Diagnostic Radiology Resident Incentive Project: Improving Reporting of Critical Results

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BACKGROUND

- The radiology department serves as a critical node in the diagnostic process within healthcare.
- Timely communication of critical findings by radiologists can greatly influence patient outcomes.
- Missing or delayed communication of critical findings can lead to significant patient harm, delay in treatment, or even fatal consequences.
- It is important that radiology residents recognize “critical” findings and have efficient communication with the clinical teams.

OBJECTIVE

- Enhance radiology residents' knowledge & awareness of our current "critical results" policy including which findings are defined as "critical" and how to appropriately document our communications.
- Specific aim: Achieve a 10% increase in the identification of “Critical Results” over a 3-month period.
- Our broader objective is to bolster timely and accurate reporting, thereby reducing patient harm.

Radiology Critical Test Results
Documentation of Notification will be maintained per Radiology Guidelines

Ultrasound:

Ectopic Pregnancy
Unsuspected transplant thrombosis
New Intracranial Hemorrhage greater than germinal matrix grade 1 and 2 (pediatrics)

Chest X-ray:

Tension Pneumothorax/Hydrothorax
Malpositioned endotracheal tube in the bronchus or esophagus
Nasogastric tube in bronchus
Retained surgical foreign body

Abdominal X-ray:

Unexplained free intraperitoneal gas
Retained surgical foreign body

Pediatric:

Suspected non-accidental trauma

Chest CT:

Central pulmonary embolism
Acute dissection of aorta
Traumatic aortic rupture

Abdominal CT:

Unexplained free intraperitoneal gas
Active hemorrhage
Ruptured aortic aneurysm

Nuclear:

Brain Death Study

MRI:

Acute spinal cord compression or injury

CT/MRI Brain:

New or unsuspected intracranial hemorrhage
New or worsening brain herniation
New or unsuspected acute brain infarct

CTA/MRA Brain:

New acute carotid/vertebral/basilar thrombosis or dissection

This is not meant to be inclusive and will ultimately be at the Radiologist's discretion per ACR guidelines.

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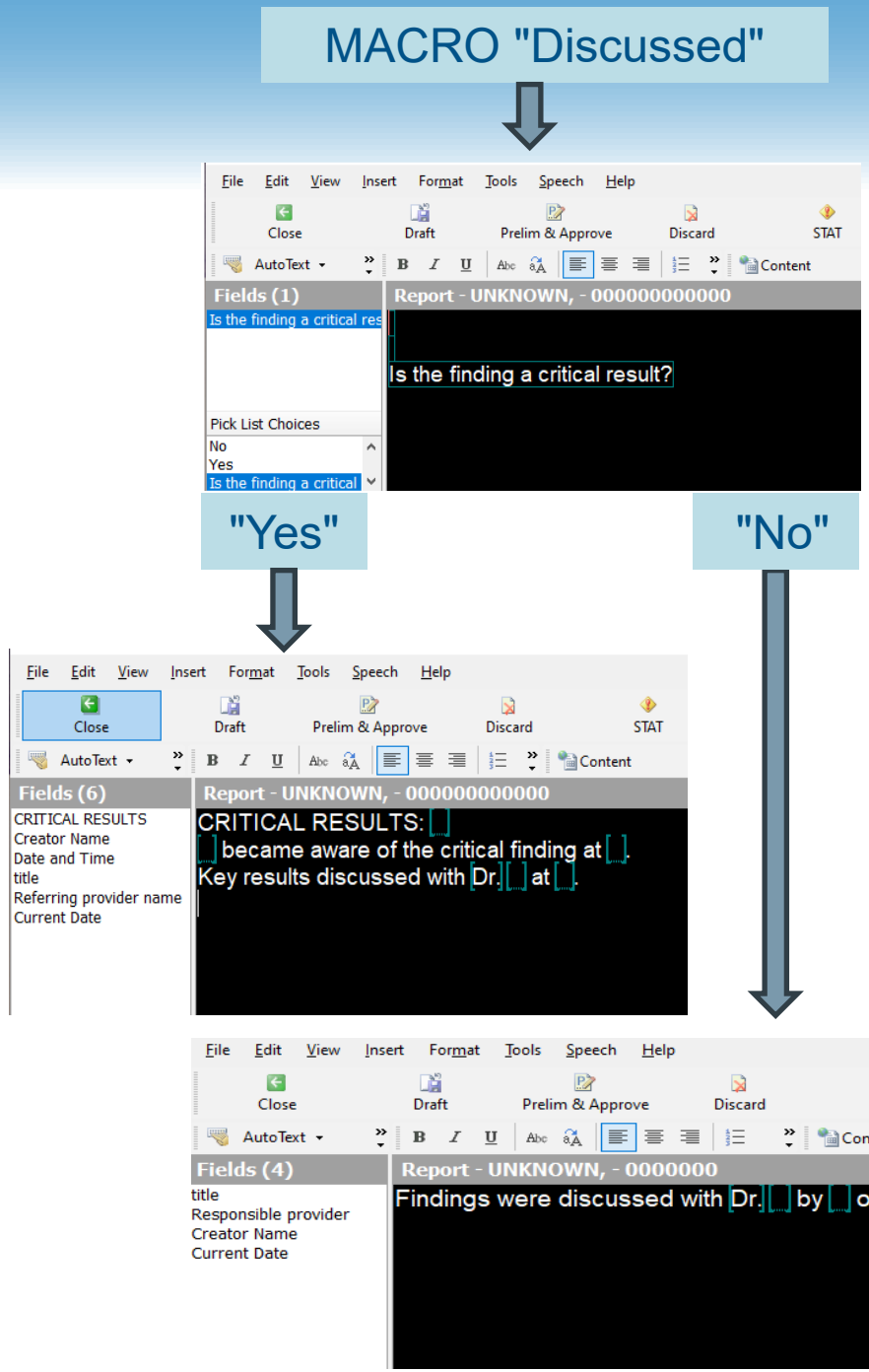
METHODS

