Evaluation of the impact of a personalized postdonation short messaging service on the retention of whole blood donors

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BACKGROUND: Short messaging service (SMS) is routinely used by blood collection agencies to remind donors about appointments but has been applied less frequently in interventions to increase return behavior. This study aimed to investigate whether receipt of a personalized postdonation SMS promoted donor retention.

STUDY DESIGN AND METHODS: A postdonation SMS was sent to 2605 whole blood donors who had donated at one of six donor centers in Australia from April to July 2015 and left without making a forward appointment. Once their donation was dispatched to a hospital or facility an SMS was sent informing the donor of the hospital or town to which their blood was dispatched. Donor's return behavior over 12 months was examined, comparing with a control group of donors who donated at the same donor centers but did not receive an SMS.

RESULTS: Donors who received the SMS had increased odds of returning to donate within 12 months, with 70.3% of these donors returning (adjusted odds ratio, 1.49; 95% confidence interval, 1.30-1.71), compared with 62.6% of donors who did not receive the SMS. The SMS was effective in retaining first-time, novice, and established donors at 12 months, but had no effect on experienced donors. The timing of the receipt of the SMS postdonation had no impact on donor retention.

CONCLUSION: This study highlights the potential of utilizing a postdonation SMS that informs donors where their blood has been dispatched as a cost-effective tool to increase retention, particularly among new donors, who are traditionally more difficult to retain.

Globally, among blood collection agencies that operate in a voluntary nonremunerated setting, the recruitment and retention of blood donors presents ongoing challenges for the provision of a sustainable supply of blood and blood products.[1] Retained blood donors offer many advantages to blood collection agencies over newly recruited donors. Specifically, they are more cost-effective to retain, due to the costs associated with marketing acquisition, health status testing, and blood typing new donors.[1] Long-term donors also tend to have healthier lifestyles, carry less risk of infectious disease than new donors,[2] and offer a safer supply of blood that has already undergone testing.[3] In addition, maintaining a panel of dedicated long-term donors helps with the forecasting and management of blood supply.[4,5] However, despite the benefits, donor retention is typically suboptimal. Australian figures extracted in December 2015 indicated that only 46.2% of first-time whole blood (WB) donors returned to donate within

ABBREVIATIONS: aOR = adjusted odds ratio; SMS = short messaging service; WB = whole blood.

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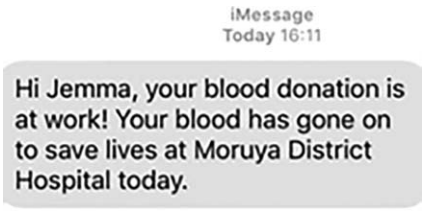

Fig. 1. Example of a postdonation SMS message.

6 months, 57.8% returned within 1 year, and 63.4% returned within 2 years.

While the importance of donor retention is recognized, and there is a growing literature on factors associated with donors returning to donate (see reviews by Bagot et al.,[6] Bednall et al.,[7] and Ferguson[8]) further evidence of effective interventions to facilitate donor return is required. Godin and colleagues[9] reviewed interventions that promote blood donation (including interventions to recruit as well as retain donors) and found support for motivational interventions and reminders. However, in their review of studies examining the retention of first-time donors in particular, Bagot and colleagues[6] did not observe a strong effect of reminder interventions on the retention. Regarding first-time donor retention, the authors concluded that "although predictor studies are identifying effective areas to target, translating them into effective interventions is yet to occur."[6] In the broader review by Godin and coworkers,[9] most included studies that recruited college student samples, limiting generalizability to the broader blood donor population. Moreover, interventions tended to employ traditional modes of delivery, notably telephone, face to face, or mailed paper materials. This literature contrasts with the increasing use of newer technologies by blood collection agencies, such as e-mails, mobile phone short messaging service (SMS), and social media.[9]

