Official Radiology Policies for Residents in a Hurry:
Increasing the Accessibility of Official Hospital Policies for Radiology Residents on Call or Injection Shift

Stanford MEDICINE Resident Safety Council Quality Improvement & Innovation

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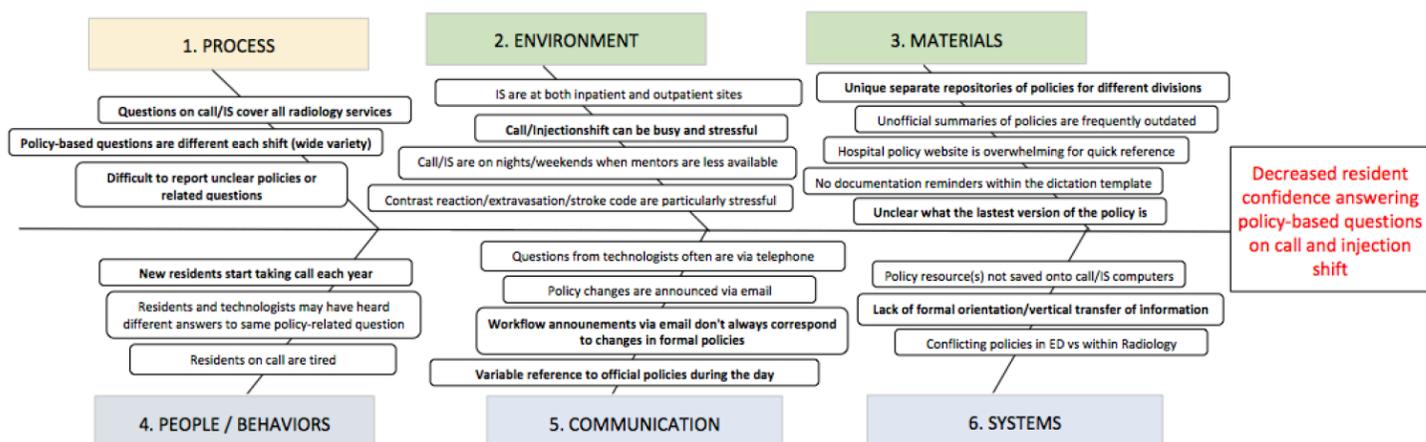
Problem Statement/Background

Official Radiology Department policies ensure safe, high-quality, and consistent care for all patients undergoing imaging, including patients receiving CT or MRI contrast, patients for whom an MRI may be unsafe, patients receiving radioactive tracer material internally, and potentially pregnant patients. There are few regularly-updated centralized resources that cover the full scope of these policy-based decisions, and the existing resources may be difficult to find or navigate quickly.

Residents on call and injection coverage shifts are expected to independently answer policy-based questions about patient imaging which span all of the modalities of radiology and all of the radiology sub-sections. Lack of knowledge or experience in these scenarios can lead to non-conformity with hospital policy, delayed patient care or adverse outcomes.

Target State: SMART Goal

By 4/4/2022, increase the confidence of radiology residents answering policy-based questions while on call or injection coverage shifts, measured on a 1-5 Likert scale, by 10% above the 2/25/2022 baseline.

Root cause Analysis

1. PROCESS
- Questions on call/IS cover all radiology services
- Policy-based questions are different each shift (wide variety)
- Difficult to report unclear policies or related questions
- New residents start taking call each year
- Residents and technologists may have heard different answers to same policy-related question
- Residents on call are tired

2. ENVIRONMENT
- IS are at both inpatient and outpatient sites
- Call/Injectionshift can be busy and stressful
- Call/IS are on nights/weekends when mentors are less available
- Contrast reaction/extravasation/stroke code are particularly stressful
- Questions from technologists often are via telephone
- Policy changes are announced via email
- Workflow announcements via email don't always correspond to changes in formal policies
- Variable reference to official policies during the day

3. MATERIALS
- Unique separate repositories of policies for different divisions
- Unofficial summaries of policies are frequently outdated
- Hospital policy website is overwhelming for quick reference
- No documentation reminders within the dictation template
- Unclear what the lastest version of the policy is
- Policy resource(s) not saved onto call/IS computers
- Lack of formal orientation/vertical transfer of information
- Conflicting policies in ED vs within Radiology

Decreased resident confidence answering policy-based questions on call and injection shift

4. PEOPLE / BEHAVIORS
5. COMMUNICATION
6. SYSTEMS

Key Learning

• Our outcomes demonstrate that junior residents are less comfortable navigating official policies than senior residents, and that this gap can be bridged by making official policies easy to access, review, and ask questions about.

• Ease of access is critical for any resource residents are expected to use during a busy call shift, and having multiple means of reaching the resource (email, posters, link directly from imaging-reading software) empowers residents to add the resource to their workflow.

• Residents are expected to answer policy-based questions independently for more than half of the hours in a day, and resident confidence performing these tasks is essential to ensure patient safety, clinical efficiency, and positive patient experience.

