Cpt. James A. Lovell Veterans Health Administration

Interactive Text Messaging as an Intervention for Monitoring and Supporting Veterans at High Risk Suicidal

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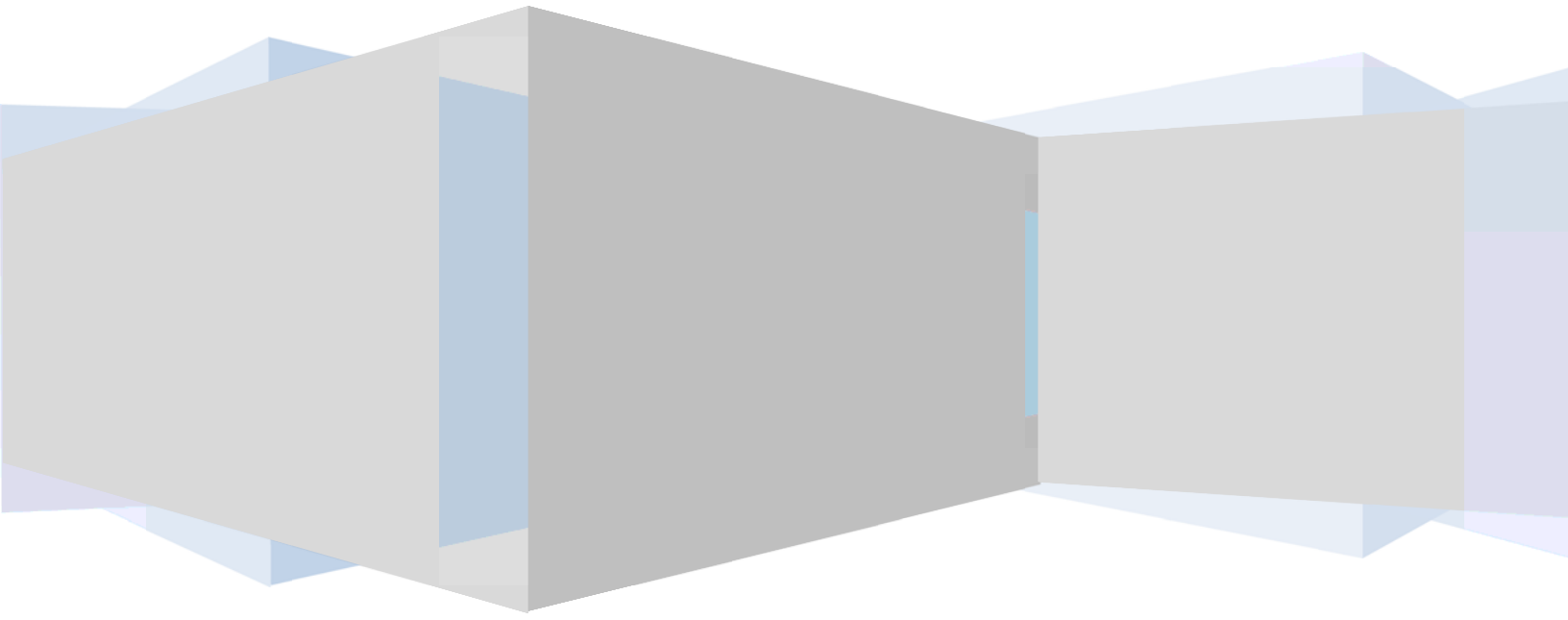

Executive Summary

Introduction

The 2011 report commissioned by the Suicide Prevention Resource Center in collaboration with SAMHSA noted that continuity of care is an essential feature of suicide prevention. One underutilized resource in maintaining contact with suicidal individuals has been text-messaging, which has risen exponentially in popularity in the United States since 2001. In 2007 the National Suicide Prevention Lifeline (1-800-273-TALK) sponsored a report entitled the *Lifeline Service and Outreach Strategies Suggested by Suicide Attempt Survivors*. In this report, it was specifically recommended that crisis centers explore the use of text-messaging as supplemental services. In the summer of 2011, software utilized in the medical industry to manage chronic conditions through text-messaging became available to the Lovell Federal Health Care Center as an intervention for monitoring and supporting veterans at high risk for suicide. This software had been previously used in another high-risk veteran population with high customer satisfaction and participation. In accord with the innovative spirit of the Cpt. James A. Lovell Federal Health Care Center (Lovell FHCC), the Suicide Prevention Coordinator (SPC) in collaboration with a Psychology Intern requested and received permission to implement this unique intervention.

