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Hot Off the Press: Post–Emergency Department Automated Messaging to Improve Follow-up Compliance—What Is the Number Needed to Text?

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BACKGROUND

After emergency department (ED) care more than 85% of patients are discharged home, and many are provided follow-up instructions for reassessment or specialist evaluation. Unfortunately, some patients do not follow up as recommended for a variety of reasons, including insurance status, childcare, work, and transportation barriers.¹ Non-ED survey studies have shown that many patients miss appointments simply due to forgetfulness.² Interventions to improve post-ED follow-up compliance are often labor-intensive endeavors, such as nurse telephone calls, requiring extra personnel that all EDs may not be able to provide.³ In addition, attempts to improve compliance are not consistently successful.^{4–6}

ARTICLE SUMMARY

The study by Arora et al. under discussion is a randomized controlled trial of non–critically ill adult English-and Spanish-speaking ED patients from the Los Angeles County University of Southern California Medical Center, which serves a largely uninsured population without reliable access to outpatient care. In this study, appointments were scheduled by the ED clerk prior to discharge. Each patient was randomized to receive a text message appointment reminder including the date, time, and location of his or her follow-up appointment or to usual care. Patients in the text message intervention arm of the study received reminders at 7, 3, and 1 day before their first scheduled appointments. The primary outcome was the

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Associated podcast: <http://tinyurl.com/SGEM-TextMessage2015>

follow-up rate at this first appointment, which was assessed using both an intention-to-treat and per-protocol analysis.^{7,8}

QUALITY ASSESSMENT

Although this study did not reference the Consolidated Standards of Reporting Trials or CONSORT recommendations (<http://www.consort-statement.org/>), they largely adhered to these reporting guidelines. The randomization sequence was adequately generated and concealed, and patients were analyzed in the groups to which they were assigned, as well as by the interventions that they actually received. Patients, clinicians, and outcome assessors were not blinded to subject assignment to text or standard care group, so readers cannot be certain whether differences observed resulted from simply receiving a text regardless of the messaging or if the content of the text is essential. The planned sample size of 626 (80% power to detect 10% absolute difference in missed appointments, with two-sided alpha 0.05) was not attained. Only 374 participants were ultimately randomized, so the study is underpowered for the primary outcome.

KEY RESULTS

Randomized patients were mostly (70.4%) Hispanic, and the average time until outpatient follow-up appointment was 7 to 8 days. In the intention-to-treat analysis, no significant difference in follow-up was demonstrated (8.1% absolute risk reduction; 95% CI = -1.6% to 17.7%, $p = 0.100$). In the per-protocol analysis, 46 patients from the intervention arm were excluded because they failed to receive text messaging for some reason. The absolute risk reduction was 10.5% (95% CI = 0.3% to 20.8%, $p = 0.045$) favoring the text group. This equates to a number needed to treat (or number needed to text) of 10 (95% CI = 5 to infinity). In a multivariate logistic regression analysis, text messaging significantly increased appointment adherence in English language speakers for both primary care and specialty care appointments, but had no effect on Spanish speakers, regardless of appointment type.

A few potential study flaws and omissions were noted. First, the investigators hypothesize that forgetting appointments is a significant barrier to more efficient post-ED follow-up compliance, but all four of their supporting references were drawn from the United Kingdom with essentially universal access to primary care. In the United States, the situation may be more complex when indigent, uninsured, or underinsured patients with unaffordable copays limit access to outpatient care. Other unmeasured confounders to follow-up compliance may include access to reliable transportation, limited health literacy, job status, and ability to miss work for appointments. Second, the authors did not provide ideas for future studies. Could a role exist for two-way messaging between patient and the follow-up provider? For elderly or impaired patients, could caregivers receive concurrent text message reminders? Could specific subpopulations of discharged ED patients be more likely to benefit from text reminders, such as those with regularly scheduled appointments (e.g., dialysis patients), chronic pain patients, ED high utilizers, and those with high burden of comorbid diseases?

AUTHOR COMMENTS

When patients are discharged from the ED, they are often provided with specific follow-up appointments ranging from wound checks to specialist evaluation. Adherence with these appointments not only improves patient outcomes, but also mitigates malpractice risk. Sadly, a large proportion of patients fail to follow up as instructed for a variety of reasons, including financial constraints, transportation difficulties, and confusion over or forgetting about the time and date of their appointment. Text messaging offers one potential solution to eliminate appointment forgetfulness by providing reminders on a platform that almost all patients already use. In our randomized controlled trial, we saw an absolute difference in first appointment follow-up of about 10% between the two arms. By providing both the intention-to-treat and the per-protocol data, we hoped to give readers a better understanding of how well text message reminders work in a real practice environment. There are other solutions that work, including case managers and phone calls, but these are very time- and labor-intensive. Emergency providers cannot fix all of the problems that contribute to patients not going to their appointments, but automated text messages, which require essentially no work to send and cost just a few cents per patient, seem like a beneficial first step. Nearly everyone has a cell phone, making it an excellent target for enhancing care and improving the lives of our patients.

TOP 5 SOCIAL MEDIA COMMENTS

Gregory Crunican, South Huron Hospital Association (comment on the Skeptics Guide to Emergency Medicine [SGEM] blog): Call me Maybe, but text me always for ED follow-up. An excellent example of adapting health care to technology. As a rural emergency nurse we regularly have patients returning for follow-up appointments to ensure their continued recovery. Forgetting these appointments (which happens often due to work schedules) can lead to prolonged treatment and continued complications. Any increase in patient adherence is worth further investigation.

TAKE-TO-WORK POINTS

Patients who fail to attend outpatient appointments after ED visits are at risk for worse outcomes. Additionally, health care systems become inefficient and continued care may become more expensive for noncompliant patients. Although many factors likely impede reliable patient compliance with short-term follow-up, forgetfulness has been found to be one important factor. Health care providers have used phone communication and written correspondence to remind patients of follow-up care, but have found these tools to be too time-intensive to apply broadly. The study by Arora et al. demonstrates that text messaging may be a feasible, less-intensive means to improve follow-up care after discharge from the ED, although larger, multicenter studies are needed to validate this finding. Furthermore, non-English-speaking patients may benefit less from this intervention, warranting further investigation into culturally specific means of reaching out to specific subpopulations.

BOTTOM LINE

Emergency providers always need to review the rationale for outpatient follow-up with patients who are discharged from the ED. Appointment reminders may improve follow-up compliance, but further studies are needed to better understand the complexities underlying follow-up failure. For now, a conversation with patients to understand other economic, social, or logistic barriers may expose specific interventions to improve outpatient follow-up attendance.

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