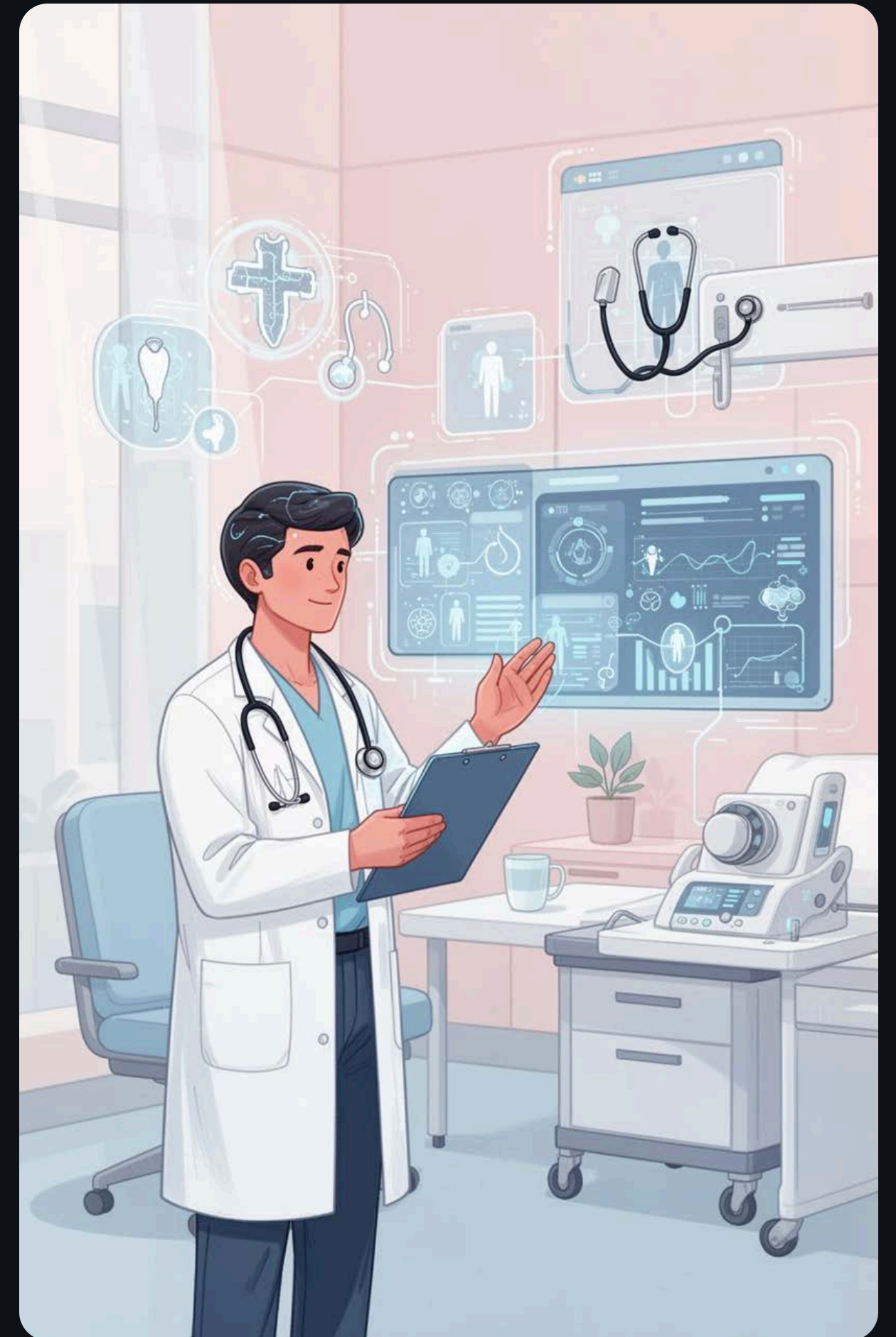
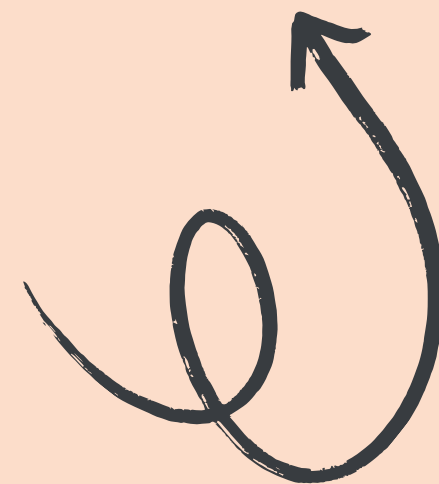


Reliable AI for Clinical Handoffs: SRE Lessons for Safer Care Transitions

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The Challenge of Clinical Handoffs

Communication failures during clinical handoffs cause over 30% of adverse hospital events, underscoring the need for better processes and tools for safer patient transitions. Effective strategies, like the SBAR method, offer structured communication. Enhancing team training and leveraging technology, such as electronic health records and messaging platforms, can close communication gaps. Promoting open dialogue and accountability among healthcare providers can reduce risks and improve patient outcomes and satisfaction.



