

# Development and Implementation of a Dedicated Quality Improvement and Patient Safety Curriculum in a Diagnostic Radiology Residency Program

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## Project Background/Introduction

- Patient safety, performance improvement, and numerous quality improvement initiatives exist throughout the hospital
- There had not been any formal, longitudinal educational curriculum that taught key concepts and information about these initiatives to the diagnostic radiology residents (in 2018)
- A two-year rotating curriculum was implemented in the department of radiology diagnostic radiology residency program in July of 2018
  - Consisted of case conferences, didactic lectures, and multi-disciplinary conferences
  - Did not contain specific conferences to educate residents about patient safety and performance improvement other than monthly QI conference during which missed findings by residents or faculty are discussed

# Project Aims



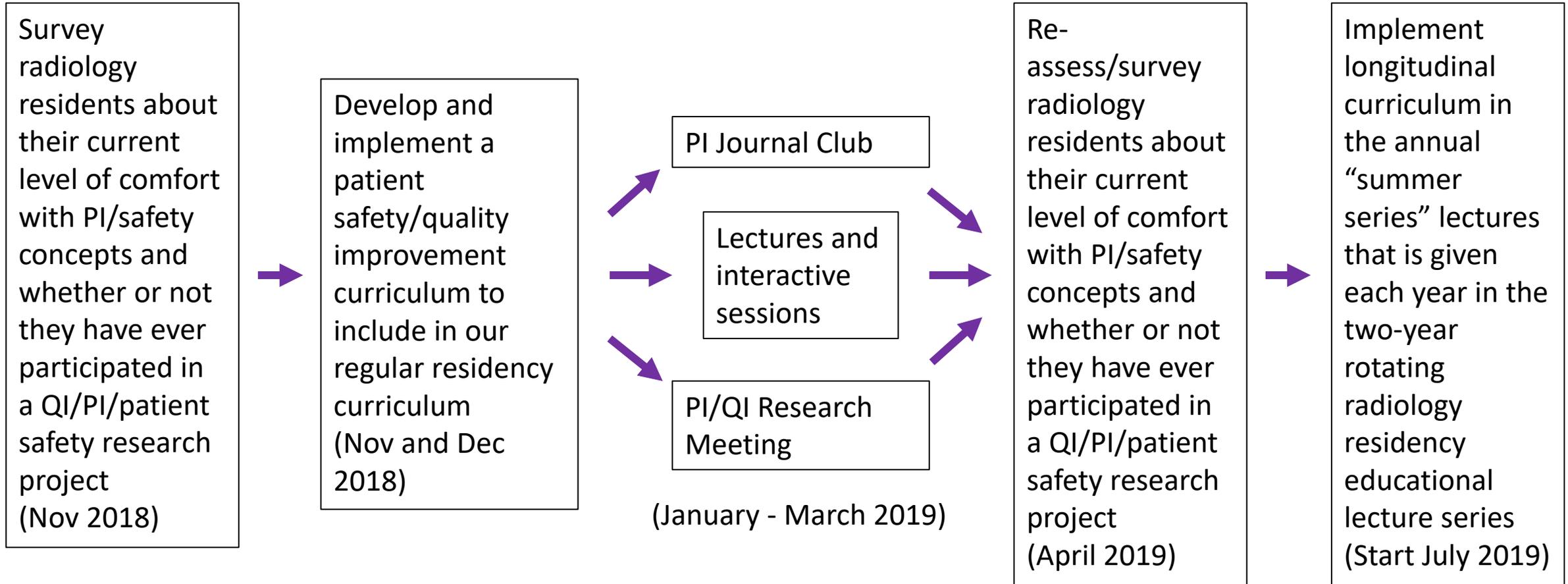
- Global:
  - To create and implement a useful patient safety and quality improvement curriculum within the larger educational curriculum of the diagnostic radiology residency program, with ultimate goal of reducing diagnostic error
- SMART:
  - Increase radiology resident involvement in QI projects by 25% from baseline by November 2019