There is reason to consider newer technologies in promoting blood donation, including their potential cost-effectiveness.[10] A recent review reported that interventions delivered by SMS have been effective for a variety of health behaviors, such as increasing physical activity, promoting weight loss, ceasing smoking, and self-managing diabetes.[11] SMS has been identified as a useful vehicle for intervention delivery because it transcends geographical, cultural, and socioeconomic disparity.[12] In Australia, 84% of adults reported owning or having access to a smartphone in 2016[13] and on average, Australian users check their smartphone more than 30 times per day.[14]

SMS is routinely used by blood collection agencies worldwide, to remind donors about appointments and to provide further information (e.g., updates on blood inventory levels, pre- and postdonation maintenance),[15,16] but this technology has been applied less frequently in blood donation interventions. The "Blodcentralen" blood service in Stockholm, Sweden, launched a novel program in 2012, sending donors an SMS thanking them when they had donated blood and an additional SMS when a patient received their blood. Following positive feedback from donors, this program has since been implemented by other blood services across Sweden.[17]

In 2015, the marketing department of the Australian Red Cross Blood Service (the Blood Service) trialled sending a personalized postdonation SMS message to WB donors in Australia who left the donor center without making a forward appointment. The goal of this intervention was to promote retention among donors who were considered less likely to return than those who had made a forward booking. Unlike traditional campaigns that invite donors to make another booking, the SMS instead informed the donor that his or her blood donation was already being used and named the hospital (or town) to which their donation had been sent. The message did not invite donors to make another booking, but merely informed donors that their blood was in use. The aim of this study was to investigate whether receipt of the postdonation SMS had a positive impact on the proportion of donors who return to donate over the following 12 months and whether the impact varied for donors according to sex, age, and prior donation experience. Also of interest was whether receipt of the SMS facilitated quicker return and the ideal time point in which to send the SMS after the donation.

MATERIALS AND METHODS

A postdonation SMS was sent to donors who donated WB at one of six donor centers in New South Wales, Australia, between April 16 and July 17, 2015. Donors were included in the trial if they had successfully donated WB and had left the donor center without making a forward appointment. Once their donation was dispatched to a hospital or facility, the following SMS was sent:

Hi <*donor firstname*>, your blood donation is already at work! Your blood has gone on to save lives at <*hospital*> today.

An example is depicted in Fig. 1. Where the hospital could not be identified because the facility serviced a number of hospitals, an alternative SMS was sent:

Hi <*donor firstname*>, your blood donation is already at work! Your blood has gone on to save lives at a hospital in <*town*> today.

The SMS was delivered to donors between 1 and 41 days after donating (mean, 8 days; standard deviation [SD], 4.2), in line with the Australian fresh WB expiration period of 42 days.

Sample

In total, 3090 postdonation SMS messages were sent during the study period. Blood Service data were extracted to determine donors' return donation behavior over the subsequent 6- and 12-month periods. Of the 3090 messages sent, 42 donors received a duplicate message either on the same day or a day later. In addition, as the study period was greater than the interdonation interval (84 days in Australia), donors recruited at the beginning of the study period became eligible to donate again within the duration of the study. As these donors received an additional text (n = 10), only return behavior as a result of the first SMS was included for analysis. An additional 43 donors were removed as they donated autologous or therapeutic blood (i.e., donated for themselves due to a rare blood type or hemochromatosis). Finally, an additional 348 donors were removed from the SMS group as they were aged under 18 years The Blood Service has an age restriction policy on donors under the age of 18, who at the time the study was undertaken could only donate once during a 12-month period. A total of 2647 donors were used in our analysis.

A pseudo control group of donors (n = 2254) was extracted to compare against the SMS group. This control group consisted of all donors who had donated at the same six donor centers during the trial period and meet all the criteria to receive the SMS but did not receive one. Of these 2254 donors, 237 donors were removed from the control group as they did not give a full donation (sample only) or else gave an autologous donation or a therapeutic donation. Donors with a missing blood type (at time of data extraction) were removed (n = 19) and an additional 202 donors were removed from the control group as they were aged under 18 years. A total of 1796 donors were assigned to the control group. Both the SMS group and the control group continued to receive post-donation communication as per usual business practice, which may have included e-mails, phone contact, and public appeals to encourage them to return to donate.

