

Beyond Hospital Walls: Mayo Clinic's Pediatric Paramedic Project

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BACKGROUND

- In 2022 the country saw the occurrence of a double pandemic – the largest influx of Respiratory Syncytial Virus (RSV) and Influenza (Flu) in recent history
- Pediatric Hospital unit spent 50+ days on diversion
- Pediatric outpatient practice tripled hours of operation with no incremental staff added.
- Community paramedicine is an evolving method of providing community-based health care where paramedics function outside their traditional emergency response roles to improve access to primary and preventive care¹.
- The Mayo Clinic Rochester Pediatric Hospital Medicine (PHM) team collaborated with local paramedics to establish the Community Paramedic-Pediatric project, aimed at expanding healthcare accessibility for at-risk pediatric patients within the community.
- Guided by a physician Medical Director, the project consists of experienced paramedics equipped with specialized training in non-emergency medicine, patient education, and a comprehensive understanding of social determinants of health.
- By defining a process that employs specific inclusion and exclusion criteria for pediatric patients, the project strategically focuses on those individuals recently discharged from PHM where families seek additional support and resources to assist in caring for their child.
- This innovative approach seeks to enhance post-hospitalization care for pediatric patients and provides a blueprint for community-based medical interventions. Given the complexities of the project, a multi-phased approach was identified.

OBJECTIVES

The Mayo Clinic Community Pediatric Paramedics project aims to:

- Reduce length of hospital stays for children and their families while maintaining positive patient outcomes
- Provide home-based support and access to medical resources/interventions that allow for earlier and safer discharge from the hospital

Phase I service objectives include:

- Clinical evaluations and vital signs
- Oral/nasal/NP suctioning by trained paramedics
- Administration of oral and nebulized medications
- Teaching and reinforcement of medication regimens
- Basic wound care
- Direct connection to Physician of the Day

Future Phase II service objectives:

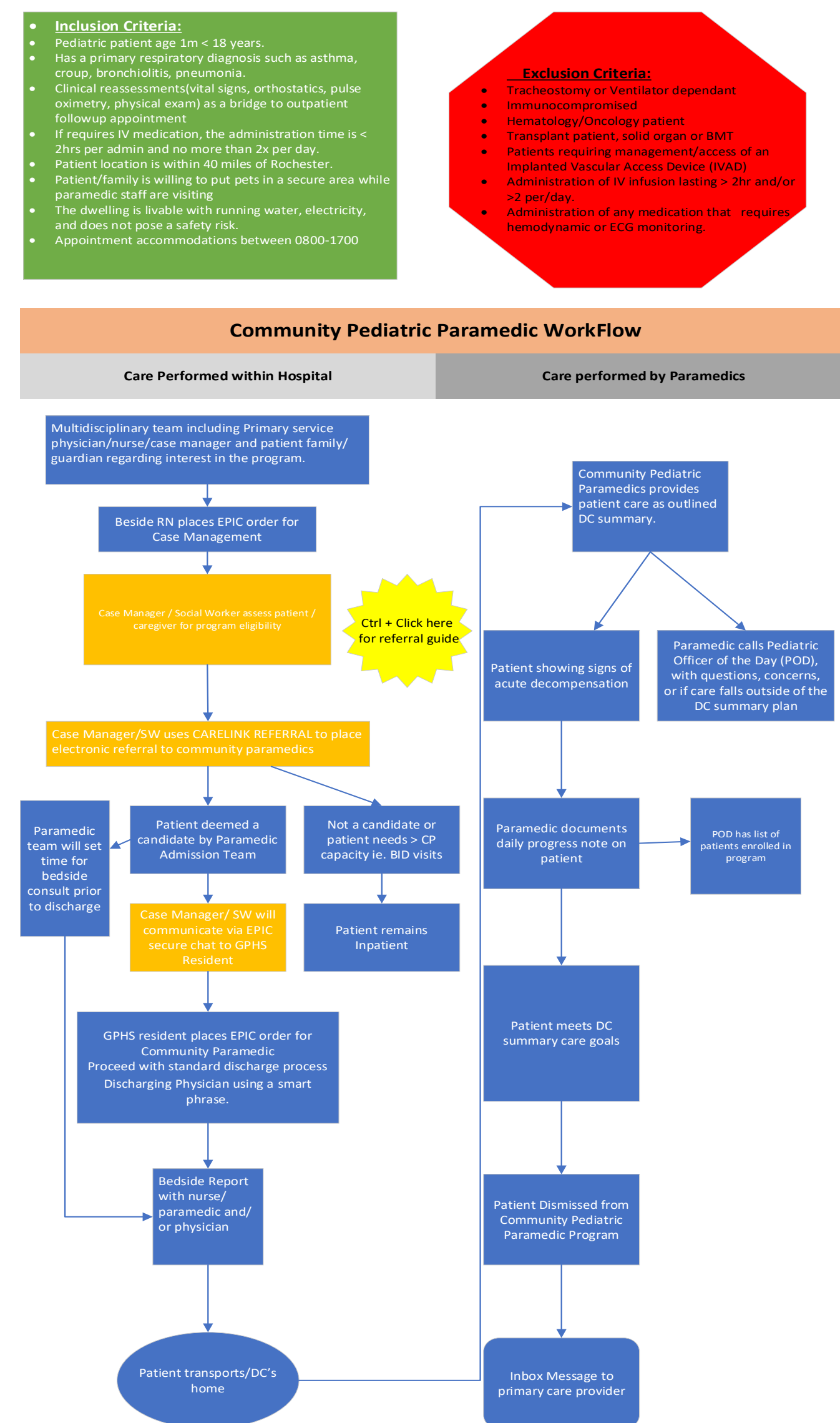
- IV fluid and medication administration
- Additional services which are yet to be determined
- Hematology/ Oncology indications
- Diabetes management
- Engagement of ED, Primary Care