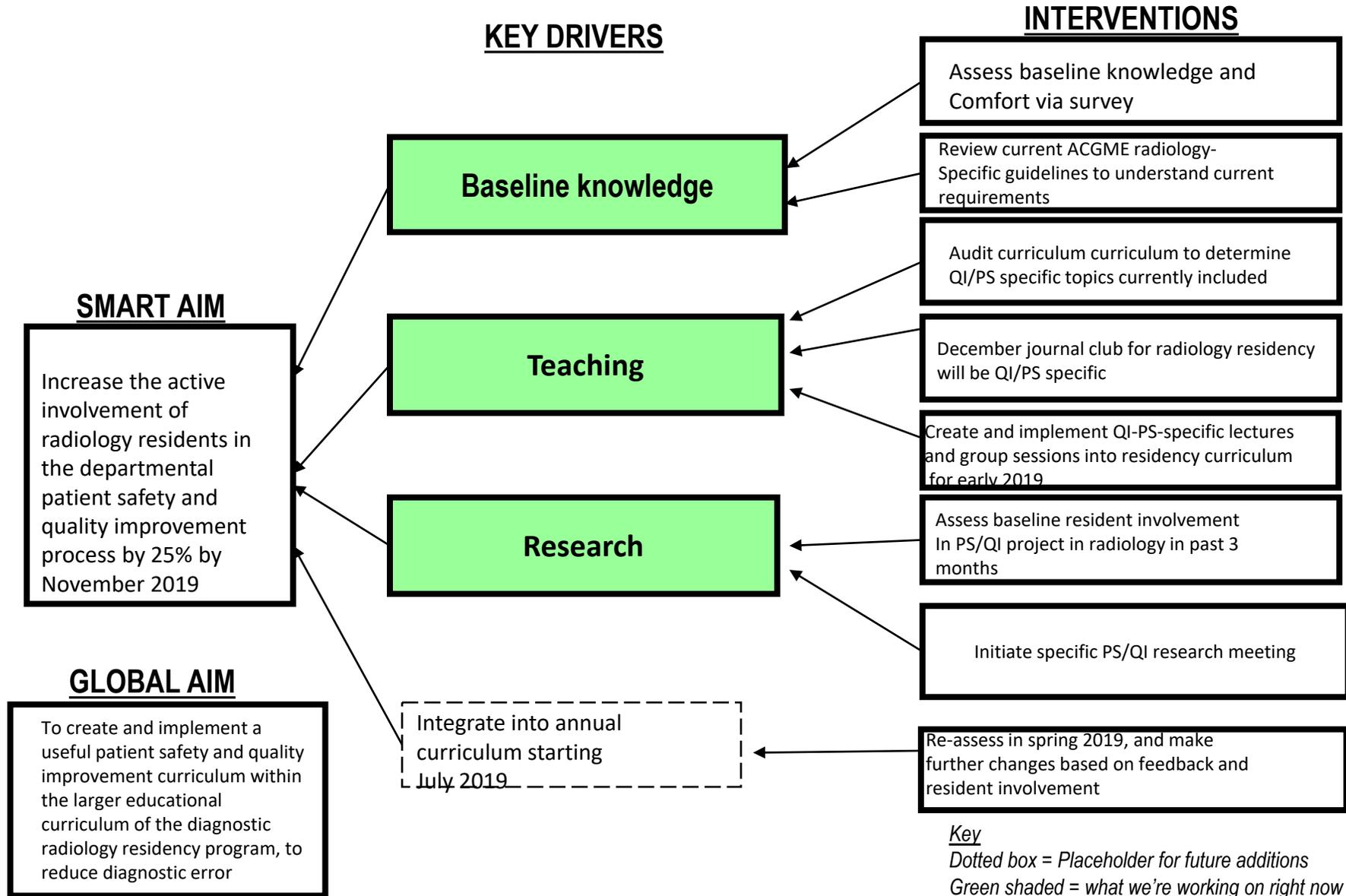
# Methods: Structure creation

- Created a team!
  - Sponsor: Chief of Radiology
  - Team Leader: Radiology Residency Program Director
  - Team members: Radiology Residency Program Coordinator, Chief Resident, radiology resident, and musculoskeletal radiologist
- Baseline anonymous survey sent to radiology residents via online platform in November 2018
- Used the newly created 2-year rotating curriculum as the basis upon which to create a more robust educational infrastructure

# Process Map:



# Key Driver Diagram



# Summary of resident survey findings



- 18 out of 19 residents completed the survey (response rate 94.7%)
- 6 out of 18 respondents have been or currently are involved in a patient safety of quality improvement research project
- Varying levels of comfort with patient safety and quality improvement concepts
- 10/18 residents have read no patient safety or quality improvement-specific articles over the past 3 months
  - 8/18 have read 1 or 2
- >77% of radiology residents agreed that developing a focused, radiology-specific patient safety and performance improvement curriculum would be valuable

