

Embedding patient simulation in a pediatric cardiology rotation: a unique opportunity for improving resident education

Mohan S¹, Follansbee C², Nwankwo U², Hofkosh D², Sherman F², Hamilton M^{3,4}

¹ Division of Cardiology, Children's Hospital of Philadelphia

² Department of Pediatrics, Children's Hospital of Pittsburgh of UPMC

³ Department of Critical Care Medicine, Children's Hospital of Pittsburgh of UPMC

⁴ Peter M. Winter Institute for Simulation, Education, and Research

Introduction- High fidelity patient simulation (HFPS) is an educational tool utilized to bridge the gap between medical trainee knowledge and clinical performance. It has been validated in mock codes and intensive care scenarios, however few studies have analyzed its impact on inpatient subspecialty rotations.

Hypothesis- We hypothesized that pediatric residents exposed to HFPS in a formal clinical rotation with a structured content curriculum would perform better on a case quiz at the completion of the curriculum as compared to residents who did not get HFPS.

Methods- Senior pediatric residents, during their cardiology rotation, completed an online pediatric cardiology curriculum and a cardiology quiz. After randomization into two groups, the study group participated in a fully debriefed HFPS session. The control group had no HFPS, and both groups completed a case quiz. Confidence surveys pre and post simulation were completed.

Results- From October 2010 through March 2013, fifty-five residents who rotated through the pediatric cardiology rotation were used in the final analysis (30 controls, 25 in the study group). There was no significant difference between groups on the initial cardiology quiz. The study group scored higher on the case quiz compared to the control group ($p=0.024$). Based on pre and post simulation questionnaires, residents' confidence in approaching a pediatric cardiology patient improved from an average Likert score of 5.1 to 7.5 (on scale of 0-10) ($p<0.001$).

Conclusions- Incorporation of HFPS into a pre-existing pediatric cardiology rotation was feasible and well received. Our study suggests that simulation promotes increased confidence and may modestly improve clinical reasoning compared to traditional educational techniques.

Significance- Targeted simulation session may readily be incorporated into pediatric subspecialty rotations.

Research/Grant Support- All analyses were conducted by the CTSI of the University of Pittsburgh and supported by the NIH through Grant Numbers UL1 RR024153 and UL1TR000005.