

COVID-19 Planning for Infection Surges

Changes in this version

Changes highlighted in purple

1. Foreword

The attached document has been drawn up by the Clinical Team - huge thanks to them - the members are listed in [appendix 1](#).

Organ and Tissue Donation and Transplantation in the UK was maintained for the most urgent patients during the first COVID-19 surge and the service recovered from that surge remarkably quickly. This was due to top level teamwork across the whole of the NHS and collaborative working with transplant commissioners.

We have seen a second surge, and the Clinical Team drew up plans and considerations that were detailed in a previous version of this document. The provision for regular input in decision-making processes from Lay Members and patient voices is fully incorporated.

A variant SARS-CoV-2 strain has now been identified in the southeast of England and appears to be spreading quickly. New social distancing Tiers have been introduced and restrictions on gatherings over the holiday season have been put in place.

As a result of these recent changes, colleagues and patients are under increasing pressure again. It is timely to re-visit this document and consider how the UK Organ and Tissue Donation and Transplantation services should respond to further surges. Effective vaccines against SARS-CoV-2 have recently been developed which offers future hope.

Thank you again to the whole Clinical Team; we hope you find this document useful.

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COVID-19 Planning for infection surges

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2. Introduction

- 2.1. In response to the coronavirus (COVID-19) pandemic the United Kingdom enacted unprecedented policies designed to slow down the rate of spread, including measures such as closing schools, restricting populations to their homes, and closing NHS services.
- 2.2. Due to concerns around patient safety almost all transplant units in the UK stopped transplanting from living donors (except for a few paediatric liver recipient/donor pairs) and the majority of units closed their deceased donor kidney and pancreas transplant programs. Cardiothoracic, liver and some islet units continued to offer transplantation to a restricted number of high priority patients on their waiting list. At the height of the pandemic in March-May 2020 deceased donation and transplantation was down over 80%.
- 2.3. Following a peak in mid-April the rate of infection declined during May, coincident with significant falls in hospital bed occupancy.
- 2.4. Throughout June, OTDT encouraged units to consider their 'recovery' plan (NHSBT **POL296/4** – Re-opening of Transplant Programmes: Issues for Consideration). Unfortunately, based on previous experience of pandemics, the World Health Organization has warned against further waves of COVID-19.
- 2.5. **Between September-December 2020, there have been regional and national lockdowns in the UK, with significant variation in rates of SARS-CoV-2 positive cases and subsequently, increasing numbers of hospital and ICU admissions (the 'second surge'). Previous versions of this document have provided a basis for preparations for that second surge.**
- 2.6. **Effective vaccines against SARS-CoV-2 have been introduced in the UK in December 2020, but the speed they may impact on infection numbers is unclear.**
- 2.7. **The emergence of a variant SARS-CoV-2 strain in southeast England with suspected higher transmissibility has caused further surges. It is therefore essential that UK organ and tissue transplant units reflect on their experiences between March-December 2020, and adequately prepare themselves for the possibility of further surges of COVID-19.**
- 2.8. The OTDT Clinical Team have noted that most centres have found that recovering from complete closure has been more difficult than anticipated. This response has been conditioned by the variable impact of the pandemic in different geographical areas, making optimum use of NHS resources and the understandable need to focus managerial and clinical attention on re-opening other urgent services.
- 2.9. The support from Commissioners across all 4 countries has been valuable with recovery planning, as well as collaboration with NICE in producing relevant guidance.
- 2.10. The statement on 23rd June 2020 from The Royal College of Surgeons of England on behalf of all four surgical Colleges strongly supported the recovery of solid organ transplant services (from deceased and living donors) and included transplantation as a priority for hospitals/Trusts/Boards as part of their recovery programmes.
- 2.11. This document combines the shared experiences and analyses of the OTDT Clinical Team during **first and second surges and provides guidance for units planning for further infection surges.**

- 2.12. The intention of the document is to provide accurate, up-to-date issues for consideration and clinically relevant data to guide decision-making.
- 2.13. The document should be used in conjunction with local hospital/Trust/Board guidance to aid-decision making and planning. It references latest guidance from the professional societies on the clinical management of transplant recipients in context of suspected or diagnosed COVID-19, which is regularly updated.
- 2.14. [Guidance on SARS-CoV-2 assessment and screening of potential solid organ donors and transplant recipients can be found in POL304.](#)

<https://nhsbtdbe.blob.core.windows.net/umbraco-assets-corp/20342/pol304.pdf>

3. Deceased Donor Criteria

Figure 1 summarises deceased donor numbers and transplants and contemporaneous data can be found at: <https://www.odt.nhs.uk/deceased-donation/covid-19-advice-for-clinicians/>

During the first surge, OTDT altered the national age criteria for deceased donation. National deceased donor criteria are complex and include many variables that might have been altered. Donor age was used as the primary restriction criterion because it was felt to be a clear and unambiguous metric, that was easily changed centrally. As the pandemic lessened and in light of experience, age restrictions were able to be eased **and were not required during the second surge**.

- 3.1. The strengths of restricting deceased donor age criteria in the first surge were that:
 - 3.1.1. It represented a strong statement of intent and support for creating hospital and Intensive Care Unit (ICU), bed capacity.
 - 3.1.2. It achieved the intended aim of a 50% reduction of donation activity.
 - 3.1.3. It enabled relative preservation of cardiac, liver and paediatric transplantation.
 - 3.1.4. It ensured that the potential donors that were explored had a higher chance of progressing to actual donation.
 - 3.1.5. It ensured that donations that did proceed had the best chance of success and rapid discharge for the recipient, reducing the chance of contracting COVID-19 post-transplant whilst in-hospital.
 - 3.1.6. It reduced strain on National Organ Retrieval Service (NORS), teams and reduced NORS teams travel, potentially spreading or becoming infected with COVID-19.
 - 3.1.7. It tried to match donation offers to transplant capacity.

