Reduction in technical repeat and recall rate after implementation of artificial intelligence driven quality improvement software

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Why it matters

This large study affirms that unnecessary imaging can be reduced with use of mammography quality improvement software. Volpara Analytics™ is effective in improving quality and reducing repeats and recalls for large breast cancer screening centers that produce a high-volume of mammograms.

Key takeaways

This study is the largest North America–based mammographic image quality (IQ) evaluation to date. Following installation of Volpara Analytics™ software, significant improvements of 6% and 8% were observed in objectively measured breast positioning and compression IQ, respectively. This corresponded to a concomitant 78% reduction in technical repeats and recalls (TR), from 0.77% to 0.17%.

Study location

Virginia Mason Franciscan Health, Seattle, WA

Study dataset

>48K exams; 42 technologists across 9 clinics

Study design

Quality improvement evaluation of IQ indicators and TR rates following installation of Analytics software

Methods

- Analytics software was installed in 2019 to objectively measure breast positioning and compression IQ for all images and all technologists.
- Technologists reviewed interactive dashboards that provided continuous IQ feedback, trend analyses, and benchmarking, enabling them to identify focus areas for improvement and set goals
- TR rates (n=40 technologists; 48,143 exams) and IQ indicators (n=42 technologists; 48,874 exams) were compared for the first ("*Baseline*", April 2019 – March 2020) versus the most recent ("*Current*", April 2021 – March 2022) 12-month periods following Analytics installation.

Study results

- Comparing *Baseline* versus *Current* periods:
  - TR rates reduced by 78% (0.77% to 0.17%)
  - Mean overall Quality Score increased by 6% (2.28 to 2.42)
  - Proportion of images meeting Target Compression increased by 8% (59.1% to 63.6%)
  - Proportion of images scored Perfect or Good increased by 6% (56.4% to 59.8%)
- Analytics software facilitated mammographic IQ evaluation on an unprecedented scale and has the potential to improve outcomes for both providers and consumers of mammography screening.