Royal Papworth Hospital NHS Foundation Trust Organ Utilisation Strategy and Annual Report

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Section 1: Trust Details

- Trust name: **Royal Papworth Hospital NHS Foundation Trust**
- Hospital(s) included: **Royal Papworth Hospital**
- Named Executive Board Member responsible: **Eilish Midlane, CEO**
- Date of strategy/report: **1 February 2026**
- Planned date of next strategy submission: **1 February 2027**

Section 2: Scope of Transplant Services

- Organs transplanted within the trust (tick all that apply):
  - ☒ Heart (Adult / Paediatric)
  - ☒ Lung (Adult / Paediatric)
  - ☐ Liver (Adult / Paediatric / Living donor)
  - ☐ Kidney (Adult / Paediatric / Living donor)
  - ☐ Pancreas
  - ☒ Other (please specify): simultaneous kidney and/or liver transplantation
- Annual transplant volume (24/25): **32 hearts, 41 lung/heart-lung**
- Waiting list size and trend (31/03/25): **43 heart (stable), 18 lung/heart-lung (falling)**
- National Organ Retrieval Service (NORS) teams within the trust: **Cardiothoracic**

Section 3: Organisational Structure

- Divisional/Directorate management arrangements:
  Divisional director (Surgery, Transplant and Anaesthesia): **Dr Alain Vuylsteke**
- Clinical leadership (transplant units, NORS, living donor programmes):
  Clinical lead (Transplant): **Dr Stephen Pettit**
  Surgical lead (Transplant): **Mr Marius Berman**
  NORS lead: **Mr Pradeep Kaul**

- Nursing leadership arrangements:
  Nursing lead: **Mr Paul Lincoln**
  Nursing lead for retrieval: **Ms Jennifer Baxter**

- Local Clinical Lead for Organ Utilisation (CLU) for each organ type:
  Heart: **Ms Hassiba Smail**
  Lung: **Mr Pradeep Kaul**

Section 4: Patient, Donor and Carer Involvement

- **How patients, families and carers were involved in strategy/report development:** Patients, families and carers were involved in the development of this strategy through collection and review of patient feedback, including detailed written reflections from transplant recipients and family members. This provided insight into the experience of referral, assessment, transplantation and long-term follow-up, ensuring the strategy reflects what matters to patients and carers.

- **Mechanisms for ongoing engagement:** Ongoing engagement is provided by the RPH Transplant Patient Group, including peer support, patient experience surveys, direct written feedback, and discussions during outpatient clinics. Informal feedback from patients and families is also used to identify emerging issues and examples of good practice. Specific issues of importance are often highlighted by families when donations are made to the RPH charity.

- **Summary of feedback and how it has informed planning:** Patient and carer feedback has directly informed planning priorities, including improved information at referral, stronger multidisciplinary and supportive care input, better coordination with local services, and enhanced use of digital systems. Positive feedback regarding continuity of care, staff culture and the hospital environment has reinforced the importance of protecting and developing these strengths.

Section 5: Mission and Vision

- Royal Papworth Hospital updated our strategic aims for 2026 to 2031. Our vision is to be a centre for heart and lung care which is renowned for

  - **Clinical excellence**, by focusing on clinical excellence in our services and creating a culture of innovation, team-working and learning.
  - **Innovative partnerships**, by partnering locally and regionally to extend our impact and leading nationally and internationally in heart and lung care.
  - **Every member of staff feeling valued, empowered and proud to work here**, by ensuring all staff are valued and empowered and through getting the basics right.

- Our mission statement with respect to organ utilisation:

1. **Treat patients with** advanced heart or lung failure with **compassion**, aiming to improve **survival** and **quality of life**.
2. **Use all suitable donor organs** offered to patients on our transplant waiting list.
3. **Honour the gift of organ donation** by seeking to achieve the greatest number of additional **good quality life-years** from each donor organ.
4. Provide **excellent life-long care** for transplant recipients.
5. **Train and develop healthcare professionals** to become our workforce tomorrow

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Section 6: Strategic Priorities

1. **Referral management**
   Rationale: Late or absent referral of patients with advanced heart or lung failure limits access to transplantation, may disproportionately affect patients from deprived communities, and contributes to avoidable organ non-utilisation.
   Objectives:
   Increase referrals for transplant assessment by 20% within 24 months
   Increase registrations on transplant waiting list by 15% within 24 months
   Reduce proportion of organs declined due to lack of a suitable recipient by 10% within 36 months

2. **Multi-disciplinary assessment**
   Rationale: Fragmented assessment processes increase peri-operative risk, length of stay, and patient dissatisfaction. Early multidisciplinary input improves outcomes and

patient experience.

