



THE IMPACT OF TECHNOLOGICAL ADVANCEMENTS ON EMERGENCY MEDICAL SERVICES

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Introduction

- ♦ Emergency Medical Services (EMS) are vital for delivering timely medical care in emergencies. The integration of technology has significantly enhanced the efficiency and effectiveness of EMS. This study evaluates the impact of technological advancements on EMS by comparing performance metrics before and after their implementation. The insights gained will aid policymakers and healthcare providers in optimizing emergency care.

Research Question

How have technological advancements impacted Emergency Medical Services in terms of response times, patient outcomes, and operational efficiency?



Aim

- ♦ To evaluate the impact of technological advancements on the effectiveness and efficiency of Emergency Medical Services (EMS) in improving response times, patient outcomes, and overall operational performance.

Objectives

1. To compare EMS response times before and after the implementation of technological advancements.
2. To assess the effect communication technologies on patient satisfaction in EMS.
3. To identify the effectiveness of technology on dispatch time and TAT of EMS.

Review Of Literature

- ♦ **Criteria Based Dispatching:**

- ♦ **Impact:** Compares Criteria Based Dispatch (CBD) with Medical Priority Dispatch (MPD), highlighting potential improvements in emergency response accuracy and efficiency.

- ♦ **Emergency Triage, Treat, and Transport (ET3) Model:**

- ♦ *Sarah Goldman et al. (2020, CMS):*

- ♦ **Impact:** Enhances emergency care with innovative triage and treatment approaches, reducing costs and improving patient outcomes through flexible local adaptation.

Technological Advancements in EMS:

- ♦ *Narayan Hampiholi (2024, USA):*

- ♦ **Impact:** Enhances emergency healthcare with smart ambulance systems, addressing challenges and leveraging data-driven interventions for proactive patient care.

