



6



6th European Conference
on Donor Health
and Management

10-11 september 2025

Wijk aan Zee,
The Netherlands

Posterbook

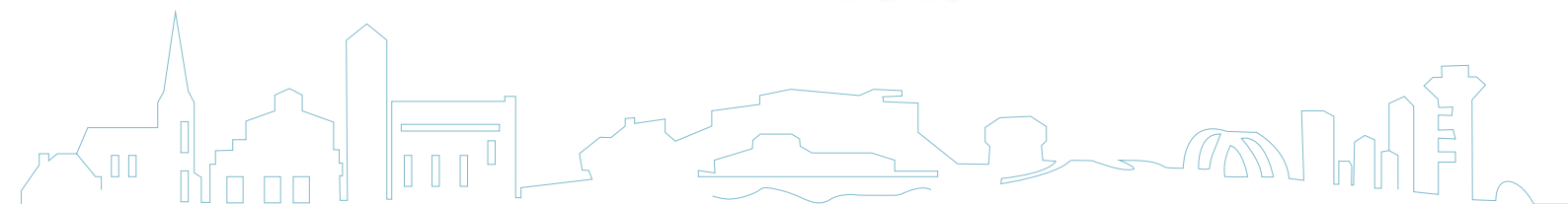
This conference is organized by



Sanquin



EUROPEAN
BLOOD
ALLIANCE



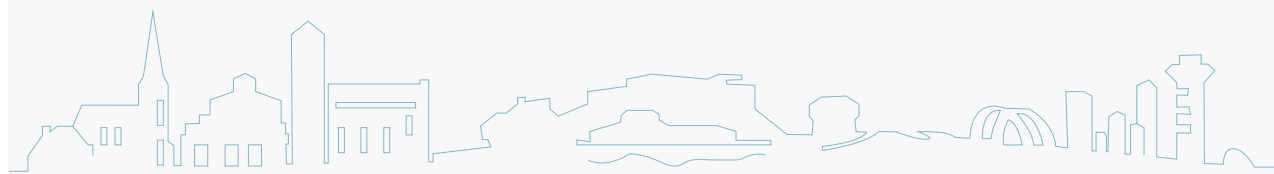


We are delighted to welcome you to the 6th European Conference on Donor Health and Management (ECDHM) at beautiful Hotel Het Hoge Duin in the charming seaside town of Wijk aan Zee!

This year's theme, "Sustainability in Donations", invites us to take an inspiring journey: from looking back at donor health and management through history, to tackling today's challenges, and imagining the possibilities that lie ahead. Since our very first gathering in The Hague back in 2014, ECDHM has grown tremendously. Along the way, we have shared countless valuable moments with colleagues and friends - old and new alike. We are especially thrilled to bring ECDHM back to the Netherlands to celebrate a decade of remarkable progress. Together, we have deepened our understanding, improved our practices, and paved the way for healthier and more engaged donors.

Now, more than ever, it is crucial to embrace sustainability so that donors remain both healthy and motivated to continue giving the "Gift of Life". As Wim de Kort - our first Conference Chair in 2014 and keynote speaker in 2025 - put it: "Donors deserve it!" Let's make this an unforgettable event filled with learning, sharing, and inspiration. And just for fun - if this conference were a song, which one would it be? 🎵

With warm regards,
Katja van den Hurk & Eva-Maria Merz
Hosts of the 6th ECDHM on behalf of Sanquin,
in collaboration with the European Blood Alliance (EBA)



A **heartfelt** thank you to our sponsors for helping bring the 6th European Conference on Donor Health and Management to life



2 Welcome

4 Sponsors

Wednesday

6  [Donor Management 1: Donor Experience & Motivation](#)

26  [Donor Health 1: Monitoring Donor Health & Safety](#)

Thursday

42  [Donor Management 2: Innovation & Ethics in Blood Collection](#)

62  [Donor Health 2: Managing Donor Programs and Health Data](#)



Donor Management 1:

Donor Experience & Motivation
Wednesday September 10th



Introduction

Contrary to anecdotal evidence suggesting donors were indifferent to personal recognition, the Welsh Blood Service research indicated otherwise. Inspired by modern best practices and international blood services, the Welsh Blood Service began testing personalised, semi-automated thank-you emails for whole blood donors in 2024. The primary goal was to evaluate the impact of personalised thank-you emails on donor retention, donor intention and satisfaction.

Results

We asked donors whether receiving the email made them more likely to donate again, 53.8 per cent selected the highest option of 'very likely', this was most popular with 24 to 34-year-olds (66.1%). Donors who received the email were also three times more likely to score satisfaction highly.

START 19.6% vs 11%
First-time

↺ 19.1% vs 16.6%
second-time

3 19.9% vs 15.9%
Third-time

📢 17.8% vs 18.5%
milestone pending

🏆 28.7% vs 18.5%
milestone

✉️ 62.8% vs 5.9%
Standard email

Conclusion

The thank-you email initiative positively impacted donor retention, with higher subsequent donation rates among those who read the emails. This approach effectively celebrated donors and enhanced their experience, contributing to increased donor engagement and retention.

♥️ Back to basics: the impact of thank you emails Andrew Harris

Background

In 2022, the Welsh Blood Service analysed 14,937 survey responses to understand the statistical relationship between overall satisfaction and the variables contributing to the donation experience, from the initial booking to the post-donation experience. The research found nine variables impacted satisfaction:

- The donation day: the donation experience; process comfort and process duration
 - Donor engagement: contact centre experience; feeling valued; eligibility information available and the telephone interaction.
 - Venues: cleanliness and accessibility.
- Contrary to anecdotal evidence suggesting donors were indifferent to personal recognition, the research indicated otherwise. Inspired by modern best practices and international blood services, the Welsh Blood Service began testing personalised, semi-automated thank-you emails for whole blood donors in 2024.

Aims

The primary goal was to evaluate the impact of personalised thank-you emails on donor retention, donor intention and satisfaction.

Methods

Thank-you emails were sent to red cell donors following their donation, personalised to the number of donations made. The study tracked the delivery, open rates, and subsequent donation rates for donors. Behaviour statistics were measured based on retention rates and donors' future intentions were measured via the post-donation satisfaction questionnaire. Thank-you emails were sent to donors the week following their red cell donation, personalised based on the number of donations made. The study tracked retention rates against delivery, open rates, and subsequent donation rates, future donation intentions were measured via post-donation satisfaction questionnaires.

Results

Donor intentions

We asked our donors who attended a clinic whether receiving the email made them more likely to donate again, 53.8 per cent selected the highest option of 'very likely', this was most popular with 24 to 34-year-olds (66.1%). Donors who received the email were also three times more likely to score satisfaction highly.

Donor behaviour

- First-time donors: 910 emails delivered, 709 opened. 19.2% donated again after reading the email, compared to 11.0% who did not read the email.
- Second-time donors: 1,047 emails delivered, 792 opened. 19.1% donated again after reading the email, compared to 16.6% who did not read the email.
- Third-time donors: 1,090 emails delivered, 800 opened. 19.9% donated again after reading the email, compared to 15.9% who did not read the email.
- Donors pending a milestone: 2,880 emails delivered, 2,430 opened. 28.7% donated again after reading the email, compared to 18.5% who did not read the email.
- Donor milestones: 2,919 emails delivered, 2,235 opened. 30.2% donated again after reading the email, compared to 23.8% who did not read the email.
- Standard donor emails: 27,658 emails delivered, 20,960 opened. 62.8% donated again after reading the email, compared to 5.9% who did not read the email.

Conclusion

The thank-you email initiative positively impacted donor retention, with higher subsequent donation rates among those who read the emails. This approach effectively celebrated donors and enhanced their experience, contributing to increased donor engagement and retention.



Improving Blood Donation Experiences to Boost the Blood Supply and Sustainability of the Donor Base

Nicole Priddee (Consultant Haematologist, SNBTS)
Deborah McNaughton (Associate Director, Donor and Transport Services, SNBTS)
Acknowledgements: Andrew Reid, Donor Marketing and Engagement and Donor Collection Teams



Malaria related donor selection processes

Malaria donor selection guidance in the UK is complex¹.

In Scotland, donors who were born in malarial countries and/or lived there for 6 months or more are asked to attend a donation session to give a Malaria Antibody Test (MAT) sample and await a negative result before being allowed to donate (See Figure 1). This process is repeated after further visits to malarial countries. Donors who travel to malarial countries for 6 months or less, are asked to follow the “samples only” process only if they attend to donate between 4 and 12 months after their last malarial exposure.

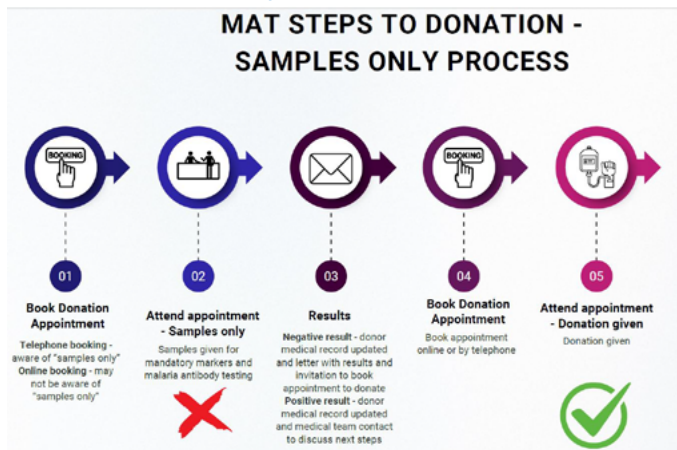


Figure 1 Samples only process

This process disproportionately affects ethnic minority (EM) donors and means that targeted recruitment drives are likely to result in an increase in “samples only” donations, thereby reducing yield of donation sessions and overall blood stocks. Donors with a malaria risk factor are required to make multiple trips to donation venues, at their own expense, before being allowed to donate.

The challenge we face...

In 2023, 95% of donors were MAT negative and eligible to donate but...

1 in 3 in total did return to donate.

...a 67% attrition rate!

What did we do?

To improve donor experience, we piloted a MAT with donation model allowing donors to be tested for MAT at their initial attendance, if otherwise eligible to donate.

References

¹JPAC Whole blood and components donor selection guidelines- Malaria
<https://www.transfusionguidelines.org/dsg/vb/guidelines/ma001-malaria> (Accessed 01 Sep 2025)

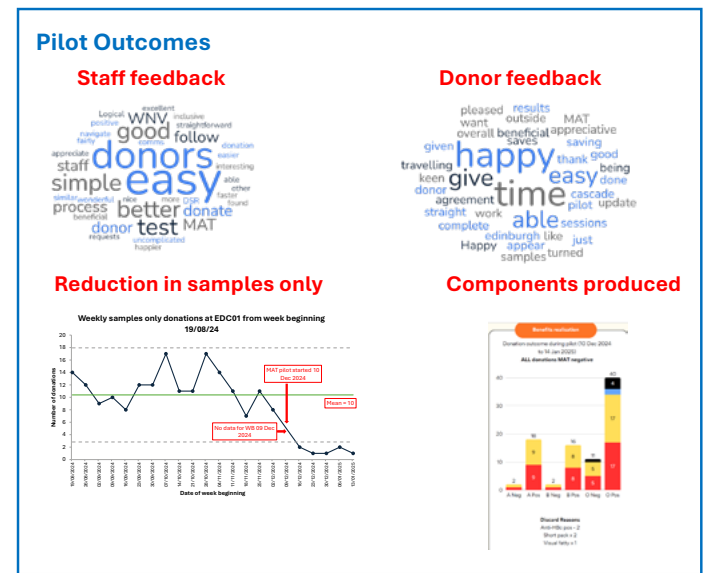
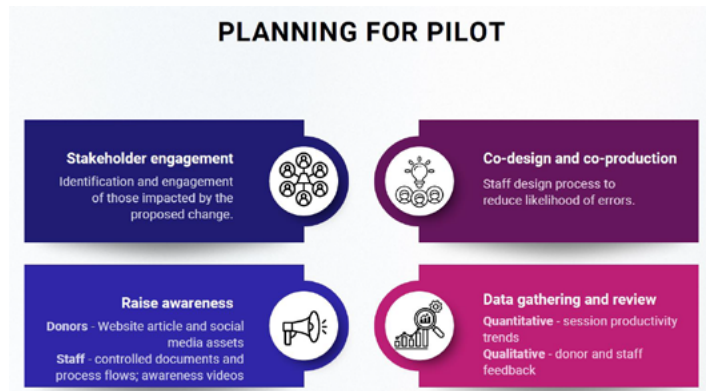
Aims

- ✓ Reduce number of “samples only” appointments
- ✓ Reduce the associated workload associated with informing donors of their negative result and inviting them to return to donate

Expected benefits

- ✓ Improved donor journey
- ✓ Better session flow and collection yield
- ✓ Improved donor and staff satisfaction
- ✓ Reduction in workload related to informing donors about negative results

How did we do it?



Conclusions

- The pilot improved donor and staff experience whilst maintaining the safety of the blood supply.
- Appointment use was optimised with 110 components shelved compared to none using the “samples only” model.
- The success of the pilot garnered senior management approval to implement the MAT with donation model nationally.
- The MAT with donation model helps to pave the way for future targeted donor recruitment e.g. to meet the needs of the increased Sickle Cell Disorder population in Scotland

Improving Blood Donation Experiences to Boost the Blood Supply and Sustainability of the Donor Base Dr Nicole Priddee

Background

Malaria donor selection guidance is complex. At present in Scotland, donors who have been born in malarial countries and/or lived there for 6 months or more need to attend a donation session to give a Malaria Antibody Test (MAT) sample and receive a negative result before being allowed to donate. If they subsequently visit malarial areas, this process must be repeated. This current process means that ethnic minority (EM) donor recruitment drives are likely to result in an increase in “samples only” donations thereby reducing yield of donation sessions and overall blood stocks. EM donors will be required to make multiple trips to donation venues, at their own expense, before being allowed to donate. In 2023, although 95% of donors were MAT negative and eligible to donate, 1 in 3 in total did not return. To improve donor retention, we piloted a MAT with donation model allowing donors to be tested for MAT at their initial attendance, if otherwise eligible to donate.

Aims

The pilot aimed to reduce number of regional “samples only” and to reduce the associated workload associated with informing donors of their negative result and inviting them to return to donate.

Expected benefits included a simpler donation process, improved donor journey, session flow and collection yield; improved donor and staff satisfaction and reduction in workload related to informing donors about negative results.

Methods

Whole blood donors attending Edinburgh Donor Centre over a 6-week period were eligible.

As part of co-design and co-production, staff engagement commenced several months prior to the pilot and a training video complemented a staff brief, instructional memo and process flow chart highlighting the changes to process for all teams involved.

Donors were informed via news article on our website, if they booked via telephone and were also provided with an information leaflet when they attended session.

“Samples only” attendance data was collated on a Tableau dashboard. Workload and session yield data were collated manually.

Results

This pilot had a successful outcome with expectations being met, including reduction in “samples only” donations and associated workload, increase in session yield and improved session flow.

Donor and staff feedback was positive with a clear ask to make the change permanent.

Future process improvements required include enhanced training in travel related donor selection and improved collection of donor travel history details.

Conclusions

Following the successful pilot, we plan to roll out MAT with donation to all regions in Scotland to boost our blood stocks and donor retention. This will also pave the way for future targeted EM donor recruitment drives, e.g. to meet the clinical needs of the increasing Sickle Cell Disorder (SCD) population in Scotland.

Under the Loyalty Umbrella: Towards a Loyal Donor

Author(s): Monique Wigman and Saartje de Wit

Communications Department Sanquin
m.wigman@sanquin.nl



Introduction

Donor Loyalty in The Netherlands

For the past 20 years, Dutch donors have received a small gift after every 10th donation—such as a towel, a chocolate bar, or a puzzle. Occasionally, special events were also organized. Today, Sanquin faces new challenges, which call for a renewed and inclusive loyalty program. Our goal is to recognize and appreciate all donors, regardless of how often they donate. Blood donation remains a voluntary act, driven by intrinsic motivation. With the new program, we add an extra layer of appreciation (extrinsic motivation), offering recognition throughout the year. This approach adds value beyond the act of donating, encourages positive attitudes and behaviors and builds and maintains long-term donor relationships tailored to individual needs.

Methods

Pilots for the New Loyalty Program (2023/2024)

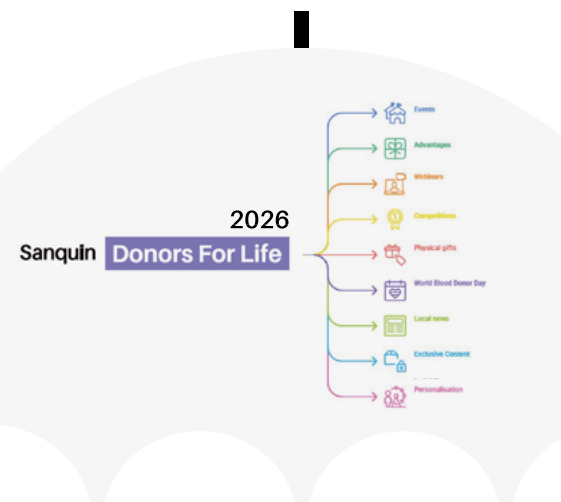
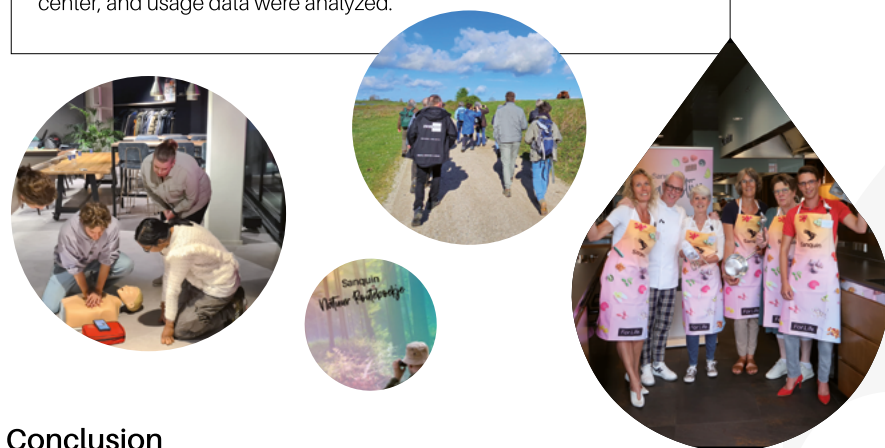
In 2023/2024, we launched several pilot initiatives for our new donor loyalty program, open to all donors - independent of donating.

- **Events and activities.** Like baking contest for the healthiest new cake, nature walks with fellow donors, webinar on health & nutrition
- **Privileges.** Booklet with walking routes for World Donor Day, social media giveaways and iron-rich recipes in the newsletter
- **Benefits.** Discounted first aid course and special walking, running, and cycling routes in the Komoot app.
- **Plasma donor reward program** 'Donordruppels' (only at 1 plasma-only location). Online platform with special gifts (e.g., coupons for movies or books, health check, powerbank)

Evaluation. Donors were asked to complete questionnaires for each pilot. For the plasma donor reward program, we also developed specific success metrics. Feedback from questionnaires, donor centers, the call center, and usage data were analyzed.

Results

- Donors responded very positively to all events, giveaways, and benefits.
- Events were well attended and received high ratings (>8), similar to the other pilots.
- External partners spontaneously reached out to collaborate on donor benefits.
- The plasma donor reward program:
 - Showed a positive, significant link between participation and donation frequency. However, costs remain high for a single location.
 - Two-thirds of participants chose coupons for movies or books.
 - The health check is much less popular than expected and is chosen less often than the earplugs.
 - Special campaigns (e.g., "donate twice this year" or "good intentions") encouraged donors but did not achieve the desired results.



Conclusion

Next Steps (2025 and 2026)

At the start of 2025, we could present donors with an overview of all planned activities for this year (like city walks, discount on concerts) on a dedicated webpage. This strengthens good donor communication and adds organizational structure.

We will implement in 2026 one loyalty program for all donors, regardless of donation type. The program will include:

- A mix of activities, events, and both physical and online gifts, aligned with our new branding (Emotional, Human, Impact).
- Recognition that every donor counts, independent of age, donation frequency, donation amount, or background.
- A focus on personalization, connecting with meaningful moments in the donor's life during their donor journey.

Under the Loyalty Umbrella: Towards a Loyal Donor Monique Wigman

Background

Since 10-20 years donors in The Netherlands get a small gift every 10th donation, gifts like a towel, a chocolate bar or a puzzle. And sometimes events are organized for the donors. The last years the focus was very much on recruitment and donor frequency, not on the relationship with the donor. Sanquin's current challenges require a new program in which there is more reciprocity, Sanquin can monitor, influence the behavior of donors to a certain extent. With respect to the voluntary, non-remunerated donations.

Aims

Loyalty is about building and maintaining a long-term relationship with the donor, appropriate to the needs of the donor. So we came to the loyalty umbrella, which comprises a set of instruments and activities to measure and stimulate donor loyalty. In addition, concrete projects are put forward to anchor loyalty in the organization and to ensure continuous attention to this. The loyalty umbrella provides an overview of feasible loyalty projects. So the goal is a complete loyalty program which is futureproof, sustainable and for different types of donors.

Methods

In 2023/2024 we started with some pilots for our 'club program' for all the donors (independent of donating):

Events and actions like:

- Baking contest for the most healthy new cake
- Nature walks with other donors, in several places
- Webinar on health & nutrition
- Gladiator statue and gamification

Privileges like:

- Booklet with walks for World Donor Day
- Giveaways on social media
- Iron-rich recipes

Benefits like:

- First aid course with discount. Organized only for donors.
 - Discount in the Komoot app (routes for walking/running/cycling)
- Reward program for donors in our plasma-only center:
- Online program with campaigns
 - Attentions like coupons (movie, books, ..), health check, sustainable powerbank, healthy products, charity.

We provided questionnaires for the donors for all the pilots. For the reward program we set up a success measurement. All the questionnaires, reactions at the donor centers and call center and data were analyzed.

Results

- Donors respond very positively to all the events, giveaways and benefits offered.
- The events were very well attended and received a high rating as well as the other pilots.
- Partners for the benefits contacted us spontaneously throughout the year.
- For the reward program we saw a positive, significant relation between the program and the donation frequency. Campaigns like the 'New Year's resolution' offer opportunities to stimulate donors in a different and positive way.

Conclusion

We are going to continue on the path we started in 2023/2024. With first implementing our 'club program', with its own look & feel and within My Sanquin in 2025. Furthermore we will be offering donors attentions, physical and online, at several moments in the donor journey, hereby implementing a more simple version of the reward program in the pilot. On our way towards a loyal donor.

Insights into Personality Characteristics of Blood Donors

Kim Mangler¹, Luise Pappe¹, Janina Sommermeyer¹, Andreas Hinz², Reinhard Henschler¹

¹ Institute for Transfusion Medicine and ² Institute for Medical Psychology and Sociology, Medical Faculty, Leipzig University Germany



UNIVERSITÄT
LEIPZIG
Medizinische Fakultät

Contact: University Hospital Leipzig, Institute of Transfusion Medicine, Johannisallee 32, D 04103 Leipzig, Germany Janina.Sommermeyer@medizin.uni-leipzig.de Reinhard.Henschler@medizin.uni-leipzig.de

BACKGROUND

Voluntary blood donation may depend on personality characteristics including individual attitudes towards humanity, society, but also ego (self). The latter could influence donor attraction and binding.

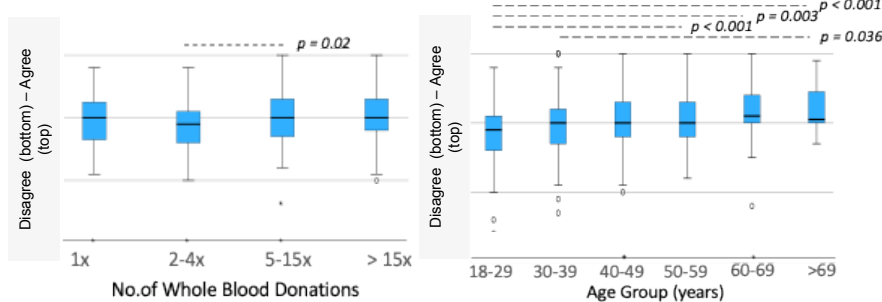
METHODS

- We designed a questionnaire including 20 questions on motivation factors, and 10 standardized questions each on personality (out of BIG FIVE) and self-efficacy.
- The response format was a 5-level agree/disagree scheme on motivation factors and personality, with disagree when 1 or 2 were marked, indifferent when 3 was marked, and agree when 4 or 5 were marked.
- Self-efficacy questions were answered within a 4-level agree/disagree scheme, with disagree when 1 or 2 were marked and agree when 3 or 4 were marked
- First insights into donor motivation reasons point to differences in consciousness and emotional stability, and trends in self-efficacy associated with age, gender and donation history.

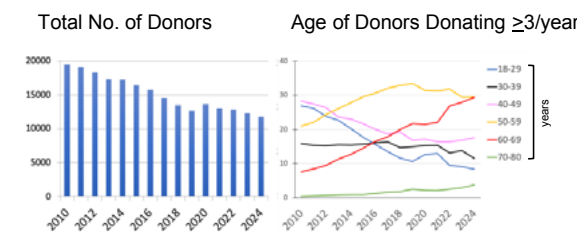
RESULTS

Self-Efficacy

10 questions



Donor Database and Donation Frequency



Questionnaire Return and Evaluation

No. returned: 500
No. evaluated: 489-499*

*some questions were not filled in all questionnaires

Big Five Personality Traits

10 questions in total; 2 for each dimension



Kruskal-Wallis-Test

Null Hypothesis: „The Manifestation of the Dimension ... is identical over the number of previous whole blood donations.“

Big-Five-Dimension	Significance χ^2	Maintain Null Hypothesis ...
Extraversion	0.270	yes
Agreeableness	0.203	yes
Consciousness	<0.001	no
Openness	0.450	yes
Emotional Stability	0.002	no

Source: Journal of Complementary Business and Management (2023) 10(2) 36-49

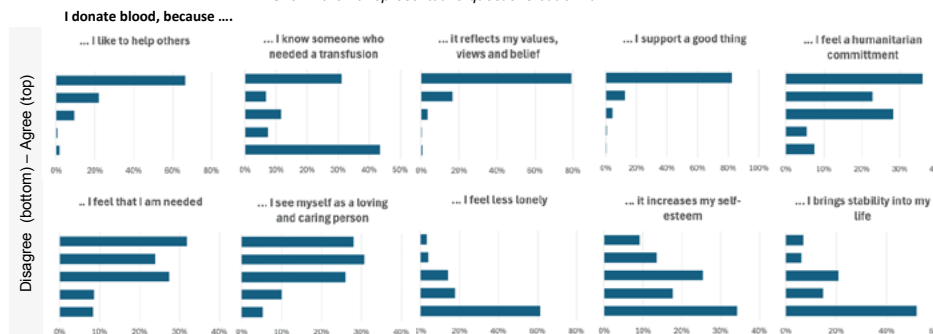
ONGOING AND PLANNED WORK

- Analysis of further differences between epidemiological factors including age groups, gender, personal donation experiences
- Comparison of blood donors with societal reference populations
- Derivation of potential new donor profiles and incorporation of insights into more individualized donor marketing strategies.

