

Identifying barriers to timely and safe neonatal and pediatric inter-facility transport

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Background

Canada's regionalized healthcare system concentrates specialized care in tertiary and quaternary centres, requiring transport of critically ill neonatal and pediatric patients to these facilities. Limited access to timely, safe transport can exacerbate inequities in access to critical care, especially for patients living far from pediatric centres. Delayed, missed, or unsafe transports may also expose healthcare providers to medico-legal risk and psychological or moral injury.

Objective

This study uses medical professional liability data to identify and describe factors contributing to delayed, missed, and unsafe neonatal and pediatric inter-facility transports.

Methods



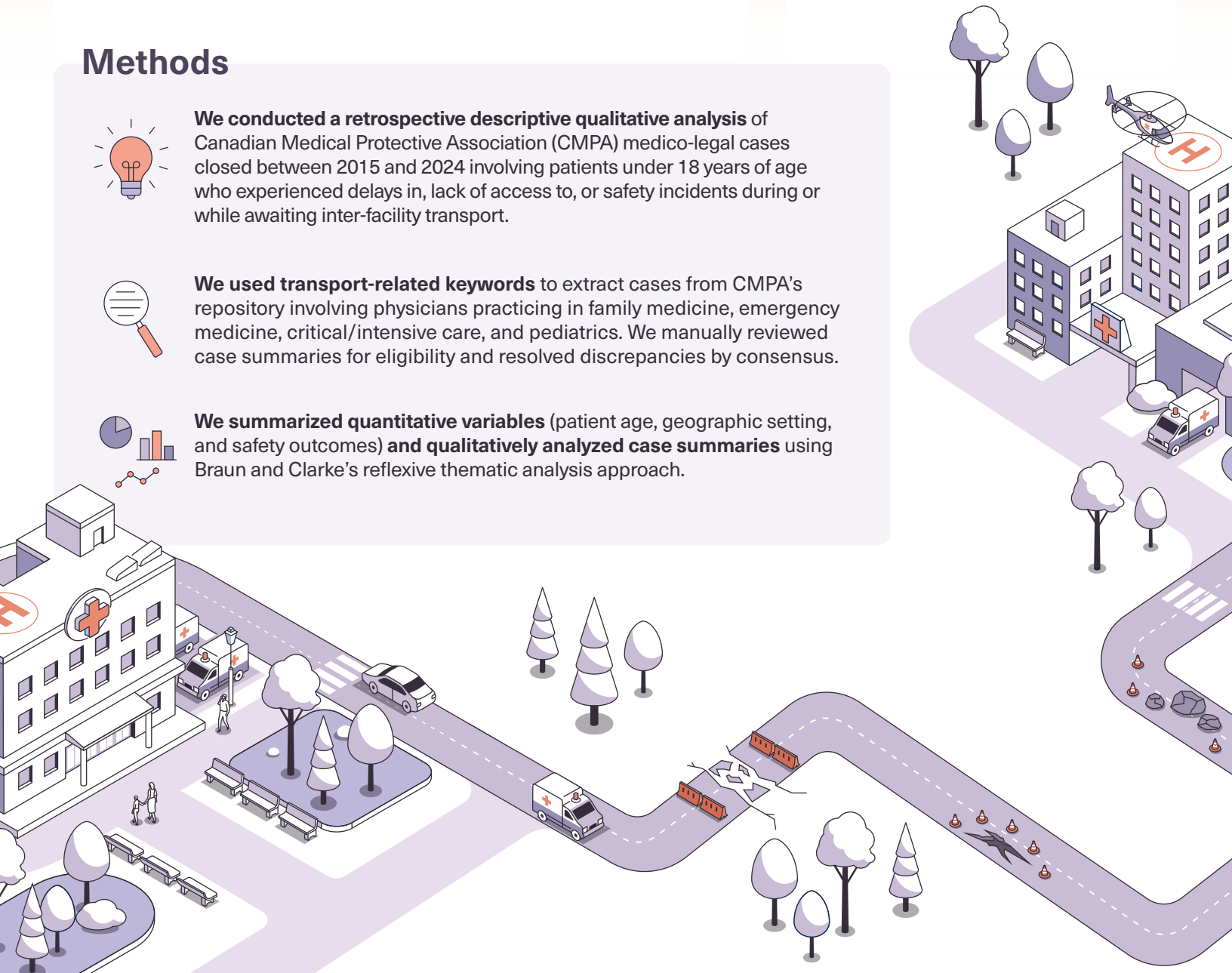
We conducted a retrospective descriptive qualitative analysis of Canadian Medical Protective Association (CMPA) medico-legal cases closed between 2015 and 2024 involving patients under 18 years of age who experienced delays in, lack of access to, or safety incidents during or while awaiting inter-facility transport.



We used transport-related keywords to extract cases from CMPA's repository involving physicians practicing in family medicine, emergency medicine, critical/intensive care, and pediatrics. We manually reviewed case summaries for eligibility and resolved discrepancies by consensus.



We summarized quantitative variables (patient age, geographic setting, and safety outcomes) and **qualitatively analyzed case summaries** using Braun and Clarke's reflexive thematic analysis approach.



Findings



Of the 307 extracted medico-legal cases, 47 (15%) involved **transport issues**, concerning 47 neonatal or pediatric patients and 63 physicians.



Patient age was evenly distributed between neonates (n = 16, 34%), infants and toddlers (n = 15, 32%), and children and adolescents (n = 16, 34%).



Over half of these transport cases (55%, n = 26) occurred in **rural or small population centres**.



Most cases (n = 39, 83%) involved patient harm due to **provider, team, or system factors**, with severe harm or death occurring in 60% (n = 28) of cases.

Patterns from our thematic analysis

Delays and safety incidents arose across three frequently co-occurring scenarios due to a **complex interplay** of provider, team, and system-level factors. Recurring, intersecting contributing factors across scenarios included:

- Lack of staff with the knowledge, skills, or judgment to identify and manage critically ill pediatric patients
- Inadequate patient assessment, evaluation, and monitoring
- Rigid, unavailable, or underutilized clinical support tools (e.g. guidelines, protocols, or hospital leadership)
- Resource shortages and operational delays across settings
- Communication challenges within and between facilities, and before and during transport



Missed transport (n = 23 cases)

Gaps in situational awareness and clinical judgement led to delayed or missed recognition of the need for transport



Barriers to transport (n = 19 cases)

Transport was delayed or prevented despite recognition of need



Safety incidents (n = 18 cases)

Patients experienced increased risk or preventable harm while awaiting or during transport, typically due to barriers to accessing necessary interventions or medications

Conclusions

Enhancing patient safety and equitable healthcare access may require system-level changes that support providers in maintaining situational awareness, managing critically ill patients during transport delays, and navigating a multi-tiered healthcare system under resource constraints. A safer transport system may also call for a whole-system perspective that utilizes all resources, including interprofessional teams, to address barriers to patient flow within, between, and beyond healthcare facilities.

Limitations

Medico-legal cases reflect only a small subset of safety incidents. Case pursuit is influenced by various factors, and physicians report cases to CMPA at their discretion. Relevant team and system-level factors may not be fully captured in our data. Additionally, the focus on select specialties limits the transferability of findings to broader transport contexts.

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