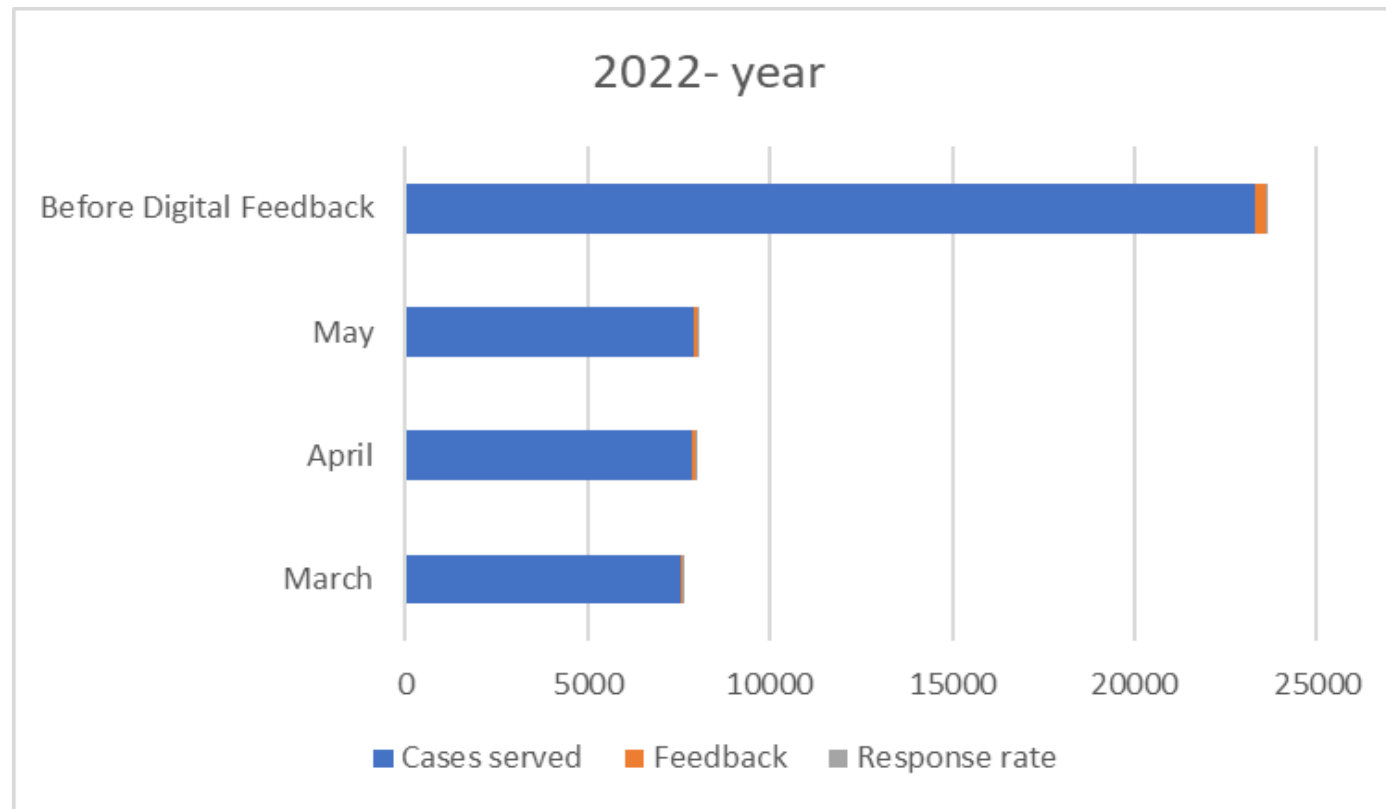
Methodology

- ♦ **Design:** Comparative cross-sectional study on EMS operations before and after technological advancements.
- ♦ **Setting:** RED. HEALTH network, various departments and demographics.
- ♦ **Data:** Historical TAT, patient records.
- ♦ **Duration: Pre-Implementation:** 15 March - 15 June 2022, **Post-Implementation:** 15 March - 15 June 2024
- ♦ **Sample:** All patients using Red.Health ambulance services (56,096 cases).
- ♦ **Data Collection: Feedback:** Electronic survey via SMS, reminders via WhatsApp,
- ♦ **Platform:** FRESH DESK for data management and analysis.
- ♦ **Process:**
- ♦ **Data Collection:** Patient records and operational data.
- ♦ **Analysis:** Comparison of KPIs, statistical significance (t-test, $p < 0.05$).