Measures

Routinely collected Blood Service data were extracted for donors in both the SMS and the control groups to determine their return donation behavior over the subsequent 6- and 12-month periods. Demographic and donation variables collected included date of donation, number of prior donations, date of receipt of SMS (if applicable), date of next donation, blood type, sex, age, whether they experienced an adverse event at their last donation, and whether they had donated at a static or mobile donor site. A variable denoting "WB donor status" was created by collapsing the number of prior WB donations into four categories: "new donor" (no prior WB donations), "novice donor" (one to four prior WB donations), "established donor" (five to 10 prior WB donations), and "experienced donor" (11 or more prior WB donations). Dichotomous variables were computed to indicate whether donors had returned to donate within 6 months (182 days) and within 12 months (365 days) of their last donation.

The method used to calculate time to return to donate was based on the approach developed by James and Matthews,[18,19] based on the donation cycle. Donors were included if they returned to give either a WB or an apheresis donation. In Australia, donation intervals recommend a donor wait 84 days (12 weeks) between WB donations and 28 days between WB and apheresis donations, to ensure adequate iron restoration and reduce the chances of iron deficiency.[20,21] Time to return was calculated using the method described in Gemelli and colleagues.[22]

Statistical analyses

Statistical analyses were performed using statistical software (R, R Core Team, 2017, "R: A language and environment for statistical computing," R Foundation for Statistical Computing, http://www.R-project.org/). Demographic and socioeconomic characteristics were described by means (±SD) for continuous variables and by totals (percentages) for categorical variables. Univariate differences were examined for the two identified groups (SMS and control) and the SMS interval on return at 6 and 12 months using t test, one-way analysis of variance (ANOVA), and chi-square goodness-of-fit test. Multivariate logistic regression analyses were used to assess the association of covariates and donor return behavior. Our primary model estimate of interest was the adjusted odds ratio (aOR) for SMS recipients versus no-SMS (main effects). Models were adjusted for age, sex, blood type, WB donor status, adverse event during previous donation, and collection site (mobile or fixed location), all of which impact on return rates. We tested for any interactions between age, sex, WB donor status, and SMS-recipient status to evaluate any moderated effects. Univariate survival analysis was performed to look at the fit of the experimental groups on time to return through Kaplan-Meier survival curves and log-rank tests. Significance was defined at the alpha 0.05 level, and a likelihood ratio test was used to evaluate the statistical significance of the intervention.

RESULTS

Characteristics of the sample according to intervention condition are presented in Table 1. There was an almost equal representation of males and females in the SMS group (53% male) and the control group (54% male). The distribution of blood types across both conditions was

TABLE 1. Characteristics of sample*

Characteristics	SMS group (n = 2605)	Control group (n = 1796)	p value
Sex			
Male	1384 (53)	972 (54)	
Female	1221 (47)	824 (46)	
Blood group			
O+	1077 (41)	748 (42)	
O–	340 (13)	221 (12)	
A+	718 (28)	486 (27)	
A–	186 (7)	127 (7)	
B+	204 (8)	140 (8)	
B–	31 (1)	29 (2)	
AB+	35 (1)	41 (2)	
AB–	14 (<1)	4 (<1)	
Age (years)	38.9 ± 15.2	40.0 ± 15.9	†
Age group (years)			
18-29	959 (37)	572 (32)	‡
30-39	470 (18)	336 (19)	
40-49	425 (16)	298 (17)	
50-59	443 (17)	295 (16)	
60+	308 (12)	295 (16)	
Collection site			
Static	2326 (89)	1610 (90)	
Mobile	287 (11)	186 (10)	
Experienced an adverse event on last donation			
No	2544 (98)	1712 (95)	‡
Yes	61 (2)	84 (5)	
Prior donations	9.4 ± 10.9	9.9 ± 12.1	
WB donor status			
First-time (no prior WB donations)	415 (16)	331 (18)	
Novice (one to four prior WB donations)	774 (30)	533 (30)	
Established (five to 10 prior WB donations)	601 (23)	372 (21)	
Experienced (11 or more prior WB donations)	815 (31)	560 (31)	

