Pay it forward- Improving Radiology Trainee Orientation through Feedback Driven Change

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Purpose

• Success in Radiology residency depends on mastering Picture Archive and Communication System (PACS) and dictation/advanced viewing applications

• Residents are expected to rapidly gain expertise in these systems shortly upon beginning Radiology Residency

• We attempted to identify issues with existing technical training during new resident orientation...

  • ...and restructure the information technology (IT) portion to address perceived learning barriers and create a more meaningful experience
Initial Application Orientation Session – Component 1

Non-interactive didactic presentations on PACS, Dictation Software, Electronic Medical Record (EMR), and ancillary applications

Initial Application Orientation Session – Component 2

Focused hands-on orientation with a ‘Superuser’ (technologist, resident, or attending) for all applications based on task oriented checklists
Initial Application Orientation Session – Component 3

Multiple paper handouts trainees could keep and reference as needed

Quality Improvement Project

Leveraged the classic PDSA (Plan, Do, Study, Act) cycle

Plan – Convening a group to assess the problem and survey residents on possible changes
Do – Survey residents (next slide)
Study – Analyze survey results
Act – Make modifications based of survey results

...and repeat
Assessment Survey

- Residents trained in the original orientation format were surveyed
  - Survey performed 1-2 months post orientation
  - 13 Residents total (12 responses)
  - Utilized a Likert scale from 1-5 and single answer multiple choice questions

Baseline Survey Questions

1. What was your overall impression of the presentations during the orientation? **Likert scale**
   - Not Beneficial (1) to Very Beneficial (5)

2. Did you find the presentations helpful in learning the information technology associated with radiology? **Likert scale**
   - Not Helpful (1) to Extremely Helpful (5)

3. Did you find yourself referring back to the presentations once you started your rotations? **Likert scale**
   - Never (1) to Occasionally (3) to All the Time (5)

4. Was the timing of the orientation presentation ideal for using the information? **Multiple choice**
   - Ideal
   - Prefer a few Days on Rotation
   - Time would not have had an impact
Results

Survey Results

Baseline Orientation Analysis

- Didactic portion middle range helpful
  - 2.4 of 5
- Hands on portion very helpful
  - 3.2 of 5
- Slightly better than middle range on preparation for first day of work
  - 2.9 of 5
- Handouts not routinely referenced
  - 1.3 of 5
**First Cycle Modifications and Actions Taken**

Didactic Portion

- Reduced presentation time in half
- Increased emphasis on problem applications

Hands on Portion

- Freer use of time and exploration

**Visualization of Changes:**

Didactic Portion Maintained, Hands on Modified

[Diagram showing changes in presentation and hands-on portion]
Second Survey Results

13 residents total, 11 responses

First Cycle – Analysis

• Improvement in didactic presentations
  ➢ 2.4 → 2.9 of 5

• Hands on portion of the orientation was better received
  ➢ 3.2 → 4.5 of 5

• A little better prepared for first day of residency
  ➢ 2.9 → 3.1 of 5

• Handouts still not routinely referenced
  ➢ 1.3 → 1.7 of 5

• Bonus: Suggestion made for a refresher course 1 month post orientation
Second Cycle Changes

- Combined Hands on Session and Didactic Session
  - Changed to a room with individual computers where trainees could follow presenter and perform same task together
  - Superusers would be around to assist as needed
- Didactic Session shortened even further
- Refresher course added 1 month post training
  - Mix of presentation and open forum Q&A session
- Created an electronic frequently asked questions (FAQ) site with screen shots
  - Hard copy handouts no longer provided

Second Cycle of Changes

- Didactic Portion
  - Combined into one session.
  - Large group session with individual workstations for trainees and rounding superusers.
- Hands on Portion
  - With freer use of time and exploration
- Combined Didactics and Hands on portion
Visualization of Changes

Third Survey Results

13 Residents surveyed, 12 Responses

1/16/2017
Second Cycle Analysis

- Didactics are beneficial
  - 2.4 → 2.9 → 3.8 of 5
- Hands on format still valued over didactics
  - 3.2 → 4.5 → 4.3 of 5
  - Consider improving hands on with more engaging scenarios
- Continuing improvement in sense of preparedness
  - 2.9 → 3.1 → 3.4 of 5
- Reference material still not heavily used
  - 1.3 → 1.7 → 1.2 of 5 (at least trees were saved)
- One month refresher well received, but room for improvement
  - 3.2

Trend chart over 3 years of modifications
Future Targets for Next Cycle Improvement

- Better example scenarios
  - Recognized real life encounters early in training
- Incorporating more residents in IT orientation
  - More insight into training needs
- Focus on hands-on over didactics
- Iterate on one month refresher
  - Enhance based on feedback comments
- Try to make electronic FAQs more meaningful
  - Or easier to use
- Continue resident survey to track improvements

Overall Conclusions

- Traditional didactic and check list orientation was not identified as valuable for new trainee early success
- Continuous improvement from user input can provide a more engaging and useful orientation for trainees
- Hands on use without or during didactics more highly valued than passive recipient didactic presentation
- Reference material (hard copy and electronic) is not heavily utilized
- Refresher courses may be helpful in reinforcing concepts if successfully implemented
Thank You

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