- 3.2. The weaknesses of restricting donor age criteria in the first surge were that:
 - 3.2.1. A centralised approach restricted donation in regions that continued to have capacity to explore donation.
 - 3.2.2. It led to the lack of ability to explore donation in those over the age restriction criteria, causing frustration in some donation teams.
 - 3.2.3. It may have contributed to a greater drop in donation (87%) and transplantation (88%) than that required.
 - 3.2.4. It may have held back the recovery in deceased donation numbers as, once implemented, it has proven more difficult to relax criteria quickly, especially in DCD donation.
 - 3.2.5. It may have contributed to a more severe reduction in kidney donation, because of the relative importance of DCD donation in UK kidney transplantation.
 - 3.2.6. It required process deviations in specialist nurse standard operating procedures, and communication of these process deviations was difficult when age criteria were raised in steps.
 - 3.2.7. It may confuse or undermine the aim of 100% potential donor referral.

- 3.3. Other factors relevant to restricting donor age criteria:

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- 3.3.1. 'Lockdown' and ICU bed pressures are not linearly linked. Local lockdown is designed to preserve ICU capacity in hospitals within that region.
 - 3.3.2. Centrally determined donor age criteria may risk undermining local ICU support for organ donation.
 - 3.3.3. Donor testing is now well established and is relatively independent of the intensity of local infection (i.e. the presence or absence of other COVID-19 patients within an ICU unit is less likely to alter acceptance of organs for donation).
 - 3.3.4. Thus far, there have been no reported cases of donor-derived transmission of COVID-19, worldwide.
- 3.4. After considering feedback from key stakeholders, and taking the above into account, NHSBT supports the adoption a model of local flexibility built around individualised decision-making carried out through enhanced screening/assessment, and regional leadership. This model was adhered to during the second surge between September-December 2020 and no age restrictions were required. A similar plan is recommended for further infection surges.
- 3.5. Recommendations in case of further infection surges:
- 3.5.1. Specialist nurse risk assessments will include considering if the referring hospital is in an area of increased 'lockdown' compared to their respective nation (as defined by UK governments) or if there are high COVID-19 numbers on the ICU.
 - 3.5.2. If yes, then the specialist nurse will escalate decision-making to the team manager or regional manager who will consider and balance the following factors when deciding if donation will be explored further:
 - Staff factors, e.g. staff location and individual capacity
 - COVID-19-related factors, e.g. assessment of COVID-19 risk within the potential donors' ICU
 - Donation factors
 - Early screening for donation potential (patient age will be a factor and guidance (not rules) can be given).
 - Consideration of likelihood of a potential DCD donor proceeding to donation.
 - The organs being explored for donation (e.g. heart or liver)
 - Patient (donor) and family considerations, e.g. registration on the organ donor register, or a strong family request for donation.
 - ICU capacity factors, e.g. the ICU has expected capacity for the next 24 hours to facilitate donation. Expedited organ offering via fast-track triggers will be considered.
 - Retrieval factors.
 - NORS capacity (e.g. other activity regionally and nationally expected within the next 24 hours).

- Establish the most suitable time for the donation hospital to carry out organ retrieval (e.g. night-time may be preferred).
 - Personal Protective Equipment (PPE), considerations and planning.
- 3.6. Local decisions taken after considering the above factors may need to be reconsidered if new information is received.
- 3.7. Sometimes donation will not be pursued when it would otherwise have been possible in ordinary circumstances. This should be explained to families and teams.
- 3.8. At the time of writing, there are no restrictions on either DCD or DBD referral criteria. They are back to pre-COVID-19 criteria.

4. Personal Protective Equipment

- 4.1. During infection surges we advise that the guidance below on risk assessment and personal protective equipment (PPE) is considered to ensure the health and safety of specialist nurses in organ donation (SNODs) and National Organ Retrieval Service (NORS) team members.
- 4.2. This document should be read in conjunction with national guidance (e.g. <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control>, and <https://www.hps.scot.nhs.uk/guidance/> <https://phw.nhs.wales/topics/latest-information-on-novel-coronavirus-covid-19> and <https://www.hps.scot.nhs.uk/>), and local policies of employing and host Boards/Trusts.
- 4.3. Guidance for SNODs.
- 4.3.1. Volunteering to front line clinical practice duties. NHSBT's priority in the event of further surges is to maintain donation and transplantation services. SNODs should discuss any requests to work in front line clinical practice duties in critical care areas with their manager.
- 4.3.2. Donor facilitation.
Before going to the unit, the SNOD will speak to the nurse referring the patient to assess the unit's COVID-19 situation.
The following issues will be considered:
- Are there any possible or confirmed COVID-19 patients on the unit?
 - Are all the possible or confirmed COVID-19 patients in side-rooms?
 - Are all the possible or confirmed COVID-19 patients segregated?
 - If the unit is free of COVID-19 patients we advise that colleagues facilitating donation should work to the infection control procedures and policies on the unit.
- 4.3.3. If the potential donor is being cared for in an area with possible or confirmed COVID-19 infected patients, **national guidance should be adhered to**. Visiting hospitals to undertake the Potential Donor Audit (PDA).
Maintaining donation and transplant activity is critical and understanding the donation potential during any further surges is important, therefore conducting the PDA will be essential. When visiting hospitals to undertake embedded duties such as collecting PDA, we request that SNODs follow the guidance below:
- Talk to the nursing team prior to entering the unit and assess the unit situation with respect to the COVID-19 status.
 - Work to the individual hospital infection, prevention and control procedures and policies that are appropriate for the area the SNOD will be attending/working in.
 - Local social distancing guidance must be followed.
- 4.3.4. Public transport.

At the time of writing, it is mandatory for face coverings to be worn on public transport (<https://www.gov.uk/government/news/face-coverings-to-become-mandatory-on-public-transport>).

4.3.5. Transport in other vehicles or taxis.

A face covering must be worn during transport. See also <https://www.gov.uk/government/publications/staying-safe-outside-your-home/staying-safe-outside-your-home#face-coverings>.