* Data are reported as number (%) or mean ± SD.
† $p < 0.001$ independent group t-test.
‡ $p < 0.001$ chi-square test of significance.

representative of the wider Australian donor population, and a low proportion of donor adverse events was recorded (2%, SMS; 5%, control). There was a significant difference in adverse event rates between the control and SMS group when tested using a chi-square goodness-of-fit test ($p < 0.0001$). Donors in the SMS group were younger on average (38.9 ± 15.2 years) than those in the control group (40.0 ± 15.9 years, $p < 0.001$); however, the overall age distribution was similar. WB donor status was similar for the two groups, with a smaller number who had donated for the first time receiving an SMS (16% SMS; 18% control).

Impact of receipt of SMS on donation return

Analyses were conducted to determine if receipt of an SMS increased retention at 6 and 12 months, controlling for age, sex, blood type, experiencing an adverse event, prior WB donation count, and the type of donation site. The aORs from the multivariate logistic regressions are reported in Table 2 (return at 6 months) and Table 3 (return at 12 months). The receipt of an SMS was associated with increased odds of returning to donate within 6 months, with the association being significant ($p < 0.0001$) in the bivariate model and having a moderate effect size in the multivariable model ($p < 0.0001$). The odds of returning to donate within the 6-month period were increased by 29% for donors who received the SMS (aOR, 1.29; 95% CI, 1.14-1.46). Similar findings were observed at 12 months, with the association being significant ($p < 0.0001$) in the bivariate and multivariate models. The odds of returning to donate within a 12-month period were increased by 49% for donors who received the SMS (aOR, 1.49; 95% CI, 1.30-1.71).

Interaction between WB donor status, age, sex, and receipt of SMS on donation return

An interaction examining WB donor status indicated that receiving the SMS increased the odds of returning to donate for donors who are less experienced with blood donation (i.e., previously made 0-10 donations; $p = 0.05$ and $p = 0.02$ for 6- and 12-month retention, respectively; Tables 2 and 3). The largest change observed in the odds of returning to donate was for new donors who received the SMS. Here, we note an increase in the 6 months odds of returning by 73% (95% CI, 1.25-2.44) compared with new donors who did

TABLE 2. Odds of returning to donate within 6 months

Variable	6-month retention rate (%)	Model 1 (univariate)*		Model 2 (multivariable)†	
Main effect					
Receipt of SMS					
No SMS	44.9	1.00	(Reference)	1.00	(Reference)
Received SMS	50.3	1.24	(1.10-1.40)	1.29	(1.14-1.46)
Interactions					
Receipt of SMS and sex		(Overall interaction p = 0.4448)		(Overall interaction p = 0.7012)	
Female					
No SMS	39.4	1.00	(Reference)	1.00	(Reference)
Received SMS	44.7	1.24	(1.04-1.49)	1.23	(1.02-1.48)
Male					
No SMS	49.5	1.00	(Reference)	1.00	(Reference)
Received SMS	55.3	1.26	(1.07-1.49)	1.29	(1.09-1.54)
Receipt of SMS and age		(Overall interaction p = 0.0786)		(Overall interaction p = 0.2233)	
18-29 years					
No SMS	35.7	1.00	(Reference)	1.00	(Reference)
Received SMS	41.2	1.26	(1.02-1.56)	1.17	(0.94-1.47)
30-39 years					
No SMS	36.6	1.00	(Reference)	1.00	(Reference)
Received SMS	48.1	1.60	(1.20-2.13)	1.51	(1.12-2.04)
40-49 years					
No SMS	47.3	1.00	(Reference)	1.00	(Reference)
Received SMS	54.1	1.31	(0.98-1.77)	1.29	(0.95-1.74)
50-59 years					
No SMS	53.6	1.00	(Reference)	1.00	(Reference)
Received SMS	63.4	1.50	(1.11-2.03)	1.51	(1.11-2.05)
60+ years					
No SMS	61.0	1.00	(Reference)	1.00	(Reference)
Received SMS	58.1	0.89	(0.64-1.23)	0.95	(0.67-1.33)
Receipt of SMS and WB donor status		(Overall interaction p < 0.0001)		(Overall interaction p = 0.0498)	
New donor					
No SMS	29.3	1.00	(Reference)	1.00	(Reference)
Received SMS	40.5	1.64	(1.21-2.23)	1.73	(1.25-2.40)
Novice donor					
No SMS	37.9	1.00	(Reference)	1.00	(Reference)
Received SMS	43.9	1.28	(1.02-1.61)	1.33	(1.05-1.69)
Established donor					
No SMS	43.0	1.00	(Reference)	1.00	(Reference)
Received SMS	50.1	1.32	(1.02-1.72)	1.34	(1.03-1.74)
Experienced donor					
No SMS	62.0	1.00	(Reference)	1.00	(Reference)
Received SMS	61.6	0.98	(0.79-1.23)	0.97	(0.77-1.22)

