Free cholesterol testing as a motivation device in blood donations: evidence from field experiments

Lorenz Goette, Alois Stutzer, Gürcan Yavuzcan, and Beat M. Frey

BACKGROUND: Health tests are often seen as promising donor incentives to improve the supply of blood. However, systematic behavioral evidence on donor recruitment is scarce.

STUDY DESIGN AND METHODS: To study the effectiveness of a free cholesterol test in attracting new donors and motivating previous donors, two field experiments were conducted. In Study 1, 2825 nondonors were randomly assigned to one of three treatments: a solicitation letter, a solicitation letter plus an appeal, or a solicitation letter plus an appeal and the offer of a free cholesterol test. In Study 2, 8269 previous donors were randomly assigned to one of three treatments: a standard invitation, an invitation plus an appeal, or an invitation plus an appeal and a cholesterol test. Marginal effects from probit estimations were calculated to study the effects of the treatments on donors' response.

RESULTS: In Study 1, only 0.6 percent reacted to the solicitation letter. There were no significant differences in the response rates between the three treatments. In Study 2, 45.3 percent of the invited previous donors came to donate. The appeal (marginal effect, –0.5%; standard error [SE], 1.9%) and offering a cholesterol test (marginal effect, 1.6%; SE, 1.8%) did not significantly increase the probability of a donation relative to the standard invitation. The treatment effects for the cholesterol test did not systematically differ between frequent and infrequent donors and female and male donors. There is some evidence that young donors responded relatively most positive to the cholesterol test (marginal effect, 4.4%; SE, 2.2%).

CONCLUSIONS: Contrary to conclusions from survey studies, free cholesterol testing did not significantly increase donations from nondonors and previous donors during a 3-month campaign. The two studies show that field experiments are an important method to evaluate donation incentives, because measuring donors' intentions alone can lead to significantly different conclusions.

The supply of blood relies in many countries on nonremunerated voluntary blood donations. However, a steady tightening of donation criteria and seasonal blood shortages challenge this arrangement. Providing a sufficient amount of blood donations has thus increasingly become an issue of public interest. This situation raises the key question on how to recruit new donors, to reactivate infrequent donors, and to reduce temporary shortfalls of frequent donors. Often, the question is addressed debating a promising solution, that is, the provision of incentives (several recent articles address this issue, including Davey and Richard,[1] Gilcher and McCombs,[2] O'Brien,[3] and Devine et al.[4]). A particularly prominent one is the offering of health tests like free cholesterol testing.[5-7] However, the effectiveness of donation incentives is an open issue both theoretically and empirically.[7] On theoretical grounds, for instance, material incentives might reduce people's prosocial motivation to donate blood so that there is no net increase in donations despite the offering of rewards. Empirically, there is mainly survey evidence on attitudes toward donation incentives and only limited evidence on their behavioral consequences.

In the following section, we lay out the theoretical background of our study. We ask why free cholesterol tests might be or not be an effective motivation device. We also briefly discuss why questionnaire studies on attitudes toward motivation devices can only provide limited information about behavioral consequences. Finally, we

From the Center for Behavioral Economics and Decision Making, Federal Reserve Bank of Boston, Boston, Massachusetts; the Department of Business and Economics, University of Basel, Petersgraben, Basel, Switzerland; and the Blood Transfusion Service SRC, Rütistrasse, Schlieren-Zurich, Switzerland.

Address reprint requests to: Beat M. Frey, Blood Transfusion Service SRC, Rütistrasse 19, CH-8952 Schlieren-Zurich, Switzerland; e-mail: bm.frey@zhbsd.ch.

Received for publication June 20, 2008; revision received September 23, 2008; and accepted September 23, 2008.

doi: 10.1111/j.1537-2995.2008.02007.x

TRANSFUSION 2009;49:524-531.

discuss the previous evidence. In addition, a study on recruiting new donors (Study 1) and a study on the motivation of previous donors (Study 2) are presented. The final section offers concluding remarks.