4.4. Guidance for NORS Leads and teams: NORS Leads should review their previous risk mitigation/PPE strategies instituted for the pandemic to ensure that any new guidance or information is incorporated.

4.4.1. Patients that are confirmed SARS-CoV-2 positive or thought to have COVID-19 will not be considered for organ donation. SNODS will confirm with ICU medical staff that COVID-19 has been reasonably excluded in any potential donor prior to offering/retrieval.

4.4.2. If patients are confirmed SARS-CoV-2 positive in the past and SARS-CoV-2 negative at present and have an organ (or organs) that are offered and accepted, NORS teams should mobilise accordingly.

4.4.3. NORS team members will be working within PPE protocols for their own Board/Trust, with locally available resources at the donor hospitals. Any additional PPE equipment, over and above that available in any standard theatre, will need to be taken with the team on retrieval. NORS teams must alert the specialist nurse in organ donation (SN-OD) at the donor hospital if this is the case.

4.4.4. NORS teams should use their employing hospital's risk assessment protocols to assess the risk of retrieval surgery for each donor on a case-by-case basis. The risk assessment should then be used, with their employing hospital's PPE policy, to decide what PPE is appropriate for retrieval surgery.

4.4.5. All potential donors will have had a COVID-19 SNOD checklist (**FRM6439**) completed. If desired, this form can be requested by a NORS team prior to departure, so that a risk assessment may be performed. Further discussion may be required with the SNOD or ICU team to enable a full risk assessment.

4.4.6. NORS teams must be aware that bronchoscopy and use of high-speed instruments (e.g. a sternal saw) are considered aerosol-generating procedures (AGPs).

4.4.7. If the NORS team plans on taking additional PPE, they should inform the donor hospital staff as they may need to source PPE or swap staff around.

4.5. Team transport.

A face covering must be worn during transport. See also

<https://www.gov.uk/government/publications/staying-safe-outside-your-home/staying-safe-outside-your-home#face-coverings>.

NHSBT will continue to support wherever possible the use of two vehicles per retrieval to reduce staff proximity and maintain recommended social distancing.

5. National Organ Retrieval Service

- 5.1. Background and management of the National Organ Retrieval Service (NORS) during the first surge of the COVID-19 pandemic.
 - 5.1.1. NORS was maintained at 100% of normal availability during the peak of the COVID-19 crisis in March-June 2020. A number of team leads were in contact to discuss whether they might stand down on an alternating basis. Teams were given the option of looking at alternative rota options and two teams reverted to a previous rota option during the pandemic.
 - 5.1.2. It wasn't possible to predict if teams would suddenly become unavailable due to staff absences. Reducing the number of teams to less than 100% simply increased the risk of a critical failure of service.
 - 5.1.3. It was considered that the low level of deceased donor activity meant that the system was unlikely to be stressed, even if teams were on-call. It was therefore straightforward to recommend that teams remained on service. In addition, the more teams that were available, the less the burden for each team. So, a reduction of one or two teams due to COVID-19 has less effect if all teams are 'on' than if there are fewer teams on-call.

- 5.2. **Management of NORS during the second surge**
 - 5.2.1. Whilst it might have been possible, in retrospect, to estimate the effect of the first wave on regional teams (London teams had the highest risk of disease early on, followed later by teams progressively further North), predictive ability during the second surge was limited. NORS capacity was maintained during the second surge, utilising approaches outlined in previous versions of this document.
 - 5.2.2. Planning for further surges of COVID-19. Similar to the second surge, further surges waves may well comprise multiple breakouts happening in an uncoordinated fashion across the country, with regional differences, which are relatively short-lasting.

- 5.3. **NORS cover for further infection surges**
 - 5.3.1. The uncertainty in modelling how disease might affect NORS is unchanged. There will still be unpredicted staffing absences. Therefore, it is suggested that NORS teams remain on service throughout the UK, so that there is maximum resilience to absences, should further infection surges occur.
 - 5.3.2. It is particularly important for during surges that there is full availability, as the workload for the teams on average will be much higher than during the first wave. If there is a regional or district level problem, the rest of the country will still be working at normal speed. We therefore need to maintain the highest level of availability to ensure the highest resilience.
 - 5.3.3. We also need to be alert to the likelihood that intermittent outbreaks may continue for more than a year from now.
 - 5.3.4. It remains a theoretical possibility that there will be a more generalised further wave. Should there again be a high level of disease in the country, perhaps even higher than before, it may be necessary to re-think the position above. We should make minimal preparations for this unlikely contingency.

6. Waiting List Management

In anticipation of further COVID-19 surges, it is advised that transplant centres maintain updated risk assessments to determine which patients would benefit from transplantation despite an increased risk of infection. Centres should not wait until an infection surge has occurred before doing this work. Risk assessment of patients on the waiting list could:

1. Identify those patients who should remain on the active transplant waiting list.
2. Identify patients who need more frequent review as they are at risk of rapid deterioration.
3. Establish a list of patients who may need to be transferred to another centre if there is a prolonged but local shutdown involving one or more transplant units.
4. Consider which groups of patients on the waiting list are imminently likely to receive a vaccine against SARS-CoV-2 and whether suspension from the wait list would be appropriate until immunity is likely to be achieved.

6.1. Heart transplant waiting list

Patients with advanced heart failure on the waiting list who cannot be discharged from hospital constitute a group where the benefits of transplantation far outweigh the risks, even during a COVID-19 outbreak. These patients will usually be on the Super-Urgent or Urgent List. In addition, each centre can identify patients who need more frequent clinic review as the risk of clinical deterioration (and consequent need for in-patient treatment) is high.

6.2. Lung transplant waiting list

A very small number of patients (<10) are on the Super/Urgent List. For patients who fail to meet the national criteria, each centre has an in house, priority list. This consists of patients who are deteriorating but fail to meet the national criteria and need frequent review. Examples of patients at increased risk include patients with fibrotic lung disease and a rapidly increasing oxygen requirement, patients with cystic fibrosis and frequent infections, the need for continuous intravenous antibiotics or hypercarbia, or decompensated right heart failure.

