

## Radiology Resident Idea System

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## Purpose

- To engage residents in continuous departmental improvement
- To educate residents about management of an academic radiology department
- To provide a platform for residents to report workflow inefficiencies, submit potential solutions, receive feedback from department administrators about proposed ideas, and actively participate in implementing changes

## Developing an Idea System

- Senior department administrator with support of the department chair guided the resident Quality Improvement director
- A committee of 5 residents from all class years was established
- An electronic submission system was created per specifications of the committee based on Idea Systems described in the literature and previously implemented by technologists in our department

## Submitting an idea

- Must be a resident enrolled in our institution's diagnostic radiology residency
- Ideas must include a proposed solution
- Submissions are not anonymous
- Ideas related to education and the residency program specifically remain within the realm of the chief residents and program directors
- There are no repercussions for suggesting solutions in a professional manner

## Idea submission categories

- Daily workflow
- On-call/weekend workflow
- Patient safety
- Resident safety
- Information technology
- Other

## Submission page

The screenshot shows a web-based form titled "Resident Idea System". At the top right, there is a link for "HELP" and a "Post" button. The form contains several sections:

- (Red = Required)**: A red label indicating required fields.
- What did you observe or experience that could be improved?**: A large text area for describing the issue.
- Date, if relevant:**: A date selection field.
- Primary focus of problem:**: A list of checkboxes for categories: Daily workflow, On-call/weekend workflow, Patient safety, Resident safety, Information technology, and Other (please describe). There is a text input field below this list.
- Is the problem primarily related to a single location?**: A list of checkboxes: East only, South only, West only, and Problem not specific to a single location.
- If readily resolvable, please submit:**: A small text input field.
- Describe any action that has already been taken to correct or improve the situation:**: A large text area.
- What suggestions do you have to improve the situation?**: A large text area.
- Reported by:**: A field containing the name "Neil, Steven".
- Reported on:**: A field containing the date "10/2/2013".
- Submit Survey**: A button at the bottom of the form.

## Review of submissions

- Committee members are notified electronically every time an idea is submitted
- Any member of the committee may review the submission and approve it for posting on the Idea System electronic dashboard, which is visible to all residents
- The committee meets every 5 weeks to review ideas
- After review, all ideas receive a written response on the Idea System dashboard
- Tasks related to implementing changes are delegated among committee members

## Status of ideas

- Submission pending
- Initial report approved for posting
- In progress
- Complete

## Idea System Dashboard

- Description (as submitted)
- Category (as submitted)
- Date, location, and modality, if relevant (as submitted)
- Initial action taken and initial suggestions (as submitted)
- Date of submission and name of submitting resident
- Status
- Resolution to date
- Date of last resolution edit and name of committee member who made the change

## Results – Total Submissions

- System launched February 2013
- 34 submissions from 10 residents
  - 1st year (3)
  - 2nd year (2)
  - 3rd year (4)
  - 4th year (1)

## Results – Submission Status

- 2 (6%) approved for posting/pending review
- 12 (35%) in progress
- 20 (59%) complete
- 0 (0%) pending initial approval for posting

## Results - Category

- Daily workflow – 12 (35%)
- On-call/weekend workflow – 5 (15%)
- Patient safety – 5 (15%)
- Resident safety – 2 (6%)
- Information technology – 7 (21%)
- Other – 3 (8%)
  - Resource utilization - 2
  - Education/workflow - 1
- On further review, 22 (65%) pertained to information technology, such as PACS, electronic ordering of radiology studies, electronic protocols for radiology studies, and telephone and paging systems

## Example changes

- Replaced computer in the department conference room, which was malfunctioning during conferences on a daily basis.
- Fixed broken chairs in the reading room, most of which were still under warranty.
- Allowed long distance calls without a special access code from telephones in the on-call reading rooms, so that on-call residents can return pages from ordering physicians with long-distance cell phone numbers without delay.

## Example changes

- Changed a new wet read policy that adversely affected resident work flow.
- Consulted pharmacy to unwrap Epi pens, which were wrapped in tamper-resistant tape that precluded opening during an emergency.
- Installed a fan in center section of a large subdivided reading room with one universal thermostat but a wide range of temperatures.

## Example Changes

- Redesigning the electronic protocol system, which was not considered a priority issue until multiple residents submitted ideas suggesting changes.
- Provided notepads in the reading rooms for daily note-taking to reduce use of high-quality printer paper.
- Purchased a head-lamp speculum light for sonohysterography and hysterosalpingography to facilitate faster cervical catheter placement and reduce patient discomfort.

## Challenges

- Implementing information technology systems changes is complex and costly. Not all proposed changes could be accomplished in the short-term, but as a result of this system, resident ideas will be incorporated into long-term system updates.



## Indirect benefits

- Once this system revealed a common theme of suggestions for improving our department's information technology (IT), a designated resident, who is also a member of the Idea System committee, was invited to join the IT planning committee to provide resident input at the planning stages of implementing new departmental IT systems

## A win-win situation

- Residents learn through the committee's response to submissions about the intricacies of department operations and the process of making changes at the systems level
- The department learns directly from trainees "on the ground" about potential areas for improvement and potential solutions
- Patient care and interaction with ordering physicians is improved

## Future plans

- Add a “like” feature to the dashboard which will informally poll residents to determine which ideas to prioritize
- Involve additional residents, including new first year residents, in quality improvement, including through the Idea System committee

## Conclusions

- A systematic resident Idea System brings residents' ideas for improving workflow promptly to the attention of appropriate department administrators, resulting in rapid systems improvements.
- Daily workflow inefficiencies, some of which residents have been working around for years, were changed within weeks of implementing this system.
- Resident ideas can decrease excess resource utilization.
- The majority of changes proposed by residents through this system relate to use of information technology.

## Contact

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