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SPECIAL ARTICLE

Improving communication during triage in a Pediatric Emergency Department

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Abstract

Introduction: Effective communication during triage is essential for managing patients awaiting care in an Pediatric Emergency Department (PED).

Objective: This study aimed to increase by 10% the proportion of the patients informed about: a) their triage level, b) the waiting time to be seen, and c) the possibility of reevaluation.

Method: From January 2023 to February 2024, a multidisciplinary team implemented a communication improvement methodology during triage. The target population consisted of patients classified as triage levels IV and V who presented to the ED. Baseline data on patient awareness of their triage level were collected through situational mapping. Plan-Do-Study-Act (PDSA) cycles guided the interventions, which included problem quantification, the development of educational materials, regular reminder workshops, addressing barriers to effective communication, providing feedback, and conducting focus groups.

Results: Over the study period, 29,253 patients were triaged as levels 4 and 5. The percentage of adequately informed patients increased from a baseline of 35% to a median of 63%.

Conclusion: The percentage of informed patients during triage increased by 33%, exceeding the initial goal, demonstrating the effectiveness of the implemented interventions.

MEJORA DE LA COMUNICACIÓN DURANTE EL TRIAGE EN UN DEPARTAMENTO DE EMERGENCIAS PEDIÁTRICAS

Resumen

Introducción: *La buena comunicación en el triage es un elemento fundamental para la gestión de pacientes que esperan ser atendidos en un departamento de Emergencias Pediátricas (DEP).*

Objetivo: *El objetivo fue aumentar en un 10% el número de pacientes informados sobre: a) nivel de triage; b) tiempo de espera para ser atendidos; y c) la posibilidad de reevaluación.*

Método: *Un equipo multidisciplinario aplicó la metodología de mejora en la comunicación durante el triage entre enero de 2023 y febrero de 2024. La población objetivo fue los pacientes de nivel IV y V que acudieron al DEP. Se realizó un análisis de la situación para conocer la línea basal de pacientes informados sobre el nivel de triage, aplicando ciclos de Planificar, Hacer, Estudiar y Actuar (PDSA). Las áreas de intervención principales incluyeron la cuantificación del problema, el diseño de material educativo, talleres recordatorios periódicos y sistemáticos, la interpretación y eliminación de barreras para la comunicación asertiva, retroalimentación y grupos focales.*

Resultados: *Se triaron 29.253 pacientes como niveles IV y V durante el período de evaluación. El porcentaje de pacientes adecuadamente informados se incrementó del 35% al 63% (mediana).*

Conclusión: *Se obtuvo un aumento del 33% en la población informada durante el triage, superando nuestro objetivo propuesto.*

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INTRODUCTION

The management of the waiting room is essential for the safety and satisfaction of patients waiting to be seen in a pediatric emergency department (PED)[1]. Triage is the first contact with healthcare personnel prior to medical consultation, allowing patients to be categorized according to their priority of care[2]. Knowing the waiting time according to the assigned triage level, as well as considering going for reevaluation if the child feels unwell, is part of understanding the care process in the PED and is expected to improve the patient/caregiver experience, increasing their satisfaction[3]. The lack of information, conversely, leads to dissatisfaction, disorder in the waiting room, and unnecessary use of medical time. Physicians reported caregiver discomfort, which was attributed to insufficient or inadequate communication. In our organization, it is specified that triage professionals must provide this information at the conclusion of the triage process.

A systemic issue was identified, and it was decided to assess the scope of the problem and develop a sustainable improvement plan.

The overall aim was to enhance communication with patients in the triage area. To achieve this, we implemented a quality improvement (QI) plan to ensure families receive the necessary information throughout the care process.

Our specific objective was to increase the percentage of patients adequately informed about: a) their triage level, b) the expected waiting time to be seen, and c) the possibility of reassessment during the triage visit at the PED, from 35% to 45% by 28 February 2024.

METHOD

Context

This project was conducted in a tertiary, academic, urban PED that receives 120,000 pediatric patient visits annually. The emergency medical team included board-certified pediatric emergency medicine physicians, pediatric residents, and pediatric emergency fellows. As part of the routine triage process, a nurse determined the priority level using a structured triage system integrated into the hospital's software, MAT/SET web_e-PAT v4.15, based on the Andorran Triage Model. Patients are assigned a triage level from 1 to 5 and directed to separate waiting areas. Those with low-severity conditions receive a score of 4 or 5. In our PED, 67% of patients are assigned a score of 4 or 5. The target population for this project included level 4 and 5 patients attending the PED. The project was conducted between January 2023 and February 2024 as part of the Improvement Methodology Course conducted by Cincinnati Children's Hospital and the Latin American Society of Pediatric Emergency Medicine (SLEPE).