Objectives:

Integrate anaesthetic, physiotherapy, pharmacy, psychology and supportive care input into 100% of transplant assessments within 18 months

Reduce median post-transplant length of stay by 10% within 24 months

Reduce unplanned readmissions within 30 days by 10% within 24 months

3. **Waiting list management**.

   Rationale: Suboptimal monitoring of wait-listed patients leads to preventable deterioration, increased mortality, and missed opportunities for urgent transplantation.

   Objectives:

   Reduce waiting list mortality and removals due to clinical deterioration by 15% within 36 months

   Increase use of urgent/super-urgent allocation pathways by 20% within 24 months

4. **Donor organ acceptance**.

   Rationale: Inconsistent decision-making and lack of real-time MDT discussion reduce donor organ utilisation.

   Objectives:

   Establish daily donor offer meeting with >90% attendance of core stakeholders within 6 months

   Increase acceptance of suitable donor organs by 10% within 24 months

5. **Thoraco-abdominal normothermic regional perfusion (TA-NRP)**.

   Rationale: TA-NRP has the potential to significantly increase utilisation of DCD hearts, but its use in the UK is currently restricted.

   Objectives:

   Complete national evaluation of cerebral perfusion during TA-NRP within 24 months

   Contribute to lifting the national moratorium on TA-NRP within 36 months

6. **Novel technologies**.

   Rationale: Emerging technologies can improve donor organ utilisation, reduce complications, shorten hospital stay, and improve patient experience.

   Objectives:

   Introduce dd-cfDNA surveillance for heart transplant recipients within 12 months

   Pilot XVivo Hypothermic Oxygenated Machine Perfusion (HOPE) within 12 months and secure long-term funding within 24 months

   Increase the use of ex-vivo lung perfusion (EVLP) by 10% within 12 months

Establish an Extra-corporeal Photophoresis (ECP) service within 24 months
Establish a Lung Assessment and Recovery Centre (ARC) within 36 months

7. **Data management**.
   Rationale: Inadequate data capture limits quality improvement, outcome evaluation, and research innovation.
   Objectives:
   Implement an electronic referral portal within 12 months
   Achieve >90% completeness of key outcome data within 18 months
   Enable routine capture of PROMs (EQ-5D-5L) for >75% of patients within 24 months

8. **Create and amplify good news stories**.
   Rationale: Public engagement improves referral rates, organ donation, staff recruitment, and institutional reputation.
   Objectives:
   Publish at least 4 transplant-related stories per year
   Update the transplant section of the RPH website within 12 months

An action plan for each strategic priority is detailed in section 13 (Next steps).

Section 7: Information and Data

- National data used:
  Organ and Tissue Donation and Transplantation. Activity Report 2024/2025, NHS Blood and Transplant
  Annual Report on Organ Utilisation 2023/2024, NHS Blood and Transplant
  Annual Report on Heart Transplantation 2024/2025, NHS Blood and Transplant
  Annual Report on Lung Transplantation 2024/2025, NHS Blood and Transplant
  Annual Report on Mechanical Circulatory Support Related to Heart Transplantation, 2023/2024, NHS Blood and Transplant
  National Peer Review Programme: Heart and Lung Transplant Measures, NHS England

- Local data used (including PREMs, PROMs, DREMs, DROMs):
  Royal Papworth Hospital Transplant Unit database
  Friends and family, and quality of life questionnaires (EQ-5D-5L)
  Feedback from RPH patient advocacy and liaison service

- Key performance indicators (KPIs):
    - **Organ offer decline rates** (clinical and non-clinical/logistical):

CLINICAL	RPH	UK
Heart	96/160 (60%)	1089/1451 (74.9%)
Lung	44/100 (44%)	344/538 (63.9%)

Total decline rate for DBD heart, DBD bilateral lung or DBD heart-lung blocks offered between 1 April 2022 and 31 March 2025 that were eventually transplanted

LOGISTIC	RPH	UK
Travel time	130 (3.25%)	No data
Theatres (already transplanting)	86 (2.15%)	No data

Logistic decline rate for **all** organs offered between 1 April 2022 and 31 March 2025. No national data for organ offer declines for non-clinical reasons is published by NHS BT.

