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ORIGINAL ARTICLE



Understanding the experiences of plasma donors in Canada's new source plasma collection centres during COVID-19: A qualitative study

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Abstract

Background and Objectives: To address a national concern over the sufficiency of plasma, Canadian Blood Services (CBS) initiated a proof-of-concept programme with three new source plasma collection centres, aiming to demonstrate a cost-effective template for future source plasma collection and to alleviate the concerns and risks associated with the dependence on the United States. This study uses social capital as a framework to assess the success of the proof-of-concept collection centres.

Materials and Methods: One-hundred and one qualitative interviews with source plasma donors in three new source plasma centres in Canada were carried out.

Results: CBS played a critical role in motivating whole-blood donors to switch to plasma donation by building on their identity as a donor and facilitating access. Community was central to ensuring that donors returned. The importance of the social network was apparent through relationships participants developed with staff and through the relationships that staff had with each other. Donors wanted to understand more about the uses of plasma so that they could promote donation through their social networks outside the centre.

Conclusion: Campaigns to convert existing blood donors to plasma donors should build on their identity as a donor and structure the centre as a safe and welcoming place. To retain donors, blood collection agencies should emphasize community by facilitating staff ability to work well together and connect with the donor. Blood operators have the potential to expand existing social networks and foster trust through the dissemination of knowledge about plasma more broadly in more diverse communities.

KEYWORDS

COVID-19, plasma sufficiency, qualitative research, social networks, source plasma donors

Highlights

- Canadian Blood Services successfully converted whole-blood donors to plasma donors by building on existing social networks and trusted communities.
- Campaigns to convert existing blood donors to plasma donors should build on the donors' identity as a person who wants to help others through donation and structure the centre as an accessible, safe and welcoming place.
- Plasma donor retention should emphasize social networks by facilitating staff to work together well and connect with the donor.

INTRODUCTION

Like many jurisdictions globally, Canada relies on paid donation in the United States to supply more than 80% of the plasma used to create plasma-derived products to treat many illnesses. To address a national concern over the sufficiency of plasma, Canadian Blood Services (CBS) has initiated a proof-of-concept programme with three new source plasma collection centres, aiming to demonstrate a costeffective template for future source plasma collection and alleviate the concerns and risks associated with the dependence on the United States. This study addresses the experiences of donors in the first three proof-of-concept centres as CBS opens eight more new plasma centres across the country.

Literature on plasma donation in a voluntary, non-remunerated setting has assessed motivations and deterrents for plasma donation, indicating that plasma donors want to help others or save lives [1–6] and are motivated by the blood collection agencies' (BCAs') need for plasma [2, 7, 8]. Plasma can be donated more frequently than whole blood, which facilitates a routine and relationships with staff [2, 9]. Regular plasma donors work to fit donation into their lives [6]. Given the need for plasma, there has been some scholarship measuring BCAs' efforts to convert donors from whole blood to plasma donors and retain them as ongoing donors [2, 3, 9–11]. BCAs are encouraged to build retention through providing social and informational support and structuring the donation process to encourage interpersonal relationships [12].

For the proof-of-concept programme, CBS closed long-standing whole-blood collection centres in the smaller Canadian towns of Sudbury (Ontario), Lethbridge (Alberta) and Kelowna (British Columbia), and opened new source plasma collection centres, asking donors to switch to plasma donation. The centres were in a new space with 12-16 beds (from 4 to 6 beds in whole-blood centres), designed with the organization's 'Donor Centre of the Future' standards meant to increase and retain the donor base while providing safe and efficient operations. Each centre has dedicated staff responsible for engaging the community through schools, workplaces, faith-based organizations, charities and local businesses, and the centres are designed to foster relationships through an open seating area, a conference room for book clubs and community groups and food from local businesses. However, just as the first centre was to open, the COVID-19 pandemic began. CBS adopted measures to ensure that the donation experience was safe, by including masks, physical distancing and restrictions on eating and drinking. Community outreach had to take place almost entirely online. Despite these challenges, whole-blood donors in these sites have converted to plasma donation. As of March 2022, of the donors who had contributed whole blood in the year prior to the opening of the plasma centre, 74% converted to plasma donation in Sudbury, 49% in Lethbridge and 64% in Kelowna. The proof-of-concept centres have collected approximately 32,300 L of source plasma, representing 88% of the target established before the pandemic.