- **INTERVENTION:**
  - ***Educational Lecture:*** Covering the significance, criteria per department, protocols for reporting critical findings, and how to appropriately document communication of these findings.
  - ***Macro Improvement:***
    - Change current “Discussed” macro (often used by residents rather than the “Critical Results” macro) to have a pick-list where the resident must choose to either report a Critical Result or other “non-critical” finding as a forcing function.
    - No changes will be made to the “Critical Results” macro which can also be used
  - ***Visual aids/documentation:*** Lists of critical results were installed throughout the reading rooms (especially at the first-year resident desks) as a constant reminder of critical findings.



METHODS

- Pre and Post-Intervention Data:
  - Analyze data gathered by the Imaging Department for a 3 month period (July, September, and October) to provide a baseline number of reported “critical results” and additionally, how many were incorrectly documented.
  - Compare this to data to a 3 month period after our intervention implementation (December, January, and February) to determine the number of times the “Critical Results” macro was used and determine if there were any instances incorrectly documented.

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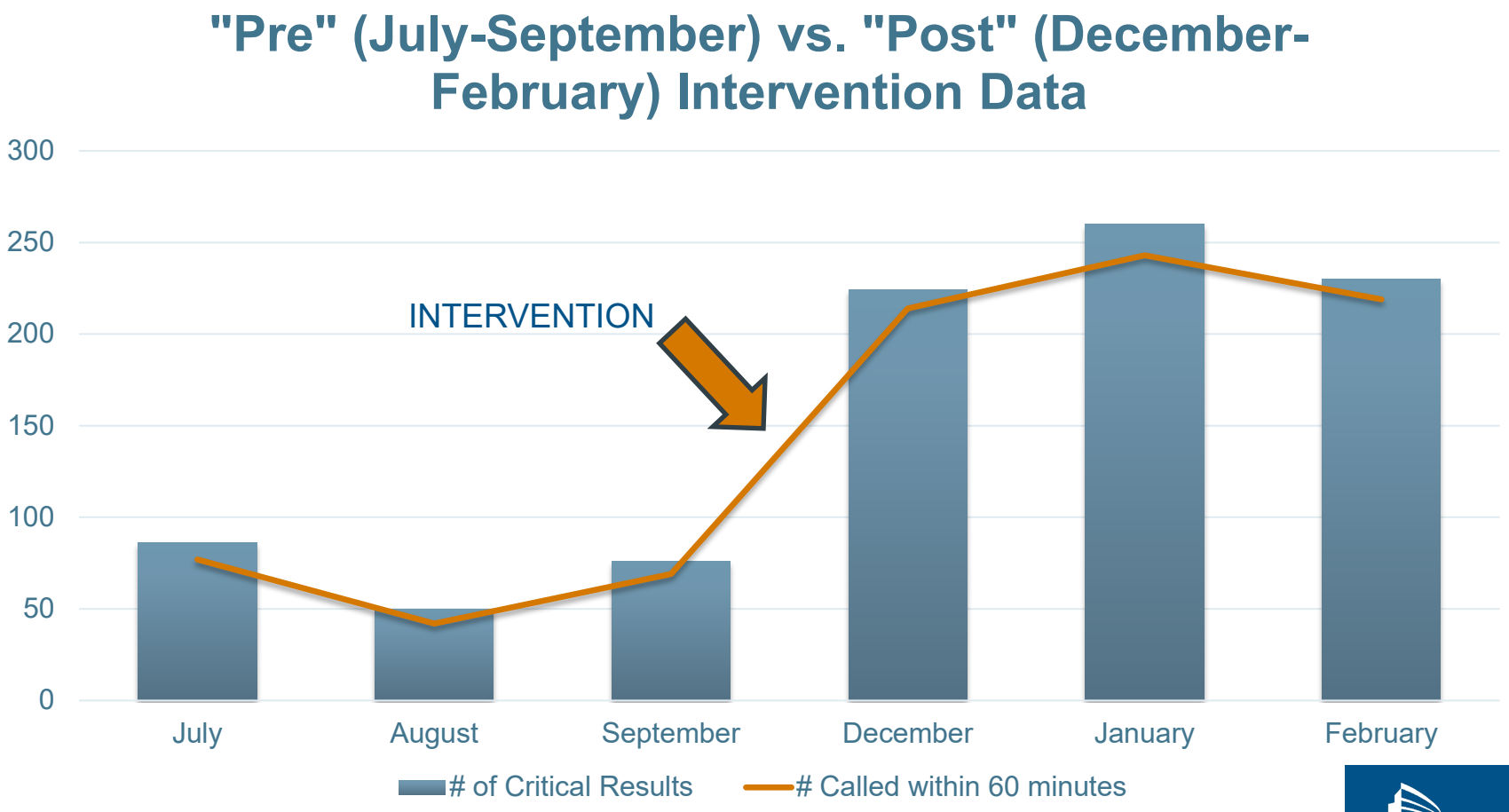
RESULTS