BACKGROUND

Health-related incentives are often applied with the intention to recruit new blood donors or recall previous donors. However, the belief in their effectiveness is often more based on gut feeling than systematic evidence. There are, in fact, many arguments from different "motivation" theories in favor of health-related incentives indicating that they should work as motivation devices. However, there are also theoretical arguments why incentives like free cholesterol tests might not work. We briefly summarize these arguments. We then discuss empirical tools to evaluate the effectiveness of incentives and relate the reasoning to previous evidence.

There are several (theoretical) reasons why free cholesterol tests increase voluntary blood donations. First, cholesterol tests are a positively valued good and people who are indifferent about donating blood might see the free test as attractive enough to actually donate. Second, a free cholesterol test serves as a signal that donating blood is important. And third, people often behave reciprocally. The offer of a free test might be seen as a gift they want to reciprocate with a donation. A free cholesterol test might also strengthen an existing reciprocal relationship between donors and the procurement center. Blood donors receive a reward in return for their donations in the dimension of health. Moreover, the test might simply be seen as a recognition of donors' good intentions. The latter two effects are expected to strengthen the motivation to donate blood.

There are, however, also countervailing forces that might even lead to a negative net effect of a free cholesterol test on donations relative to simply inviting people to donate blood. First, prosocial motivation might be crowded out by an extrinsic material incentive like a health test. This argument takes up Titmuss'[8] hypothesis that pricing undermines people's sense of community and cohesion because people are deprived of the opportunity to express altruism and no longer face the moral conflict and challenge to answer the question about their obligations to strangers (see also Frey[9]). Second, people might want to avoid the health information provided by a cholesterol test (even if taking the test is voluntary). And third, people might recognize the long-term positive consequences of taking the cholesterol test. However, the short-term calculus about donating blood is not affected when weighing immediate opportunity costs of time and some potential health benefit in the distant future. In sum, the consequences of offering free cholesterol testing on donation behavior are theoretically open and invite empirical analysis.

Previous evaluation methods and previous evidence

There are two basic methods of studying the consequences of free cholesterol testing on blood donations. The most common method asks people about their attitudes toward specific motivation devices and whether they would change their intentions to donate blood if they were offered some specific health incentive. These questionnaire studies are relatively easy and cheap to administer and provide comparative results about attitudes toward different motivation devices. The alternative and rarely used method is to study the effectiveness of incentives in controlled natural field experiments.

Several survey studies were designed to collect donors' responses on whether they would be encouraged or discouraged or remain neutral if they were offered some incentives. In a prominent study that involved eight blood donation centers in the United States conducted in 1998 (the Retrovirus Epidemiology Donor Study [REDS]), an anonymous survey was sent to more than 90,000 blood donors. Based on the responses of more than 45,000 people, blood credits and free cholesterol testing were the two incentives most likely to encourage net donations. The rate of net encouragement was 61 percent for the former and the latter incentive. In comparison, offering cash was found to lead to a net encouragement of only 28 percent.[7] Similarly, a recent study surveyed individuals after having offered them a cholesterol test,[10] but found little effect on motivation.

Research on attitudes is well-suited to identify interventions that warrant further analysis. However, there are at least two important reasons to believe that this approach leads to systematically different results than applying experimental field trials. Both reasons are related to key characteristics of survey research. First, responding to survey questions measures attitudes, not behavior. Answering nonbinding questions anonymously involves no consequences. Responses might then be driven by social desirability and/or the expression of general attitudes.[11] Independent of strategic or conscious misreporting, it is often very difficult to imagine how one would behave in a situation when actually exposed to a specific incentive. There is a long research tradition in psychology that deals with these issues. In particular, in social psychology, the theory of planned behavior (e.g., Icek and Fishbein[12]) postulates that behavior follows from intentions and perceived control over behavior. This relationship has been confirmed in several meta-analyses.[13] However, it is still important to know whether and to what extent behavioral consequences are overestimated (i.e., a

level effect) and misperceived for different groups of people.