Interventions

A multidisciplinary team was established to implement the interventions, comprising two staff physicians, the chair of the PED, the PED head nurse, and the hospital nurse manager supervisor. The team used the Improvement Model based on Deming's theory, consisting of four key components: the theory of knowledge, appreciation of a system, knowledge of variation, and knowledge of psychology of change in people4. Through process mapping, barriers and potential solutions for patient care were identified. Improvement objectives were defined and organized into a key factors diagram, which served as a strategic roadmap for the interventions (Figure 1).

From August 2023 to February 2024, we implemented Plan-Do-Study-Act (PDSA) cycles. The multidisciplinary intervention team met every 15 days initially and then monthly, conducting multiple PDSA cycles to decide on new processes. The primary areas of intervention included quantifying the problem, designing educational materials, implementing these materials through periodic and systematic reminder workshops, identifying and addressing barriers to assertive communication, and conducting feedback sessions and focus groups.

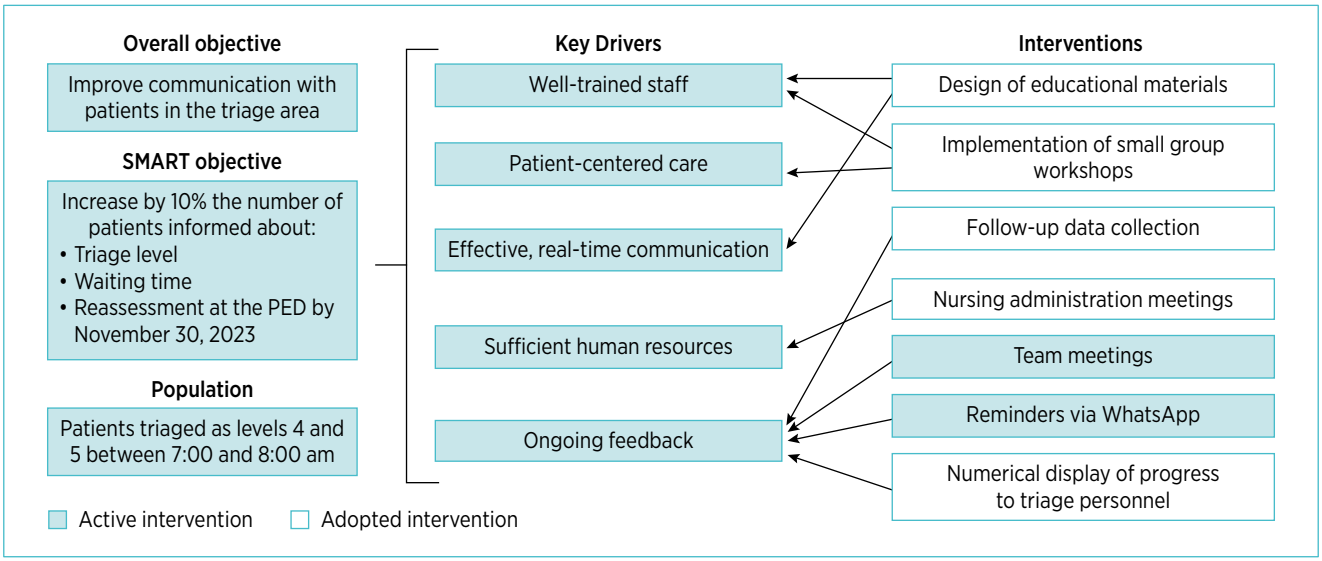

FIGURE 1. Diagram of key drivers.

- **Quantification of the problem:** To identify the scope of the issue, a survey was conducted with parents and caregivers daily across all three triage shifts: morning, afternoon, and evening, during September 2023. Patients categorized as triage levels 4 and 5 were assessed using three questions: 1) Are you aware of the triage level assigned? 2) Do you know the expected waiting time for that level at the time of the triage assessment? 3) Were you informed that, if the patient's clinical condition worsens, you should return for reevaluation?
- **Design of Educational Material:** Educational materials were developed in July and August 2023 with the specific objective of effectively communicating the three key aspects identified as fundamental by the multidisciplinary team.
- **The application of this material in workshops:** The application of this material was conducted through workshops designed to educate triage nurses. These small-group workshops, conducted in October and November 2023, included five to seven participants per session, ensuring all 32 PED triage nurses received targeted training. Each workshop began with an assessment of the strengths, opportunities, weaknesses, and threats in triage communication, followed by the use of the specifically developed educational materials.
- **Periodic and systematic reminders:** End-of-shift visits to the triage area were conducted by a member of the multidisciplinary intervention group, complemented by weekly reminders sent via WhatsApp over a three-month period.
- **Interpretation and elimination of barriers to assertive communication:** During the work team meetings, it was identified that certain stages of the project experienced a reduction in the information provided. To address this, it was recommended to conduct focus groups with members of the multidisciplinary team and the triage team in January 2024 to identify the underlying causes.
- **Feedback:** Feedback was provided to the triage professionals on two occasions, focusing on the information records obtained during January 2024.
- **Focus group:** conducted in January 2024 to identify new barriers to communication. Example: Parents did not accept low triage levels as they considered their children were too sick; triage staff avoided reporting the assigned level to prevent confrontations. Twenty-six of 33 triage staff participated in the focus group.

