Remote or On-Site Diagnostic Breast Imaging: Performance Comparison and Acceptance

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2024 Disclosures

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Background

- Adoption of remote radiology
  - Driven by tech advances and COVID-19 pandemic
  - Improved productivity, work-life balance, may combat burnout
  - High patient/staff acceptance, quality maintained
  - Radiologist shortage: access pressures, increased workload
  - Can bridge equity gaps for underserved areas
- Challenges: tech issues, monitor costs, reduced collaboration

- Further research on performance and efficiency of remote breast radiology is needed

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Aim

To evaluate diagnostic imaging performance, patient satisfaction, and staff acceptance of remote diagnostic breast imaging in an academic practice.

Methods

- Retrospective analysis of all diagnostic exams read under hybrid model
  - All exams conducted from 2011-2023 by a single radiologist with 24 years' experience
  - Comparison of data before and after transitioning to hybrid in Oct 2021
  - Baseline for performance (2011-2016)
  - No exclusions
- 15,906 diagnostic reports with 4,443 (28%) under the hybrid model

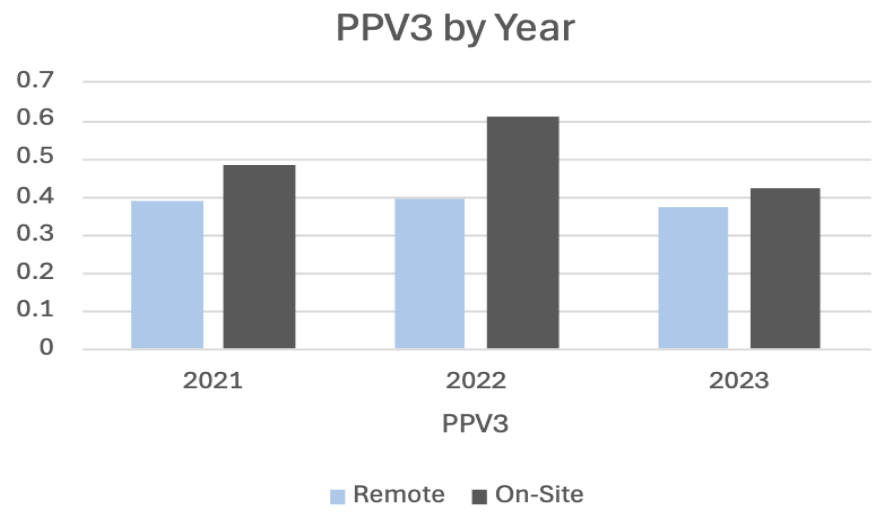
- Patient and technologist feedback
  - Anonymous surveys (paper/online) post-visit
  - Radiologist providing remote or on-site care

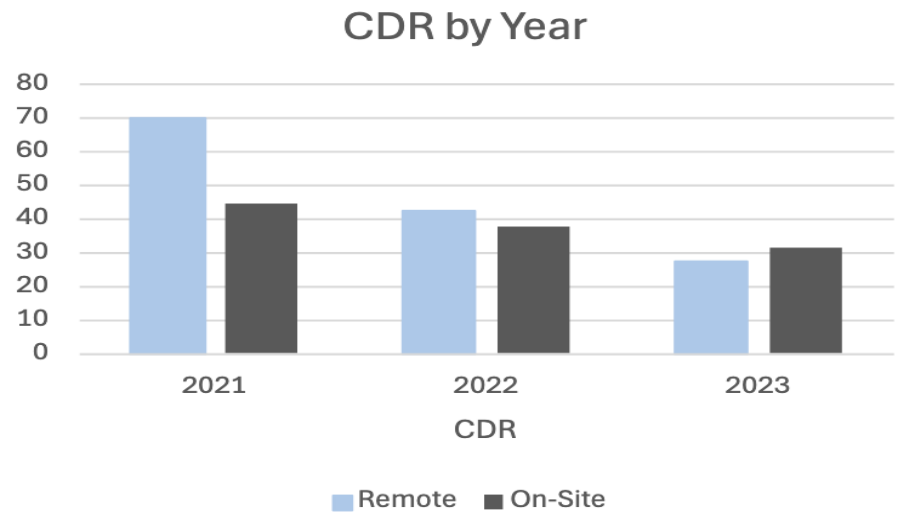
Methods: Implementation of Remote Reading

- Remote setup:
  - 300 MB/sec internet with 1-gigabit ethernet ($300/month)
  - HIPAA-compliant laptop
  - Blackout drape
- Annual quality checks, weekly quality reports
- Phone set-up
- Virtual video call program for US
- Backup systems and engineering support for issues

