Classification: Official

NHS England North East and Yorkshire

Renal Dialysis Commissioning Plan

North East and Yorkshire

October 2024

Publication reference: v:1.0

Introduction

Most providers of renal dialysis services in the North East and Yorkshire have been reporting significant increased capacity pressures in in-centre renal dialysis. This regional pressure is in line with what is being reported nationally and units which are experiencing capacity issues may become unstainable over the long term.

To mitigate against this rise in demand, some trusts in the region have undertaken significant service improvement work to maximise their current capacity by implementing 'best practice' initiatives. Others have or are considering expansions to their capacity through internal business cases, some of which will be highlighted further in this document.

There are risks of not addressing these shortfalls in capacity as it could mean that patients who require dialysis may not be treated or that the number of dialysis sessions they can have falls short of what may be required clinically. This could lead to patients being at an increased risk of disease progression and mortality.

Actions to address the current situation are the responsibility of stakeholders from across the renal pathway and this plan aims to set out these responsibilities by;

- **Providing an overview of regional services;**
- **Describing the issue by presenting a review of capacity and demand and the current situation;**
- **Recognising the significant constraints that may impact on and potentially limit ambitions of future plans; and**
- **Proposing work that needs to take place to ensure commissioning of renal dialysis services secures safe and sustainable provision for the coming year(s).**

(This work has been summarised into an action plan and a staged approach that can be found on pages 18-20.)

Contextual Overview

According to Kidney Research UK in the report, Kidney disease: A UK Public Health Emergency see Appendix 1. The current economic burden of kidney disease in the UK is £7 billion per year, with £6.4 billion being direct costs to the NHS, approximately 3.2% of total NHS spending across the four nations.

By 2033, if projected figures for the number of dialysis patients are realised, those figures could rise to as much as £13.9 billion and £10.9 billion respectively. The report also found that £372 million is lost to the UK economy every year from missed work due to dialysis alone, a figure that could rise to £2 billion by 2033.

A total of 30,000 adults and children are currently on dialysis. Using predictive modelling approaches, the report found that by 2033, the number of people in need of dialysis treatment could rise to as much as 143,000 – meaning existing capacity would need to grow by almost 400% to meet essential demand.

Background

Each year, in England, about 7,000 people start treatment for kidney failure and there are currently about 58,000 people receiving treatment for end stage kidney failure. Not treating or withdrawal of treatment leads to death in the majority of patients with kidney failure within three weeks.

Of those receiving Renal Replacement Therapy:

- Just over half are treated with a kidney transplant either from a living or deceased donor.
- About 4 in 10 are treated with haemodialysis.
- About 1 in 10 are treated with peritoneal dialysis.

There were 2,903 adult kidney only transplants undertaken in the UK in 2021/22 along with 244 paediatric transplants, 884 of which involved organs from living donors. Some deceased donor transplants were undertaken in conjunction with transplantation of other organs, and this included 120 kidney with pancreas transplants.

About the services

The services are provided in Adult Renal Transplant Centres and Adult Specialist Renal Centres, all of which operate satellite haemodialysis units to reduce the distance patients have to travel to receive treatment.

NHSE Spec Comm (Specialised Commissioning) commission adult specialist renal services from Adult Specialist Renal Centres and Adult Renal Transplant Centres, including services delivered on an outreach basis as part of a provider network. Although currently renal dialysis is commissioned by NHSE Specialised Commissioning, it will likely be delegated to an Integrated Care Board (ICB) for commissioning from April 25.

For further information see PRN00115-prescribed-specialised-services-manual-v6.pdf (england.nhs.uk) page 65 ***attached appendix 2*** and the Service Specification: A06/S/a In Centre Haemodialysis (ICHD): Main and Satellite Units: https://www.england.nhs.uk/wp-content/uploads/2018/08/In-centre-haemodialysis.pdf, ***attached appendix 3***.