OUTCOME MEASURES AND ANALYSIS

The primary outcome measure was to improve communication with patients in the triage area, defined as providing information about the triage level, waiting time, and the possibility of reassessment.

Data collection

A baseline survey was conducted for triage levels 4 and 5, with data collected across three shifts: morning (06:00 to 08:00 AM), afternoon (12:00 to 14:00), and night (20:00 to 22:00). The following variables were included: the day of the week the survey was conducted, the shift, whether the patient's caregiver was informed of the triage level assigned to their child (the triage system has five levels of care, assigned based on the severity of the child's condition upon arrival at the PED), whether the waiting time corresponding to the assigned triage level was communicated (times may vary depending on delays in care during the shift), and whether it was explained that if the child's health condition worsens, they should return to triage for reassessment.

The baseline was established at 35% for the information provided in the initial measurement, with the target set at a 10% increase in the information provided.

Analysis

The denominator was defined as the number of children surveyed during each shift and day of the week. We used run charts (QI Macros, version 2020; KnowWare International Inc., Denver, Colorado) to measure the effects of our interventions over time.

We used data collected prior to the implementation of the initial intervention to calculate the initial central line or median. The baseline period was from September to October 2023, and the intervention period from October to November 2023. Significant changes in the measures (i.e., special cause variation) were identified using traditional rules for patterns in run charts, including eight consecutive data points consistently above or below the median, six consecutive points trending upward or downward, or a zigzag pattern. A new central line was calculated if a system change meeting the special cause rule was observed.

Ethical considerations

This project was conducted as a QI initiative within the PED and was determined not to constitute human subjects research. The authors declare no conflicts of interest.

RESULTS

A total of 50,917 patients visited the PED between September 1, 2023, and February 28, 2024. A total of 29,253 patients were triaged as level 4 and level 5 during this period.

After the intervention period, the percentage of adequately informed patients increased from 35% to 63%, exceeding the initial target of 45%.

Our baseline for adequately informed patients, set at 35%, showed alternating points during the intervention. By the end of the intervention, we achieved a 33% improvement in the proportion of patients informed about their triage level, waiting time, and reassessment. This improvement was represented by a sustained increase of six consecutive points (Figure 2).

From 28 December 2023 onwards, there was a sustained decline in the provision of information, with the mean stabilizing at 28%. Causality was investigated through a focus group.

On 19 January 2024, a sustained increase in the provision of information began, reaching a peak of 80% and a median of 63%.

