

Abstract:

Background: In response to increasing emergency department presentations and wait times in Australia, multiple strategies and models of care have been implemented with varying results. One effective strategy has been the implementation of pre-hospital blood collection by paramedics when they insert an intravenous cannula. This research aims to determine the efficiency of and barriers to wider implementation of a pre-hospital blood collection trial in a regional context. In particular, to evaluate the impact of the pre-hospital blood collection on time to pathology results and error rates, and paramedic opinion.

Methods: This retrospective controlled cohort study was conducted over 12 months from August 2018. Emergency and pathology data were used to determine the haemolysis and error rates, as well as the time to result availability of pre-hospital blood collection samples compared to in hospital samples arrived by ambulance. To determine the facilitators and barriers to wider implementation a survey of 48 paramedics was conducted following completion of the 12-month trial. The survey was informed by the Theoretical Domains Framework, a behavior change theory associated with improved uptake when applied.

Findings: Overall 237 samples were collected. There was a 65% (51 min) reduction in time taken for samples to be received at pathology and a 38% (50 min) improvement in time taken for results to return from pathology for patients arrived by ambulance. There were no labelling errors in the pre-hospital blood collection group or change in haemolysis rates. The majority (79%) of paramedics who completed the survey were optimistic about the protocol improving patient outcomes and 89% regarded the change in practice as acceptable. Three main themes emerged: 1. Training, environmental challenges and adequate equipment; 2. increased efficiency and improved patient care and 3. Prerequisites to implementing a new practice. Integration of Quantitative and Qualitative data resulted in 10 key influencers of behavior that need to be addressed in any future implementation.

Conclusion and implications for practice: The introduction of pre-hospital phlebotomy reduced the time to blood results availability by 38% and resulted in fewer labelling errors. Wider implementation is supported by paramedics, but more training is required.

Reference:

Curtis K, Ellwood J, Walker A, Qian S, Delamont P, Yu P, Stojic J, Phang SM. Implementation evaluation of pre-hospital blood collection in regional Australia: a mixed methods study. *Australas Emerg Care*. 2020 Sep 24:S2588-994X(20)30084-1. doi: 10.1016/j.auec.2020.08.007. Epub ahead of print. PMID: 32981863.