

# Cardiac Arrests and Do Not Attempt Cardiopulmonary Resuscitation (DNACPR) Decision-making

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## Introduction

Cardiorespiratory arrest is a relatively frequent occurrence in acute hospital inpatients. In certain circumstances this may be reversible if treated promptly with cardiopulmonary resuscitation (CPR)<sup>1</sup>.

It is vital to recognise, however, that cardiorespiratory arrest is an integral and universal part of the natural dying process. National guidelines promote anticipatory decision-making and discussion of DNACPR decisions with patients approaching the end of life or who are at risk of cardiorespiratory arrest. Failure to make such decisions leaves patients at risk of receiving futile or inappropriate treatments that they may not have wanted, had their wishes been explored<sup>1,2</sup>.

## Methods

A retrospective audit was conducted for all patients who underwent attempted CPR in our hospital in 2017. The resuscitation department compiled a list of 75 patients. Five case-notes were unavailable. Cardiac arrests in critical care were excluded.

An audit tool was designed to examine the correlation between age, comorbidities, initial cardiac rhythm and clinical outcome. It was recorded whether the patient's wishes regarding resuscitation were explored. The audit team's retrospective opinion regarding resuscitation was recorded.

## Results and Interpretation

N=70. Age range 44-95 years, median age 78.

Overall outcomes from cardiac arrest mirrored those reported in observational studies with approximately 20% of patients surviving to hospital discharge (Graph 1). As expected, patients with shockable rhythms (VF and VT) had better outcomes than those with PEA or asystole<sup>4</sup>.

Increasing comorbidity (Graph 2) and older age (Graph 3) were associated with poorer likelihood of survival. No patients with 3 or more of the conditions listed in table (1) survived attempted resuscitation. Outcomes were markedly poorer in patients over the age of 70 yet this was the cohort of patients most likely to undergo CPR (Graph 4).

Resuscitation status had been discussed with 17% of patients and usually led to a DNACPR decision. Approximately 10% of patients had a valid DNACPR order that was not appreciated at the time of attempted resuscitation. Retrospectively we would have advocated DNACPR decisions in more than 50% of patients reviewed.

## Conclusions

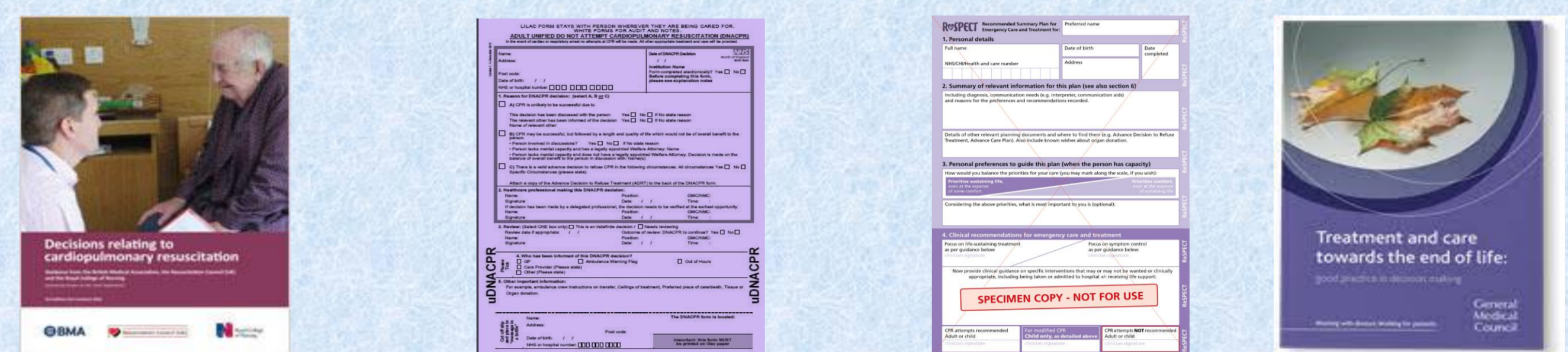
Outcomes from cardiac arrest were in keeping with published data. Older and multi-comorbid patients had predictably poorer outcomes following CPR.

In accordance with national guidance we would like to develop strategies to improve decision-making and communication regarding attempted resuscitation in patients at high risk of cardiorespiratory arrest. Discussing CPR in the context of other emergency treatments and overall care goals may improve this process.