Results of the Clinical Intervention

Between April and July 2011 the Lovell FHCC implemented the use of a text messaging program as an intervention for monitoring and providing support to high-risk, suicidal veterans. The intervention program was applied to 11 high-risk individuals. Text messages included appointment reminders, medication reminders, motivational messages and mental status check-in questions. A lack of response to a check-in question or a response indicating a crisis initiated follow-up by the Suicide Prevention Coordinator. Three participants discontinued from the program, despite interest, due to financial difficulties (primarily the cost of adding text-messaging to an existing cell-phone plan). Eight participants completed the program. In August, exit interviews were conducted with each of the participants. Responses were overwhelmingly positive and participants reported receiving individual benefits associated with their motivational messages and the sense of connectedness that frequent check-in questions gave to them. *Briefly stated, this text-messaging intervention enabled effective triage, improved clinical outreach, provided accurate charting, and reduced clinical workload.*

Introduction

Medical Center Profile

Acknowledgments. The authors wish to thank Greg Gola, Assistant to the Head, Department of Mental Health, and George Lutz, Acting Director of Psychology at the Cpt. James A. Lovell Federal Health Care Center for their support and interest in this program. We are also grateful to Howard Rosen, the CEO of the LifeWIRE Corporation, for providing software and technological support throughout the use of the intervention.

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Organization. The Captain James A. Lovell Federal Health Care Center (FHCC) is a first-of-its-kind partnership between the U. S. Department of Veterans Affairs and the Department of Defense (DoD), integrating all medical care into a fully-integrated federal health care facility with a single combined VA and Navy mission. Located in North Chicago, Illinois, the Lovell FHCC was established on Oct. 1, 2010. The arrangement incorporates facilities, services and resources from the former North Chicago VA Medical Center (VAMC) and the former Naval Health Clinic Great Lakes (NHCGL). A combined mission of the health care center means active duty military, their family members, military retirees and veterans are all cared for at the facility. The health care center ensures that nearly 40,000 Navy recruits who transition through Naval Station Great Lakes each year are medically ready. Nearly 67,000 eligible military and retiree beneficiaries are cared for each year, and veterans throughout Northern Illinois and Southern Wisconsin receive first-rate care here.

Process

Prior to beginning the text-messaging program a Focus Group was conducted with six veterans of both sexes ranging from 27 to 60 years of age. They were told about the availability of a text-messaging service[1] that could deliver a personalized schedule of appointment reminders, motivational messages, check-in questions, and rescue options. The collective, expressed interest of the Focus Group, provided momentum to initiate the Pilot Program.

The only qualification for participating in this program was being a veteran receiving care at the Lovell FHCC, at high risk for suicide, and having a cell phone capable of text-messaging. The group size was limited to fifteen veterans. The participating individuals represented a broad spectrum of psychiatric diagnoses, substance abuse issues, characteristics and life styles. They ranged in age between 22 and 51. There was 1 female participant, 3 OIF/OEF/OND veterans, 1 post-Vietnam veteran and the remaining 9 participants served between conflicts. Four of the fourteen veterans enrolled, dropped out of the program due to differing levels of competency in their ability to answer the initial invitation text message correctly or changed services without informing the program coordinators. Although all the participants were located in the North Chicago catchment area, during the course of the program 3 participants transferred to other VAs within the VISN and another moved outside the state and began receiving services at another VA.

Individuals selected for the text messaging intervention, only some of whom were in the Focus Group, were provided verbal and written explanations of the program, and informed consent was obtained before proceeding. Each veteran created a user name to maintain confidentiality across electronic communications, and then discussed with one of the program coordinators the types and frequency of messages which they would like to receive. The range of messages available included appointment reminders, medication reminders and motivational/ inspirational messages. These messages were created collaboratively and entered into a web-based, encrypted, secure server that automatically sent the text messages according to the desired schedule. The system had considerable flexibility and messages could be pre-scheduled according to desired frequency. In addition the following check-in question was sent to all participants several times a week: How do you rate your mood right now on a scale of 1 to 5? (1 = Great; 2 = Good; 3 = Ok; 4 = Fair; and 5 = Poorly.)

