



# Covid-19 challenges To the point of cell delivery - The Reality

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## Introduction

Here we intend to highlight the challenges faced when organising a Stem Cell donation, from the point of donor medical assessment through to cell delivery, from the experiences at our transplant centre during the Sars-CoV-2 (COVID-19) pandemic. The service we provide in the specialist Cancer Centre based in the North West of England is approximately > 150 transplants per year, we are also an Anthony Nolan Collection Centre. Activity within the Transplant program was reduced in 2020 due to the pandemic. However this did not reduce work load and presented our Transplant team with new challenges, hurdles and obstacles to consider.

## Challenges

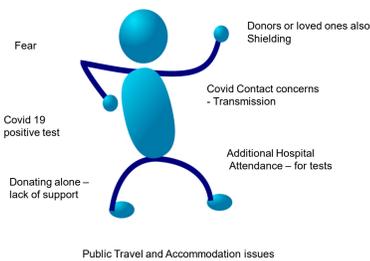
### The Trust and Team

Back in March 2020 little was known or understood regarding the Sar-CoV-2 outbreak in the UK, additional Personal Protective Equipment was not worn, Covid-19 screening wasn't heard of and patients and visitors could attend the hospital freely.

The hospital, like other public sectors has since become a different environment with changes that have been embedded as standard practice and integrated into daily working routines. Guidelines and safe practices remain to change and the team have needed to evolve and adapt during these times.

The donor is pivotal and the starting point of any allogeneic transplant. Being a specialist treatment centre for cancer patients, the decision was made to protect our vulnerable patients and consequently in the first 4 months of the pandemic, it was deemed necessary to temporarily pause the activity as a collection centre. As an unrelated donor collection centre it was considered to be a risk. The aim was to minimise fallout through the department, with concerns for donor and patient safety, capacity issues and staff numbers all considered too greater risk. We recommenced donor collections in September 2020 prior to the second wave of the infection and faced similar ongoing challenges, but recognised that risk management and constant review was the key to success.

Additional commitment has been required from our donors in these unprecedented times. There were a number of concerns from the donor perspective such as;



Covid testing has inevitably added additional pressure on the donor, recipient and transplant service. The correct time of COVID testing, the number of tests required and additional visits. Its been necessary to incorporate time allocation when obtaining and chasing results from the number of Laboratories around the country and responding to outcomes. An matched unrelated donor who is donating fresh cells would be required to have a total of 4 covid test within a 3-4 week period. To comply with local and national guidelines.

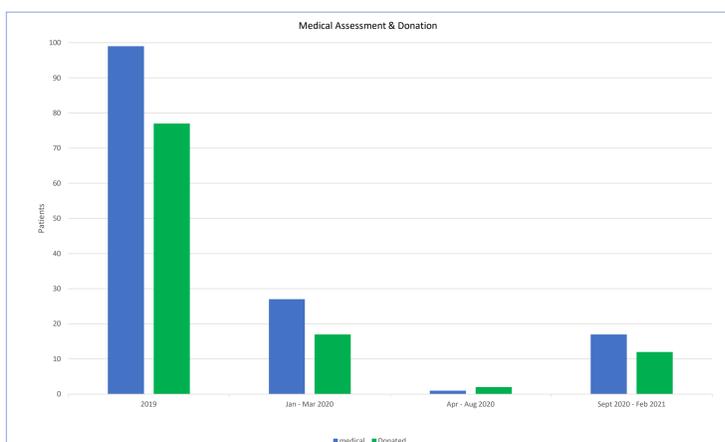
Donors covid testing	Recipient covid testing
At Medical assessment	2 weeks isolation pre admission
Pre GCSF if Non- Cryopreserved cells	Within 3 days of admission
Within 5 days of donation then isolate	Weekly whilst an inpatient
The Day of Donation	

Not only are we asking for donors and recipients to have multiple covid test, we also need to consider the inconvenience and commitment of isolating prior to donation following the covid test. The financial cost can be reimbursed to unrelated donors, but this commitment requires employer and family support. These concerns were reflected by the donor registries too, (Mengling et al 2020) new guidelines were developed in addition to internal trust specific guidelines and policies, all forever changing/adapted in conjunction with emergent infection data.