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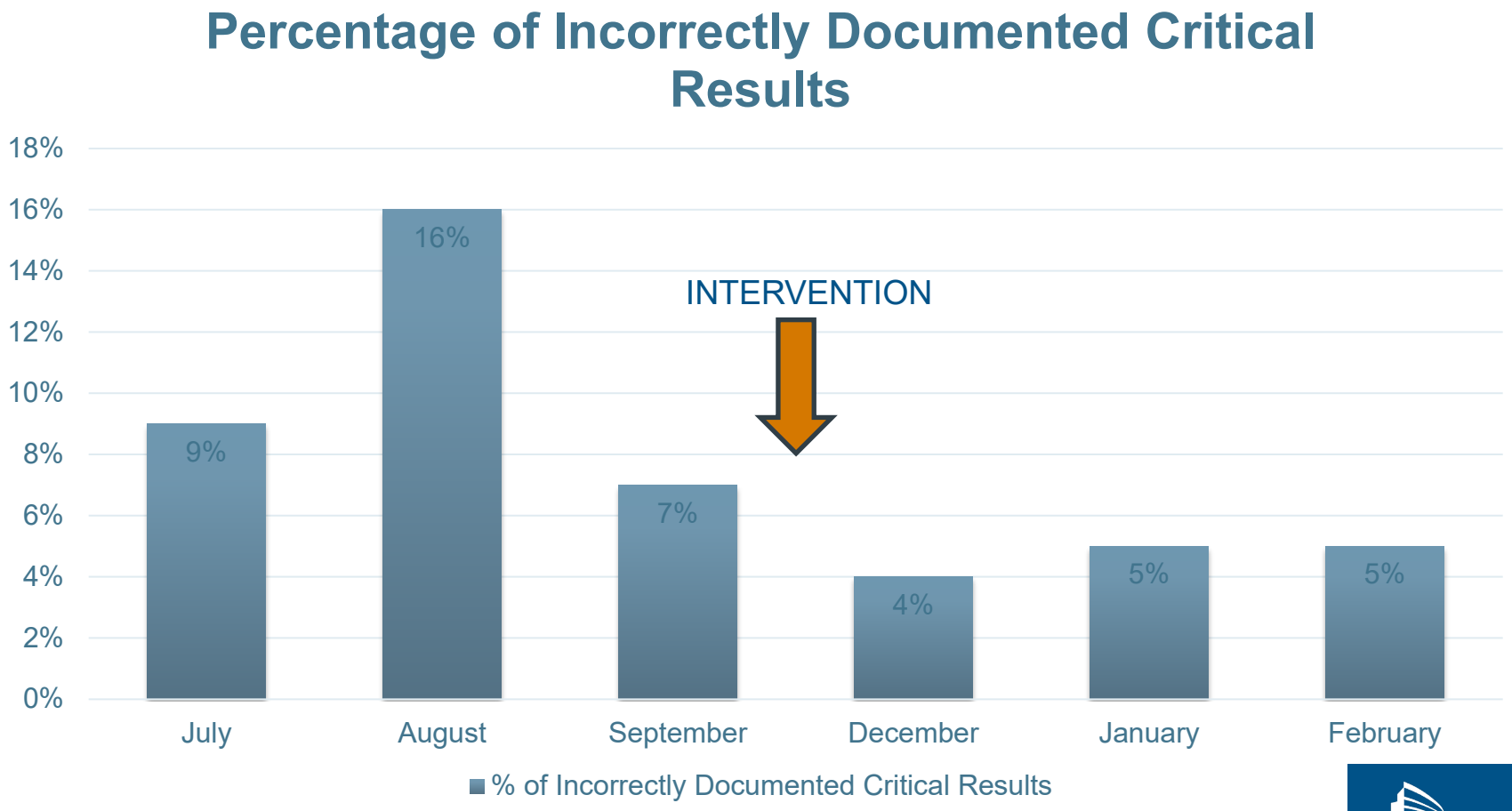

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RESULTS

	Pre-Intervention	Post-Intervention
Avg Monthly Critical Results	70.7	230
Percent Change	+ 225%	
Avg Monthly Percentage of Incorrectly Documented Calls	10.6%	4.9%
Percent Change	- 53.8%	

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CONCLUSION

- There was increased awareness/reporting of critical results and improved adherence to timely reporting/appropriate documentation.
  - Compared to pre-intervention data, there was a 225% increase in critical results documented with a concurrent decrease in the incorrectly documented/reported findings by 53.8%.

- Strengths:
  - Staff buy-in and ease of the tool. New macro forced reporting radiologists to state whether a result was "critical" and the previous "critical results" macro auto-populated, seamlessly aligning with previous documentation practices.

- Limitations:
  - Our relatively shorter timeframe of 3 months may not have correctly projected future use of the "critical results" macro, which could be monitored over a longer timeframe. Another limitation was possible failure to capture results that were defined as "critical", as these findings could have been reported without the "critical results" macro.

- Future Recommendations:
  - All report impressions could be parsed for any critical result regardless of "critical results" macro usage.

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IMPLICATIONS FOR FUTURE PRACTICE

By empowering radiology residents with knowledge and emphasizing the significance of timely reporting of critical findings, we can contribute to a culture of patient safety, improving patient outcomes, and streamlining clinical workflow.

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