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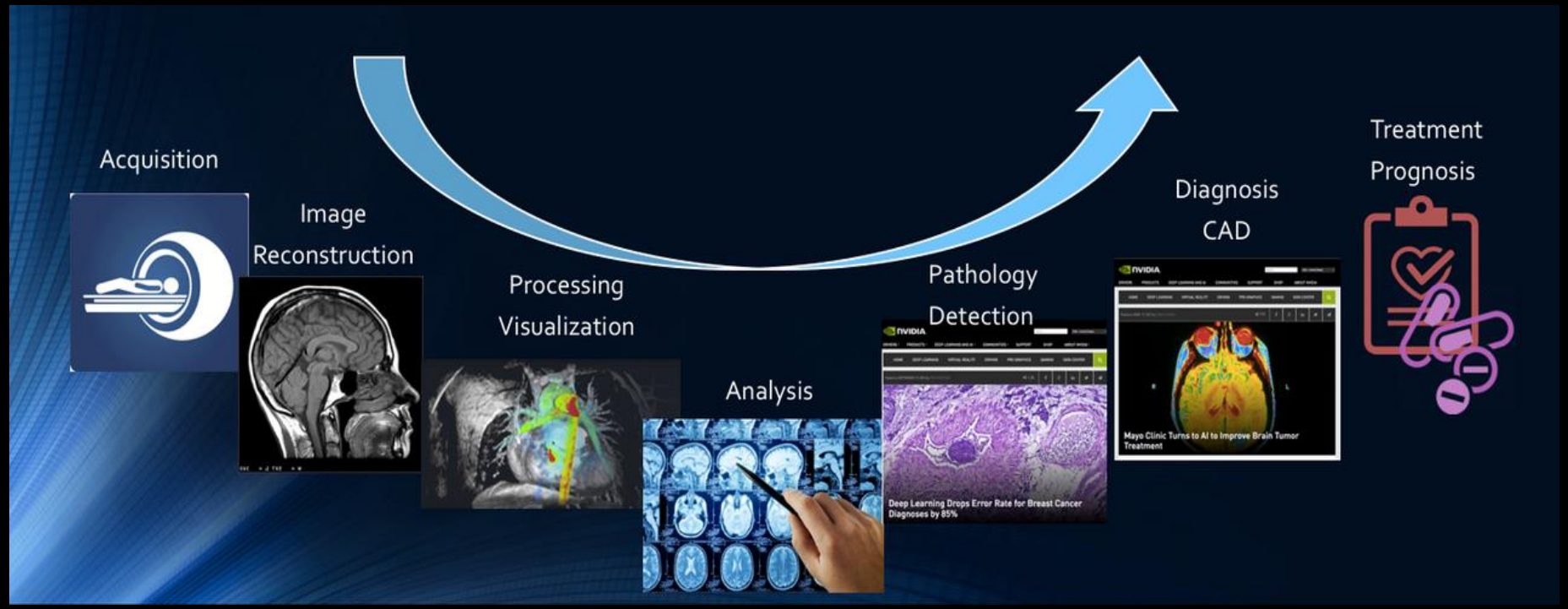