## Background

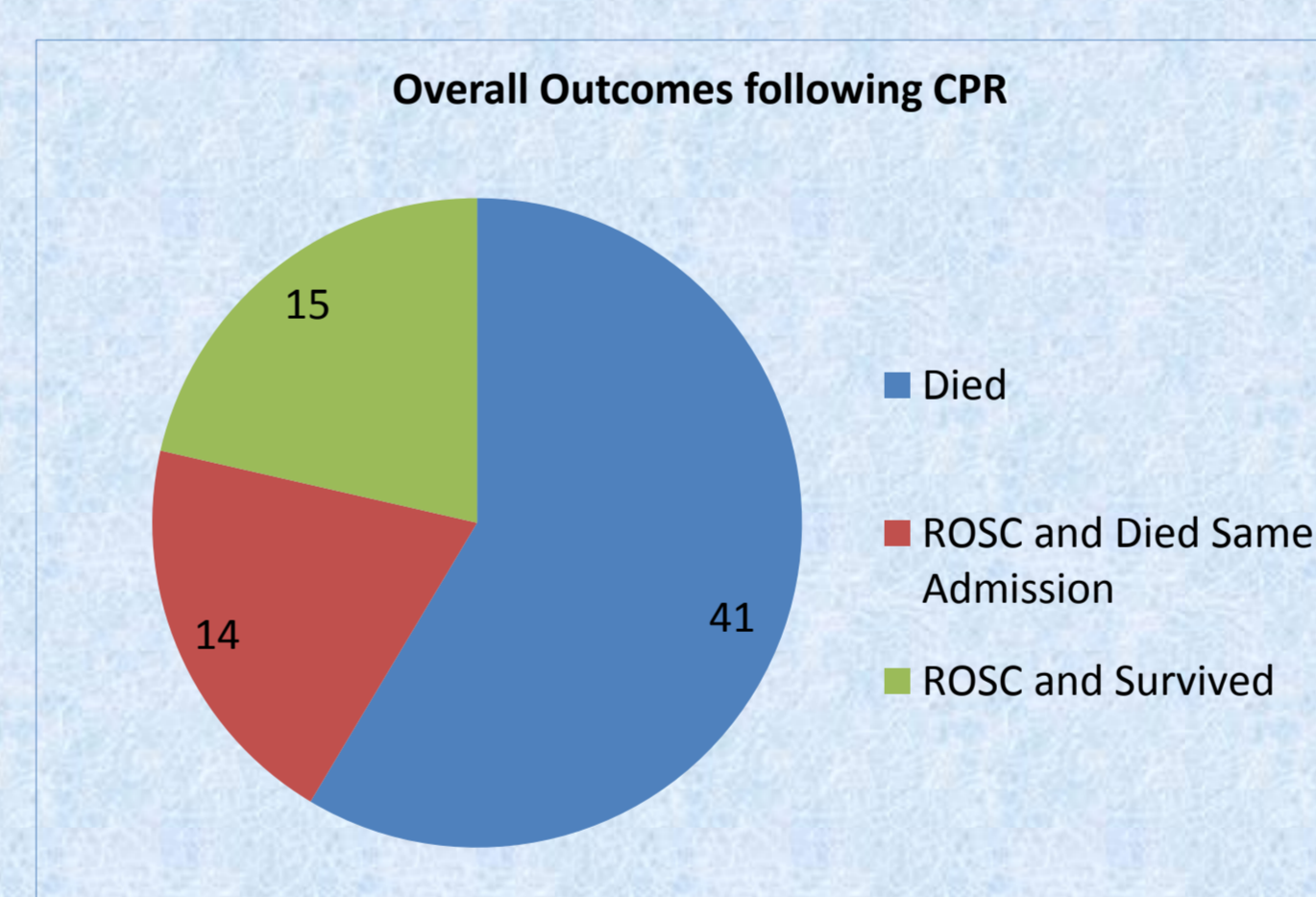
Several national institutions provide guidance on anticipatory decision making regarding attempted resuscitation in patients whom are thought at higher risk of developing cardiac arrest<sup>1,2</sup>.

Studies have pinpointed certain conditions that predict poorer outcomes from CPR<sup>3</sup>, listed in Table (1).