    - **Waiting times for transplantation**:

WAITING TIMES		RPH	UK
Heart	Non-urgent	248 (162-334) days	788 (556-1020) days
	Urgent	37 (15-59) days	37 (29-45) days
	Super-urgent	18 (8-28) days	15 (11-19) days
Lung	Non-urgent	200 (126-274) days	449 (372-526) days
	Urgent:	No centre-specific data	19 (14-24) days

Median waiting time for adult patients registered for non-urgent heart (1 April 2018 to 31 March 2021), urgent/super-urgent heart (1 April 2021 to 31 March 2024), or non-urgent/urgent lung (1 April 2021 to 31 March 2024)

    - **CUSUM reports and learning points**:
      RPH has experienced a single centre-specific tabular CUSUM signal in the last decade (Signal 286, November 2024) and this related to heart transplantation. Two themes were identified in the signal analysis. Firstly, each recipient had 2-3 pre-operative risk factors for an adverse outcome. Secondly, total ischaemic time in each DBD heart recipient was at the upper limit of acceptability. We reduced recipient risk profile, double- or triple-consulted for marginal donors, declined DBD donors with estimated travel time of >2.5 hours, and altered co-ordination timings to minimise standing time.
    - **Equity of access monitoring** (ethnicity, geography, socio-economic factors):

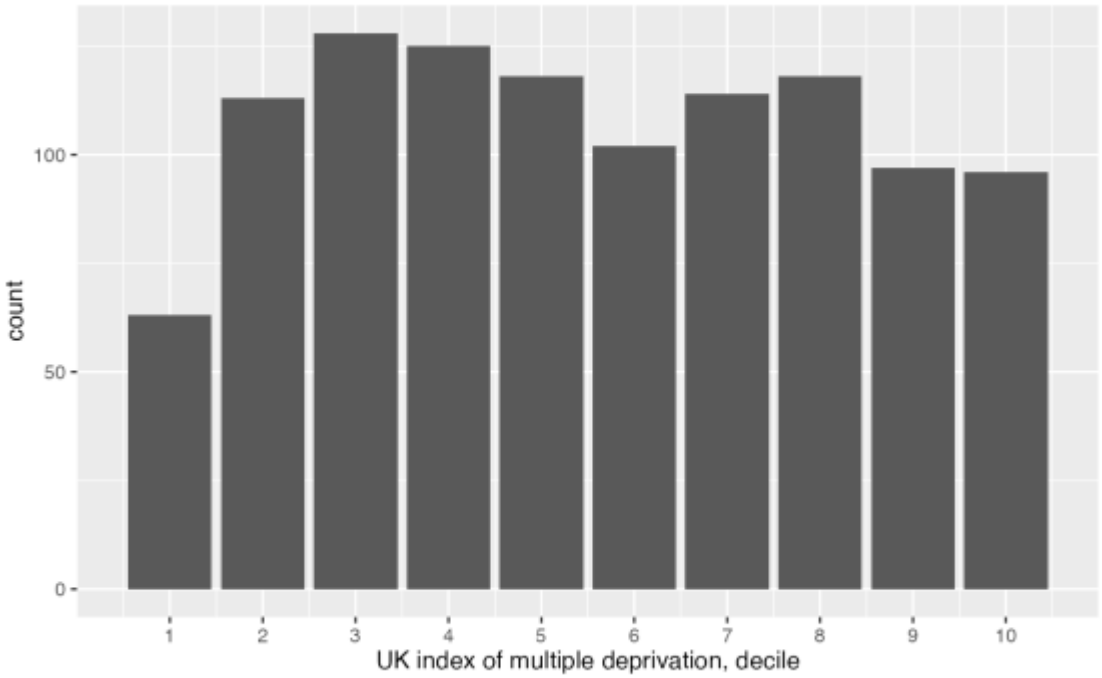
AGE, YEARS	RPH	UK

Heart	51 (38-60)	52 (40-59)
Lung	58 (51-61)	57 (50-61)

MALE SEX	**RPH**	**UK**
Heart	31/51 (61%)	191/284 (67%)
Lung	33/50 (66%)	138/193 (72%)

NON-WHITE ETHNICITY*	**RPH**	**UK**
Heart	5/15 (33%)	16/77 (21%)
Lung	5/50 (10%)	27/193 (14%)

Demographic characteristics of adults registered on the heart, lung and heart-lung transplant lists between 1 April 2024 and 31 March 2025. *There is a large amount of missing ethnicity data in the Annual Report on Heart Transplantation and patients with missing data are excluded from these summary statistics.



