From reactive to proactive: implementing a low-threshold reporting system in a large, multisite diagnostic radiology department

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Purpose

- **High-reliability organizations (HRO)**
  - Rely on proactive low-threshold reporting systems in order to decrease downstream failures.
  - Root Cause Analysis effective for the analysis of active errors.
  - Most system failures consist of latent errors not active errors.

- **Existing standard incident reporting tool at our institution**
  - Designed for high impact events
  - Requires detailed entry information; ~5-10 minutes per entry
  - Managed at health system-level

- **No existing reporting pathway for latent errors, ex:**
  - Wrong phone numbers in staff directory
  - Suboptimal (though diagnostic) field-of-view

- **No reporting pathway for successful grassroots “workaround”**

Reason J. Beyond the organisational accident: the need for “error wisdom” on the frontline. Quality and Safety in Health Care. 2004 Dec 1;13(suppl_2):i28-i33.
Methods

- Low-threshold reporting tool
- Simple entry – 30-60 seconds per entry
- Managed at Department level
- Four levels of severity + Extra level for “good job”
  - A. Person Harmed (*)
  - B. Potential for Harm (*)
  - C. Requires Follow-Up
  - D. Could have Done better
  - E. Kudos for Job Well Done

(*) Direct reporter to the standard incident-reporting system

First Iteration
- “Education-Only”
- Formal announcement of submission system
- Dedicated grand round session
- Submission collected for 12 weeks

Second Iteration
- Integrated implementation approach
- Continue education-only approaches
- Easy access at every workstation by single click
- Accountability to section “Quality Officer” for closed-loop review
- Monthly analytic report at departmental Quality and Patient Safety conference
- Lottery-based reporting incentives
- Submission collected for additional 12 weeks
Reports

- **Weekly**
  - Provided to subspecialty divisional Quality Officer
  - New submissions each week
  - Pending submissions from previous week

- **Monthly**
  - Analytic data provided to divisional Quality Officers
  - Volume of Submission
  - Pattern
  - Delay in Patient Care
  - Stratification by severity

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**Lottery-Based Incentive**

- Per submission, probability of either winning a nominal prize or be redirected to a radiology-related cartoon (no prize)

- **Aw Shucks...**
  You didn’t win the prize this time, but take a break and enjoy a radiology-related cartoon!

- **You Win...**
  Free coffee from

- **Prize**
  5$ gift card for a specialty tea or snack. Thank you for making Penn Radiology better.

![Cartoon](image_url1)

![Prize](image_url2)

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Results

A low-threshold reporting system emphasizes latent system errors

- Higher submission volume with integrated approach versus education-only
- No significant decrease in standard incident reporting (gray bars) as result of increase in low-threshold reporting
Report Themes:
- Direct patient care
- Radiology worklist
- Image quality
- Electronic health record
- CT and MRI
- Phone call to radiologist/clinician

Conclusion

- Low-threshold incidence reporting program is feasible without adversely affecting submissions to the traditional reporting system.

- An integrated approach to implementation of low-threshold reporting is more effective than education alone.

- Future directions include
  - Leveraging submitted entries as baseline data for quality improvement projects, and
  - Context-aware auto-population of relevant data such as timestamp and accession number to further decrease submission threshold.