Overall, this progressive, two-phase initiative aims to leverage trained paramedic personnel to deliver medical care directly to patients' homes, enabling shorter hospital stays without compromising quality of care or outcomes.

PLANNING & IMPLEMENTATION METHODS

To be considered a candidate for this project, certain criteria needed to be met. When the criteria were met a structured workflow was followed. Figure 1 describes the criteria and workflow.

FIGURE 1: Community Pediatric Paramedics Criteria & Workflow



RESULTS

Phase I of the project was launched at the end of October 2023 during a period when RSV rose to near a 70% positive rate (State of Minnesota).

- Observed 71 pediatric RSV cases during Phase I.
- Readmission rate decreased by 80% (from 5 to 1).

FIGURE 2: MN Hospitalizations by Indication

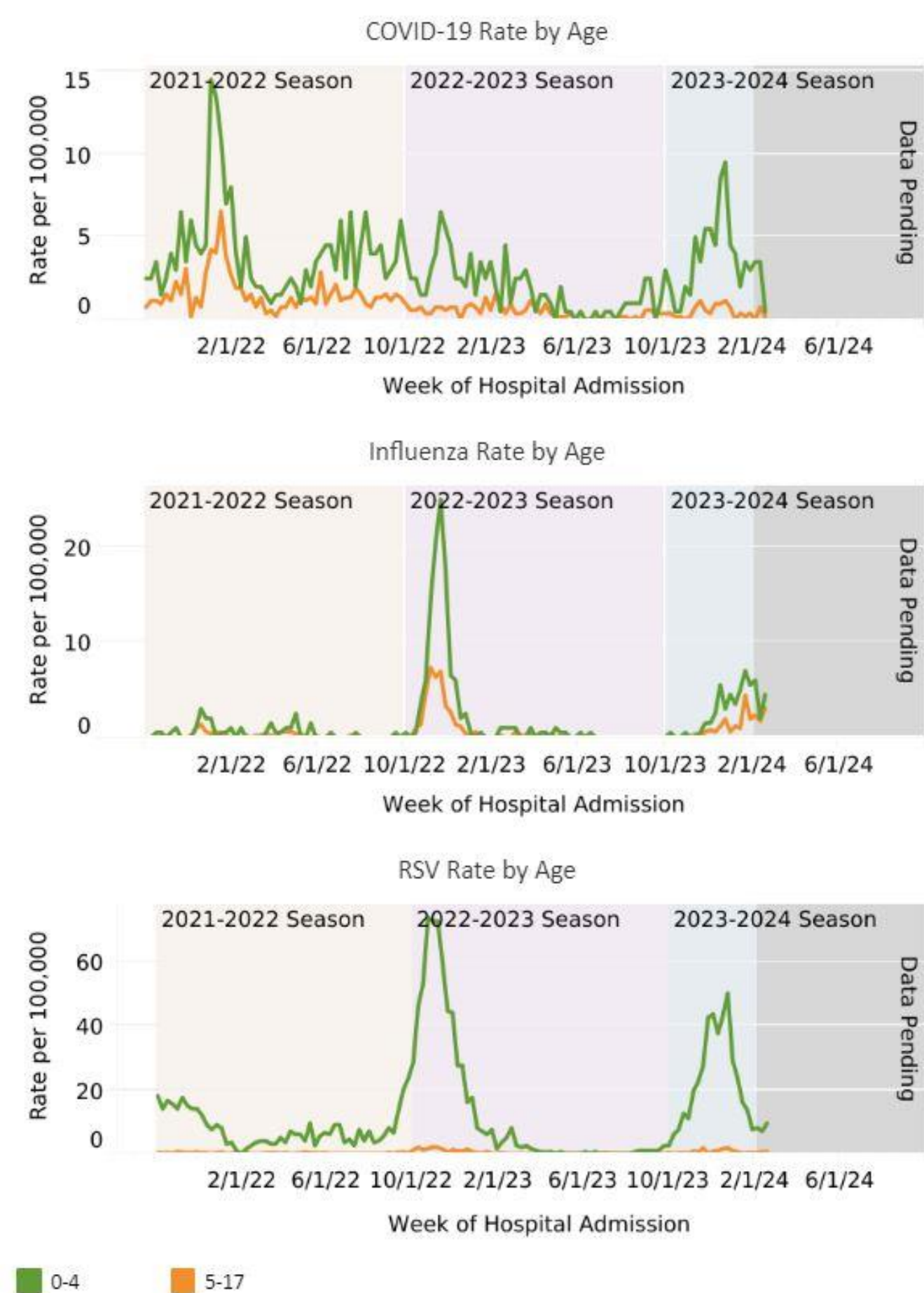


FIGURE 3: Enrollment Rate of Eligible Pediatric Patients

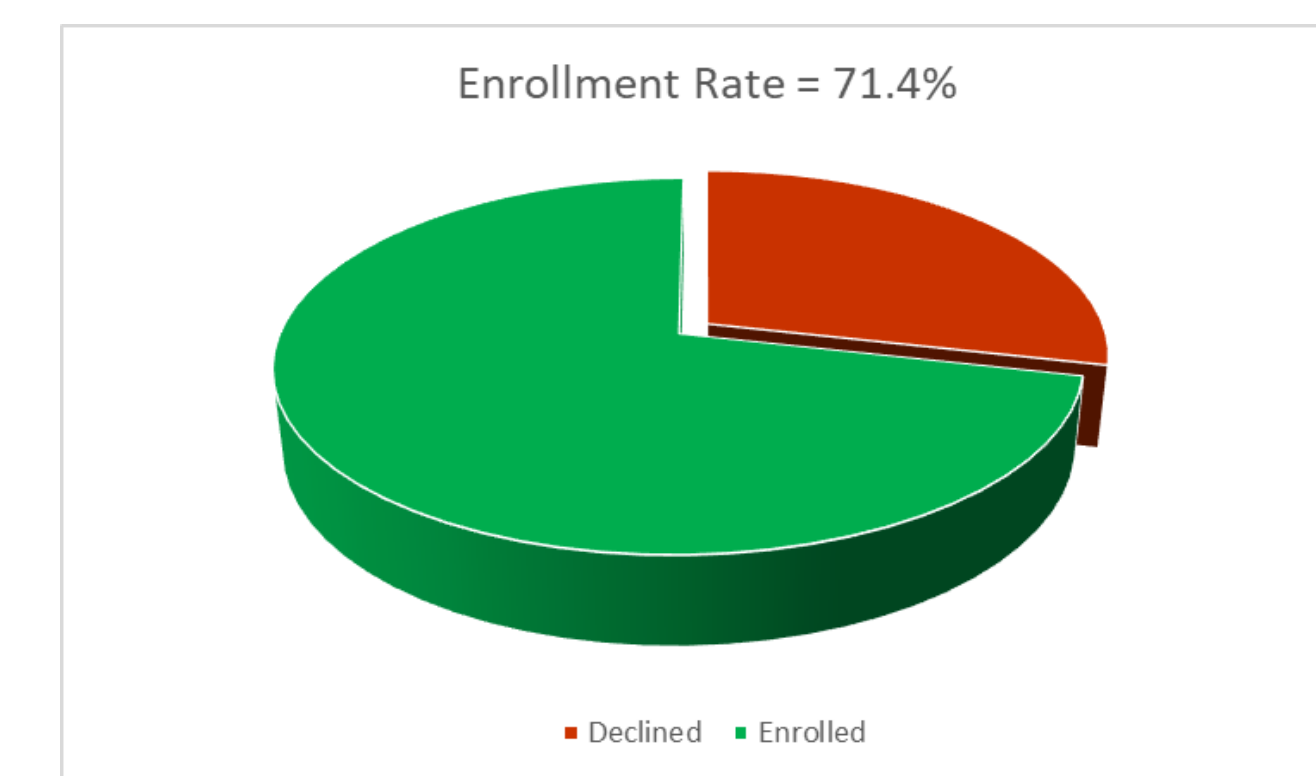
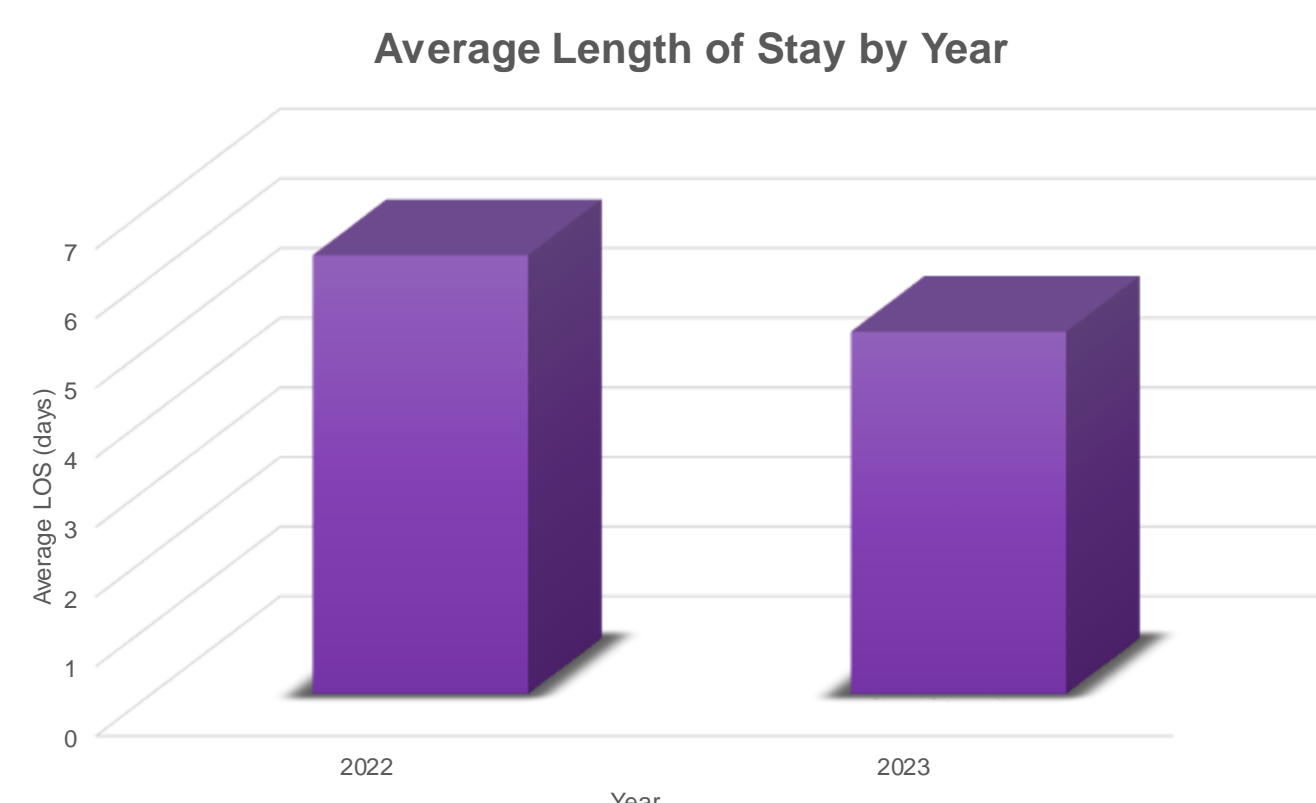


