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Trends in Clinical Deterioration Events Mortality: A Call for Action

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TRENDS IN CLINICAL DETERIORATION EVENTS MORTALITY: A CALL FOR ACTION

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ABSTRACT

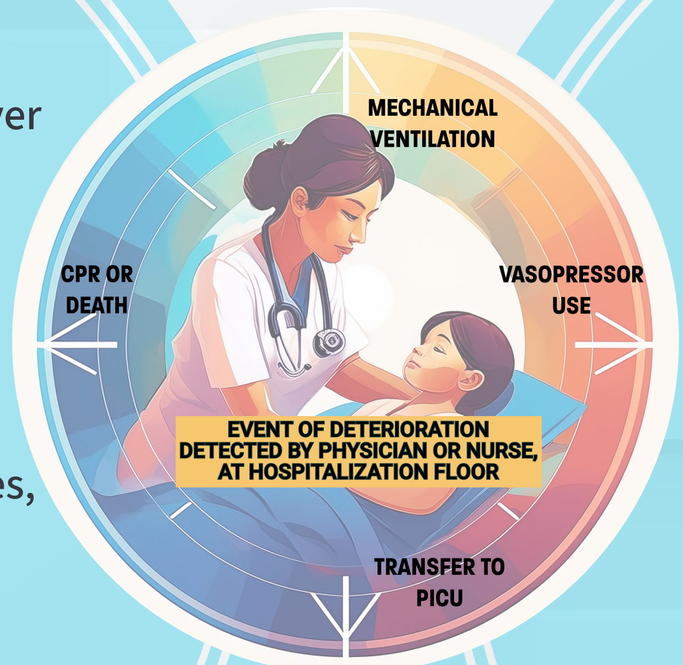
Children's mortality is still a public health concern. The World Health Organization (WHO) has been attempting to lower the death rate among children under five years old which represented the most important burden of mortality in children. In certain countries these diseases have moved from high mortality rates secondary to under-5 mortality such as infections in neonates, respiratory, and gastrointestinal disorders, to other diseases that are more commonly seen in older children and for which there is an urgent need to identify in order to improve these outcomes. An assessment of clinical deterioration events, which, if left undetected, may result in mortality, is one method of identifying more common causes of mortality.

INTRODUCTION

Problem: Mortality in children from Low and Middle Income Countries (LMICs) remains high. WHO has leaded strategies to improve it, however causes of mortality have changed in the last 20 years. Evaluation of current causes to give solutions is crucial.

Events of Clinical Deterioration (EOD): is a sudden worsening of patient physiological condition, generally preceded by clinical changes, if not recognised could finish in bad outcomes and death (4).

AIM: To evaluate the EOD in a high complexity center from Colombia, its etiology and associated rate of mortality to propose strategies to reduce them and its bad outcomes.



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METHODS

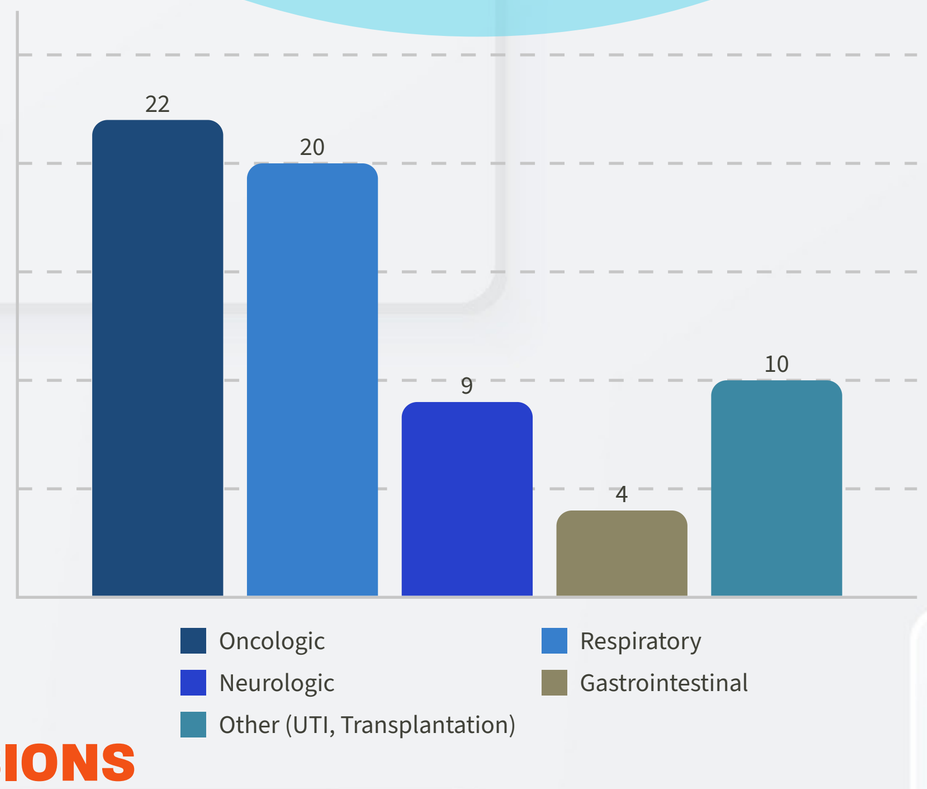
Descriptive observational study with prospective data collection conducted in the Hospital Pablo Tobón, a referral center for complex diseases in Medellín, Colombia. The hospital has 78 pediatrics beds at Hospitalization floor and a mixed pediatric critical care unit (PICU) with 26 beds.

Population: Children 0-18 years hospitalized who suffered an EOD and were transferred to the PICU between February and July, 2024 were included .

Data collection: To identify and record EOD, a group of pediatricians and a licensed nurse received virtual training. Flyers with this information were distributed to the pediatricians and nurses who care for hospitalized children. When a child experienced an EOD, a text message was sent to the group and the RedCap platform was used to complete the event data

RESULTS

A descriptive analysis was done. A total of 85 events of clinical deterioration were reported during six months, all of the children were transferred to a high dependence unit . The **mortality rate** of the children transferred with an event of clinical deterioation was **16.4%**, this is higher thant the total mortality rate reported for the PICU of this center, which is 4%. The mean age of children with a event of clinical deterioratio was **6.5 years old**. The most frequent pathologies associated with an event of deterioration were **oncological diseases** as is shown in picture. Excluding children located with carbapenemic-resistant isolation and post blood marrow trasplant, **22%** needed **mechanical ventilation** and **8%, vasopressor support.**



DISCUSSION

The death rate for children in Colombia has decreased over the past 30 years, with children under the age of five experiencing the largest decline . A method to understand how this etiology has evolved over time and to develop approaches to address these causes is to research clinical deterioration and the complications that are associated with it. This study demonstrates how the etiology of EOD differs from the causes of death for Colombian children that were reported thirty years before. It also reveals a significant correlation between oncological and respiratory diseases, which highlights these two pathologies as priorities for early warning system implementation in order to identify these events, minimize complications, and lower mortality.

MORTALITY RATE
16.4%

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CONCLUSIONS

Finding methods for the early diagnosis of complications in hospitalized children involves evaluating clinical deterioration events and the diseases that are linked to them. In this center, the most significant illnesses linked to these incidents were oncology and respiratory disorders. This research can be expanded to other facilities in Colombia, which will help us better understand and collaborate on treating diseases with high death rates.

REFERENCES