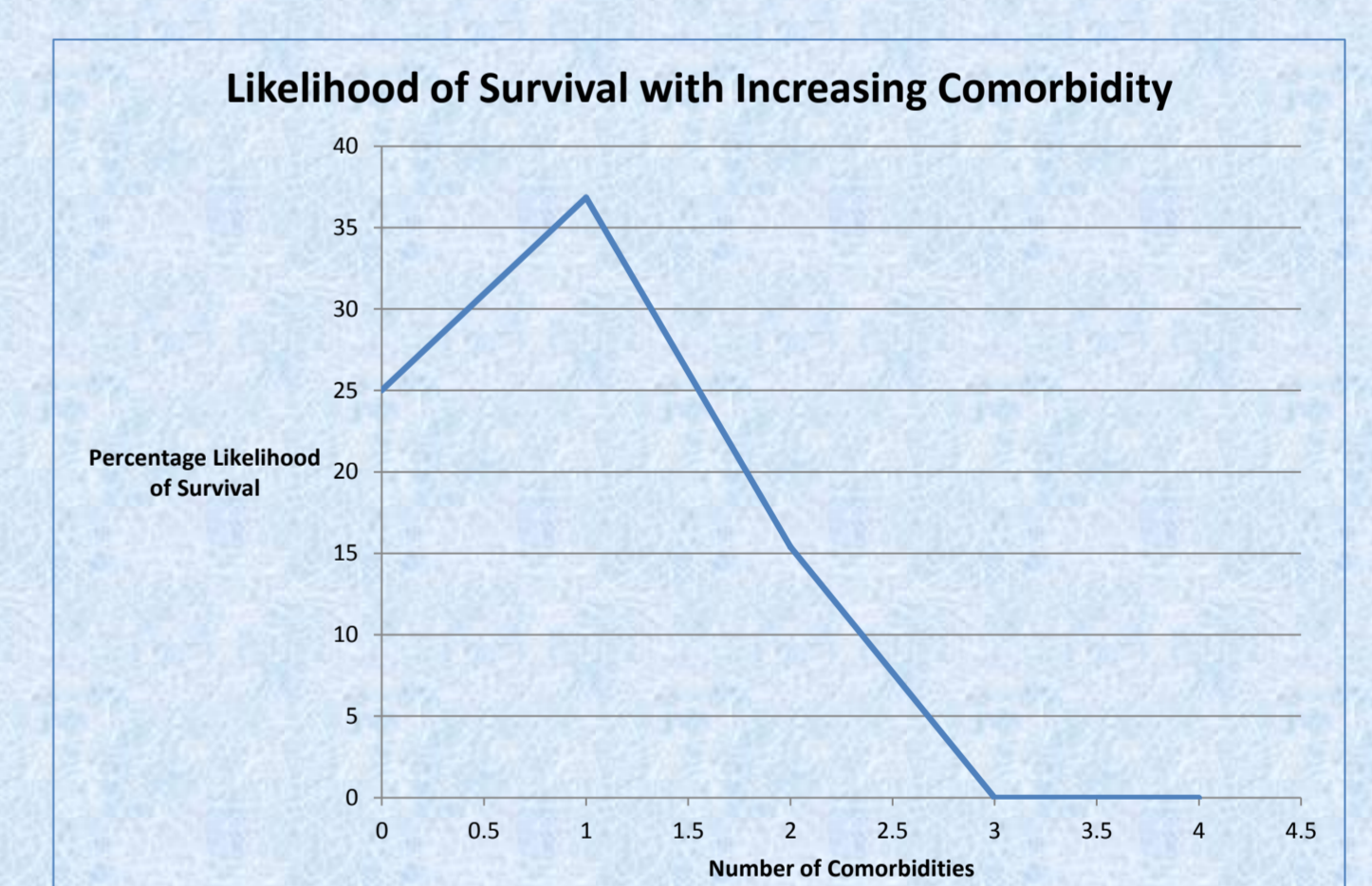


Comorbidity	Definition for audit purposes
Renal Failure	Creatinine >200 or RRT
Respiratory Failure	FiO2 > 40%, LTOT, NIV, pCO2 > 6
Cardiac Failure	NYHA 3 or 4, moderate or severe LV impairment
Liver Failure	Bilirubin >100, encephalopathy, coagulopathy
Sepsis	Current diagnosis
Dementia	Formal established diagnosis
Acute Stroke	Current diagnosis
Malignancy	Metastatic or inoperable
Neurodegenerative Disease	Significant disability or severe and progressive