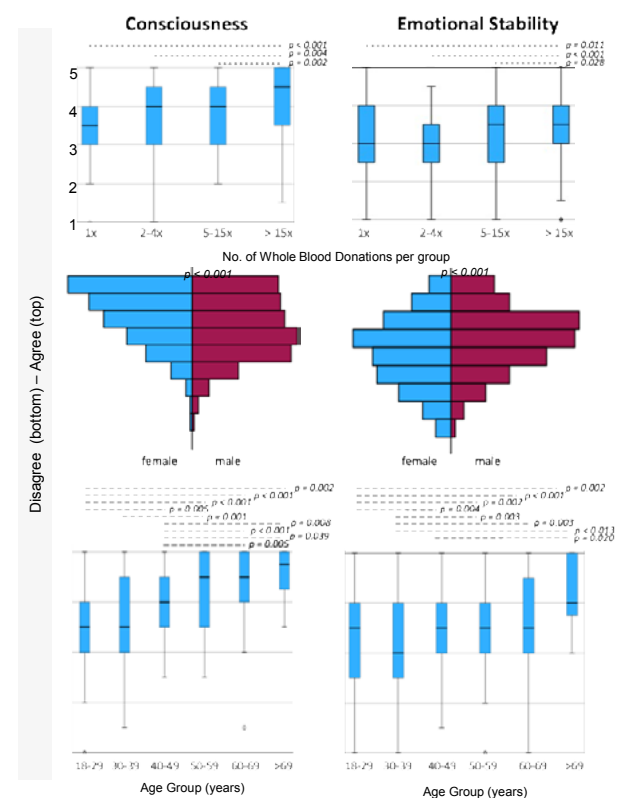
RESULTS

Donor Motivation

Shown are 10 representative questions out of 20



- Donor motivation Q and A's confirm some previously known prosocial behavioural motifs of whole blood donors. Differences in personality characteristics become evident.



Personality characteristics of blood donors Janina Sommermeyer

Background

Voluntary blood donation may depend on personality characteristics including individual attitudes towards humanity, society, but also ego (self).

Methods:

We designed a questionnaire including 20 questions on motivation factors, and 10 standardized questions each on personality (out of BIG FIVE) and self-efficacy. The response format was a 5-level agree/disagree scheme on motivation factors and personality, with disagree when 1 or 2 were marked, indifferent when 3 was marked, and agree when 4 or 5 were marked. Self-efficacy questions were answered within a 4-level agree/disagree scheme, with disagree when 1 or 2 were marked and agree when 3 or 4 were marked. One-hundred questionnaires were so far completed and evaluated.

Results:

For the 20 donor motivation questions, highest agreement levels were scored for “support of a good thing” (96%), “reflects my own values” (94%), and “to provide help to others” (86%). 73% agreement was found for “I am needed”, 68% for “I love and care for others”, 55% for “feeling obliged to donate for a humanitarian

reason”, and 50% for “I feel emotionally better”. Indifferent score (3) percentage was between 15 and 25% for most questions, and less than 15% for scores 4 and 5. Questions where the predominant answers were disagreement included “to overcome my own weaknesses” and “because I feel less lonely” (75% disagreement each), “I evade daily stress and pressure” (68%) and “it provides stability for my life” (62%). Within the personality question set, highest agreement scores were thoroughness (80%), and being communicative (60%). Whereas, for self-efficacy, an agreement was 92% for “whatever happens, I am confident I can handle it”, 82% for “I can find a solution for upcoming problems” and 80% for “I trust in my own abilities”. Ongoing evaluations include donor age, sex and further epidemiologic data, as well as comparison to the published norm data of BIG FIVE.

Conclusions:

Use and completion of a 60-item questionnaire on donor personality and motivation filled in during the rest phase after blood donation is feasible. First insights into donor motivation reasons point to high agreement scores in altruism, a variable proportion of donors with a positive social interaction attitude, and high scores for self-efficacy.

Pink blood cells: a national analysis of the reasons why women in their 30s stop giving blood



Poster number 5

Donata Forioso ⁽¹⁾, Marcello Lembo ⁽¹⁾, Valeria Reda ⁽²⁾, Serena Pappagallo ⁽¹⁾, Vincenzo De Angelis ⁽¹⁾

National Blood Center, Istituto Superiore di Sanità, Rome ⁽¹⁾, Institutional & Social Surveys, BVA Doxa, Milan ⁽²⁾

BACKGROUND

Women represent **about 34% of blood donors** in Italy, a lower percentage than in other European countries such as Belgium, Portugal or France, where they **make up over 50% of donors**. National data show a **strong decrease** in **female donors after they turn 30**.



AIMS

We conducted an exploratory survey to understand **why many Italian women don't approach blood donation** and why they stop if they do.

METHODS

The project included a **quantitative** and **qualitative analysis**. We carried out 4 online focus groups while the readers of *Io Donna*, a very popular women's magazine and website in Italy, were invited to answer a **web survey**. We collected opinions and personal experiences from **3,947 women over 30 years old**.

Each 2-hour focus group involved 8 women (non-donor or ex-donor for at least 2 years) from all over the country and started with an individual pre-task.

RESULTS

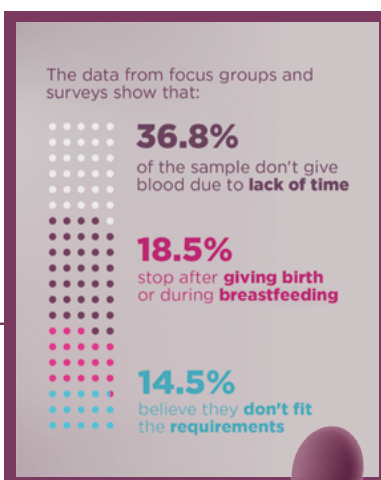
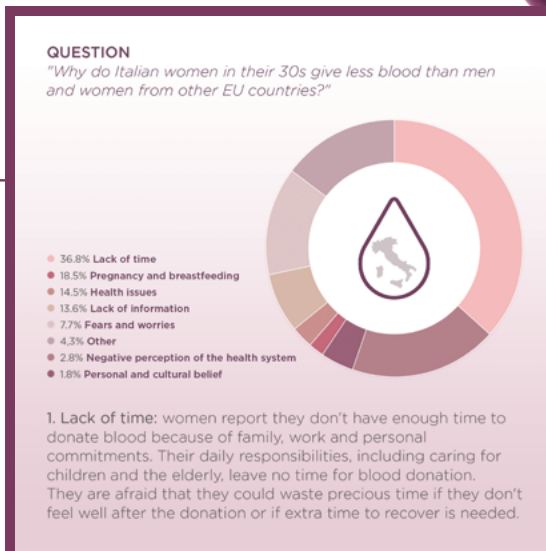
In the initial pre-task, they were asked to choose an emblematic image regarding blood donation. It emerged that the **aim is noble** and that **donating has an intense, positive, profound value**. It is a **generous, high** and **ethical gesture**. They **need to feel more informed** and **engaged**. During the focus groups, they claimed that there is no direct gratification from the receiver, nor an advantage for the donor (the medical check-up is very secondary, often unknown). Women **who used to donate in the past** (ex-donor target) **regret not giving blood anymore**, and pay greater respect to the past image of themselves. Those who never donated do not fully understand their choice/non-choice or struggle to justify it. Concretely, **fitting blood donation into their agenda seems very complicated**; it requires planning and women are willing to find space for it among the many combinations of the daily routine. Furthermore, before COVID-19, signals about donation were more visible in the places where they live: info days in schools, workplaces, and mobile blood collection in town.

36.8% of survey respondents attributed the main reason for this men/women disparity in blood donation to lack of time, followed by **18.5%** who answered pregnancy and breastfeeding.

14.5% of respondents relate to health issues, followed by lack of information (**13.6%**). Fears and worries (**7.7%**), negative perception of the health system (**2.8%**) and personal and cultural beliefs (**1.8%**) close the circle.

CONCLUSION

The collected data highlight that, although the ethical drive and the **desire to contribute** are intact, multiple factors make this **act more complex** and **complicated for women**. Therefore, it is necessary to recognize the emotional, physical, and practical difficulties they face and **make donations more manageable** and adjustable to encourage women to donate. Introducing nationwide **helping tools** such as apps where it is possible to easily and quickly change your appointment or having volunteers who care for the kids while the mum is giving blood, thank you messages, for instance, are all good strategies to retain female donors.



Donor Management 1
September 10th

Donor Experience & Motivation

Pink blood cells: a national analysis of the reasons why women in their 30s stop giving blood Donata Forioso

Background

Women represent about 34% of blood donors in Italy, a lower percentage than in other European countries such as Belgium, Portugal or France, where they make up over 50% of donors. National data show a strong decrease in female donors after they turn 30.

AIMS We conducted an exploratory survey to understand why many Italian women don't approach blood donation and why they stop if they do.

Methods

The project included a quantitative and qualitative analysis. We carried out 4 online focus groups while the readers of *Io Donna*, a very popular women's magazine and website in Italy, were invited to answer a web survey. We collected opinions and personal experiences from 3,947 women over 30 years old. Each 2-hour focus group involved 8 women (non-donor or ex-donor for at least 2 years) from all over the country and started with an individual pre-task.

Results

In the initial pre-task, they were asked to choose an emblematic image regarding blood donation. It emerged that the aim is noble and that donating has an intense, positive, profound value. It is a generous, high and ethical gesture. They need to feel more informed and engaged. During the focus groups, they claimed that there is no direct gratification from the receiver, nor an advantage for the donor (the medical check-up is very secondary, often unknown). Women who used to donate in the past (ex-donor target) regret not giving blood anymore, and pay greater respect to the past image of

themselves. Those who never donated do not fully understand their choice/non-choice or struggle to justify it. Concretely, fitting blood donation into their agenda seems very complicated; it requires planning and women are willing to find space for it among the many combinations of the daily routine. Furthermore, before COVID-19, signals about donation were more visible in the places where they live: info days in schools, workplaces, and mobile blood collection in town.

36.8% of survey respondents attributed the main reason for this men/women disparity in blood donation to lack of time, followed by 18.5% who answered pregnancy and breastfeeding.

14.5% of respondents relate to health issues, followed by lack of information (13.6%). Fears and worries (7.7%), negative perception of the health system (2.8%) and personal and cultural beliefs (1.8%) close the circle.

Conclusion

The collected data highlight that, although the ethical drive and the desire to contribute are intact, multiple factors make this act more complex and complicated for women. Therefore, it is necessary to recognize the emotional, physical, and practical difficulties they face and make donations more manageable and adjustable to encourage women to donate. Introducing nationwide helping tools such as apps where it is possible to easily and quickly change your appointment or having volunteers who care for the kids while the mum is giving blood, thank you messages, for instance, are all good strategies to retain female donors.



Award Winner
Best Poster

Study of the life cycle of blood and plasma donors: segmentation into stages, their transitions, forecast of future state and explainability of factors

Gual Jordi(1,2), Grifols Joan Ramon(1), Masi Antoni(1), Vidal Francisco(1,2), Colom Emili, García-Martínez Iris(1,2), Córdoba Pilar(1), Millan Anna(1).

1: Banc de Sang i Teixits de Catalunya (BST)

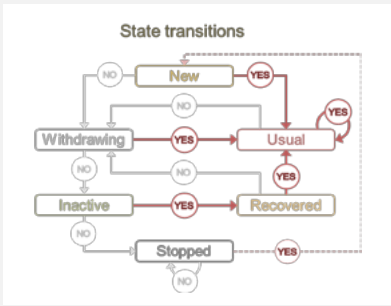
2: Grup de Medicina Transfusional, Vall d'Hebron Institut de Recerca (VHIR). Universitat Autònoma de Barcelona (UAB)

INTRODUCTION

Achieving blood and plasma donor retention is crucial for optimizing blood donation campaigns.

METHODS

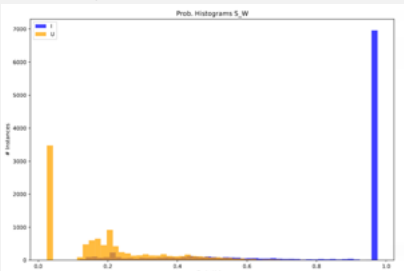
By segmenting donors into six distinct states based on their donations and transitions, we established a complete framework for their evolution analysis.



OBJECTIVES

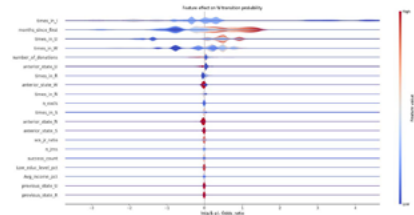
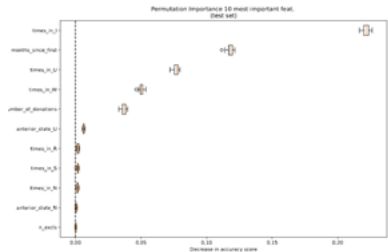
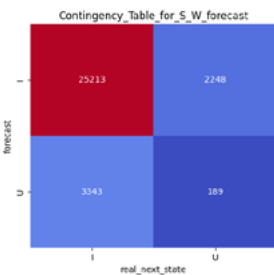
Identify donors at risk of discontinuing and finding out the factors explaining their behavior to enable the development of targeted strategies and enhance donor engagement.

We define 26 donor features (biographical, socio-economical, communication with BST and state sequences) and train 10 HGB classifiers (blood & plasma, all states except new) to find the probability of churning in the following 6 months.



RESULTS

By applying Permutation importance and SHAP we find that in all cases the most important features to explain churn are associated to the donor behavior in the past (states). Example: Churning from W; results are similar for the rest of classifiers.



CONCLUSIONS

- Segmenting donors based on their donation history allows for the development of more effective and personalized intervention strategies, ensuring that efforts are directed toward individuals at higher risk of disengagement.
- The trained classifiers provide reliable predictions of donor trajectories, enabling more precise and proactive communication strategies tailored to different donor profiles.
- Past donation record emerges as a crucial determinant in forecasting future engagement, highlighting the importance of historical patterns in predicting retention trends.



Background

Predicting donor retention is crucial for optimizing blood donation campaigns and ensuring a stable blood supply. Identifying donors at risk of discontinuing and finding out the factors explaining their behaviour enable the development of targeted strategies to enhance donor engagement. By addressing key determinants, such as donation history, communication effectiveness, and demographic factors, tailored interventions can improve retention and long-term commitment.

Aims

This study explores the life cycle of blood and plasma donors by analysing their donation patterns to develop predictive models that anticipate future responses. It aims to characterize the sequence of donation events, identify transition patterns and design predictive algorithms to identify donors at risk of dropout within six months. Additionally, explainability techniques are applied to determine the most influential attributes affecting donor retention, providing insights that can enhance targeted interventions and improve long-term engagement strategies.

Methods

By segmenting donors into six distinct states based on their donations and transitions, we established a complete framework for analysing their evolutions. This segmentation enabled a deeper understanding of donor engagement factors and patterns to forecast next donor actions. Machine Learning classification techniques (Random Forests, Histogram Gradient Boosting Trees and others) were applied to assess the probability of donors transitioning between states. These models were trained using a comprehensive set of attributes, including biographical factors such as age and sex, communication-related variables like contact history and response rates, and socioeconomic indicators derived from residence postal codes. Additionally, donation history, incorporating the sequence and timing of past contributions, was a crucial component

of the analysis. Explainability techniques, including Feature Permutation Importance and Shapley Additive exPlanations (SHAP), were utilized to determine the most influential attributes, providing critical insights into the key predictors of donor evolution.

Results

The analysis identified six distinct donor states and their transitions, which are essential for predicting donor conduct. This segmentation allowed for a detailed study of donation patterns and the identification of key variables affecting donor engagement. Based on these insights, ten machine-learning classifiers were developed to estimate the probability of donor transitions for both blood and plasma donors. These models demonstrated high predictive performance, with accuracy, precision, recall, and F1-score levels ranging between 85% and 90%. Additionally, the analysis revealed the most influential attributes explaining donor behaviour, including biographical, socioeconomic, and communication-related factors. These findings provide a solid foundation for designing targeted engagement strategies improving long-term donor retention through personalized interventions.

Conclusions

Segmenting donors based on their donation history allows for the development of more effective and personalized intervention strategies, ensuring that outreach efforts are directed toward individuals at higher risk of disengagement. The trained classifiers provide reliable predictions of donor trajectories, enabling more precise and proactive communication strategies tailored to different donor profiles. Past donation record emerges as a crucial determinant in forecasting future engagement, highlighting the importance of historical patterns in predicting retention trends. These insights support the implementation of data-driven strategies in donor retention programs, ultimately improving long-term participation and optimizing resource allocation.



Who are US Source Plasma donors? Results from a preliminary analysis.

Michelle Fransen¹ and David Chang²

¹Plasma Protein Therapeutics Association (PPTA), Annapolis, Maryland, USA; ²Westat, Rockville, Maryland, USA

BACKGROUND

Source Plasma (SP), or plasma for fractionation, is the starting material for 87% of plasma-derived medicinal products (PDMPs) globally, especially Immunoglobulins. Approximately 70% of the SP used for PDMP manufacturing comes from United States (US) donors.

Per federal regulations, a US SP donor can donate not less than 2 days apart or more frequently than twice in a 7-day period.

Knowledge of donor demographics from US donor centers will provide valuable insights into current SP donor characteristics and donation patterns.

AIMS

This study analyses donation data to identify a typical SP donor in the US.

METHODS

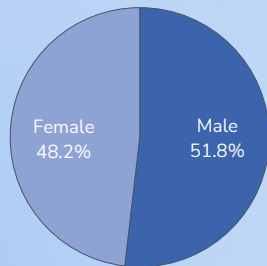
Donation data for 1.9 million donors making 28 million SP donations between 1 January and 31 December 2022 (CY22) were analyzed.

Data was collected from five Plasma Protein Therapeutics Association (PPTA) member companies: ADMA Biologics, Inc., Grifols, ImmunoTek Plasma, Kedrion, and Takeda.

Demographic data included date of donation, sex, race, age, weight, height, body mass index (BMI), and donation status.

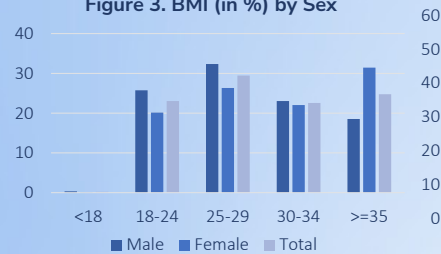
RESULTS

Figure 1. Donors by Sex (in %)



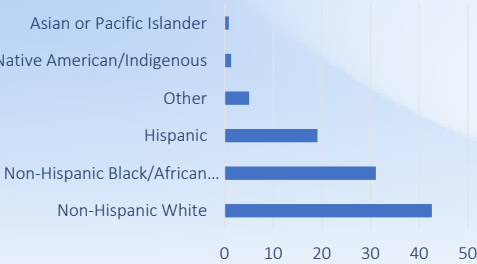
There were slightly more male donors (52%) than female donors.

Figure 3. BMI (in %) by Sex



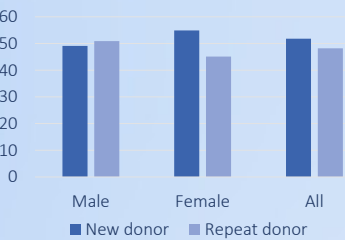
Most (29.1%) donors had a BMI between 25 and 29, yet most female donors (31%) had a BMI ≥ 35 versus male donors (18.0%).

Figure 5. Race and Ethnicity (in %)



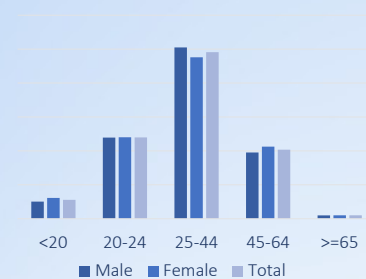
Of the available data, Non-Hispanic White accounted for 43% of all donors whereas 31% of all donors were non-Hispanic Black/African American, 19% were Hispanic, and 5% were other races/ethnicities. 52% of the donors had missing or unknown race/ethnicity data.

Figure 2. Donor Status (in %)



Half of all donors (51%) in CY22 were first time donors.

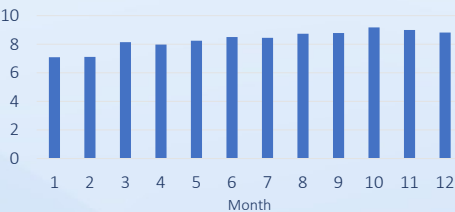
Figure 4. Donors (in %) by Age Group (in years) and Sex



Approximately 50% of all donors were aged 25-44 years old and approximately 30% were aged 24 years or younger.

RESULTS, Continued

Figure 6. Donations by Month (%)



The highest percentage of donations (27%) were made in the last quarter of the year (months 9-12), with October (month 10) being the month with the highest percentage of donations (9%).

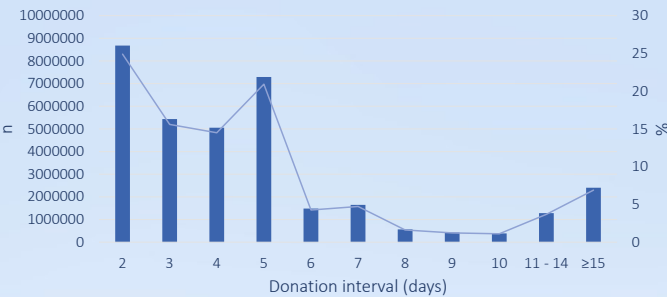
Table 1. Donations per Donor (in %) in CY 22

Donations (n)	Male	Female	Total
1	9.5	12.1	10.7
≤ 2	18.3	22.7	20.4
≤ 6	42.3	49.2	45.6
≤ 24	78.7	85.0	81.7
≤ 26	80.4	86.5	83.4
≤ 45	90.6	94.6	92.5
≤ 50	92.2	95.7	93.8
≤ 52	92.7	96.0	94.3
≤ 60	94.7	97.3	95.9
100 - 104	0.13	0.03	0.08
Average per donor	16.2	12.6	14.5
Median per donor	8	7	8

Of all donors, 96% made 60 or fewer donations (97% female; 95% male) in CY22. On average, a SP donor made 14.5 donations (12.6 for females; 16.2 for males), but the median per donor was 8 donations. 11% of all donors (12% female; 10% male) made only one donation.

Only 0.18% of donors who made their first donation of 2022 between 1 and 10 January, made 100-104 donations in CY22.

Figure 7. Donation interval (in n and %) by days



Most (76%) donations had an interval between 2 and 5 days.

CONCLUSIONS

In summary, the typical US SP donor is non-Hispanic white, aged 25-44 years old, has a BMI between 25 and 29, and makes an average 14.5 donations (median = 8 donations) per year. Male donors have a slightly lower BMI and tend to make more donations per year than female donors.

Most SP donors have a donation interval between 2 and 5 days.

While FDA regulations allow a theoretical maximum of 104 donations per year, individual donors donating at or near this frequency are extremely uncommon.

ACKNOWLEDGEMENTS

A special thanks goes to the plasma collection industry companies, their staff, and donors who made this analysis possible. The authors would like to acknowledge the following for their support and guidance: Jeffrey Gruenglas (ADMA Biologics, Inc.); Dr. Mark Becker (Grifols); J. Scott Lee (ImmunoTek Plasma); Ruth Espinoza (Kedrion); Dr. Walter Kelley and James Lenart (Takeda); and James Knowles and Dr. Toby Simon (PPTA).

CONTACT

Michelle Fransen, MPH
147 Old Solomons Island Rd, #100
Annapolis, MD 21401, USA.
Email: mfransen@pptaglobal.org



PLASMA PROTEIN
THERAPEUTICS
ASSOCIATION

Donor Management 1
September 10th

Donor Experience & Motivation



Who Are US Source Plasma Donors? Results from a Preliminary Analysis

Michelle Fransen

Background

Source Plasma (SP) is the starting material for 87% of plasma-derived medicinal products (PDMP) globally, especially Immunoglobulins. Approximately 70% of the SP used for PDMP manufacturing comes from United States (US) donors. Knowledge of US donor demographics is important to dispel many misperceptions pertaining to the SP collection industry.

Aims

This study analyzes donation data to identify a typical US SP donor.

Methods

Donation data for 1.9 million donors making 28 million SP donations from five Plasma Protein Therapeutics Association member companies between 1 January and 31 December 2022, were analyzed. Demographic data included date of donation, donor sex, race, age, weight, height, body mass index (BMI), and donation status.

Results

Overall, there were slightly more male SP donors (52%) than female. Fifty percent of all donors were aged 25-44 years old (49.0% female; 51.8% male) and 30% were 24 or younger (30.1% female; 28.9% male). Non-Hispanic White accounted for 42.6% of all donors whereas 31.1% of all donors were

non-Hispanic Black, 19.1% were Hispanic, and 7.2% were other races. Most (29.5%) donors had a BMI between 25 and 29 (26.3% female; 32.4% male) yet most female donors (31.4%) had a BMI ≥ 35 (18.5% male). Over half of all donors (52.6%) in the calendar year were first time donors (55.9% female; 49.6% male). On average, a SP donor made 14.5 donations (12.6 for females; 16.9 for males) in the calendar year and 11.4% of all donors (12.9% female; 10.0% male) made only one donation. Of all donors, 96% made 60 or fewer donations (97.3% female; 94.7% male) and 0.18% of all donors who made their first donation of 2022 between 1 and 10 January, made 100-104 donations in the calendar year. Most (88.4%) donors had a donation interval between two and 10 days.

Conclusion

In summary, the typical US SP donor is non-Hispanic white, aged 25-44 years old, has a BMI between 25 and 29, and makes 14.5 donations per year. Female donors are younger, have a higher BMI, and tend to make slightly more donations per year than male donors. Most SP donors have a donation interval between two and 10 days. While FDA regulations allow a theoretical maximum of 104 donations per year, individual donors donating at or near this frequency are extremely uncommon.



Mission Market: A New Approach to Donor Recognition and Sustainability

Tara Scott

Blood donation plays a vital role in global health infrastructure and each year, more than 100 million units of blood are collected worldwide.

To encourage and acknowledge this life-saving act, blood collection organizations generally create their own incentive programs, offering various types of merchandise designed to appeal to donors while promoting both donation and the institutions themselves.

However, this approach has several limitations. The first issue is the fragmented nature of design and procurement processes, with individual blood establishments purchasing relatively small quantities of selected items. This decentralized approach misses the potential for economies of scale and more strategic, meaningful rewards beyond transactional incentives like a T-shirt-per-donation. More critically, there is no universally recognized emblem that signifies someone's identity as a blood donor across institutions and national borders. Given that social recognition and peer influence significantly encourage first-time and repeat donations, this lack of a common symbol is a missed opportunity.

In response, Our Blood Institute developed a universal blood donor logo and recently launched Mission Market, an online hub offering a wide range of merchandise that reflects a person's status as a blood donor. Mission Market serves blood centres seeking a broader selection of donor-branded items or wishing to enhance their recognition programs by giving donors direct access to personalized products. It also caters to individual donors wanting to express pride in their donor identity or to friends and family looking for meaningful gifts that resonate with a donor's passion — much like supporting a favourite sports team or hobby.

Additionally, a portion of sales from Mission Market supports Global Blood Fund, a US-based non-profit promoting blood donation in low-income countries.