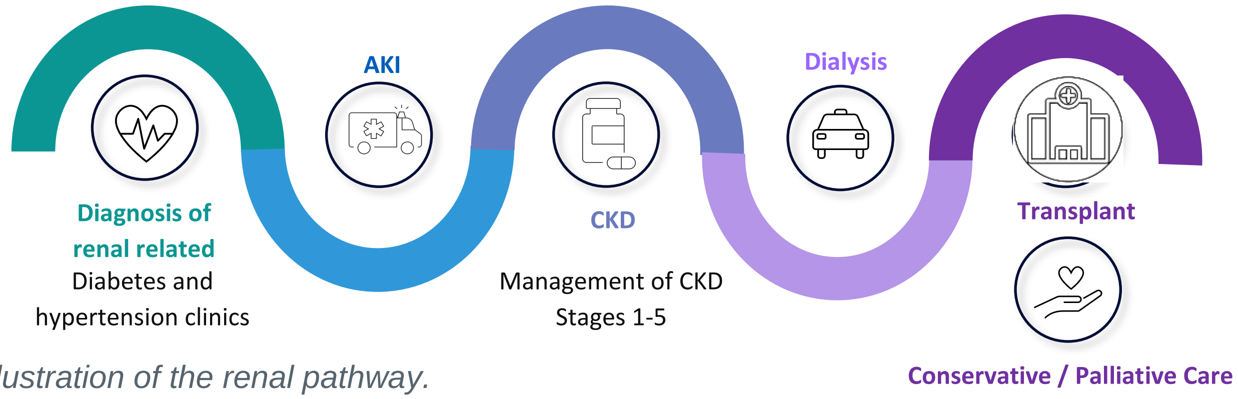


Illustration of the renal pathway.

Modalities of Renal Replacement Therapy (RRT)

In-centre haemodialysis (HD)

Haemodialysis (HD) is a type of dialysis that filters the blood outside the body using a machine and a dialyser, which is a manufactured filter that acts like an artificial kidney. The is carried out usually 3 times a week and takes 3-5 hours.

Peritoneal Dialysis

Peritoneal Dialysis (PD) uses the inside lining of the abdomen (the peritoneum) as the filter, rather than a machine. Like the kidneys, the peritoneum contains thousands of tiny blood vessels, making it a useful filtering device. Before treatment starts, a thin tube called a catheter is inserted into the space inside the abdomen (the peritoneal cavity). This is left in place permanently. Fluid is pumped into the peritoneal cavity through the catheter. As blood passes through the blood vessels lining the peritoneal cavity, waste products and excess fluid are drawn out of the blood and into the dialysis fluid. The used fluid is drained into a bag a few hours later and replaced with fresh fluid. Changing the fluid usually takes about 30 to 40 minutes and normally needs to be repeated around 4 times a day or via a machine overnight.

Dialysis at Home

Can be either HD or PD and dialysis and the treatment takes place in a patient’s own home. Dialysis is carried out by the patient or with the support of a family member or friend who has been trained to help.

NEY Renal Units and Satellite Units

North East and North Cumbria Dialysis Units

Main Unit	Satellite and Other Units
Newcastle: Royal Victoria Infirmary	Alnwick
	Gateshead
	North Tyneside
South Tees: James Cook University Hospital	Darlington South Tees
	Stockton UHNT South Tees
	North Ormesby
	Friarage
North Cumbria: Cumberland Infirmary	Whitehaven: West Cumbria Hospital
South Tyne and Sunderland: Sunderland Royal Hospital	Washington
	Durham

Yorkshire and the Humber Dialysis Units

Main Unit	Satellite and Other Units
Bradford: St Lukes Hospital	Bradford Royal Infirmary
	Skipton Hospital
	Airedale Hospital (Pre-Dialysis and Renal Inpatient)
Leeds: St. James University Hospital	Seacroft Hospital
	Beeston
	Dewsbury
	Huddersfield
	Halifax
	Pontefract
York: York Hospital	Easingwold
	Selby Memorial
	Scarborough General Hospital
	Harrogate Heather Dene

Hull: Hull Royal Infirmary	Bridlington District Hospital
	Scunthorpe General Hospital
	Diana Princess of Wales Grimsby
Sheffield: Sheffield Teaching Hospital	Chesterfield Royal Hospital
	Barnsley District General Hospital
	Rotherham District General Hospital
	Sheffield Satellite Unit
Doncaster and Bassetlaw: Doncaster Royal Infirmary	Bassetlaw Hospital
	Montagu Hospital Mexborough

Potential Clinical risks of Insufficient Capacity

1. If dialysis demand grows and Trusts are not able to mitigate against this, there is risk patients who require dialysis may not be treated.
2. Due to their own capacity issues Trusts may not want to undertake any shared learning or work in collaboration with other Trusts to help mitigate dialysis capacity issues.
3. There could be an increased reliance on external contractors to deliver the haemodialysis service, which could be financially prohibitive, and Trusts may not develop their own services to deal with future demand.
4. Realistic timescale for implementation may not provide the required capacity at required pace due to the clinical urgency of the patients. If additional capacity is not generated at pace, this places patients at increased risk of disease progression and ultimately an increased risk of mortality, with emergency interventions required to prevent this.
5. Without further coordination different trusts may implement different approaches to managing demand leading to inequities in access and outcomes.