* Data are reported as OR (95% CI).
† Data are reported as aOR (95% CI), adjusted for age, sex, ABO blood type, donor adverse event, prior WB donations, and donor center type.

not receive the SMS. Interactions were performed, examining differences across age and sex and receipt of the SMS on donor return at 6 and 12 months, with no significant variation observed.

Impact of receipt of SMS on time to return

Kaplan-Meier survival curves were used to investigate time to return at over 12 months, comparing the control and SMS conditions, with the Kaplan-Meier at 12 months included in Fig. 2. The log-rank test showed significant differences between the SMS and control groups ($\chi^2(1) = 32.06$, $p < 0.0001$). Donors who received a postdonation SMS returned to donate sooner than donors who did not receive the SMS (mean, 215 days for SMS and 229 days in the control).

Impact of timing of SMS on donor return

A one-way ANOVA was conducted to determine whether the interval period (in days) between donating and receiving the SMS had any impact on donor return behavior. There was no significant difference in the interval period between donors who returned and donors who did not return ($F(1.2603) = 1.02$, $p = 0.3119$), suggesting that the day on which the SMS was sent had no impact on return.

DISCUSSION

This study is the first to our knowledge to report on the impact of sending a postdonation SMS to inform donors of the hospital or town to which their donation was dispatched on donor retention. Although media reports have

