APPG Inquiry Response from NHS Blood and Transplant – September 2025

NHS Blood and Transplant (NHSBT) is a healthcare organisation within the NHS with front-line services providing care for donors and patients. NHSBT plays a unique role in the NHS – we produce life-saving and life-improving products and treatments from donated blood, organs, tissues and stem cells, and provide a range of related diagnostic and therapeutic services. Thanks to our workforce, which includes expert manufacturing and logistics capability, we provide a lifeline for patients who rely on us to deliver every day across the length and breadth of the UK.

We are trusted nationally for our commitment to quality, safety and reliability, and respected internationally for our productivity, research and development. At our heart are the thousands of donors without whom our service would not be possible. Their generosity and daily acts of altruism make NHSBT so much more than the sum of its parts. We care for the thousands of blood, plasma and stem cell donors who turn up every day, as well as the generous families who, in the depth of grief, consent to organ or tissue donations from their loved ones.

All of our products require appropriate matching prior to being given and this means that we need donors to reflect the people needing our help. To do this we need hundreds of thousands of donors across all ethnic backgrounds to meet clinical demand for appropriately matched blood products, organs, tissues, and stem cells. Despite the generosity of our donors, we are not currently able to supply all patients with the donation they need to give the best outcome.

Treating patients requires many different NHS and third sector organisations to work together to make the biggest differences. Whilst we are responsible for recruiting all blood donors and consenting all organ donors, other bodies also recruit people to stem cells registries both in the UK and abroad as all patients can be served by international registries.

NHSBT plays a crucial role in managing stem cell donations in the UK. We operate the NHS Stem Cell Donor Registry and collaborate with other UK registries to provide a centralised access point for transplant centres. The registry is vital for matching donors with patients in needs of stem cell transplants.

Responses to specific questions:

UK stem cell supply

a) Does the size, composition, or quality of UK registries, or strategies for donor recruitment mean UK donors are less likely to be chosen?

- Donors are selected primarily on degree of Human Leukocyte Antigen **(**HLA) match to the patient and then for other criteria such as age, sex and availability. The size and composition of a registry in relation to these factors will therefore affect the likelihood that a donor for a specific patient is chosen from a particular registry – either a UK or an international one. The recruitment strategy of the NHS Stem Cell Donor Registry (SCDR) is to recruit predominately young, male donors, HLA typed

to high resolution, as these are the donors in highest demand from the UK and international clinical community. Further the aim is to increase recruitment and therefore proportional representation on the registry of ethnic minority donors so that the needs of ethnic minority patients are more likely to be met. A patient is more likely to find a close HLA match with a donor from the same ethnic group.

- The current size and composition of the UK Aligned Registry (Anthony Nolan, DKMS UK, NHSBT, WBMDR) is ~2.44 million adult donors and >28.4k clinicalgrade cord units as of 31 Mar 2025. The most recent published Aligned Registry State of the Registry report highlights that young men, <30yo, are underrepresented despite providing >50% of donations, implying composition skews away from the most-used type of donor. Minority ethnicities comprise 16% of the Aligned Registry adult panel and 34% of the cord bank. 2021 UK census data suggests that minority ethnicities make up 17% of UK overall population. As described above, and as recommended by the UKSCSF, NHS SCDR donor recruitment criteria seek to redress this imbalance in addition to diversifying the HLA types available through targeted recruitment of ethnic minority donors.

b) Have overseas registry changes increased their odds of being chosen?

The DKMS Registry in Germany adopted a strategy more than 15 years ago to type new donors at **high resolution across five HLA loci**—well before any other major registry worldwide.

This early investment gave DKMS a lasting competitive edge in donor selection and enabled rapid growth to nearly **7.8 million registered donors**, including **700,000 added in the past three years**.

By combining large-scale recruitment with high-resolution typing, DKMS has maximised the likelihood of identifying high-quality matches. A broader, well-typed pool also improves donor availability and shortens the time required to secure a suitable graft—key factors for transplant centres.

As a result, during FY24/25 Germany supplied **42% of the UK's unrelated and cordblood stem cell products**, compared with **24% sourced from the UK Aligned Registry**

c) Do UK apheresis/collection services affect UK donor selection?

- NHSBT Therapeutic Apheresis Services has experienced steadily increasing cell collection demand for registries over the last 10 years, however continued UK wide apheresis capacity pressures can impact the availability of stem cell donation slots. This is not just due to available apheresis slots, but also donor medical assessment capacity and stem cell lab support. If the availability of cell collection slots in the UK delays the provision of stem cell donations, then Transplant Centres may opt for overseas donors with, faster collection windows. UK apheresis capacity is currently being reviewed by DHSC.

d) Are workforce/training constraints along the pathway influencing donor choice?