Understanding the challenges in clinical handoffs

Clinical handoffs are fraught with risks that can jeopardize patient safety. Key challenges include:

- **Cognitive overload:** Clinicians often juggle multiple patients, leading to potential oversights during handoffs.
- **Fragmented EHR data:** Inconsistent and incomplete electronic health records hinder effective communication.
- **Variable handoff quality:** Even established frameworks like SBAR do not guarantee uniformity in handoff execution.

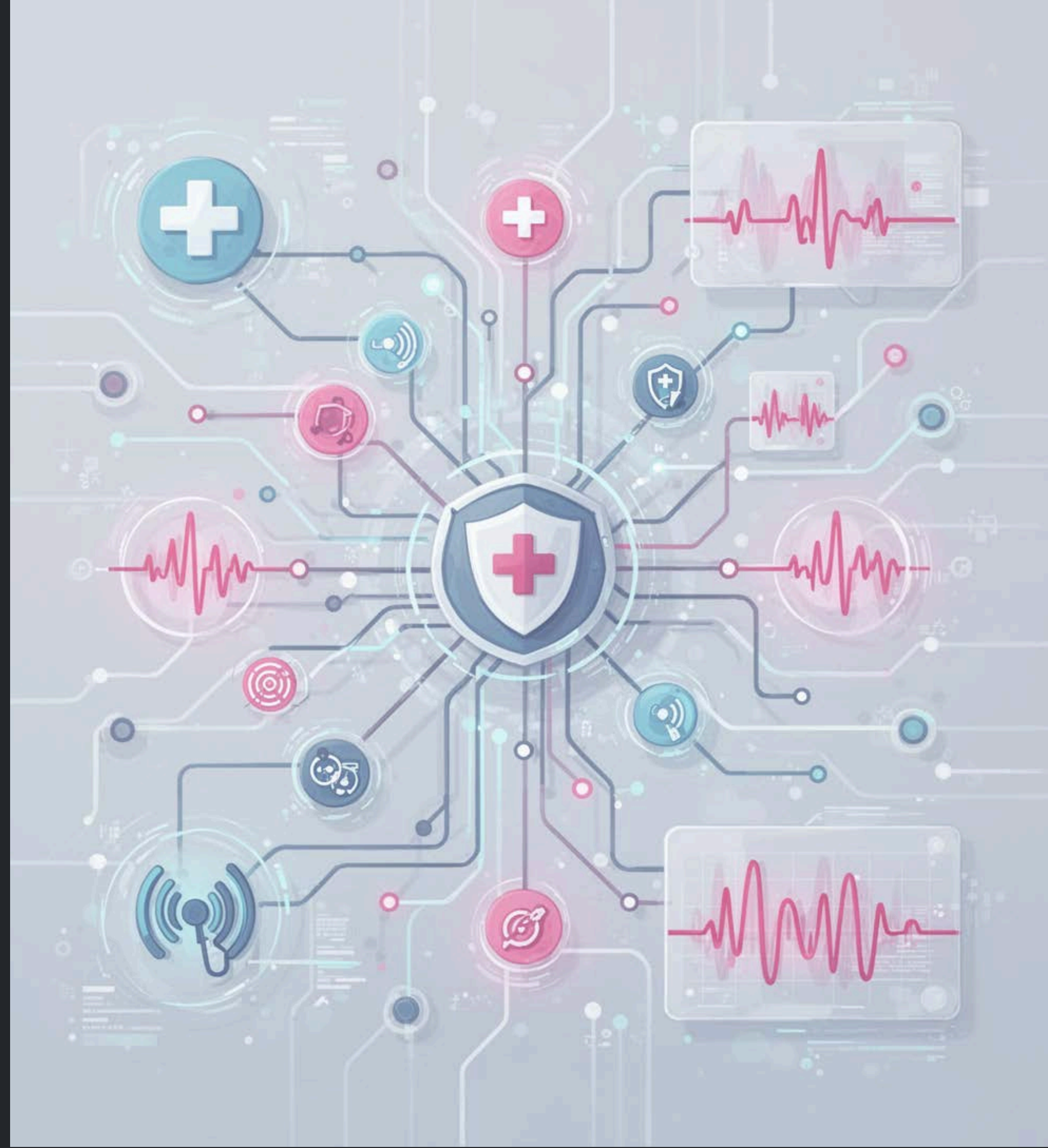
These factors contribute to increased patient safety risks, making it essential to address these challenges for smoother transitions and better healthcare outcomes.