TABLE 3. Odds of returning to donate within 12 months

Variable	12-month retention rate (%)	Model 1 (univariate)*		Model 2 (multivariable)†	
Main effect					
Receipt of SMS					
No SMS	62.6	1.00	(Reference)	1.00	(Reference)
Received SMS	70.3	1.42	(1.25-1.61)	1.49	(1.30-1.71)
Interactions					
Receipt of SMS and Sex		(Overall interaction p = 0.4448)		(Overall interaction p = 0.5039)	
Female					
No SMS	56.2	1.00	(Reference)	1.00	(Reference)
Received SMS	64.2	1.40	(1.17-1.68)	1.41	(1.16-1.700)
Male					
No SMS	68.0	1.00	(Reference)	1.00	(Reference)
Received SMS	75.7	1.47	(1.22-1.76)	1.54	(1.27-1.87)
Receipt of SMS and Age		(Overall interaction p = 0.2736)		(Overall interaction p = 0.3583)	
18-29 years					
No SMS	50.7	1.00	(Reference)	1.00	(Reference)
Received SMS	60.6	1.49	(1.21-1.84)	1.40	(1.13-1.75)
30-39 years					
No SMS	50.9	1.00	(Reference)	1.00	(Reference)
Received SMS	67.5	2.00	(1.50-2.67)	1.84	(1.36-2.50)
40-49 years					
No SMS	68.1	1.00	(Reference)	1.00	(Reference)
Received SMS	73.9	1.32	(0.96-1.83)	1.29	(0.92-1.82)
50-59 years					
No SMS	74.9	1.00	(Reference)	1.00	(Reference)
Received SMS	81.5	1.47	(1.03-2.10)	1.43	(0.99-2.07)
60+ years					
No SMS	81.0	1.00	(Reference)	1.00	(Reference)
Received SMS	84.1	1.24	(0.81-1.89)	1.33	(0.85-2.09)
Receipt of SMS and WB donor status		(Overall interaction p < 0.0001)		(Overall interaction p = 0.0237)	
New donor					
No SMS	43.2	1.00	(Reference)	1.00	(Reference)
Received SMS	55.9	1.67	(1.24-2.23)	1.71	(1.26-2.34)
Novice donor					
No SMS	52.5	1.00	(Reference)	1.00	(Reference)
Received SMS	63.2	1.55	(1.24-1.94)	1.63	(1.29-2.07)
Established donor					
No SMS	62.6	1.00	(Reference)	1.00	(Reference)
Received SMS	72.9	1.60	(1.22-2.11)	1.60	(1.21-2.12)
Experienced donor					
No SMS	83.6	1.00	(Reference)	1.00	(Reference)
Received SMS	82.6	0.93	(0.70-1.24)	0.94	(0.70-1.27)

* Data are reported as OR (95% CI).
† Data are reported as aOR (95% CI), adjusted for age, sex, ABO blood type, donor adverse event, prior WB donations, and donor center type.

indicated a positive public response toward these SMS messages being sent to blood donors in Sweden,[17] there appears to be no published evaluation of the impact of these kinds of interventions in the scientific literature. Our findings indicated that a postdonation SMS increased the proportion of donors who returned to donate within 6 and 12 months, compared with a control group and facilitated quicker return. Thus, this study highlights the potential of SMS as an inexpensive, broad-reaching tool for retention of blood donors.

It is encouraging to note that the SMS intervention was equally effective for male and female donors and for donors in all age groups. However, donors' response to the SMS varied with their level of donation experience. The SMS was effective for first-time donors, as well as donors who had made fewer than 10 donations. More experienced donors did not demonstrate improved return on receiving an SMS. It is important to note that more than 80% of experienced donors returned to donate, regardless of whether or not they received an SMS. Thus, these donors were already highly committed, and it may be the case that interventions designed to influence future donation behavior will have limited effect with this group. However, the identification of a tool to enhance the retention of new donors is heartening, given the challenges faced by blood collection agencies in encouraging these donors to return to make a repeat donation, and the absence of clear evidence in the literature of effective

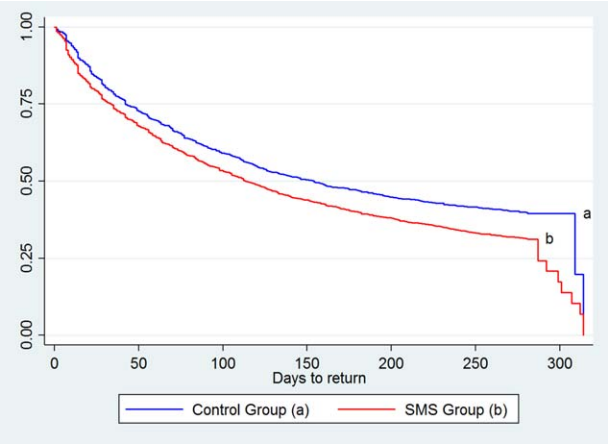

Fig. 2. Time to return comparing donors who received the SMS and the control group. [Color figure can be viewed at wileyonlinelibrary.com]

interventions for new donors.[6] As well as being more likely to return to donate, this study indicated that donors returned more quickly to donate after receipt of the SMS. This is an important finding, given indications in the literature that WB donation frequency within the first 18 months is associated with longer-term retention;[23-25] thus, a quicker return of new donors may result in a more stable donor panel.

