Imaging Stewardship
Defining STAT Portable Digital Radiographs in the Cardiac ICU

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Disclosures

- None
Background and Aim

• High priority or “STAT” portable digital radiographs (DR) are crucial for addressing urgent patient needs

• Concerns arise when STAT portable DR are requested regardless of patients’ urgency

• Delaying STAT portable DR in the ICU causes delays in delivering time-sensitive care

Aim: Enhance STAT portable DR workflow through decreasing technologist turnaround times (TAT*) from a median of 24 minutes to 20 minutes over a 6-month period

*TAT: Duration between technologist acknowledgment of the order within EPIC and exam completion
Methods

• This project was a quality improvement initiative performed following the *Realizing Improvement Through Team Empowerment (RITE)* model

• A multidisciplinary team including technologists, nurses, physicians, a human factors engineer, and safety & quality specialists conducted regular Gemba walks and applied PDSA cycles to improve each step of the process
Problem Analysis: Causes of Extended DR TAT

**At project initiation:** median technologist TAT for portable DR in the CICU was 24 minutes

**Process**
- Determine patient’s need for portable DR and its priority (inpatient team)
- Call portable DR technologist (RN)
- Schedule portable DR in electronic medical record (technologist)
- Perform & complete DR (technologist)

**Problem**
- Technologist might be busy performing another exam
- Technologist must have access to electronic medical record
- Patient might not be ready for DR to be performed

As observed through Gemba walks

As expressed by Technologists
Key Drivers and Interventions

**Key Drivers**

- Communication clarity
- Shared understanding of priority level definitions
- Technology integration

**Interventions**

- Introduction of a new communication platform that allows CICU clinicians to notify technologists about a STAT DR through a text message instead of a phone call.
- Create well defined clinical criteria for STAT DR using clinical expertise & history data.
- Update text received by technologist with exam priority & patient information through communications in the electronic medical record chat function.
**Updated STAT clinical criteria**

- Categories of requested portable DR updated to: STAT, ASAP, ROUTINE

<table>
<thead>
<tr>
<th>STAT</th>
<th>ASAP</th>
<th>ROUTINE</th>
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<tbody>
<tr>
<td>Post-OP</td>
<td>S/P VP shunt revision/placement</td>
<td>Temperature spike</td>
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<tr>
<td>Code</td>
<td>Evaluate for pleural effusion</td>
<td>Check lung status</td>
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<tr>
<td>OR</td>
<td>Evaluate line placement</td>
<td>Evaluate for infiltrates</td>
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<tr>
<td>Evaluate for aspiration</td>
<td>Chest tube pulled</td>
<td>Evaluate for pneumonia</td>
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<tr>
<td>ETT placement</td>
<td>Intracardiac line pulled</td>
<td>Evaluate feeding tube placement</td>
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<tr>
<td>Swan placement</td>
<td>Localized pain</td>
<td>Abdominal distension</td>
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<tr>
<td>PICC placement</td>
<td>Concern for pulmonary edema</td>
<td>Ileus</td>
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<tr>
<td>Respiratory distress</td>
<td>Concern for NEC</td>
<td>Fracture follow-up</td>
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<tr>
<td>Evaluate for pneumothorax</td>
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<tr>
<td>Evaluate for bleed</td>
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<tr>
<td>Evaluate for free air</td>
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<td></td>
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<tr>
<td>S/P intubation/extubation</td>
<td></td>
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<tr>
<td>Bedside surgical procedure</td>
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Results

Interventions decreased technologist TAT from 24 minutes to 15 minutes over the study period of 6 months.
Limitations

• The few number of technologists available to respond to CICU STAT portable DR orders limited further decrease in technologist TAT

• Definitions for STAT were designed for the pediatric cardiac ICU, may not be applicable in other clinical settings
Conclusion

• Direct and informative communication pathways between technologists and ordering providers decreases unnecessary interruptions in technologists’ workflow

• Effective relay of exam priority to technologists helps assign importance to STAT orders

• Clear criteria for STAT exams prevent inappropriate labeling of non-urgent cases

• The designed workflow improved imaging stewardship at our institution, ensuring we provide the right study for the right patient at the right time using multi-specialty collaboration.