Streamlining Process Improvement Identification and Resolution in a Hospital-at-Home Care Model

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ABSTRACT

BACKGROUND

The Mayo Clinic Virtual Care Platform, Advanced Care at Home (ACH), provides an inpatient virtual and physical encounter for patients within the comfort of their own home. To effectively and safely provide care for patients in the program, the orchestration of virtual connections facilitated by a robust supplier network are core foundational elements that must align with one another.[1] In a brick-and-mortar hospital, the traditional incident reporting tool does not accommodate for improvements needed to address an innovative care model that interacts with over 18 domains of external service provider relationships. According to an article by the Institute for Healthcare Improvement, developing a reporting system is imperative to create a culture of safety; allowing clinical teams to bring forward information on safety issues for both near misses and adverse events.[2]

METHODS
In a collaborative effort between the Mayo Clinic ACH team and Medically Home Group, the incident reporting process was re-designed to ensure:

- Seamless incident reporting experience for key stakeholders of the program,
- A comprehensive process to triage and resolve the submitted issues, and
- Robust closed loop communication to the incident submitter and leadership.

To effectively transition to the new process, education and training were tailored to different end-users one month prior to implementation.

RESULTS
The new process demonstrated an 82%-time savings for issue submission for end-users, 84%-time savings in issue triaging, 30% improvement in issues completing the incident lifecycle, and a 48% decrease of days to close an incident.

CONCLUSIONS
By embedding an incident intake form within the software platform that clinicians use to virtually interact with patients and implementing a sophisticated process to manage the incident lifecycle, it has resulted in an increase of reporting efficiency and has allowed for a standard continuous improvement forum to address service delivery, workflow, and customer issues. These improvement efforts allowed for key stakeholders across multiple disciplines in the command center to remain engaged with the program and drive a culture of continuous improvement in this transformative model of care.

OBJECTIVES

The aim of the project was to standardize and streamline the intake of service opportunities identified by front-line staff simplifying the process for issue resolution. The solution needed to include standardization of intake within a currently leveraged software, issue tracking from initial identification through resolution, and relay of assessment results. A successful implementation would exhibit decreased processing time providing quicker resolution turnaround and increased completion of incident reporting follow-up.

METHODS

RESEARCH METHODS
Mayo Clinic ACH and Medically Home Group collaborated to increase efficiency and expand reporting on service delivery, workflow, and customer service issues. Through feedback, a future state process and project plan were designed to translate the improvement idea to operations. Specific process improvement themes and actions identified included embedding incident reporting in the user interface, streamlining a comprehensive back-end process and ensuring closed loop communication.

IMPLEMENTATION METHODS
To ensure a smooth transition, education and training were tailored to different end-users and offered one month prior to launch. A comparison for four months pre- and post-implementation was conducted to assess the effectiveness of the work.

RESULTS 1

Within the four months following implementation, the team realized an 82%-time savings for issue submission with the intake form embedded in a central resource and an 84%-time savings in the issue triage step through workflow and resource efficiency. On average between May and August 2022, 57% of issues did not complete the issue lifecycle process, while only 18% of issues did not make it through the lifecycle process between September and December. Improvement was observed even within the new incident tracking process as the team grew in comfort with the workflow. The average turnaround time from submission to issue resolution decreased by 48% between September (23.3 days) to December (11.9 days). A dashboard of key metrics was developed to bring visibility to the incident life cycle reporting process and to ensure these gains were sustained.
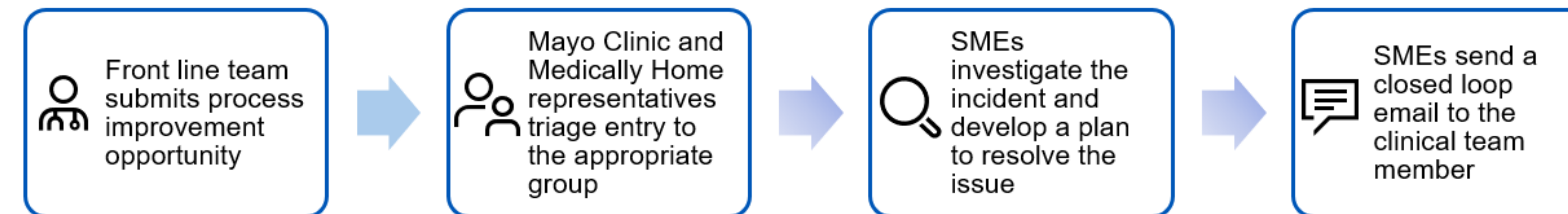
RESULTS 2