Leveraging *Artificial Intelligence* in *Radiology Multidisciplinary Rounds*

Enhancing Clinical Decision Making and Collaboration

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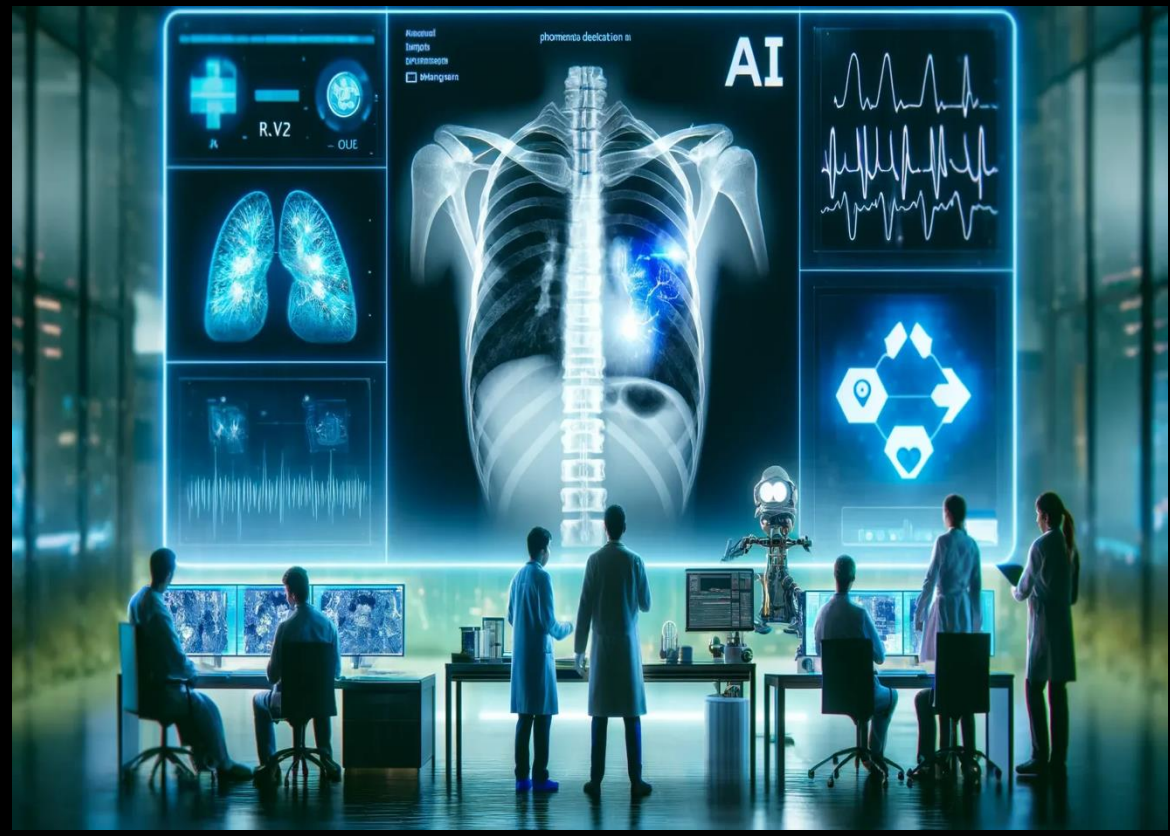
Radiology Pitfalls and Diagnostic Challenges in Multidisciplinary Rounds

Introduction

- Radiology multidisciplinary rounds (MDRs) bring specialists together to collaboratively discuss and plan treatment for complex cases. AI integration can support more accurate, efficient decision-making and improve outcomes.

- This study examines AI's impact on efficiency, accuracy, and satisfaction in radiology MDRs.



Aims, Objectives and Goals

The primary aim was to evaluate how AI integration could enhance decision-making and patient outcomes in MDRs.

- Clinical Efficiency: Reducing analysis time, accelerating diagnosis-to-treatment transition.

Diagnostic Accuracy: Leveraging data-driven AI insights to improve precision.

Collaboration: Supporting specialists to achieve better consensus on treatment plans.

Materials and Methods

Study Design

This study used a controlled pre- and post-implementation design to evaluate the impact of AI on decision-making and outcomes in radiology multidisciplinary rounds (MDRs).

Conducted in a tertiary care hospital with a multidisciplinary team, including radiologists, surgeons, oncologists, and other relevant specialists.

AI tools were integrated into the workflow of radiology MDRs, involving over 50 healthcare professionals across multiple specialties.

AI-powered tools were used to analyze imaging studies, providing automated insights on findings, differential diagnoses, and recommended next steps.

Data Collection

Data was gathered before and after AI implementation on key metrics like diagnostic accuracy, time to treatment initiation, and patient outcomes.