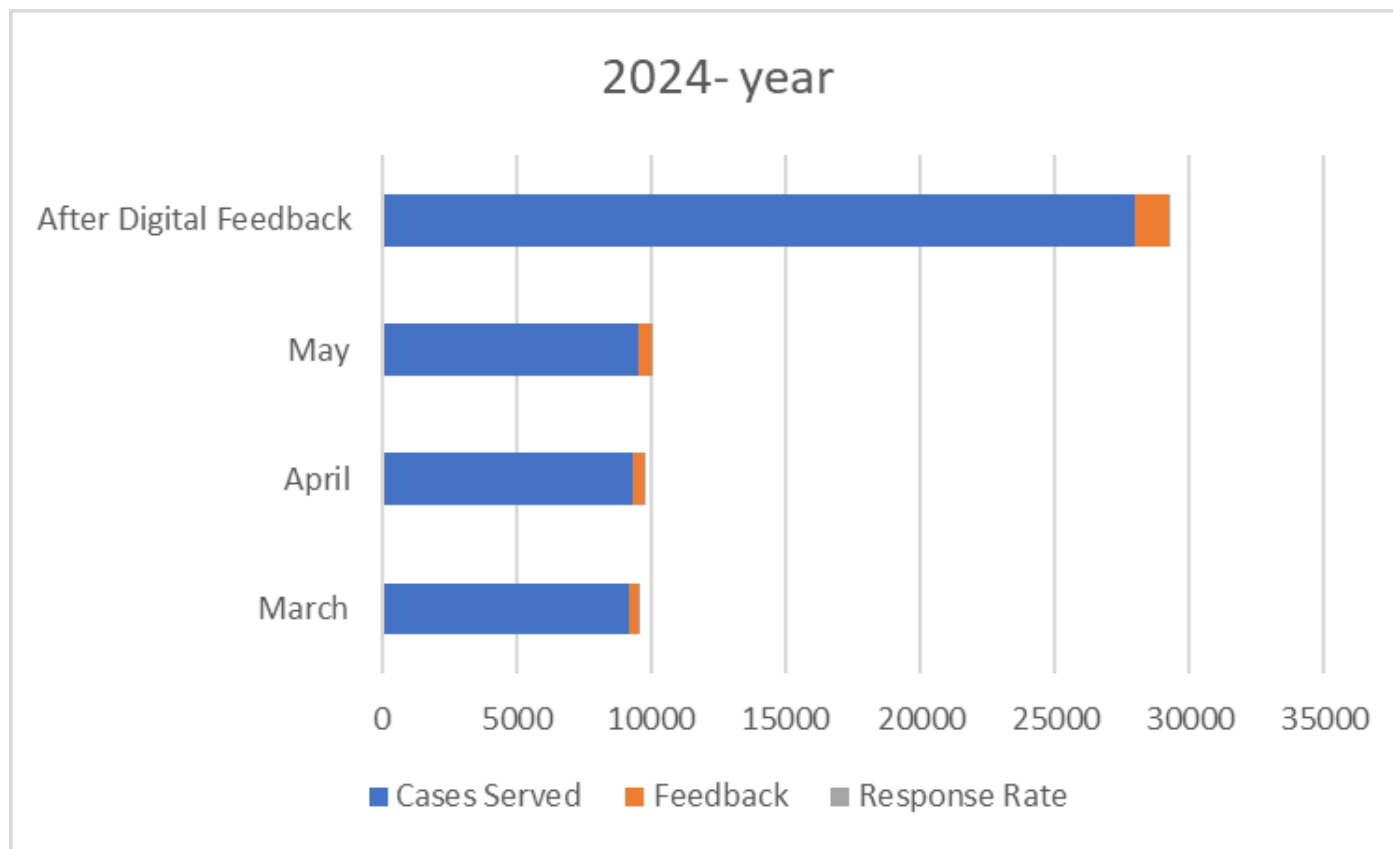
Result

1. Customer success

- ♦ **Feedback count / Response rate**
- ♦ 2022: Average response rate of 1.27%.