- Collection of stem cells by apheresis is a specialised, regulated procedure and requires highly trained staff. Staff turnover can be difficult to manage, with extensive training periods for new staff. Therefore, nursing and medical staffing shortfalls can cause capacity issues, extending timelines for donor availability. Similarly, adequately staffed specialist stem cell lab processing capacity needs to be available to match cell collection availability. Failure to meet requested donor stem cell collection dates can reduce the attractiveness of a UK donor relative to an overseas alternative with immediate capacity.

e) Have UK donor behaviours changed in ways that reduce likelihood to donate?

- At NHSBT we have seen a slight increase in donor unavailability due to donor reasons (medical and personal) since the pandemic. This is in line with other registries, both in UK and internationally. Reasons for this are not yet clearly understood but this behaviour is more pronounced amongst young donors suggesting changing donor motivations and the need for reassurance and clarity as early as possible in the donor journey to improve availability.

f) Current UK system—pros, cons, and changes to build resilience/sustainability

Pros: The UK Aligned Registry model provides several benefits to the UK stem cell supply ecosystem:

- provides UK transplant centres a single, streamlined, coordinated search across UK and global donor registries
- A financial model that keeps UK:UK donor provision at a greatly reduced price compared to international imports and allows the maintenance of a cord blood back containing 28,500 high quality units with 34% of these being from ethnic minority donors
- Access to data from across the 4 component registries has led to harmonised donor typing protocols, and coordinated donor recruitment strategies with shared oversight, performance metrics, and a focus on increasing donor diversity and efficiency.
- A joint Medical Advisory Committee ensures clinical best practices guide donor management
- Better data sharing and support for clinical trials accelerate research and innovation
- **Cons:** Despite the best efforts of the AR partners and the benefits described above there remains inequity of access for all patients to stem cell transplant and an increasing reliance on imports.
- **Priority changes (pragmatic, measurable):**

1. **Donor recruitment strategy**—continue to focus on diversifying the stem cell registries and expanding the pool of young, male donors to increase the likelihood of a UK donor being selected for UK patients. Track donor selection and availability by donor characteristic segments quarterly.
2. **Boost donor "readiness"**—continue to invest in high-resolution HLA typing/confirmatory strategies; streamline pre-work-up checks; improve donor engagement to lift availability at donor selection and work-up.
3. **Expand UK collection capacity**—commission additional cell collection chairs and extended hours where demand warrants; explore new satellite/partner collection sites to guarantee rapid booking. Ensure associated labs support and staff availability and training are matched to this increased capacity.
4. **Cord blood strategy**—Continue to develop UK Cord Blood Working Group to support UK Transplant centre cord selection and use. Support the expansion of UK cord blood trials from paediatric to adult patients.
5. **Data/ops modernisation**—UK registries should continue to invest in better digital systems and work towards an integrated data system covering the whole donor and patient journey. The Data working group of the UK Stem Cell Strategic Forum is key to this.
6. **Post Transplant Cyclophosphamide (ptCy)**: Evolving data on the use of post-transplant cyclophosphamide to enable successful use of mismatched donors offers great hope for a suitable donor to be found for nearly all patients. An ongoing UK study 'MoTD' is due to deliver results within a few years. The UK transplant community is however reviewing data from international studies at a special meeting at the beginning of October with the aim to produce rapid guidelines on the use of mismatched donors and post-transplant cyclophosphamide.
7. **Clinical Trials:** invest in clinical trial infrastructure and networks to ensure UK has early access to novel treatments and therapies to improve patient outcomes and address health inequalities.

Context note: European (and UK) transplant activity continues to grow (allogeneic +7.8% in 2023), while WMDA reports sustained global donor expansion—competition for the "best-fit, fastest" product is therefore intensifying. Strengthening UK donor composition, readiness and collections will directly improve domestic selection rates and system resilience.

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03 December 2025

Dear Ms Ribeiro-Addy

Response to your inquiry supplementary questions

Thank you for your letter dated the 11 November 2025 and your supplementary questions to us in respect of your APPG inquiry on 'Ensuring a resilient and sustainable stem cell supply for all'.

Please find below our responses which I hope are helpful, please do not hesitate to contact us again if you require any further information.

Context

NHS Blood and Transplant (NHSBT) manage the NHS Stem Cell Donor Registry (NHS SCDR) and operates within the UK Aligned Registry partnership alongside Anthony Nolan, DKMS UK, and the Welsh Bone Marrow Donor Registry. Together, the Aligned Registry provides search and procurement services for UK patients and facilitates international exchange of unrelated stem cell products through the World Marrow Donor Association/European Marrow Donor Information System network.

NHSBT's model is partially self-financing, with approximately 60 per cent of service income derived from exports of UK-sourced stem cell products to overseas transplant centres. Each export yields an average income of around £29,000 per provision, compared with approximately £5,000 for a UK provision (this is after the donor work-up costs that Anthony Nolan incur for our donors). The export revenue underwrites a substantial share of the fixed costs that maintain our donor panel, provision costs, and HLA typing costs that allow us to reduce our prices to NHS Trusts (via Anthony Nolan) that ultimately serve UK patients.