6.3. Liver transplant waiting list

Liver transplantation should be offered for patients listed for Super-Urgent transplantation, and for those assessed as urgent. The decision about transplanting less urgent patients must be based on local circumstances – primarily the incidence of COVID-19 in the transplanting hospital. Individual patient factors (e.g. UKELD score) need to be considered, and also that the already substantial waiting list mortality will increase with accumulating numbers.

6.4. Kidney transplant waiting list

The risk-benefit estimation needs to account for individual patient risk factors (e.g. hospital dialysis, age, obesity, diabetes, cardiovascular disease, ethnicity, lifestyle considerations) and environmental factors (e.g. whether transplantation can be offered in a 'COVID-light' hospital environment). Examples of patients where the benefit of transplantation might outweigh the risks include those aged under 40

years, without (significant) cardiovascular morbidity, those with dialysis access concerns and those Tier A patients expected to have longer waiting times. Patients and families need to be counselled and consented on risks during a COVID-19 surge.

6.5. Pancreas/Islet transplant waiting list

The risk-benefit analysis for pancreas transplant recipients should be assessed in the same way as for kidney transplant recipients, allowing that induction immunosuppression is typically more intensive in this group of patients. Waiting list mortality is high in patients awaiting simultaneous pancreas and kidney transplantation, and also in patients awaiting pancreas transplantation alone for hypoglycaemia unawareness. Another factor to be considered, depending on local practice, is the availability of intensive care capacity in the event of a COVID-19 surge. In patients with life threatening hypoglycaemia and patients who have received a first (routine) islet transplant, the risk benefit balance may favour remaining active on the list.

6.6. Multi-visceral and intestinal transplant waiting list

The waiting list mortality and donor constraints for multi-visceral transplantation are such that these patients are generally regarded in the same way as urgent liver transplant recipients. Intestinal and modified multi-visceral transplant recipients need to be considered on a case-by-case basis, assessing the risk to remaining on the waiting list (e.g. line infections, progression of liver disease, progression of cancer), and the barriers to transplantation (e.g. sensitisation status).

6.7. Living kidney or liver donors

In addition to risk-benefit assessment for deceased donor transplantation, the approach to living donation during infection surges must consider:

- 6.7.1. The legitimate caution about exposing healthy donors to undue risk due to COVID-19.
- 6.7.2. The wishes of potential donors and recipients. A NHSBT market research survey disseminated via the kidney charities of previous, present and potential living kidney donors in June-July 2020 elicited 240 responses and indicated a high level of trust in the NHS to deliver living donation safely and a desire for programmes to remain open. <https://www.odt.nhs.uk/deceased-donation/covid-19-advice-for-clinicians/>
- 6.7.3. That living donor liver transplantation has been safely performed for acutely unwell recipients in the COVID-19 era
- 6.7.4. The decision to proceed with living donation must be made by the clinical team on an individual basis considering donor, recipient (and family, if applicable for children and young people), and environmental factors. These include:
 - 6.7.4.1. Generic and specific risks to the donor related to COVID-19, including social circumstances and work and lifestyle commitments that may impact on their exposure to COVID-19

- pre/post donation and the willingness of the donor to accept these risks.
- 6.7.4.2. Donor clinical complexity and their willingness to consent to proceed to donation +/- accommodate necessary infection prevention and control requirements (e.g. social isolation pre- and post-donation).
 - 6.7.4.3. The availability of a 'COVID-free' pathway to mitigate against additional risk to the donor during donor evaluation, in-patient stay for surgery, and post-discharge follow-up.
 - 6.7.4.4. Recipient complexity and their willingness (and that of their family, if applicable for children and young people) to proceed with a transplant based upon an individual risk-benefit analysis, including the risk of not being transplanted versus the risks associated with transplantation (as above).
 - 6.7.4.5. The willingness of the clinical team to proceed with donor assessment and surgery, considering donor +/- recipient factors, the local environment (e.g. community prevalence of COVID-19, and access to suitable donor-recipient pathways).
 - 6.7.4.6. The opportunity for a donor +/- recipient to be transferred to another centre to mitigate local or regional environmental risk factors and to facilitate donation. This is particularly important for non-directed altruistic donors and donor-recipient pairs who contribute to the UK Living Donor Kidney Sharing Scheme, where there is an impact on other donor-recipient pairs and patients on the deceased donor waiting list.

7. Minimising Unit Closures

As the UK prepares itself for potential further surges of COVID-19, and mindful of the best interests of potential transplant recipients throughout the UK, OTDT proposes the following overarching principles with respect to minimising unit closures outlined below. Further information on the data and its application in providing an early warning of a surge in COVID-19 cases is presented in appendix 3

Total transplant unit closure should be avoided except in exceptional circumstances. In preparation for infection surges transplant centres should have a plan which can be shared with commissioners, Trust/Board management and supported by NHSBT. For any proposed closure, OTDT will consider the wider regional or super-regional solutions for both abdominal and cardiothoracic organs, encouraging dialogue between units and attempts at collective problem solving.

- 7.1. Transplant units must be aware of the above principles and also consider that:
 - 7.1.1. If a centre or region experiences a spike of infections, they should refer to their own internal escalation plan and local triggers. It is essential that the Trust/Board management is made aware and communication with commissioners in response to any increases in infection rates.
 - 7.1.2. Even when transplantation itself cannot go ahead, plans should be made to continue transplant assessment and follow-up activity, as far as is possible to do so. Consideration should be given to:
 - 7.1.2.1. Preparation of the waiting list.
 - 7.1.2.2. Review all waiting lists and describe plans for patients categorised based on need.
 - 7.1.2.3. Consideration of working jointly with other centres, if this is appropriate.
 - 7.1.2.4. Discussion with transplant waiting list patients and, where appropriate, consenting of patients (at the least those of high urgency) to be transferred to another centre for transplantation.
 - 7.1.2.5. Planned staffing models to sustain support for NORS and organ implantation, as appropriate.
- 7.2. Since various factors may influence different lengths of unit closure, this issue is considered in three timeframes; short-, medium- and long-term potential closure. The triggers for any closure within a transplant centre will depend on local escalation plans and local internal triggers and will be made in collaboration with Trust/Board management team.
 - 7.2.1. Short-term closures (1-14 days).
 - 7.2.1.1. Short-term closures are likely to be due to capacity issues, such as temporary workforce shortages, typically experienced by small teams where resilience will be limited due to sickness, enforced self-isolation, or annual leave. Such disruptions could last days (for staff to be confirmed swab negative) or up to two weeks (to complete self-isolation).