Preview of the policy repository (Stanford log-in required; https://radit.stanford.edu/):

Stanford MEDICINE Radiology Documents Repository

Home (All Documents)　SHC Imaging Services　SoM Department of Radiology　LPCH Department of Radiology
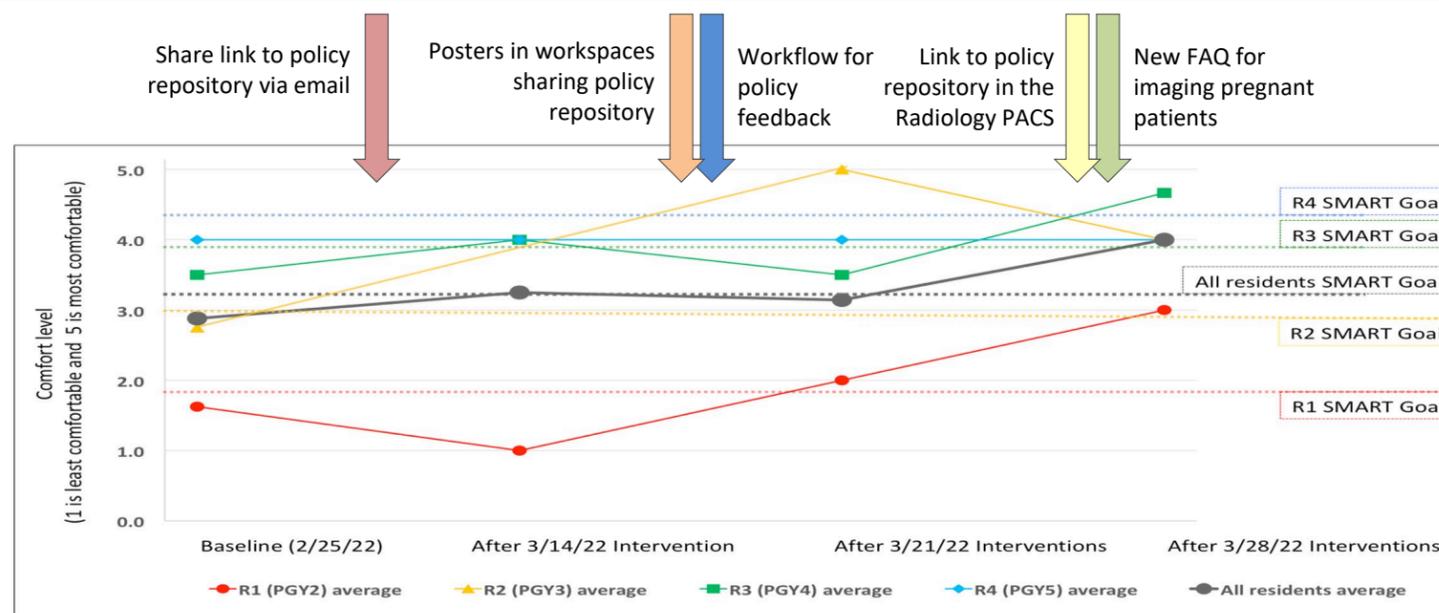Frequently Asked Questions　IT　Radiology Weekly Update　Submit Feedback

Key Drivers

- Separate policy repositories for different divisions
- Quick turn-around time (questions asked via telephone during busy shifts)
- Lack of formal resident orientation makes rapid access of the correct policy difficult
- Difficult to report unclear policies or related questions

Interventions / Countermeasures

- Share via email the Radiology Documents Repository for residents to trial (3/14/22)
- Post fliers with the link to the Radiology Documents Repository in the call and injection shift rooms (3/21/22)
- Share a link directly from PACS to the repository (3/28/22)
- Share a focused FAQ for a policy on the repository (3/28/22)
- Establish a workflow for direct resident/user feedback for policies and the Radiology Documents Repository (3/21/22)

Run Chart

Share link to policy repository via email | Posters in workspaces sharing policy repository | Workflow for policy feedback | Link to policy repository in the Radiology PACS | New FAQ for imaging pregnant patients

Comfort level (1 is least comfortable and 5 is most comfortable)

X-axis: Baseline (2/25/22), After 3/14/22 Intervention, After 3/21/22 Interventions, After 3/28/22 Interventions

Legend: R1 (PGY2) average, R2 (PGY3) average, R3 (PGY4) average, R4 (PGY5) average, All residents average

Reference lines: R4 SMART Goal, R3 SMART Goal, All residents SMART Goal, R2 SMART Goal, R1 SMART Goal

Additional Results

Group of Residents	Baseline 2/25/22	After 3/28/22 Intervention	Increase from baseline to after 3/21/22 intervention
R1 (PGY2) average	1.6	3.0	85%
R2 (PGY3) average	2.8	4.0	45%
R3 (PGY4) average	3.5	4.7	33%
R4 (PGY5) average	4.0	4.0	0%
All residents average	2.9	4.0	39%

• After completing the interventions, the average reported confidence of residents answering policy-based questions increased by over 10% for all groups, except the R4 resident class, who reported high confidence at baseline.

• The confidence of junior residents was relatively low at baseline, but demonstrated the greatest increase after the interventions.