Number of outpatients assessed for heart transplantation between 1 January 2010 and 22 December 2025, categorised by UK index of multiple deprivation (IMD) decile.

Geographical equity of access to heart transplant services cannot be determined from an individual centre, but from a national overview of heart transplantation. Maps describing the rate of assessment for heart transplantation at RPH, registration for heart or lung transplantation in the UK, and actual heart or lung transplantation in the UK are presented in Appendix 2.

Section 8: Workforce

- **Staffing levels**

	Consultants or Band 7/8	Residents or Band 3-6
Surgeons (H=heart implant) (L=lung implant) (R=retrieval)	4 WTE (H/L/R) 1 WTE (H/L) 1 WTE (L) 1 WTE (R)	6 WTE
Cardiologists	5 WTE	2 WTE
Respiratory Physicians	3 WTE	2 WTE
Specialist Nurses	9 WTE	5 WTE
Donor care physiologists	5 WTE	
Transplant practitioners		4 WTE
Occupational therapists	0.33 WTE	0.66 WTE
Pharmacists	2.1 WTE	
Data team		2.4 WTE

- **Recruitment and retention.** This is a major problem due to long, anti-social hours and opportunities in North America. We have lost seven Consultant Cardiothoracic surgeons in the last six years. Five moved overseas and two stepped down from the implant rota. One Cardiologist retired in 2025. One Cardiologist plans to retire in 2026 and will need to be replaced. Two additional lung physicians are needed to accommodate the needs of the recipients. We attract high quality fellows from overseas who are critical members of the NORS team. There is a stable team of Transplant co-ordinators. The workload of the donor care physiologists (DCPs) is rising and recruitment of additional DCPs is needed.

- **Job plans.** Physician job plans are developed from heart and lung service maps which consists of on-call duty, outpatient clinics, procedural lists, and MDT meetings. Surgical job plans are complex because they contribute to general cardiothoracic surgery, reflect the unpredictable and labour-intensive nature of deceased donor transplantation, and include a component for specialised or complex organ retrieval. Our heart and lung CLU have 0.5 PA within their job-plan for these roles.

- **Multi-disciplinary team**. We work alongside anaesthetists, intensivists, pathologists, radiologists, liaison psychiatrists, perfusionists, pharmacists, physiotherapists, occupational therapists, clinical psychologists, dieticians, speech and language therapists, social workers and our supportive/palliative care team. These individuals

are shared with other services in the hospital. Patient surveys have highlighted that we receive less AHP support than other UK units, particularly clinical psychology.

- **Administrative and operational support**. Our administrative team are based off-site, and communication can be challenging. Our operational team are based on-site. We share a small open-plan office area in the hospital. This is a difficult environment due to insufficient desks at peak times, background noise and frequent interruptions. Study booths and meeting rooms require booking several weeks in advance. Our electronic patient record (Lorenzo) is not well-regarded by clinical staff and has had a major adverse impact on productivity, but is due to be replaced in 2027.

- **Culture, behaviour and values**. A culture of shared learning has developed among UK cardiothoracic transplant units. This is important because we share an organ retrieval service and urgent/super-urgent waiting lists. We have developed a 'buddy' relationship with Queen Elizabeth Hospital, Birmingham, which matches one of our own organisational values (collaboration) and strategic objectives (partnering regionally and locally to extend our impact). Through this relationship, we have analysed differences in early graft dysfunction after heart transplantation, shared techniques for percutaneous RVAD support and are exploring shared waiting lists for urgent and super-urgent heart transplantation. Psychological staff wellbeing is a priority and our hospital employs a wellbeing practitioner to provide support such as one-to-one counselling. Our team supports each other, particularly around paediatric retrievals or when outcomes after transplant are adverse.