FIGURE 1

FIGURE 2

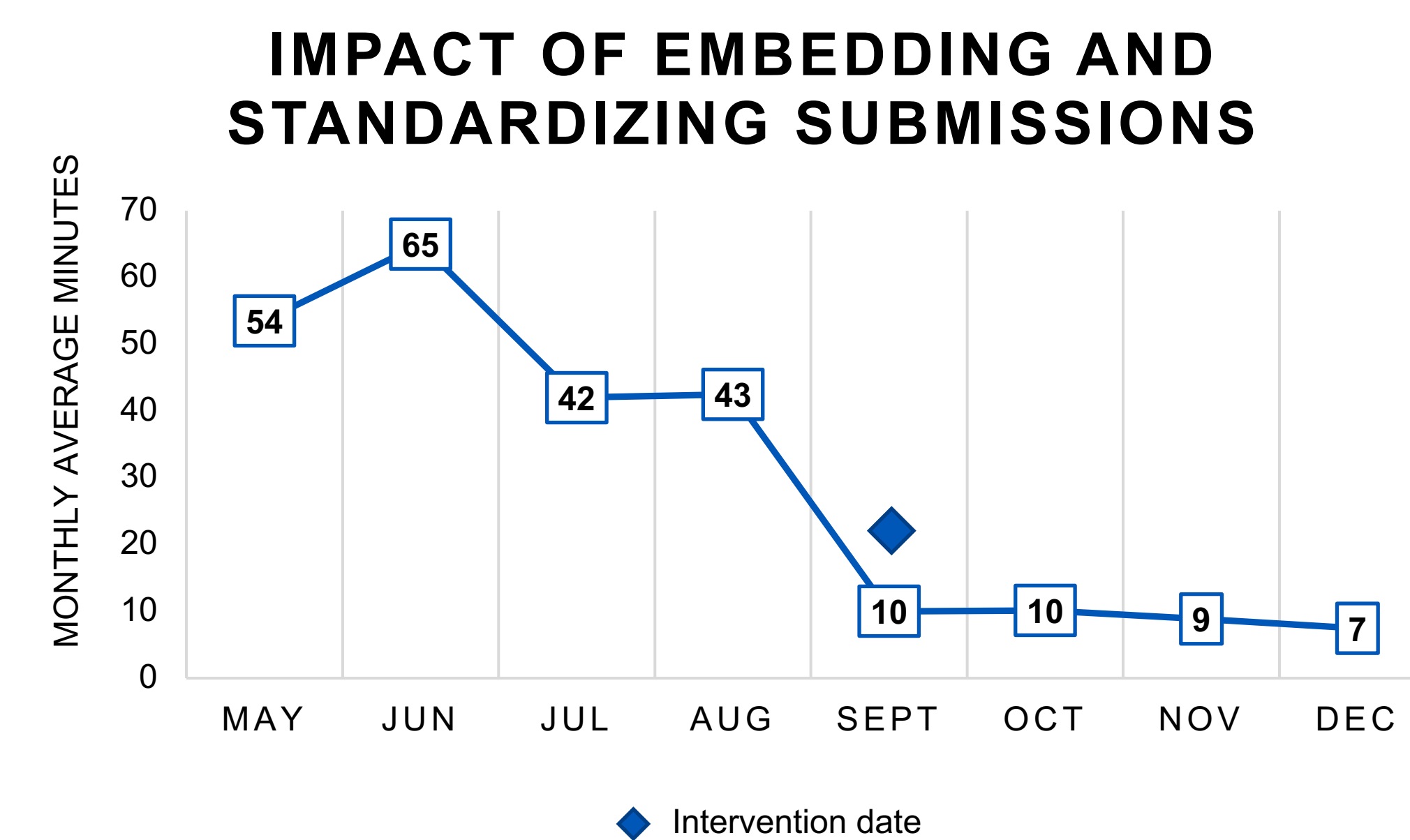**IMPACT OF EMBEDDING AND STANDARDIZING SUBMISSIONS**

Figure 2 highlights the 82% efficiency gain in time spent for front-line ACH team members to submit an incident or process improvement idea.

