Introduction

• Emergency calls are the first link in the chain of survival for out-of-hospital cardiac arrest (OHCA).
• Clear and efficient communication between caller and call-taker is crucial.
• But little is known about how communication factors impact on dispatch accuracy and timeliness.
• Within the Medical Priority Dispatch System© (MPDS), call-takers follow a script of questions and instructions.
• Does the way these scripted sentences are said have an impact on what callers say?
• In this study, we focus on:
  • the prompt “okay, tell me exactly what happened”
  • how callers describe the emergency in their responses
  • Study Aim: To determine how to deliver this prompt so that callers answer in a relevant and efficient manner.

Data & Methods

Data:
• 188 cases of OHCA: emergency telephone calls + dispatch data
• MPDS: paramedic-confirmed, presumed cardiac etiology, resuscitation attempted
• 1 January 2014 to 31 December 2015
• Perth, Western Australia

Mixed-methods linguistic analysis:
• Detailed transcription of calls
• Qualitative analysis of calls
• Systematic coding for linguistic features:
  • Tense in call-taker prompt: simple past vs. present perfect
  • Format of caller answer: narrative vs. report
  • Timing completion of steps in dispatch protocol
• Statistical analysis (Median + IQR; logistic regression; Mann–Whitney test)

Results

• Callers used two linguistic formats to respond to the prompt:
  • Report (focuses on the patient’s symptoms)
  • Narrative (contains contextual, irrelevant details)
• Reports were shorter (p < 0.001):
  • Median length of report response = 9 seconds (IQR 6-13 seconds)
  • Median length of narrative response = 18 seconds (IQR 11-26 seconds)
• Time to dispatch was 8 seconds faster with a report (p = 0.002):
  • Median time in calls with report = 50 seconds (IQR 35-65 seconds)
  • Median time in calls with narrative = 58 seconds (IQR 43-81 seconds)
• The tense that call-takers use in the prompt has an effect on how callers respond:
  • 43% of “what happened” followed by a report
  • 72% of “what’s happened” followed by a report
• Report response more likely with the present perfect (“what’s happened”) than with the simple past (“what happened”):
  Odds Ratio 3.34, 95% Confidence Interval 1.81–6.28, p < 0.001

Conclusion

• When call-takers ask callers to describe the emergency, our findings suggest that they should use the present perfect (“tell me exactly what’s happened”)
• This linguistic change from the scripted version can increase the likelihood that callers respond with an informative and short report.
• This is important for cardiac arrest, as every second counts.
• A better understanding of the linguistic and interactional dynamics can improve dispatch performance.
• Further research is necessary:
  • On other languages than English
  • On other dispatch protocols than the MPDS
  • On other aspects of language as used in emergency calls

The way call-takers speak influences how callers respond

1. Obtaining the address
2. Obtaining a telephone number
3. Asking what the emergency is

Version #1 (official)

Okay tell me exactly what happened

Version #2 (alternative)

UH my mum CAN’T breathe.

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