

Blood donation in the UK. Are we doing all right? Could we do better?

Background

Blood cannot be artificially created and the only source to get blood is through human donations, voluntary (not remunerated) in the UK. Blood is collected in the UK through voluntary (not remunerated) human donations. The number of appointments booked with NHS blood and transplant (NHSBT) has significantly risen in recent years. However, evidence shows that the number of appointments is greater than the number of final blood donations. Given that there is an urgent need for more blood donors, NHSBT are interested to explore the key factors that are driving potential donors who book an appointment to make a blood donation (or not).

Aim

- To explore the circumstances and characteristics that lead to a donation, compared to those that do not lead to a donation, amongst people who book an appointment.
- Special interest on first time donors/bookings. How to retain them?

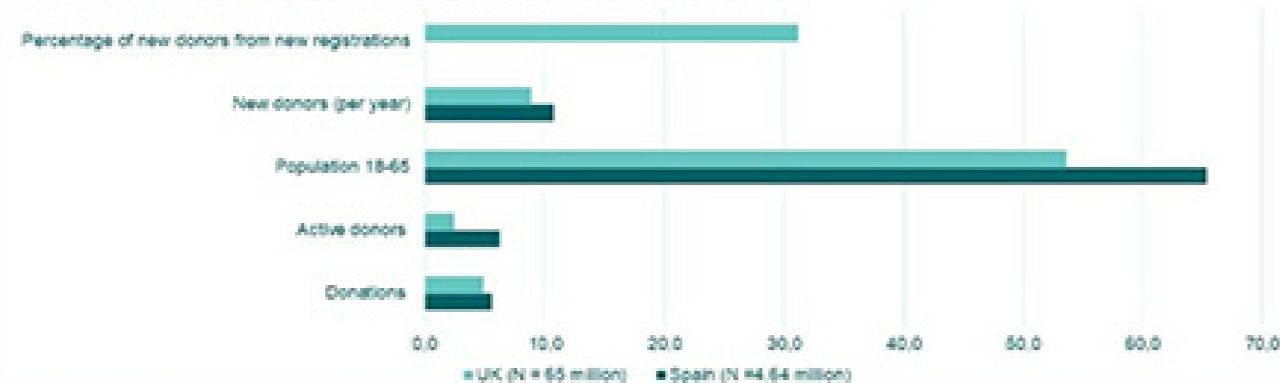
Methods

Probabilistic models would be estimated (probit/logit models) in order to estimate the probability of donating/not conditioned on a set of individual characteristics.

The model would be able to give a profile of donors and non-donors (see Errea, 2014).

Facts

Figure 1. Supply Descriptive Statistics Blood donations in Spain and UK



Gap: Notice there is an important difference between the New Registrations' gap with the number of donations. Only 31% of the new registers actually donate.



TABLE 1: About the NHSBT donation campaigns. Aims and Results.

