



Implementation of a Radiologist Feedback System on Clinical Computed Tomography Examinations for Quality Improvement

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Background

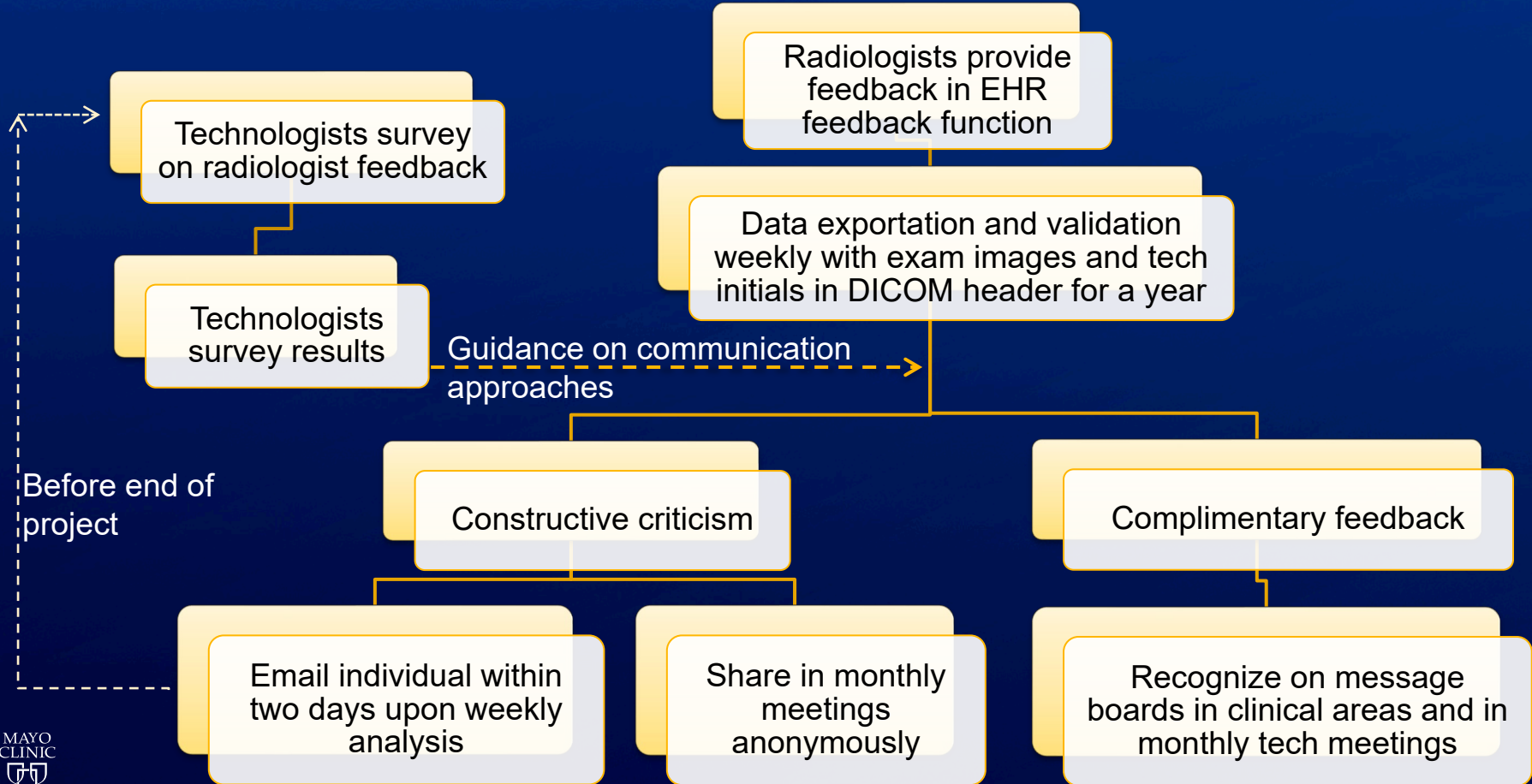
- Technologists play a vital role in patient care [1]
- Radiologist input and feedback on clinical examination acquisition and reconstruction are invaluable [2-3]
 - Aid in technologist education, image quality optimization and ultimately patient care
- This project aimed to establish a convenient and closed-loop radiologist feedback system as a quality improvement tool in our CT practice