Second, responding to survey questions about attitudes toward different incentives creates a quasi-comparability of predicted behavioral reactions to different motivation devices. However, predicting behavior when both costs and benefits are experienced in the future does not reflect the actual choice situation with free cholesterol testing as an incentive device. In the actual situation, people face short-term costs and must weigh them with long-term health benefits. If people emphasize the present, they might easily postpone donating blood because the benefits in the far future are substantially discounted. These distortions due to present biased preferences hold for some incentives but not for others making it difficult to draw firm conclusions from surveys with regard to the relative effectiveness of motivation devices.

An alternative evaluation method is to conduct randomized trials and examine the impact of incentives on behavior directly. There is only a small set of studies so far reporting evidence on the role of *material* incentives in donor motivation. In our review of the literature, we try to compile all the available studies that apply an individual-level treatment-control design and are published in scientific journals since the publication of Titmuss' book. We only found five studies.

Three studies rely on small samples of 500 or less subjects. Within these studies, one finds a doubling of the attendance rate in a campus blood drive if solicitors offered coupons for merchandise and participation in a raffle.[14] In contrast, another study finds a negative effect on participation in a preparatory health examination when a cash payment was offered.[15] The negative effect was significant for female students. In a different study, first-time donors were offered an unexpected reward (two movie tickets) after they had donated. They were not more likely to come back than the control group of people who only received a standard thank-you letter.[16]

The best-known study in this context is by Upton.[17] Upton distinguishes between donors of high and low motivation, based on their previous frequency of blood donations. From each of the two groups, donors are called and asked if they want to donate blood. Half the donors are offered a $10 reward to donate blood, and half are offered no reward. Of those who agree to donate blood on the phone, Upton finds that highly motivated donors are less likely to subsequently donate blood when offered the incentive on the phone. In contrast, less-motivated donors are more likely to follow through and donate when offered an incentive on the phone. However, a crucial flaw in the design of this study makes the interpretation of these results difficult: Upton calculates these results based on the show-up rates of those who initially agreed to donate blood. However, the only randomized comparison between the two groups is the show-up rate of all donors who were initially contacted, because many may have declined to donate in the first place. The respective success rates of soliciting appointments by treatment were not evaluated and cannot be reconstructed from the data. Because the offered reward is likely to have affected people's willingness to accept an appointment (e.g., higher acceptance rate with incentive), the recruited people in the four groups (reward/no reward) cannot be compared.

In our view, the best evidence on the causal effect of a specific material incentive is a study that applies an individually randomized trial design for a large sample of 6919 first-time donors.[18] The treatment group gets a T-shirt offered while the control group solely gets the standard invitation to donate a second time (recruited either by phone or by e-mail). No economic difference in the return rates between the two groups is found. With incentives 20.5 percent returned at least once during the test period, while without incentives the return rate was 20.6 percent. In a recent study, cholesterol tests were offered to potential donors at blood drives,[19] and no significant effect was found. However, by the nature of blood drives, the fraction of potential donors can only be estimated, leading to low power of tests.

Overall, a rather heterogeneous picture emerges with regard to measured causal effects on the propensity to donate blood. No recommendations can be derived so far.

METHODS

The goal of our studies was to evaluate the effectiveness of incentives in recruiting new donors (Study 1) and in recalling previous donors (Study 2). Both studies were conducted at the blood donation service of the Swiss Red Cross in Zurich (Stiftung Zürcher Blutspendedienst SRK), Switzerland. (A review about the legal and organizational background of transfusion medicine in Switzerland is provided in Levy et al.[20]) The incentive program was embedded in a 3-month summer campaign in 2006. As the incentive program involved the offering of a new health test to blood donors, that is, cholesterol testing, equipment for cholesterol testing was procured and all the personnel involved in the blood withdrawal were instructed. The personnel were also fully informed about the experimental setup of the incentive program.

Study 1

The first study applies an individually randomized design to evaluate the effect of a free cholesterol test and a general appeal on the recruitment of new donors. A sample of nondonors was randomly selected from the population of the city of Zurich. Potential donors received an invitation letter by regular mail. As is customary, invitations are for a specific date 3 weeks ahead.

