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Characteristics of QIs (Quality Indicators) in Prehospital Care: A Review

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ABSTRACT

This literature review aimed to trace, examine, and describe the literature on indicators used to evaluate the quality of prehospital care.

Traditionally, the performance of ambulance services and the quality of prehospital care have been measured using simple indicators, such as response time intervals, often based on low-level evidence. However, the discipline of paramedicine has evolved significantly over the last few decades. Consequently, the validity of utilizing such measures as holistic quality of prehospital care indicators (QIs) has been challenged. There is a growing interest in identifying new and more significant ways to evaluate the quality of prehospital care.

This literature review examined the concepts of prehospital care quality and QIs developed for ambulance services. The review considered primary and secondary research across all paradigms and utilizing any methods, as well as text and opinion. The Joanna Briggs Institute methodology for conducting scoping reviews was employed. Separate searches were conducted for review questions, specifically addressing the characteristics of QIs in the context of prehospital care. The following databases were searched: PubMed, CINAHL, Embase, Scopus, Cochrane Library, and Web of Science. The searches were limited to publications from January 1, 2000, to the search date (April 16, 2017). Non-English articles were excluded. To supplement the above, searches for grey literature were performed, experts in the field of study were consulted, and applicable websites were explored.

Review Question Findings: Thirty articles were included. The predominant source of articles was research literature (n = 23; 76.7%), originating mostly from the USA (n = 13; 43.3%). The most frequently applied QI development method was a form of consensus process (n = 15; 50%). A total of 526 QIs were identified. Of these, 283 (53.8%) were categorized as Clinical QIs and 243 (46.2%) as System/Organizational QIs. Within these categories, QIs related to Out-of-hospital cardiac arrest (n = 57; 10.8%) and Time intervals (n = 75; 14.3%) contributed the most, respectively. The most commonly addressed prehospital care quality attributes were Appropriateness (n = 250, 47.5%), Clinical effectiveness (n = 174, 33.1%), and Accessibility (n = 124, 23.6%). Most QIs were process indicators (n = 386, 73.4%).

Historically, the quality and performance of prehospital emergency care (PEC) have been assessed largely based on surrogate, non-clinical endpoints such as response time intervals or other crude measures of care (e.g., stakeholder satisfaction). However, advances in Emergency Medical Services (EMS) systems and services worldwide have seen their scope and reach continue to expand. This has necessitated the implementation of novel performance measures or evaluations to complement this growth. Significant progress has been made in this area, largely in the form of the development of evidence-informed quality indicators (QIs) of PEC.

While there is a paucity of research specifically defining prehospital care quality, the attributes of generic healthcare quality definitions appear to be accepted and applicable to the prehospital context. There is a growing interest in developing prehospital care QIs. However, there is a need for validation of existing QIs and de novo development addressing broader aspects of prehospital care.

Keywords: Ambulance; emergency medical services; healthcare quality assessment; prehospital care; quality indicators