AI-Augmented Handoff System

The AI system seamlessly synthesises structured and unstructured patient data, generating concise, SBAR-aligned handoff summaries. This integration enhances clinician efficiency, reduces variability, and supports informed decision-making during care transitions. Additionally, the system fosters improved communication among healthcare teams by ensuring that vital information is consistently conveyed, minimising the risk of errors. With the ability to learn and adapt from ongoing interactions, the AI system continuously refines its capabilities, making it an indispensable tool in modern healthcare environments. As a result, healthcare professionals can focus more on patient care and less on administrative burdens, ultimately leading to better patient outcomes and a more streamlined workflow.

Site Reliability Engineering Principles

- Dependability under pressure: Resilience to incomplete inputs and failures.
- Continuous monitoring of clinical signals for early warning.
- Transparent outputs promoting trust through explainability.
- Collaborative culture: Fostering a team environment where knowledge sharing and joint problem-solving are encouraged, enhancing overall system reliability and innovation.
- Proactive maintenance: Implementing regular updates and patches to prevent vulnerabilities and ensure the system is always operating at peak performance.



Traditional vs. AI-Augmented Workflows

Enhancing Efficiency in Clinical Handoffs

AI-augmented workflows have become essential for improving precision in information transfer between healthcare professionals. By integrating AI into handoff processes, clinicians access real-time data analysis, ensuring critical patient information is communicated clearly.

AI systems help organize patient data, highlight risks, and suggest care plans based on current medical evidence, reducing cognitive load and minimizing errors. Additionally, AI-driven tools enhance communication across teams, fostering collaboration and better patient outcomes.

Incorporating AI in clinical handoffs allows continuous improvement. Machine learning identifies patterns in handoff data, offering feedback to refine processes. Consequently, AI-augmented workflows boost efficiency and advance patient safety and care quality.



SBAR-Aligned AI Summaries

- **Situation:** Highlights of current patient status for quick review
- **Background:** Key medical history and recent notable events
- **Assessment:** Vital trends and medication changes for informed decisions
- **Recommendations:** Suggested next steps and interventions to optimize patient care, including potential adjustments to treatment plans and monitoring strategies.

SBAR



Human-AI Collaboration

Enhancing clinician capacity through technology

Clinician Control

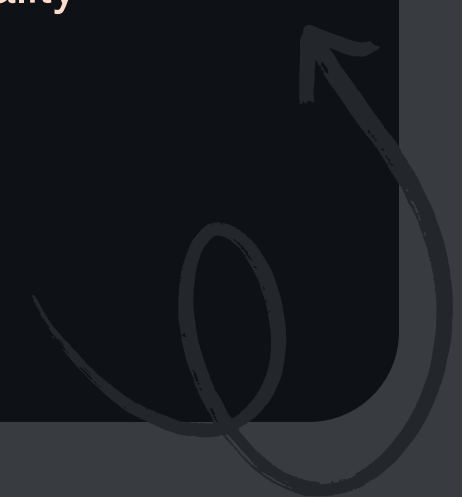
Clinicians maintain ultimate authority over patient care decisions, ensuring that AI tools serve as supportive resources rather than replacements, reinforcing human expertise in clinical environments.

Explainable Outputs

AI systems provide transparent reasoning behind their recommendations, fostering clinician understanding and trust, which is essential for effective collaboration between healthcare professionals and technology.

AI as Assistant

By handling routine data processing, AI assists clinicians in focusing on patient interactions and critical thinking, effectively enhancing their productivity and enriching the quality of care provided.



Governance and Clinical Deployment

Successful AI integration in healthcare requires compliance with regulations, validation of AI performance, staff training, and incident response protocols to ensure safety and efficacy. It's vital to promote continuous learning through workshops, enhancing staff skills and confidence in using AI. Collaboration between AI developers and healthcare professionals can lead to tailored solutions that improve patient outcomes. Prioritizing transparency and ethics builds trust with patients and ensures responsible AI deployment.

