Resuscitation Plus

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Editorial

Can emergency dispatch communication research go deeper?

The first links in the Chain of Survival for out-of-hospital cardiac arrest (OHCA) are well established as being critical steps for survival. The role of the call-taker (also known as dispatcher) is pivotal in these links through ensuring the earliest possible recognition of a cardiac arrest and the earliest possible resuscitation interventions by a bystander. In this regard, call-takers are on the front line of emergency medical services (EMS) even if their roles are not as visible as those of paramedics. There is now a significant body of evidence that has identified the facilitators and barriers in emergency calls for cardiac arrest recognition and the delivery of cardiopulmonary resuscitation (CPR) and defibrillation.[1–3] It is pleasing to see the many studies, exploring methods to evaluate and improve the dispatch system, that have featured in Resuscitation Plus since it launched in 2020.

In this issue of the journal, Byrsell et al.[4] examine a criteria-based medical index dispatch system and compare their findings to the benchmarking goals recently published in the Telecommunicator CPR (t-CPR) Policy Statement by the American Heart Association (AHA).[5] Their emergency call audit found that some performance goals were exceeded (e.g. the proportion of recognised OHCA), but others fell short, specifically in the time taken to OHCA recognition and dispatch-directed compressions. Given these significant delays, the authors recommend that a simpler version of questioning may save time, such as the two-question composition of the NO-NO-GO algorithm. In this algorithm, if the answer to critical screening questions, "is the patient conscious (awake)?" and "is the patient breathing normally?", is no, then t-CPR should be inititated immediately.[6]

Of novel interest, Byrsell et al. estimate the number of potential additional OHCA survivors if each of the AHA performance goals is met. Extrapolated for the whole of Sweden, this translates into a potential saving of 192 additional lives through improved time to OHCA recognition and 462 lives through improved time to dispatch-directed compressions. The calculation of potential additional survivors is likely to be a useful method for EMS to identify how and where to improve their dispatch system for the greatest gain.

Also of interest is another study, published in Resuscitation Plus by Gram et al.,[7] which examined the implementation of a quality improvement intervention in a dispatch system using the NO-NO-GO algorithm. By conducting regular call-taker education sessions and providing feedback from audited calls, these authors reported a significant improvement in OHCA recognition, but not in the key time intervals of the call-taking process. However, the times reported by Gram et al. at baseline were close or already below the AHA minimum standards, and were much shorter than the Byrsell et al. study.

The value of turning audio recordings of emergency OHCA calls into transcripts was promoted in 2014, by Gareth Clegg and his team, for the purpose of qualitative and quantitative analysis to pinpoint, more specifically, what the hold-ups are in caller-call-taker interactions.[8] The application of such an approach is highlighted in another Resuscitation Plus paper, in which van Rensburg et al.[9] identified common themes within caller descriptors of the patient (in multiple languages) in order to improve the identification of OHCA cases in their unscripted call-taking system in South Africa.

There is also emerging evidence of the value of a systematic and sophisticated linguistic analysis of emergency calls in order to isolate communication breakdowns and patterns, as well as identify the impact of specific words and phrasing on subsequent actions and timings. Through the application of linguistics, the answers to many communication problems are revealed via close examination of the transcripts. Less-than-optimal communication outcomes can be associated with a variety of factors including the use of particular standardised call scripts which place restrictions on the kinds of "talk" the parties can engage in.

Our own group's research has focussed on a commonly used standardised protocol named the Medical Priority Dispatch System (MPDS) and has identified key barriers to bystanders providing CPR and significant linguistic aspects of OHCA call communication.[10–12] We encourage the field to look at what qualitative linguistic analysis can offer in the understanding of *why* there are time delays and *how* call-takers and callers themselves can provide the solutions to shortening these critical times.[13–15] Linguistics, as a discipline, has a body of knowledge on the dynamics of service encounters, institutional communication, and the particularity of emergency service interactions, with interdisciplinary research collaborations between linguists and EMS looking set to expand in the near future. Linguistic analysis will enhance our understanding of how to target issues in OHCA calls such as the handling of emotional callers, cases of miscomprehension, and language barriers. Given the high importance of early recognition and basic life support, enhancing communication and optimising the emergency call has great potential to improve patient outcomes.

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Declaration of Competing Interest

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