TABLE 1. Descriptive statistics of sample populations*

Variable	Study 1: nondonors (n = 2825)	Study 2: previous donors (n = 8269)
Treatment		
Invitation	24.8	30.0
Appeal	25.7	23.8
Cholesterol test	49.6	46.1
Characteristics		
Age (mean)		44.6
<30	32.7	
30-44	33.4	
45-65	33.9	
Female	48.7	38.8
Male	51.3	61.2
Frequent donors		
4 successful invitations		23.9
3 successful invitations		17.0
Infrequent donors		
2 successful invitations		16.1
1 successful invitations		16.3
0 successful invitations		26.7
out of 4		
Donations	0.57	45.33

* Data are reported as percentages unless otherwise specified.

For the experimental intervention, treatment-specific additional information was added to the invitation. Two treatments were distinguished revealing specific information on the summer campaign. In each case, this information was provided on a card (15 × 21 cm) showing a flower meadow on the face and the accompanying text "During this summer you can make a difference." The information on the reverse side differed. In both treatments, it was explained that the blood donation service found it difficult to meet demand during the summer months and that this raised the possibility of significant shortages. In the appeal treatment, the card then stated "In order to prevent this, we are particularly relying on your voluntary donation during the summer months. We therefore especially invite you with this call to donate blood." In the cholesterol treatment, in addition to the information provided in the appeal treatment, a cholesterol test was offered.

The treatments were randomly assigned to mail orders. In total, 2825 nondonors were invited (24.8% of them in the control group, 25.7% in the appeal treatment, and 49.6% in the cholesterol treatment). Further descriptive statistics about the sample population are presented in Table 1. Once in the center, free cholesterol testing was offered to everybody whether they were a spontaneous donor, had gotten a simple invitation, had received an appeal, or had been offered the test.

Study 2

Study 2 applies an experimental setup similar to that of Study 1. It differs, however, in the choice of the subjects. The subjects consisted of donors that had already been at least once in contact with the Zurich blood donation service and were thus included in its database. Donors from three donation centers participated in the field experiment. Donors in these centers are regularly sent invitation letters by mail. Like in Study 1, the donors are asked to donate blood on a prespecified date, 3 weeks ahead.

The experimental intervention extended the standard procedure according to which donors are usually approached. On several days of the week the donation service sends out invitation letters to previous donors recorded in the database. For each mail order, a given number of people—from the pool of donors who are eligible to donate—are randomly invited. Whether somebody is eligible depends on the elapsed time since their last donation and, if applicable, their preferred invitation frequency.

For the experimental intervention, treatment-specific additional information was added to the regular written invitation as in Study 1. The treatments were randomly assigned to mail orders. In total, 8269 previous donors, who have at least been invited four times in the past, were invited during the field experiment. On purpose, there was no balanced distribution across treatments. There was a need of an overall high response rate to the campaign due to the seasonal blood shortage. As a positive effect of a free cholesterol test on blood donor motivation was conjectured, the sample of the control group and the appeal treatment were kept at a level that would just allow statistically meaningful comparisons. So we ended up with 30.0 percent of the people in the control group, 23.8 percent in the appeal treatment, and 46.1 percent in the cholesterol treatment (further descriptive statistics are provided in Table 1). Again, free cholesterol testing was offered to everybody when they showed up to donate blood at the center.

RESULTS

We present the results in the order of the studies.

Study 1

Overall, 0.6 percent of the nondonors in our sample reacted to the invitation and came to the center to donate blood. Thereby, the donor rate varies between 0.86 percent for people who got a simple invitation, 0.55 percent for people who received an appeal, and 0.43 percent for those who were offered free cholesterol testing.