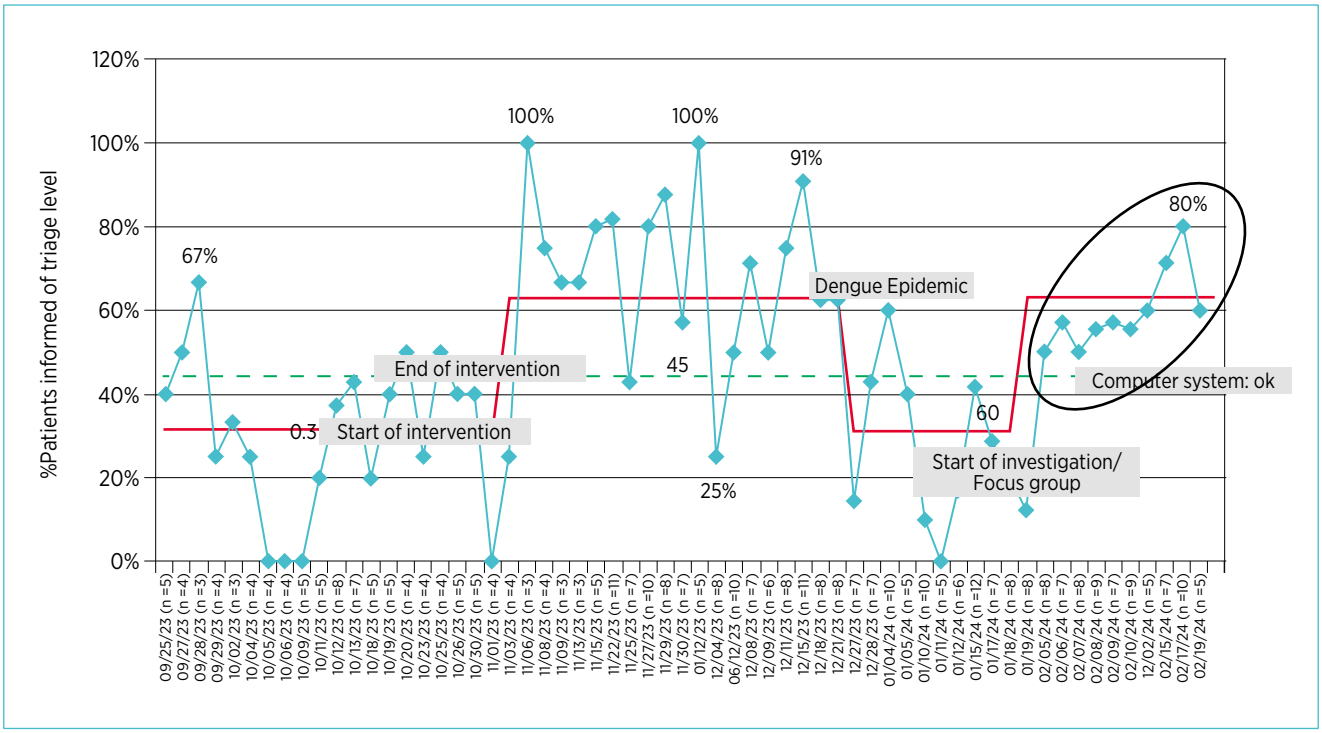

FIGURE 2. Proportion of patients adequately informed during the triage process.

DISCUSSION

The PED triage communication QI initiative proved successful, leading to better-informed patients and improved waiting room management. Previous studies have reported successful QI initiatives in PEDs aimed at enhancing parent-provider communication5,6. In the study by Porter et al., the "3 Cs" initiative (communication, clear, and concise) was shown to improve parents' communication experiences with emergency providers. In our project, we increased the number of adequately informed patients, exceeding the objectives set out in the SMART Aim.

During the development of the project, we observed significant one-point drops on 22 November and 4 December, which were linked to a specific triage worker who had not attended the training sessions due to a leave of absence. Following an initial improvement, during which we achieved the objectives outlined in the improvement plan, a sustained decrease in patient information was identified. Consequently, a focus group was set up, and the previously described interventions were continued. The focus group identified several issues contributing to the decrease in patient information, which were attributed to an increase in visits due to a dengue outbreak. These issues included: 1) Lack of acceptance of the assigned triage level by the family or accompanying person; 2) Lack of acceptance of the justification for the assigned level provided by the triage professional; 3) Overuse of the re-evaluation process; 4) Incidents of violence during triage; 5) Episodes of computer system malfunctions, leading to patient backlogs. As a result, reducing the amount of information provided allowed triage staff to feel less exposed to complaints by avoiding confrontations over level assignments. During the outbreak, it was decided that the physician responsible for managing patient flow would provide periodic reports in the waiting room to support the triage team, as there was no increase in human resources during that period. The application of the improvement methodology enabled a thorough analysis and informed decision-making, considering and evaluating the contextual factors. In dynamic environments like emergency departments, the improvement methodology proves to be a valuable tool for the continuous assessment of processes, guiding interventions, and determining their timing.

During the training of the educators, we observed that incorporating sociocultural aspects into the training processes is essential. Throughout the intervention, the need for external assistance with data uploading and ensuring measurement sustainability became apparent. The institution's management recognized this need and provided the necessary support staff.

Although this study has strengths, such as the implementation of planned, executed, and evaluated interventions that achieve the proposed objective, it also has some limitations. Since the QI initiative was conducted within a training course on QI strategies, the measurements and the number of patients surveyed were limited by the duration of the training. A longer measurement period and a larger patient sample would be needed to assess the sustainability of the interventions.

CONCLUSIONS

A 33% increase in the population informed during triage was achieved, exceeding our proposed aim. Understanding the barriers to project implementation is crucial for the development of an improvement plan. The interventions implemented are easily reproducible in other PEDs.

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