This presentation will outline the rationale behind Mission Market, detail its journey from concept to launch and its anticipated future development. Its potential for global impact will be highlighted by discussing the recent donation of 15,000 T-shirts featuring the worldwide blood donor logo to Ghana.



WHY THIS MATTERS

BLOOD DONATION PLAYS A VITAL ROLE IN GLOBAL HEALTH.

Over 100 million blood units are collected worldwide each year. Blood saves lives, yet the act often goes unnoticed.

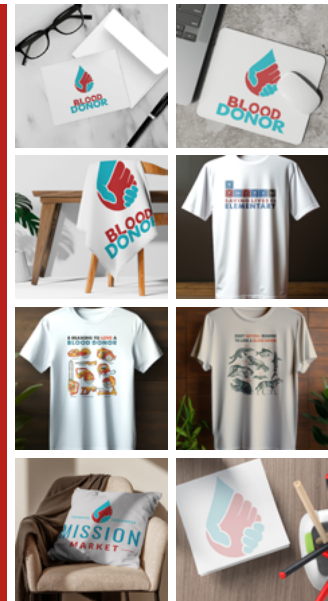
Many blood centers offer incentives, but these approaches are often:

FRAGMENTED (Small-scale sourcing per center) | **TRANSACTIONAL** (e.g. 1 shirt per donation) | **INCOHESIVE** (Lacking a unifying donor identity)



SHOP. SHARE. SAVE LIVES.

Research shows that social recognition and emotional messaging significantly increase willingness to donate among both first-time and repeat donors. - *Frontiers in Public Health*, 2024



PRODUCT HIGHLIGHTS

MISSION MARKET OFFERS SOMETHING FOR EVERY SUPPORTER AND A WIDE VARIETY OF PRICE POINTS.

PRODUCT	DESCRIPTION	PRICE
Folded Cards	10 Cards + Envelopes (4.25 X 5.5 in)	\$12
Mousepads	Neoprene stain-resistant (7.75 X 9.25 in)	\$10
Minky Blanket	Ultra-soft single sided (50 X 60 in)	\$29.99
T-shirt	Bella+Canvas soft ring-spun (MD - XXL)	\$25.40
Woven Pillow	Woven blend of cotton & polyester (18 X 18 in)	\$30
Notepads	50 single-sided tear-away pages (6 x 6in)	\$9

ALL ITEMS AND MORE AVAILABLE AT [SHOPMISSIONMARKET.ORG](https://shopmissionmarket.org)

A MISSED OPPORTUNITY- UNTIL NOW

MILLIONS DONATE BLOOD WORLDWIDE, YET THERE HAS NEVER BEEN A UNIFYING SYMBOL ACROSS INSTITUTIONS, REGIONS, OR BORDERS.

Imagine:

- A **Universal Emblem** for donors everywhere
- A store where donors can **celebrate that identity**
- **Purchases that fund blood donation programs** in the countries that need them most



THE POWER OF A GLOBAL DONOR SYMBOL



A UNIVERSAL BLOOD DONOR LOGO NOW EXISTS AND IT'S ALREADY MAKING A GLOBAL IMPACT. CREATED TO TRANSCEND LANGUAGES, BORDERS, AND ORGANIZATIONS, THE SYMBOL:

- **Honors** the collective act of giving
- **Inspires** donations by encouraging visible pride
- **Unites** blood donors with a shared message: *Healing. Giving. Connection. Hope.*

15,000 T-shirts with the universal logo were donated to Ghana through Global Blood Fund by Cotton Images, boosting donor recognition and education in underserved areas.

MISSION MARKET- THE SOLUTION

MISSION MARKET IS AN ONLINE STORE THAT PROVIDES RECOGNITION AND CONNECTION.

Created by Our Blood Institute, Mission Market offers:

- Merchandise featuring the **Universal Blood Donor Symbol**
- Provides a broad selection of thoughtful, mission-aligned gifts
- Supports **Global Blood Fund** (GBF) — a nonprofit that promotes voluntary blood donation in low-income countries

* Proceeds help fund GBF initiatives that equip blood centers, train personnel, and increase donor access around the world.



STRATEGIC EFFORTS TO RECRUIT NEW DONORS — REPORTING ON BEST PRACTICE AND ASSESSING DONOR MOTIVATION

Susanne Suessner¹, Juergen Kimmerstorfer¹, Alexandra Mayrhofer¹, Norbert Niklas¹

BACKGROUND AND AIMS

The supply of blood products to our patients in sufficient quantities is becoming more and more difficult due to the demographic development in Europe. Increasing the number of donors and raising awareness of the importance of voluntary unpaid donation among young people and society is essential. To learn more about what motivates new donors to give blood, it is important to know what touchpoints and motivations they had to donate blood.

We constantly share knowledge very openly about the importance of blood donation and the processes that underpin the production of safe products. Therefore workshops, training courses, guided tours and open days are offered. Blood donation is carried out in cooperation with companies and sports clubs as an important contribution to social commitment. In addition to recruiting new blood donors, follow-up is a key component in increasing the return rate, so a telephone follow-up for first-time donors has been introduced using a standardized questionnaire.

METHODS

Blood donation education activities for children and young people include workshops during school holidays and field trips to our blood bank. To harness the potential of teachers as multipliers, training courses on blood donation are offered in collaboration with professional associations. By participating in open days, the general public can get a behind-the-scenes look at a blood bank and learn about important issues related to blood donation. In order to attract new donors, blood donation campaigns with event character are regularly organized, for example at universities, at clubs such as the rural youth group, cultural associations, and in companies. Around 70 blood donation events are organised each year in various companies in Upper Austria, where many new donors are recruited. New donors are constantly being recruited by working with regional media to provide blood typing at youth events. Social media is also an important platform for recruiting new donors. Facts about blood donation and the importance of blood products are regularly shared. Campaigns such as the annual winter competition, campaigns with regional media "Blood Donation Marathon" or special campaigns with companies on World Blood Donor Day attract many new donors.

RESULTS

The educational sessions for children have been well received for years and more than 50 tours of the blood bank are given each year. The training places offered for teachers are always fully booked. The participants come from schools across Upper Austria and act as multipliers. This way we can ensure that many students know about blood donation before they reach the age where they are allowed to donate blood. The survey of 792 first-time donors showed that 37 % were motivated to donate blood by family members, friends or acquaintances. 32 % were motivated intrinsically. 13 % were reached through a mobile blood donation campaign in a company, and a further 3 % through cooperation with sports clubs.

	the military	communities	Schools/universities	companies	clubs	fixed blood drive
2017	4.6	61.4	14.8	8.9	1.2	9.0
2018	6.0	59.4	13.4	10.0	2.4	8.7
2019	2.3	59.8	16.0	11.3	1.8	8.7
2020	1.5	74.2	3.6	6.8	2.7	11.1
2021	0.7	67.3	1.1	10.1	2.7	18.1
2022	1.2	61.7	5.5	11.3	3.2	17.1
2023	1.4	57.3	14.1	13.2	2.2	11.8
2024	1.3	56.4	13.4	12.9	3.1	12.8

Table 1. Distribution of first time donors across blood donation campaigns



Picture 1 and 2. open day „LNF“



Picture 3. youth ski event „blood typing“



Picture 4. Children's university „in the footsteps of Karl Landsteiner“



Picture 5. educational day for teachers

CONCLUSION

These activities increase the visibility of unpaid voluntary blood donation, focusing on the 'blood journey' (donation - production - testing - storage and distribution) and the supply of blood products to our patients.

Donor Management 1
September 10th

Donor Experience & Motivation



Strategic Efforts to Recruit New Donors: Reporting on Best Practice and Assessing Donor Motivationy Alexandra Mayrhofer

Background

The supply of blood products to our patients in sufficient quantities is becoming more and more difficult due to the demographic development in Europe. Increasing the number of donors and raising awareness of the importance of voluntary unpaid donation among young people and society is essential. To learn more about what motivates new donors to give blood, it is important to know what touchpoints and motivations they had to donate blood.

Aims

We constantly share knowledge very openly about the importance of blood donation and the processes that underpin the production of safe products. Therefore workshops, training courses, guided tours and open days are offered. Blood donation is carried out in cooperation with companies and sports clubs as an important contribution to social commitment. In addition to recruiting new blood donors, follow-up is a key component in increasing the return rate, so a telephone follow-up for first-time donors has been introduced using a standardized questionnaire.

Methods

Blood donation education activities for children and young people include workshops during school holidays and field trips to our blood bank. To harness the potential of teachers as multipliers, training courses on blood donation are offered in collaboration with professional associations. By participating in open days, the general public can get a behind-the-scenes look at a blood bank and learn about important issues related to blood donation. In order to attract new donors, blood donation campaigns with event character are regularly organized, for example at universities, at clubs such as the

rural youth group, cultural associations, and in companies. Around 70 blood donation events are organised each year in various companies in Upper Austria, where many new donors are recruited. New donors are constantly being recruited by working with regional media to provide blood typing at youth events. Social media is also an important platform for recruiting new donors. Facts about blood donation and the importance of blood products are regularly shared. Campaigns such as the annual winter competition, campaigns with regional media "Blood Donation Marathon" or special campaigns with companies on World Blood Donor Day attract many new donors.

Results

The educational sessions for children have been well received for years and more than 50 tours of the blood bank are given each year. The training places offered for teachers are always fully booked. The participants come from schools across Upper Austria and act as multipliers. This way we can ensure that many students know about blood donation before they reach the age where they are allowed to donate blood. The survey of 792 first-time donors showed that 37 % were motivated to donate blood by family members, friends or acquaintances. 32 % were motivated intrinsically. 13% were reached through a mobile blood donation campaign in a company, and a further 3 % through cooperation with sports clubs.

Conclusions

These activities increase the visibility of unpaid voluntary blood donation, focusing on the 'blood journey' (donation - production - testing - storage and distribution) and the supply of blood products to our patients.

¹ Red Cross Blood Transfusion Service of Upper Austria, Linz

Correspondence: susanne.suessner@o.oteskreuz.at

The authors declare that there is no conflict of interest.



Donor Health 1:

**Monitoring Donor Health & Safety
Wednesday September 10th**



Early Identification of Thrombosis in Donors with Post-Donation arm Symptoms: Learning Points

Niubel Diaz Padilla¹, Mardin Rashid¹, Ivan Bank^{2,3},
Armand Snel¹, Jo Wiersum¹

¹Sanquin Blood Supply Foundation, department of Donor Medicine, ²Sanquin Blood Supply Foundation, department of Transfusion Medicine, ³Sneek Hospital

Introduction

- Studies on donor complications have mainly focused on vasovagal reactions and less on local complications like arm pain.
- A rare cause of arm pain after donation is due to thrombotic disorders like upper extremity deep vein thrombosis (UDVT).
- Awareness of this risk is important, since thrombotic disorders requires timely treatment to prevent further complications like pulmonary-embolism.

Methods

- Literature search using PubMed and Notify Library.
- UDVT, thrombophlebitis or phlebitis cases, between December 2022 to January 2025, were extracted from our quality management system database. Details about donation procedure and reported complication were extracted.
- After informed consent, (ex-)donors were contacted by telephone to fill in a questionnaire on symptoms, investigations, treatment and risk factors for UDVT.

Aim

In depth review of thrombosis-related cases in our center for a better and an earlier identification of post-donation symptoms suggestive of UDVT

Results

Literature search

- 7 reports about 9 cases and a conference-summary of 20 cases with post-donation UDVT.
- Post-donation UDVT is described as a very rare complication (incidence 0.009-0.47 per 100,000 donations).
- In all reports describing symptoms at least pain and/or swelling of the limb was present.
- Time to onset of symptoms hours-5 days, after donation.
- In most cases, in addition to donation, other risk factors for thrombosis were present: weightlifting, complicated venipuncture (e.g. needle adjustment or tight tourniquet), prolonged phlebotomy, smoking, oral contraception and a genetic mutation i.e Factor V Leiden.

Prevalent cases in our quality system

- Between Dec 2022-Jan 2025, 12 donors reported symptoms suggestive of venous thrombosis. However, the information was incomplete to differentiate between phlebitis, thrombophlebitis and UDVT.
- We developed a prototype questionnaire using the data reported in our literature search combined with the criteria from the Dutch national DVT diagnosis and treatment guidelines to obtain verbal information from donors with suspected UDVT.

Conclusion

Literature search

- Post-donation arm thrombosis is very rare and mainly happens in at-risk donors. Symptoms may occur within days after donation.

Our case studies:

- Careful evaluation of post-donation arm symptoms is key, followed by timely referral and treatment as necessary.
- This current data is the first step towards a better understanding of thrombotic disorders in blood(component) donors.

Characteristics of the cases		Characteristics of the cases	
N	12	Hospital admission <12 months post-donation	0
Female	7(58.3%)	Trauma <3 months post-donation	0
Age at onset	50(IQR 20.5)	Donation site	Left, 9(75%)
Type of donation	8 plasma(66.7%)	Symptoms site	Left, 7(58.33%)
Time from donation to symptoms	0-14 days	Symptoms location	Mostly around injection opening, upper arm
Number of donations:		Symptoms during early donations	0
<10	4	Arm-complications in early donation	0
10-30	2	Early thrombosis/cardio-vascular disease	1 (DVT leg)
31-50	1	Family history of trombosis-related problems	1
51-70	2	Diagnosis:	
>71	3	DVT	3(25%) (1leg DVT)
Complications donation procedure	6(50%)	Thrombophlebitis	4(33.33%)
Arm symptoms post donation	12(100%)	Phlebitis	2(16.67%)
History of previous events	1	Other	2(16.67%)
Smoking	1	Diagnostic tool:	
BMI	24.7(2.7)	Clinical presentation	2(16.67%)
Flight/car journey <12 months:	4 (33.33%)	Ultrasound	9(75%)
Duration >4 h		Treatment:	
Arm-overload-movements post-donation:	6 (50%)	DOACs	4(33.33%)
Same day	4(33.33%)	LMWH	2(16.67%)
Within 6 days	3(25%)	Antibiotics	3(25%)
Immobility <12 months post-donation	0	Compress	1(8.33%)
Surgery past year	0	Pain killers	1(8.33%)

Table 1: summarizes the collected data on the cases with a suspect thrombotic complication after donating blood(components).



Early identification of thrombosis in donors with post-donation arm symptoms: Learning points Niubel Diaz Padilla

Background

Introduction: Studies about donor complications have mainly focused on vasovagal reactions and less on local complications such arm pain. A rare cause of arm pain after donation is upper extremity deep vein thrombosis (UDVT). Awareness of this risk is important, since UDVT requires timely treatment to prevent further complications such as pulmonary embolism. A recent possible case which was reported to our blood center triggered us to review reported knowledge in the literature and to review possible recent cases in our center.

Aim

Better and earlier identification of post-donation symptoms suggestive of UDVT and to review possible recent cases in our center

Materials and methods

A literature search was conducted using PubMed and Notify Library using the search terms thrombocytopheresis, plasmapheresis, blood donation, deep vein thrombosis, (thrombo)phlebitis and D-dimer; we excluded reports associated with therapeutic apheresis and clinical studies. Journal articles reporting aggregated data or individual cases of venous thrombosis, thrombophlebitis or phlebitis after whole blood, plasma or platelet donations were selected. We extracted details about donation procedure, symptoms, investigations, treatment and documented risk factors. Furthermore, we searched the blood bank quality management system database for records of UDVT, thrombophlebitis or phlebitis from December 2022 to January 2025.

Results

The literature search yielded 7 reports presenting in total 9 cases and a conference summary of 20 other unique cases of post donation UDVT. UDVT after whole blood donation or component apheresis

is described as a very rare complication (reported incidences are 0.009 and 0.47 per 100,000 donations). In all reports describing symptoms, these consisted of (at least) pain and/or swelling of the limb. Time to onset of symptoms after donation is variable (hours to 5 days). In most cases, in addition to donation, other risk factors for thrombosis were present, including repeated sport-related arm movements (weightlifting), complicated venipuncture (e.g. needle adjustment or tight tourniquet), prolonged phlebotomy, smoking, oral contraception and/or genetic mutation i.e Factor V Leiden.

Within our quality system, 12 donors reported symptoms suggestive of venous thrombosis. However, the information was incomplete to differentiate between phlebitis, thrombophlebitis and UDVT and about the presence of any risk factors. Therefore, we developed a prototype questionnaire by using the data reported in the published cases and criteria from the Dutch national DVT diagnosis and treatment guidelines to obtain verbal information from donors with suspected UDVT. A protocol for contacting the 12 donors to obtain additional details using this questionnaire has been submitted for ethical review.

Conclusion

An overview of literature search and our cases of post-donation UDVT, has increased our knowledge about this very rare complication. Since symptoms may occur days after donation, more prompt evaluation and referral to the general practitioner will contribute to preventing harmful consequences. Furthermore, a systematic evaluation of post-donation arm thrombosis, taking into account all risk factors, will help to optimize donor counselling about contributing factors and to reinforce staff focus on venipuncture care.

The association between ferritin level and vasovagal reaction in blood donors

Niubel Díaz Padilla¹, Zahraa Salem Hasan¹, Jolanda Mak¹, Inge Pauw-Rowaan¹, Femmeke Prinsze² and Mart Janssen (†)²

n.diazpadilla@sanquin.nl

1. Department of Donor Medicine, 2.Department of Research, Sanquin Blood Supply Foundation, Amsterdam, the Netherlands

Introduction

Vasovagal reaction (VVR) is a common complication during blood donation.

Recent studies (2023–2025) report an incidence of VVR from approximately 0.25% to 4.9% in whole blood donations (1-2)

Known risk factors include young age, first-time donation, female sex, and low blood volume. Since VVR affect donor return, it is very important to investigate other risk factors.

Literature suggests low ferritin may contribute to fainting via splanchnic vasodilation and excess nitric oxide (3)

To our knowledge, no peer-reviewed studies have yet examined the direct association between ferritin levels and vasovagal reactions (VVR) in whole blood donors.

Aim: To investigate the association between low ferritin levels in whole blood donors and the occurrence of vasovagal reactions

Study Design and Methods

Retrospective observational cohort study of WBD with ferritin measurements (2018–2024).

Ferritin Measurement Moments:

First Time (FT) Donations

Every 5th whole blood donation

Donation after return from ferritin-based deferral.

VVR rates were analyzed across groups with deferral policy based on ferritin level

Group 1: < 15 ng/mL → 12-month deferral

Group 2: 15–30 ng/mL → 6-month deferral

Group 3: > 30 ng/mL → No deferral

Analysis:

VVR rates by ferritin group were compared

VVR and ferritin association was analyzed using logistic regression, adjusting for sex, menopausal status, age, and donation experience.

Conclusion

- The VVR risk seems to be more strongly influenced by donor demographics than by ferritin alone
- The apparent increase in VVR rates at low ferritin levels is mainly due to the overrepresentation of donors from high-risk subgroups
- Further studies on iron status and other potential risk factors for VVR are needed.

Reference

- 1.Piccinini V, et al., Vasovagal reactions in whole blood and apheresis donors: a cross-sectional study on donor haemovigilance data from 2016 to 2019 in Italy. Blood Transfus. 2022 Jul;20(4):281-29
- 2.Demircioğlu S, et al., Frequency of vasovagal reactions in whole blood donation and contributing factors. Med Int (Lond). 2025 Feb 18;5(3):22.
- 3.Stewart JM. Reduced iron stores and its effect on vasovagal syncope (simple faint). J Pediatr. 2008 Jul;153(1):9-11.

Table 1: Characteristics of all donors and donations

	males	premenopausal females	postmenopausal females	total
Nr of donations	270,206	169,531	146,259	585,996
Nr of VVR (%)	1,462 (0.54%)	4,941 (2.91%)	1,231 (0.84%)	7,634 (1.30%)
Nr ferritin <15	17,174	29,256	12,828	59,258
Nr ferritin 15-30	71,562	71,499	47,449	190,510
Nr ferritin >30	181,470	68,776	85,982	336,228
First Time donors	1,999	24,261	3,686	29,946
5 th donation screening	130,950	75,717	57,453	264,120
Return after deferral	137,257	69,553	85,120	291,930
Nr of unique donors	113,146	94,441	72,595	280,182

Table 2: VVR Rates (%) by ferritin Level (ng/mL) and donor subgroup (in % of donations)

Subgroup	Ferritin <15	Ferritin 15–30	Ferritin>30
All donors	1.8%	1.6%	1.0%
Premenopausal women	2.9%	3.2%	2.6%
Postmenopausal women	1.1%	0.9%	0.8%
Men	0.5%	0.6%	0.5%
First-time donors	7.1%	7.0%	6.7%
First-time premenopausal	7.7%	7.5%	7.5%
First-time postmenopausal	3.9%	4.1%	3.4%
First-time men	2.8%	4.9%	5.1%

Table 3: Logistic regression coefficients and 95% confidence intervals for associations of the Serum Ferritin and Vasovagal Reactions adjusted for age and gender/menopausal status

Crude Model (continuous)	0.995 (0.994 to 0.995)	
+ Sex	0.998 (0.998-0.999)	
+ Sex + Age	1.002 (1.001 to 1.002)	
	Ferritin 15-30	Ferritin < 15
Crude Model (reference > 30)	1.623 (1.546 to 1.705)	1.824 (1.703 to 1.954)
+ Sex	1.366 (1.300 to 1.435)	1.416 (1.321 to 1.518)
+ Sex + Age	1.049 (0.997 to 1.103)	0.930 (0.867 to 0.999)
Crude Model (reference > 15)		1.490 (1.396 to 1.589)
+ Sex		1.229 (1.152 to 1.312)
+ Sex + Age		0.908 (0.850 to 0.970)

- The overall incidence of VVR was 1.3 %
- First-time donors exhibit significantly higher VVR rates than repeat donors, especially among premenopausal females (7.7%).
- Among all donors, VVR rates decline with increasing ferritin levels, from 1.8% in those with ferritin <15 ng/mL to 1.0% in those with levels >30 ng/mL.
- Ferritin is associated with VVR risk in unadjusted analyses. Adjustment for sex and age/menopausal status weakens or reverses this association.



The association between ferritin level and vasovagal reaction in blood donors

Niubel Diaz Padilla

Background

A vasovagal reaction (VVR) is a common complication related to blood donation. In the past, several risk factors for VVR have been recognized, such as youth, first-time donation, being female, and a small estimated donor blood volume. An association between low ferritin level and fainting has been described in literature (Stewart J, 2018) which may be explained by splanchnic circulation vasodilation and nitric oxide excess during iron deficiency. As far as we know, no (peer-reviewed) published reports have evaluated the possible association between VVR in blood donors and a low ferritin level.

Aim

To investigate the association between low ferritin levels in whole blood donors and the occurrence of VVR.

Methods: In the Netherlands, Sanquin routinely measures ferritin levels during first-time whole blood donation, at every fifth repeat donation, and upon a donor’s return after the period of deferral because of low ferritin levels. We conducted a retrospective analysis of all whole blood donations from 2018 until 2024, in which ferritin was measured. We analyzed the VVR rate in three donor groups with different ferritin levels: (1) Ferritin < 15 ng/mL: deferred for 12 months, (2) Ferritin ≥ 15 and ≤ 30 ng/mL: deferred for 6 months, and (3) Ferritin > 30 ng/mL: not deferred.

The VVR rate in the 3 groups was assessed for sex with menopausal status and for being the first donation. In addition, we used logistic regression to analyze the association between VVR and ferritin level, with sex, age, and number of previous donations as covariates.

Results

There were 548,282 whole blood donations between 2018-2024 with ferritin measurements. Table 1 summarizes the rates of VVR for various subgroups and ferritin levels at donation. The total number of VVR was 7,202 (men 1405, premenopausal women 4609 and postmenopausal women 1188) and the overall incidence of VVR was 1.31%. It also shows the impact of number of donations, sex and menopausal status. The association of VVR and level of ferritin showed inconsistent results. Adding age and sex with menopausal status nihilated the odds ratios. This suggests that age and sex are more important for having a VVR than low ferritin levels.

Conclusion

Although there seems to be a higher rate of VVR in donors with lower ferritin levels, this seems to be driven by the overrepresentation of some subgroups, and we did not find a statistically significant association between low ferritin levels and vasovagal reactions. The higher rates of VVR in whole blood donors were associated with less experienced (1-5 donations) donors and premenopausal women, as is in line with findings reported in the literature. However, the number of donors with VVR were low in some subgroups, such as postmenopausal women and men with low levels of ferritin. Further research into risk factors (as maybe iron status) for VVR seems warranted.

5-year donor adverse events data from NHS Blood and Transplant: 2019 – 2023

Liezl Gaum¹, Alexandra Griffiths², Shruthi Narayan^{1,2}
NHS Blood and Transplant, United Kingdom
1 Donor Medical Team, 2 Serious Hazards of Transfusion

Background

NHS Blood and Transplant (NHSBT) is a special health authority that provides blood and transplantation services to the NHS in England and the UK.

Around 1.5 million blood donations are collected annually, saving and transforming thousands of lives.

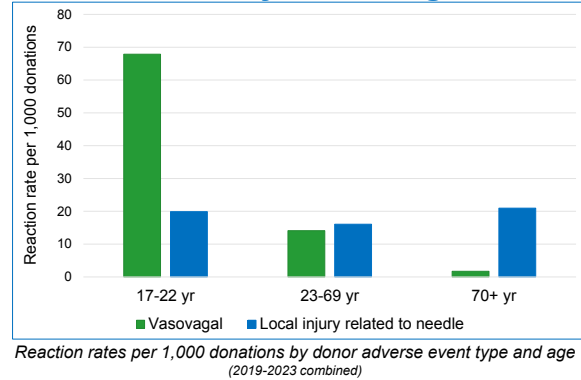
Donor safety is of paramount importance and is ensured by stringent donor selection and health screening, standard policies and procedures, and adequately trained staff optimally supported by necessary resources.

Donors are encouraged to report any adverse event in a timely manner to encourage appropriate management.

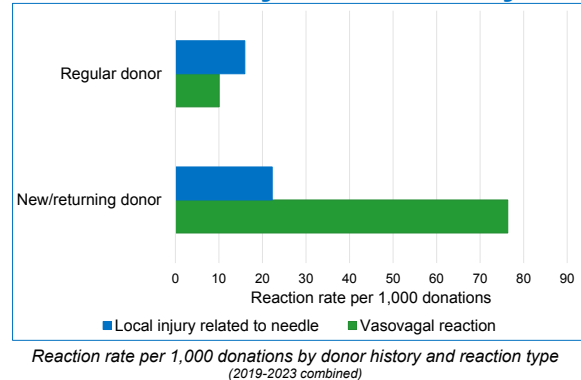
NHSBT collected a total of 7,778,585 donations (Whole Blood, Apheresis, convalescent plasma (CVP) and Plasma for Medicine (PfM)) between 2019-2023. These include completed donations or those instances where venepuncture (VP) was attempted but the donation was not completed.

Donor complications were reported at an overall rate of 32.4 per 1000 donations, excluding delayed events (delayed bruising, rebleeding or vasovagal reactions).

