SKIARA Case Studies: AI in Healthcare Management

Case Study 1: AI-Enhanced Blood Loss Monitoring at Mount Sinai Health System
Challenge:
Accurately measuring blood loss during childbirth is critical to prevent postpartum hemorrhage, a leading cause of maternal mortality. Traditional methods often rely on visual estimations, which can be inaccurate.
AI Solution:
Mount Sinai implemented the Triton AI-enabled platform by Gauss Surgical to monitor blood loss in real-time during vaginal and cesarean deliveries. This system uses AI to quantify blood loss more precisely than traditional visual assessments.
Results:
- Improved recognition of hemorrhage cases: 2.2% in vaginal deliveries and 12.6% in cesarean sections, compared to 0.5% and 6.4% respectively with traditional methods.
- Reduced need for blood transfusions in vaginal deliveries (47% with Triton vs. 71% without).
- Decreased blood transfusion volume in cesarean sections (1.90 units with Triton vs. 2.52 units without).
- Annual cost savings of approximately $209,228 related to laboratory and blood bank expenses.

Source:
Mount Sinai Health System Study Finds Use of AI-Enabled Monitoring System Improves Use of Blood During Childbirth.
Source: https://memorialcareinnovationfund.com/mount-sinai-health-system-study-finds-use-of-ai-enabled-monitoring-system-improves-use-of-blood-during-childbirth/?utm_source=chatgpt.com

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Case Study 2: AI-Powered Stroke Detection at Cleveland Clinic
Challenge:
Rapid identification and treatment of strokes are vital to prevent long-term disability or death. Traditional diagnostic processes can be time-consuming, delaying critical interventions.
AI Solution:
Cleveland Clinic partnered with Viz.ai to incorporate AI into its stroke response protocol. The AI system analyzes CT scans to detect large vessel occlusions (LVOs) and promptly alerts the stroke team.
Results:
- Significantly reduced time to treatment by enabling faster detection of LVOs.
- Enhanced coordination among multidisciplinary teams through immediate notifications and streamlined communication.
- Improved patient outcomes due to expedited decision-making and intervention.
Source:
AI in patient care: How Cleveland Clinic, Providence, others use it.

Case Study 3: AI-Based Radiation Therapy Personalization at Cleveland Clinic
Challenge:
Determining the optimal radiation dose for cancer patients is complex and traditionally relies on generalized protocols, which may not account for individual patient differences.
AI Solution:
Cleveland Clinic researchers developed an AI framework that utilizes patient CT scans and electronic health records to personalize radiation therapy doses. This model assesses individual patient data to tailor treatment plans more accurately.
Results:
- Enabled data-driven, personalized radiation dosage schedules aimed at maximizing treatment efficacy.
- Potential to mitigate radiation side effects by avoiding over- or under-dosing.
- Demonstrated the feasibility of integrating AI into treatment planning to enhance patient care.
Source:
Using Artificial Intelligence to Deliver Personalized Radiation Therapy.
https://newsroom.clevelandclinic.org/2019/06/27/using-artificial-intelligence-to-deliver-personalized-radiation-therapy?utm_source=chatgpt.com

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These case studies illustrate the transformative impact of AI across various aspects of healthcare, from improving diagnostic accuracy to personalizing treatment plans and enhancing patient safety.