FIGURE 3

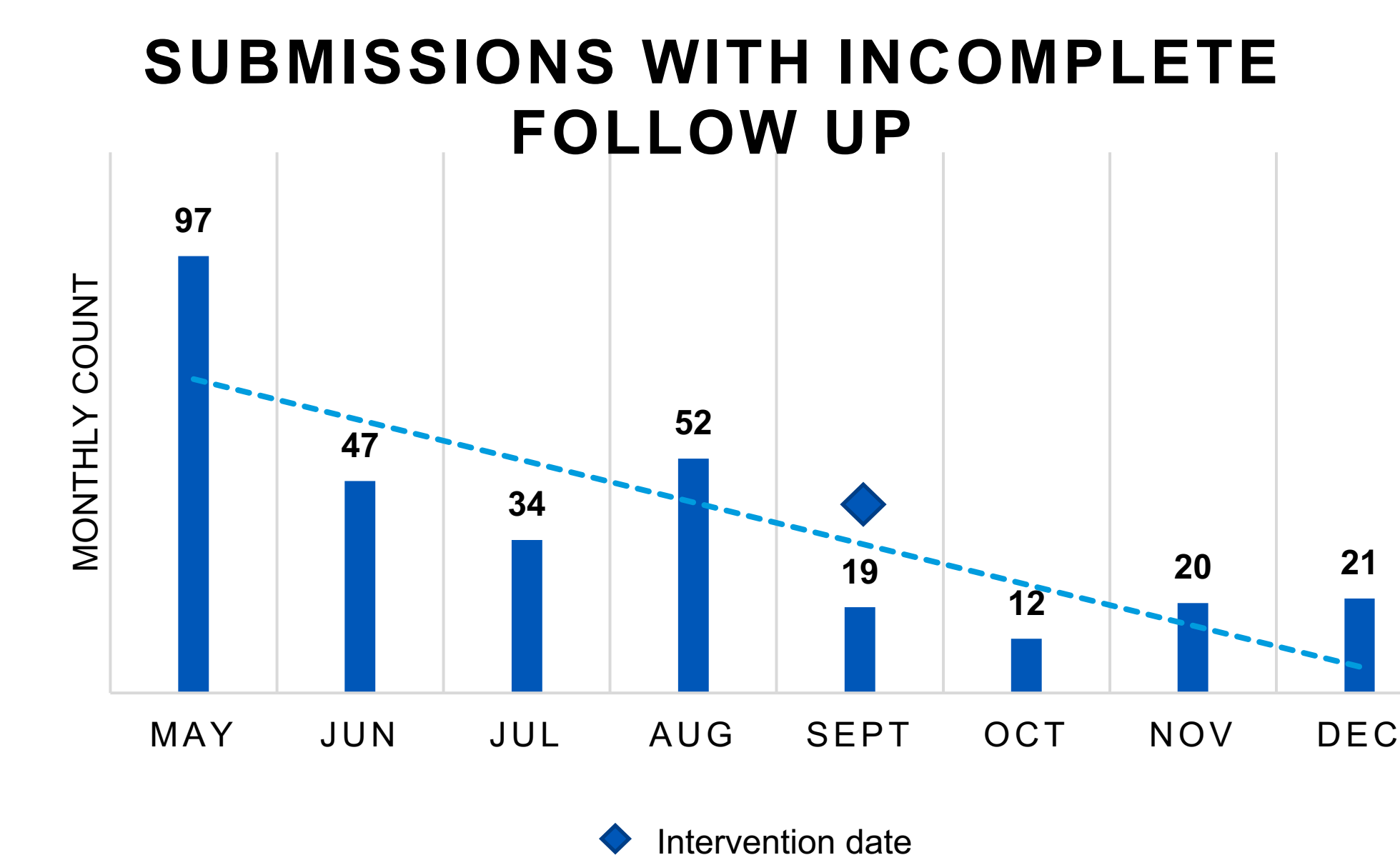**SUBMISSIONS WITH INCOMPLETE FOLLOW UP**

Figure 3 shows a downward trend for incomplete incident resolutions; specifically, an average 39% reduction compared to the pre-intervention months.

TABLE 1: SUMMARY OF INTERVENTION IMPROVEMENTS

QUALITY IMPROVEMENT CATEGORY	PRE-	POST-
Data Accuracy	Excel Spreadsheet with manually entered timestamps	System that automatically captures accurate timestamps at each phase of review
Accountability	Dependent on manual email communication	Leverages SharePoint to automate emails and triage issues entries to SMEs
Reporting	Pivot tables with multiple columns to filter	Dashboards available with Excel export capabilities
Scope	Service Provider Network Issue Tracking	Service Provider Network + Command Center Operations Continuous Process Improvement
User Interface	Separate platforms for daily work and issue intake submission	Embedded issue intake submission in same platform used to coordinate clinical care and connect with patients
Follow Up	No closed loop emails	Closed loop emails

DISCUSSION

Redesigning the identification of process improvement opportunities submitted by the front-line ACH team led to significant efficiency and quality improvement gains. The most notable time savings outcomes included the integration of the submission form and development of the triage process. However, there was a month-over-month reduction in the time from intake to closed loop communication from September to December as the operational users became more familiar with the new process.

Prior to implementing the intervention, the Mayo Clinic ACH team and Medically Home Group hypothesized that the process changes would lead to more incident entries because the training would create heightened awareness and was more user-friendly. Contrary to that theory, the number of entries submitted was reduced by 23% after implementation. The assumption is that the closed loop communication emails enhanced confidence from the end-users that issues submitted would be resolved, therefore reducing multiple examples of similar incidents.

CONCLUSIONS

Although the United States Hospital-at-Home model was developed over 25 years ago as an alternative for high-acuity healthcare delivery[1], Mayo Clinic's Advanced Care at Home program and Medically Home Group continue to collaborate to find ways to optimize the ecosystem to best serve patients based on findings from the front-line clinical team. Streamlining the process to ensure timely resolution and response to the end-users is key to maturing this innovative care model to ensure the delivery of high-quality and safe inpatient level care in the home setting.

REFERENCES

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