

SUPPLEMENTAL DIGITAL CONTENT 2

Diagnostic Errors in Pediatric Critical Care: A Systematic Review

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Supplement to Results

Supplement Table. Characteristics of Included Studies and Types of Information Provided on Diagnostic Errors in the Pediatric Intensive Care Unit

Authors	Year	Title	Research Design	Objective	Relevant Sample	Relevant Information on Diagnostic Errors
Avesar M, et al. (abstract only) (23)	2019	The effect of rudeness on challenging diagnostic error: A randomized controlled simulation trial	Randomized controlled trial	Determine the effect of rude behavior on challenging a diagnosis in the PICU.	35 simulation events involving 35 teams with an overall composition of 13 residents, 12 fellows, 10 attendings in the PICU	Factors contributing to diagnostic errors
Bhat PN, et al. (20)	2018	Diagnostic errors in paediatric cardiac intensive care	Cross-sectional survey	To understand the frequency and types of diagnostic error in the pediatric cardiac ICU.	200 pediatric cardiac ICU clinicians	Prevalence of diagnostic errors (from clinician survey); Conditions misdiagnosed; Factors associated with diagnostic error
Blanco C, et al. (11)	2014	Discrepancies between autopsy and clinical findings among patients requiring extracorporeal membrane oxygenator support	Retrospective cohort	Assess discrepancies between premortem and postmortem diagnosis among PICU patients who required ECMO support.	54 patients admitted to a single PICU who required ECMO	Prevalence of diagnostic errors (from autopsy)
Carlotti AP, et al. (10)	2016	Discrepancies Between Clinical Diagnoses and Autopsy Findings in Critically Ill Children: A Prospective Study	Retrospective cohort	Evaluate discrepancies between clinical and autopsy diagnoses in patients who died in 2 PICUs at a single center.	123 patients with autopsies admitted to a single PICU	Prevalence of diagnostic errors (from autopsy)
Cifra CL, et al. (14)	2014	The morbidity and mortality conference as an adverse event surveillance tool in a paediatric intensive care unit	Retrospective cohort - review of conference minutes, chart review, review of incident reports	Compare safety event information gleaned from chart review vs. the morbidity and mortality conference.	96 patients discussed at a single PICU's morbidity and mortality conference	Prevalence of errors (from the morbidity and mortality conference)
Cifra CL, et al. (12)	2018	Piloting methods to determine factors associated with diagnostic error on admission to a pediatric intensive care unit (PICU)	Retrospective cohort - chart review using the Safer Dx Instrument	Determine feasibility of chart review to identify patient, provider, and work system factors associated with diagnostic error in 1st 24 hours of PICU admission.	50 patients non-electively admitted to a single PICU	Prevalence of diagnostic errors (from chart review); Conditions misdiagnosed; Factors associated with diagnostic error
Cifra CL, et al. (15)	2015	Diagnostic Errors in a PICU: Insights from the Morbidity and Mortality Conference	Retrospective cohort - review of conference minutes, chart review	Describe diagnostic errors and their characteristics as discussed at a PICU morbidity and mortality conference.	96 patients discussed at a single PICU's morbidity and mortality conference	Prevalence of errors (from the morbidity and mortality conference); Conditions misdiagnosed; Factors associated with diagnostic error

Cifra CL, et al. (abstract only) (24)	2017	Using ethnography to understand the diagnostic process in a pediatric intensive care unit	Focused ethnography	Pilot test the feasibility of ethnography to examine the diagnostic process during patient admission to the PICU.	6 PICU clinicians	Factors contributing to the diagnostic process
Custer JW, et al. (8)	2015	Diagnostic errors in the pediatric and neonatal ICU: A systematic review	Systematic review of 7 PICU autopsy studies	Assess diagnostic errors in the PICU by systematic review.	498 PICU patients with autopsies included in 7 studies	Prevalence of diagnostic errors (from autopsies)
Davalos MC, et al. (13)	2017	Finding Diagnostic Errors in Children Admitted to the PICU	Retrospective cohort - chart review using the Safer Dx Instrument	Determine whether the Safer Dx Instrument can be used to reliably detect diagnostic errors in a PICU cohort.	214 patients admitted to a single PICU	Prevalence of diagnostic errors (from chart review)
Fink AZ, et al. (17)	2018	Discrepancies in Radiograph Interpretation Between Pediatric Radiologists and Pediatric Intensivists in the Pediatric or Neonatal Intensive Care Unit	Retrospective cohort	Quantify and classify discrepancies in radiographic interpretation between pediatric radiologists and pediatric intensivists at PICUs and NICUs.	575 radiographs of patients admitted to a single PICU	Prevalence of diagnostic errors (in radiographic interpretation)
Fischer JE, et al. (22)	2003	Hindsight judgement on ambiguous episodes of suspected infection in critically ill children: poor consensus amongst experts?	Retrospective cohort - chart review	Determine agreement between ICU and infectious disease experts regarding classification of cases along the sepsis/infection spectrum.	167 patients with suspected infection admitted to a single PICU	Factors contributing to diagnostic errors
Frey B, et al. (16)	2018	The morbidity and mortality conference as a tool to reveal diagnostic errors	Retrospective cohort - review of conference minutes	Present the experience of a single PICU in an interdisciplinary morbidity and mortality conference emphasizing its usefulness in improving patient safety.	48 patients discussed at a single PICU's morbidity and mortality conference	Prevalence of errors (from the morbidity and mortality conference); Conditions misdiagnosed; Factors associated with diagnostic error
Labib JR, et al. (19)	2019	Incident reporting system in pediatric intensive care units of a Cairo tertiary hospital: An intervention study	Quasi-experimental pre-test/post-test design	Enhance patient safety in 4 PICUs by enhancing health care professionals' error reporting attitudes and practices.	215 incident reports submitted regarding the care of 918 patients admitted to 4 PICUs	Prevalence of errors (from incident reports)
Nesterova GV, et al. (18)	2010	Discordance in interpretation of chest radiographs between pediatric intensivists and a radiologist: impact on patient management	Retrospective cohort	Investigate the frequency of errors in chest radiograph interpretation by pediatric intensivists and their impact on patient management.	460 radiographs of patients admitted to a single PICU	Prevalence of diagnostic errors (in radiographic interpretation)
Su L, et al. (abstract only) (21)	2015	Video review produces insight into diagnostic errors	Qualitative review of clinical videos	Describe clinician behaviors at the bedside that may provide insight into how diagnostic errors occur.	Pediatric cardiac ICU clinicians, number not reported	Factors contributing to diagnostic errors
Widmann R, et al. (9)	2017	Value of postmortem studies in deceased neonatal and pediatric intensive care unit patients	Retrospective cohort	Determine prevalence and distribution of autopsy-confirmed diagnostic errors.	39 patients with autopsies admitted to a single PICU	Prevalence of diagnostic errors (from autopsies)

PICU - pediatric intensive care unit, ECMO - extra-corporeal membrane oxygenation