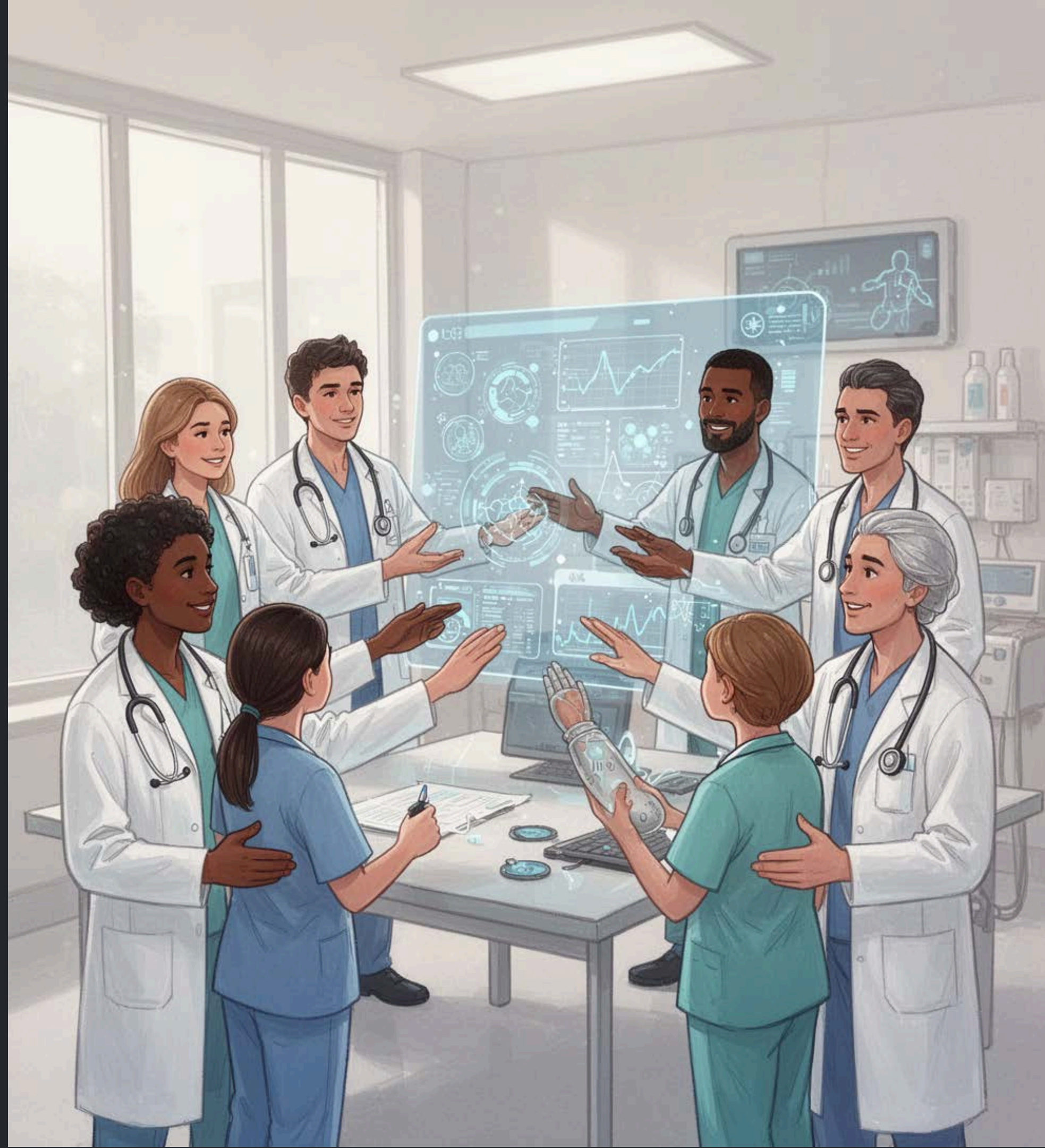


Enhancing Patient Safety with AI

Implementing AI systems has improved early detection of deterioration signals by 25%, enhancing patient safety during clinical handoffs. AI harnesses machine learning to analyze vast patient data in real-time, aiding timely interventions and personalized care plans. It also improves communication among healthcare professionals by ensuring accurate information transfer during shift changes, reducing errors. Future AI advancements may include predictive analytics to anticipate complications, promoting a proactive approach to patient care and further reducing adverse events. Integrating AI in healthcare automates routine tasks, allowing practitioners to focus on patient interaction and complex decisions, thus enhancing care quality. AI's evolution promises to revolutionize patient monitoring with wearables, offering continuous health insights and instant alerts. This collaboration fosters a more resilient, patient-centered system, where technology and human expertise achieve optimal outcomes.

Strategic Implementation for Safer Handoffs

To improve clinical transitions, we should implement AI-augmented handoff pilot programs, involve clinicians in workflow design, and create a strong governance framework for safety and efficacy. Integrating AI can streamline handoffs, reduce errors, and enhance patient outcomes. Clinicians' insights are vital for developing practical solutions. Continuous training and feedback are essential for adapting to new tools and fostering a collaborative culture, ultimately making clinical transitions safer and more efficient.



Thank You!