This qualitative study of source plasma donors explores their interest in donating and experiences in the centre; it also examines social and informational support for plasma donation through interpersonal relationships, using a sociological approach. This approach is informed by Charbonneau's [13] position that blood donation is fundamentally social, linked to personal, political, and cultural meanings, as well as to trust in the state. Analysis draws on the theory of social capital to understand blood donation as a social phenomenon that is embedded in the context of community [14] and considers the essential role of trust in healthcare institutions in the context of the COVID-19 pandemic [15, 16]. The concept of social capital has been used to argue that networks of social interaction can lead to trust in the community and a generalized reciprocity [17]. This conceptualization of social capital is central for a national blood service that relies on voluntary non-remuneration; a level of trust and community integration is essential for maintaining the blood system, particularly during a transition, as the one CBS is currently undertaking with plasma.

MATERIALS AND METHODS

This investigation is part of a broader ethnographic process evaluation [18] of the CBS plasma proof-of-concept programme, involving interviews with key informants associated with the project through CBS, document analysis and interviews with staff in the first proof-of-concept centre in Sudbury. This paper presents findings from qualitative semi-structured interviews with source plasma donors in three new source plasma centres in Canada. This study was approved by the CBS Research Ethics Board.

Recruitment of participants

Purposive sampling was used to identify and select individuals who experienced the three new plasma centres. Donors who had donated plasma in the first 6 months of the new plasma collection centres in Sudbury, Lethbridge and Kelowna were contacted by email or received a recruitment flyer in the centre. Inclusion criteria were 18 years or older, able to speak and understand English, donated source plasma in Sudbury, Lethbridge or Kelowna and had not been recruited in the previous 6 months to participate in a study. A total of 1682 eligible donors received an email about the study and were asked to contact the investigator by email if they were interested in participating. Participants were recruited one centre at a time. In total, 249 donors reached out about the study, and KH responded to 148 of them in the order that emails were received with the letter of information and informed consent form and an invitation to participate in an interview, with the aim of obtaining a sample of n = 30 source plasma donors per centre, since 20-30 interviews are generally sufficient to achieve saturation of themes [19].

Data collection and analysis

Sudbury's centre opened in August 2020, and interviews were conducted between December 2020 and February 2021; Lethbridge's centre opened in December 2020, and interviews were conducted between February 2021 and April 2021. Kelowna's centre opened in June 2021, and interviews were conducted between September 2021 and October 2021. Semi-structured one-on-one interviews were conducted by KH by video conference or telephone between December 2020 and October 2021. The interviews lasted between 30 and 70 min. Participants were asked (1) how they experienced the switch to plasma donation in the midst of a pandemic, (2) their reasons for donating plasma, (3) their experiences in the centre, (4) their understanding of community in relation to donation, (5) their knowledge about plasma and (6) their thoughts on how CBS can promote plasma donation. Each participant filled out a consent form and emailed it to KH. Interviews were recorded and transcribed verbatim and checked against the audio recording for inconsistencies. Participants were asked about why they donate, what donation means to them, their experience in the centre, whether they encourage others to donate. how they think CBS should encourage others and their knowledge about plasma. All interview transcriptions were entered into Nvivo, a qualitative software analysis tool, and coded by KH. Interview data were analysed using thematic analysis informed by grounded theory and abductive analysis, which move between gathering and analysing data [20]. With this approach, the researcher is situated in a knowledge and understanding of the literature and theory in the area of study, and checks these contributions against what is being observed in the field throughout the research process [20].

RESULTS

Sample description

A description of the participants is summarized in Table 1. Semi-structured interviews were conducted with 33 participants in Sudbury, 32 participants in Lethbridge and 36 participants in Kelowna, for a total of 101 participants. Most participants were between 50 and 70 years old. Of the participants, 52% were male, 47% were female and 1% were other. Also, 82% of the participants were white, and the second most prevalent ethnicity was Metis (4%). There was a range of educational background, with most donors having obtained post-secondary education. In the following, the quotations from participants are numbered and assigned a letter, PS = Sudbury, PL = Lethbridge, and PK = Kelowna.

Analytical results are presented below according to key areas of discussion with the participants, and the primary themes emerging from the study are as follows—Conversion: responding to an ask and establishing trust; Reasons for donating: continuing the donor identity by making donation easy; Retention: connecting with staff, safety, and the need and Promotion: from the positive experience to an interest in plasma.

Conversion: Responding to an ask and establishing trust

CBS was centrally involved in converting whole-blood donors to plasma donors in the three centres. Most participants became aware

of plasma when they were donating whole blood, before the wholeblood centre closed. Staff in the centre talked to them about the closure, the opening of a new plasma centre and the reasons for the change. As one participant from Lethbridge explained,

> the ladies at the clinic were talking about it, when it was still a blood donor clinic, [...] I just thought, oh that's good, that's, nothing wrong with that, I can do that (PL20).

