

Research Explained

The added value of the advanced practice provider in paediatric acute care cardiology

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Published in *Cardiology in the Young*, ePub November 2020

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About this Study

Why is this study important?

- Advanced practice providers (APP) are trained and certified medical providers (nurse practitioners and physician assistants) who can prescribe medications, order tests, and provide direct medical care much like a doctor.
- APPs have worked with adult and pediatric patients for more than 50 years, and it is now more common for them to be part of the team that takes care of cardiology patients while in the hospital.
- This is the first study to describe in detail the role of APPs in the care of pediatric cardiology patients admitted to acute care units (in the hospital, but not in the intensive care unit/ICU).

How was this study performed?

- The Pediatric Acute Care Cardiology Collaborative (PAC³) is an organization of pediatric cardiology groups that is dedicated to improving the quality of medical care provided on acute care pediatric cardiology units and the outcomes of the patients cared for on these units.
- PAC³ performed a survey in 2017 of the 34 hospitals in their collaborative to collect information on the medical practice and environment on their pediatric cardiology acute care units.
- This study used data collected from the PAC³ survey on the different types of providers (doctors, fellows, residents, and APPs) that work in the pediatric acute care cardiology units. It also tracked types of medications and therapies used in each unit.
- The data from the survey was used to calculate a score – the resource acuity score - for each hospital. This score described how sick the average patient in that hospital's pediatric acute care cardiology unit was.
- A separate database was used to get the number of surgeries performed at each hospital - the surgical volume.
- A previously developed model that can estimate the expected number of days in the hospital was used to determine how many patients were discharged home earlier than expected.

What were the results of the research?

- Nearly all (94%; 29 centers) of the 31 centers that completed the PAC3 survey have APPs actively caring for patients.
- Nearly half of centers had APPs covering more than 75% of their pediatric acute care cardiology unit patients.
- On average there are 1-2 APPs at the hospital during the day. Most centers also have APPs working on the weekend, but less often at night.
- Even with APPs present, doctor trainees – pediatric residents and pediatric cardiology fellows – also help take care of patients on pediatric cardiology acute care units at almost all hospitals.
- The number of APPs employed was higher in centers that perform more surgeries and care for sicker patients.
- As the number of APPs caring for patients increased, there was a greater likelihood of the patients being discharged from the hospital earlier than expected following cardiac surgery.

What are the limitations of this study?

- **Acuity Score Accuracy.** The model used to assign an acuity score based on how sick the patients are is a combined opinion of experts and has not been proven to be completely accurate.
- **Impact of Non-Surveyed Factors.** Because this study was completed based on data from the past (retrospective), it is possible that the length of stay was affected by something that was not recorded or evaluated in the surveys.
- **Survey Response Bias.** Results were only obtained from the hospitals that participated in the survey and therefore the findings may not represent all institutions.

What are the biggest takeaways of this study?

- **An APP Work Force – Shorter Stays.** A dedicated front-line work force, specifically a dedicated team of APPs, was shown to be associated with decreased post-operative length of stay.
- **Educational Opportunities and Consistency of Care.** The addition of APPs to the traditional hospital care team allows for improved education and learning opportunities for doctors in training and more consistency in the care of complex cardiac patients.
- **Opportunity for Additional Investigation.** This study shows that there are significant differences between the types of caregivers at different hospitals. Because there is so much variation, the data can be used to further investigate the advantages of using APPs to care for this specific group of patients.