NHS England Risk Register

This issue has been added to NHS England’s Regional and National Risk Register, known as Corestream. This Is the NHS England’s risk management platform where all risks are captured, including the information needed to manage risk appropriately.

Strategic Planning

Assessing Need: Renal dialysis demand and capacity

The below two areas provide some background regarding the growth in demand and capacity for dialysis services in the region:

1. Public Health Analysis – An updated analysis of renal dialysis demand in NEY; and
2. Current SITREP from Yorkshire and Humber and North East and North Cumbria providers.

1. Summary of Public Health Analysis - An updated analysis of renal dialysis demand in NEY (2023)

In 2017/18 a full epidemiological review of Chronic Kidney Disease & Renal Dialysis trends and data in NEY Specialised in 2017/2018 by PHE (Dr David Baggueley) was published. The 2023 report, ***see appendix 1***, is not a complete re-review of that work, but is trying to answer the following questions:

- Has demand in NEY for all/some of types of dialysis increased in recent times beyond any normally expected growth?
- Are there any Trusts in particular, where dialysis demand has increased at a substantially higher rate?
- Has the total number of patients on dialysis changed dramatically over that time?
- Is it that the modes of delivery have changed and that is driving demand, rather than the total numbers of patients increasing?

Report conclusions:

- Patients per million population for Kidney Replacement Therapy is no higher in NEY than other areas England.
- Numbers of new cases of patient are not necessarily driving increasing total patient numbers (certainly up to 2021). It is more likely a result of year-on-year prevalence increase due to better survival.
- Nationally and regionally there has not been a change in modality since 2016. This means that there are about the same percentage of cases having Home Haemodialysis, In-Centre Haemodialysis, Peritoneal Dialysis and Kidney Transplant.
- Other than Hull (a high outlier) – NEY centres are better than or in-line with average for ‘late presentation’ for treatment.
- Bradford is higher regionally against England average for patients per million population prevalent Kidney Replacement Therapy (7 other centres in England higher still). All NENC centres below the England rate.

- Bradford has notably a higher proportion of patients receiving care at the Main Hospital site and less at satellite sites than other NEY centres, for England average (Bradford 42% higher). Middlesborough has a high % of care at satellites (61.7%).

Summary – Regional Data to M2 23/24

- Centres across NEY have seen a step increase in patient numbers since 2021. These include Newcastle, Leeds, Hull, Doncaster, Bradford, York, and Scarborough for example.
- The relationship between increases in patient numbers, Activity, and Price is complex and non-linear.
- The Trust with greatest increase since 19/20 in patient numbers (Doncaster 19%) does not have the highest activity increases (Bradford 21%) or cost increases (Bradford 30%) over the same time period. In fact, Doncaster's activity levels actually fell by 5% over that period.
- North Cumbria - Patient numbers increase 5%, activity drops 1%, price rise of 26%.
- Several Trusts have seen price increases over 17% since 19/20 (Sheffield 17%, Doncaster 18%, York & Scarborough 25%, Leeds 25%, North Cumbria 26%, Bradford 30%).
- Activity increases since 19/20 are notably higher in Bradford (21%) than the next highest Sheffield (8%), Leeds 7%, York & Scarborough 6%. (Newcastle 2%, South Tees -2%, North Cumbria -1%)
- Bradford, (and Leeds to a lesser extent) growth in Activity and Price appear particularly non-linear in relation to their increases in patient numbers (higher than expected). The reasons for this are unclear in the data.
- North Cumbria also has particularly non-linear growth in Price in relation to patient numbers, yet activity falls.

