REDUCING ERRORS IN DIGITAL RADIOGRAPHY

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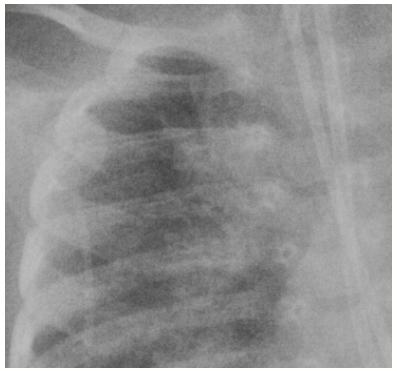
WHAT WE DID

Diagnostic Radiography team reports error on average every 4.6 days.

Quality Improvement project investigates, sets goal to achieve 7 day average in 6 months.

Second QI project to targets image quality concerns for specific studies.

Significant change in error rate for diagnostic radiography



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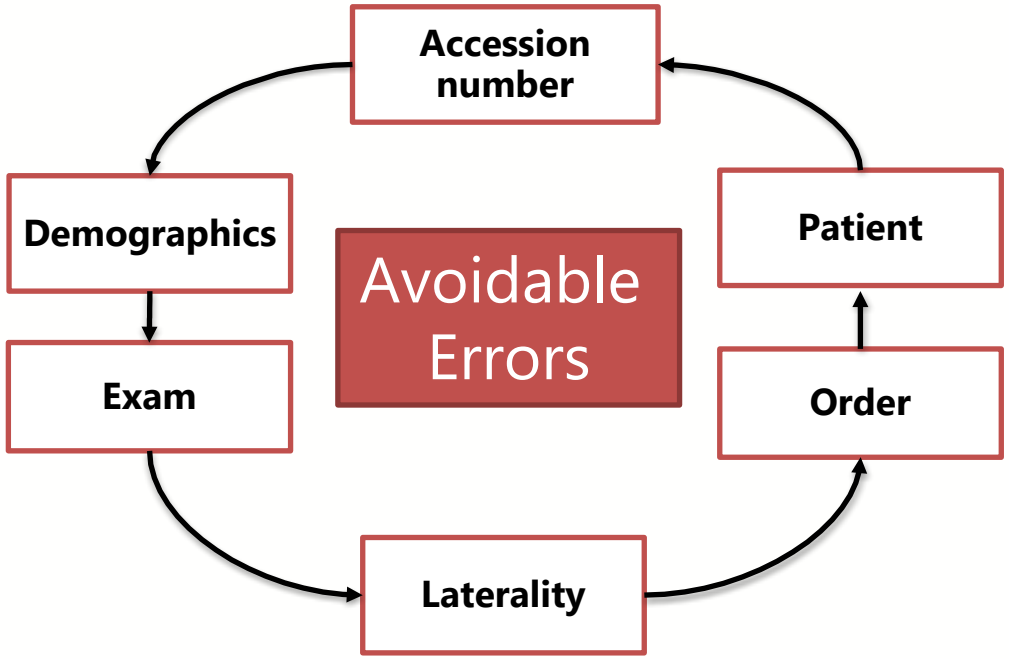
FOCUS ON THE ERRORS THAT CAUSE HARM



Root causes of Errors

- Equipment Variations
- Failure to Use “Time Out” Process
- Capture Images Based on Order
- Varied Individual Imaging Technique
- Equipment Protocol Name Variations
- Ambiguous Automation