Table 2 presents the marginal effects, that is, the predicted change in the frequency of donation, from probit estimates. The dependent variable is equal to 1 if the individual donated blood and 0 otherwise. We directly report

the marginal effects of the independent variables, that is, the change in the probability that an individual donates blood if in a specific treatment rather than in the control group or if having demographic characteristics different from the reference category. We model the decision to donate blood as a function of the treatment to which we assigned the subject, the subject's age, and his or her sex. In the estimation in Table 2, we define as the reference category men younger than 30. The first column shows the estimates without week effects, the second with week effects to control for potential time effects that may have occurred over the course of the study. In both specifications, we find a slightly lower probability of donation if a subject is offered a cholesterol test than if sent an invitation alone. However, the difference between –0.4 and –0.6 percentage points is not significant. The probability of a donation seems also slightly lower (between –0.1 and –0.4 percentage points) when the invitation is coupled with an appeal. However, also these differences cannot be measured with enough statistical precision to draw conclusions. In sum, no treatment specific behavioral reaction was measured that would indicate a positive motivation effect of offering a free cholesterol test when recruiting new donors.

TABLE 2. The effect of cholesterol testing on donations of "cold" donors*

Treatments		
Appeal	–0.001	–0.004
	(0.003)	(0.004)
Cholesterol test	–0.004	–0.006
	(0.003)	(0.005)
Control variables		
Sex (=1 female)	–0.002	–0.002
	(0.003)	(0.003)
Age 30-45 years	–0.002	–0.003
	(0.003)	(0.003)
Age 45-65 years	–0.004	–0.005
	(0.003)	(0.003)
Cholesterol—appeal	0.003	0.001
	(0.003)	(0.004)
Week effects?	No	Yes
Pseudo-R^2	0.017	0.052
Number	2825	2125

* Dependent variable: donated blood (=1). MEs from probit estimations. SEs are in parentheses. In the second column, 700 observations are dropped, because in Weeks 26 and 29, nobody reacted to the invitation.

Study 2

Overall, 45.3 percent of the invited previous donors participated in the campaign and came to donate blood. Table 3 shows the treatment specific outcomes. Again, marginal effects from probit estimations are calculated, and the associated standard errors (SEs) reported underneath the coefficients. Because the treatments are only randomized within weeks, we need to control for week effects and weekday effects. We allow both effects to be center-specific so as not to identify the treatment effects by imposing restrictions on the control variables. The estimates in

TABLE 3. The effect of cholesterol testing on donations of "warm" donors*

	Baseline specification		Infrequent donors		Frequent donors	
Treatments						
Appeal	0.019	–0.005	0.027	0.026	–0.046†	–0.051‡
	(0.017)	(0.019)	(0.020)	(0.020)	(0.024)	(0.024)
Cholesterol test	0.010	0.016	0.020	0.019	–0.001	0.006
	(0.016)	(0.018)	(0.018)	(0.017)	(0.022)	(0.022)
Control variables						
Age		0.005§		0.004§		0.004§
		(0.000)		(0.000)		(0.001)
Sex (=1 female)		–0.023†		–0.007		–0.034‡
		(0.013)		(0.013)		(0.017)
Number of previous successful invitations						
1 of 4		0.159§		0.152§		
		(0.015)		(0.016)		
2 of 4		0.301§		0.292§		
		(0.016)		(0.017)		
3 of 4		0.483§				
		(0.016)				
4 of 4		0.652§				0.158§
		(0.014)				(0.016)
Cholesterol—appeal	–0.008	0.02	–0.006	–0.006	0.045‡	0.056‡
	(0.016)	(0.018)	(0.018)	(0.018)	(0.023)	(0.023)
Pseudo-R^2	0.024	0.259	0.024	0.107	0.042	0.096
Number	8269	8269	4874	4874	3387	3387

* Dependent variable: donated blood (=1). MEs from probit estimations. Robust SEs are in parentheses. All specifications include controls for donation center, donation center-specific weekday effects, and week effects.
† Significant at the 10 percent level.
‡ Significant at the 5 percent level.
§ Significant at the 1 percent level.

