

# QI Bootcamp: A Novel Approach to Engage Radiology Residents in Quality Improvement

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*DISCLOSURES: NONE*



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# Background



**Per the ACGME QI Milestones for Diagnostic Imaging, residents are required to complete a QI project to demonstrate several skills and knowledge related to Quality and Safety.**



**Informal interviews indicated that residents did not feel supported in meeting QI milestones and quality leadership noted that some resident QI projects lacked rigor and correct application of QI tools.**



**ACGME requirements were perceived as a formality to be checked off as a graduation requirement.**

## Purpose

- To conduct a QI bootcamp that serves as a refresher for QI knowledge and provide coaching for project completion.

## Goal

For first- and fourth-year residents develop by March 2023:

- Education materials
- QI project list
- Coaching infrastructure

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## Improvement Team

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# Methods

- **First- and fourth-year DR, IR and NM residents were invited via email to voluntarily sign up for a 4.5-hour “QI Bootcamp”**
- **Bootcamp was led by a first-year QI Track resident (QI Track is one of the several tracks available to trainees to enhance their skills beyond clinical radiology) and by the Interim Medical Director for Quality in Radiology.**
- **A list of potential QI projects and mentors was emailed in advance.**

# Measure/Metrics

- **Pre- and post-knowledge assessment survey was administered.**
- **Post survey included supplemental questions to assess bootcamp objectives.**
- **Survey results were analyzed using Microsoft Excel.**

# QI Bootcamp Agenda

Time	Topic
12:00 – 12:40 PM	Lunch
12:30 – 12:40 PM	Introduction
12:40 – 12:45 PM	Pre-Survey
12:45 – 1:30 PM	Movie & Discussion
1:30 – 2:15 PM	Lean Basics
2:15 – 2:30 PM	A3 Intro
2:30 – 3:00 PM	A3: Boxes 1-5
3:00 – 3:10 PM	BREAK
3:10 – 3:40 PM	Red Bead Game
3:40 – 3:50 PM	A3: Box 6
3:50 – 4:05 PM	Run Charts
4:05 – 4:15 PM	Change Management
4:15 – 4:20 PM	Project Rules
4:20 – 4:30 PM	Form groups & select projects
4:30 – 4:50 PM	Aim Statements; Project Timeline; Next steps

# Survey Results - Objective

- 19 residents signed up and 13 attended the bootcamp.
- 13 residents completed the pre-survey and 12 completed the post-survey resulting in a 92% response rate.

Concept	Pre-survey: Correct	Post-survey: Correct	Percent Difference
Waste as defined by Lean	92%	100%	+ 8%
Value Add vs Non-value Add	92%	100%	+ 8%
Process Mapping	92%	83%	- 9%
Purpose of Driver Diagram	46%	42%	- 4%
Fishbone/Ishikawa Diagram	50%	92%	+ 42%
What do Driver Diagrams show	15%	75%	+ 60%
Purpose of Run Charts	31%	75%	+ 44%
Change Management	23%	25%	+ 2%

- Participants demonstrated baseline proficiency with Lean concepts
- They were less knowledgeable of driver diagram, fishbone diagram, run charts and change management and made most improvement after the didactics.

# Survey Results - Subjective

## Questions & Responses

**Q1: How well did this bootcamp meet its goals of enabling participation in local QI initiatives?**

- Very well (75%); Extremely well (8%); Extremely not well (16%)

**Q2: What went well?**

- Very engaging and interactive. Loved having time to think about my project.
- Great environment to facilitate exchange of ideas; needs to be a little shorter
- Awesome half day to learn the basics
- Wish we had this as R1s
- Liked the time at the end where we could work on projects.
- Quality systems lecture
- Group discussions were very inciteful
- Helpful QI tools and getting started on a project
- Connecting with team regarding project

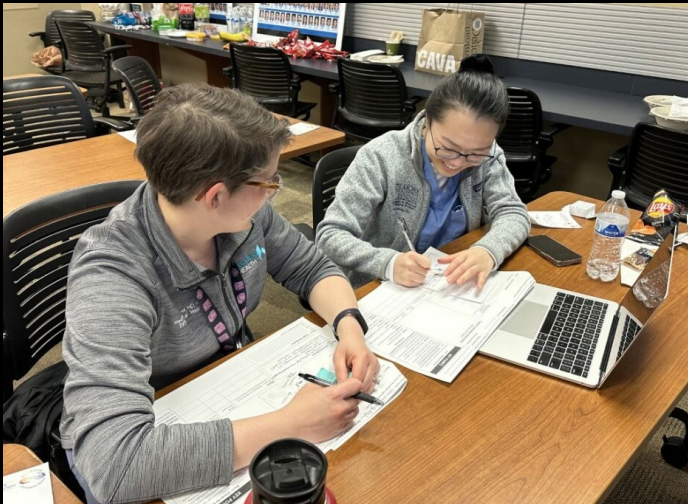
**Q3: What could be improved?**

- Making mandatory so all residents can be involved.
- Less time watching first video
- More time to work on project
- There was overlap in the material. Workshop could be done backwards - have people pick a project and team (at least temporarily) to focus on and then work on short example parts of the A3 or PDSA as they go.
- Nothing, great bootcamp!
- Add learning videos before boot camp. Some of info was dense.
- Too much didactics



# Discussion

- Correct response to knowledge items improved from 55% to 74%.
- Resident QI project participation improved from 31% to 82%.
- 85% of respondents rated the bootcamp favorably.



Residents drafting project A3



Residents watching patient safety video

# Conclusions

- **QI bootcamp pilot was well perceived and is probably best suited for R1 and R4 residents.**
- **The event resulted in increased knowledge and a higher number of residents committed to a QI project.**
- **Group activities were most popular, especially brainstorming QI project ideas.**