Avoidable Errors → Precursor Event → Patient Harm

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WHAT HAPPENS WHEN TECHNOLOGISTS DON'T KNOW THE ERRORS ARE HAPPENING

Changes patient size profile

Automatically selects a detector plate

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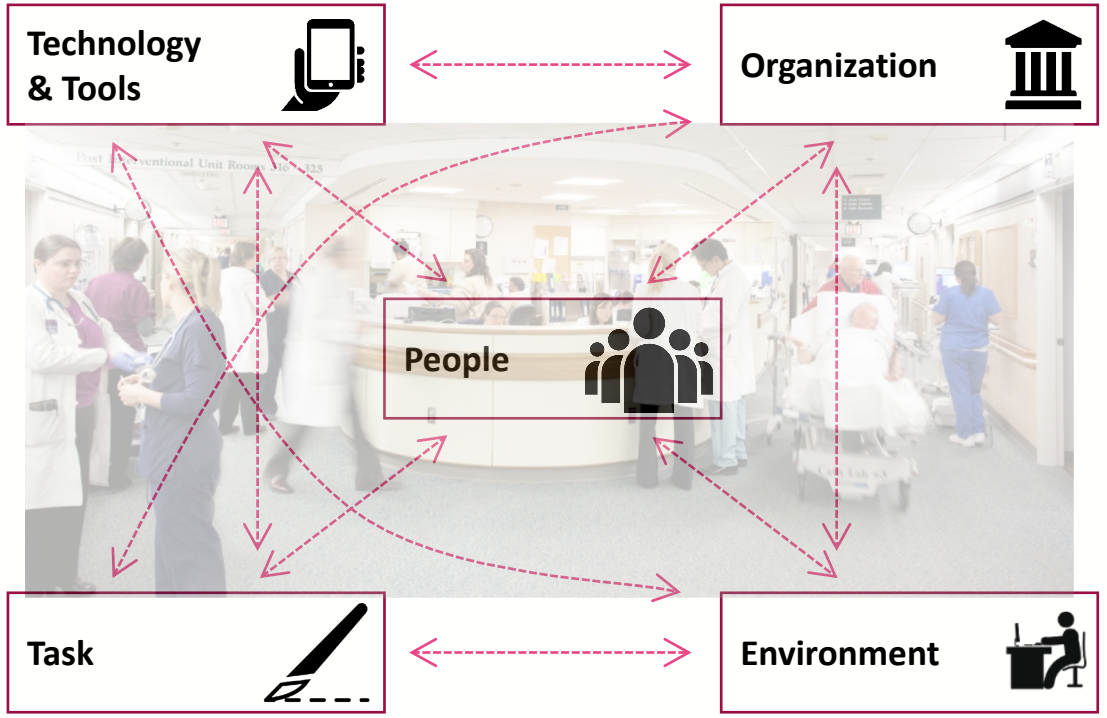
HOW CAN HUMAN FACTORS HELP?

We don't redesign humans, we redesign the system in which people work

-Terry Fairbanks



(Holden & Carayon, 2021)

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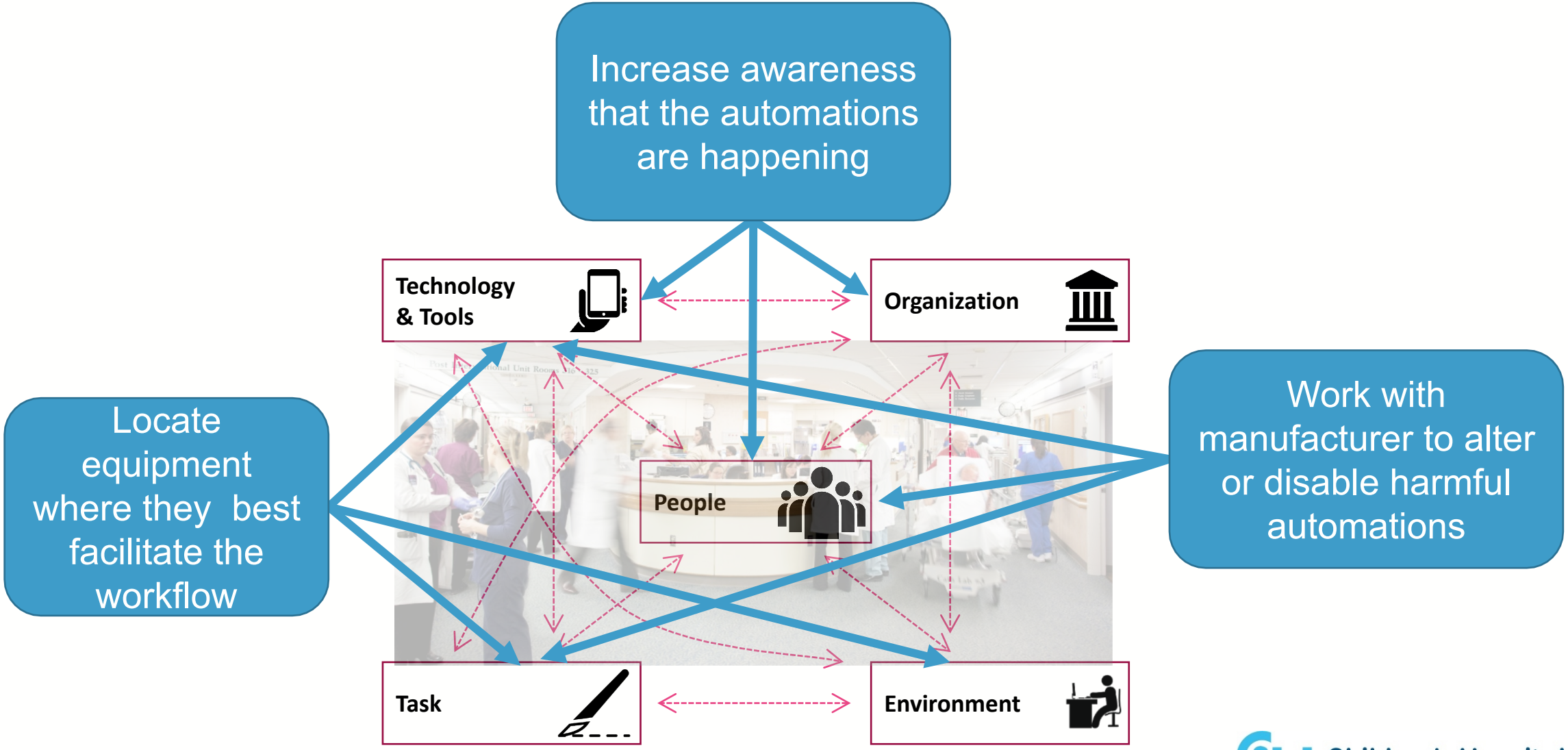
HOW TO APPLY HUMAN FACTORS SOLUTIONS