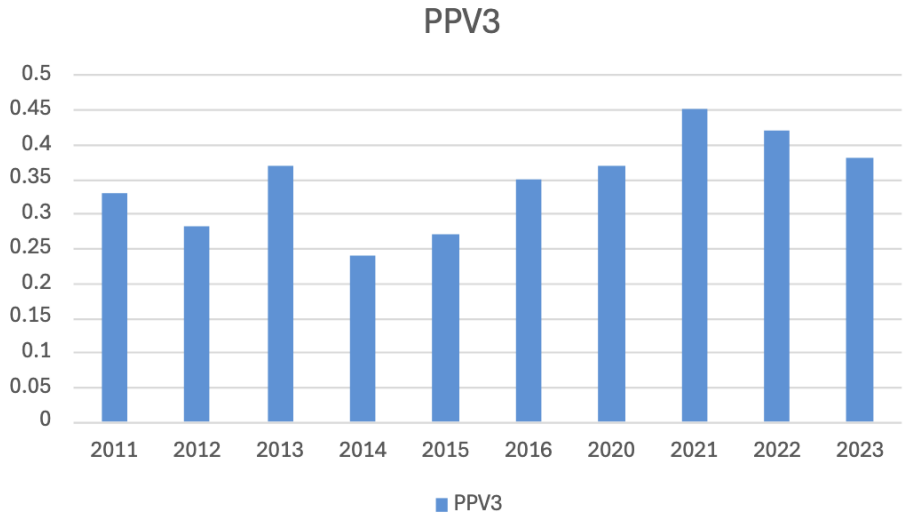
Results

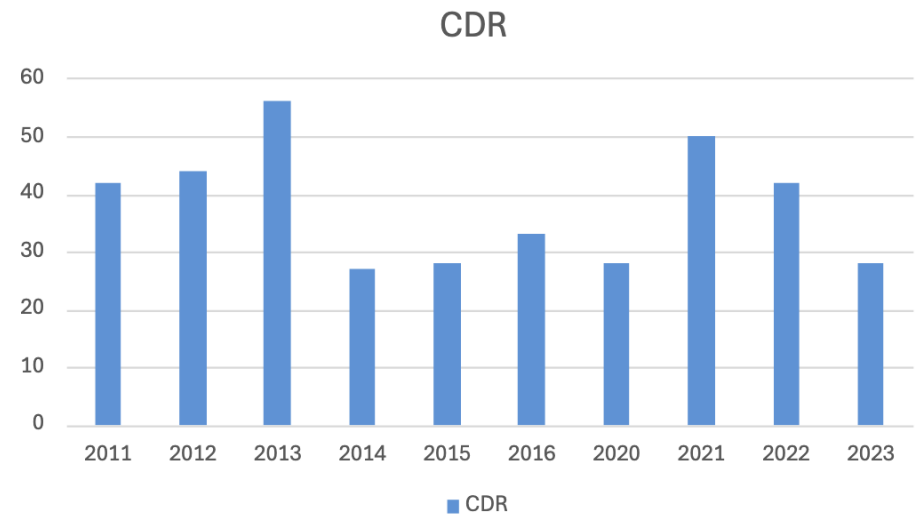
Remote vs. On-Site Under Hybrid Model





Annual Trends





Results: Diagnostic Performance

Hybrid Model

- **CDR:**
  - Remote: 28—70/1,000
  - On-site: 31—44/1,000
- **PPV3**:
  - Remote: 37–39%
  - On-site: 42–61%
- **Comparable CDR and PPV3** indicate no diagnostic quality loss in remote reads
- Consistent annual trends for CDR, remaining within the range of baseline metrics (27—56)
- Small observable increase in annual PPV3 from baseline (24%—37%)

Results: Patient and Technologist Satisfaction and Acceptance

- Patient satisfaction:
  - Overall: **91% remote, 86% on-site**
  - Visit duration: 89% remote, 100% on-site
- 87% willing to return for remote imaging
- No technical issues reported by patients
- Technologists rated functionality, workflow, communication highly
  - Minor technical issues (image transfer, audio)
  - **High confidence in care** quality, efficiency, and hybrid model feasibility

Discussion: Lessons Learned and Limitations

- **Consistent diagnostic performance** (CDR, PPV3)—suggests no loss of accuracy
- **High patient and technologist satisfaction**—supports hybrid model integration
- Can combat increased operational demand and provide care for underserved areas
- Requires significant investment

Troubleshooting:

- Phone setup for typing delays
- Backups and IT support essential
- Recommend technical upgrades and reliable support infrastructure

Limitations:

- Did not evaluate resident attitudes
- Evaluated a single senior radiologist with established care patterns within one organization
- Limited on-site care provided through hybrid model