There are several limitations with this study, most notably with the use of a retrospective, matched cohort design. The pseudo control group was matched on several factors, and analyses controlled for key factors known to be associated with donor return (e.g., age, donation experience, blood group, donor adverse event during last donation). However, prospective, randomized controlled trials are required to replicate these preliminary findings. Such trials may investigate the mechanisms underpinning this intervention, which have not yet been explored. There are several possible interpretations of why this SMS intervention improved donor retention. For example, the SMS may serve as a reminder to the donor to make another appointment. Another possibility is that receipt of the SMS reprimes the "warm glow" (i.e., feeling better about oneself) felt by the donor after the donation, which is known to be a key motivator for returning to donate.[18] Upon receiving the SMS, donors may recall those positive feelings, increasing their desire to repeat the experience.

The SMS may serve to increase motivation through explicit acknowledgment or recognition of the donation act. There is an established literature on the motivational effects of expressing gratitude. For example, writing "thank you" on the back of restaurant checks has been shown to increase the size of the tip provided by customers.[26] Within the charitable donation literature, Merchant and colleagues[27] evaluated a thank you note with donors who supported a public television station. This acknowledgment was associated with higher intention to donate again and stronger commitment to the organization, but only among infrequent donors; the intervention had no effect on frequent donors. This concords with the findings of the current study, where the SMS did not impact on the donation behavior of more committed donors. Based on a subsequent experimental study of financial giving to a fictitious nonprofit organization, the authors indicated that donor acknowledgment was associated with increased positive emotions, while negative emotions were observed in donors who did not receive such acknowledgment, with an adverse effect on intention to donate again.[27]

As well as acknowledging the donation, the SMS forwarded to donors in the current study highlighted the need for or the importance of the donation. The SMS provides the donors with clear evidence that their individual donation has been used, in contrast to a more abstract understanding among donors that some benefit will come from their donation. Further, the SMS trialled in this study personalized the destination of the donation, which may be a key component of its success. Previous research has noted the importance of personalizing communications with donors, with Chamla and coworkers[28] reporting that letters to donors including information about their blood type and the percentage of the general population with that blood type were more effective in facilitating donor return than letters with generic information. Trenholm[10] recently advocated for the take up of technologies to offer a service that has a "bespoke or personalized feeling for donors." In this study, information on particular messaging received by individual donors was not available for analysis. However, future studies may compare the effect of naming the specific hospital where the blood was dispatched versus naming the town or general region. It would also be of interest to explore the impact on return behavior of sending the donation to an area in the same town or region as the donor, where potentially the recipient of the blood could be a neighbor or acquaintance versus sending the donation to a geographical area where personal connection is less likely.

After the trial, which received highly positive feedback from donors, the Blood Service implemented the intervention nationally and currently sends a postdonation SMS to most WB donors as part of routine practice. A similar scheme was also introduced by the National Health Service Blood Service in the United Kingdom in 2016.[10] Further research may examine the impact of this approach on national retention data and also investigate whether donors are more likely to keep their next appointment if they receive a postdonation SMS. Of particular interest is the ongoing impact of the intervention as a standard practice. This initial trial increased donor return over

12 months by 49%; however, donors may have responded to the novelty of this approach. The effect of receiving the SMS again at subsequent donations is currently under investigation by the authors. Also of interest is the impact of a postdonation SMS on donors attending mobile versus fixed donation sites, which account for 27.7% of WB donors and 25.9% of WB donations. Another area worthy of exploration is the broader impact of the postdonation SMS on the recruitment of new donors. The campaigns in Sweden, Australia, and England have generated great interest among donors on social media, as well as in the broader national media outlets. Analyses of changes in the numbers of new donors presenting to donate as a result of this publicity or word of mouth is of interest, and further exploration of this topic may lend itself to social network analysis.

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CONFLICT OF INTEREST

The authors have disclosed no conflicts of interest.

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