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# OUTCOMES FOLLOWING NEONATAL CARDIAC SURGERY IN CAPE TOWN, SOUTH AFRICA

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## INTRODUCTION AND OBJECTIVES

Neonatal Cardiac Surgery has developed significantly since its advent, with improved outcomes, survival, and physiological repair. Limited programs offer neonatal cardiac surgery in emerging economies. We report our experience with neonates undergoing cardiac surgery in our cardiac surgery program. Red Cross War Memorial Children's Hospital (RCWMCH) is the only public service tertiary center undertaking congenital cardiac surgery on children in the Western Cape Province.

## MATERIALS AND METHODS

We conducted a retrospective database and chart review at RCWMCH. Children aged < 30 days undergoing congenital cardiac surgery at RCWMCH over a three-year period from 1 April 2017 to 31 March 2020 were enrolled. This period was selected to avoid the COVID-19 related restrictions on cardiac surgery. Data were extracted from the IQIC database and hospital records as required and included patient outcomes up to 30-days post-surgery. A REDCap™ database hosted on a UCT-secured server was used for recording and managing data.

## RESULTS

- A total of 859 patients underwent cardiac surgery at our center, of these 81 (9.4%) were neonates
- Fourteen (17%) were premature, four (5%) had a major chromosomal abnormality, five (6%) a major medical illness and eight (10%) a major non-cardiac structural anomaly
- Hours in ICU were extensive; median 189 [IQR 114-286] as were hours of ventilation; median 95 [IQR 45-163]
- Almost 60% (n=48) of procedures were complicated by sepsis, as defined in our database
- The in-hospital mortality rate was 16% (n=13); the 30-day mortality rate was 19.8% (n=16).

Table 1. Surgical variables and outcomes related to the study

Surgical variables	Outcomes
Preoperative procedure	In-hospital death
Description of surgical procedure	Number of days from procedure to discharge
Palliative versus repair procedure	ICU stay in minutes and hours
Number of operations or reoperations prior to surgery	Ventilation time in hours
Open chest after surgery	CPB events
Need for additional surgery for bleeding	Surgical site infection
RACHS score	Bacterial sepsis
	Alive at 30 days post-surgery

Figure 1. The proportion of neonates operated on during the three-year period our study