[1] **Software**. The LifeWIRE text-messaging service is a web-based mobile health and behavior management tool. Although there are a number of web-based text-messaging programs available (e.g. Mosio, Simplified Alerts, EZTexting, etc.), LifeWIRE is one of the few that allows individual text message responses to alert clinicians. As a result, providers and case managers can customize text-messaging to engage users in improving their health or other important health goals. Additionally, LifeWIRE is a HIPAA- and HITECH-compliant software.

A unique feature of this system was that check-in questions which were not answered within 3 hours, or to which the veteran responded with a 4 or 5 (i.e., the veteran was doing only fairly or poorly), triggered an automatic alert. If they failed to respond, the SPC was alerted and the availability of a preapproved social network that could be developed by the participant would also have been alerted by an email/ text message stating, "[User name] has not responded to the check-in message. Please contact [user name] as soon as possible." Similarly, if the veteran responded in a way indicating distress (i.e. sent a "4" or "5"), an alert was sent to the SPC and, if developed, a preapproved social network via email/ text message with a generic message stating, "[User name] has responded below the desired threshold. Please contact [user name] as soon as possible." These alerts could have also been sent to the SPC's cell phone. However, since the SPC's VA cell phone did not have an associated text-messaging plan, this was not explored. As previously indicated, there was the availability to develop a preapproved social network and it was intended that these alerts would also be sent to the preapproved social support network of the veterans who were participating in the program. However, this was not done for reasons discussed below in, "Opportunities for Improvement."

The text-messaging intervention also allowed the SPC to access at his convenience a web-based dashboard organized by user name. The program highlighted in red for easy identification any user who had unanswered check-in questions or text messages that failed to be received. The dashboard also provided details of each veteran's usage. Individuals with authority to access the encrypted system could read each veteran's date- and time-stamped responses to the check-in questions and could also monitor the preprogrammed messages that the veteran was receiving. Through the web-based dashboard, program administrators, including the SPC, could update appointment reminders and modify motivational messages as needed for the entire group. Lastly, the SPC was also able to use this dashboard to send group messages, either to the entire group or to a selected subset of veterans. The SPC often made use of this prior to the weekend, reminding veterans of their coping skills and of resources available to them.

The of use text messaging as an intervention for all the veterans was between one and three months. Four veterans, although expressing interest at the outset, failed to enroll in the program after leaving the office, and three individuals were forced to quit: one ran out of minutes and had no income at the time to replenish his cell phone account; another changed cell phone providers and phone number; and the third had unusual technical difficulties with his cell phone that prevented him from responding to check-in questions.

Participants' Reactions

In general the reaction by participants was overwhelmingly positive. Everyone felt that the program was helpful in some manner and spoke in different ways about how the program provided them benefit. Concerning the motivational messages, participants commented: "It felt like someone was there encouraging me"; "They came at needed times"; "On days I didn't get (i.e. wasn't scheduled to receive) a motivational message I

went back and scrolled down to past messages for support." One veteran said that he relied on the messages for support at specific times in the day and that this helped him improve his coping abilities. Several participants said that receiving the motivational messages helped them in general to feel supported and reduced feelings of loneliness and alienation. Two of the participants expressed appreciation for the medication reminders and one was especially grateful for appointment reminders. (Not all participants opted to receive appointment or medication reminders.)

When participants were asked to suggest improvements concerning the motivational messages, the responses varied. One individual added that he would have liked the motivational messages to have been changed more frequently (which had been done with other veterans who requested this during the program) and to include Bible quotes (which some had in fact received). Another thought that the times at which the motivational messages were sent should have been varied more frequently, which would also have been possible.

As mentioned earlier, not every participant requested to have appointment reminders and medication reminders as a part of their program. Those that did use this service found it very useful while a few that did not use this service conveyed regret for not taking advantage of this addition.