Surveys and interviews were conducted with healthcare professionals to assess the usability, accuracy, and perceived benefits of AI tools in MDRs.

Key indicators such as time to diagnosis, treatment initiation, and patient satisfaction were tracked to measure AI's effectiveness.

These methods provided comprehensive insights into AI's role in enhancing clinical efficiency, collaboration, and patient care outcomes in radiology MDRs.

Implementing AI into Radiology MDRs

Integrate AI Tools into Imaging Workflows

AI Software Integration: Embed AI in RIS/PACS for seamless access to insights.

Automated Image Analysis: AI identifies abnormalities, measures volumes, and highlights key findings.

Differential Diagnosis: AI suggests potential diagnoses based on imaging and clinical data.

Pre-Processing Reports: AI generates preliminary findings and suggestions; radiologists review and validate.

AI-Assisted Summary: Highlights urgent cases and important findings for focused discussions.

Interactive AI Dashboard: View AI insights and traditional interpretations in real-time.

Consensus Building: AI findings provide a standardized basis for collaborative decision-making.

Enhanced Imaging Comparisons: AI detects subtle changes over time, aiding condition monitoring.

Use AI Data to Inform Treatment Planning

Treatment Suggestions: AI recommends treatment plans aligned with clinical guidelines.

Predictive Outcomes: AI models predict treatment outcomes, supporting decision-making.

Monitoring and Follow-Up: AI tracks patient data over time, alerting teams to changes.

Review Outcomes: Evaluate AI's diagnostic accuracy and utility post-MDR for improvement.

Feedback Mechanism: Collect professional feedback to refine AI usability and relevance.

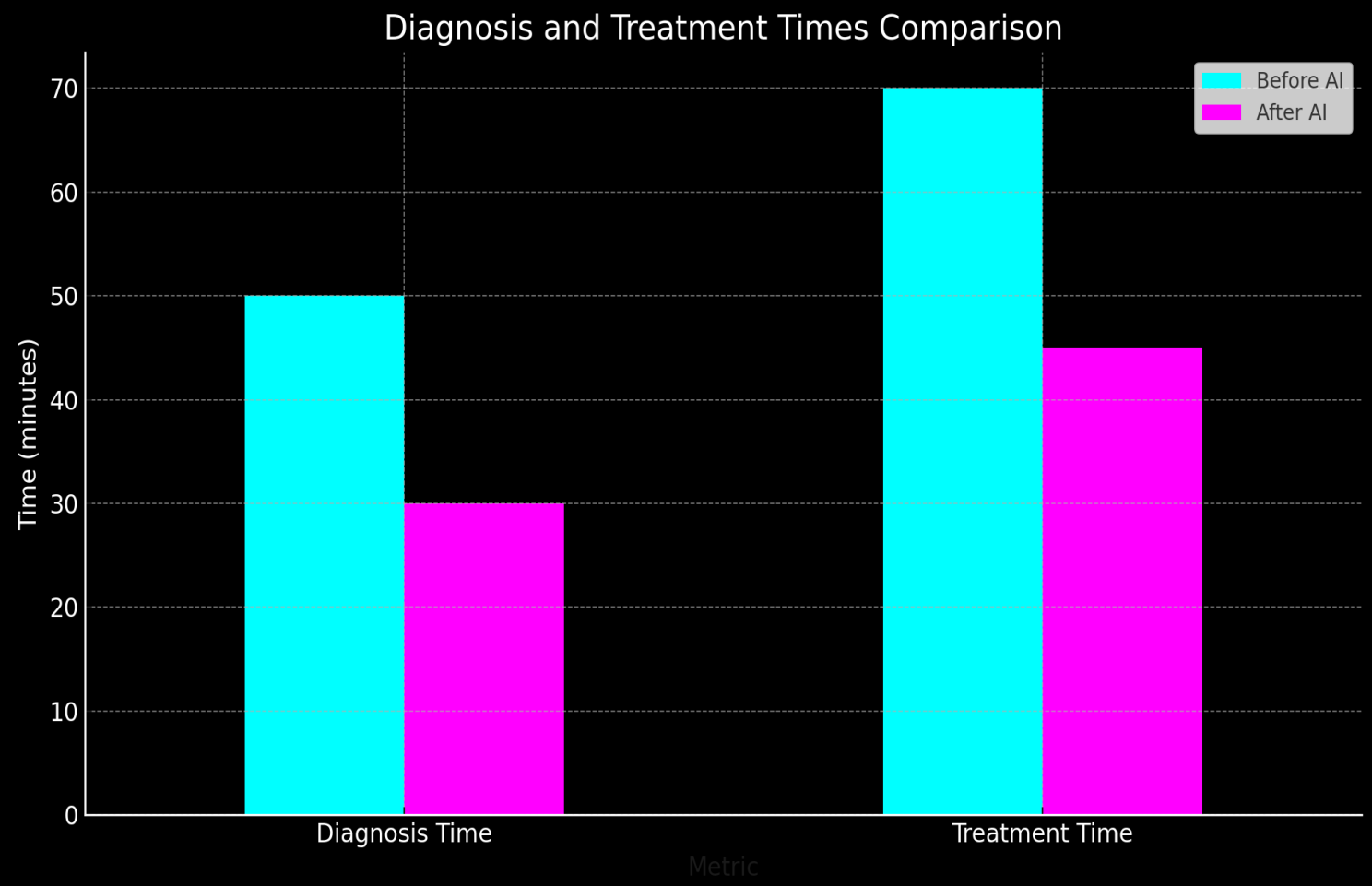
Bias and Quality Control: Regularly validate AI outputs for accuracy and bias control.