FIGURE 4: Average Length of Stay for RSV Patients by Year



- Enrolled 25 of 35 eligible pediatric patients for a 71.4% acceptance rate.
- Average Length of Stay (LOS) **Decreased by 1.2 days** for patients enrolled in the project.
- Averaged 4 referrals per week to the paramedic team from Pediatric Hospital Medicine (PHM).
- This equals a savings of \$1500 per day per patient. In addition, it allows the inpatient practice to utilize the bed space for children that are more acutely in need of care.



\$1,500 savings to each patient/ family

\$37,500 in savings to families in '23/'24 RSV season

DISCUSSION

Community-Driven Expansion:

- Encourage local clinics, hospitals, paramedics, and community groups to take the lead in bringing similar initiatives to their neighborhoods.
- Customize the project to fit the unique characteristics and preferences of each community, ensuring it addresses specific health concerns and cultural practices.
- Recommended best practices: Stay abreast of industry trends, advancements in medical technology, and changes in regulatory requirements to ensure that training programs remain relevant and effective. Regularly review and update curricula to align with evolving healthcare standards.

Application to Other Care Models:

- Explore adaptations of the project for additional indications to address specific healthcare needs in those/ your? demographics.
- Integrate the paramedic model into existing community health worker programs to enhance outreach and continuity of care.
- Develop partnerships with local social services agencies to address social determinants of health and provide holistic support to patients and families. (preventative care/screenings?)
- Encourage flexibility in the project's design to accommodate variations in local healthcare systems, cultural contexts, and community needs.

LESSONS LEARNED

Scope Enhancement: Need for Phase II which aims to broaden the scope of services offered and adapt to various evolving community needs.

Integrated Care Models: The project has highlighted promising opportunities for the development of integrated care models, emphasizing collaboration among healthcare teams.

Opportunity for Referral Process Enhancement: Phase II will introduce improvements to the referral process, allowing referrals to come from hospitals, emergency departments (ED), or primary care settings.

Conduct Needs Assessments: Perform comprehensive assessments to identify existing training gaps and skillset deficiencies among paramedics and care teams. These assessments should consider factors such as clinical competency, technological proficiency, and patient care outcomes.

Regulatory Challenges: Regulations and licensure requirements can vary across regions, making it challenging to standardize training and skillsets for paramedics and care teams. Navigating these regulatory frameworks while striving for optimal performance can be complex and time-consuming.

Invest in Professional Development: Allocate resources and support mechanisms for ongoing professional development opportunities, including continuing education courses, skills workshops, and mentorship programs. Encourage a culture of lifelong learning and skill enhancement within the organization to promote operating at the top of licensure level.

Limited Resources: Healthcare organizations may face constraints in terms of funding, staffing, and time, which can hinder efforts to assess and enhance the training and skillsets of paramedics and other care teams.



REFERENCES

1. Thurman WA, Moczyska LR, Tormey K, Hudzik A, Welton-Arnt L, Okoh C. A scoping review of community paramedicine: evidence and implications for interprofessional practice. J Interprof Care. 2021 Mar-Apr;35(2):229-239. doi: 10.1080/13561820.2020.1732312. Epub 2020 Apr 1. PMID: 32233898.