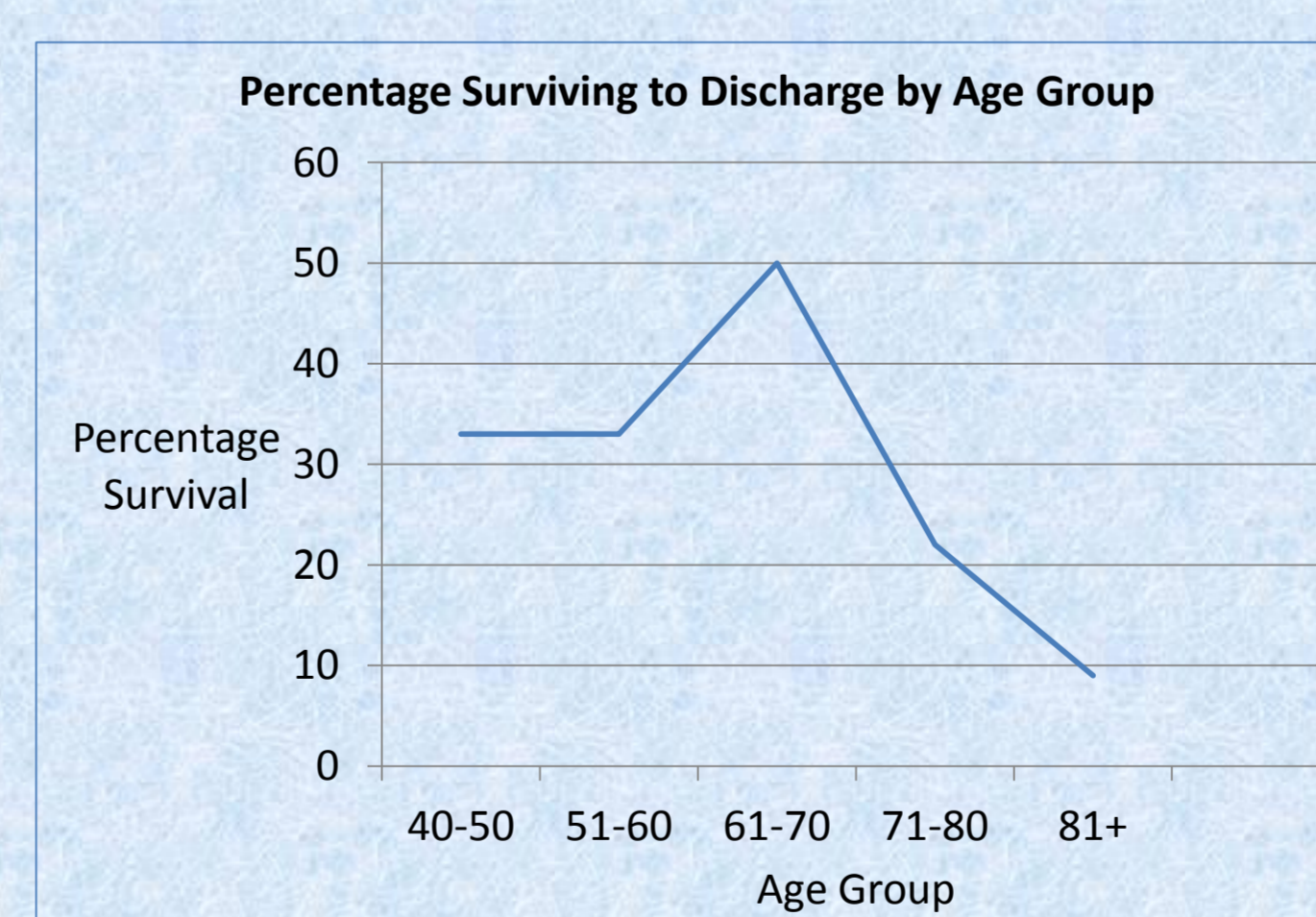
Table 1. Conditions associated with poorer outcomes following attempted CPR