Section 9: Policies, Pathways and Technology

- Our standard operating procedures are described in the following documents.
  DN826 Management of the cardiothoracic donor
  DN827 Management of the lung transplant patient
  DN828 Management of the heart transplant patient
  DN625 Transplant Operational Procedure
  DN808 Policy for testing Transplant recipients immediately prior to transplantation
  DN668 Clinical guidelines for management of hyperglycaemia in transplant patients

- Escalation policies for avoiding organ offer declines due to logistical reasons: If there is a risk of organ offer decline due to centre-level logistics, the issue is escalated to the senior operational manager. This escalation policy is being added to the next version of DN625.

- **Technological requirements** (e.g., machine perfusion, AI, software):

  Digital referrals. We require ongoing access to a digital portal for referrals. A Bloomsbury Health system (refer-a-patient) is currently working well.

  Electronic patient record. We require an electronic patient record that automates data capture throughout the patient journey, links with local and national transplant registries, enables two-way communication with patients including completion of patient-reported outcome/experience measures, and has a patient-accessible portal for letters, results and appointment management.

  Business intelligence and analytics. We require access to software to conduct quality improvement projects, audit and observational research. Excellent open-source software is available (such as R Studio or Positron). The Business Intelligence and Analytics team is growing and could provide valuable assistance in future.

  Machine perfusion. We want to use the XVivo HOPE system once CE-marked and approved for use in the UK. We are developing the mOrgan device for machine perfusion of cardiothoracic organs. We are developing a research program designed to enable longer durations of donor lung perfusion.

  Other resources or business cases needed:

  Referral management. Physician time and administrative support for referral meetings with 15 regional centres. Assuming 1 hour per meeting and 4 meetings per centre per year, this equates to 60 hours per year of Cardiologist time and 60 hours per year of Respiratory Physician time.

  Outreach clinics. Additional physician time would be required to expand outreach services and enable local assessment of potential transplant recipients.

  Multi-disciplinary assessment. Additional time is required to increase the level of input from Pharmacy, Clinical Psychology, Physiotherapy and Anaesthetic colleagues. It is likely that business cases will be required for each service.

  Waiting list management. Cardiologist and Transplant/LVAD co-ordinator time for virtual review of patients on the heart transplant waiting list, particularly those patients supported with implantable LVAD.

Donor organ review. Physician, Surgeon and Transplant co-ordinator time for review, acceptance or decline of donor organ offers. This process will happen every morning (8-10am) as part of NHS BT SCORE project.

TA-NRP. Cardiac surgical, donor care physiologist and transplant practitioner time to support re-establishment of this highly specialised area of donor organ retrieval.

Hypothermic oxygenated machine perfusion (HOPE). Financial support is required for use of HOPE, rather than cold static storage, for selected DBD hearts. HOPE would allow safe utilisation of DBD hearts with travel times greater than 2.5 hours.

Assessment and Recovery Centre (ARC). Financial support is required for the development of a lung ARC on the campus. Additional time would be required throughout the transplant team (surgeons, physicians, specialist nurses).

Novel technologies for transplant recipients. Financial support is required for (1) dd-cfDNA for surveillance of rejection in heart transplant recipients, (2) ECP for patients with chronic lung allograft dysfunction.

Data management. Time is required for greater Consultant input into data capture, quality control and audit projects within the Transplant unit, particularly as the Trust moves towards a new electronic patient record.

Website. Time is required to enable the Comms team to redesign the Transplant website and undertake regular work to showcase the work of the Transplant unit. This work could be supported by the RPH Charity.

Section 10: Communication and Dissemination

- This document will be hosted on the Transplant section of the Trust website. A launch event will be organised with the Communications team. Patients, carers and referrers feedback will be sought through the Transplant Patient Group and Referral meetings.

Section 11: Progress (For future annual reports)

- Changes to scope of services (number and type of transplants):

- Changes to organisational structure and leadership:
- Key achievements in the past year:
- Challenges faced and actions taken:
- Progress against each strategic priority (using SMART objectives):
- Examples of success:
- Areas requiring further action:

Section 12: Governance

- Strategy/report development pathway and approval process: Drafted by Stephen Pettit, with input from stakeholders described below.
- Named Board Member responsible: **Eilish Midlane**
- Stakeholder groups involved:

Stakeholder	**Name**	**Date**
Board Member	Eilish Midlane	Sep 2025
Divisional Director	Alain Vuylsteke	Nov 2025
Clinical leads, Transplant unit	Stephen Pettit Marius Berman Paul Lincoln Pradeep Kaul Jennifer Baxter	Jun 2025
Clinical leads, Organ utilisation	Pradeep Kaul Hassiba Smail	Jul 2025
Clinical lead, Organ donation	Kiran Salunkey	Nov 2025
Allied healthcare professionals	Emma Matthews Amil Magpantay Heather Chapman Carol Holder Joanna Woodger Rachel Benford-Brown	Oct 2025
Operational team	Nicola Hall Jane Speed Sam Edwards	Nov 2025 Nov 2025 Jan 2026

Patients and carers	Eric Scoones Christopher Blake Robbie Burns Trevor Collins Gilbert Wheeler Andrew Barber	Nov 2025 Dec 2025 Jan 2026 Jan 2026 Jan 2026 Jan 2026
Referral units and collaborating units	GOSH, London QE Hospital, Birmingham Essex CTC, Basildon NNUH, Norwich St Barts Hospital, London	Jan 2026

- Dates of Meetings and Board approval:

Transplant Business Unit Meeting	19 January 2026
Surgery, Transplant and Anaesthesia Directorate Meeting	23 December 2025
Quality and Risk Committee	29 January 2026
Royal Papworth Hospital Board Meeting	

Section 13: Next Steps

- Planned actions for the next three years:

Strategy 1: Referral Management	Establish regular MS Teams referral meetings with regional referring centres, prioritising hospitals serving deprived populations Incorporate time for referral management into physician job plans Conduct outreach visits to centres with low referral rates to review pathways, provide education, and assess patients
Strategy 2: Multidisciplinary Assessment	Develop and submit a business case for additional MDT resources Embed all professional groups into assessment process Adopt Enhanced Recovery After Surgery (ERAS) protocols Implement prehabilitation and psychological support for all patients registered on waiting list Provide supportive and palliative care for both patients and carers, particularly when outcomes are adverse
Strategy 3: Waiting List Management	Develop our weekly waiting list review meeting to optimise ongoing care and ensure correct priority status Explore shared transplant waiting lists with QEH, Birmingham

Strategy 4: Donor Organ Acceptance	Establish a daily MDT meeting of surgeons, physicians, transplant coordinators and operational teams to review all donor offers received via the SCORE system Standardise documentation of acceptance and decline decisions
Strategy 5: TA-NRP	Complete national evaluation of cerebral perfusion during TA-NRP Contribute to lifting national TA-NRP moratorium
Strategy 6: Novel Technologies	Secure financial backing for dd-cfDNA assays Obtain RPH charitable funding to pilot XVivo HOPE Develop a multi-organ ARC in collaboration with CUH Develop infrastructure and staffing for ECP service
Strategy 7: Data Management	Refine electronic referral platform Configure EPR to capture key clinical and outcome data Integrate PROMs and PREMs into patient-facing EPR Explore AI-based donor–recipient matching projects
Strategy 8: Create and Amplify Good News Stories	Publish at least 4 transplant-related stories per year Update the transplant section of the RPH website