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- 7.2.1.2. The transplant team will initiate such closures in close collaboration with Trust/Board management and relevant parties, and criteria for re-opening confirmed with Trust/Board management.
- 7.2.1.3. In this scenario, OTDT Information Services will temporarily suspend the centre waiting list as a manual process over the planned closure. It is expected that the centre will continue to receive offers through a pre-determined point of contact, with the understanding that the offer will automatically be turned down until such time that the centre can safely re-open. Such measures will enable Hub operations to function logistically and eliminate the need for the centre to formally 'close' and hence minimise the risk of bureaucracy associated with re-opening.
- 7.2.1.4. Requirements for short-term closures.
- 7.2.1.4.1. Clear pre-determined criteria for closure to be activated and Hub operations must be informed as early as possible as to the nature of the closure (see above).
- 7.2.1.4.2. This is best done using an SBAR (situation, background, assessment, and recommendation) tool (see [appendix 2](#)).
- 7.2.1.4.3. Clear communication with the Trust/Board management and risk assessment teams that the closure is short-term and that transplantation will be expected to re-commence as soon as the prescribed criteria are met.
- 7.2.2. Medium-term closures (14-28 days).
- 7.2.2.1. Medium-term closures may be as a result of a localised 'outbreak' in the hospital/ transplant ward/dialysis unit/ICU etc. This may typically last a month or longer. In the first instance the waiting list should be reviewed, and centres must confirm with OTDT Hub operations if suspension will be required and discussed with relevant parties.
- 7.2.2.2. There is an expectation that units will stay 'open' for a highly selected group of patients to be transplanted and offers will continue to be accepted for this select list. In addition, there should be a regular review date in place to consider re-opening to 'routine' offers, to discuss with relevant parties
- 7.2.2.3. If the predicted closure is to be longer than four weeks the agreed plan to transfer selected 'routine' listed [patients to a pre-determined 'partner' centre \(or centres\) should be activated](#); the 'Mutual Aid Assistance' programme.
- 7.2.3. Long-term closures (more than 28 days).
- 7.2.3.1. For activating long-term closures, it is expected that centres may be predicting months of reduced or no activity. This scenario will

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- most likely be as a result of a major local outbreak in a region requiring medical, surgical, and nursing staff to be re-assigned to front-line COVID-19 work and suspension of all non-COVID-19 and /or routine work in the Trust/Board. It is clear that in such circumstances, the resources of the Trust/Board may need to be diverted to the frontline and supporting critical care services.
- 7.2.3.2. This type of closure may be imposed on transplant units by Trust/Board teams. In these situations, internal approval will be needed for a transplant unit to reopen.
 - 7.2.3.3. In this instance OTDT Information Services may be required to suspend the centre's entire waiting list (i.e. no offers to be accepted) and activate the agreed pre-determined plan to transfer patients who are willing to be transferred to the link centre to continue their care.
 - 7.2.3.4. In the face of long-term closures, units should make every reasonable attempt to continue other transplant-related activity, such as transplant assessments, virtual clinics, and management of acute post-transplant emergencies.
- 7.2.4. Requirements for medium- and long-term closures.
- 7.2.4.1. Clear reasons given by Trust/Board personnel for closure communicated to NHSBT and appropriate commissioners.
 - 7.2.4.2. Within 14 days of closure there should be a discussion about the urgency and appropriateness of transferring a patient to another centre.
 - 7.2.4.3. There will be an expectation that the SBAR worksheet for re-opening has been agreed/approved by the Trust/Board in discussion with Regional Commissioners.
- 7.2.5. Transferring activity to another centre should be explored and in collaboration with commissioners and neighbouring units
- 7.2.5.1. This option must be explored if the anticipated closure is longer than 14 days.
 - 7.2.5.2. All unit waiting list patients should be given the option of having their care transferred to an agreed suitable alternative centre that is open. If patients opt to remain in their 'home' unit this must be clearly documented. Preparations for this step should occur well in advance of further waves to ensure all waiting list patients are aware that this possibility could arise.
 - 7.2.5.3. If no service level agreement exists between units, Commissioners need to be involved in facilitating the process.
 - 7.2.5.4. Priority consideration for collaboration should be given to Urgent and Super-Urgent recipients in hospital. Again, this should be established in advance of any further waves.
 - 7.2.5.5. The transfer of staff and agreeing honorary contracts may be an option.

- 7.2.5.6. From Hub operations viewpoint, careful planning and manual changes will be required for each transplant performed in a 'sister' centre. Because of the logistics involved, Hub operations must be included from the outset in the planning of these partnerships so that they can support this operationally rather than late notifications and last-minute planning.

7.3. Communication with the OTDT Hub.

For any short, medium- or longer-term closures, OTDT Hub must be informed by telephone on 0117 9757580. Any necessary arrangements regarding the waiting list can then be done.

For any short, medium- or longer-term closures the NICE Guideline: COVID-19 rapid guideline: arranging planned care in hospitals and diagnostic services will be useful
<https://www.nice.org.uk/guidance/ng179>.