Responses to your supplementary questions

(1) Impact of reduced provision on investment

A fall in total provision inevitably reduces income and therefore constrains discretionary investment. While NHSBT has protected core operations - donor search, testing (through Grant in Aid Funding), and collection capacity - a decline in total provision from our registry would limit reinvestment in digital upgrades, donor recruitment, and diversity initiatives.

Currently, export income is sufficient to cross-subsidise these functions even though UK to UK provision has fallen; if overall provision declines, reinvestment capacity will erode.

(2) Reasons for reduced recruitment

Recruitment to the NHS Stem Cell Donor Registry has increased over the last year as we have put additional resource and initiatives in place and we are currently forecasting to exceed our annual recruitment target of 30,000.

(3) Sustainability risk if UK provision continues to fall

If domestic provision continues to decline, the UK risks a self-reinforcing downward cycle: fewer UK donations → lower income → reduced investment → further decline. Given the large differential between export (£29k) and domestic (£5k) income, the Registry's sustainability depends on maintaining both export competitiveness and UK utilisation. NHSBT's position is that targeted reinvestment now is essential to reverse this trend - focusing on younger, diverse, high-availability donors and digital engagement tools that improve readiness and work-up success.

(4) Business-case modelling using import savings

Yes. NHSBT and the Aligned Registry have modelled the financial impact of improving UK self-sufficiency and these have been reported through The UK Stem Cell Strategic Forum. The findings formed the basis of the business case for the DHSC Stem Cell

Programme funding. Imports cost 30–50 per cent more than equivalent UK products once transport, insurance, and coordination costs are included. Raising the UK-sourced share of transplants by even 5–10 percentage points could yield annual savings to the NHS in the low millions. This modelling underpins the UK Aligned Registry sustainability business case, linking reduced import dependency and sustained export revenue to long-term financial stability.

(5) Addressing health inequity in minority and mixed-heritage patients

Mitigating inequity is a key component of our business plans. Planned existing and future measures include:

- Buccal Swab recruitment – This was supported following the submission of a business case to DHSC for stem cell funding. This 3-year proof of concept pilot allowed us to run targeted recruitment campaigns of enrolled blood donors who were yet to donate blood and lapsed blood donors. Within these two broad cohorts we specifically targeted black heritage donors. We are planning a pilot to bring buccal swabs into our up-front blood donor recruitment, again with a particular focus on minority ethnicity potential donors.

- Stem Cell Community Engagement Assistants – We have recruited and trained 6 dedicated recruitment assistants who attend high volume blood donor sessions across the country, with a focus on those large donor centres in major urban areas that have a higher concentration of minority ethnicity donors. These assistants have targeted conversations with donors prior to their blood donation to highlight the need for stem cell donor registrants. Their impact has proved very successful, and we are now in discussion with colleagues in Donor Experience to transition this model to business as usual.

- Supporting the clinical community engagement for the Methods of T-Cell Depletion clinical trials, to accelerate the use of mis-matched unrelated donors using posttransplant cyclophosphamide, which we hope will replicate the success of the US trials. This is the clinical key to ensuring all patients can have a donor regardless of heritage.

- Linking our blood donor recruitment of ethnically diverse donors to our stem cell donor recruitment, improved data capture for minority ethnicity patient searches and donor matches, and the continued investment in our cord blood bank and the support to transplant centres in the use of cord. Cord is still a valuable resource for patients who are unable to find a good adult donor match.

(5) Addressing Supply Chain Disruption

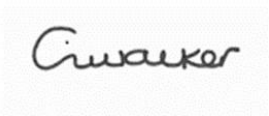
The COVID pandemic provided a very robust test of our ability to handle major supply chain disruption and logistical hurdles to the international exchange of stem cell products. We are very proud that despite all the challenges, in partnership with our

Aligned registry partners, we were still able to facilitate export and import of stem cell products. We continue to refine and test our business continuity plans with these potential scenarios in plan. At the same time we recognize that we still need to continue to enrich our domestic stem cell panel, with a focus on young available donors. Combined with clinical advances in the use of mis-matched unrelated donors, we are confident that we can continue to support UK patient needs into the future.

Summary

The UK stem cell supply currently relies on a balanced portfolio of domestic provision and international exports. Export income underpins around 60 per cent of our registry operations, but long-term resilience demands ongoing domestic investment—especially in the recruitment of young and diverse donors and greater efforts to ensure donor availability when matched to a patient. Strengthening the UK Aligned Registry will reduce import dependence, preserve export competitiveness, and help to ensure financial sustainability along with equitable patient access.

Yours sincerely



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