Ninety-five percent of the plasma donors in the new centres had donated whole blood with CBS. When asked if it was difficult to switch, most said it was not. They noted that it took more time, but also felt they did not feel as tired after the donation. In plasma donation, red blood cells are returned to the donor, and therefore, some reported that they did not feel as depleted.

When participants talked about switching from whole blood, they highlighted the importance of the staff in the centre explaining everything to them. Plasma donation differs from whole-blood donation in that blood goes into a centrifuge that separates whole blood and plasma, and then red blood cells and saline are returned to the donor during the donation process. When they came to donate plasma for the first time, the donors felt welcome, and the staff answered all of their questions about the collection process. This relationship with staff often existed prior to the first plasma donation because donors recognized staff who carried over from the whole-blood centre. Their interactions with the staff in the plasma centre were based on a trust, which was central to the conversion process. Particularly for first-time donors, members of the staff at the three new centres would stay with them throughout the duration of their visit. For new donors, this was reassuring:

Because I'd never done it before and because there was all these, tubes and whatever, you know, blood going in and then coming out, and so it was just, nice to have that support (PK31).

Reasons for donating: Continuing the donor identity by making donation easy

Participants' reasons for donating plasma were rooted in their identify as whole-blood donors. When participants were asked why they are a plasma donor, the most common response was that they wanted to help someone who needs their donation. This reason was combined with other reasons, as demonstrated by this participant from Kelowna, who identifies feeling good, helping people and benefit weighted against the duration of the commitment:

> it makes me feel good, and it helps save lives, and really for what takes maybe about an hour, an hour and a half process, it's, it's worth doing (PK16).

Other reasons participants discussed included giving back to the community, the ability to donate more frequently than whole blood, the 4_____Vox Sanguinis

TABLE 1 Sample description and total donors in the first 6 months

Category	Participant characteristics				Total donors in the first 6 months ^a			
	Sudbury, n	Lethbr, n	Kelown, n	%	Sudbury, n	Lethbr, n	Kelown, n	%
Total	33	32	36	101	1714	2000	2502	6216
Donated before	28	32	35	94%	1436	1798	2091	86%
New donor	5	0	1	6%	278	202	411	14%
Age								
18-30	4	1	4	8%	424	559	637	26%
31-40	8	4	4	16%	283	370	437	18%
41-50	4	4	4	12%	255	282	367	17%
51-60	7	8	11	25%	344	331	470	18%
61-69	7	11	8	26%	285	321	422	17%
70 and older	3	4	5	12%	123	137	169	7%
Gender ^a								
Male	15	19	19	52%	795	961	1150	47%
Female	18	13	16	47%	919	1039	1352	53%
Other	0	0	1	1%				
Ethnicity								
White	23	29	31	82%				
Jewish	0	1	0	1%				
Hispanic	0	0	1	1%				
White/Chinese	0	1	0	1%				
White/Turkish	0	0	1	1%				
Metis	1	0	3	4%				
Metis/White	1	0	0	1%				
Italian/Filipino	1	0	0	1%				
South Asian	1	0	0	1%				
Mullato/Black	1	0	0	1%				
Chinese	1	0	0	1%				
White/French Canad	1	0	0	1%				
French Canad	1	0	0	1%				
English	1	0	0	1%				
Missing	0	1	0	1%				
Education								
High school	0	5	5	10%				
College (at least some)	8	8	10	26%				
University (at least some)	19	13	13	45%				
Graduate degree	6	6	8	20%				

^aCBS only collects gender identities male and female. This policy is being re-examined in order to ensure diversity and inclusion.

fact that they or a member of their family might need it 1 day and the ease of the process. Participants gave similar answers to the question of what donation means to them. The most common answer was that donation helps saves lives.

The desire to help was often coupled with the claim that donation is easy. Participants talked about the donation centre being at a short distance from their home, located in a part of the city that was accessible, with parking, or they said that they were retired, so had time. A few said switching to plasma donation was 'not difficult, but...' and indicated that the process was a little more invasive than whole-blood donation because the needle is longer, it takes longer, or they miss the social time in the whole-blood centre (COVID-related). Those who noted the length of time said it was difficult given work and caregiving responsibilities.

