

Assessing Resident Communication With Faculty from Multiple Specialties During High-Fidelity Simulation Designed to Provide Multi-Source Feedback

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Published In/Presented At

Nguyen, M., Dudley, R., Elliott, N., Kane, B., Best, K., Nimmo, M., Cook, M., Macfarlan, J., & Lindauer, L. (2021, January). Assessing Resident Communication With Faculty from Multiple Specialties During High-Fidelity Simulation Designed to Provide Multi-Source Feedback. Poster presented at: IMSH 2021, The Society for Simulation in Healthcare Meeting, New Orleans, LA.

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Assessing Resident Communication With Faculty from Multiple Specialties During High-Fidelity Simulation Designed to Provide Multi-Source Feedback

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Hypothesis/Research Question

Communication is critical in health care and affects patient safety, disposition and coordination of care. Although simulation has been tied to improvements in medical knowledge, procedural performance and education of residents, there has been relatively little data to establish how simulation can be used to assess communication skills of residents as it pertains to discussing with consulting and admitting physicians. The 5C's (Contact, Communicate, Core Question, Collaboration, Close the Loop) is a validated model of Emergency Medicine (EM) resident phone communication.^{1,2} This study seeks to assess the differences of 5C's based communication checklist scores between EM and non-EM faculty embedded in a resident-led high-fidelity adult resuscitation multi-source feedback (MSF) simulation (sim) case.

Method

This IRB approved, prospectively enrolled study of MSF and communication was conducted at a PGY 1-4 EM residency based at an independent academic medical center. The program trains 13 residents per year. PGY 2-4 EM residents were eligible to be enrolled to lead a multi-disciplinary team through a single adult sim case. The case required resuscitation of a high-fidelity adult simulator due to toxic ingestion. The team included a PGY 1, an EMT, and a nurse. This team, and 2 on-site EM attendings, provided MSF. Remote from the sim lab were both an EM Toxicologist (Tox) and Internal Medicine Critical Care (ICU) physicians. These faculty were contacted by phone during the case for consultation about management (Tox) and request for admission/transfer of care (ICU). The faculty completed a checklist of 12 objective behaviors (Table One) based on the 5C's.² Data were compared across faculty specialty and PGY year using Chi-Square, Fisher's Exact, and t-Test. Alpha was set to 0.05.

Results

Enrollment straddled two academic years. Of the four PGY classes eligible, 34 (22 male, 12 female) resident team leaders were enrolled. Table One demonstrates completion rates for each task. No resident identified their supervisor in any conversation. PGY year was rarely communicated (12.5% Tox, 6.5% ICU). Significant differences were noted for Core Questioning (p<0.0001 for both Need and Timeline) and one Loop Closure task (Reviews/Repeats p<0.0001). Table Two demonstrates significant differences in the summative scores. The ICU rated the entire resident cohort as having completed significantly more communication tasks (10.0 +/- 0.4) than did Tox (6.9 +/- 0.9), p<0.0001. A significant difference was also seen between Tox and ICU within each PGY year (p<0.0001 except end PGY 1/beginning PGY 2 where p=0.0016). For ICU, completion of communication tasks increased with PGY year of experience. For Tox, the summative scores had a variable pattern by PGY year.

Conclusion

Using a previously validated framework,^{1,2} this single site study evaluated the ability to communicate on the phone while in the middle of a standardized high-fidelity resuscitation case in the sim lab. Completion of communication tasks during this internally developed simulation case varied significantly by attending specialty both for the entire cohort overall and for each PGY year. Significant differences were also seen in 2 of the 5C categories. These findings may be limited by the fact that the Tox phone call was placed first by the resident in the majority of cases. This study suggests that adding evaluation of phone communication to MSF appears feasible to measure in the sim lab and may provide valuable information to both residents and program leadership. As an example for this cohort, identification of supervising physician is an opportunity for improved communication.

Table 1
Communication Tasks by Rater for the Overall Cohort

5 C's Category	Toxicologist (n=32) ^a	ICU (n=34)	p-value
Contact			
1. States Name			0.1635 ^d
Done	24 (75.0)	30 (88.2)	
Not done	8 (25.0)	4 (11.8)	
2. Rank and Service ^b			0.6719 ^d
Done	4 (12.5)	2 (6.5)	
Not done	28 (87.5)	29 (93.6)	
3. Identifies Supervising Attending ^c			N/A
Done	0	0	
Not done	32 (100)	31 (100)	
4. Identifies the Name of Consulting Physician			0.3482 ^d
Done	29 (90.6)	33 (97.1)	
Not done	3 (9.4)	1 (2.9)	
Communication			
5. Presents a Concise Story			0.4928 ^d
Done	32 (100)	32 (94.1)	
Not done	0	2 (5.9)	
6. Presents an Accurate Recount of Information/Case Detail			0.4928 ^d
Done	32 (100)	32 (94.1)	
Not done	0	2 (5.9)	
7. Speaks Clearly			1.0000 ^d
Done	32 (100)	33 (97.1)	
Not done	0	1 (2.9)	
Core Question			
8. Specifies Need for Consultation			<.0001 ^d
Done	4 (12.5)	33 (97.1)	
Not done	28 (87.5)	1 (2.9)	
9. Specifies Timeframe for Consultation ^e			<.0001 ^d
Done	0	32 (97.0)	
Not done	32 (100)	1 (3.0)	
Collaboration			
10. Is Open to and Incorporates Consultants Recommendations			1.0000 ^d
Done	32 (100)	33 (97.1)	
Not done	0	1 (2.9)	
Closing the Loop			
11. Reviews and Repeats Patient Care Plan			<.0001 ^d
Done	1 (3.1)	33 (97.1)	
Not done	31 (96.9)	1 (2.9)	
12. Thanks Consultant for Consultation			1.0000 ^d
Done	31 (96.9)	33 (97.1)	
Not done	1 (3.1)	1 (2.9)	
Total Score (Max of 12) mean ± SD	6.9 ± 0.9	10.0 ± 0.4	<.0001^f

Data are n (%) unless otherwise stated. Percentages might not add to 100% due to rounding.

^aTwo simulations are missing data from Toxicologist consultation.

^bThree simulations are missing data from ICU consultation for this question.

^cOne simulation is missing data from ICU consultation for this question.

^dChi-Square test used to calculate p-value.

^eFisher's Exact test used to calculate p-value.

^fTest used to calculate p-value.

Table 2
Summative Communication Tasks Overall and by PGY Year

	Toxicologist	ICU	p-value
All Residents^a (n=34)	6.9 ± 0.9	10.0 ± 0.4	<.0001
End of PGY 4 (n=9)	6.3 ± 1.0	10.2 ± 0.4	<.0001
End of PGY 3/Beginning of PGY 4^b (n=11)	6.9 ± 1.0	10.0 ± 0.0	<.0001
End of PGY 2/Beginning of PGY 3^c (n=10)	7.4 ± 0.7	9.8 ± 0.5	<.0001
End of PGY 1/Beginning of PGY 2 (n=4)	7.0 ± 0.0	9.8 ± 0.5	0.0016

Data are median ± standard deviation (SD) unless otherwise stated.

^aTwo simulations are missing data from Toxicologist consultation; four simulations are missing data from ICU consultation.

^bOne simulation is missing data from Toxicologist consultation; two simulations are missing data from ICU consultation.

^cOne simulation is missing data from Toxicologist consultation; two simulations are missing data from ICU consultation.

^dt-Test was used to calculate p-value.



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ACKNOWLEDGMENTS

This project was funded, in part, by an unrestricted grant, the Dorothy Rider Pool Trust for Health Research and Education community foundation grant.