Campaign	Year	About the campaign	Results
Main Human Blood Donation Campaign	2014	The main Human Blood Donation Campaign was started in 2014. The campaign aims to increase the number of blood donors across the UK. The campaign is also starting to set up large scale community sessions.	The campaign successfully raised awareness of the need for donations and we were able to continue providing the blood and plasma patients needed throughout the festive season.
The gift you can give	2015	Providing a Christmas blood service (donor) and over Christmas and New Year over the festive season over 200,000 extra blood donors and 12,000 plasma donations were needed to make sure the hospitals in England and North Wales had the stocks they need to treat patients.	The campaign successfully raised awareness of the need for donations and we were able to continue providing the blood and plasma patients needed throughout the festive season.
Missing type	2015	During National Blood Donor Week 2015 NHS Blood and Transplant launched a campaign to encourage those who have never donated blood before to sign up as donors. The campaign aimed to:	Thanks to the huge support from our colleagues, reflections, charity and blood donors the campaign was a huge success, with over 30,000 people registering to donate.
Blood in England	Autumn 2015	The campaign aimed to encourage 100,000 people in England to register as blood donors in the run up to, and during, the world's largest rugby tournament. New donors are needed to replace those who can't donate anymore and to ensure we have the right mix of blood types to match patient needs in future.	Thanks to the support from key sporting personalities, celebrities, local rugby clubs and you, we have had an amazing response to the campaign. 124,250 people registered to donate. By booking appointments and giving blood they will help ensure patients in the future get the blood they need, when they need it. The England rugby team's early departure from the Rugby World Cup 2015 had the campaign's momentum with people continuing to sign-up in their thousands.
Be Black	13th October for the first time campaign ran during Black History Month (11-19 October 2016) to highlight the need for more blood and organ donors from the black community as currently less than 1% of blood and organ donors are from this group. The campaign aimed to get 1,000 more blood and 1,000 more organ donors from the black community to register. The campaign sought to inspire people to learn more about the link between blood and organ donation and their own community and the rare blood and tissue types that can be found within the community.	The campaign resulted in 1,587 blood registrations and 628 registrations to the NHS Organ Donor Register. There was lots of activity on social media including a powerful poem about blood called 'The Broken Story' by recording artist, George the Poet. It was supported by Donority On Sale and On Line from African Caribbean Leukemia Trust (ACLT) and encourages more people to become stem cell, blood and organ donors.	
Donor campaigns	Ongoing	Give people the chance to tell us their story blood type before becoming a donor	100%
Get out your blood type	Ongoing	Celebrities, sports people and influencers feature in our online film to encourage people to be the first to tell during often fun and quirky donation sessions	750%
Donorches	Ongoing	Use to promote donor sign up events and events and has had hundreds of TV appearances, promoting the life saving power of blood	100%
Be a donor cheer	Ongoing	The added people to support. See values not only through their love of sport, but in a way that makes a difference - by giving blood and saving lives	150%

Data

TABLE 2: Data requested for doing the study*

Variable	Description	Available at NHS	Comments/Requirements
ID	A time invariant number for any donation made by the donor or potential donor	YES	Encrypted
Date of donation	Standard format (DDMMYYYY)	YES	Donors only
Date the appointment was booked	Standard format (DDMMYYYY)	YES	Donors & Non-Donors
Date booked for the appointment	Standard format (DDMMYYYY)	YES	Donors & Non-Donors
Way the appointment was booked	Web, phone, other	TBC	Donors & Non-Donors
Appointment Reminder and type	Indicator of reminder before the appointment, and, if available, the type of reminder: letter, call, email	TBC	Donors & Non-Donors
Preferred way for the donor of being contacted	Phone, email, letter, other	TBC	Donors & Non-Donors
Information about why the donation was cancelled	e.g Last minute cancellation, sickness, forgot, other...	TBC	Non-Donors Only
Location for donation	Donation centre, mobile unit, other	YES	Non-donors Only
Donation number	e.g: 1 for first time donors	YES	Donors Only
Number of donations before the starting date of the data set	e.g. if starting date is 1995, how many donations registered for each donor before that date	YES	Donors Only
Blood type	O, A, AB, B... and Rh (+/-)	YES	Donors & Non-Donors
Age (at each donation) / age band	Standard format (e.g: 18 / [18-25])	TBC	Donors & Non-Donors
Ethnicity	Standard classification	YES	Donors & Non-Donors
Any other sociodemographic information that the NHS could share		TBC	Donors & Non-Donors

* Campaigns and other confounding factors will be included as control variables

Discussion

- NHSBT is very interested understand estimate the profiles of donors versus non-donors who originally registered as donors.
- We know from a previous study that campaigns have an impact on the number of new blood donors so campaigns play a very important role in this study.
- The number of new donors per day doesn't seem to be very different from its demand, however there are problems to gather donors from specific groups of the population (e.g the black, or some blood types)
- The number of donors per day is still very far from the demand objective. Increasing the number of registrations that become donations seems to be a key factor to work in

References

- Errea M. (2014): Encouraging Blood and Living Organ Donations. FUNCAS (serie tesis) <https://www.funcas.es/publicaciones/Sumario.aspx?idRef=5049>
- NHSBT Blood and Transplant Annual Donation report (2017/18).
- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/732455/NHS_Blood_and_Transplant_2017-18_Printing_of_Accounts_Web_Accessible_AMENDED_1.pdf