Reaction rate by donor age



Reaction rate by donor history



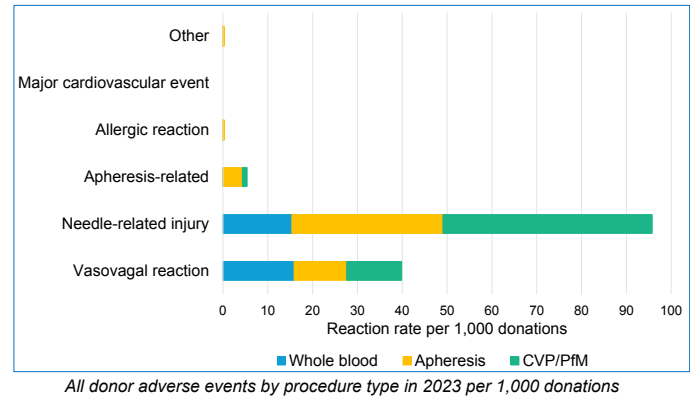
Conclusions

- Blood donor haemovigilance data can provide valuable insights to enhance donor safety, improve the donation experience and strengthen the overall transfusion chain.

- These contribute to improvements in blood donation practices e.g., improved venepuncture practices, changes to standard operating procedures, risk mitigating measures in high-risk donors, support education.

- Information provided to blood donors regarding risks using this data and measures to improve safety, help promote better decision making and informed consent.

Reaction rate by procedure type



Whole blood

- Overall reaction rates in whole blood donors were stable, between 31 and 32 reactions per 1,000 donations.

Apheresis

- Reaction rates in apheresis donors (excluding CVP/PfM) rose between 2019-2023 from 40.4 to 49.9 per 1,000 donations → mainly due to higher vasovagal reactions and needle-related injuries.

PfM

- PfM donations began in April 2021.
- The reaction rate for PfM donors in 2023 was 60.0 per 1,000 donations, which is much higher in comparison to non-PfM apheresis donors → mainly due to the higher bruising rate observed.

Reaction rate by donor sex

Female donors:

- Had a higher overall reaction rate than male donors (40.7 vs 25.4 per 1,000 donations in 2023).
- Were twice more likely to experience a vasovagal reaction, compared to male donors (21.1 vs 10.8 per 1,000 donations in 2023).

Male donors:

- Apheresis-related reactions were more common in male donors (0.25 vs 0.08 per 1,000 donations)
- ~ this can be attributed to the fact that a high proportion of apheresis donors are male.

Year	Female	Male
2019	~39	~23
2020	~37	~28
2021	~40	~29
2022	~40	~25
2023	~41	~25

A five-year summary of donor adverse events data from NHS Blood and Transplant

Shruthi Narayan

NHS Blood and Transplant provides blood and transplantation services to the NHS in England and the UK. Around 1.5 million blood donations are collected annually, saving and transforming thousands of lives. Donor safety is of paramount importance and is ensured by stringent donor selection; health screening, standard policies/procedures, and adequately trained staff optimally supported by necessary resources. Donors are encouraged to report any adverse event in a timely manner to encourage appropriate management. This provides a summary of the blood donor complications reported to NHSBT 2019-2023.

A total of 7,778,585 donations (Whole Blood, Apheresis, convalescent plasma (CVP) and Plasma for Medicine (PfM)) occurred between January 2019 and December 2023. Donor complications were reported at an overall rate of 32.4 per 1000 donations, excluding delayed events (delayed bruising, rebleeding or vasovagal reactions). Overall reaction rates in whole blood donors were stable across this period, between 31 and 32 reactions per 1,000 donations. Reaction rates in apheresis donors (excluding CVP/PfM) rose between 2019 and 2023 from 40.4 to 49.9 per 1,000 donations. PfM donations began in April 2021. The reaction rate for PfM donors in 2023 was 60.0 per 1,000 donations, which is much higher in comparison to non-PfM apheresis donors and is mainly due to the higher bruising rate.

Reaction rates in 2023 were over three times higher in donors aged 17-22 years than in donors aged 23-69 years (96.9 vs 30.7 per 1,000 donations). This is due to the higher rates of vasovagal reactions in younger donors. Older donors aged >70 years had lower reaction rates

overall (24.7 per 1,000 donations). They were slightly more likely to report a local injury at the needle site, e.g., bruising. Overall reaction rate for new/returning donors was almost four times higher compared with regular donors in 2023 (97.9 vs 26.7 per 1,000 donations). Most of this difference can be attributed to increased vasovagal reaction rates. Female donors had a higher overall reaction rate than male donors (40.7 vs 25.4 per 1,000 donations in 2023) and were twice as likely to experience a vasovagal reaction, compared to male donors (21.1 vs 10.8 per 1,000 donations in 2023). Apheresis-related reactions were more common in male donors (0.28 vs 0.12 per 1,000 donations in 2023) reflecting the fact that a high proportion of apheresis donors are male. Vasovagal reactions and needle-related injuries were the most commonly reported adverse events. Haemovigilance data can provide valuable insights to enhance donor safety, improve the donation experience and strengthen the overall transfusion chain with improvements in blood donation practices such as improved venepuncture practices, changes to standard operating procedures, risk mitigating measures in high-risk donors and support staff education. Information provided to blood donors regarding risks using this data and measures to improve safety help promote better decision making and informed consent.

Implementation of severity grading for all donor complications at NHS Blood and Transplant, UK

Clare McNally, Rebekah Holliday, Sally Gough, Theresa Collinson, Gwyneth Everett, Penny Wimbleton, Alexandra Griffiths, Liezl Gaum, Shruthi Narayan
NHS Blood and Transplant, United Kingdom



Blood and Transplant

Donor Health 1
September 10th

Monitoring Donor Health & Safety

Implementation of severity grading for all blood donor complications at NHS Blood and Transplant Shruthi Narayan

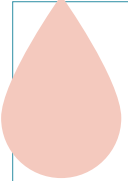
NHS Blood and Transplant (NHSBT) is responsible for the efficient, safe and reliable collection and supply of blood in England. Around 1.5 million blood donations are collected annually, saving and transforming thousands of lives. The 4 UK Blood Services agreed to implement the validated donor severity grading criteria developed by the AABB Donor Haemovigilance Working Group and endorsed by ISBT, IHN and EBA (Townsend et al. 2020). This framework assigns a severity grade to each donor adverse event, with grades 1 to 5 being roughly associated with mild, moderate, severe, life-threatening and death. Advantages to NHSBT of implementing this grading system included alignment with internationally validated criteria, allowing benchmarking and promoting system-wide improvements to donor care and safety. Before its introduction, severity grading within NHSBT was applied only to vasovagal events and did not follow the AABB criteria. This abstract covers the preparation for and experience of this change, which went live in October 2024.

Change control processes within the quality management system enabled effective, successful implementation while maintaining compliance, safety and efficiency. An 'Assess-Plan-Do-Review' framework was followed. The initial assessment found that this change provided an opportunity to address issues that had been identified from previous audits and incidents relating to incorrect codes being applied to donor adverse events. An initial 'scoping' meeting with all stakeholders identified the various workstreams needed to ensure smooth implementation: new set of codes, staff training, investigation thresholds for these incidents, changing controlled documents for the processes, dissemination of the new framework and monitoring impact of change.

documents for the processes, dissemination of the new framework and monitoring impact of change. A culture of collective ownership was promoted, fostering innovation and creativity. A multidisciplinary core group was established to lead and coordinate this ensuring representation. Risk assessment at the start of the project allowed identification of appropriate mitigation measures. PULSE, developed and supported by Savant, is the core software system that powers the whole life cycle for blood at NHSBT, from donation to hospital issue. New 3-character codes were developed to incorporate the severity grading for all donor complications that were distinct from codes in use and allowed comparison of historic data with future data. Feedback was sought from end users at every stage and helped refine the process.

Training included an intense staff training programme delivered over 4 weeks with a training guidance document detailing the change and rationale, drop-in sessions via Teams and follow up calls to address Q&A for the first couple of months post implementation. Reported events for the first 3/12 were reviewed to help identify and address issues in a timely manner. Feedback from staff post implementation has been positive and a further educational session is being planned to ensure consistent application of the new criteria. Successful change implementation in healthcare can happen if people, processes and purpose align. Healthcare is about care which extends beyond patients and donors to the very people responsible for implementing change.

Introduction



NHS Blood and Transplant (NHSBT) is responsible for the efficient, safe and reliable collection and supply of blood in England. Around 1.5 million blood donations are collected annually, saving and transforming thousands of lives.



The 4 UK Blood Services agreed to implement the validated donor severity grading criteria developed by the AABB Donor Haemovigilance Working Group and endorsed by ISBT, IHN and EBA (Townsend et al. 2020).

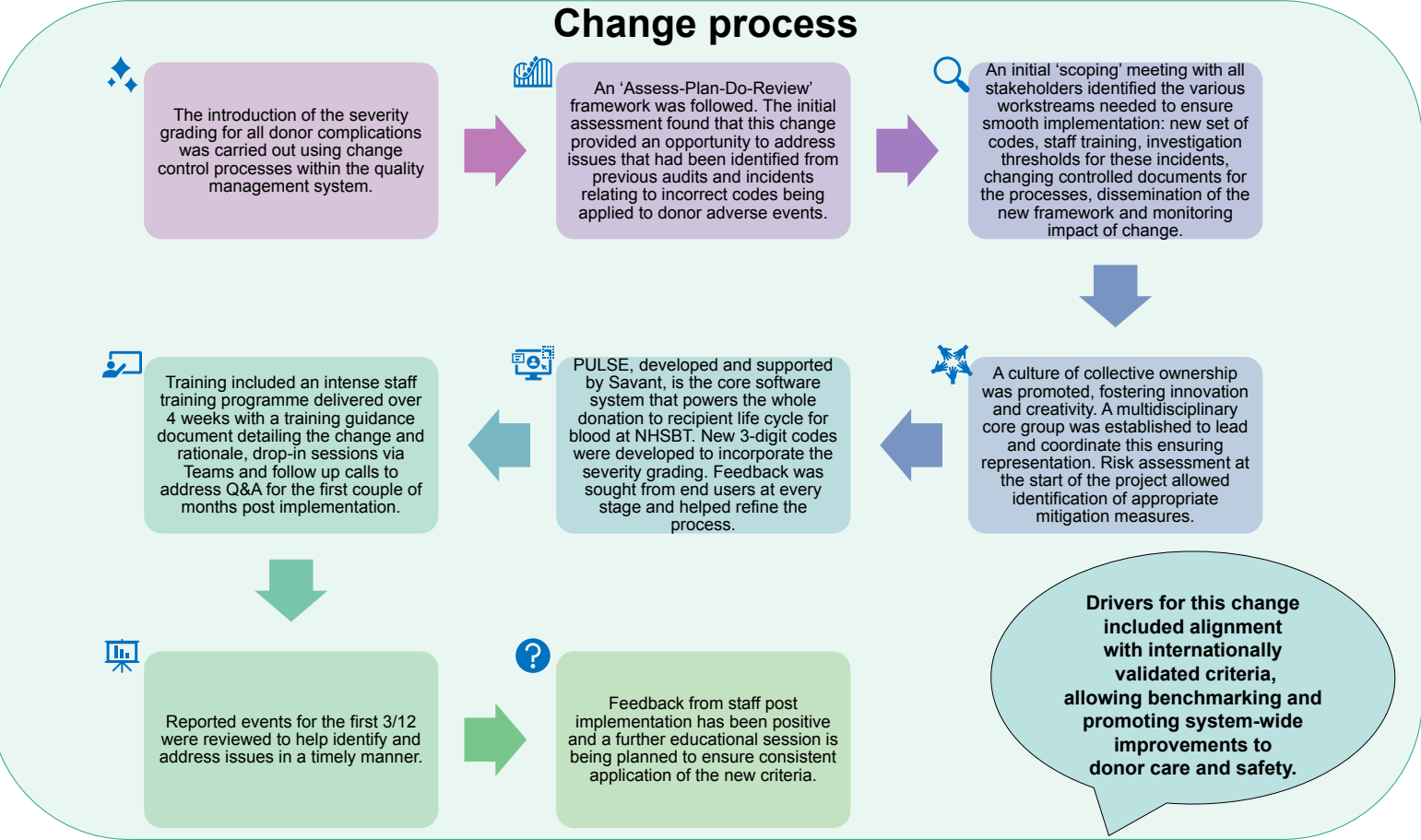


This framework facilitates recording the severity for all donor adverse events from Grades 1-5, with 1 through 5 being roughly associated with mild, moderate, severe, life-threatening and death. NHSBT went live with incorporating the severity grading in October 2024.



This abstract covers the preparation and experience for this change. Before the introduction of this change, at NHSBT, severity grading was applied only to a limited number of categories such as vasovagal events, both immediate and delayed, and bruising.

Change process



Conclusion



Successful change implementation in healthcare can happen if people, processes and purpose align.



Healthcare is about care which extends beyond patients and donors to the very people responsible for implementing change.



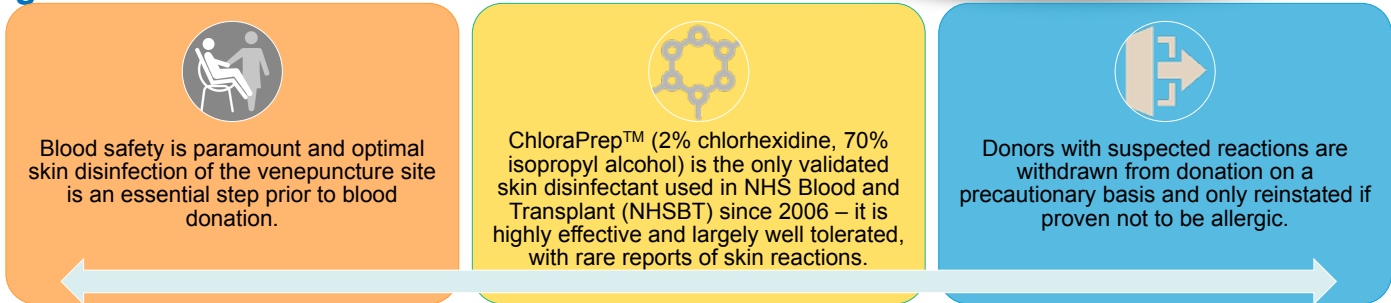
Suspected Chlorhexidine reaction audit:
what we found and what we did next

NHS

Blood and Transplant

JB Muller¹, Liezl Gaum¹, Suhail Asghar¹, Susan Burchill³, Norda Kerr³, Dasia Dosi³, Alexandra Griffiths², Shruthi Narayan^{1,2}
NHS Blood and Transplant, United Kingdom
¹ Donor Medical Team, ² Serious Hazards of Transfusion, ³ Clinical Support Team

Background

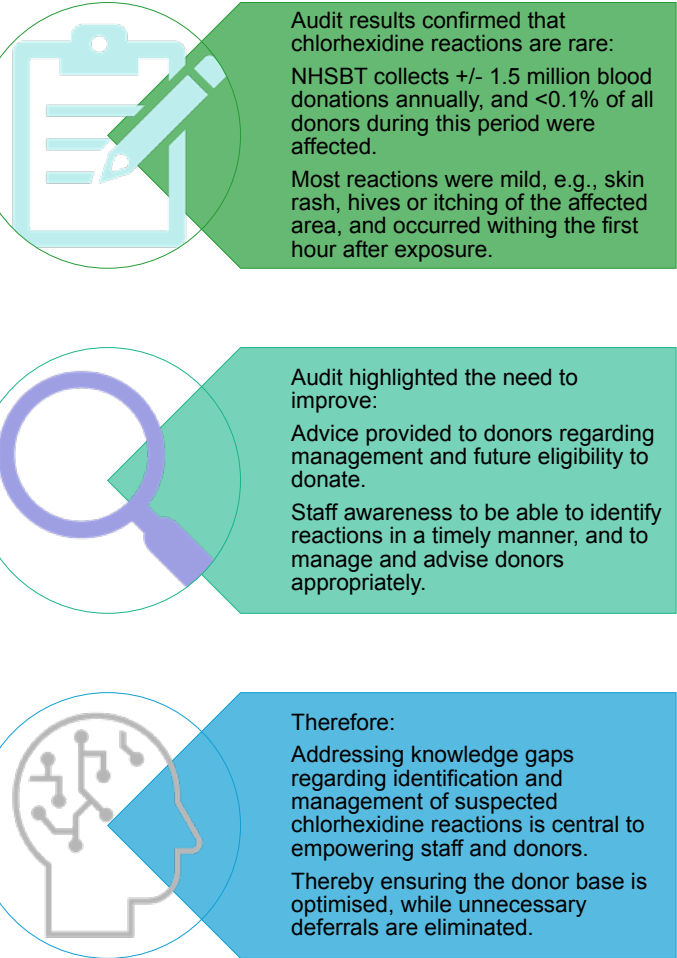


Method

A retrospective audit of blood donors who had reported a skin reaction was carried out between January 2013 – June 2023, looking at electronic donor records. The audit aimed to identify gaps in management of donors with suspected reactions, with subsequent recommendations to improve practices, thereby enhancing donor care and satisfaction.

Results

What we found



INTRODUCTION

Before donation, donors are asked:

“...have you ever injected yourself, or been injected with, illegal or non-prescribed drugs, **including body-building drugs** or cosmetics or injectable tanning agents?”

Permanent IDU deferral by law, withdrawn from donation

Prescribed testosterone accepted to donate

IDU

Injecting drug use

IPED

Image and performance enhancing drugs

PWID

People who inject drugs

Aim to understand the scale and type of bodybuilding drug use reported by UK donors

METHODS

Data from:

- Audit of on-session deferrals for injecting drug use in England from 14 June 2021 to 13 June 2023 when 3.1 million donations were made
- Online survey of blood donors England, Scotland, Wales in 2024 with 23,861 responders
- Routine surveillance of post-test discussion of donors with markers of infection, UK 2021 to 2024, when 7.1 million donations were made

RESULTS

Disclosed injecting non-prescribed bodybuilding or testosterone in deferred donors, online surveyed negative donors and donors positive on donation testing

	Deferred	Online survey	Positive donors
Total bodybuilding including testosterone	90	20	3
Non-prescribed testosterone	38	7	2
Rate	2.8 per 100,000 donations made	83.8 per 100,000 responders	0.04 per 100,00 donations made
First-time donor	89 (98.9%)	1 (5.0%)	3 (100.0%)
Repeat donor	1 (1.1%)	19 (95%)	0
Male	87 (96.7%)	19 (95.0%)	3 (100.0%)
Female	3 (3.3%)	1 (5.0%)	0
Mean age (range)	36.2 (21.62)	47 (38-58)	37 (32-41)

Donors deferred on-session for non-prescribed injecting by drug/agent, England 2021-2023 (n=90)

31 unknown drug

38 non-prescribed testosterone

20 steroids

1 human growth hormone

Survey responders said they didn't disclose past injecting (n=20, 0.08%) because...

...they didn't remember (2)

...it was a long time since use (5)

...they said they were told they could still donate (6)

...they were embarrassed (3)

...not known (4)

3 positive donors (hepatitis B, C, HIV) identified recent IPED use at post-test discussion. All had other potential sources of infection and HIV was ascribed to sex between men and women.

5 syphilis positive donors reported prescribed testosterone, 3 treated so had other reasons for ineligibility

CONCLUSION

Few donors disclose and are deferred for testosterone use on session. Larger number of male donors but some female donors deferred

Small number donating while ineligible for bodybuilding IDU – 0.08% in 2024 survey vs 0.05% in 2014 survey [3] but higher rate than deferred donors. Different types of injecting were not asked about separately in 2014 survey

No evidence that injecting was the source of recently acquired infection in positive donors, but some donating with recent injecting behaviour

Routine surveillance does not indicate safety impact but need for continuous monitoring and donor engagement

REFERENCES

- McVeigh, J. *et al.* (2021) 'Generating evidence on the use of image and performance enhancing drugs in the UK: Results from a scoping review and expert consultation by the Anabolic Steroid UK Network'. *Harm Reduction Journal*, 18(1). doi:10.1186/s12954-021-00550-z.
- Hope, V.D. *et al.* (2013) 'Prevalence of, and risk factors for, HIV, hepatitis B and C infections among men who inject image and performance enhancing drugs: A cross-sectional study'. *BMJ Open*, 3(9). doi:10.1136/bmjopen-2013-003207.
- Reynolds, C.A. *et al.* (2020) 'What are blood donors telling us about injecting drug use?'. *Vox Sanguinis*, 115(8), pp. 637–646. doi:10.1111/vox.12976.

ACKNOWLEDGEMENTS

Thank you to donors, survey responders, on session staff, NHSBT/UKHSA Epidemiology Unit and NHSBT Microbiological Services Laboratories

Donor Health 1
September 10th

Monitoring Donor Health & Safety

Building a picture of testosterone injecting in blood donors, UK 2021 to 2024

Katherine Daly

Background

In the UK, blood donors are asked predonation if they have ever injected illegal or nonprescribed drugs, including bodybuilding drugs, which carries a permanent deferral. Testosterone may be prescribed for medical reasons but can be used, as with other anabolic steroids, as an image and performance-enhancing drug (IPED). Testosterone may also increase haematocrit, with phlebotomy as one way to mitigate potential harm. People who inject IPEDs have higher hepatitis B and C prevalence than the general population. Recent trends of increased use of IPEDs among the general population aligns with anecdotal evidence of UK donors increasingly reporting testosterone injection.

Aims

We aim to synthesise a body of evidence on the scale and type of bodybuilding drug use reported by UK blood donors, focussing on testosterone. This can be used for communications to maintain a safe donor population.

Methods

Data were sourced from an audit of on-session deferrals in England between 14 June 2021 and 13 June 2023 extracted from the donor management system using the injecting drug use deferral code, an online anonymous behaviour survey of confirmed negative blood donors in England, Scotland and Wales during 2024, and routine surveillance of positive donors' posttest discussion, UK from 2021 to 2024.

Results

In England over 2 years, 63 donors were deferred on session for injecting the bodybuilding drugs testosterone (18), steroids (13), human growth hormone (1) or other (31) and a further 20 reported nonprescribed testosterone injecting with no bodybuilding noted (Table 1).

Of the 23,861 survey responders, 20 (0.1%) answered yes to injecting bodybuilding drugs with 7 also reporting nonprescribed testosterone. Reasons for nondisclosure included long time since use (5), not remembering (2), did but were told could still donate (6), embarrassment (3) and none given (4). There were 94 donors (64 per 100,000 responders) with prescribed testosterone, 1 female and 6 nonbinary or another identity. Of these, 10 disclosed ineligible behaviours: 9 injecting bodybuilding drugs and 1 taking medication to prevent HIV plus anal sex with new/multiple partners. In the UK over 4 years, posttest discussions with positive donors (hepatitis B, C, syphilis) identified 3 ineligible for injecting nonprescribed steroids and/or testosterone for bodybuilding. One reported not seeing the question, one said long time since risk, and no reason noted for one. Additionally, 5 firsttime syphilis-positive male donors were prescribed testosterone for low levels (3), hormone replacement therapy (2), including 3 ineligible for syphilis treatment.

Conclusion

In England over 3 donors per month are deferred for injecting bodybuilding drugs, usually younger, male firsttime donors. Few negative survey responders reported bodybuilding drug injection but included repeat donors with recent injecting behaviour. Furthermore, the survey was biased towards older donors so may be underestimating injecting. Reassuringly, positive donors had longstanding infections, seemingly unrelated to testosterone use. Some donors prescribed testosterone were donating despite being ineligible for other reasons. Behavioural and staff training interventions are needed to enable donors and staff to defer appropriately and overcome nondisclosure linked to memory failure or embarrassment.

39

Award Winner
Best Poster

Complimentary A1C Wellness Screening for Blood Donors



Background: Diabetes is a national health crisis in the U.S., with over 37 million people living with diabetes and 96 million adults having prediabetes. The Southern U.S. states of Texas, Florida, Alabama, Georgia, and South Carolina have some of the highest rates of diabetes and prediabetes. A growing concern is the increasing incidence of type 2 diabetes among young people, many of whom are blood donors. In addition, there is a continuous need to increase the blood donor population due to ongoing demand. The pilot program, which offered complimentary A1C screenings during blood donations, addressed both the diabetes crisis and the urgent need for more blood donors.

Aims: The program aimed to assess whether offering complimentary A1C wellness screenings positively impacted the local blood supply. It sought to engage new, existing, and lapsed blood donors while educating them about their health, particularly in relation to diabetes and prediabetes. The initiative also evaluates if providing A1C results could enhance donor retention and encourage first-time donations.

Methods: The campaign targeted diverse blood donors across various demographics and age groups. The two collaborating blood centers, which covered Texas, Florida, Alabama, Georgia, and South Carolina, collectively tested 231,885 blood donors. These states represent some of the most diverse populations in the U.S., providing valuable insights into donor behavior and health risks.

- Results:**
- Collaboration Between Two Centers:** The pilot involved two blood centers working closely to implement the A1C wellness screening. This collaboration enabled both centers to share insights, refine strategies, and optimize donor engagement. Regular meetings facilitated the exchange of best practices, problem-solving, and tactical adjustments, creating a unified process for communication, testing, and follow-up, which enhanced the program’s success.
 - Multistate Campaign with a Diverse Donor Pool:** The program’s multistate scope broadened its reach and data insights, allowing the campaign to engage a diverse donor population. By targeting a wide range of demographics, the campaign was able to assess how different groups responded to the A1C screening offer, which provided valuable data for refining future outreach efforts.

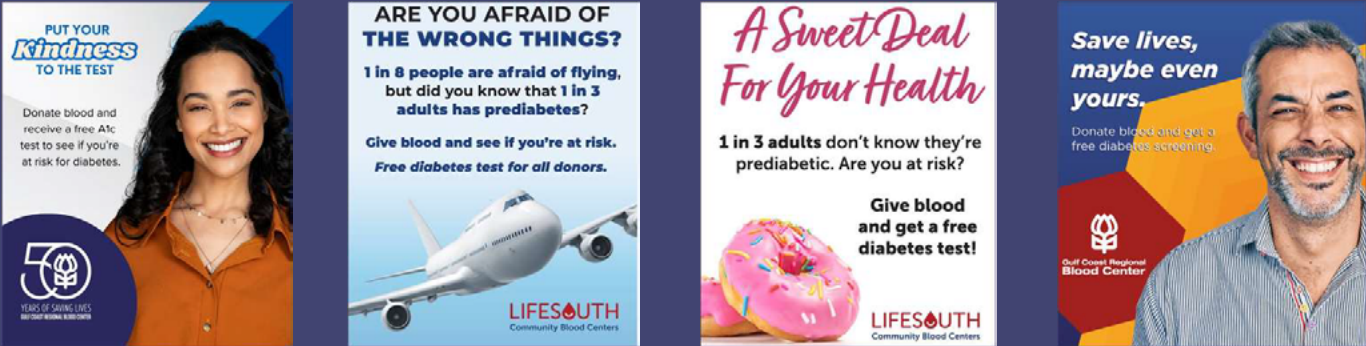
Impact on the Local Blood Supply:

- Gulf Coast Blood-** 7% increase in donor procedures year over year.
- LifeSouth-** 10% increase in donor procedures year over year.

Donor survey to measure the donors’ sentiment:

- Gulf Coast Blood-** 68.9% of donors prefer A1c testing at every donation, and 64% said they are likely or very likely to donate more frequently because of testing.
- LifeSouth-** 60.1% of donors prefer A1c testing at every donation, and 50% said they are likely or very likely to donate more frequently because of testing.

