

**EDITORIAL****Risk maps in Pediatric Emergency Medicine****Yordana Acedo Alonso, Marisa Herreros Fernández, Andrea Mora Capín, Vanessa Arias Constantí***SEUP Quality Improvement Working Group*

Over the past two decades, patient safety has become a key priority for healthcare systems due to the increased recognition of risks associated with medical care. Since the publication of the report of the Institute of Medicine in 2000, *To Err is Human: Building a Safer Health System*<sup>(1)</sup>, which highlighted the profound impact of these risks, numerous efforts have been made in research, education, and collaboration among various organizations to promote safety<sup>(2,3)</sup>. Despite these efforts, however, as health care professionals, we know that medical errors and patient harm unfortunately remain prevalent.

Healthcare is becoming increasingly complex, with more professionals involved in the same medical procedures, new tests being requested, and emerging evidence constantly modifying our approach. Although these advancements offer opportunities for continuous improvement in patient care, they also increase the probability of failure due to the growing number of changes and variables<sup>(4)</sup>. Hospital Emergency Departments share several characteristics that make them high-risk areas for safety issues. The unscheduled influx of patients with varying levels of complexity, the need to make rapid decisions based on limited clinical information, and factors related to the healthcare providers, teamwork, and organization all contribute to potential errors in care. When we add the unique aspects of pediatric patients—such as their anatomical and physiological characteristics, limited ability to express symptoms at certain ages, and the need to individualize medication doses based on weight—it becomes evident why Pediatric Emergency Departments (PEDs) are particularly high-risk areas for adverse events<sup>(5-7)</sup>.

Today, it is known that risk management in healthcare services is a highly effective strategy to improve safety. Risk management includes all processes aimed at eliminating or reducing risks within a given area. Traditionally, risk management has been reactive, i.e., analyzing and addressing errors that have already occurred. However, to achieve real improvement, we must adopt a proactive approach, i.e., anticipating and continuously assessing the risk of failure. Risk Maps (RM) are dynamic tools that help detect potential errors a patient may be exposed to throughout the care process. Their purpose is to raise awareness among professionals and managers about high-risk activities and the importance of implementing preventive measures to reduce the likelihood of harm to patients<sup>(8)</sup>.

In 2014, the Spanish Society of Emergency Medicine (SEMES) RM Working Group (WG), designed and validated a general RM for EDs, with the aim of improving safety in these care areas<sup>(9)</sup>. At the pediatric level, several initiatives have been developed in pediatric emergency settings that validate the use of RMs as valuable tools to identify and manage patient safety risks in the PED. However, all of these initiatives are single-center in nature, and their use is not widely disseminated<sup>(10-13)</sup>.

In this context, the Spanish Society of Pediatric Emergency Medicine (SEUP) has shown interest in developing a common RM for pediatric emergencies to enhance and promote safety across different Pediatric Emergency Departments PEDs. A multicenter study was conducted, involving a core research group of four pediatricians with experience in patient safety and RM development, as part of the SEUP Quality Improvement WG. The study design was based on the methodology used by the SEMES RMWG and incorporated the Failure Mode and Effects Analysis (FMEA) tool. The FMEA identifies the possible failures of a process (in this case, emergency care) and their possible causes and effects, and prioritizes these failures. For the elaboration of the SEUP RM, a specific WG was created, consisting of 41 consultants from 22 PEDs of different levels of complexity. This group validated the initial RM proposed by the main research team. The total duration of the project was almost 2 years (November 2021-

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May 2023) and it was finally presented during the XXVIII SEUP Meeting in A Coruña.

A total of 104 potential errors, also known as failure modes (FM), were identified in the RM developed. Each FM was assessed and given a score by the WG based on its frequency, severity, and detectability, to prioritize them effectively. Consequently, three final documents were produced; a complete RM with all the failures, a recommended RM where only the FMs with a score above the median were included, and a core RM that included only the FMs with the highest score. The process phases associated with the highest accumulation of risks were the complementary testing and treatment phases. Many of the risks listed were related to working conditions, particularly the pressures faced by the PEDs to provide timely care.

Once the RMs were developed, the next goal was to make them available to our society as a useful tool and to facilitate their implementation. The three RMs can be adapted to the reality of different PEDs, allowing each of them to analyze the risks according to its resources and capacity. They are currently available for easy download on the SEUP website, in the Quality Improvement WG section ([available at: https://seup.org/gtcalidad/](https://seup.org/gtcalidad/)). In addition, a presentation guide is provided to assist in applying the RMs within the PED. We hope that this tool will advance risk management in PEDs, leading to preventive measures to avoid harm to our young patients and improve our daily care.

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