Participants were also asked how they felt about the warning messages that they received if they answered below a threshold or failed to answer (e.g. "You have responded below the desired threshold, your SPC will contact you soon"). For the most part, veterans were happy with the system. However, one veteran stated that he thought that the warnings were annoying and that he did not always want to answer his check-in question within the three-hour time frame. In contrast, others responded favorably. One participant stated that he felt reassured when notified that he would be contacted soon. During an occasion when this particular veteran was experiencing distress, the text-messaging system communicated this quickly and effectively to the SPC. After being notified, the SPC called this veteran and provided him an opportunity to talk and work through a difficult time. Another individual stated that the warnings made him feel that someone really cared about him and so he felt supported. Yet another veteran indicated that the warnings made him feel as if he had a safety net.

Prior to applying the text messaging intervention, it was decided that the check-in question would be the only mandatory aspect of the program. Not every participant wanted to receive the check-in question. Some felt it would be annoying. However, in asking each participant how they viewed the check-in question in retrospect, every participant replied in a very similar fashion. Each stated that receiving the check-in question caused them to reflect on how they were really doing in that particular moment. Additional comments included: "I had to stop and really think about how I felt which I have never done before," and, "Once I realized where I was on the scale I used coping strategies to help myself either improve my mood or to maintain it," and, "It forced me to be honest with myself and with you (i.e. the SPC)." Other comments indicated that some of the participants found themselves more willing to respond honestly because they felt

supported. They said that in previous settings, they worried no one would respond or would respond in an unhelpful way, if they asked for help. Consequently, the fear of getting no response, or an unhelpful response, caused some of them to repress any admission of distress.

When asked what they liked least about the program the majority commented that they did not like that it ended. In a similar vein, others stated that there was nothing that they did not like.

Participants were asked if they could make any changes in the program what would they suggest. As indicated above, the majority indicated that it should be longer or should not end or be available to more veterans. Other comments included: allowing a person to respond using their own words for the check-in question; having the SPC send random motivational messages; and having the SPC use texting as a means to communicate and check-in with participants randomly during the day.

Opportunities for Improvement

The use of a text-messaging service required that every phone first accept an "invitation" to use the service. Not everyone invited responded to this message, which caused some delays and resulted in four veterans failing to complete their enrollment in the program. In the future, after consent is obtained, it is recommended to send the initial "invitation" to the veteran while he is still physically present in the room in order to troubleshoot any possible issues with text-messaging that may occur.

Not every individual who received the intervention had unlimited text-messaging capability and those on a pay-as-you-go plan or with fixed minutes ran into problems once they started receiving messages, which had the potential of using their balance quickly. Some were uncertain about the details of their cell phone plan and whether it included text-messaging and how much (e.g. a 250 or 500 text-message bundle as opposed to unlimited text-messaging). At the end of the program, it was discovered that there is now the possibility for the texting to and from a particular server to be covered under separate charges that would eliminate the need to pay for general text-messaging plans. This would allow participants to receive and respond to text messages without an added personal cost or a drain on their own budgeted text-messaging plan.

Often participants requested to be given motivational statements and had difficulty designing their own. It would be prudent to have an extensive list handy when designing an individual's program. It was also suggested by several participants to rotate and alter the times motivational messages were sent and received. Although this possibility was mentioned at the outset, their reactions suggest that they may have needed periodic reminders that they could change aspects of the text-messaging that were no longer as useful to them, and to actively solicit their input throughout the program.

The population targeted with this program was veterans at high risk for suicide. Accordingly, before each weekend the SPC sent a message reminding them to make use

of their resources and their Safety Plan in the event they started to feel unsafe. An additional improvement would be the explicit incorporation of key aspects of an individual's Safety Plan into their designed message program, or even sending their entire Safety Plan, so that it could be saved on their phone and be readily accessible.

As mentioned earlier, the SPC was notified whenever a veteran failed to respond or responded poorly to the check-in question. At the outset of the program, it was intended also to notify individuals from the veteran's support group, in addition to the SPC, so that the veterans could be surrounded by a network of care. This type of intervention had proven to be a valuable component of a program for veterans with PTSD, which had been conducted previously at another site. The unfortunate reality of veterans at high risk for suicide was that at most they named one individual who could serve as support while others had no one. Those that did name at least one individual did not follow-up with that individual by providing the needed information on how to respond to the invitation message or about the program itself. Although requiring participants to have social support contacts may not be feasible in the beginning, the inclusion of additional providers and the development of a social network should be considered during the program development.