When talking about why they donate plasma and what donation means to them, very few participants talked about the specific uses of plasma. They donated plasma as a continuation of a history of donation for the purpose of helping someone in need. Many donated because they were long-time whole-blood donors, and they wanted to continue to give:

I don't know exactly what all the different things that are used, you know, use plasma to manufacture or whatever, but, I would think, but I, I would think that [...] whatever they can use it for to help someone out, I'm just glad to help (PL1).

Thus, participants' motivations for donating whole blood carried over to plasma.

Retention: Connecting with staff, safety, and the need for plasma

Plasma donors can donate every week, and to meet sufficiency, CBS is asking them give monthly, with a target of eight donations per year. This means that aside from getting them into the door, CBS needs to retain them. Ninety-seven participants had donated more than once; 21 had donated more than five times.

When asked what keeps them coming back to the centre, participants talked about the atmosphere in the centre, the need for plasma and the ease of the process as interconnected—it was easy because it was close to them and did not take long, and it was important. The combination inspired them to return.

In all centres, participants emphasized their relationships with members of the staff, and a large majority said they had positive interactions with staff. Plasma donors can donate more frequently, and they are in the centre for a longer period, so they have more time to get to know the staff. This was an essential part of the experience for them, particularly as they transitioned from whole blood to plasma they found the staff knowledgeable and helpful about the process and the growing need for plasma. In each centre, participants primarily emphasized that the staff were friendly, meaning that they were empathetic, kind, remembered the donor's name and thanked them for their donation. Participants also emphasized that the staff were professional and knowledgeable, and this helped put them at ease.

While this came across in every centre, participants from Lethbridge noted that they sensed some tensions within the staff because the transition from a whole-blood centre to a plasma centre meant some disputes over staffing with the union representing nurses and plasma associates. Participants still reported that their interactions with the staff were positive, and those close relationships meant that they were keenly aware of the staffing issues.

Despite the COVID precautions, a large majority of participants felt a sense of community in the centre, and this was very much linked to relationships that they developed with the staff, and between staff. The primary reason for the centre feeling like a community was that members of the staff got along with each other. A participant from Kelowna also said the community feeling came from staff working together, and then connected this to feeling safe in the centre: I think that just also adds to the safety factor where, if they're all working together the way they should, then things should run smoothly, and less chance of, you know, any kind of upset, or mistakes (PK23).

Further, participants talked about a sense of community from their own relationships with the staff. For some, it was because they recognized the staff from the whole-blood centre and had already developed a relationship with them.

> so when I walk in, it's like a family, like I, because I go every two weeks, I'm on the same rotation as the staff. And even though we have our masks on, we all know who we are (PS27).

Participants also indicated that their relationships with each other give them a sense of community. For some, the efforts to create a centre that was a community hub was successful. The frequency of donation means that donors with a similar schedule start to see each other and recognize each other. At the same time, some said that COVID had an impact on their ability to communicate with other donors.

> We're too spread out, you can't even talk to anybody who's in there. [...] before COVID, on a busy day, there could be four or five people sitting in a row of chairs, waiting to start the process. And sometimes you talk to people, [...] I think post-COVID, things will go back to be a lot more relaxed, and there'll be a lot more sharing and communication (PL7).

Participants also appreciated that the new plasma centres were open, bright, spacious, modern and clean, and these features encouraged them to return. While some participants missed the ability to socialize with one another because of the COVID precautions, they understood why the measures were in place, and all said they felt safe in the centre amid the pandemic. For some, it was one of the only places they could go, and they appreciated the social time it afforded when they had largely been alone. They were also impressed by the food. Plasma centres offer a menu to donors, where they can select a drink and several food options including local baked goods and healthy snacks, to take with them. Participants liked that the centre was promoting local businesses by offering their food, particularly during the pandemic when local businesses in their town were struggling.

Finally, the need for plasma encouraged retention. Participants referred to the ongoing need for plasma, as emphasized in the marketing materials distributed in the community with the message 'the need for plasma is more than four times what is currently donated in Canada'. That message is reinforced in the centre with TV monitors highlighting why plasma is needed and how it is helping recipients. Further, participants had conversations with members of the staff where they learned about plasma.

Promotion: From the positive experience to an interest in plasma

A large majority of participants encourage others to donate by talking about their positive experience, emphasizing the relaxing environment and the snacks. They say donating plasma is easy and try to demystify the experience. They also talk about helping people. A few make a connection to how plasma has had an impact on their family and friends. A large majority of participants understand that there is a need for plasma, and this is important to them. However, very few know how plasma is used, what happens to their donation and how plasma is turned into treatments. At the same time, they desire to know more about these things, and they said this would help them promote plasma donation in the community:

> I think [more knowledge] also would give ammunition to encourage others to donate. If you know what it's for, then you can explain what it's for to other people, thereby creating more interest (PK4).

