Impact of Text Messaging Communications on Mammogram Scheduling Outcomes Three Phases Pilot Study of an Overdue Screening Mammogram Campaign

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INTRODUCTION

Breast cancer, the second most prevalent and lethal cancer among U.S. women, requires effective screening strategies for early detection and improved patient outcomes. Patients at our facility typically rely on MyChart notifications and mailed letters as reminders for upcoming mammogram screenings, often due within 30 days. To enhance the uptake of breast cancer screening mammograms, our institution has implemented a program that uses two-way text message (SMS) reminders for patients who are overdue for their screening imaging. This campaign emphasizes the importance of community outreach in addressing the gaps in overdue mammogram screenings, especially in the wake of the COVID-19 pandemic, which has significantly impacted annual mammogram screening numbers. The importance of early detection, a fact underscored by numerous studies, is the driving force behind this initiative. This report aims to analyze the impact of these SMS-reminders on improvement of patient medical compliance and appointment reminders.

METHODS

We conducted a retrospective, single-institution, multisite pilot study of women who were overdue for mammograms within our institution, excluding males, those with previous bilateral mastectomies, deceased patients, individuals with pre-scheduled breast imaging appointments, and those previously diagnosed with breast cancer. Eligible patients received a two-way SMS in three phases, allowing self-scheduling of appointments and reminders for overdue mammograms.

METHODS

We calculated the number of patients who responded to the SMS and scheduled appointments, including mammogram screening, other breast imaging types, biopsy requirements, and cancer detection rates, two months after each phase.

RESULTS

In Phase 1 of the study, 5,975 out of 6,069 eligible patients received an SMS, while 93 patients with delivery failures were contacted via automated phone calls. The average patient age was 59.6 years (SD ± 11.5). The three most common languages spoken by the patients were English (88.3%), Spanish (7.7%), and Korean (1.4%). The patient population included White (59.7%), Black/African American (11.1%), Korean (4.0%), Chinese (2.1%), other Asians (16.9%), Hispanic (3.4%), and others (2.7%). After two months, 1,027 patients (16.9%) scheduled appointments, with approximately 40% self-scheduling their mammograms through the SMS link. In Phase one, 59 patients (5.7%) required appointments for breast imaging other than routine mammograms. The cancer detection rate was 0.6%, and 8 out of 1,027 patients (0.8%) required a biopsy.

In the second phase, out of 531 patients, 175 (33%) scheduled a screening mammogram or other types of breast imaging. The cancer detection rate was 0.6%, and two patients (1.1%) required surgical excision. In Phase 3, 174 out of 542 patients (32%) responded to the text messages and were scheduled for breast imaging. Only two patients required a biopsy, and both were reported as benign.

RESULTS

		Phase 1	Phase 2	Phase 3	All Phases
Total scheduled for breast imaging including routine screening mammogram		1027/6069 (16.9%)	175/531 (33%)	174/542 (32.1%)	1376/6069 (19.2%)
Scheduled for screening mammogram	Completed	840 (81.8%)*	132 (75.4%)	137 (78.7)	1109 (80.6%)
	Upcoming appointment	50 (4.9)	28 (16%)	28 (16.1%)	106 (7.7%)
	Canceled	60 (5.8%)	3 (1.7%)	5 (2.9%)	68 (4.9%)
	No-shows	18 (1.8%)	3 (1.7%)	1 (0.6%)	22 (1.6%)
Scheduled for imaging other than a routine breast mammogram	Completed	49 (4.8%)	9 (5.1%)	6 (3.4%)	64 (4.7%)
	Upcoming appointment	3 (0.3%)	0	0	3 (0.2%)
	Canceled	2 (0.2%)	0	0	2 (0.1%)
	No-shows	5 (0.5%	0	0	5 (0.4%)
Cancer detection rate		6/1027 (0.6%)	1/175 (0.6%)	0/174 (0%)	7/1376 (0.5%)
Required needle biopsy		12 (1.2%)	4 (2.3%)	2 (1.1%)	18 (1.3%)
Required surgical excision		8 (0.8%)	2 (1.1%)	0	10 (0.7%)

* Percentage calculated among all the scheduled patients

CONCLUSION

The study shows that two-way SMS communication may be a promising intervention in increasing the uptake of screening mammograms especially in patients who are overdue for their screening imaging. This indicates digital outreach, including SMS reminders, could enhance early diagnosis and patient results in conditions like breast cancer, which necessitates further research.

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