A final lesson learned is that this texting program is not superior to face-to-face contact and assessment but is only a valuable complement to such existing programs. As an adjunct, and possibly the only means to achieve regular contact with difficult or noncompliant patients then a texting service rises to the top. Otherwise, the high risk, non-compliant, veteran is left alone with his resources, whether he chooses to utilize them or not.

Clinical Assessment and Conclusion

Briefly stated this text-messaging intervention enabled effective triage, improved clinical outreach, provided accurate charting, and reduced workload. Notifications about an individual either not responding or responding poorly to check-in questions, enabled the SPC to rapidly respond to stressful events before they escalated into a crisis. Prior to the use of this intervention it was not feasible to have daily contact with high-risk veterans nor be able to intervene in real time with the potential of smoothing over a rough patch, divert a crisis and avoid hospitalization. Also noteworthy is that even though individuals in the program were not responding to scheduled outpatient appointments, telephone calls, health-and-wellness checks, or outreach letters, they did respond to their text messages and check-in questions. This gave the SPC a sense of their mental status and well being. As mentioned earlier, three participants were receiving follow-up care at two other VA's in the region and another moved to Idaho suggesting that this tool may be even more valuable for maintaining contact with individuals that live in rural or outlying areas.

The ability to send a text message to an individual, a small group, or all participants was another valuable time saver. At the end of each week, the SPC sent a message reminding them to make use of their Safety Plan, the Veterans Crisis Hotline number, the ED or to

call 911 if needed during the weekend when the SPC was unavailable. Also, a review of an individual's log could provide valuable information regarding the times of the day or week that they found the most difficult to manage and allowed the program developers to adjust when to send motivational messages. Each individual had a recorded log of all their responses to their check-in questions which allowed mapping of their mood and an opportunity to make a personal contact with them when they responded lower to a check-in question than they did previously. The use of the dashboard to monitor a number of individuals at a glance was time efficient.

The cell phone text-messaging log, which was accessed through the dashboard on the web, enabled the SPC to review and monitor what messages were sent, when they were sent, and whether the messages were sent successfully. Patients who tend to be less compliant with scheduled appointments are traditionally difficult to engage in treatment, and providers frequently end up waiting for these individuals to contact them. Such a veteran is easily overlooked and forgotten. The text-messaging intervention sent messages to the veteran without forcing him to engage any longer than he wished. Receiving a text message is less intrusive than receiving a phone call. A received text message can be left until an individual feels comfortable in responding or can respond without having to engage in a lengthy conversation which may feel intrusive or not be convenient. Most of the individuals that received the intervention seemed to be more comfortable in text-messaging than being kept on the phone for any length of time being questioned about their mental status. Another added advantage to the use of a text-messaging program is the ability to tailor and adjust a program for each individual. Designing the message schedule in collaboration with the participants appeared to increase their investment in healing and sense of self-efficacy. They appreciated being able to receive any message at any time which in turn increased their sense of being supported as well as their engagement with positive coping skills. Also, the built-in log of this particular software always reflected the efforts placed in attempting to contact veterans, whereas current documentation in CPRS is not always reflective of the efforts made to get in touch with a veteran.

Another advantage of this text-messaging intervention is that it can reach any mobile phone user and does not require designing separate mobile applications for different smart phone operating systems (e.g. the Apple OS, Android OS, or Blackberry OS) and does not need updating when OS systems are upgraded from one version to another. According to the Nielsen 2010 Media Industry Fact Sheet there are over 223 million U.S. mobile phone users over the age of 13, but only 18 percent of mobile devices in the US are smart phones. Although some veterans carry smart phones, almost all carry cell phones with text-messaging capability and rarely go anywhere without their phones.

After monitoring and managing text messaging as an intervention, it is clear that this tool for providing added support, managing and monitoring individuals at risk for suicide is capable of providing the same benefits to any individual with any issue requiring additional support. It is clear that this is a valuable supplemental resource to providing a supportive link to individuals outside of a clinical setting. In conclusion, making use of text-messaging as an adjunct to following veterans identified at high risk for suicide

should be given serious consideration for further study as a potential standard of care as it adds one more mechanism for following and making contact with this population.