Key Performance Indicators (KPIs)

AI integration led to reduced diagnostic and treatment times:

- Diagnosis Time-Reduced from 50 to 30 minutes, speeding decision-making.
- Treatment Time-Decreased from 70 to 45 minutes, allowing quicker treatment initiation.

These improvements highlight AI's role in enhancing workflow efficiency.

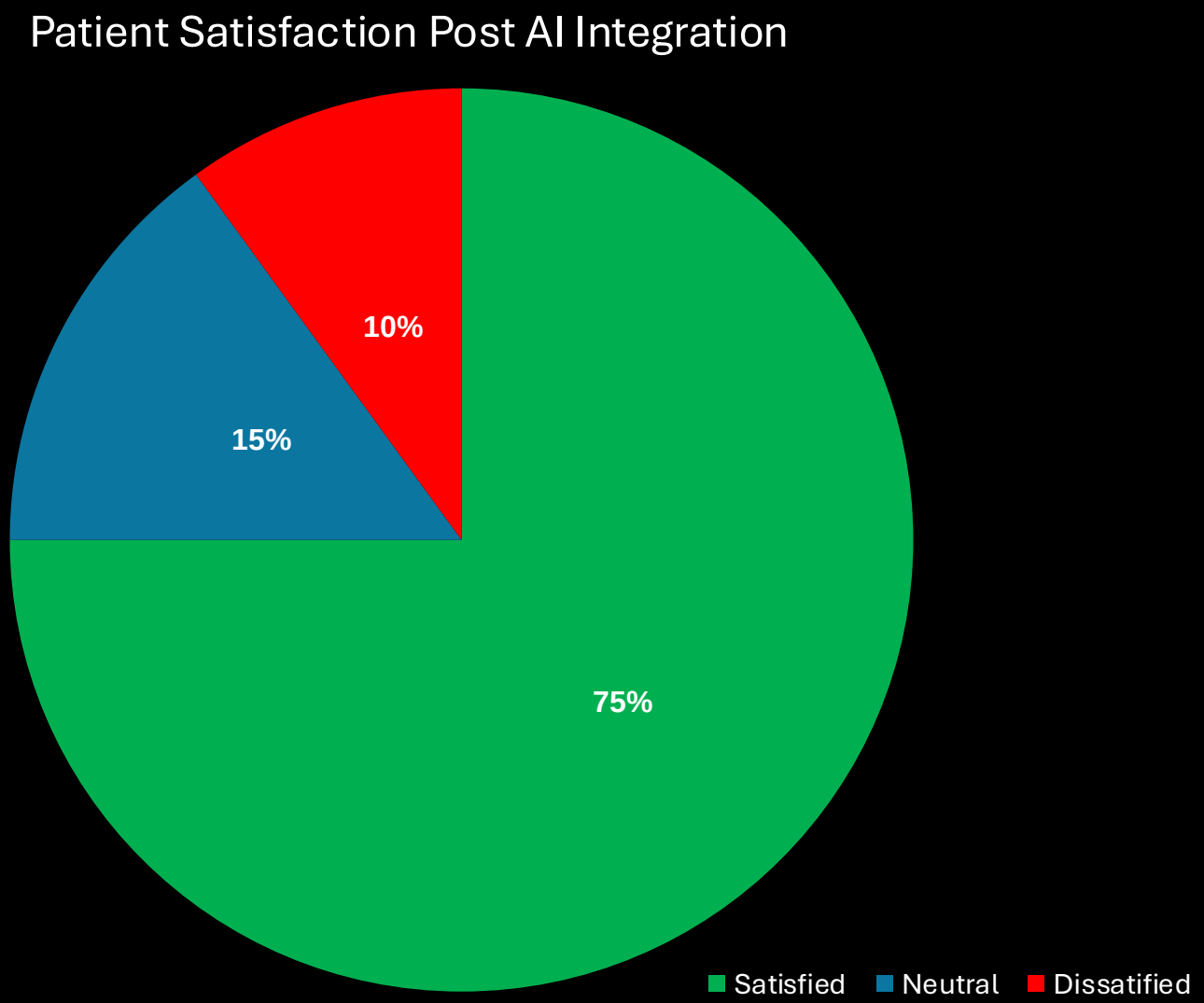


Patient Satisfaction

Patient satisfaction increased with AI integration:

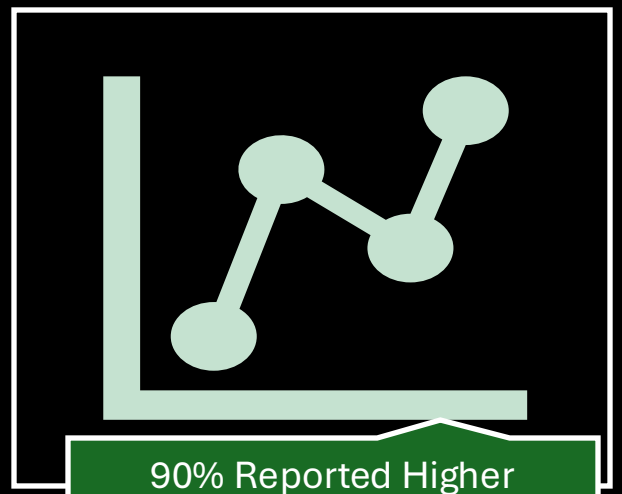
- 75% Satisfied-Faster diagnosis and treatment led to higher satisfaction.
- 15% Neutral-Some patients felt no change in care quality.
- 10% Dissatisfied-Concerns about AI involvement remained for a minority.

Overall, these results suggest positive patient response to AI-enabled care.



Feedback from Healthcare Professionals

Professionals appreciated AI's efficiency and diagnostic support



90% Reported Higher Efficiency-AI streamlined workflows and case reviews

85% Found Diagnostic Insights Accurate-Clinicians valued AI's precision

88% Benefitted from AI in Collaboration-Aiding team consensus and support

Conclusion

This study shows AI's potential to improve MDRs by