Sharing Best Practices and Insights: The centers worked together to identify effective strategies for donor engagement. They shared best practices on digital marketing, communication, and donor retention. Key discussions focused on the most effective messaging for social media, how to communicate A1C results to donors, and addressing concerns without providing medical diagnoses. **Campaign examples:**



Findings of Donor Test Results: A key outcome of the pilot was the collection and analysis of A1C test results, revealing that many donors had A1C levels indicating prediabetes or diabetes. This finding highlighted the importance of offering wellness screenings during blood donation. The program not only saved lives through blood donations but also provided critical health information, potentially enabling earlier interventions for diabetes. (Fig 1: Results from testing, Fig 2: A1c Results by Age Group)

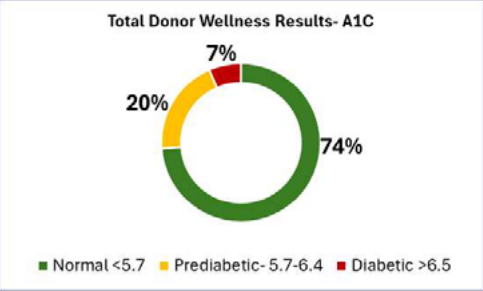


Fig:1

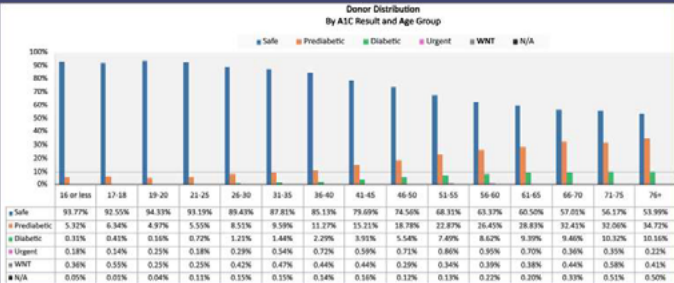


Fig:2

Conclusion: The pilot program successfully engaged blood donors and provided valuable health information, demonstrating its potential to address both the diabetes crisis and the ongoing need for blood donations. By sharing the findings, the centers emphasized the broader public health impact and the importance of integrating wellness screenings into blood donation campaigns. These results will help inform future wellness initiatives for both blood donation organizations and healthcare providers, promoting better health outcomes and a sustainable blood supply.

Complimentary A1C Wellness Screening for Blood Donors Theresa Pina

Diabetes is a national health crisis in the U.S., with over 37 million people living with diabetes and 96 million adults having prediabetes. The Southern U.S. states of Texas, Florida, Alabama, Georgia, and South Carolina have some of the highest rates of diabetes and prediabetes. A growing concern is the increasing incidence of type 2 diabetes among young people, many of whom are blood donors. In addition, there is a continuous need to increase the blood donor population due to ongoing demand. The pilot program, which offered complimentary A1C screenings during blood donations, addressed both the diabetes crisis and the urgent need for more blood donors.

Aims The program aimed to assess whether offering complimentary A1C wellness screenings positively impacted the local blood supply. It sought to engage new, existing, and lapsed blood donors while educating them about their health, particularly in relation to diabetes and prediabetes. The initiative also evaluates if providing A1C results could enhance donor retention, encourage first-time donations, and increase donations.

Methods The campaign targeted diverse blood donors across various demographics and age groups. The two collaborating blood centers, across multiple states, collectively tested over 150,000 blood donors. These states represent some of the most diverse populations in the U.S., providing valuable insights into donor behavior and health risks.

Results 1. **Collaboration Between Two Centers:** The pilot involved two blood centers working closely to implement the A1C wellness screening. This collaboration enabled both to share insights, refine strategies, and optimize donor engagement.

- Diverse Donor Pool:** The program’s multistate scope broadened its reach and data insights, allowing the campaign to engage a diverse donor population. By targeting a wide range of demographics, the campaign was able to assess how different groups responded to the A1C screening offer, which provided valuable data for refining future outreach efforts.
- Sharing Best Practices and Insights:** The centers worked together to identify effective strategies for donor engagement. They shared best practices on digital marketing, communication, and donor retention. Key discussions focused on the most effective messaging for social media, how to communicate A1C results to donors, and addressing concerns without providing medical diagnoses.
- Findings of Donor Test Results:** A key outcome of the pilot was the collection and analysis of A1C test results, revealing that many donors had A1C levels indicating prediabetes or diabetes. This finding highlighted the importance of offering wellness screenings during blood donation. The program not only saved lives through blood donations but also provided critical health information, potentially enabling earlier interventions for diabetes.

Conclusion The pilot program successfully engaged blood donors and provided valuable health information, demonstrating its potential to address both the diabetes crisis and the ongoing need for blood donations. By sharing the findings, the centers emphasized the broader public health impact and the importance of integrating wellness screenings into blood donation campaigns. These results will help inform future wellness initiatives for both blood organizations and healthcare providers, promoting better health outcomes and a sustainable blood supply.



Donor Management 2:

Innovation & Ethics in Blood Collection
Thursday September 11th





Digital Transformation of the Blood Service: Innovative App for blood donors

BACKGROUND

The Finnish Red Cross Blood Service (FRCBS) is responsible for the national supply of blood products and related laboratory services. In Finland's healthcare system, blood donations are essential for treating approximately 40,000 patients each year. Every day, 600–700 donors are needed to maintain supply. To better support blood donors and ensure emergency preparedness, the Finnish Red Cross Blood Service (FRCBS) launched a mobile application aimed at boosting donor engagement, improve communication and interaction, and strengthening operational crisis resilience.

OBJECTIVE AND METHODS

Methods

Challenges were addressed using participatory methods with both blood donors and Blood Service experts.

Participatory design methods included:

- Co-design workshops with donors and FRCBS experts.
- Interviews and surveys to capture user preferences.
- Iterative development cycles incorporating feedback and usability testing.

Blood Donors' Preferences

- **Motivation and Meaning:** Many donate blood to help others, valuing recognition and information on how their contributions are used.
- **Personalized Guidance:** Donors want individualized instructions, guidance, and reminders to make donation routine.
- **Clarity and Accessibility:** Transparent communication about the importance, process and demand helps maintain trust.
- **Independence and Personal Donation Plan:** Donors seek autonomy in setting their own donation schedules.

The Blood Service's Objectives

- Increase donor motivation and retention through personalized digital services
- Provide donors with real-time, accessible information about donation history and eligibility
- Improve communication efficiency, especially during emergencies
- Support crisis preparedness

Based on these needs, the goal was to develop an app providing clear, motivating, and supportive services for blood donation journey.

RESULTS

The Blood Service created a dedicated app as a new digital service channel to enhance customer value, engage existing donors, reach underrepresented groups, and integrate ongoing initiatives for improved donor recognition and streamlined communication.

The first version of the app was released in 2023, offering key digital services for blood donors.

The App includes now several features:

- **Donation History:** Past donations, hemoglobin levels, and blood group.
- **Eligibility Calculator:** Determine the next donation date based on previous activity.
- **Donor Services:** Easy access to appointment booking and the health questionnaire.
- **Emergency Alerts:** Real-time notifications during critical and urgent situations, such as major accidents.
- **Offline Access:** Blood group information even without an internet connection.
- **Lifesaver Badges:** Virtual badges to recognize and celebrate donation visits.
- **Profile Management:** Update personal details directly in the app.
- **Multilingual Support:** Full functionality in Finnish, Swedish, and English to reach diverse donor groups.

The app now has over 100,000 users – nearly matching the annual number of blood donors. Eighty percent of new donors download the app, and almost 30,000 users are active each month, with half opting in to receive emergency notifications.

The app supports targeted communication during crises, strengthening national preparedness. It also provides access to a donor's blood group information even if the Blood Service's core system is offline – a feature particularly valuable in disruption and crisis scenarios.

CONCLUSIONS

The FRCBS donor app demonstrates how digital solutions can not only make blood donation easier but also support society's preparedness in swift crisis communication. By aligning donor needs with operational goals, the app fosters sustained engagement and ensures rapid response capabilities.

The Blood Service continues to develop the app to make it even easier to use and more engaging. In the future, users will be able to manage appointments directly through the app and report donation restrictions or absences to avoid unnecessary invitation messages.

"We are truly delighted with how well the app has been received. It shows that Finns want to help, and that digital solutions can effectively support this willingness," says Johanna Castrén, Director of Blood Donation.

THE APP EXCEEDED EXPECTATIONS



100 000+

Within the first week, 23,000 users downloaded the app. Today, the app has more than 100,000 users and is available in three languages: Finnish, Swedish and English. This indicates a strong demand and high user engagement.



4/5

The app has received excellent reviews in both app stores. Feedback from users has been very positive, highlighting the convenience and motivation provided by the app.



80 %

Almost 80% of new blood donors download the app. The app has almost 30,000 users per month.

Contact: johannes.siikonen@bloodservice.fi
anne.lind@bloodservice.fi
@veripalvelu



♥ Digital Transformation of the Blood Service: Innovative App by the Blood Service Johannes Siikonen, Anne Lind

Background

The Finnish Red Cross Blood Service ensures an adequate blood supply to meet healthcare needs, which can change unexpectedly due to events like major accidents. One key objective is to engage donors and encourage regular donations.

Aim's and Methods

Challenges were addressed using participatory methods with blood donors and Blood Service experts via co-design meetings and interviews. Workshops and brainstorming sessions provided additional insights from donors and experts.

Blood Donors' Preferences

- **Motivation and Meaning:** Many donate blood to help others, seeking recognition and information on how their contributions are used.
- **Personalized Guidance:** Donors desire individualized instructions, guidance, and reminders to make donation routine.
- **Clarity and Accessibility:** Clear communication about the importance, process, changes, and demand helps maintain trust.
- **Independence and Personal Donation Plan:** Donors wanted autonomy to set their own donation schedules.

The Blood Service's Objectives

The design aimed to streamline communication and transactions while activating donors

- Facilitating Donor Engagement and Commitment
- Tracking and Information Sharing
- Operational Readiness

Based on these needs, the goal was to develop an app providing clear, motivating, and supportive services for blood donation processes.

The Blood Service created a dedicated app as a new digital service channel to enhance customer value, engage existing donors, reach underrepresented groups, and integrate ongoing initiatives for better donor recognition and streamlined communication.

Results

The first version of the app was released 2023, offering key digital services for blood donors. The initial app version includes several features:

- Donors can track their donation history, haemoglobin levels, dates, locations, and next eligible donation date.
- Donors can check the next possible donation date based on their last donation and required waiting period.
- The app helps donors locate the nearest donation center with details like address, hours, and appointment slots.
- The app also provides easy access to appointment booking and the health questionnaire for blood donors.

The latest version of the app improves the user experience by having new gamification elements for blood donors. Donors will receive virtual lifesaver badges for their visits, which will thank them for donating blood and encourage them to donate again. Donors can also update their personal details in the app.

Blood Service will notify donors via app in critical and urgent situations. These could include, for example, major accident scenarios.

The app supports a reliable blood supply, particularly during emergencies by sending real-time alerts to donors in urgent shortages or large-scale accidents, ensuring quick mobilization.

Continuous updates strengthen the Blood Service's response capabilities, contributing to overall supply security and resilience.

Conclusion

The App Exceeded Expectations
Within the first week, 23,000 users downloaded the app. This indicates a strong demand and high user engagement. Today app has more than 85 000 users and is available in three languages: Finnish, Swedish and English. Almost 80% of new blood donors download the app. The app has over 22 000 users per month (44% men, 56% women). Feedback from users has been very positive, highlighting the convenience and motivation provided by the app.

Digital strategies for blood donor engagement: maximizing impact & efficiency

P. Córdoba 2 L. Gonzalez 1, C. Moya 1, S. Vallés 1, J.R. Grifols 3, A. Millan 4.
1 Chief Marketing & Communicatios Offcier ,2 Márqueting &Communication , 3 Chief Medical Officer,, 4 CEO
Banc de Sang i Teixits (BST) Barcelona.

INTRODUCTION

Traditional donor recruitment relies on media outreach, mobile drives, and direct contact (calls, SMS, email).

Digital platforms are increasingly essential, especially to reach younger demographics (18–30 years). telemarketing.

METHODS

- From July to December 2024, we invested in online marketing campaigns with the following actions:
- **Google Ads campaigns**, displaying ads targeted at young audiences in areas served by the Banc de Sang i Teixits, across Google platforms.
 - **Social Ads campaigns**, displaying ads on Instagram and Facebook aimed at the target profiles.
- All ads link to our booking website. Different formats and texts are used to test and optimize those with better impact and results.

In Google Ads, remarketing campaigns are used (i.e., re-impacting users who click on the ad but don't book an appointment)

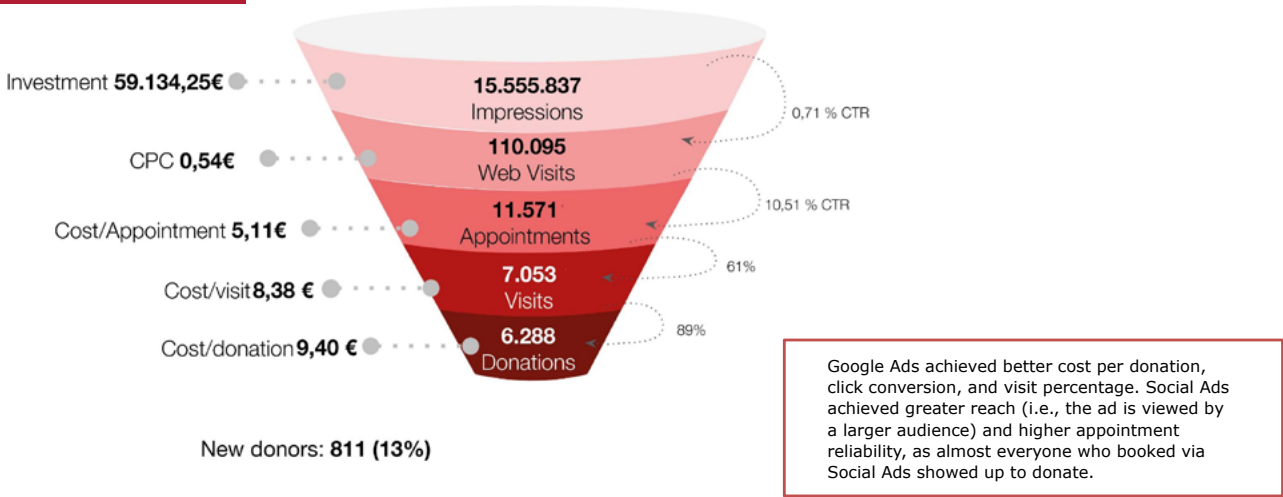
All impacts and their results are tracked to monitor: cost per click, cost per booking, cost per visit, and cost per donation. The cost per donation of these campaigns is compared to the cost per donation obtained through donor telephone calls.

OBJECTIVES

- Evaluate the results of online marketing to increase impact among potential donors.
- Increase the number of new donors.
- Preferably attract donors aged 18–30 to ensure generational replacement.



RESULTS



CONCLUSION

Online communication campaigns are an effective channel to spread the message about the need for donation. They allow mass yet segmented outreach, spark interest, drive traffic to the website, and result in both bookings and donations—by both regular and new donors. The cost per donation is significantly lower than that of telephone campaigns. By comparing digital and traditional methods, it provides data-driven insights into cost-efficiency and impact. The findings support a shift toward scalable, targeted strategies that optimize resources and ensure generational renewal in donor bases—key for maintaining stable blood inventories in evolving communication landscapes

♥ Digital Strategies for Blood Donor Engagement: Maximizing Impact and Efficiency Pilar Córdoba

Introduction

Traditional blood donor recruitment has long relied on media outreach, strategically planned mobile drives and direct communication through phone calls, SMS, or email. However, with the increasing dominance of digital platforms, the effectiveness of online marketing strategies in donor acquisition needs to be explored, particularly when targeting younger demographics. Engaging younger donors is essential for ensuring a sustainable donor base and meeting the continuous demand for blood donations.

Aims

This study evaluates the impact of digital marketing campaigns in reaching and engaging potential donors, increasing first-time donor participation and encouraging individuals aged 18 to 30 to contribute, securing generational continuity in blood donation. Additionally, it assesses the cost-effectiveness of digital outreach compared to traditional telemarketing methods.

Methods

Between june 2024 and decembre 2024, an online marketing campaign was implemented . Google Ads were designed to attract younger audiences through targeted advertisements displayed across Google's platforms, including YouTube, Gmail, Display, and Discovery. Simultaneously, social media advertisements on Instagram and Facebook were deployed to engage individuals within the target demographic. All digital ads directed users to the blood donation appointment platform, where various formats and messaging approaches were tested to optimize engagement. A remarketing strategy was also employed via Google Ads to re-engage users who had shown initial interest by clicking on an ad but had not completed an appointment reservation. The effectiveness of the campaign were assessed by tracking key performance indicators such as ad impressions,

website visits, appointment bookings, actual donor attendance, and completed donations. Cost metrics, including cost per click, cost per reservation and cost per successful donation, were analyzed to compare the efficiency of digital marketing with traditional telemarketing-based donor recruitment.

Results

The campaign generated nearly 15.5 million ad impressions, leading to over 110,000 website visits and resulting in more than 6,000 successful donations, including 800 first-time donors. The cost per successful donation was €9.4, significantly lower than the €13 cost per donation associated with telemarketing efforts. These results highlight the efficiency and cost-effectiveness of digital marketing campaigns in donor acquisition.

Conclusions

Google Ads demonstrated superior cost-efficiency in driving donations and achieving higher engagement per click, while social media advertisements reached a broader audience and attracted donors with a higher conversion rate from reservation to actual donation. The ability to segment and retarget audiences within digital platforms provides a strategic advantage in optimizing donor recruitment efforts. Online marketing campaigns have proven to be an effective and scalable solution for blood donor recruitment. By enabling precise audience segmentation based on demographic and geographic criteria, digital strategies maximize reach and engagement at a lower cost than traditional outreach methods. These findings support the continued implementation and refinement of digital marketing as a key tool for donor acquisition and retention, particularly among younger populations. Future initiatives will further optimize these strategies to enhance their impact and sustainability, ensuring a steady and diverse donor base for years to come.

EVALUATING THE USAGE OF A BLOOD DONATION APP FOR DIGITALIZATION AND DONOR COMMUNICATION

Norbert Niklas¹, Stephan Federsel¹, Claudia Loimayr¹, Carina Hüttner¹, Dieter Forsthuber¹, Susanne Süßner¹

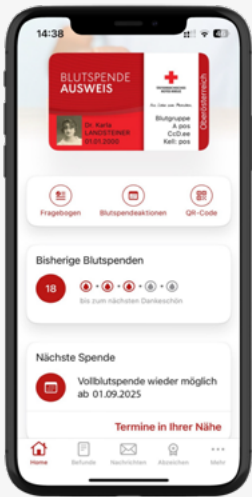
BACKGROUND AND AIMS

It is a challenge for every blood donation center to constantly motivate donors and increase donor retention. Although there is not one solution that fits all problems, it is crucial to attract new and young donors and commit them to develop a donation habit. Therefore, it is necessary to create a modern donation environment that feels natural for digital natives. Altruism, emotions and personal motivation can be supplemented by digitalization providing immediate benefits.

We created a mobile app for blood donors that enables the secure communication of medical information and integrates into our donation processes. The app covers many useful features like answering the questionnaire in advance, searching for blood drives and appointment reservation, downloading personal medical reports, messaging, notifications about distributed blood products and collection of badges.

METHODS

Our blood donation app is able to connect multiple donation centers and was launched in April 2021. Since then 99,166 users have registered and 54,406 verified users have access to their medical data. At the time of writing, 68% of all donations make use of the app, and the trend is still increasing.



RESULTS

We asked donors (n = 2056) what features they like the most and 52 % nominated the donor ID card and the retrieval of medical reports, followed by 49 % for the questionnaire. Additionally, we have analyzed the actual feature usage. 40 % of 1,105 daily users (mean) access the medical reports; 22 % search for appointments and 19 % check their achieved badges. Although the questionnaire is an important component, it is naturally not used on a daily basis.

In 2024, deferral rate was 23 % lower by donors with the app and they return sooner (207 days) for their next donation compared with donors without the app (413 days).

The implementation costs and associated expenses are a major factor when starting such project and it is likely that this is not bearable for small blood centers. In addition to the overall advantages, paper and printing expenses as well as postage can be eliminated. Moreover, the digitalization streamlines the process for staff and donors benefit from the listed features and adapt their behavior. Nevertheless, marketing aspects and support for users, e.g. for the recovery of the second factor or for app store support, must also be taken into account.

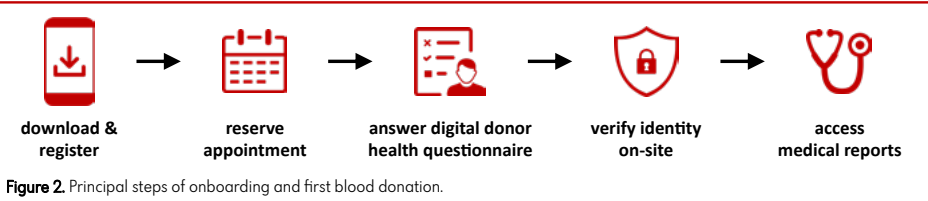
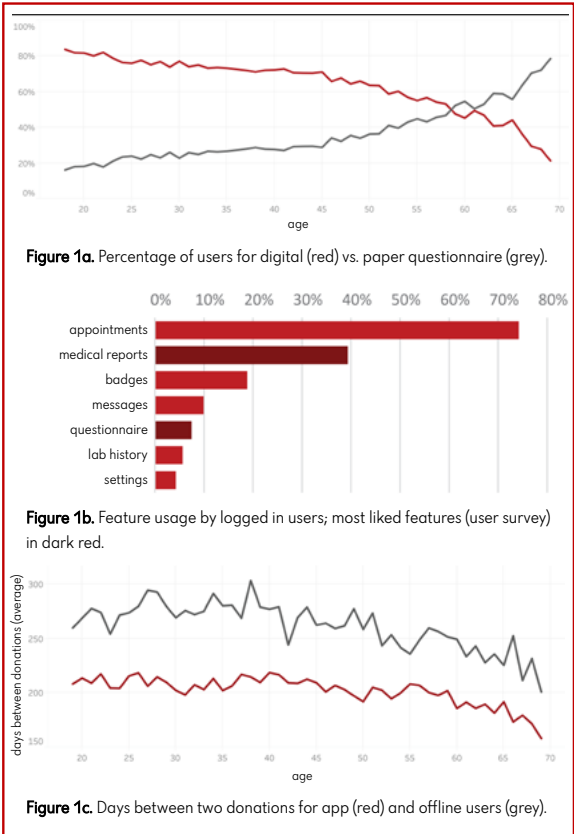


Figure 2. Principal steps of onboarding and first blood donation.



CONCLUSION

The introduction of a blood donation app reaches deep into many processes. Hence, it is essential for all stakeholders to be committed and supportive. On the other hand, the positive effects on our donor pool are evident. Our solution is able to connect multiple centers for not only user experience but also economic factors.



Donor Management 2
September 11th

Innovation & Ethics in Blood Collection

Evaluating the Usage of a Blood Donation App for Digitalization and Donor Communication Dieter Forsthuber

Background

It is a challenge for every blood donation center to constantly motivate donors and increase donor retention. Although there is not one solution that fits all problems, it is crucial to attract new and young donors and commit them to develop a donation habit. Therefore, it is necessary to create a modern donation environment that feels natural for digital natives. Altruism, emotions and personal motivation can be supplemented by digitalization providing immediate benefits.

Aims

We created a mobile app for blood donors that enables the secure communication of medical information and integrates into our donation processes. The app covers many useful features like a donor ID card, eligibility information, answering the questionnaire in advance, searching for blood drives and appointment reservation, downloading medical reports upon completion of laboratory testing, medical history, contact preferences, messaging, notifications about distributed blood products and collection of badges. We want to offer an all-round service that makes blood donation modern and as comfortable as possible.

Methods

Our blood donation app is able to connect multiple donation centers and was launched in April 2021. Since then 99,166 users have registered and 54,406 verified users have access to their medical data. At the time of writing, 68% of all donations make use of the app, and the trend is still increasing. Nearly four years after the launch, we analyze the advantages and challenges of the app, quantify the usage of the implemented features and the effects on donor behavior.

Results

We asked donors (n = 2056) what features they like the most and 52% nominated the donor ID card and the retrieval of medical reports, followed by 49% for the questionnaire. Additionally, we have analyzed the actual feature usage. 40% of approximately 1,105 daily users access the medical reports; 22 % search for appointments and 19 % check their achieved badges. Although the questionnaire is an important component, not so many donors (7%) use it on a daily basis. In 2024, deferral rate was 23 % lower by donors with the app and they return sooner (207 days) for their next donation compared with donors without the app (413 days). The implementation costs and associated expenses are a major factor when starting such project and it is likely that this is not bearable for small blood centers. In addition to the overall advantages, paper and printing expenses as well as postage can be eliminated. Moreover, the digitalization streamlines the process for staff and donors benefit from the listed features and adapt their behavior. Nevertheless, marketing aspects and support for users, e.g. for the recovery of the second factor or for app store support, must also be taken into account.

Conclusions

The introduction of a blood donation app reaches deep into many processes. Hence, it is essential for all stakeholders to be committed and supportive. On the other hand, the positive effects on our donor pool are evident. Our solution is able to connect multiple centers for not only user experience but also economic factors.

¹ Red Cross Blood Transfusion Service of Upper Austria, Linz

Correspondence: norbert.niklas@o.oteskruz.at

The authors declare that there is no conflict of interest.



Aus Liebe zum Menschen.

ENGAGING THE NEXT GENERATION THROUGH 'OPERATION AORTA' IN MINECRAFT

Marloes Metaal, together with Gaming Agency The Invaders

INTRODUCTION

In September 2023, Sanquin introduced an innovative educational tool in the Netherlands: Operation Aorta – Discover the Power of Blood, a custom-designed Minecraft world aimed at educating players about blood and its vital functions. This interactive experience takes players on a journey through the circulatory system, allowing them to explore the composition of blood and the roles of its key components through engaging challenges.

GOALS

- ★ Enhancing knowledge about blood and its working among a younger audience.
- ★ Introducing the concept of blood donation and raising awareness of its importance.
- ★ Highlighting the role of blood banks worldwide.
- ★ Establishing Sanquin's role as an authority on 'all things blood' for a wider audience.

WHAT DID WE DO?

- ★ We made a custom designed Minecraft map, called 'Operation Aorta'
- ★ This map represents the human body, taking the player on a journey as blood cells
- ★ The various assignments taught the players about the functions of blood and blood cells, and processes in the body in which blood plays a role.
- ★ We provided a special 'skin' for players who managed to finish the game, as a motivational gadget
- ★ We made the map available on Minecraft Education and on the Minecraft Marketplace

RESULTS

- ★ MAP HAS BEEN DOWNLOADED MORE THAN 1.6 MILLION TIMES WORLDWIDE.

- ★ ACCORDING TO STATISTICS, ABOUT 10% OF THOSE DOWNLOADS WERE DUTCH. Which is extraordinary for an educational minecraft world.

- ★ THE MAP WAS RATED WITH 4,5 STAR RATING, WHICH IS WELL ABOVE AVERAGE AND THEREFOR A GREAT COMPLIMENT.

GAMING POSSIBILITIES

Around 3.3 billion people worldwide are gamers, that is more than 40% of the global population.