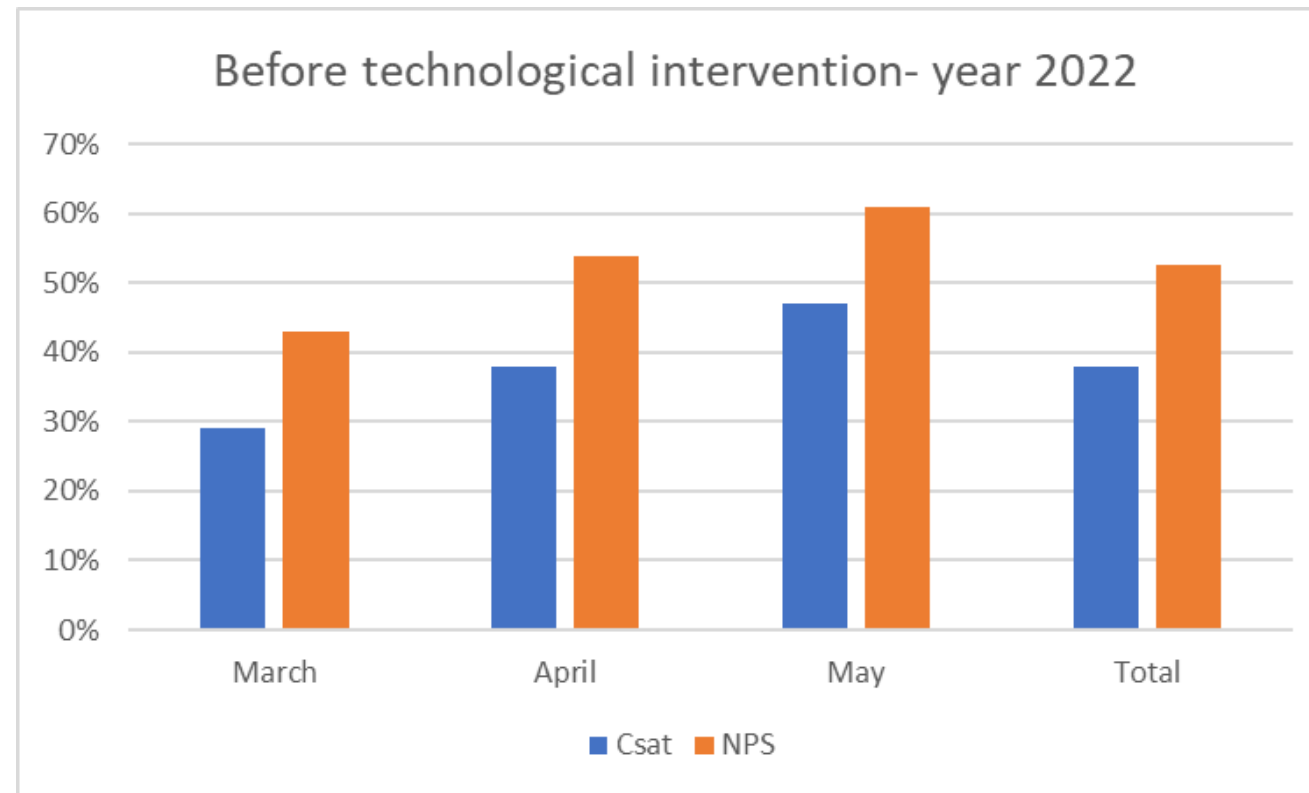
2024: Significant increase to an average response rate of 4.4%.