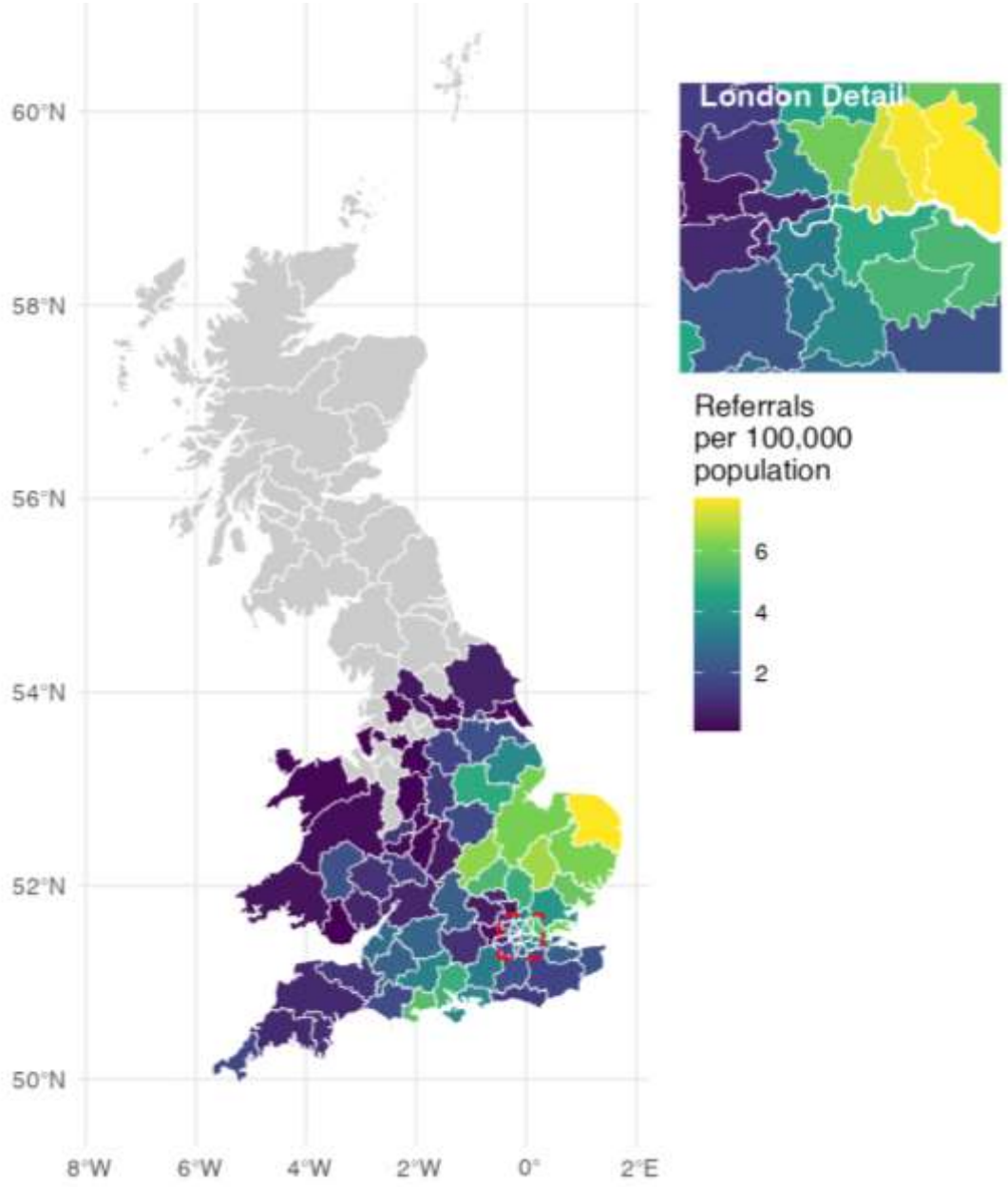
- Anticipated barriers: Major barriers to successful implementation of organ utilisation strategy are availability of trained healthcare professionals (particularly cardiac surgeons), financial support for service developments, need for improvement to support structures that lie outside our service (such as EPR system, digital inter-operability), and need for external service providers (referring hospitals, primary care) to co-operate with our team.

- Mitigation strategies: Key risks will be mitigated by gradual implementation aligned to workforce capacity, development of job plans, and succession planning. Financial constraints will be managed by prioritising high-value initiatives, and using charitable or pump-priming funding to support pilots. IT challenges will be addressed by close working with our digital team. Dependence on external providers will be mitigated through regular engagement, clear shared-care guidance, and education.

