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Improving paramedic-delivered CPR - A novel way to investigate current performance.

Problem Qatar's survival to hospital admission rates (SHAR) following an out-of-hospital cardiac arrest (OHCA) is 12.4%. Global communities with emergency systems similar to Qatar's have reported SHAR of >50%. In an attempt to improve SHAR in Qatar, the factors associated with low SHAR during Ambulance Service (AS)-delivered CPR in Qatar had to be identified. These factors were not known before this project. This storyboard showcases the process in which these factors were identified, defined, and described.

Aim To identify specifically those factors that contributed to poor Ambulance Service delivered CPR.

Intervention A conceptual definition of competent AS-delivered CPR was established. This definition reflected AS-delivered CPR performance that would most likely result in improved SHAR. Data was then extracted from multiple sources reflecting 12 months of AS-delivered CPR performance. Both qualitative and quantitative research techniques were used to extract, process, and analyse the data. The resultant output was then compared to the established definition of competent AS-delivered CPR as well as the AS-Clinical Practice Guidelines (CPG).

Results The project established definition of competent AS-delivered CPR is shown in figure 1. When AS-delivered CPR over the last 12 months reflected by multiple data sources (Figure 2) was measured against the establish definition of competence and the AS CPGs, deviant or suboptimal care had occurred 610 times. Through the process of thematic analysis, all 610 instances, referred to as exemplars were coded and grouped into 12 broad factors. Figure 3 presents these broad factors and their percentile frequency distribution.

CPR Competence is defined as the ability to perform up to date technical and non-technical resuscitative skills in a manner and at a standard that is likely to restore oxygen delivery and maintain circulation and perfusion of vital organs, to allow for return of spontaneous circulation (ROSC) and/or successful defibrillation

Figure 1. Established definition of AS-delivered CPR Competence

	n	Data source
a	761	OHCA's attended to by HMCAS – Data as per cardiac registry
b	120	Patient Care Reports - Review of Specified Exemplars
c	38	Death in Care Reviews and Investigations – Quality Depart.
d	20	CPR performance assessments using OHCA Rapid Evalu. Tool
e	7	Root Cause Analysis
	935	Mixed Data Sources in Total

Figure 2. Mixed data sources used to identify factors : (Nov 12 to Nov 13)

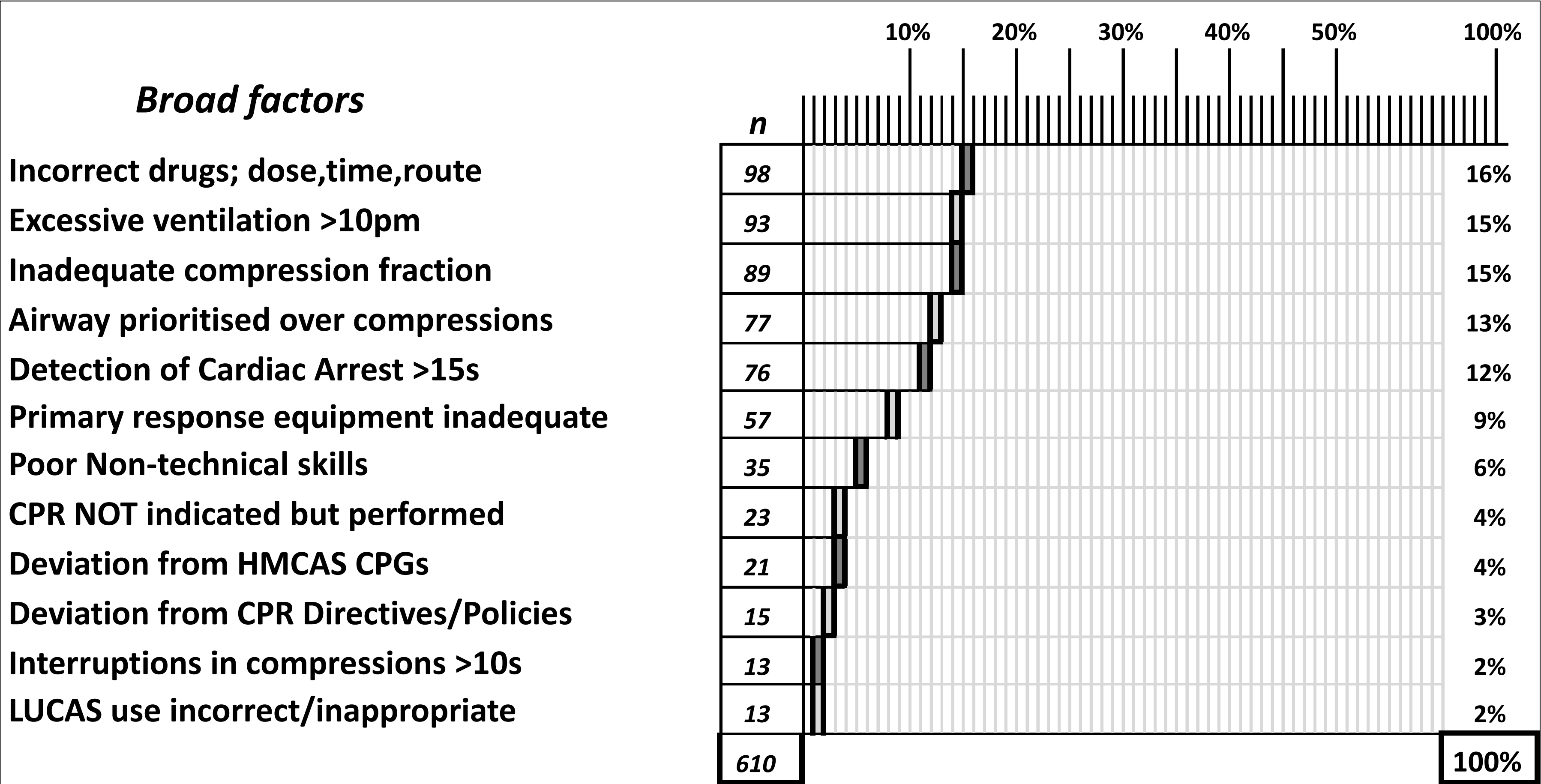


Figure 3. Factors contributing to Poor AS-delivered CPR

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- Conclusions:**
- AS-delivered CPR is an important multiplicand to the formula for improving SHAR in Qatar.
 - Twelve broad factors were identified as contributory to poor AS-delivered CPR in Qatar.
- Next Steps:**
- Develop a clinical protocol and an AS-delivered CPR training curriculum that promotes acquisition and retention of CPR knowledge and skills.
 - Identifying when CPR skill decay is likely to happen in AS personnel.
 - Identifying CPR skill decay intervals for refresher courses to ensure proficiency.
 - Establish a template that captures reporting data during an HMCAS attended OHCA in the state of Qatar.
 - The proximate aim of the process is to provide progress reports to examine what is working, what is not working, where more attention is needed, and where gaps exist. The ultimate aim is to enhance SHAR following an OHCA in Qatar.