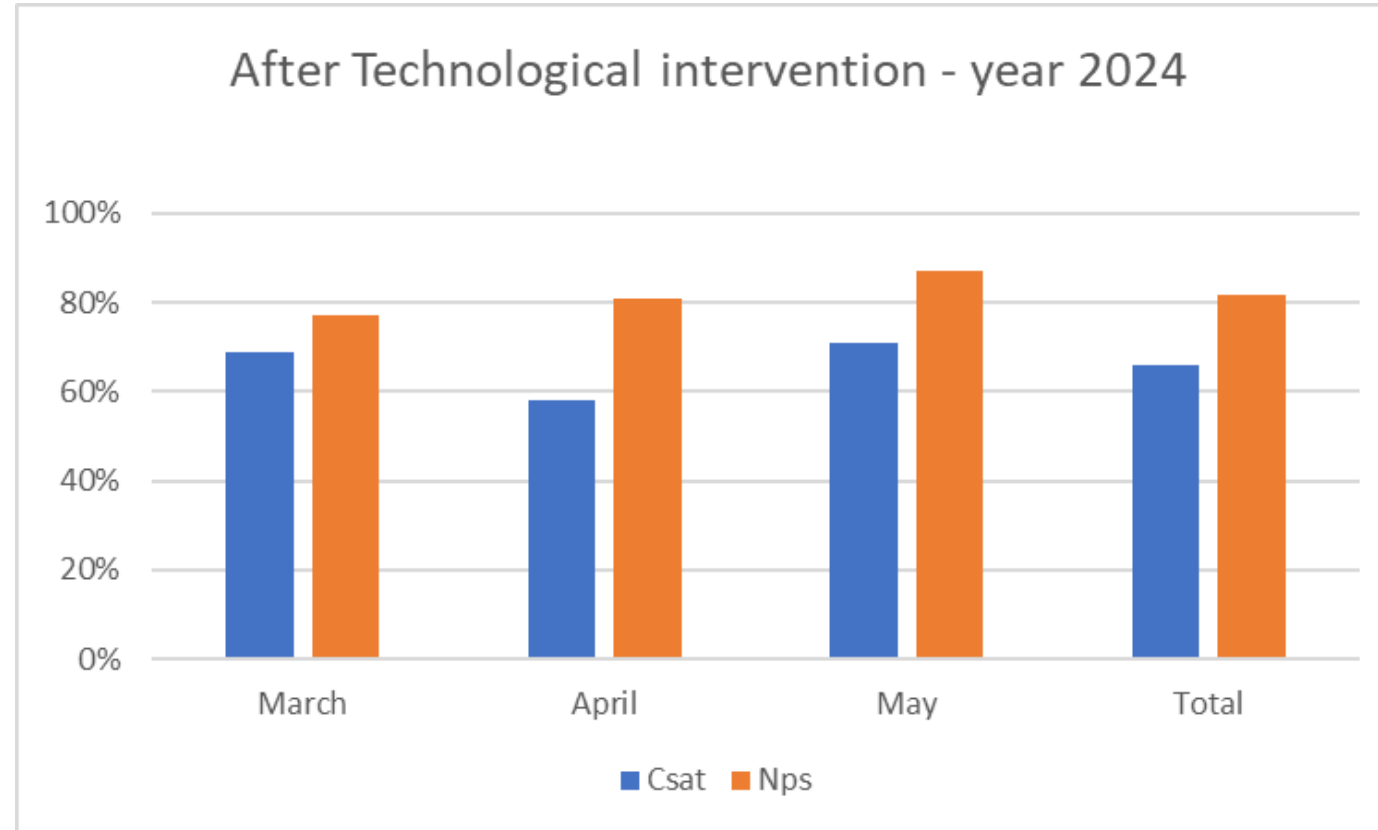


b) CSAT and NPS Overall Status

CSAT (2022): Average of 38%, increased to 66% in 2024.

NPS (2022): Average of 53%, increased to 82% in 2024.





c) Appreciations/ VOC of Customers - Google Review:

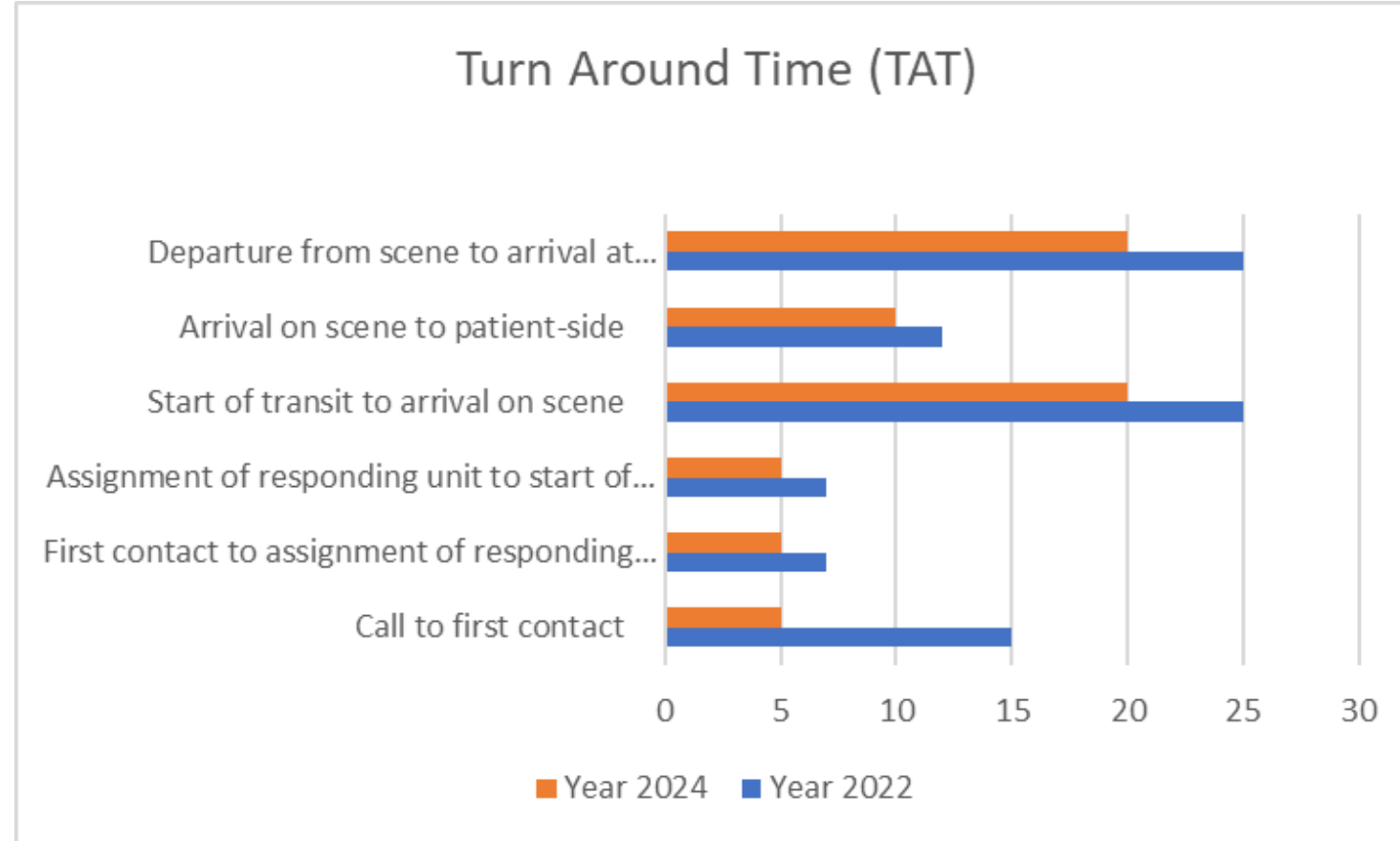
- Google Rating: Improved from 3.5 stars in 2022 to 4.7 stars in 2024.
- Technological Initiatives: Quick links and reminders significantly increased reviews and ratings.

