

The impact of interdisciplinary code simulation on perceptions of collaboration and team performance among internal medicine residents and nursing students



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Background

Simulation^{1,2}

- Allows for inter-disciplinary training
- Provides safe environment to practice patient care with immediate feedback → quality improvement
- Results in better adherence to protocols
- Well received by learners

- In one study, almost half of IM residents surveyed felt ill-equipped to lead code teams even after ACLS training³

Crisis Resource Management (CRM)⁴

- Communication and cooperation
- Leadership and management
- Situational awareness
- Decision-making

Methods

Data Collection

- Participants completed two instruments before and after each debriefing (total 4 times)
 - Mayo High Performance Teamwork Scale (MHPTS)⁴
 - 1=never or rarely, 2=inconsistently, 3=consistently
 - Jefferson Scale of Attitudes toward Physician-Nurse Collaboration (JSA)⁵
 - 4=strongly agree, 3=agree, 2=disagree, 1=strongly disagree

Statistical Analysis

- Repeated measures analysis of variance (RM ANOVA) was used to compare responses over time
- All assumptions were met, no outliers detected, scales demonstrated adequate internal consistency reliability coefficients

	Comparison Mean Score Before and After First Debriefing	Comparison Mean Score Before and After Second Debriefing
JSA	F (1,158) = 25.69 P=0.0005 η ² =0.14	F (1,164) = 15.32 P=0.0005 η ² =0.08
MHPTS	F (1,160) = 0.076 P=0.78 η ² =0.00	F (1,161) = 19.24 P=0.0005 η ² =0.11

Results

Study Sample Demographics

Age	M=26.31 SD=6.03
Gender	123 (70.3%) female 50 (28.5%) male 2 (1.2%) did not report
Training	27 (15.4%) medicine residents 146 (83.4%) nursing students 2 (1.2%) did not report

	Mean Score Before First Debrief	Mean Score After First Debrief	Mean Score Before Second Debrief	Mean Score After Second Debrief
JSA	M=3.57 SD=0.23	M=3.62 SD=0.23	M=3.64 SD=0.25	M=3.68 SD=0.24
MHPTS	M=2.27 SD=0.38	M=2.27 SD=0.43	M=2.53 SD=0.34	M=2.60 SD=0.37

Methods

Research Question

Does interdisciplinary code simulation with CRM-guided debriefing change resident and nursing student perceptions about collaborative education and team performance?

Participants

- PGY2 Internal Medicine Residents
- 2nd and 4th semester nursing students
- High fidelity simulation education activities - 2010 and 2011
- Resuscitation team = 1 resident leader with 4-8 students
- All participants could confidentially decline consent for use of their data

Intervention Design

- Each "resuscitation team" participated in 2 simulated emergency scenarios (lasting ~20 minutes)
 - PEA
 - Ventricular fibrillation
- Option for resuscitation failure in the setting of significant algorithm non-adherence
- Video guided debriefing (emphasizing CRM principles) with faculty followed each scenario

Conclusions

- Mean scores on both scales increased
- Significant changes in attitudes about collaborative education were seen immediately and persisted
- Perceptions of team performance were significantly enhanced only after the second code and debriefing, suggesting this change occurs more slowly than attitudes about collaboration
- Interdisciplinary code simulation and CRM-focused debriefing is an important tool fostering physician-nurse relationships and teamwork
- Limitations include difficulty with generalizability given convenience sample at one site, lack of control group, two sampling time frames
- Future analyses: objective evaluation of team performance and correlation with ACLS algorithm adherence

References

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