

Evaluation of Paediatric Death Pronouncement from a Resource-Limited Country

Urooj Faisal, Marium Noor and Anwarul Haque

Division of Paediatric Critical Care Medicine, Department of Paediatrics, Sindh Institute of Child Health and Neonatology, Karachi, Pakistan

ABSTRACT

Death pronouncement (DP) in children is quite challenging and distressing, especially for junior paediatric residents. This study aims to evaluate the implementation of the WHO international criteria for the determination of death in Paediatric patients. A retrospective chart review was conducted on the death declaration notes of 165 patients who died in the Paediatric Intensive Care Unit of Sindh Institute of Child Health Neonatology, Karachi, Pakistan, between January and June 2023. The median age of the patients was 12 (6.7-19) months, and 58% (n = 96) were male. Infectious-related illnesses accounted for 37.6% (n = 62) of the cases. The documentation of absence of breathing, heartbeat, response to painful stimuli, and a flat line on electrocardiogram was not mentioned in 74%, 68.5%, 70.3%, 85.5%, and 42%, respectively. Moreover, administrative data were lacking in 31% of cases. There was almost 100% failure to document a communication note. The authors observed severe deficiencies in the documentation of death pronouncement.

Key Words: Death pronouncement, Paediatric patients, Clinical tests, Paediatric residents, Intensive care unit.

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Death is an everyday medical occurrence that has social, legal, religious, and cultural consequences. Death is a devastating event which involves the cessation of physiological functions. Moreover, the determination of death is the final event of a life. Death pronouncement (DP) is one of the most challenging and anxiety-provoking clinical practices. There is a paucity of data on paediatric DP and has not been actively investigated in the medical literature.¹ There are few national guidelines available on DP.² However, the World Health Organization (WHO) published international clinical guidelines in 2014 on the determination of death to make a universal definition of death for both children and adults.³

Most children die in the intensive care environment. The act of the DP is mostly relegated to junior doctors. As a quality improvement project, the authors evaluated death reports from a newly opened public sector paediatric hospital in Karachi. This study aimed to assess the documentation of the DP in medical records, as per the criteria established by the WHO.³

The local Institutional Review Board approved this clinical project (IRB ID: SICHN/Ex-004/2024), and consent was waived. This is a retrospective, cross-sectional, descriptive, and exploratory study. The sample size was not calculated due to the unavailability of data. The authors retrospectively reviewed the death declaration documents drafted by the paediatric residents of 165 deceased patients in the Paediatric Intensive Care Unit (PICU) of Sindh Institute of Child Health and Neonatology, Karachi, Pakistan, between January and June 2023. The authors have a protocol for the pronouncement of death in the PICU. Minimum five minutes wait is suggested after performing all clinical tests to ensure no return of cardiac or respiratory functions, as per the WHO international guidelines.³ Once a person is declared dead, it is imperative to inform the family and the attending physician responsible for the patient, as part of the death declaration protocol. This should also be documented in the patients' medical record. The authors collected the following variables from the death reports of the deceased patients: clinical data, including response to painful stimuli, breathing, pulse, heart sounds on auscultation, and a flat line on electrocardiogram; administrative data; and details of communication with the family and physician all recorded on a structured data collection sheet. The data were collected as Yes / No responses, entered into a Microsoft Excel spreadsheet, and descriptive analysis was performed. During the study period, a total of 1,899 patients were admitted in the PICU, and the mortality rate was 15.1% (n = 288). Only the records of 165 patients were included in this study. The median age was 12 (6.7-19) months, and 58.2% (n = 96) were male. The most

Correspondence to: Dr. Urooj Faisal, Division of Paediatric Critical Care Medicine, Department of Paediatrics, Sindh Institute of Child Health and Neonatology, Karachi, Pakistan

E-mail: uroojmalik@gmail.com

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common admitted diagnosis was infection-related illnesses (37.6%, n = 62). The findings of the death reports were tabulated in Table I.

Several serious deficiencies were observed in the paediatric death reports, including 40-85% deficiencies in clinical tests and 100% deficiencies in communication skills on the pronouncement of death. Although the communication might be done physically, they were not documented in medical records.

Table I: Omission of documented clinical and demographic criteria for the declaration of paediatric death (n = 165).

Variables	n (%)
Clinical tests	
Absence of breathing	122 (74%)
Absence of heartbeat	113 (68.5%)
Absence of pulse	116 (70.3%)
Absence of response to painful	141 (85.5%)
A flat line on ECG	70 (42.4%)
Administrative data	
Death time and date	51 (31%)
Communication variables	
Family informed	3 (1.8%)
Admitting physician informed	4 (2.4%)

To the best of the authors’ knowledge, this is the first clinical report on paediatric DP from low- and middle-income countries, and these findings can serve as a benchmark for future studies from other centres. This study is an eye-opener regarding the documentation of such a serious medical occurrence as death. Though this study from Pakistan offers valuable insights into DP, further research from other centres can produce intriguing results. The process of DP can be difficult and anxiety-provoking, especially for first-year residents or interns who have limited personal or professional experience with death. The medical literature on paediatric DP is scarce; however, most available information is covered from other reports, such as end-of-life care and palliative care medicine in paediatric medicine.¹ Education and training on DP are seriously lacking in both undergraduate medical education and post-graduate training. Despite seeing death every day in the hospital, end-of-life care has not been emphasised in medical trainings. It focused on providing comfort and supporting patients during the final stages of life, including DP. Given that Pakistan is among countries with highest of infant and child mortality rates — currently 61 per 1,000 live birth in 2022, DP is not an uncommon event for the locally practising paediatricians and paediatric intensivists.⁴ There is a significant demand and urgent need for education and training of young paediatricians in DP through educational interventions and documentation templates.

DP can be done with adequate preparation if young paediatricians are trained. Most of the residents had received no instruction in DP and felt to be unprepared to carry out the task. Never-

theless, few educational interventional studies made an effort to address this topic, which is found to be beneficial and effective.⁵ Hobgood *et al.* described an acronym GRIEV_ING (gather, resource, identify, educate, verify, give space, inquire, nuts, bolts, and give) as an excellent educational intervention tool, which is simple, feasible, efficient, and efficacious in DP.⁶ This is the most commonly used protocol for DP in the emergency department.

The strength of this clinical report lies in being the first of its kind to present paediatric DP. However, this study is limited by its single-centre design, retrospective nature, and small sample size. Another limitation is the absence of a clinical test of pupillary response to light in our cohort. These findings cannot be generalised. However, this observation has brought attention to a very important and serious aspect of DP in children.

ETHICAL APPROVAL:

Approval was obtained from the Institutional Review Board of the Sindh Institute of Child Health Neonatology, Karachi, Pakistan [IRB ID: SICHN/Ex-004/2024].

COMPETING INTEREST:

The authors declared no conflict of interest.

AUTHORS’ CONTRIBUTION:

UF: Study design and data analysis.
MN: Data collection.
AH: Concept, critical review, and final guarantor of the manuscript.
All authors approved the final version of the manuscript to be published.

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