- Gaming therefore provides a great opportunity to reach various target groups, from GenZ to Boomers.
- Possibilities are not limited to custom made games, other options that have proven to be effective are:

- ★ Esports collaborations (like the Sanquin First Blood Campaign).
- ★ Partnerships with streamers as brand ambassadors.
- ★ Interactive activations on live events like TwitchCon and GamesCom.
- ★ Gamification of websites, apps and customer journeys.
- ★ Social content campaigns based on relevant gaming insights.

Want to know more? Visit theinvaders.nl

CONCLUSION

Operation Aorta has proven to be an unconventional but effective means of reaching a very large group of people with an educational message. In a way that was highly appreciated by the target group. This insight offers opportunities to use gaming in the future for various purposes related to donor management.

♥ Engaging the Next Generation through 'Operation Aorta' in Minecraft Marloes Metaal

Engaging the Next Generation through 'Operation Aorta' in Minecraft

In September 2023, Sanquin introduced an innovative educational tool in the Netherlands: Operation Aorta – Discover the Power of Blood, a custom-designed Minecraft world aimed at educating players about blood and its vital functions. This interactive experience takes players on a journey through the circulatory system, allowing them to explore the composition of blood and the roles of its key components through engaging challenges.

While the primary goal of the game is to enhance knowledge about blood among a younger audience, it also introduces the concept of blood donation, raising awareness of its importance and the role of blood banks worldwide.

Operation Aorta is primarily designed for children aged 10 to 15 but is accessible to players of all ages. The game is available in both Dutch and English and can be accessed through Minecraft Education, a platform widely used in schools, as well as through the Minecraft Marketplace.

Since its launch, Operation Aorta has significantly contributed to Sanquin's strategic goals:

Increasing Public Engagement and Media Visibility – The game has attracted media attention, strengthening public awareness of Sanquin's mission.

Positioning Sanquin as a Knowledge Leader – By providing high-quality educational content, Operation Aorta reinforces Sanquin's reputation as a leading authority in blood research and healthcare.

Reaching Future Blood Donors – The game serves as an early touchpoint for potential future donors, expanding outreach to demographics that traditional donor recruitment efforts may not easily reach.

The game's impact has exceeded expectations. It quickly gained traction beyond our own platforms, reaching over one million downloads within just a few months on the Minecraft Marketplace, consistently maintaining a 4.5 out of 5-star rating. Based on global player distribution, we estimate that approximately 100,000 players in the Netherlands have engaged with the game, alongside a significantly larger international audience.

Our experience with Operation Aorta demonstrates the potential of gamification as an innovative approach to donor education and recruitment. By leveraging digital platforms like Minecraft, we can connect with new audiences and foster awareness of blood donation in an engaging and accessible way.



BACKGROUND AND AIMS

In Austria, blood donations are collected mainly through the Austrian Blood Donation Services of the Red Cross. In 2023, only 3.42% of the eligible population participated in blood donation, indicating a significant untapped potential. Furthermore, the demographic structure of the main target group, which is in the upper third of the age distribution, presents another challenge, as this group will no longer be able to donate blood within the next ten years. These circumstances highlight the need to increase the percentage of blood donors in the eligible age group in order to meet future demand for blood donations.

As a result, various initiatives have been launched to attract new target groups to donate blood. A central project is the internationalization of the donation process. Currently, the entire blood donation process is conducted exclusively in the German language. The Austrian Blood Safety Act stipulates that, in the interest of donor protection and to ensure the quality of the donated blood, donors must be adequately informed before, during, and after the blood donation. This requires that all blood donors have sufficient knowledge of the German language. Given the increased migration, as well as the growing internationalization of the economy and universities, many people living in Austria are excluded from donating blood due to language barriers. As a result, significant blood donation potential remains untapped.

METHODS

A small qualitative field study was conducted to examine how other countries handle multilingualism in the blood donation process. The first step involved conducting an internet-based search of foreign blood bank websites. Since this did not produce the desired results, the next step involved contacting ten countries directly via email.

RESULTS

The results of this concise qualitative study could hardly be more diverse. In each country the corresponding process is organized in a different way. Regardless of the percentage of migration in each country, there is, at least in the countries surveyed, the possibility of conducting the blood donation process in a different language, although not on a nationwide scale. While the process is mainly offered in English, some countries are capable of offering the blood donation process in multiple languages.

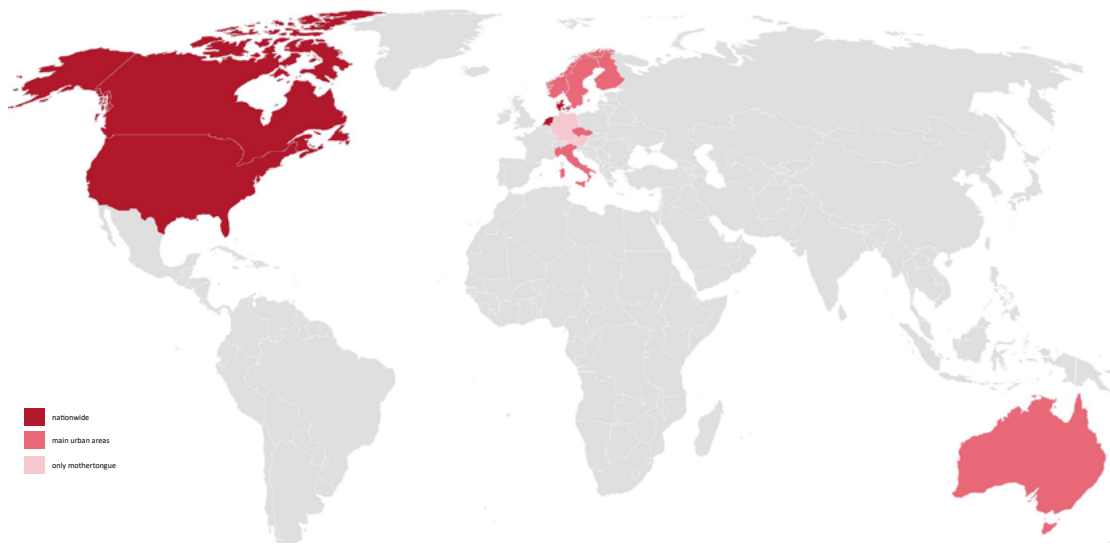


Figure 1. World Map

CONCLUSION

Based on these findings, we conclude that it is essential for Austria to take a step toward internationalization. In order to ensure the continued blood supply for the country in the future, new approaches must be pursued. Reaching out to previously unacquired target groups and recruiting potential blood donors through the introduction of a multilingual blood donation process is indispensable.

Background

In Austria, blood donations are collected mainly through the Austrian Blood Donation Services of the Red Cross. In 2023, only 3.42% of the eligible population participated in blood donation, indicating a significant untapped potential.

Furthermore, the demographic structure of the main target group, which is in the upper third of the age distribution, presents another challenge, as this group will no longer be able to donate blood within the next ten years. These circumstances highlight the need to increase the percentage of blood donors in the eligible age group in order to meet future demand for blood donations.

Aim

As a result, various initiatives have been launched to attract new target groups to donate blood. A central project is the internationalization of the donation process. Currently, the entire blood donation process is conducted exclusively in the German language. The Austrian Blood Safety Act stipulates that, in the interest of donor protection and to ensure the quality of the donated blood, donors must be adequately informed before, during, and after the blood donation. This requires that all blood donors have sufficient knowledge of the German language.

Given the increased migration, as well as the growing internationalization of the economy and universities, many people living in Austria are excluded from donating blood due to language barriers. As a result, significant blood donation potential remains untapped.

Methods

In this context, the internationalization of the entire blood donation process is being considered. This includes the registration, blood collection, post-donation care, and the delivery of test results. First, we determined which languages would be required and how this project could be implemented.

For this purpose, a small qualitative field study was conducted to examine how other countries handle multilingualism in the blood donation process. The first step involved conducting an internet-based search of foreign blood bank websites. Since this did not produce the desired results, the next step involved contacting ten countries directly via email.

Results

The results of this concise qualitative study could hardly be more diverse. Each country organizes the corresponding process in its own way. Regardless of the percentage of migration in each country, there is, at least in the countries surveyed, the possibility of conducting the blood donation process in a different language, although not on a nationwide scale. While the process is mainly offered in English, some countries are capable of offering the blood donation process in multiple languages.

Conclusion

Based on these findings, we conclude that it is essential for Austria to take a step toward internationalization. In order to ensure the continued blood supply for the country in the future, new approaches must be pursued. Reaching out to previously unacquired target groups and recruiting potential blood donors through the introduction of a multilingual blood donation process is indispensable.

¹ Red Cross Blood Transfusion Service of Upper Austria, Linz

Correspondence: alexandra.mayrhofer@o.roteiskreuz.at

The authors declare that there is no conflict of interest.

Evaluating a ‘Time Off Work’ Incentive for Blood Service Employees Donating Outside of Work Hours



Kathleen Chell¹, Kyle Jensen¹, Marijke Welvaert¹, Andrew Dunton¹
¹ Australian Red Cross Lifeblood

Background

Time constraints and competing priorities often deter people from blood donation. While many workplaces (including Lifeblood) offer donor leave during work hours—an effective incentive—not all employees (e.g., frontline staff) can access this. This research considered an alternative leave benefit (i.e., time off in-lieu), for donating blood outside of work hours.

Aims

To investigate whether Lifeblood staff would donate more often to earn time off in-lieu, called “Loyalty Leave”, for donating outside of work hours. Specifically, we aimed to:

1. Determine whether providing Loyalty Leave can **increase donations** (attendance and collections) among active donors.
2. Understand **staff perceptions and experiences** of Loyalty Leave.

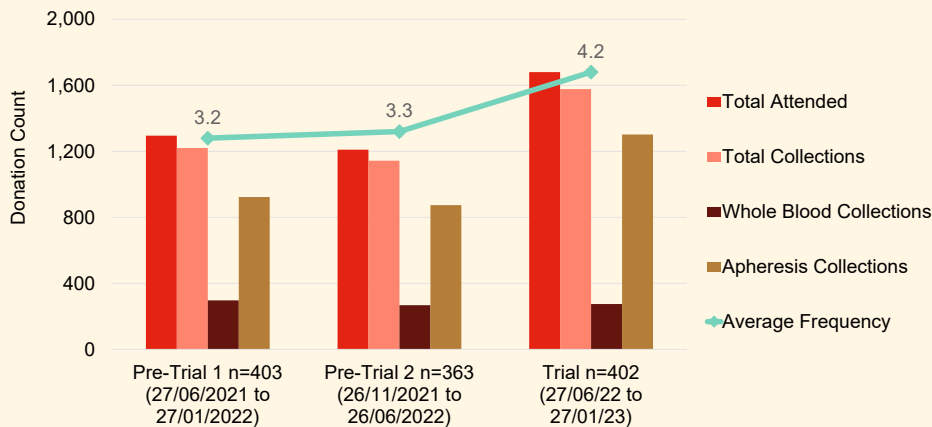
Method

- Loyalty Leave trial was active for **7 months**.
- 2x whole blood donations would accrue a half day leave (3.8 hours) and 4x donations of any type would accrue a full day leave (7.6 hours).
- One-group pre-test—post-test design, comparing attendance and collections before and during the trial.
- Feedback survey was administered to all Lifeblood staff (both eligible and ineligible to donate) at the end of the trial (n=270 responded).

Results

- 550 staff registered (~15%), including 457 active donors and 93 lapsed donors
- Attended appointments ↑ 30-39% ($p<.01$)
- Collections ↑ 29-38% ($p<.05$) – mostly plasma
- 209 (37%) donors achieved a half day or full day of leave
- Despite an increase in the number of appointments, appointment reliability (% attended) remained the same
- Significant change in donor type, with many whole blood donors starting to donate plasma
- 55.9% of registered lapsed donors were reactivated, with reactivation more likely among short term lapsed donors

Attended appointments, collections and average frequency of active donors (n) increased during the trial.



>> Offering staff time in-lieu for donating outside of work hours increased donations and reactivated lapsed donors <<

Staff Perceptions

- 47% would prefer to donate **during work hours** (vs 53% outside of work hours).
- 64.7% viewed Lifeblood **more positively** as an employer after being offered Loyalty Leave.
- While 92.5% agreed Lifeblood (as an employer) **should recognise staff efforts** to donate blood; some participants thought the leave benefit should be **more inclusive** and fairer to staff that are ineligible or unable to donate.

>> Staff sentiment towards the additional leave benefit was mostly positive, though some wanted a more inclusive option <<

Workplaces (especially blood services) can offer a time in-lieu incentive to support staff donating blood.



Evaluating a ‘Time Off Work’ Incentive for Blood Service Employees Donating Outside of Work Hours Kathleen Chell

Background

Donors often report a lack of time and competing priorities as reasons not to donate or donate regularly. Many workplaces offer volunteer or blood donor leave for donating during work hours, with ‘time off work’ found to be an effective incentive to encourage blood donation. However, not all employees can donate during work hours (e.g., front line staff). This research considered an alternative leave benefit (i.e., time off in-lieu), for donating blood outside of work hours.

Aims

The aim of this trial was to determine whether Australian Red Cross Lifeblood (Lifeblood) staff would donate more often to earn time off in-lieu, called “Loyalty Leave”, for donating outside of work hours. Specifically, we aimed to:

1. Determine whether providing Loyalty Leave can increase donation frequency among active donors.
2. Understand employees’ experience and views of the Loyalty Leave benefit.

Methods

The Loyalty Leave benefit was trialled over a 7-month period (27/06/2022 to 27/01/2023). A one-group pre-test-post-test design was used to compare donation activity before (existing policy included Blood Donor Leave for donating during work hours) and during the trial (both Loyalty Leave + Blood Donor Leave available). Lifeblood staff could earn a half-day of Loyalty Leave (3.8 hours) for attending two whole blood donations, or a full day of Loyalty Leave (7.6 hours) for attending four donations of any type (whole blood and/or apheresis). At the end of the trial, all Lifeblood staff were invited to complete a feedback survey (n=270).

Results

550 staff registered for the Loyalty Leave Trial, including 457 active donors and 93 lapsed donors. Among active donors, providing Loyalty Leave resulted in a statistically significant increase in the total number of attended appointments (+ 30-39%, $p<.01$) and collections (+ 29-38%, $p<.05$), with 209 donors achieving a half-day or full day of leave (+ 21-28% relative to what they would have earned had Loyalty Leave been available in the pre-trial periods). There was also a significant change in donor type, with many whole blood donors starting to donate plasma. Among those eligible to donate, 47% would prefer to donate during work hours and 53% outside of work hours, with 64.7% viewing Lifeblood more positively as a place of employment as a result of offering Loyalty Leave. Almost all survey respondents (whether eligible to participate in the trial or not) felt positive about the trial to some extent. While there was general agreement (92.5%) for Lifeblood as an employer to recognise staff efforts to donate blood, there is also a desire for an additional time in-lieu leave benefit to be more inclusive and fairer to staff that are ineligible or unable to donate.

Conclusion

Offering staff time in-lieu for donating outside of work hours improved donation frequency. Further, employee sentiment towards the additional leave benefit was mostly positive. This research provides preliminary support for an alternative ‘time off work’ incentive for blood donation.

The Guiding Donor Principles

Author(s): Monique Wigman and Sanne van Wijk

Communications Department Sanquin
m.wigman@sanquin.nl and s.vanwijk@sanquin.nl

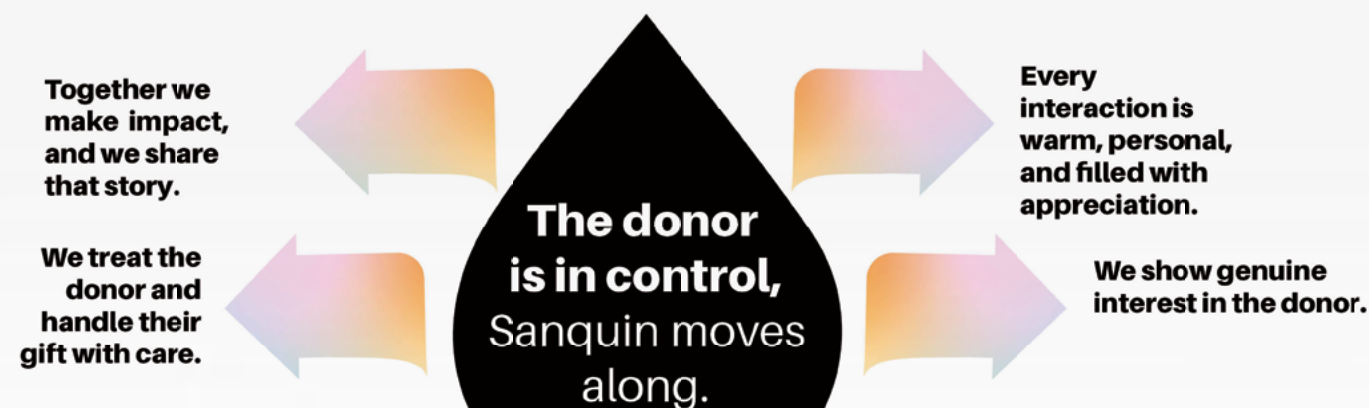
Introduction

In our organization we have many different interactions with the donor, via different channels, by different departments. We want to work towards a strong relationship with donors.

So we decided we need Guiding Donor Principles as the starting point for our actions. Sanquin's vision on how we treat the donor. Giving the donor a central place in our organization. It does not matter how, when, or with whom the donor talks; everyone approaches the donor in the same way. Every Sanquiner knows what that communication looks like and is trained in it.

Methods

- Desk research: consult existing studies and insights.
- Field research: interviews with 16 donors and 4 colleagues with primary donor contact
- Workshops with stakeholders which are involved in the donor journey.
- Based on all insights, we developed the Guiding Donor Principles.
- We tested and refined the leading donor principles until all colleagues who worked on them, agreed.
- We presented the Guiding Donor Principles to the Donor Advisory Council, the Management Team and the Works Council.



Conclusion

The Management Team has responded enthusiastically to the Guiding Donor Principles. We have been commissioned to develop a plan for the rollout of the Guiding Donor Principles. This transition requires long-term attention from the entire organization. It affects employees in all departments, both those who have contact with donors and those who do not. Our ambition is to set up a two-year program, in which we embed the Guiding Donor Principles in our working methods.

♥ Guiding donor principles Sanne van Wijk

Background

A sustainable donor database in which we deal responsibly with donors. That is our goal. Because only together with donors we can improve and save the lives of thousands of patients in the Netherlands.

In our decentralized organization with many different interactions with the donor, via different channels, by different departments, we want to work towards a clearer, more consistent approach for building a strong relationship with donors. The donors who selflessly take the time to donate blood or plasma for the life of another. Those who do something good for someone else.

Objectives

Guiding donor principles as the starting point for our actions. Sanquin's vision on how we deal with the donor. Giving the donor a central, customer-oriented place in our organization. It does not matter how, when, or with whom the donor talks; everyone approaches the donor in the same way. Every Sanquiner knows what that communication looks like, and is trained in it.

Methods

- Desk research: consulting existing research and insights.
- Field research: interviews with donors and interviews with colleagues with donor contact.
- Workshops with colleagues with donor contact. In these workshops, we determined the needs of the donors, what is already going well, what can we improve and what do we want to convey to the donor, in themes such as communication style, transparency and expectation management, safety, appreciation and loyalty.
- Based on all insights, we developed the leading donor principles.
- We tested and refined the leading donor principles until all colleagues who worked on them could agree with them.

- We presented the leading donor principles to the Donor Advisory Council, the Management Team and the Works Council.

Results

The Leading Donor Principles with one main point and four starting points.

The main point: The donor is in control. Sanquin moves along.

The four starting points.

- We show genuine interest in the donor.
- Every interaction is warm, personal and with appreciation.
- We handle the donor and their gift with care.
- Together we make an impact.

We have elaborated these starting points in three perspectives:

- The organizational perspective: what can the organization do to facilitate this movement?
- The employee perspective; how can employees give substance to this?
- The donor perspective: what does the donor experience?

Finally, we have written a storyline, entitled: 'Together for hope, life and future'.

Conclusion

The Donor Advisory Council, Works Council and the Management Team have all responded enthusiastically to the Guiding Donor Principles. We have been commissioned by the Management Team to develop a Plan of Action for the rollout of the Guiding Donor Principles.

The expectation is that the Plan of Action will be delivered the second quarter of 2025 and that we can start the rollout in the third and fourth quarters of 2025.

Knowledge of plasma among the background population (non-donors) in Denmark

Introduction

The Survey

The study aimed at mapping the knowledge of plasma in the background population (non-donors) in Denmark to identify areas of focus for an increased recruitment of plasma donors. Based on a survey with a sample of 1000 Danes 18-65 years old, nationally representative including both donors and non-donors.

Increased need for plasma donors in Denmark

A goal of plasma self-sufficiency by 2027 in Denmark meaning becoming self-sufficient in blood plasma for plasma-derived medical products (PDMP) including immunoglobulin (Ig).

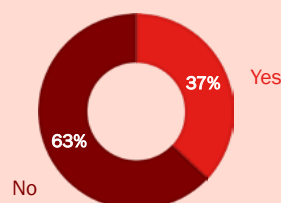
Basics about donation in Denmark

Voluntary and non-remunerated as required by the law. All 180.000 donors are organized by the Danish Blood Donor Organisation which is responsible for recruiting and acknowledgement of donors.

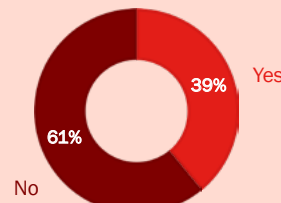
Results

Testing the knowledge of plasma among non-donors in the sample

Share of non-donors who when aided correctly identifies that plasma is the liquid part of the blood



Share of non-donors who when aided correctly identifies that plasma is used for manufacturing medical products



What could make non-donors sign up?



27 % of non-donors would consider signing up as a (blood or plasma) donor, if they can help saving lives.



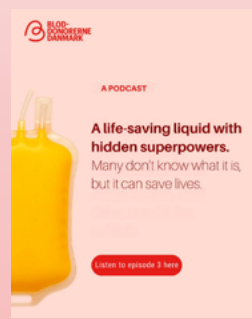
22 % of non-donors reported never having donated blood or plasma because they assumed they were ineligible due to illness or medication.

Areas of focus for recruitment

Handout and poster about knowledge of plasma



SoMe campaign and podcast about how plasma saves lives



Spotlight on more lenient deferral criteria

You might be an eligible plasma donor even if you would be deferred or ineligible for whole blood donation

Conclusion

In Denmark, we need to inform the public further about plasma donation, the use of plasma, and plasma self-sufficiency.

Increased knowledge of the use of plasma in manufacturing medication could recruit non-donors who are

motivated by the potential of saving lives. Denmark has a great task of increasing the knowledge as a poor or unstable donor pool can be challenging in future crisis.



Laura@bloddonor.dk



Knowledge of plasma in background population

Laura Ostergaard

Background

In June 2021, Danske Regioner (interest organization for the five health administrative regions of Denmark) decided that Denmark would become self-sufficient in blood plasma for plasma-derived medical products including immunoglobulin. Reaching the goal requires recruiting a higher amount of new plasma donors and that existing donors donate plasma more frequently.

In Denmark all blood donations are voluntary and non-remunerated as required by the law. All donors are organized by the national donor association 'Bloddonorerne Danmark' which is responsible for recruiting and acknowledgement of donors. Currently there are 180,000 blood donors in Denmark. In 2023 they delivered about 45 % of plasma needed for Ig self-sufficiency.

Increased knowledge of the need for plasma donation, of the less restrictive donation deferral criteria in terms of medicine use for plasma donors, and of the use of PDMP can be a driving force for more citizens to sign up as blood and plasma donors.

Aims

The study aimed at mapping the knowledge of plasma in the background population in Denmark to identify areas of focus for an increased recruitment of plasma donors.

Methods

An online survey was conducted among a nationally representative sample of Danes between the ages of 18 and 65. The questionnaire was developed and administered by the analysis agency 'It's a Fact' on behalf of the Blood Donor Organization in Denmark. It was carried out via YouGov's nationally representative panel in the period 15 November – 18 November 2024.

The survey questions assessed knowledge of plasma, the use of plasma in the Danish health system, and knowledge of diseases treated by medicine derived from plasma alongside other questions regarding blood donation in Denmark.

Results

A total of 1,000 complete responses were included and of those 73% were non-donors. When listed different statements about plasma, only 39% of non-donors knew that plasma is used for manufacturing medical products and only 37% of non-donors correctly identified plasma as the liquid part of blood.

22 % of non-donors reported never having donated blood or plasma because they assumed they were ineligible due to illness or medication. Only 6% did not know it was possible to donate plasma. Participants were overall positive towards blood donation.

When asked what would make them sign up, "saving lives" (27%) and "if I can donate at my job, school or close by" (25%) were the most popular answers.

Conclusion

In Denmark we need to inform the public further about plasma donation, the use of plasma, and plasma self-sufficiency. There is a potential to recruit donors among those who assume they are ineligible due to deferral criteria that only apply to whole blood donors and not plasma donors. Denmark has a great task of increasing the knowledge as a poor or unstable donor pool can be challenging in future crisis. Media coverage of plasma self-sufficiency during International Blood Donor Day and in instances of shortage of blood donors has been a successful way to create awareness in Denmark.



Donor Health 2:

**Managing Donor Programs and
Health Data**

Thursday September 11th



TRENDS IN PLASMA DONORS AND DONATIONS IN THE NETHERLANDS 2015-2024

F. Prinsze¹, O. Wisman², K. van den Hurk^{1,3}

¹ Donorstudies, Department of Research, Sanquin Blood Supply Foundation, Amsterdam, the Netherlands

² Department of Supply Chain, Sanquin Blood Supply Foundation, Amsterdam, the Netherlands

³ Department of Public and Occupational Health, Amsterdam Public Health research institute, Amsterdam UMC, Amsterdam, the Netherlands

sanquin.nl/research, f.prinsze@sanquin.nl

Background and Methods

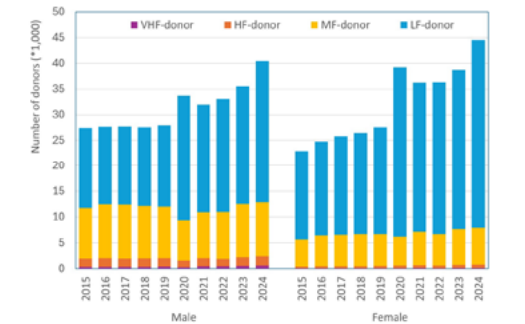
Background: The demand for Plasma-Derived Medicinal Products increases continuously. At this moment the Netherlands is not self-sufficient and aims to become more strategically independent. Sanquin aims to decrease the deficit by increasing the number of plasma donors and by encouraging donors to donate more frequently.

Aims: To characterize the changes in plasma collection in the Netherlands from 2015-2024.

Methods: We included all successful plasma donations by apheresis from 2015 to 2024 and characterized all donors and their donation frequencies. We grouped the donors based on their frequency of donations in each year: Low Frequency (LF) 1-6, Medium Frequency (MF) 7-12, High Frequency (HF) 13-18 and Very High Frequency (VHF) >18.