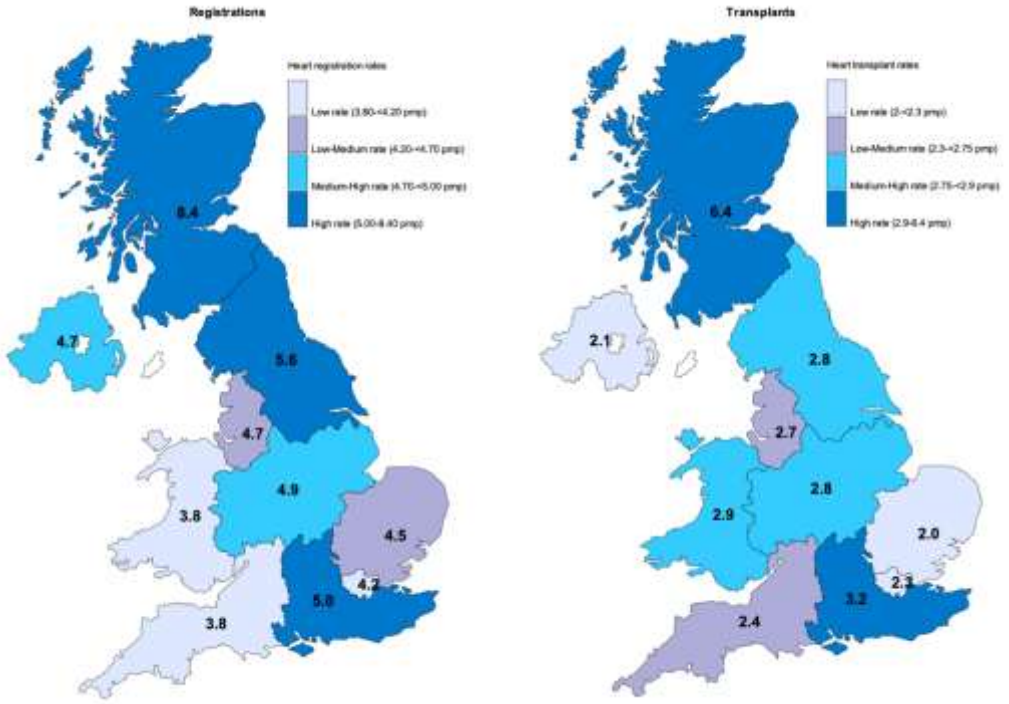
- Preparation for submission to NHS England / NHSBT and Devolved Governments: This document will be submitted to NHS England by 31 March 2026.

Section 14: Appendices

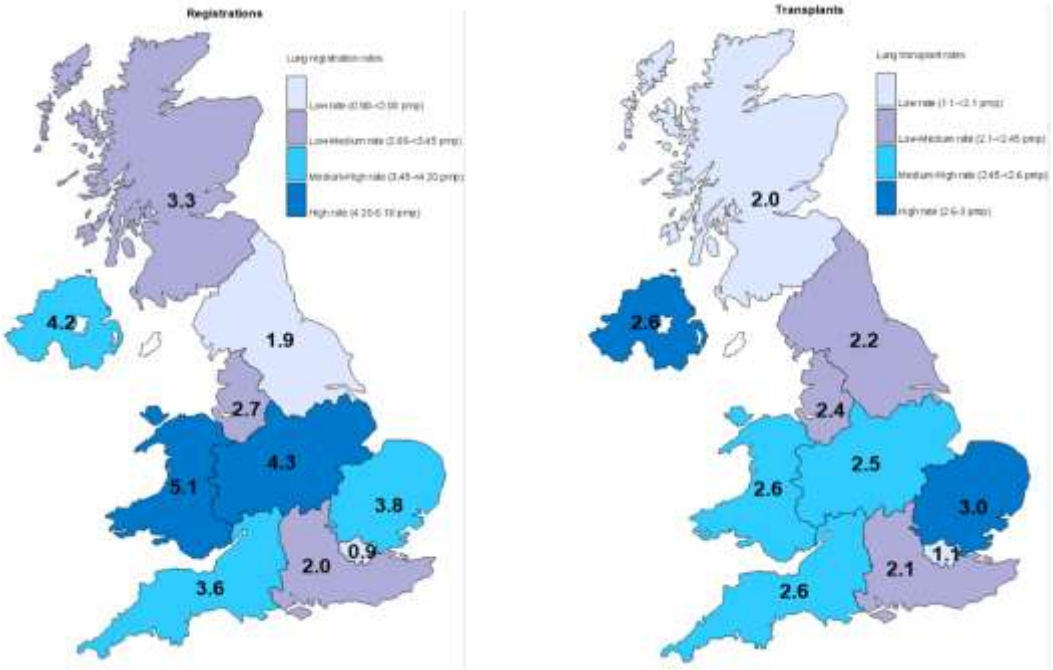
1. Geographical equity of access



Patients assessed for heart transplantation at Royal Papworth Hospital between 1 January 2010 and 22 December 2025, categorised by postcode area and adjusted for population size.



Patients registered for heart transplantation (left) and undergoing heart transplantation (right), categorised by NHS area and adjusted for population size.



Patients registered for lung transplantation (left) and undergoing lung transplantation (right), categorised by NHS area and adjusted for population size.

- Stakeholder engagement log
- Additional supporting documents