TABLE 4. The effect of cholesterol testing on donations of "warm" donors*

	Sex		Age	
	Male	Female	Young	Old
Treatments				
Appeal	–0.006	–0.003	0.012	–0.022
	(0.029)	(0.025)	(0.024)	(0.026)
Cholesterol test	0.017	0.008	0.044†	–0.017
	(0.027)	(0.023)	(0.022)	(0.024)
Control variables				
Age	0.005‡	0.006‡	0.005‡	0.003‡
	(0.001)	(0.001)	(0.001)	(0.001)
Sex (=1 female)			–0.015	–0.022
			(0.016)	(0.018)
Number of previous successful invitations				
1 of 4	0.223‡	0.238‡	0.214‡	0.200‡
	(0.032)	(0.026)	(0.026)	(0.027)
2 of 4	0.361‡	0.382‡	0.370‡	0.319‡
	(0.029)	(0.021)	(0.026)	(0.021)
3 of 4	0.527‡	0.502‡	0.540‡	0.433‡
	(0.024)	(0.017)	(0.023)	(0.017)
4 of 4	0.648‡	0.662‡	0.669‡	0.616‡
	(0.018)	(0.014)	(0.018)	(0.016)
Cholesterol—appeal	0.024	0.011	0.032	0.005
	(0.028)	(0.023)	(0.022)	(0.025)
Pseudo-R^2	0.243	0.271	0.222	0.221
Number	3206	5063	4143	4126

* Dependent variable: donated blood (=1). MEs from probit estimations. Robust SEs are in parentheses. All specifications include controls for donation center, donation center-specific weekday effects, and week effects.
† Significant at the 5 percent level.
‡ Significant at the 1 percent level.

Table 3 are shown for two specifications: a basic specification and a specification including more control variables such as a donor's age and sex and the number of previous successful invitations. The additional controls may help to gain precision in estimating the treatment effects. The first two columns show the baseline specifications, that is, the estimates using the entire sample. All in all, the treatment offering a cholesterol test in the invitation does not increase the donation rate relative to the standard invitation procedure in any significant way. In Column 1, the point estimate of 0.01 indicates a 1-percentage-point increase due to blood donations. However, this effect is not significant. In the specification with all control variables, the difference is only 1.6 percentage points and not significant at conventional significance levels.

The control variables indicate that 1) older donors react with a higher probability to the invitation, that is, +0.5 percentage points for each year of age; 2) women, on average, react with a 2.3 percentage point lower probability to the invitation than men; and 3) people who were responsive in the past also are more likely to react to the invitation during the summer campaign. In comparison to people who missed four of the last four invitations, people who missed three are 15.9 percentage points more likely to donate blood. This difference increases to a difference of 65.2 percentage points for people who did not miss any of the last four invitations. We take this frequency with which people responded to invitations in the past as an indicator of their motivation.

To study whether the behavioral response to the treatments depends on donor motivation, we studied two subsamples: those individuals who only responded twice or less often to the last four invitations (infrequent donors) and those who donated three or four times (frequent donors). The respective results are reported in Columns 3 and 4 and Columns 5 and 6 of Table 3. We find that infrequent donors show up with a slightly higher probability in the donation center when a free cholesterol test is offered. However, the difference is only 1.9 percentage points and not significant. There is no effect of the appeal. In contrast, frequent donors are less likely to donate blood when an appeal for donations, on top of the regular invitation is sent to them (–5.1 percentage points). The cholesterol test seems to offset this effect, though we lack the statistical power to find a significant difference between the appeal treatment and the cholesterol test treatment. Thus, independent of donors' motivation, the cholesterol test does not increase donations. At best, it might counteract the negative effect from approaching frequent current donors with an appeal.

We further studied whether the overall effect hides differences in treatment effects that are sex- or age-specific. Table 4 shows the results. In Columns 1 and 2, the sample is cut by sex. In Columns 3 and 4, we cut the sample by age. We use 45, the median age in our sample as the age cutoff. We find no sex-specific response in the treatment. However, young donors are more likely to donate by 4.4 percentage points if a free cholesterol test is offered. Still, this effect is not significantly larger than the effect of the appeal alone.