2) YH and NENC Situation Reports

Yorkshire and the Humber Renal Dialysis Capacity Situational Report July 2024 using the Dialysis Occupancy Measure*

JULY							
Unit	BRADFORD	LEEDS	SHEFFIELD	DONCASTER	YORK	HULL	YHKN AVERAGE (Units with submitted data ONLY)
% Utilisation of Max Capacity	97.1%	90.9%	83.8%	67.3%	69.5%	75.4%	80.7%
% Utilisation of Staffed Capacity (Patients)	107.5%	107.2%	87.4%	104.6%	97.7%	99.5%	100.7%
% Utilisation of Staffed Capacity (Sessions)	107.4%	97.9%	81.9%	99.1%	103.1%	98.8%	98.0%

*Please see P.15 Dialysis Occupancy Measurement for further **details***

North East Renal Dialysis Capacity Sit Rep April 2024 Update Pending*

Unit	Capacity	Staffing	Environment
Carlisle	Full	Severe Nurses and Consultants Shortages	Non reported
Middleborough	Full	Severe Nurses and Consultants Shortages	Recently opened additional in-house satellite unit to support ongoing pressures
Sunderland	Nearly Full	Non reported	Non reported
Newcastle	Full	Severe Nurses Shortage with resulting exacerbation of capacity issues and financial strains through overtime and Bank Staff costs	Business case in process to expand NHS Gateshead Satellite unit in 6 months set up a new nearby privately provided satellite unit

The North East Network are working toward implementing the Dialysis Occupancy Measure. In future we will have consistent reporting in the same format across the region.

Planning Capacity and Managing Demand

Renal Dialysis Pathway Improvement

There is significant work taking place both locally and nationally to monitor current capacity pressures and to develop and transform the renal dialysis pathway. The illustration below highlights some of the ongoing workstreams.

Diagram summarising the current workstreams

National Renal Transformation Programme (now closed and transformed to CRG (National Renal Clinical Reference Group)

The National Renal Transformation Programme described approaches to reduce pressure on in hospital renal dialysis including:

- Working with the Yorkshire and Humber Primary Care Network to highlight early intervention medications such as SGLT 2 Inhibitors for patients presenting with indicators of kidney disease.
- Transplant First, an initiative designed to increase the number of pre-emptive transplants in the UK.
- Increase the numbers of patients dialysing at home.

These areas of focus are aimed to firstly reduce the number of patients developing kidney disease through prevention and secondly provide alternative treatments to reduce the number of patients who would otherwise be accessing in-centre renal dialysis in the future.

National Renal Tool Kit

In 2023/24 a national Renal Toolkit was published. This can be found on the NHS Futures Website here: Renal Service Transformation Programme - FutureNHS Collaboration Platform The aim of this toolkit is to provide commissioners, ICBs, networks and providers with tools, case studies and principles to support transformation of services at a local level, that will assist Systems and Networks improve Kidney Care.

National Renal Service Specification Revision

Publication of the revised service specification of renal services is due by the end of 2024. This will bring together the six renal service specifications into one single service specification that will reflect codependent services within the renal pathways.

National CRG pricing group – review of the renal dialysis tariff 25/26

A review of the pricing tariff for renal dialysis is currently taking place via National Clinical Reference Pricing Group.

North East and Yorkshire Renal Clinical Networks:

Clinical Networks are formal structures in which providers, commissioners and patients work together to optimise healthcare. Networks were launched back in April 2013, formally known as Operational Delivery Networks, following the publication of the National Health Service (NHS) strategy paper, ‘Developing Operational Delivery Networks: The Way Forward’. They have since been re-named as Clinical Networks.

Clinical Networks ensure patient outcomes and quality standards are improved and evidence based networked patient pathways are agreed. They focus on supporting the activity of Trusts in service delivery, improvement and delivery of a commissioned pathway, with a key focus on the quality and equity of access to service provision.

Each mandated clinical network is expected to agree and submit an annual workplan to regional commissioners, this workplan is agreed and approved at network boards and describes the intended work each clinical network has prioritised across the population it serves.

The following are excerpts from the 2024/25 renal networks workplans that outline measures both networks are undertaking in mitigating against services pressures and transformation of dialysis services in the region.