8. Tissue and Eye Services

- 8.1. Tissue donor selection.
 - 8.1.1. The UK Joint Professional Advisory Committee Donor Selection Guidelines (JPAC), already include guidance on the identification and deferral of donors with acute infections. Additionally, specific measures were implemented from 23rd January 2020 to identify donors at risk of being infected with SARS-CoV-2, including geographical deferrals. These were subsequently updated when the UK was identified as an area of sustained transmission. The guidelines are regularly updated in line with information available from Public Health England. These are sufficient to deal with donors where information provided would suggest recent or ongoing SARS-CoV-2 infection.
<https://www.transfusionguidelines.org/dsg/ctd/guidelines/coronavirus-infection-1>
 - 8.1.2. There is a potential that asymptomatic deceased donors could donate and not be identified without routine testing and Tissue and Eye Services (TES) has performed a risk assessment and updated its position statement in July 2020.
- 8.2. Testing of tissue donors.
 - 8.2.1. Given the theoretical and uncertain level of risk of tissue graft-related transmission of SARS-CoV-2, there is currently no consistency in international practice with respect to screening tissue donors for this virus. In the UK, organ donors are currently tested ante-mortem for SARS-CoV-2 by combined nose/throat swab and endotracheal aspirate and are accepted with a negative nucleic acid technology (NAT) test result. Therefore, tissue donors who are also organ donors are tested for SARS-CoV-2 RNA.
<https://nhsbt.dbe.blob.core.windows.net/umbraco-assets-corp/19175/tes-covid-19-position-statement-july-2020.pdf>
 - 8.2.2. The European Centre for Disease Control (ECDC) current guidance on the risk of SARS-CoV-2 transmission via substances of human origin (30th April 2020) (<https://www.ecdc.europa.eu/en/publications-data/coronavirus-disease-2019-covid-19-and-supply-substances-human-origin>), recommends that for deceased donors without symptoms or diagnosis of COVID-19, who have lived in or visited areas of sustained community transmission of the virus, tissues should not be collected unless the donors test negative for the presence of SARS-CoV-2 RNA in the upper or lower respiratory tract in specimens collected within 72 hours prior to retrieval, **or** the tissues collected will be treated with a disinfection, sterilisation or microbial inactivation procedure validated to inactivate enveloped viruses.
 - 8.2.3. In line with these recommendations, tissue-specific risk assessments have been performed and have determined that:
 - 8.2.3.1. In NHSBT, corneas, sclera, processed bone, massive allografts, tendons (irradiated & decontaminated), irradiated skin, decellularised dermis, meniscus and osteochondral grafts are submitted to processing steps known to remove or inactivate enveloped viruses.

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- 8.2.3.2. Cryopreserved heart valves, artery and skin grafts undergo different processing which is not aimed at eliminating viable virus should it be present in these tissues. These donations could be taken from donors pre-tested either for organ donor assessment or for routine screening in health care settings. Depending on clinical demand, consideration will be given to requesting SARS-CoV-2 testing by local/regional centres for cardiovascular donations (from asymptomatic donors) consented by the National Referral Centre. This is currently under discussion.
- 8.3. Recovery and infection surge planning.
- 8.3.1. A recovery plan for short shelf-life ocular grafts has been developed by the Ocular Tissue Advisory Group (OTAG). In 2019, 50% of corneas have been issued to 14 hospitals (high volume) and 50% to more than 100 hospitals (low/medium volume). Based on this, in case of an infection surge of infection at local, regional or national level, the demand for, and allocation of corneas will be influenced by ongoing clinical activity in affected and unaffected transplant centres, which will be regularly monitored to inform decisions on the number of donations required per week. Actions taken will be informed by advice from the OTAG Chair and the Eye Bank Medical Advisors based in Bristol and Manchester.
- 8.3.2. For long shelf-life grafts, the recovery plan will focus on improving graft availability. TES has been liaising with suppliers of critical consumables to minimise impact on TES activity. Information is also being gathered on NHS requirements to develop processing schedules and targets to ensure continued supply of tissues.
- 8.4. Supply chain.
- 8.4.1. Retrieval and processing of tissue. A COVID-19 risk assessment has been carried out for retrieval and processing of tissue. This assessment is currently reviewed on a monthly basis and will be updated as required in the event of a n infection surge.
- 8.4.2. Staff availability. Business continuity plans within TES provide details on actions to be taken if staffing levels fell below essential levels.
- 8.4.3. Metrics. A number of supply chain metrics are captured and reviewed on a weekly basis which would be used to inform decisions should an infection surge impact on TES operating models.

9. Appendix 1: Members of the NHSBT Clinical Team

Professor John Forsythe - Medical Director OTDT, Chair

Olive McGowan - Assistant Director Education & Governance, NHSBT

Lizzie Abbot-Davies – Business Support Officer, NHSBT

Mr John Asher – Consultant Transplant Surgeon, Clinical Lead Medical Informatics

Liz Armstrong – Head of Transplant Development, NHSBT

Dr Richard Baker – Consultant Nephrologist, National Clinical Lead for Governance

[Hazel Bentall – ODT Solid Organ Advisory Group – Lay Member](#)

Mr Marius Berman – Consultant Cardiothoracic Surgeon, Associate National Clinical Lead Organ Donation

Lisa Burnapp – Clinical Lead Living Donation, NHSBT

Mr Chris Callaghan – Consultant Transplant Surgeon, Clinical Lead Organ Utilisation - Abdominal

Professor Steve White – Consultant Transplant Surgeon, Chair of Pancreas Advisory Group

Dr Akila Chandrasekar – Consultant Haematologist, NHSBT

Mr Ian Currie – Consultant Transplant Surgeon, National Clinical Lead Organ Donation

Dr Jan Dudley – Consultant Paediatric Nephrologist, Chair, Paediatric Subgroup of Kidney Advisory Group

Mr Andrew Butler – Consultant Transplant Surgeon, Chair of Multi-Visceral Advisory Group

Dr Dale Gardiner – Consultant in Adult Intensive Care Medicine, National Clinical Lead for Organ Donation

[Margaret Harrison – ODT Solid Organ Advisory Group – Lay Member](#)

[Julia Mackisack – ODT Solid Organ Advisory Group – Lay Member](#)

Professor Derek Manas – Professor of HPB and Transplantation, Newcastle upon Tyne, NHS Foundation Trust, Director of the Institute of Transplantation. Joint Clinical Governance Lead: OTDT

Lisa Mumford – Head of OTDT Studies, NHSBT

Dr Jayan Parameshwar – Consultant Cardiologist, Chair of Cardiothoracic Advisory Group (Heart & Lung)

Dr Ulrike Paulus – Consultant Haematologist, NHSBT

Mr Gavin Pettigrew – Consultant Transplant Surgeon, Chair of Research, Innovation and Novel Technologies Advisory Group.