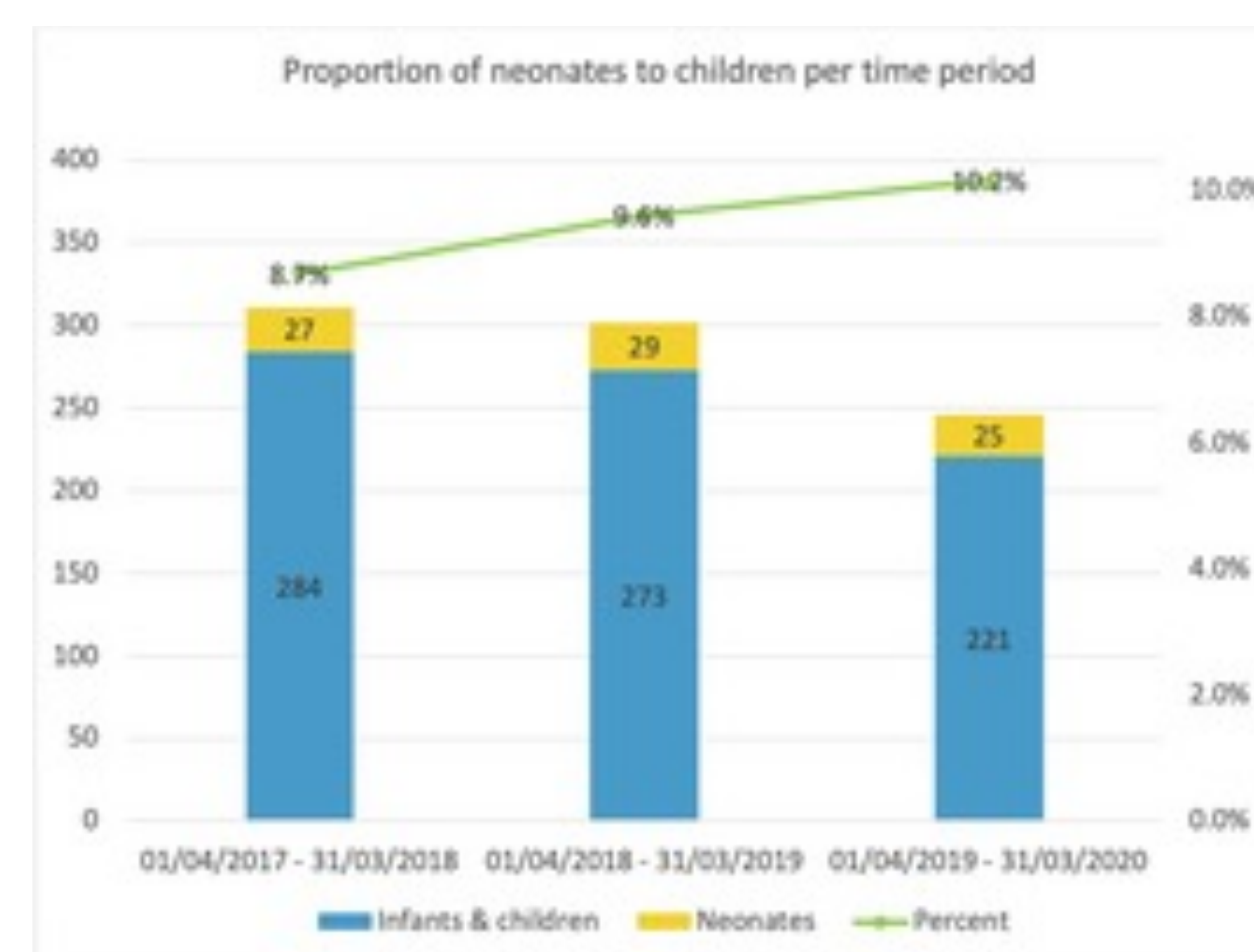
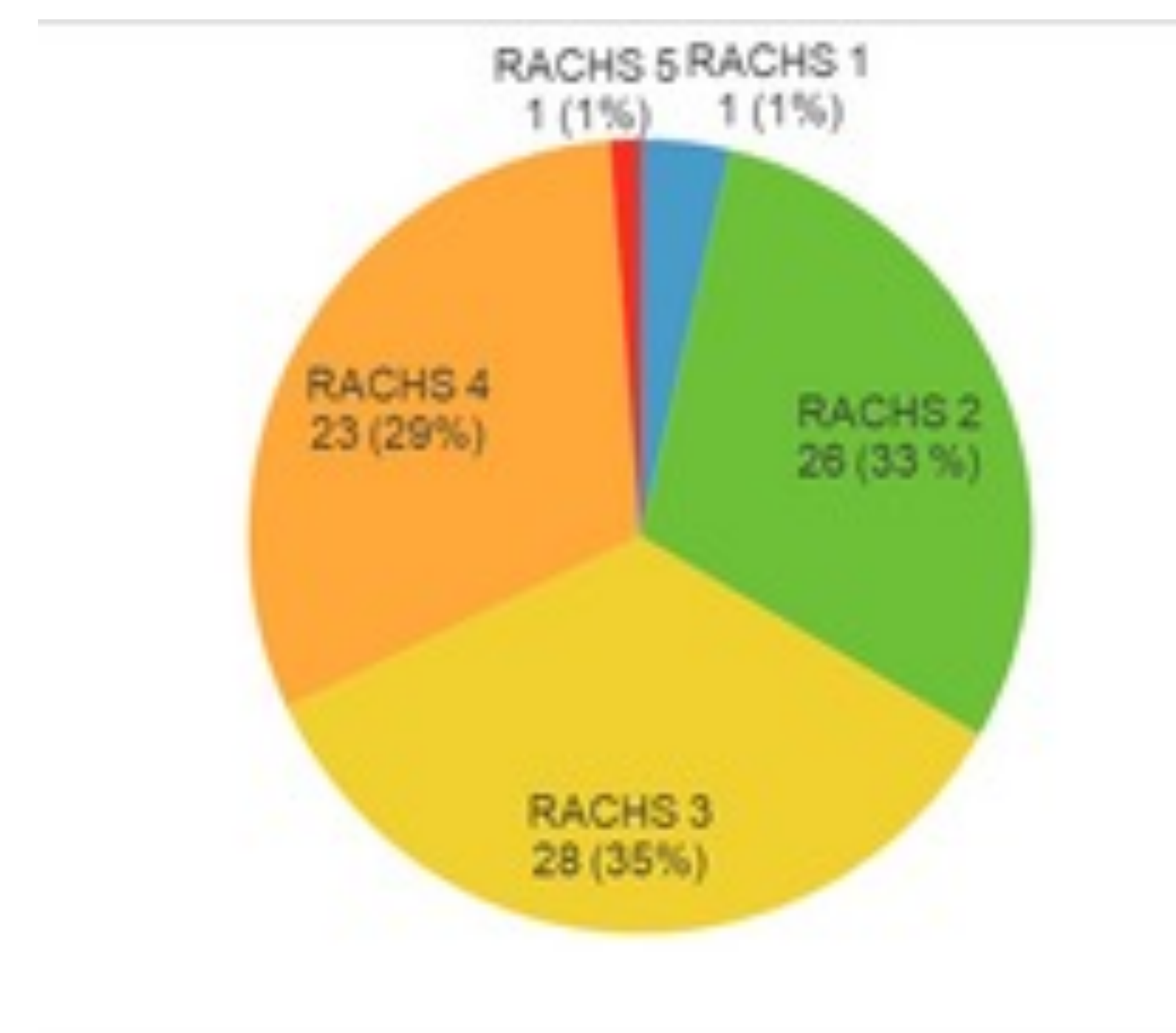


Figure 2. Distribution of RACHS scores



## CONCLUSION

The proportion of neonates in our service increased over the period. Focused strategies to shorten prolonged ICU stay and decrease rates of bacterial sepsis in neonates are needed. A multi-disciplinary, collaborative heart-team approach is crucial for best outcomes.

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