Procedural Specimen Errors: Evaluating Processes Using an Interdisciplinary Approach

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Team

Workgroup Members

- OR CNS, OR NPDP, OR RN
- 2 Surgeons
- Lab Manager, Pathology Supervisor, Microbiology Medical Laboratory Scientist
- Radiology Manager, Interventional Radiology Nurse
- Informatics Nurse Specialist
- Quality & Safety, Nurse, and Continuous Improvement Consultants

Impacted Groups

- OR staff (surgeons, nurses)
- Interventional Radiology & Endoscopy teams
- Proceduralists
- Clinical Lab & Pathology

Preparation and Planning

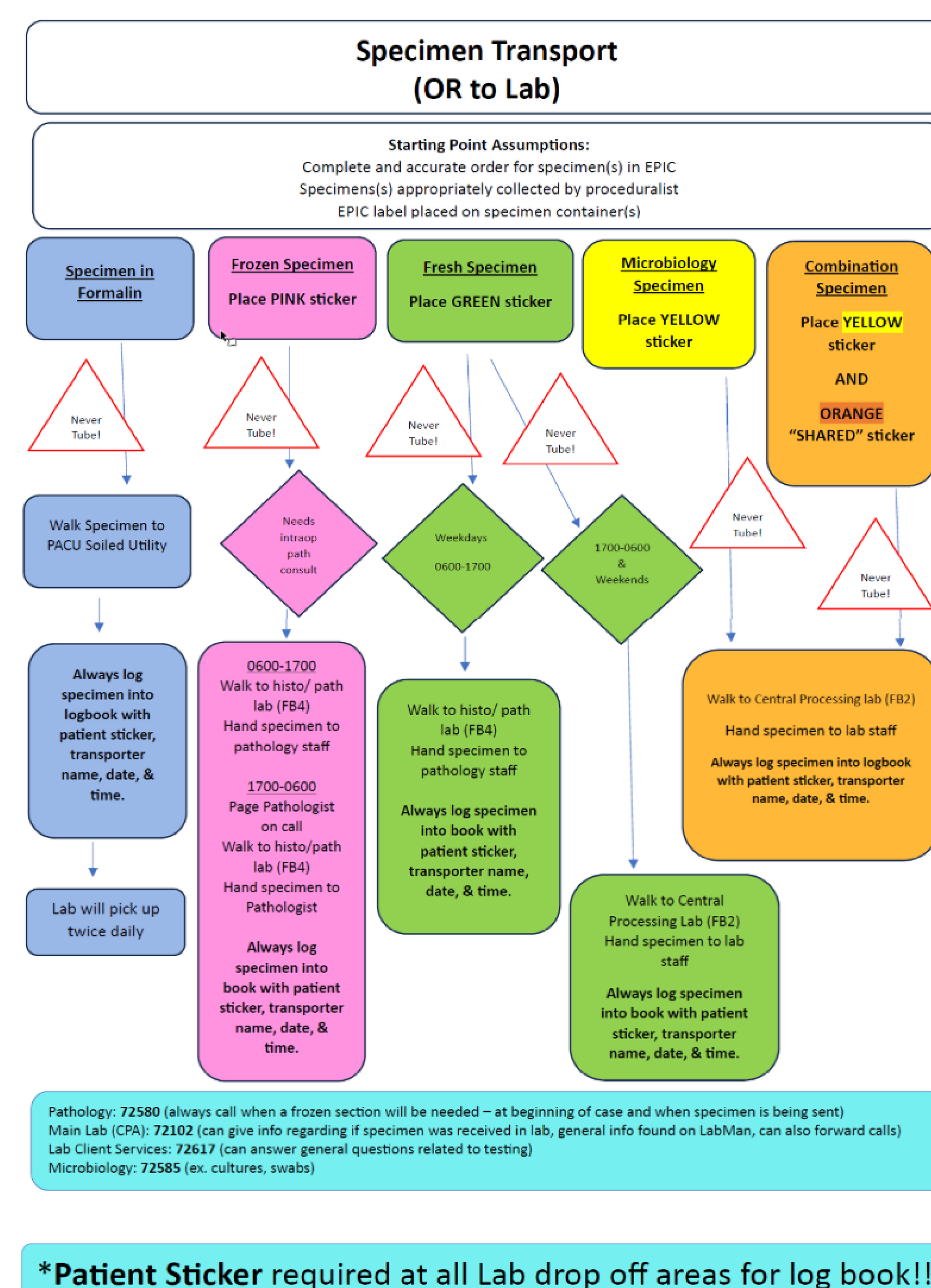
- Seattle Children's identified frequent specimen processing errors causing delays and repeat procedures
- Analysis showed defects in Epic ordering, sampling, storage, and transport
- Focus: **High-risk specimens** (excluding Epic ordering and blood collection)
- Interdisciplinary workgroup formed to design process improvements for collection and processing

Implementation

Aim/Goal: Improve specimen tracking, processing, and accountability for high-risk specimen coming from OR and IR

Process Review & Improvements:

- Two full-day sessions to assess workflows and specimen handling
- Enhanced clarity in surgical timeout, sign-out, and labeling
- Retired term "permanent"
- Introduced color-coded stickers (pink=frozen, green=fresh, yellow=microbiology)
- Orange "shared specimen" stickers to signal that a specimen would be shared between pathology and microbiology
- New lab verification process and updated chain-of-custody for accountability
- Simulations completed before finalizing changes
- Staff education with visual aids and badge buddies



*Patient Sticker required at all Lab drop off areas for log book!!

FRESH

FROZEN SECTION
Time Sent By OR ______ Time Received In Histo ______
Time Called Dx to OR ______ Initials of Pathologist ______

Micro

SHARED SPECIMEN

Changes to our Workflow

Labeling

Current state:

- Ensure that when specimen leaves field – the Scrub tech & RN check the label together and RN adds stickers
- Sticker standards: Fresh=Green; Frozen=Pink (Intra-op consults and immediate dx) Formalin=No additional label

New Process:

- Yellow stickers for specimen going to micro
- Shared stickers for specimen that need to be shared by pathology/micro when there is not enough to divide
- If a label needs to be replaced, do not place over old label -- remove old label and apply the new one.

FRESH

06:00-17:00 - FB Floor 4 Pathology/Histology

17:00-06:00- FB Floor 2 CPA

ALWAYS bring a patient sticker for the log
Please DO NOT tube specimen

STAT – FB Floor 4 Pathology/Histology Always

Micro

FB Floor 2 CPA/Microbiology Always

ALWAYS bring a patient sticker for the log
Please DO NOT tube specimen

Shared Specimen

FB Floor 2 CPA (lab to triage) Always

Outcome

- Pathology leadership reports **~40% reduction** in specimen defects during transport from OR and IR to pathology from the same period in 2024 and 2025
- Feedback from Nursing Professional Development rounding:
  - Process remains complex but **significantly clearer** after implemented changes

Implications for Perioperative Nursing

- Multidisciplinary approach was critical for reducing specimen defect errors
- Provided comprehensive insights and emphasized perioperative workflow impact
- Established guidelines can serve as a **replicable model** for other hospital areas or facilities
- **Ongoing evaluation** needed to further optimize and streamline processes