Karen Quinn – Assistant Director UK Commissioning

Dr Rommel Ravanan- Consultant Nephrologist, Chair of Kidney Advisory Group

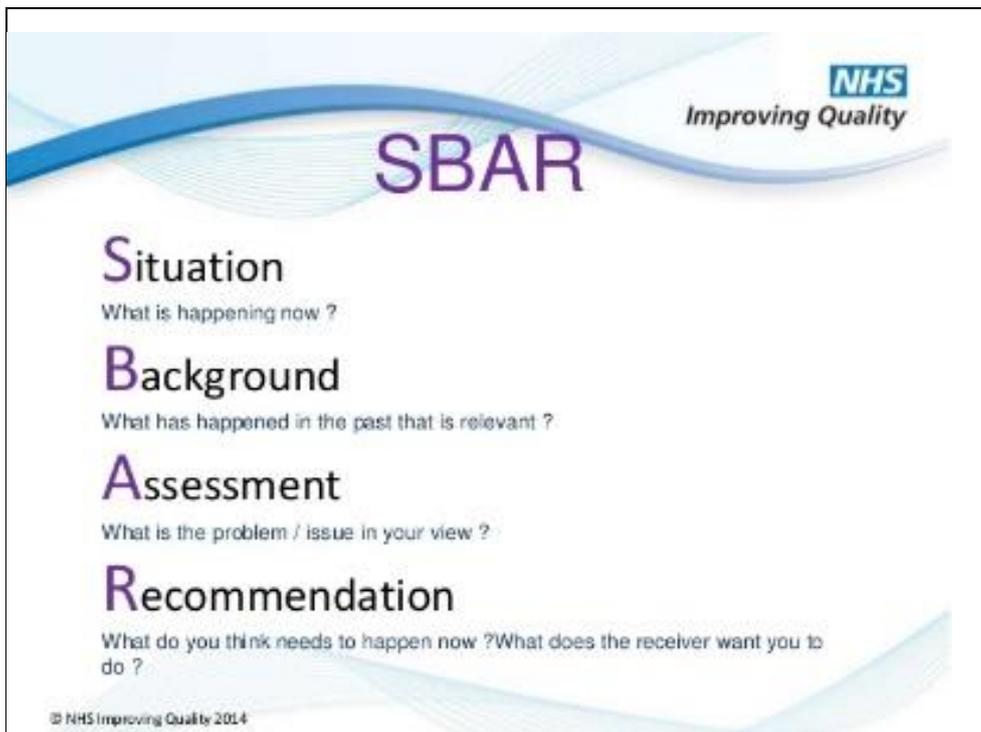
John Richardson – Interim Assistant Director - Organ Donation, NHSBT

Dr Doug Thorburn – Consultant Hepatologist, Chair of Liver Advisory Group

Dr Ines Ushiro-Lumb – Clinical Microbiology Lead for Organ and Tissue Donation and Transplantation, NHSBT. Clinical Director, Microbiology Reference Laboratory (Virology)

Julie Whitney – Head of Service Delivery, NHSBT

10. Appendix 2: SBAR Example



Situation:

An infection surge of the COVID-19 pandemic has been reported in the region/hospital/community/dialysis population with increasing admissions to ITU or positive infections in the hospital

(This may be different for each centre but there are themes that we can predict will threaten activity in each centre):

- ICU capacity may be reduced
- Diverting elective activity that affect transplant activity
- COVID-free pathway difficult to secure
- Staff re-deployment away from transplant activity
- Staff sickness in essential areas to allow transplantation to proceed safely

Background:

The first and second waves of the COVID-19 pandemic had a major impact on the Trust in terms of staffing, ICU capacity and the resources available to deliver elective activity. This resulted in curtailing of transplant activity in our Trust. Data collected during the first and second waves does not support total closure of transplantation. With evidence of a 'further wave' of infections (or after-effects of the second wave continuing) we believe the evidence suggests that the Trust must support continuation of transplantation services in some form. If the situation is such that this cannot be delivered, an alternative needs to be actioned.

Assessment:

A new 'spike' of infections has resulted in the need to re-deploy resources away from transplant facilities. This is a balance of risk for patients of continuing transplantation versus stopping the program.

- Short-term closure: this can be managed with intermittent closure to allow services to cope
- Long-term closure: this is predicted to be longer than 10 days and Plan B will be activated

Recommendation:

- Short-term closure: Continue transplantation every second day or close for 3 days etc.
- Long-term closure:
 - We will offer patients the option of going to centre X to be transplanted
 - We will move activity to site Y in the city
 - We will continue to assess potential transplant patient's remotely/transfer patients to centre X for assessment and transplantation.

11. Appendix 3: Early Warning of Infection Surges In COVID-19 Cases

As the cases of COVID-19 begin to decline in some parts of the UK, we need to turn our attention to planning for potential further waves of COVID-19. While this does not mean further waves are inevitable, it is important for planning purposes and as a precautionary approach.

Available data

Data is available on the government websites: <https://coronavirus.data.gov.uk/> for England and <https://www.gov.scot/publications/coronavirus-covid-19-daily-data-for-scotland/> for Scotland. A breakdown of data by region for Wales and Northern Ireland is currently unavailable.

COVID-19 cases are identified by taking specimens from people and sending these specimens to laboratories around the UK to be tested. If the test is positive, this is referred to as a lab-confirmed case.