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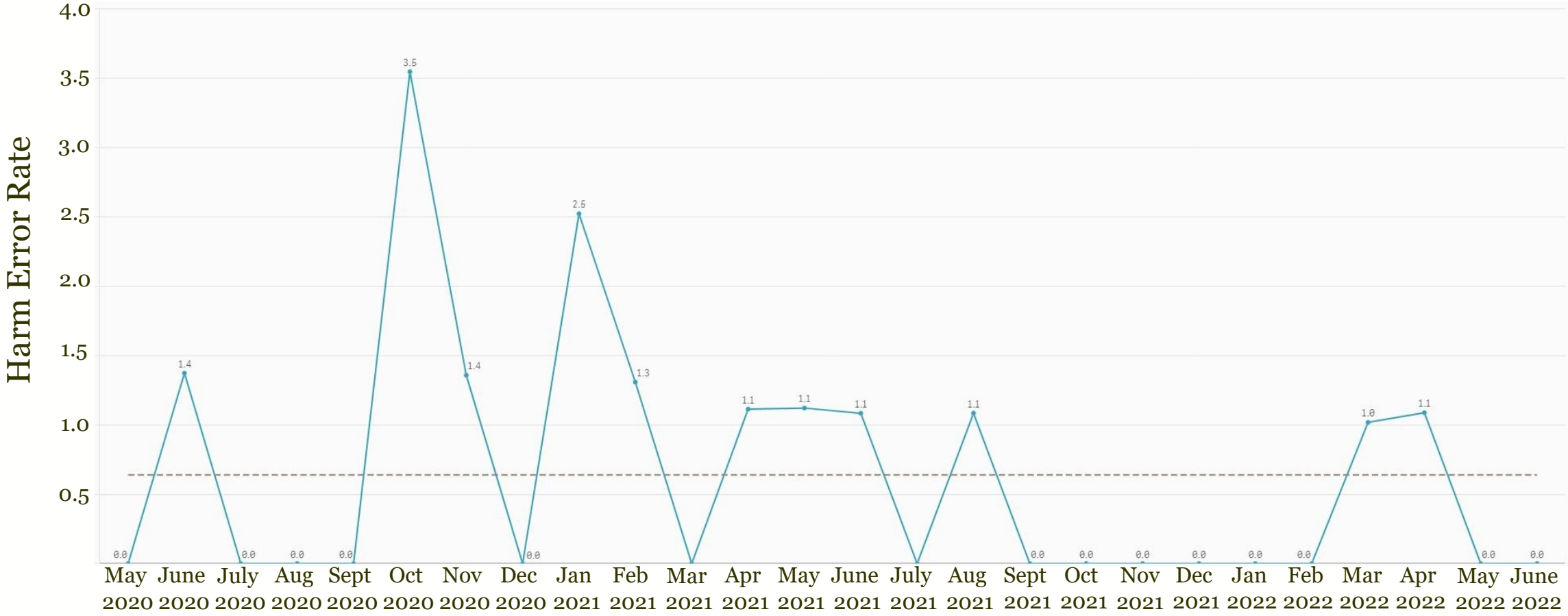
RESULTS

Monthly Error Rate – per 10,000 Exams



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CONCLUSION

- Results from QI efforts can take time and require sustained support to bear fruit.
- Consider the potential impacts of “time saving” automations.
- Human factors automation insights:
  - Machine made decision points should be obvious to the operator, and easy to deliberately override.
  - Over-reliance on technology assistance can lead to inappropriate trust in machine accuracy, leading to unintended errors

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