### Impact on donation.

Sars -CoV-2 Infection rates started to rise in the UK late February 2020 and quickly escalated by late March, it was at this time the donor collection service was halted, although donors already booked proceeded to donate unless cancelled by the registry/Transplant Centre.

In 2019 we saw 99 unrelated donors of which 77 proceeded to donate. From January to March 2020 when the pandemic in the UK was still unknown we saw 27 donors for medical assessment of which 17 proceeded to donation, however by the end of March 2020, the centre made the decision to pause the collection centre service. This was based on increasing infection rates and the unknown risk, honouring any pre-booked donations. As the prevalence of Sars-CoV-2 became more apparent we saw an expected increase in the number of medical assessment and donations cancelled. This was for a variety of reasons, including cancellation by the transplant centre, 3 donors (reasons unknown), 4 donors of which were COVID related and 3 donors had to donate at an alternative collection centre, due to transport issues including collapse in aviation and no direct flight to Manchester and the reduced service and risk of public transport. As displayed below it is clear that the donation activity within our centre reduced significantly for 6 months and was recommenced with CAUTION in September.



Since, recommending our service as a collection centre in September, we have been faced with new challenges. Two donors were found to be positive prior to donation. One at medical and the other post medical pre GCSF. Both resulted in a delayed transplant for the recipient, with additional support being required for the donors. We also experienced a positive Sars-Cov-2 result immediately after donation, a decision for the transplant centre to infuse the cells, it remains uncertain if Sars-Cov-2 is transmissible parentally (Szer 2020).

Almost all cells being collected are continuing to be cryopreserved, due to risk of contracting COVID pre or at donation, but also increasing the risk of donated cells not been used, this is also recognised throughout other centres ( Mengling et al 2020). There are no easy answers in this process. Within our centre further hurdles have been encountered, included siblings donors who live overseas; with limited international travel in and out of their home country or travelling to the UK being much more difficult, it has made the logistics of cell collection troublesome due to these restrictions. With closed national borders and cancelled flights adding to this problem. We encountered this situation and subsequently the donor was harvested in country of origin (New Zealand) and the cells were cryopreserved at source prior to shipment, resulting in additional stresses to the patient and donor, along with financial implication. Similarly. We have medically assessed a sibling donor who we harvested for an Australian transplant centre and cells cryopreserved prior to shipment.

Our experience as a transplant centre and collection centre is not unique to the UK, Healthcare Professionals and donors alike have encountered the fears and challenges over the last twelve months all with their own stories to tell.

### Moving forward beyond Sar-CoV-2

As infection rates begin to fall and the hope that normality will exist once more. The plan will be to cautiously increase donor activity as a collection centre while providing donors with reassurance to maintain their safety and make the donation process as smooth and efficient as possible. As donation activity increases so will allogeneic transplants with the hope of less disruption. One day hopefully nursing with PPE will be a distant memory and the need for the frequency of covid-19 testing will fall. Donor registries have seen a decline in the number of new donors during this crisis. DKMS report a decline of 40%. (Mengling et al 2020). Hopefully in the near future these number will begin to improve and once again building and growing the donor registries to allow our patients a chance of a transplant.



## Conclusion

Sars-Cov-2 has brought many challenges in both personal and professional life which has impacted on the way services are managed. It has been necessary for the transplant centre to adapt and maintain flexibility, regarding patient admissions, enabling support, patient safety and managing staffing complications. Related and unrelated donors have also been adaptable as they have been exposed to changes in anticipated treatment pathways, however in the last 12 months during the global pandemic, whilst an exciting time to be that special donor this has also come with additional commitment, requiring flexibility and the need for good support networks. Without the altruistic act of donors, Allogeneic transplant wouldn't exist. The Donor availability and willingness will always have a direct impact and reflection on the number of Allogeneic transplantations World wide.

### Acknowledgement

We would like to take this opportunity to offer our appreciation and a special thank you to all of our donors who have donated during these scary daunting times and to those beyond today. Also our thanks to The Anthony Nolan and all organisations involved for their support to facilitate allogeneic transplants for the patients during this pandemic



## References

- Mengling T, Rall G, Bernas S, Astreou N, Bochert S, et al. Stem cell donor registry activities during the COVID-19 pandemic: a field report by DKMS.  
Szer J, Weisdorf D, Querol S, Foeken L, Madrugal A. (2020) The impact of Covid-19 on the provision of donor hematopoietic stem cell products worldwide. Bone

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