There are separate reporting processes for each of the 4 Nations of the UK. All 4 Nations provide data based on tests carried out in NHS (and PHE) laboratories. These represent 'pillar 1' of the Government's mass testing programme. In addition, testing by commercial partners ('pillar 2' of the mass-testing programme) are now added by the individual Nations before being sent to the Department for Health and Social Care (DHSC). These are submitted to Public Health England (PHE) to display on the dashboard. Links to the Welsh data, early warning indicators are provided below.

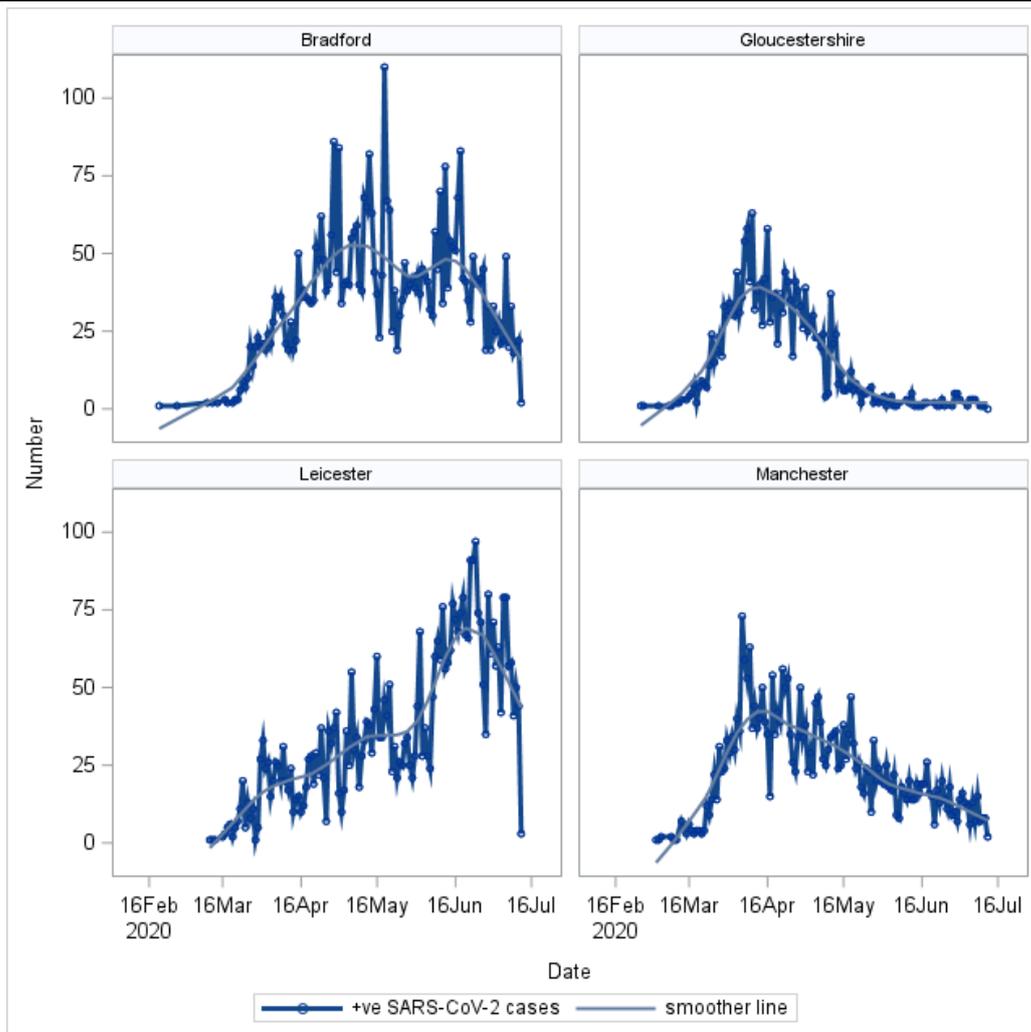
England and Scotland counts are as at 9am on the day of publication; Wales counts are as at 7am on the day of publication; Northern Ireland counts are from different times on the morning of publication.

Data for England is broken down into Regions and Upper Tier Local Authorities.

Further data is available on patients admitted to hospital, patients in hospital and patients on mechanical ventilation beds however this is only broken down by region and not in more granularity.

Process applied to data

Data will be extracted from the government website, automatically, on a daily basis. This data can be directly read into the statistical software SAS and charts are created to monitor the daily lab-confirmed cases. An example of the charts is shown in the figure below.



A statistical process control chart will be used to identify any increase in lab-confirmed cases and an automatic email will be sent to a statistician in the Statistical and Clinical Studies department highlighting the affected areas. This will prompt a further review of the data for the identified upper tier local authority/Region/Nation.

Process following a notification of increase in lab-confirmed cases

Following a 'trigger' of increased COVID-19 activity in an upper tier local authority/Region/Nation, a notification will be sent to the NHSBT clinical team to discuss. A warning may then be sent to the local transplant teams to indicate that there has been a spike in lab-confirmed COVID-19 cases in their local area with a link to the website where they can access the data to monitor cases.

Further information

Once data is available on patients admitted to hospital, patients in hospital and patients on mechanical ventilation beds, by upper tier local authority this will be incorporated into the early warning process. This will more accurately reflect the need for hospital resources and will give further understanding of a true impact of COVID-19 on transplant services.

Close contact with SAGE (Scientific Advisory Group for Emergencies) will be maintained and any information which will help to identify a second wave will be shared.

[Link to circuit breakers and early warning indicators from Wales](#)

<https://gov.wales/coronavirus-covid-19-related-statistics-and-research>

<https://gov.wales/nhs-activity-and-capacity-during-coronavirus-covid-19-pandemic>

<https://gov.wales/advice-coronavirus-technical-advisory-cell>

<https://gov.wales/covid-19-circuit-breakers-and-early-warning-indicators>

<https://gov.wales/technical-advisory-cell-summary-advice-24-july-2020>