1. Towbin. RadioGraphics 2018;38:1872-87; 2. Ong et al. AJR 2017;209:W18-W25;
3. Goldberg-Stein et al. JACR 2018;15(10):1443-47;

Methods

- A function integrated in the EHR was identified which allows easy workflow for radiologists to provide feedback on exam technical quality
 - Selection buttons for eight categories including complimentary feedback and specific quality issues such as artifact, technique and positioning
 - Free text option to provide details
- Its drawbacks also identified and solved accordingly
 - Feedback needs validation and feedback loop needs to be closed

Methods



Methods

- Opportunities for further tech education identified
 - In-service session on common quality issues and CT artifacts
- Data were analyzed in terms of percentage of each category in the total number of feedback inputs before and after in-service education
- Final technologist survey conducted to evaluate their responses on receiving feedback at the end of the project

Results

- 387 feedback inputs were received in the one-year duration from 67 radiologists
- Top three constructive criticism categories: technique (such as reconstruction error), other (such as issues with following radiologist protocol or instruction), and motion

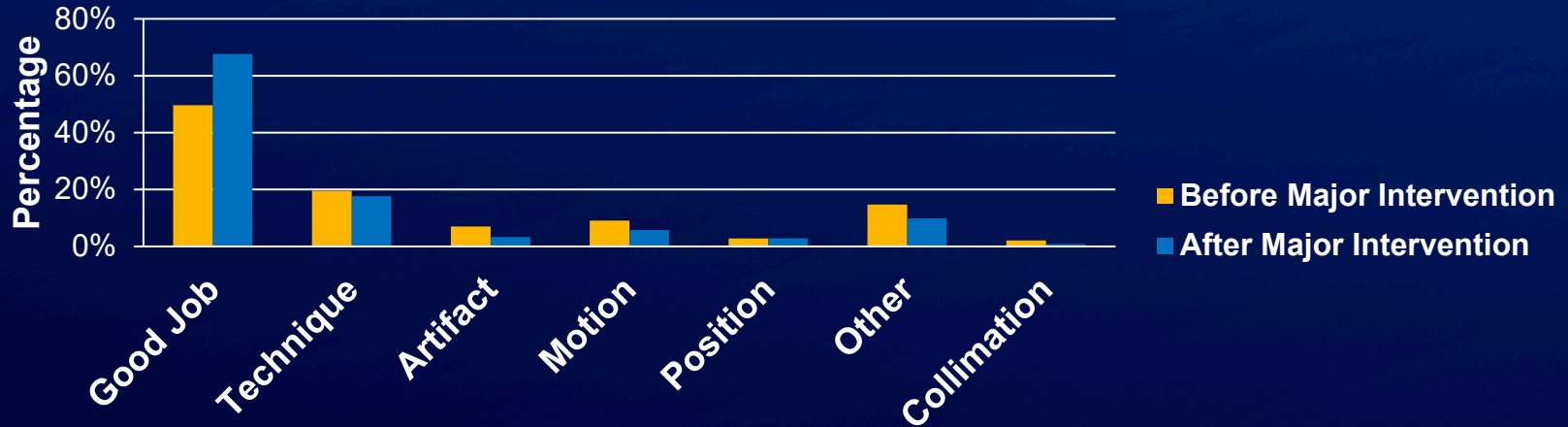
Overall Feedback Category and Frequency



Results

- The percentage of complimentary feedback increased from 49.7% to 67.6% after in-service education
- All constructive criticisms decreased significantly after education shown by a Wilcoxon Signed Ranks test ($p < 0.05$)

Radiologist Feedback Changes on CT Exam Quality



Results – Technologist surveys

- Survey prior to the project assessed the existing status of radiologist feedback, technologist opinions on feedback and how they would like to receive feedback
- Survey at the end of the project demonstrated
 - 72% indicated radiologist feedback were valuable sometimes or more often
 - 80% would like to keep receiving feedback in the future

Conclusion and Discussion

- An easy, EHR-integrated and closed-loop system for radiologist feedback on CT examinations was established
- Feedback data and technologist survey results demonstrated improvement of exam technical quality and positive experience from technologists
- Text data from this project could aid in development of natural language processing algorithms to automate some of the communication steps



Thank you for your attention!

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