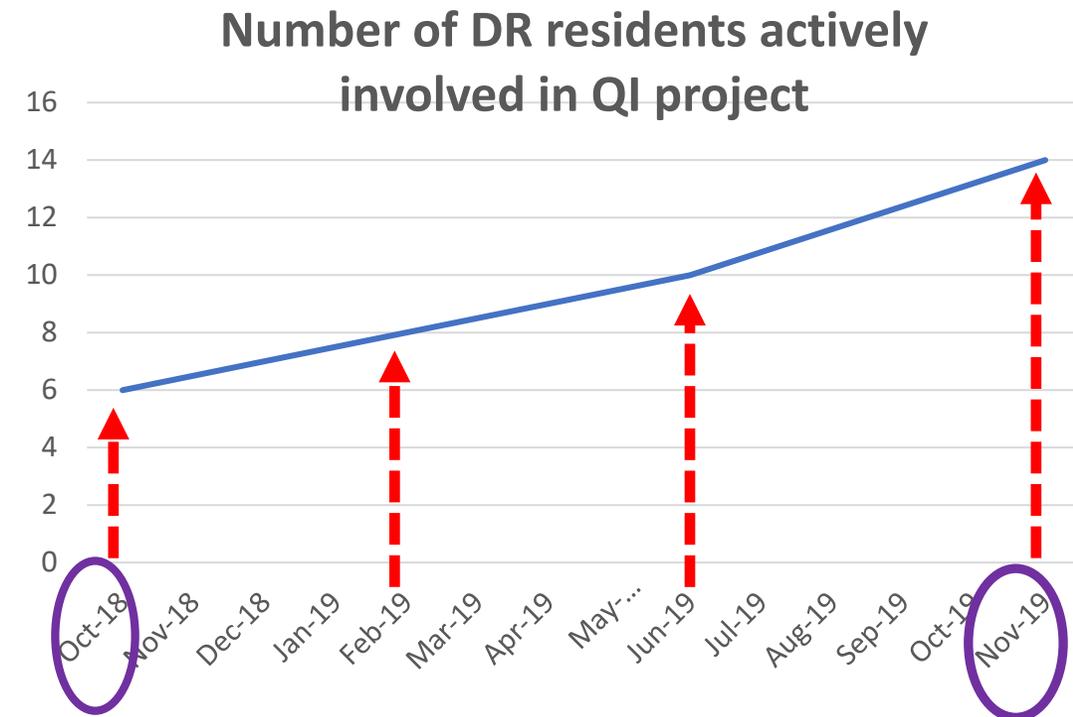
# Process: Design and Implement Interventions

- Built a five-lecture patient safety and quality improvement curriculum (January through March 2019)
  - Quality improvement tools and measurements
  - Introduction to Root Cause Analysis
  - Leadership in quality management
  - Structured reporting
  - Non-interpretative skills review
- Patient safety/quality improvement journal club (December 2018)
  - 6 articles, 90 minutes
  - Errors, lessons from aviation industry
  - Two articles reviewing key concepts and principles in patient safety and quality improvement (radiology-specific)
  - Article about turning doctors into leaders
  - Two radiology-specific QI articles (one of ovarian cyst imaging and management, one on standardized reporting related to AAA surveillance imaging)
- While quarterly meetings focusing on resident research already existed, an additional research meeting to discuss and focus on QI-related projects was added

# Outcomes: Where are we?



- All planned lectures were given
  - They will continue to be given in future academic years, with additional lectures added
- QI-specific Journal club was given
  - Is now done annually
- Resident active involvement in QI/patient safety projects has increased from 6 in October 2018 to 14 in November 2019
  - >100% increase (goal was 25% increase by November 2019)
- Radiology resident was named Chair of the House Staff QI Council
  - 2 radiology residents are now actively involved on this committee
- Palpable increase in resident interest in quality improvement and patient safety-related projects
  - Multiple abstracts submitted to and accepted at major national meetings
  - Multiple posters at the institution's annual QI/patient safety research symposium



# Discussion/Summary

- Curriculum has been created and implemented, and will continue to be evaluated and improved each year!
- Limitations include change relating to project sponsor during the first year of implementation, difficult to quantify level of involvement by residents in projects, and change in meeting structure and timing related to Covid-19 pandemic
- Next steps
  - Work to sustain and spread
  - Continue curriculum, but develop evaluation tool
  - Longitudinal assessment of QI project numbers and progress at research meetings
  - Long-term evaluation of quality improvement and patient safety specific resident knowledge using RadExam (started this year)
  - Work to build a more robust QI-specific mentorship program for residents and faculty
  - Work to integrate more teaching and key QI concept review at teaching conferences

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