Results

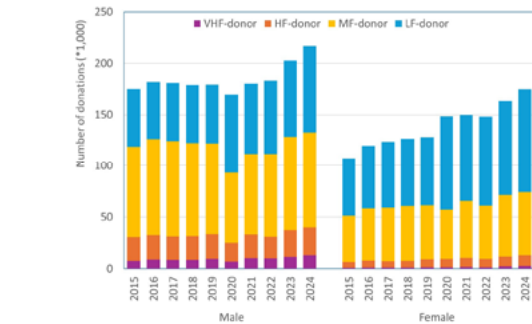
Figure 1. Numbers of male and female plasma donors 2015 to 2024



From 2015 onwards there was a steady increase in plasma donors (Figure 1) and donations (Figure 2). Traditionally, donors in the Netherlands first have a new donor examination, followed by at least one whole blood donation. However, due to a shift in policy, an increasing proportion of plasma donors start directly with donating plasma. In total 25,470 donors became a plasma donor straightaway: up to 2019 this was only about 1% of plasma donors, but this increased to 31% in 2024.

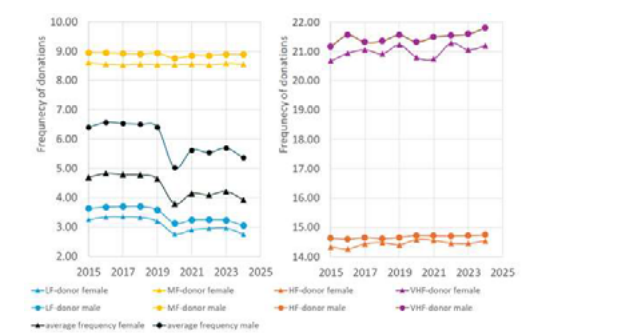
- Increase especially in LF-donors
- In 2024, 68% of male and 82% of female donors were LF-donor
- The proportion of MF-donors decreased to 26% for male and to 16% for female donors
- About 5-6% of the male donors and only 2% of female donors are HF- or VHF-donors
- Only 134 out of 729 VHF-donors are female
- In 2015 most plasma donors (54%) were male, but this decreased to 48% in 2024
- More than 90% of the new donors in 2024 were LF-donor

Figure 2. Number of (successful) plasma donations by male and female donors 2015 to 2024



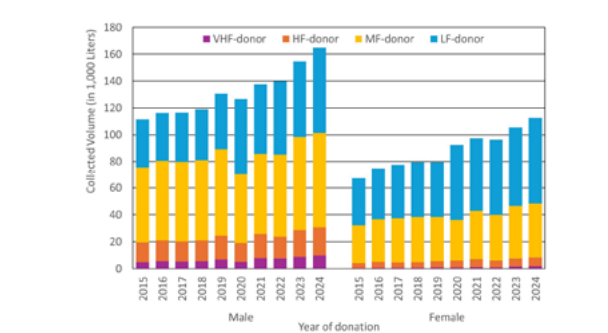
- In total 174,430 donors made at least one plasma donation
- 14,817 donors (8.5%) donated plasma in all years, 57,904 (33.2%) only in one year
- On average donors had 18.6 plasma donations in 3.2 years
- Almost 29% of plasma donors in 2024 (n=24,062) did not donate plasma in 2023
- Male donors are still responsible for 55% of the donations
- On average male donors donate more plasma per year than female donors, respectively 4.1L and 2.5L in 2024

Figure 3. Frequency of donations by male and female LF-, MF-, VF- and VHF-donors 2015 to 2024



Although the averaged number of plasma donation decreased especially in 2020, this seems primarily driven by the large number of LF-donors (Left part of figure 3). Especially the VHF-donors seemed to increase their donation frequency (Right part of figure 3)

Figure 4. Total collected volume (in Liters) from male and female LF-, MF-, VF- and VHF-donors 2015 to 2024



There was an estimated increase in collected plasma volume from ±178,000L in 2015 to ±278,000L in 2024. This 50% increase in volume was donated by 69% more donors. Both the average volume per donor decreased (3.6L in 2015 and 3.3L in 2024) as did the average number of donations per donor (5.6x in 2015 and 4.6x in 2024).

Summary/Conclusion

Increasing amounts of plasma were collected in the Netherlands over the period 2015-2024. This was achieved by recruiting more plasma donors who on average donated less frequently. Especially the new donors, that to a larger extent then before are recruited as plasma donors, are often LF-donors.

Trends in Plasma Donors and Donations in the Netherlands 2015–2024 Femmeke Prinsze

Background

The demand for Plasma-Derived Medicinal Products increases continuously. At this moment the Netherlands is not self-sufficient and aims to become more strategically independent. Sanquin aims to decrease the deficit by increasing the number of plasma donors and by encouraging donors to donate more frequently.

Aims

To characterize the changes in plasma collection in the Netherlands in 2015-2024.

Methods

We included all successful plasma donations by apheresis from 2015 to 2024 and characterized all donors and their donation frequencies. We grouped the donors based on their frequency of donations in each year: Low Frequency (LF) 1-6, Medium Frequency (MF) 7-12, High Frequency (HF) 13-18 and Very High Frequency (VHF) >18.

Results

Since 2015 there is a steady increase in plasma donors and donations. In total 174,430 donors made at least one plasma donation; on average 18.6 plasma donations in 3.2 years. In total 14,817 donors (8.5%) donated plasma in all years and 57,904 donors (33.2%) donated only in one year. Almost 29% of plasma donors in 2024 (n=24,062) did not donate plasma in 2023, more than 90% of them were LF-donor. In 2015 most plasma donors (54%) were male, but this decreased over the years and in 2024 ‘only’ 48% of plasma donors were male (see Figure). However, these male donors are still

responsible for 55% of the donations and on average they donate more plasma per year than the female donors (4.1L for males and 2.5L for females in 2024). There was an estimated increase in collected plasma volume from ±178,000L in 2015 to ±278,000L in 2024. This 50% increase in volume was donated by 69% more donors. Both the average volume per donor decreased (3.6L in 2015 and 3.3L in 2024) as did the average number of donations per donor (5.6x in 2015 and 4.6x in 2024). The proportion of LF-donors increased throughout the years and in 2024 68% of male donors were LF-donor and 82% of female donors, whereas the proportion of MF-donors decreased from 36% to 26% for male donors and from 23% to 16% for female donors. HF-donors and VHF-donors are mainly male donors, 5-6% of the male donors and only 2% of female donors are HF- or VHF-donors; only 134 out of 729 VHF-donors are female. Traditionally, donors in the Netherlands first have a new donor examination, followed by at least one whole blood donation. However, due to a shift in policy, an increasing proportion of plasma donors start directly with donating plasma. In total 25,470 donors became a plasma donor straightaway: up to 2019 only about 1% of plasma donors, but 34% in 2020, and 31% in 2024.

Summary / Conclusions

Increasing amounts of plasma were collected in the Netherlands over the period 2015-2024. This was achieved by recruiting more plasma donors who on average donated less frequently.

Quality, Risk & Compliance, an integrated risk approach to donor health and management

Author(s): [G.H. Menzen, MSc](#); A. Huizenga, MSc; R. Pieters, BSc, I. Steneker, PhD

Sanquin Blood Supply Foundation, Quality, Risk & Compliance, Amsterdam, The Netherlands

c.menzen@sanquin.nl, a.huizenga@sanquin.nl, rpieters@sanquin.nl

Introduction

Blood Establishments (BE) in the EU operate under a comprehensive framework of legislation, regulations, and directives to ensure the quality, safety, and availability of blood products.

Each regulatory domain is overseen by a designated officer, including the Responsible Person (RP), Data Protection Officer (DPO), Chief Information Security Officer (CISO), and Safety, Health and Environment Manager (SHE Manager).

Key among these are the Good Practice Guidelines and EU Directive 2002/98/EC. Over time, these quality-related directives have been supplemented with additional legislation in areas such as personal data protection, cybersecurity, and occupational health, safety, and environmental standards.

In addition, the importance of Risk Management and Business Continuity Management has grown significantly. For departments involved in Donor Health, Donor Management (DH&M), but also research, navigating this complex regulatory landscape can be challenging—particularly in determining what is permissible and who holds final decision-making authority.

Methods and results

At Sanquin we noticed that in incidents, deviations, complaints and changes there is overlap between different disciplines: an occupational health and safety-related incident can have a negative impact on the quality of blood products, the privacy of donors can be connected to cyber security and every incident, a deviation or complaint can potentially threaten business continuity.

Besides this, the DPO, CISO, SHE manager and RP want to identify risks regarding their own discipline and want to have them mitigated as much as possible. This means a lot of work for every department in the BE, including donor related departments. More-over, some laws seem to contradict each other. Sanquin searched and found the solution in an integrated department where all six disciplines are joint under one director: The department of Quality, Risk & Compliance (QRC) (figure 1).

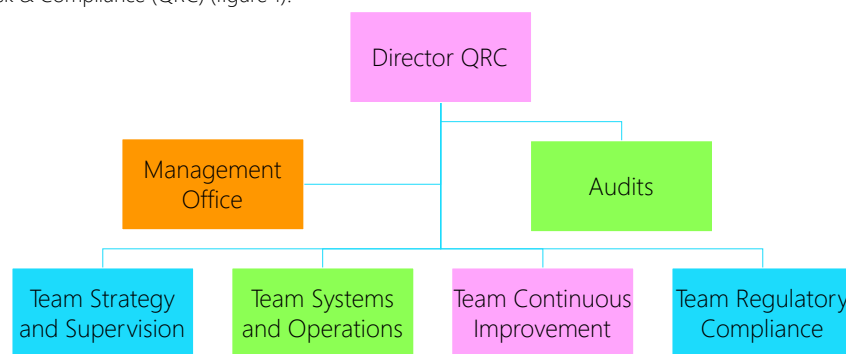


Figure 1, organizational chart QRC

Starting points of QRC are:

- All disciplines are represented in every team;
- Incidents, complaints, changes etc. will be tackled multi-disciplinarily, if necessary;
- The supervisors, together with RM and BCM, form team Strategy and Supervision;
- Each supervisor is supported by one or more experts in the relevant legal framework;
- There will be dedicated people conducting safety rounds in which all disciplines are included.

Now, at Sanquin the donor (who is connected to the patient), is surrounded by an integrated risk team: the team Strategy and Supervision (figure 2). The first process the efforts of the team are fully implemented in, is in Change Control. Every supervisor reviews the change request, change plan and actions taken from their own field of expertise. The team gives a go for implementation if the requirements of all disciplines are met (Table 1).

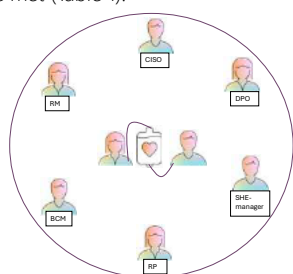


Figure 2, S&S surrounding donor and patient

Supervisor	law/Regulation	concerns in change	proof
BCM	GPG (parts)	availability of donors and blood	Business Impact Analysis (BIA)
CISO	GPG (parts), ISO27001	(internet) security	Confidentiality, Integrity, Availability and Privacy (CIAP) report
DPO	GPG (parts), Privacy Act	privacy of donors	Data Protection Impact Assessment (DPIA)
RM	GPG (parts)	complete risk overview	Risk assessment
RP	GPG, 2002/98/EC	impact on: safety of products, donors and staff, effectiveness of products, availability of blood	complete documentation as a proof of the controlled change
SHE	GPG (parts), 89/391/EEC	safety of staff and visitors, environment	Risk Inventory and Evaluation (RI&E)

Table 1, regulations and concerns in changes

Sanquin now offers a one-stop-shop for every question, complaint or change. So, instead of six different pieces of advice, the problem owner gets one consolidated advice. By this new approach, the responsibility for implementation shifts from QRC to the relevant department of the BE.

Conclusion (preliminary)

- The one-stop-shop and the integrated approach is appreciated by a great part of the organisation
- The integrated risk management approach seems to be working in change control
- The department QRC shifts from control to trust, instead of taking over responsibilities QRC places the responsibilities where it belongs
- The organisation shifts from compliance driven to continuous improvement
- The organisation shifts from putting out fires to preventing fires



Integrated Risk Management: Purpose of Establishing a Quality, Risk & Compliance Department Cindy Menzen

Background

While product quality is paramount at a blood establishment, compliance with various directives and regulations is also essential. In addition to the Good Practice Guidelines (GPG), which emphasize the quality of blood products, business continuity, and risk management, Sanquin must adhere to the Privacy Act, environmental standards, health and safety regulations, and internet information security standards. To ensure compliance, Sanquin employs supervisors for various disciplines: Data Protection Officer (DPO), Chief Information Security Officer (CISO), Responsible Person (RP), Safety, Environment, and Health (SEH) Officer, Business Continuity Manager (BCM), and Risk and Compliance Manager (RCM). Each discipline has its own internal directives and incident reporting systems. When changes are required or incidents occur, process owners must consult each discipline separately, often resulting in conflicting advice and decisions.

Aims

Sanquin aims to establish a "one-stop-shop" for all inquiries, changes, and incident reports, regardless of the governing legislation or standard. The hypothesis is that this approach will provide clarity for the organization during changes, offer a single point of contact for all questions, unify incident reporting systems, and enable a multidisciplinary team to address inquiries. The new department will be named Quality, Risk, and Compliance (QRC).

Methods

The QRC department was formed under the direction of the QRC Director. The department's teams are similar to those found in the quality departments of pharmaceutical companies, including teams for systems, operations, regulatory affairs, continuous improvement, and audits. Each team comprises experts in quality, SEH, privacy, and internet security. Additionally, the director established an Integrated Risk Management (IRM) team, which includes supervisors, BCM, RCM, and the head of the audit team. This team sets the framework, formulates policies, and develops strategies for Sanquin in each discipline. Supervisors participate in the Change Review Board, approve management reviews before presentation to senior management, discuss organizational assistance requests, and provide comprehensive advice.

Results

The organization has responded positively to the one-stop-shop approach. When presenting proposed changes to the Review Board, change owners receive comprehensive advice that is complementary rather than contradictory. No changes are implemented without approval from all supervisors. The advice provided ensures product quality, donor data protection, and employee health.

Conclusion

The integrated risk team enables a blood supply organization to implement changes in a well-considered and controlled manner at all levels. In DH&M, this approach ensures the protection of donors and their data.

Estimating the impact of a personalized donation frequency policy for new whole-blood donors

Mart Pothast^{1,2*}, Yared Paalvast³ & Mart Janssen^{1†}

¹Transfusion Technology Assessment, Sanquin Research; ²Donor Health, Sanquin Research; ³Donor Medicine, Sanquin Blood Bank; *m.pothast@sanquin.nl



Take aways:

- By using model guided **personalized donation frequencies**, we prevent donors from becoming iron deficient.
- The **impact** of such a policy for new whole-blood donors is expected to result in the **loss of 3%** whole-blood donations per year. The demand for whole blood is also decreasing by about 3% per year.
- Because donors in general do not donate at the maximum donation frequency, the **impact is limited**. By reducing the number of ferritin deferrals, it is likely that donor retention is in fact increased.

Proposed new policy

The maximum number of whole-blood donations per year, is determined by donors' ferritin levels before any donation using a computational model. The model is used to determine the donation frequency at which ferritin levels remain above 20 ng/mL, see Table 1.

Table 1. Threshold start ferritin levels by demanding ferritin levels stay above 20 ng/mL after 2 years of donating.

Start ferritin [ng/mL]	Max # donations per year
<50	1
<80	2
<150	3
<300	4
>=300	5

Methodology: how to estimate the impact

We estimate the impact of the new policy retrospectively, as if it had been implemented from 2020 and onwards by increasing donation intervals for new donors to be minimally as long as the minimum donation interval as determined by Table 1. See Figure 1 for an example. Then, the number of donations per year is counted and can be compared to the current policy.

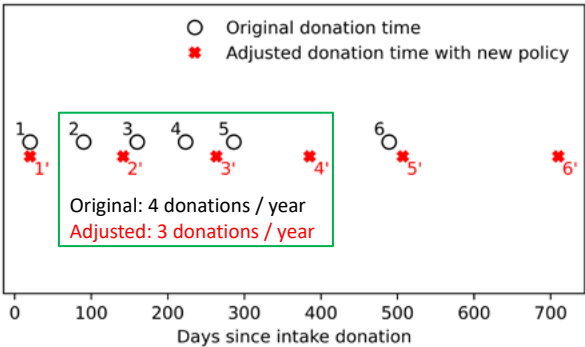


Figure 1. Example of original donation times from a whole-blood donor (with start ferritin = 133 ng/mL) that are extended under the proposed new policy using Table 1.

Results: impact of the new policy

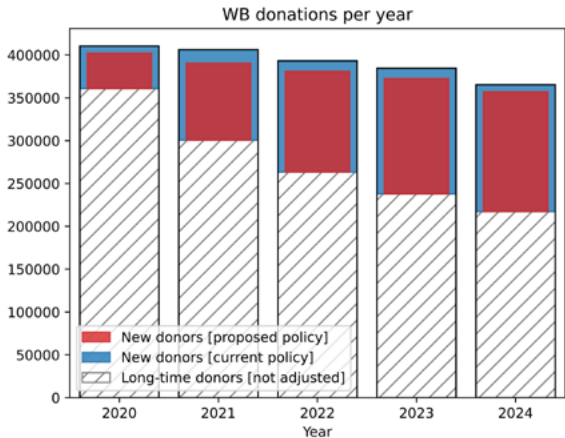


Figure 2. Total number of whole blood donations per year from new (since 2020) and long-time (started before 2020) donors. In red the predicted number of WB donations/year from new donors with the proposed policy.

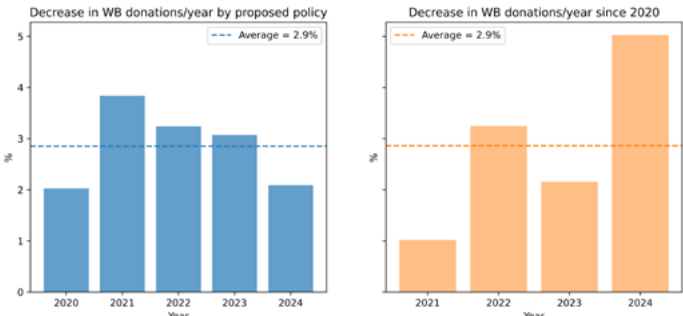


Figure 3. Decrease of WB donations/year if the proposed policy was implemented in 2020 (left). Decrease in WB donations/year since 2020 (right).

Ferritin prediction model

We developed a predictive model for ferritin and Hb levels that considers blood loss and time between donations. For details see my presentation on Thursday in the Donor Health session.

Accuracy of the model:

74% of model predicted ferritin levels are within 95% CI of the measurement uncertainty. The predictions have a precision of 80% at a sensitivity of 75% for predicting ferritin levels below 30 ng/mL.

Estimating the impact of a donation frequency policy for new whole-blood donors Mart Pothast

Background

The loss and recovery of ferritin after subsequent whole-blood donations can be well predicted from the ferritin level of a donor before the first donation. In another abstract (Preventing iron deficiency in whole-blood donors by model prediction guided donation frequencies), we propose using these model predictions to derive maximum donation frequencies for new whole-blood donors that prevents these donors from becoming iron deficient. Such individual model-based donation frequencies will restrain some donors from providing the maximum number of donations allowed in a year. Implementation of such a new policy therefore may likely result in a reduction in the yield of whole-blood products.

Aims

We estimate the impact of individual model-based donation frequencies on the availability of whole-blood products in future years. Methods

We use historical blood donation data in the Netherlands to determine the current cumulative yield of whole-blood from new donors. We estimate the impact of the new policy as if it had been implemented from 2020 and onwards. Using the first ferritin levels measured in new donors, we calculate

the minimum donation interval to keep donor ferritin levels above 20 ng/mL. Next, we increased any donation interval for an individual new donor to be minimally as long as the minimum donation interval calculated for this donor. Finally, we count the number of donations that would have taken place in future years (given the adapted donation intervals) and compare these with the currently observed number of successful donations.

Results

The number of whole-blood donations from new donors in 2020 was 49,700 and would be 40,806 under the new policy. The loss of whole-blood donations would have been 3.1% per year on average from 2020 to 2024. The historical reduction in the number of blood donations in previous years has been 2.9% per year on average.

Conclusion

Ferritin prediction model derived donation frequencies may be useful in keeping whole blood donors' ferritin levels above current deferral thresholds. We showed that the impact of such a policy on the yield of whole-blood donations is limited and comparable to the decrease in whole-blood donations we have seen in recent years.

† This poster is in loving memory of Mart Janssen who passed away this year. The idea to assess the impact by implementing the new policy retrospectively on historical data could not have come from any other mind.

BLOOD DONORS' EXPERIENCES ON RECEIVING GENETIC RISK INFORMATION FROM BIOBANK

Elina Koskinen¹, Mikko Arvas¹, Jonna Clancy¹
¹Finnish Red Cross Blood Service, Helsinki/Vantaa, Finland

BACKGROUND

HFE C282Y mutation is the most common cause of an iron accumulation disease, hereditary hemochromatosis. American College of Medical Genetics and Genomics (ACMG) has defined HFE C282Y (+/+) as an actionable genotype. Majority of the Finnish Red Cross Blood Service Biobank donors (> 99%) have consented to receiving information relevant to their health. In a pilot project, genetic risk information of HFE C282Y (+/+) was returned by mail to 82 Blood Service Biobank donors in autumn 2023 based on their biobank consent. Donors were guided to apply to health care for further consultation. Donor's experiences on receiving genetic risk information from biobank were studied through a survey.

AIMS

The aim of the study was to understand blood donors' perceptions of receiving genetic risk information.

METHODS

A survey was sent in March 2024 to 56 Blood Service Biobank participants, who had been informed about their genetic predisposition and who weren't aware of their predisposition to haemochromatosis before.

RESULTS

Thirty-eight responses (response rate 68%) were received by January 2025. There were 24 female (63 %) and 14 male (37 %) respondents. The mean age was 51.6 years. The year respondents had started donating blood varied from 1971 to 2019. Respondents were committed and regular blood donors.

Respondents had a positive attitude for the information received. They thought it was useful to receive the information (89% strongly agreed and 8% partly agreed). The information received was easy to understand (95 %, N=36). All 38 respondents would like to receive similar information also in the future. Respondents supported the idea that genetic information in the Biobank should be used more to promote health (76 %, N=29 strongly agreed, 24 %, N=9 partly agreed). Almost half of the respondents (45%, N=17) felt worried after receiving results. (Fig. 1)

Attitudes towards Blood Service and Blood Service Biobank were positive. When asked, how receiving genetic information had affected their confidence in Blood Service, 84 % (N=32) answered their confidence had grown. Receiving genetic information made 79 % (N=30) of the respondents more willing to belong to the Biobank. (Fig. 2) Respondents planned to donate blood as often as currently (50 %, N=19) or more often than currently (34 %, N=13). None of the respondents reported quitting donating blood because of the information received.

Of the respondents, 82% (N=31) reported having understood that consenting to receive health related information could actually lead to receiving results. Almost all of the respondents (N=37) applied to health care for further consultation. Based on the self-reported results, clinical diagnosis (ICD10 E83.1) for haemochromatosis was set to 14 respondents (37 %).

CONCLUSION

Blood donors reported positive experiences on receiving genetic risk information and willingness to receive similar information in the future. Blood donors also stated a strong support for the use of genetic information in biobanks to promote health. Their confidence in Blood Service and their willingness to belong to Biobank had grown. No one reported that receiving results would have decreased their confidence in Blood Service or willingness to belong to Biobank.

Due to the process of identifying and returning the information of hemochromatosis, iron supplementation is no longer offered to the blood donors with predisposition to hemochromatosis. At this point, nearly 44 000 of Biobank members were screened and the rest of the Biobank participants will be screened and the information will be returned to them in autumn 2025.

As the study concentrated on one benign variant and the study data is relatively small, to fully understand blood donors' perspectives on receiving genetic information, more research is needed.



Donor Health 2
September 11th

Managing Donor Programs and Health Data

Blood Donors' Experiences on Receiving Genetic Risk Information from Biobank Elina Koskinen

Background

HFE C282Y mutation is the most common cause of an iron accumulation disease, hereditary hemochromatosis. American College of Medical Genetics and Genomics (ACMG) has defined HFE C282Y (+/+) as an actionable genotype. Majority of the Finnish Red Cross Blood Service Biobank donors (> 99%) have consented to receiving information relevant to their health. Genetic risk information of HFE C282Y (+/+) was returned to Blood Service Biobank participants in autumn 2023 based on the biobank consent. Donors were guided to apply to health care for further consultation. Donors' experiences on receiving genetic risk information from biobank were studied through a survey.

Aims

The aim of the study was to understand blood donors' perceptions of receiving genetic risk information.

Methods

A survey was sent in March 2024 to 56 Blood Service Biobank participants, who had been informed about their genetic predisposition and who weren't aware of their predisposition to haemochromatosis before.

Results

Thirty-eight responses (response rate 68%) were received by January 2025. Overall blood donors' experience of receiving genetic information from biobank was positive. Of the respondents, 89% strongly agreed and 8% partly agreed, that the information was useful. Most of the participants (82%) had understood that consenting to join the biobank might lead to receiving health related information. Blood donors thought they would like to receive similar information in the future, and that the genetic information in biobanks should be used more to promote health. Respondents' confidence in Blood Service and their willingness to belong to Blood Service Biobank had grown. Of the participants, 37% (N=14) were diagnosed with clinical haemochromatosis (ICD-10: E83.1).

Conclusion

Blood donors reported positive experiences on receiving genetic risk information and willingness to receive similar information in the future. Donors also stated a strong support for the use of genetic information in biobanks to promote health. As the study concentrated on one benign variant and the study data is relatively small, to fully understand blood donors' perspectives on receiving genetic information, more research is needed.

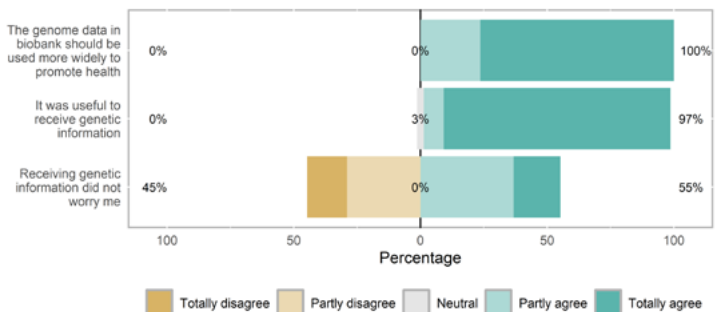


Figure 1. Blood donors' experience on receiving health related information and its use.

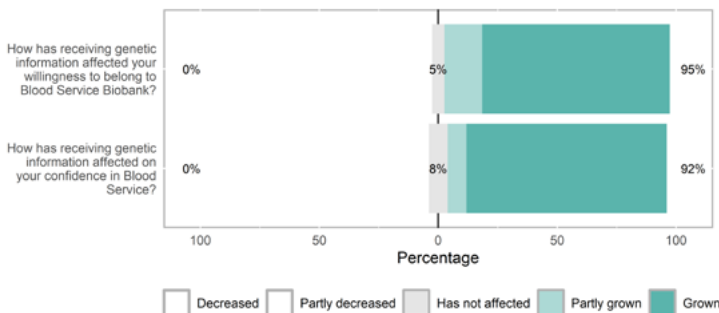


Figure 2. Blood donors' confidence in Blood Service and willingness to belong to Blood Service Biobank.



Awaiting the poster

♥♥ Expanding genomic sequencing in a blood donation context: what do donors think?