Many participants wanted to learn more through conversations with staff in the centre. They liked that the staff could answer their questions about what plasma is and why there is this new centre. When asked about how CBS can better promote plasma, participants across centres emphasized demystifying plasma donation (showing the centre, addressing the fear of needles, communicating the time commitment and clarifying COVID safety measures), doing more community outreach (events in schools, workplaces and places of worship) and emphasizing the need for plasma. As a participant from Kelowna put it:

> right now, you just, you put your blood or your plasma into a bag or bottle, and you never see it again and you, you know, you lose this connection of where it goes and what it's being used for. I think if they knew that, the donor knew that hey, or the public knew for that matter, like hey, we will tell you when we can that it went to these people, I think it means more, it means that you helped someone directly (PK2).

Participants wanted to be able to connect their donation to the story of a recipient.

DISCUSSION

This study explored the experiences of donors who converted from whole-blood donation to plasma donation in three proof-of-concept centres in Canada. Smith et al. [15] use the theory of social capital to explain why people are more likely to donate blood when they are embedded in trusted social networks that value blood donation. CBS relied on a community of people who were already familiar with donation, and where they had already developed trust, and then reinforced

that trust through a model that supported their transition, and that ensured their safety during a pandemic. This was demonstrated through the way that participants expressed a willingness to switch to plasma because they were asked. It was fostered by the role of the staff in the centre: being friendly, knowledgeable and walking the donor through the process so that it was not intimidating—putting the donor at ease. The centre itself was accessible, comfortable and safe amidst the pandemic. These findings resonate with Healy's [21] scholarship from a social-organizational approach that the BCA structure promotes and makes altruism logistically possible. Participants in this study were motivated by a desire to help people. However, this motivation did not stand alone. It was often coupled with factors identified by scholarship in this area: ease of access and the ability to make it a part of their lives [6], the need for plasma [2, 7, 8] and the ability to retain their identity as a donor [4].

Charbonneau and Queniart [14] have demonstrated that blood donors are more likely to commit to a career as a regular donor if they are supported and encouraged by the BCA and are convinced of the practical value of donation. This study demonstrates that participants felt encouraged and supported in the transition to plasma. Trust in and familiarity with the institution helped bring donors into the plasma centre, and community was central to ensuring that donors returned. The importance of the social network was apparent through relationships participants developed with staff, and through their appreciation of the relationships that staff had with each other.

At the same time, donors were not aware of the practical value of donating plasma. They expressed an interest in promoting plasma donation through their social networks, but needed to better understand what plasma is and does to fully engage in those conversations. That education should take place through the relationships with staff. As Smith et al. found, staff play a central role in developing the community [15, 22]. This study demonstrates that the trust relationship developed with staff who are seen as knowledgeable can be used to facilitate better knowledge about plasma, to further promote donation through the donors' social networks.

While social capital allows us to understand why this population of donors were willing to donate plasma, it does not explain why most of the population does not donate. The limitations of this study are that there were not enough new donors in the sample to understand how to promote donation beyond existing whole-blood donors, and since the sample was not ethnically diverse, it does not offer insight into diverse social networks. A more critical approach to the concept of social capital points to how social networks are accumulated through historical relations of power [23]. It is possible that people who do not donate want to help others but lack the institutional trust and social networks that support donation.

In conclusion, BCA campaigns to convert existing blood donors to plasma donors should build on the donors' identity as a person who wants to help people through donation, and structure the centre as an accessible, safe, and welcoming place. To retain donors, BCAs should emphasize community by facilitating staff's ability to work well together, and connect with the donor. They should promote plasma through educational settings, workplaces, and community events, emphasizing the need by making a connection to the recipient. Donors want to help with this work by encouraging friends and family, but they need more education about what plasma is and does. This education could also happen at the centre, supported by the close relationships developed with staff. CBS's demonstrated success in building on existing social networks and trusted communities to convert donors to plasma means that the organization can also expand these networks and foster trust through the dissemination of knowledge about plasma more broadly through outreach in diverse communities. As the demand for plasma protein products increases, there is mounting pressure to recruit new plasma donors. Future work should investigate who is in and out of the networks and communities that have accrued social capital in relation to donation and understand how to expand those networks.

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CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

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