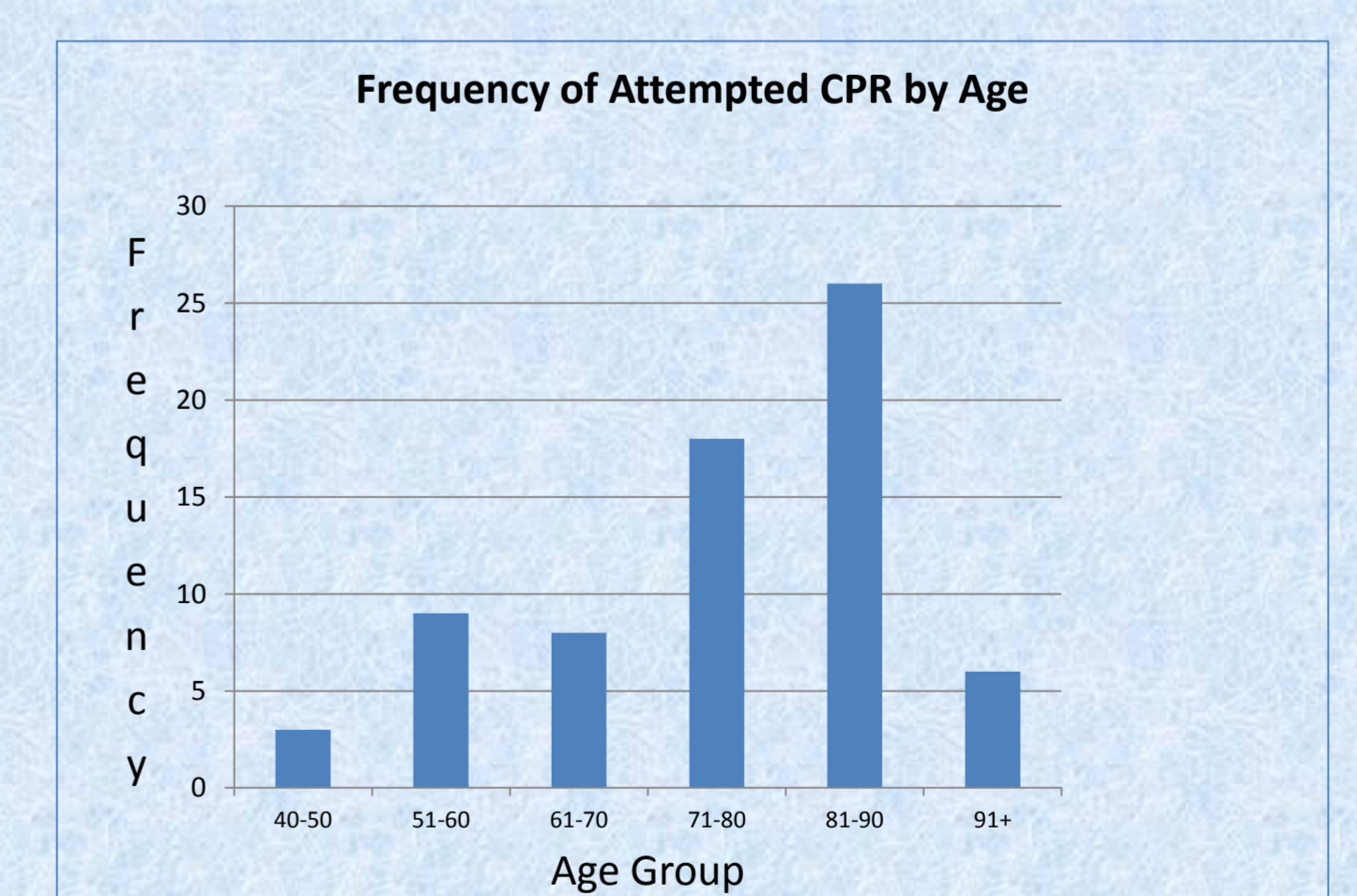
Graph 1.



Graph 2.



Graph 3



Graph 4.

## References

1. British Medical Association, Resuscitation Council UK, Royal College of Nursing *Decisions Relating to Cardiopulmonary Resuscitation 3<sup>rd</sup> Ed.* <https://www.resus.org.uk/dnacpr/decisions-relating-to-cpr/> 2016
2. General Medical Council *Treatment and Care Towards the End Of Life* <https://www.gmc-uk.org/ethical-guidance/ethical-guidance-for-doctors/treatment-and-care-towards-the-end-of-life> 2010
3. Dautzenberg, J. et. al. *Review: patient-related predictors of cardiopulmonary resuscitation of hospitalized patients.* Age & Ageing 1993; Nov(22)464-75
4. Meaney, P. et. al. *Rhythms and outcomes of adult in-hospital cardiac arrest* Journal of Critical Care Medicine 2010 (38) 101-108