Jennie Haw

Background

Blood collection agencies (BCAs) prepare for the future by considering uses of new technologies that support the work they do. Advancements in genomic technologies can enable BCAs to more closely match more donors and recipients to support better patient outcomes. Beyond this, as the scope of sequencing expands, genetic markers in donors may be identified that have important implications for donor management and donor health. For BCAs that rely on voluntary, non-remunerated blood donors, donors' views on genetic testing and uses of genetic information in a blood donation context is an important consideration. To date, this topic remains understudied.

Aims

To explore Canadian blood donors' views on current and potential future uses of genetic information in a blood donation context.

Methods

An exploratory, qualitative study was conducted with 40 current whole blood donors in Canada. Purposive and maximum diversity sampling strategies were applied. Semi-structured interviews were conducted from March-May 2024 and explored topics including views on four scenarios describing current and potential future uses of donor genetic information (i. using donor genetic information to identify a rare blood type; ii. linking donor genetic information to public health data; iii. using donor genetic information to identify a genetic marker for iron metabolism; and iv. using donor genetic information to stream donors into specific donation types); and potential impacts of genetic testing on willingness to donate. Interviews were audio-recorded, transcribed, and thematic analysis completed.

Results

Overall, participants viewed the uses of genetic information presented in the 4 scenarios favourably. Views were informed by their understanding of the role of BCAs, understanding of what they are agreeing to when they donate, familiarity with the purpose of the use of genetic information, and viewing genetic information as beneficial. Reasons for support were informed by their trust in the BCA. Participants expressed several conditions or considerations that were important for their support including, having sufficient information about testing and/or uses provided to the donor, whether donors can "opt out" of genetic testing, privacy interests, third-party access to their genetic information, and potential future uses. Most participants would not be deterred from donating blood if genetic testing is done for purposes described in the scenarios.

Conclusions

Results suggest that Canadian blood donors are generally supportive of current and potential future uses of their genetic information presented in the scenarios and would not be deterred from donating if these future uses were implemented. Conditions that participants raised as important factors in their support of uses of genetic information should be carefully considered to facilitate ongoing trust in and trustworthiness of BCAs. Further research is also needed on how best to inform donors about genetic testing and uses in a way that is understandable and meaningful to them. Informing donors effectively and transparency by BCAs are important factors in maintaining trust with donors and supporting longer-term sustainability of blood systems.

Nutritional Awareness and Sustainability in Blood Donation: Promoting Donor Health and Satisfaction

M.Völter¹, Ulf Alpen¹, Thomas Thiele¹, Klara Greffin²

1) University Medicine of Greifswald
2) University of Greifswald, Germany



Donor Health 2
September 11th

Managing Donor Programs and Health Data

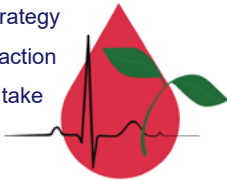
INTRODUCTION

The declining number of blood donors poses a threat to maintaining a stable blood supply¹. Low hemoglobin levels - often linked to donation frequency and dietary habits - are a major cause of temporary donor deferral. Current dietary advice for blood donors often fail to address individual dietary habits and gender-specific needs.



AIM

The **Nutritional Awareness and Sustainability Project** aims to develop a tailored nutrition and education strategy for blood donors, enhancing donor health and satisfaction through evidence-based dietary guidance, that also take planetary boundaries into account.



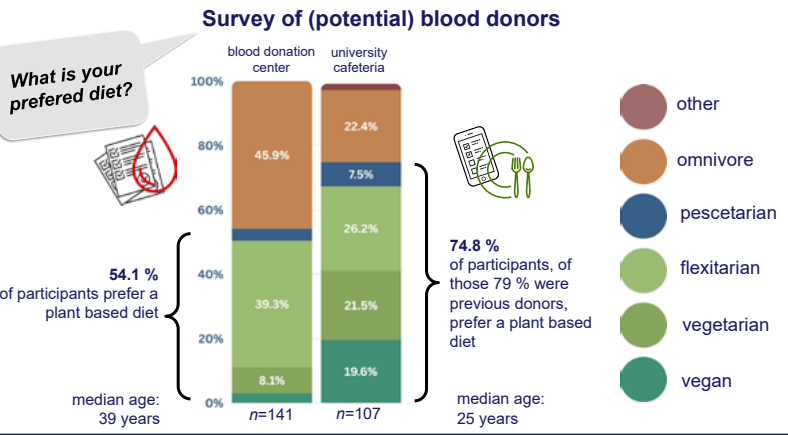
PROJECT OUTLINE

- Systematic review of existing research on dietary recommendations for blood donors
- Survey of (potential) donors to assess their needs and dietary preferences
- Creating information materials on blood donor nutrition, highlighting the importance of a plant-based diet on overall health⁴
- Staff training on iron metabolism, hematopoiesis, and the special aspects of different diets to enhance nutrition counselling skills
- Improvement of post-donation refreshment options as an example for healthy nutrition tailored to donor needs

RESULTS

- Key Findings:** Iron loss per donation: ~200–250 mg; Critical nutrients: Iron, vitamin B12, folate, vitamins A/C/E, zinc, copper².
- Before Donation:** Complex carbohydrates, protein and healthy fats. Adequate hydration. Avoid too fatty foods to prevent lipemic plasma.
 - After Donation:** Prioritize iron-rich foods: lean meat, fish, legumes, dark leafy greens, fortified cereals. Combine with vitamin C sources to enhance absorption. Support recovery with protein + complex carbohydrates. Avoid alcohol and caffeine immediately post-donation. Antioxidants support immune health^{2,3}.
 - Vegetarians/Vegans:** Higher iron requirements. Focus on legumes, tofu, nuts, seeds, whole grains, dark greens. Combine with vitamin C; minimize inhibitors (tea, coffee, calcium). Vitamin B12 supplementation is essential for vegans².
 - Women:** Higher iron needs due to menstruation/pregnancies → focus on iron-rich foods + vitamin C, consider ferritin monitoring².

RESULTS



- The informational materials providing nutritional guidance for blood donors have been revised, based on research findings. Different dietary patterns are now taken into account, with particular attention to gender-specific needs and plant-based diets.
- Staff training on iron metabolism, hematopoiesis, and dietary considerations to support post-donation recovery was initiated and well received, enhancing nutrition counselling competencies.

The initial key steps toward optimizing the post-donation refreshment offerings have been implemented: a new snack bar has been constructed, which will also allow to offer a variety of fresh food. Implementing vegan alternatives (such as plant milk) as well as a themed event day featuring plant-based hot dogs, were positively received by the donors.

CONCLUSION

With the growing prevalence of plant-based diets, especially among younger people, blood services should adapt their nutritional recommendations to support long-term donor health. By addressing donors' specific nutritional needs, this approach can help maintain hemoglobin stability, improve donor satisfaction, and strengthen the sustainability of the blood donation system.

REFERENCES

¹ Greinacher et al. A population-based longitudinal study on the implications of demographics on future blood supply. Transfusion (Paris). 1. September 2016;56(12):2986–94.
² Kurhaluka et al. Optimisation of Blood Donor Nutrition: Blood Donor Health Improvement Studies. Cell Physiol Biochem 2024;58:756-806
³ Ajit Pal Singh et al. Blood donation and post donation care: A clinical update. International Journal of Clinical Biochemistry and Research 2024;11(4):207–213
⁴ Shah UA, Merlo G. Personal and Planetary Health—The Connection With Dietary Choices. JAMA. 2023;329(21):1823–1824. doi:10.1001/jama.2023.6118

ACKNOWLEDGEMENTS

Thanks to all my colleagues, blood donors and survey-participants who shared their opinion. Their time, interest and valuable contributions make this project come true.

CONTACT DETAILS

Melissa Völter
Institut für Transfusionsmedizin
Universitätsmedizin Greifswald
Fleischmannstraße 8
17489 Greifswald, Germany

Nutritional Awareness and Sustainability in Blood Donation: Promoting Donor Health and Satisfaction
Melissa Völter

Background

The declining number of blood donors poses a threat to maintaining a stable blood supply. Low haemoglobin levels - often linked to donation frequency and dietary habits - are a major cause of temporary donor deferral. Many donors are unaware of how their nutrition influences their eligibility. Current dietary advice lacks personalisation, failing to address individual dietary habits, food intolerances, and gender-specific needs. Therefore, an individualised approach to guiding donors on their specific nutritional requirements could help support haemoglobin stability and increase donor satisfaction.

Aims

This project aims to develop a tailored nutrition and education strategy for blood donors, enhancing donor health and satisfaction through evidence-based dietary guidance for both pre-donation preparation and post-donation recovery.

Methods

The project adopted a structured approach to improving donor nutrition and education. Firstly, existing research on dietary recommendations for blood donors, individuals with nutritional deficiencies, and best practice in donor nutrition was reviewed. Based on these findings, donor education materials were revised to highlight strategies that support the intake of key nutrients vital for red blood cell production and overall blood quality. The revised materials also took into account varied dietary needs, including specific guidance for vegetarian donors on achieving adequate iron intake from plant-based sources. To ensure consistent and individualised support, blood donation staff were trained on iron metabolism, nutrient deficiencies, and post-donation recovery. Ongoing training sessions were implemented to reinforce knowledge and enhance counselling skills. In addition, on-site

refreshment options are being improved with the introduction of nutrient-rich, appealing foods tailored to donor needs, such as fresh fruit and vegetables, plant-based milks, and spreads.

Results

The literature review offered valuable insights into current dietary guidance and its relevance for blood donors. Proper nutrition plays a crucial role in safeguarding donor health, ensuring the quality of donated blood, and aiding recovery post-donation. For pre-donation meals, light options containing complex carbohydrates and moderate fat are recommended to avoid lipemic blood. After donation, iron-rich foods paired with vitamin C, protein, and sufficient fluids are advised, while alcohol and caffeine should be avoided. Essential nutrients include iron, vitamin B12, folic acid, and antioxidants. Special consideration must be given to women, who are more prone to iron deficiency due to menstruation, and to those following vegetarian or vegan diets. However, implementing these recommendations on site presents several challenges, such as cost constraints, food safety regulations, and the availability of suitable options. Furthermore, not all donors actively seek or are receptive to nutritional advice.

Conclusion

The project's initial phase has shown encouraging results, with positive responses from both staff and donors. Training improved counselling, and donors appreciated the personalised nutrition advice. Upcoming steps include refurbishing the refreshment area, developing practical tools like recipe cards, and evaluating the strategy's impact. Overall, a tailored nutritional approach may enhance donor satisfaction, support health, and strengthen the sustainability of blood donation services.

Nutritional Awareness and Sustainability in Blood Donation: Optimising Post-Donation Refreshment to Meet Donor and Staff Needs

K. Greffin¹, U. Alpen², T. Thiele², M. Völter²

¹) University of Greifswald, Germany
²) University Medicine Greifswald, Germany



Donor Health 2
September 11th

Managing Donor Programs and Health Data



Nutritional Awareness and Sustainability in Blood Donation: Optimising Post-Donation Refreshment to Meet Donor and Staff Needs Klara Greffin

Background

Post-donation refreshment plays a vital role in supporting fluid and energy replenishment while allowing medical staff to monitor donors for potential adverse reactions. As societal expectations shift towards healthier, more sustainable, and locally sourced nutrition, questions arise about whether current offerings adequately meet donor needs and preferences. Additionally, the extent to which these refreshments align with dietary recommendations - particularly the inclusion of iron-rich foods essential for red cell recovery - remains a key consideration.

Aims

The aim of this study, conducted as part of the Nutritional Awareness and Sustainability project, is to assess the needs related to post-donation refreshment for both current and potential whole-blood donors, as well as the donation staff.

Methods

Data was collected between November 2024 and February 2025 at University Medicine Greifswald, Germany. An online survey of potential donors (n = 107) was conducted in a university cafeteria, capturing insights from individuals in a food-related environment outside the blood donation setting. Simultaneously, a pen-and-paper survey at the blood donation centre gathered real-time feedback from donors using the refreshment area (n = 141). The assessment examined donor participation and satisfaction with post-donation refreshments, dietary preferences, the influence of food options on donation behaviour, and the significance of regional and sustainable choices. Additionally,

structured interviews with refreshment area staff (n = 5) provided professional insights into current offerings and potential improvements. Quantitative data are presented as frequencies, while open-ended responses were analysed using a content analysis approach.

Results

A total of 16.3% of in-centre participants stated that the food offering at the blood donation site influenced their donation behaviour, compared to 30.8% in the cafeteria group. Overall, donor satisfaction with the existing refreshment options at the blood donation centre was high, with 90.1% of current donors reporting they were somewhat or very satisfied. However, 60.9% expressed a desire for greater variety, particularly in vegetarian and vegan options, as well as better accommodation of food intolerances - an aspect that was also important to participants in the cafeteria group. Staff interviews provided further insights beyond food preferences, highlighting operational and logistical challenges in refreshment service. They emphasised the need to balance nutritional improvements with practical feasibility in daily operations.

Conclusion

This study offers valuable insights into donor and staff expectations for post-donation refreshments. While satisfaction is generally high, ongoing adaptation to evolving donor needs is essential. Evidence-based improvements must balance practicality and maintain donor satisfaction. For successful implementation, healthy options should be positively perceived by both donors and staff.

INTRODUCTION

Post-Donation Refreshment

Medical benefits

- After whole-blood donation, refreshments (food and drinks) play a vital role in helping donors recover. They replace lost fluids and energy, stabilise blood volume, and reduce common side effects such as dizziness, fatigue, and faintness (1).
- At the same time, this short recovery break allows staff to observe donors closely and provide support if any adverse reactions occur.

Social and psychological benefits

- Refreshments are also socially and psychologically meaningful, as they provide opportunities for encounters between donors or between staff and donors, and are often perceived as a reward for the donation.

Nutritional perspective and donor satisfaction

- From a nutritional perspective, offering iron-rich options is particularly relevant: they not only help replenish iron stores and support red blood cell recovery, but may also raise donors' awareness of the importance of iron in maintaining health.
- Donors may expect choices that reflect current values around health, sustainability, and local food sourcing (2). Meeting these expectations might improve satisfaction with the donation experience (3).

AIM

As part of the **Nutritional Awareness and Sustainability Project**, this study explores post-donation refreshment needs from the perspectives of (potential) whole-blood donors and donation staff.

METHODS

Data were collected between November 2024 and February 2025 in Greifswald, Germany.

Two surveys were conducted:

- At the Blood Donation Centre of the University Medicine Greifswald
n = 141 active donors
- At the University Medicine Greifswald campus canteen
n = 107 active and potential donors

Both surveys assessed:

- Use of and satisfaction with the blood donation refreshment area
- Value of regional and sustainable choices
- Suggestions for improving the blood donation refreshment area
- Dietary preferences
- Impact of food options on donation behaviour

Additionally, **structured interviews with refreshment staff (n = 5)** provided professional perspectives on current practices and possible improvements.

Quantitative data were analysed using frequency analysis, open-ended responses were analysed using qualitative content analysis.

STAFF MEMBER INTERVIEWS

Role of staff

- Donor care, guidance, food service, organisation, hygiene, logistics

Food's role

- Recovery, nutrition, and social exchange

Current offer

- Adequate, but challenged by quality, freshness, storage, inclusivity, feasibility

Symbolic value

- Food should be healthy, sustainable, and inclusive

Desired changes

- Fresher/less processed options, seasonal produce, dietary alternatives (lactose-free, gluten-free, vegan), more variety (cheese, cereals, tea)

Practical needs

- Punctual delivery, hygiene, waste prevention, manageable packaging

Canteen space

- Clearer signage, better cooling, more counter space, improved waste handling

Atmosphere

- Foster encounter, familiarity, and supportive interaction

REFERENCES

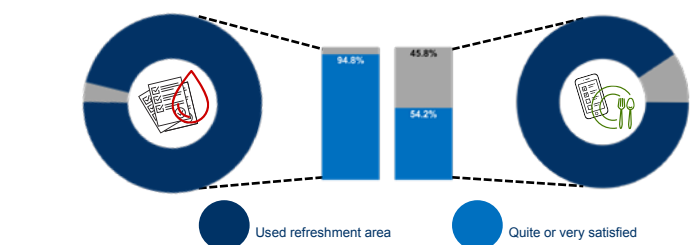
- Saxena, R., Singh, A. P., & Saxena, S. (2025). Blood donation and post donation care: A clinical update. *International Journal of Clinical Biochemistry and Research*, 11(4), 207–213. <https://doi.org/10.18231/ijcbr.2024.031>
- Marak, N. R., & Parashar, A. (2024). Feeding Tomorrow: A Journey into Sustainable Nutrition for Personal and Planetary Health. *European Journal of Nutrition & Food Safety*, 16(4), 1–14. <https://doi.org/10.9734/ejns/2024/v16i41403>
- Njianga Mbeyap, B., Nda'chi Deffo, R., & Fomba Kamga, B. (2024). Are blood donors satisfied with their donation experience? An evaluation based on the stages of blood donation in Cameroon. *International Journal of Sociology and Social Policy*, 44(11/12), 1075–1086. <https://doi.org/10.1108/IJSSP-04-2024-0158>

SURVEY RESULTS

Sample



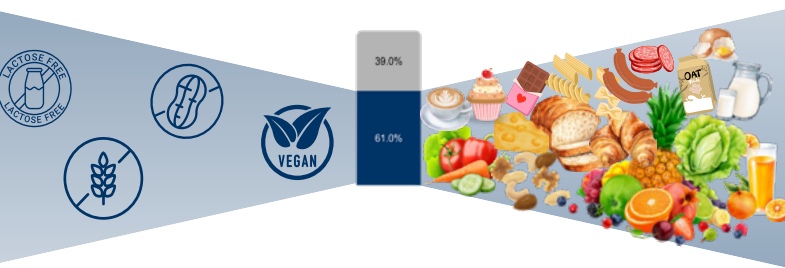
Use of and satisfaction with the blood donation refreshment area



Value of regional and sustainable choices



Suggestions for improving the blood donation refreshment area



Dietary preferences



Does the food offered after blood donation influence blood donation behavior?



CONCLUSION

The refreshment area after blood donation is valued as a space to rest, eat and drink. Donors would welcome fresher, healthier and more varied options. An inclusive selection that accommodates allergies, intolerances and different dietary needs is increasingly important, especially as younger donors prioritise plant-based nutrition. Staff also highlight the need for more freshness, variety and eco-friendly packaging. Overall, a more sustainable, diverse and health-conscious service could support recovery and enhance donor satisfaction.

ACKNOWLEDGEMENTS

We would like to sincerely thank all participants who took part in this study. Their time, openness and valuable contributions made this research possible.



CONTACT



Dr. Klara Greffin
Robert-Blum-Straße 13
17489 Greifswald, Germany

THE SCOTTISH WAY: BLOOD COLLECTION FOOTPRINT STRATEGY

Scottish National Blood Transfusion Service (SNBTS)
www.scotblood.co.uk



AUTHORS

Deborah McNaughton
Associate Director
deborah.menaughton@nhs.scot

Andrew Reid
Head of Collection Planning
andrew.reid3@nhs.scot

BACKGROUND

During 2020, the donor base in Scotland reached the lowest levels since records began. In 2023, SNBTS commissioned a Strategic Review to identify changes in the blood collection programme that would support donor base growth.

The donor base reduction was a result of two challenges:

- The Scottish National Blood Transfusion Service (SNBTS) responded to a sustained reduction in red cell demand by removing many community sessions from Scotland's blood collection programme, and certain communities were visited less often. This drove down donation frequency and resulted in donor base decline.
- This decline in the donor base was exacerbated by the 2020 COVID-19 Pandemic, which saw blood collection compressed into fixed sites, with all corporate and educational collections stopping entirely.

Scotland subsequently saw an increase in demand (1.1% increase in demand for RBC since 2018/19). SNBTS also had to prepare and future proof their collection programme to meet the introduction of Plasma for Medicines. This meant that the donor base had to expand to meet current and future demands of NHS Scotland, and the collection programme is identified as a key enabler for this growth.

AIMS

The collection footprint review aimed to increase the donor base based on four main principles:

- Expanding the opportunity for whole blood donation
- Recruitment of platelets and plasma donors
- Increasing donor loyalty
- Developing the infrastructure for recruitment and retention

OBJECTIVES

- Expanding the opportunity for whole blood, platelet and plasma collection by reducing targets from fixed sites, (by increasing community sessions, workplace and educational sessions).
- Ensuring SNBTS has the resource (including budget, vehicles and equipment) to deliver these changes.
- Meet the needs of donors, by responding to 2021 research findings where donors stated they prefer to donate in local community, rather than fixed site donor centre (Fig. 1).

METHODOLOGY

- Reduce Fixed Site Collection: A Donation Centre which was opened in Scotland's central belt in 2021, as part of a pilot, was closed after a two year trial period, and donors from the Centre were managed on to community panels.
- Increase Community Collection: The Planning Team worked to re-engage with community venues across Scotland, whilst aiming to deliver a balanced budget by managing hall hire costs.
- Increase Corporate collection: The Planning team had to develop new initiatives and contacts amongst Scotland's employers (which was challenging as many organisations utilised a hybrid work from home / office model at this time) to re-energise corporate collection. They also had to review equipment and resources required for corporate (boardroom / Pod) collection.
- Educational: Planning had to work with Donor Marketing to re-commence the school talk programme, and allocate session resource back in to schools accordingly.

RESULTS

The updates made in the 24/25 collection footprint has seen the following improvements:

- Active whole blood donor base has increased by 1.6% in the first year of Strategy implementation April 2024 – March 2025 (Fig. 2)
- Number of donor centre sessions per year has reduced by 361, target attends have reduced 12,613 easing pressure on donor centre panels. (Fig. 3)
- Community sessions have been re-energised, and are collecting as much blood as they did pre Pandemic. (Fig. 4)
- After two years of almost no educational collections, visits are increasing year on year (Fig. 5)
- The pandemic meant between April 2021 – April 2023 we had almost no workplace collections, in the last three years we are back to 80% of pre pandemic visits. (Fig. 6)

RECOMMENDATIONS

- Early indicators are that the Strategy is delivering and contributing to donor base growth Post Pandemic.
- Transferring 13.7% of whole blood collection out of the Fixed Sites, and into the community, has enabled SNBTS to start collection Plasma for Medicine in all five Fixed Sites.
- Since April 2024 to April 2025, the number of community collection sessions nationally has increased by 12%
- Community sessions have reached pre Pandemic levels, but work must be done to develop educational and corporate sessions. Board room collections (Pods) were introduced in 24/25. At that time SNBTS had 79 pod collections planned, for 25/26 this has increased significantly to 154.
- Donation frequency has reduced slightly for whole blood from 1.77 to 1.73 donations per year, reducing the reliance on the current donors to meet the collection target
- Successful plasma donor recruitment has resulted in the donor base growing to over 900 in its first year, we have tripled both the number of plasma procedures started each month and the donor base size.
- SNBTS collect Platelets in three of our donor centres, the donor base has increased for platelets by 8.7% in the first year of strategy implementation.

CONCLUSIONS

The results above have confirmed that the changes have been successful. SNBTS have had immediate improvements in some areas which have resulted in increases for whole blood, platelet and plasma donor bases as well as the other successes realised in the results. Work in this area will continue.

FIG. 1

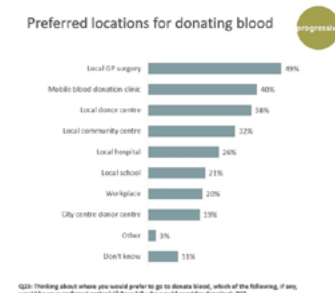


FIG. 2

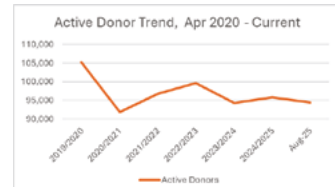


FIG. 3

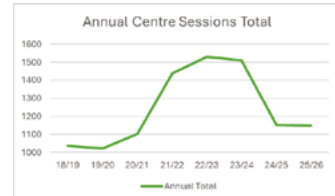


FIG. 4

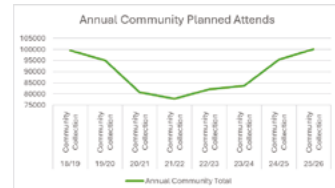


FIG. 5

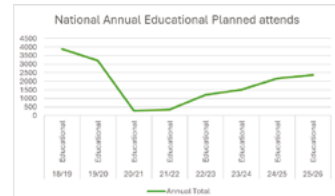


FIG. 6



The Scottish Way - Collection Foot Print Strategy Debbie McNaughton & Andrew Reid

Background

The donor base reached the lowest levels since records began. This was due to a culmination of the pandemic and the response to a previous reduction in red cell demand (2009 – 2019). Reduction in the donor base was achieved by removing community sessions, reducing frequency, this ensured better alignment of collection with clinical demand. A more recent increase in demand (1.1% increase in demand for RBC since 2018/19) means that the donor base must expand to meet current need and future needs of NHS Scotland. Over the same period the active whole blood donor base fell by 8.1%. Resulting in a less resilient supply chain, lower inventory levels and less agility in responding to demand spikes.

Aims

Setting out a strategy, operational plan to increase the overall donor base to support both clinical requirement of blood components and plasma for medicine strategy. The collection footprint review aims to increase the donor base based on four main principles.

- Expanding the opportunity for whole blood donation
- Recruitment of platelets and plasma donors
- Increasing donor loyalty
- Developing the infrastructure for recruitment and retention

Methods

Execution of -

- Expanding the opportunity for whole blood donation by reducing targets from fixed sites, increasing community sessions, increase in workplace, corporate engagement, reintroducing educational sessions
- Encouraging diversity in the donor base
- Piloting POD sessions, review of current vehicles, equipment
- Recruitment of Platelets and Plasma donors
- Increasing donor loyalty
- Improving donation frequency
- Special donor campaigns, loyalty materials, awards

Managing Donor Programs and Health Data

- Developing infrastructure for recruitment, retention
- MAT with donation
- Digital Donor Communications (DDC)

Results

- Active whole blood donor base increased 1.7% since April 24, an additional 1600 active donors
- Livingston fixed site pilot ended, along with wider fixed site reduction means reduction of 24%
- South East has increased community collections by 90% in 24/25 compared to the previous year
- Number of community collection has increased by 13%, equating to additional 102 community visits
- Increase in lapsed returning donors, averaging 11% of attends, an increase of 2-3% from year 23/24
- Diversity in the donor base is increasing across all minority groups, up 0.1% overall, increasing the number of ethnically diverse donors by an additional 200 since July 2024
- Pods were introduced in May 2024, up to the end of March 2025, with 115 pod collections planned, include communities, workplaces, educational sessions
- Donation frequency has reduced slightly for wholeblood from 1.77 to 1.73 donations per year, reducing the reliance on the current donors to meet the collection target
- Successful plasma donor recruitment has resulted in the donorbase growing to over 900 in its first year, tripling both the number of plasma procedures started each month and the donorbase size
- Platelet donorbase has increased to 1125 from 1035 in April 2024, an increase of 8.7%

Conclusions

The changes to the collection footprint have been significant in the last year. The results demonstrate that the changes have been successful, we have had immediate improvements which have resulted in increases and resilience in the donorbases.



Join
ADRP



GIVE BLOOD



6 6th European Conference
on Donor Health
and Management

See you

next ECDHM