RED.Health - RED Ambulances

6B, iLabs Centre, Silpa Gram Craft Village, HITEC City, Rai Durg, Hyderabad,
Telangana

4.7 ★★★★★ 2,406 reviews ⓘ

2. Turnaround Time (TAT)



d) Turnaround Time (TAT) Reduction:

- ♦ Overall Improvement: Reductions ranging from 16.67% to 66.67% across various response stages.
- ♦ Impacts: Enhanced operational efficiency and likely contributed to improved customer satisfaction.

Discussion

- ♦ From 2022 to 2024, Red Heath significantly improved its feedback collection and service quality by transitioning from physical feedback forms to digital quick links, resulting in a 71% increase in response rates (from 1.27% to 4.4%). Customer Satisfaction (CSAT) rose from an average of 38% to 66%, and Net Promoter Score (NPS) increased from 53% to 82%. These changes were statistically significant, with paired t-tests confirming substantial improvements. The Google rating improved from 3.5 to 4.7 stars, thanks to technological initiatives like quick links and frequent reminders. Turnaround times also improved significantly, enhancing operational efficiency and patient outcomes. These advancements reflect the positive impact of integrating advanced technologies and optimizing strategies in emergency medical services (EMS), aligning with literature on EMS improvements.

Conclusion

- ♦ Red Heath's transition from paper-based feedback to digital quick links led to a 71% increase in response rates, enhancing patient engagement. Customer Satisfaction (CSAT) and Net Promoter Score (NPS) significantly improved, indicating higher patient satisfaction and loyalty. Operational efficiencies were boosted through better ambulance dispatch and response times, resulting in improved Google ratings and patient outcomes. Embracing digital solutions aligned Red Heath with global trends, fostering continuous improvement and accountability. This transformation highlights the importance of technology, training, and strategic operational changes in delivering superior healthcare services.. Red Heath's journey sets a benchmark for patient-centric, digitally enabled care, emphasizing the need for ongoing investment and community involvement in healthcare.

Thank you