In sum, we did not find a general positive effect of offering a cholesterol test on the donations of previous donors. There is at most some indication that young donors respond positively to the cholesterol test.

DISCUSSION

The supply of blood relies on nonremunerated volunteer donors in many countries. However, in recent years donation services have found it increasingly difficult to meet the demand for blood transfusions. To prevent blood shortages, donation services strive to recruit new and

sustain previous volunteer blood donors. Confronted with this challenge, the recent plea is to systematically reconsider the judicious use of donor incentives.[1,3,4,7,20] In fact, incentives are already applied despite the limited evidence on their efficacy and despite the common understanding in the field that "It is clear that the most important advance in blood safety in the past 50 years was the conversion to a volunteer blood supply."[1] This tension between practices and ideal corresponds to the deep-rooted skepticism toward the application of material incentives to motivate blood donors that is often linked to the work of Titmuss.[8]

Survey evidence suggests that blood donors would respond well to incentives in the form of health tests.[7] Based on two natural field experiments, we tested the effect of offering free cholesterol testing on people's motivation to donate blood. Surprisingly, neither for nondonors nor for previous donors did we find a significantly higher response rate than when inviting them by a solicitation letter alone or a standard invitation in the case of previous donors. This result is in strong contrast to findings on people's attitudes toward various donor incentives. In the large-scale survey study by Glynn and coworkers,[7] free cholesterol testing was the incentive for which the most previous donors reported that they would be encouraged to donate blood. This discrepancy calls for caution in the interpretation of survey results on people's reported intentions to donate blood in case they were offered an incentive. First, the level effect of incentives might be largely overestimated. Second, the relative effectiveness of different incentives might be biased as the behavioral consequences of offering health tests with long-term benefits might be particularly overestimated.

The latter arguments highlight the importance of randomized trials in donor recruitment research (see also the discussion in Reich et al.[18] and Stutzer et al.[21]). They are productive tools to study behavioral consequences of incentives on blood donations. To provide useful evidence for policy recommendations, the field experiments should be conducted with representative samples of nondonors to study incentive effects on successful recruiting and representative samples of repeat or past donors to analyze incentive effects on donor retention. Moreover, an extended integrative perspective including experiences on the donation site seems promising when further studying successful retention. This would require a combination of the social science research agenda with the behavioral science one as proposed by Ferguson and colleagues.[22] The latter seems to have a stronger tradition in using experimental interventions to study, for example, the effect of water preload, caffeine preload, or applied muscle tension on emotional and physiological reactions while donating blood or immediately afterward and how these reactions affect donor retention.

Recently, donor research has paid greater attention to donors' motivation (see, e.g., Nilsson Sojka and Sojka,[23] Schlumpf et al.,[24] and Steele et al.[25]). Field experiments on behavioral reactions to incentives can productively complement this research because there are theoretical reasons for interactions between donors' motivation and incentives. For instance, highly intrinsically motivated donors might perceive incentives as controlling and this might crowd out their prosocial motivation to donate blood. In this study, we do not find the subsample of more motivated donors to react negatively to the offer of a cholesterol test. However, a negative effect of the appeal is measured for this group. Further research on the interaction between donor motives and the effectiveness of incentives seems promising and essential.

In light of the mixed success of donor incentives on blood supply, two issues need to be further explored. First, it is possible that cholesterol tests would have more positive effects if they were introduced on a permanent basis. Blood donors could then use blood donations to track their cholesterol level. However, this type of intervention may be particularly attractive to donors in poor health. More research is needed to address this question. Second, alternative approaches to recruit new donors need to be developed and systematically studied in field experiments. For example, a large fraction of the population has never thought about donating blood.[26] They might not be opposed to it, but simply never thought about it carefully.

ACKNOWLEDGMENTS

We thank Kyle Carlson and Tyler Williams for research assistance. The views expressed herein do not necessarily reflect the views of the Federal Reserve Bank of Boston or the Federal Reserve System.

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