

The Impact of Resident Geographic Rounding on Rapid Responses and Code Blues

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Background

Geographic rounding and interdisciplinary team rounding (IDTs) are becoming more prevalent within hospital systems. Geographic rounding refers to grouping patients to certain units in the hospital based either on physician group or disease process. There have been many proposed benefits suggested with this localization such as decreased length of stay, improved physician-staff communication and collaboration, increased face time with patients, enhanced workflow and efficiency, decreased readmission, and possibly even decreased cost. Admittedly, not all of these benefits have been realized to date. Yet mixed and conflicting studies still question these proposed benefits. The aim of our study was to determine if the improved physician-staff communication reduced rates of rapid responses and code blue events on a geographic unit.

Methods

We used an observational pre-post design involving the Internal Medicine (IM) residency geographic ward service at Carilion Roanoke Memorial Hospital (CRMH) comparing two units that were transitioned from general telemetry units open to all admitters (primarily used for treating medicine patients) to strictly IM resident run units. The observation period was for two years prior to resident geographic rounding and the year of implementation. In 2017, the IM residency ward service transitioned to a geographic-based rounding model covering two inpatient units. IDT rounding, which incorporated nursing and social service input, was implemented at the same time.

We then compared Rapid Responses and Code Blue rates pre- & post-intervention (three time periods: July-December of 2015, 2016, and 2017). The periods were limited to July through December of each year to ensure full implementation on both units and to limit variation in resident training, which naturally occurs during the academic year. We also gathered the case mix index (p=0.7428) and minimum Rothman index scores (p=0.3025) during these time periods to ensure that the level of patient complexity was consistent. The Carilion Clinic Institutional Review Board approved this study and granted it exempt status.



Results

Rate of Total Rapid Response & Code Blue Events Pre & Post Intervention

	Event	No Event	Total	% Of Patients with Event
Pre study (2015 & 2016)	68	2621	2689	2.53%
Post study (2017)	18	1807	1825	0.99%
Total	86	4428	4514	

P-value 0.0002

Rate of Rapid Response Events Pre & Post Intervention

	Event	No Event	Total	% Of Patients with Event
Pre study (2015 & 2016)	58	2631	2689	2.16%
Post study (2017)	12	1813	1825	0.66%
Total	70	4444	4514	

Odds Ratio 0.3

P-value <0.0001

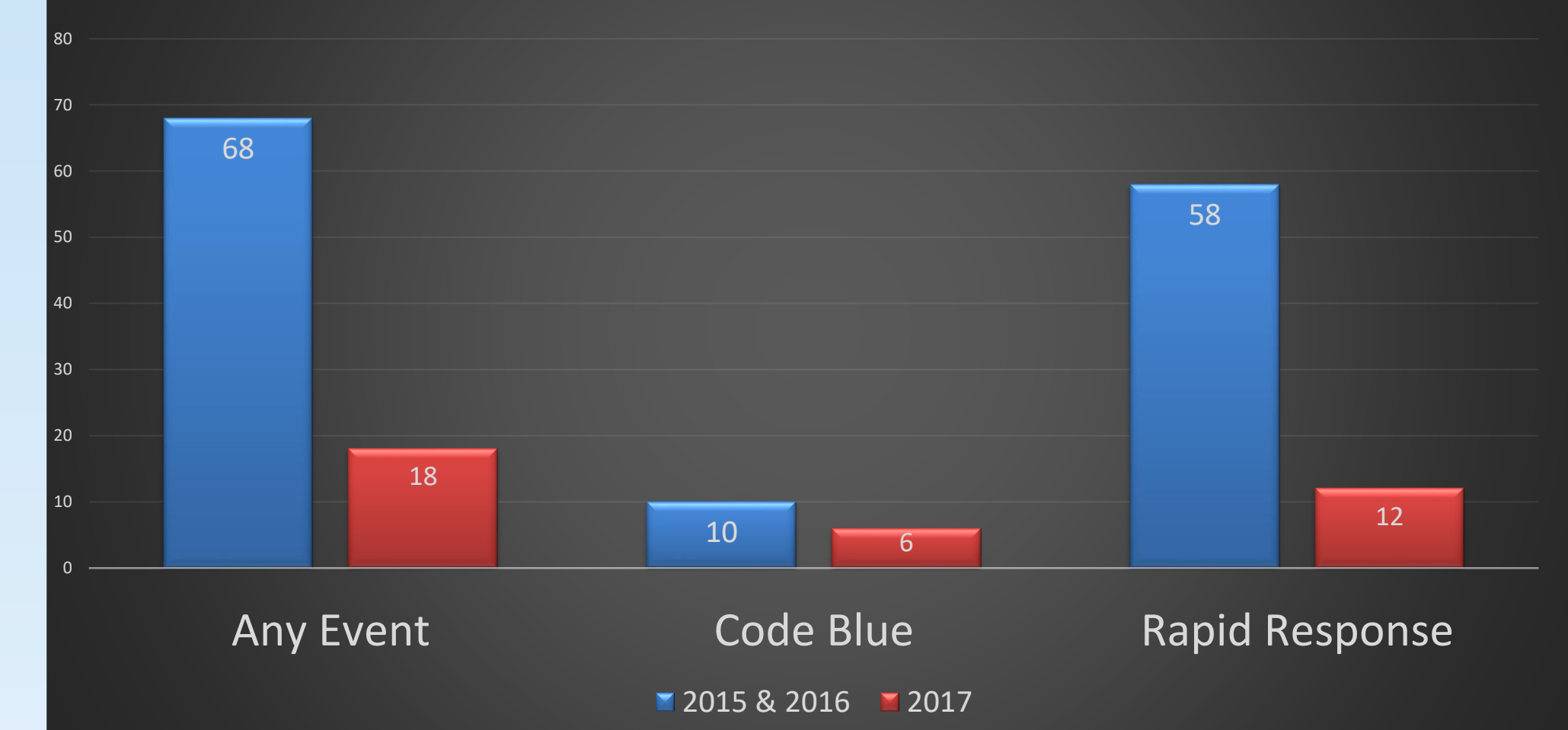
Rate of Code Blue Events Pre & Post Intervention

	Event	No Event	Total	% Of Patients with Event
Pre study (2015 & 2016)	10	2679	2689	0.37%
Post study (2017)	6	1819	1825	0.33%
Total	16	4498	4514	

P-value 0.8109

Results

Rates Pre & Post intervention



Case Severity

Study Group	Case Mix Index			Minimum Rothman Index		
	Mean	Std. Dev.	p-value	Mean	Std. Dev.	p-value
Pre-Study (2015-2016)	1.65	1.87	0.7428	38.34	26.79	0.3025
Post-Study (2017)	1.60	1.68		39.45	26.46	

*Case Mix data were collected on 278 patients in the pre-intervention group and 202 patients in the post-intervention group.

**Rothman Index data were collected on 1328 patients in the pre-intervention group and 1146 patients in the post-intervention group.

Discussion

Based on these preliminary and retrospective results, it does seem that a resident-run geographic rounding service decreased rapid response rates specifically at our institution. We theorize that the mere pervasive presence of numerous doctors (residents) on these units and the increase in communication and familiarity with the nursing staff are the likely reasons for the declines in rapid response rates.