETE</b> Mar 2021</td></tr></table>	<b>PARTY RESPONSIBLE</b> Radiology resident	<b>DATE ACTION TO BEGIN</b> Jan 2020	<b>DATE TO COMPLETE</b> Mar 2021
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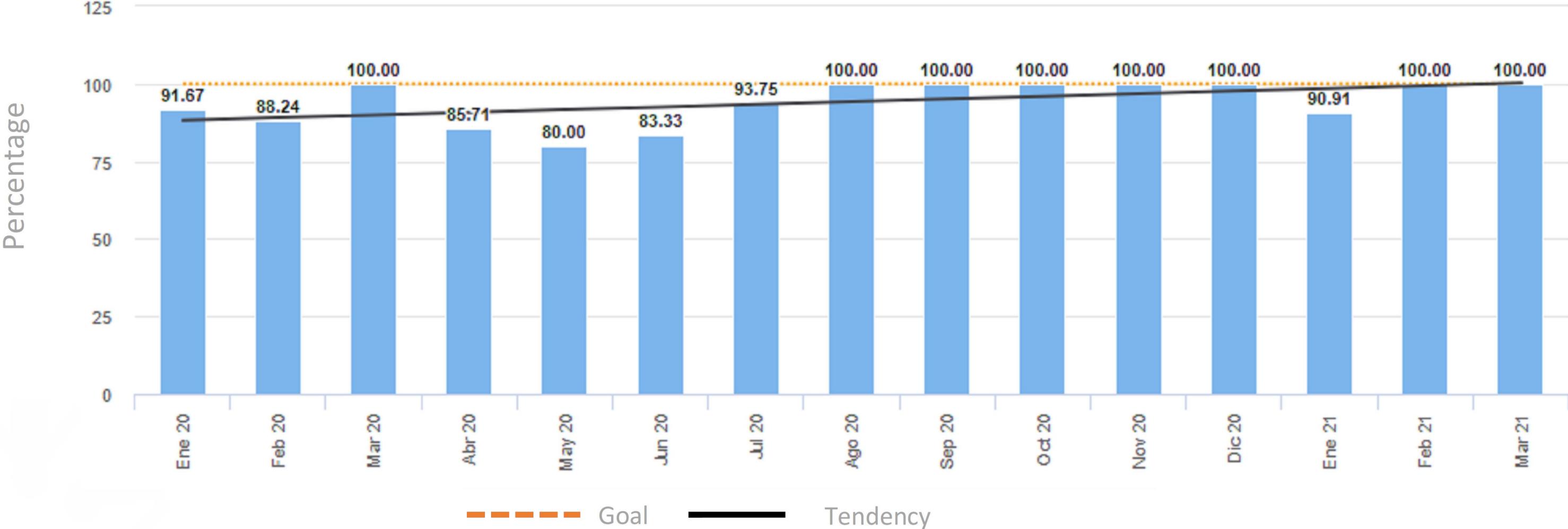
# Structured report:

- The critical finding was informed to (name of Dr or person to whom the finding was reported) at (date and time) immediately after identifying the finding. Mirror communication was verified.



# Results:

## PROPORTION OF CRITICAL FINDINGS PROMPTLY REPORTED



# Results

- At the beginning of the pandemic, critical finding reports dropped from 100% to 80% in April, March, and June 2020.
- After performing a survey, many radiologists argued uncertainty, fear and stress were the leading cause of distraction.
- After creating the structured report finding Radiologists found it easier and more accessible to inform.
- Additionally, after the email follows ups we encountered specific scenarios. In the ICU routine chest x-rays in COVID patients, critical findings could not be reported within the hour because of the higher volume and shortage of staff. This particular case, especially in the night shift critical findings report, was declared the next day by the thoracic radiologist.

# Conclusions:

- With the uprising of ICU studies during the COVID-19 pandemic, it has been hard to maintain our operational standards, especially in critical finding reports. Nonetheless, after adaptation and a learning curve, our standard has improved