Network Plan 24/25: Yorkshire and the Humber

Priority *Service Spec, GiRFT, LTP, Review Recommendation, Regional or Local ICB Priority*	**Objective** *What change are you seeking to bring about?*	**Expected Benefit** *What benefit do you expect to realise from achieving the objective?*	**Financial / Workforce / Estates**	**Potential Implications** *What resources are needed to deliver the objective?*
Dialysis	Support capacity and demand planning of renal units by 1. Implementing the Dialysis Occupancy Measure (DOM) and sharing this data with units, commissioners and executive teams as needed. 2. Working closely with ICBs/ NHSE to identify pathway improvements to address current demand and plan for future growth. 3. Support renal units develop business cases for internal investment and/or escalate risk status of services.	Improving patient access to care for incentre dialysis. Improving patient outcomes through reducing delays to accessing dialysis	Capital investment in estates by trusts or ICB either new facilities or reconfiguring existing capacity.	Retention and recruitment of dialysis workforce for both ICHD and home dialysis are constraints on increasing capacity.

Priority *Service Spec, GiRFT, LTP, Review Recommendation, Regional or Local ICB Priority*	**Objective** *What change are you seeking to bring about?*	**Expected Benefit** *What benefit do you expect to realise from achieving the objective?*	**Financial / Workforce / Estates**	**Potential Implications** *What resources are needed to deliver the objective?*
Transplant	Support renal units in the network to identify workforce gaps and develop business cases as needed to support increasing transplantation. Initially focus on transplanting centres variation in workforce Standardising the CVS workup process regionally, pilot DASI score and seeking consensus pathways.	Support units to achieve increases in pre-emptive transplantation. Agreed no mandated cardiac stress testing in asymptomatic individuals undergoing workup to remove barriers to transplant.	Workforce and financial impact	Impacts on transplant workforce and service configurations, trust level resourcing, buy-in of local teams necessary. Time and resources for education and embedding processes.

Network Plan 24/25: North East and North Cumbria

Priority *Service Spec, GiRFT, LTP, Review Recommendation, Regional or Local ICB Priority*	**Objective** *What change are you seeking to bring about?*	**Expected Benefit** *What benefit do you expect to realise from achieving the objective?*	**Financial / Workforce / Estates**	**Potential Implications** *What resources are needed to deliver the objective?*
Dialysis: Reduce unwarranted variation in definitive vascular access rates, deliver minimum thresholds of 60% incident and 80% prevalent patients with AVF/G. (GIRFT)	Establish best practice and tailored targets to each renal centre based on up-to date Vascular access data in cooperation with NHSE/NECS. Provide regional ultrasound training programme for improved canulation and fistula maintenance to increase percentage of AVF/G to above national standard. Handheld ultrasound devices to be procured for use in all units. Long-term goal of establishing national Vascular Access centre.	Up-to-date definitive access data guided tailored targets for each renal centre and will assist QI programmes by giving defined start point KPI and post-QI KPIs. Providing a uniform training programme for ultrasound use across the region will enable nurses and clinicians to adopt better canulation and fistula maintenance procedures, in turn resulting in higher rates of AVF. AVF/G is linked with lower rates of infection, complications, and mortality. Provision of advanced ultrasonic handheld scanners for region to be tied to training program to provide best practice and best-in-class resource equitably to the region.		Development and hosting of regional training programme, procurement of handheld ultrasound devices and collaborative work with NHSE/NECS will require network funding but expected to be achievable within current funding structure. £24,000 of underspend used to procure 4 x Handheld US devices (1 for each unit) to provide a legacy for the region and commonality of best practice.

Priority *Service Spec, GiRFT, LTP, Review Recommendation, Regional or Local ICB Priority*	**Objective** *What change are you seeking to bring about?*	**Expected Benefit** *What benefit do you expect to realise from achieving the objective?*	**Financial / Workforce / Estates**	**Potential Implications** *What resources are needed to deliver the objective?*
Kidney Transplantation: Reduce time to listing for all suitable patients, regardless of renal centre and increase the overall rate of Transplantation (GIRFT)	Streamline Renal Transplant Referral pathway for recipients and live donors and develop standardised regional process for referring to transplant centre, eliminating unwarranted variation. Including digital process integration.	Reduced waiting time to list patients for transplantation, uniform standards for listing times at transplant and referring centres, universal formal referral pathway with clear mandatory information submission and data recording reducing incomplete referrals and delays, version control and auditability, reduced unwarranted variation between renal centres and transplant centre.		Network members to support adaptation of upcoming Patient Pass Digital Referral system to regional transplant referrals.
Chronic Kidney Disease: Promote and facilitate early identification and treatment of CKD	Pilot project to cleanse CKD coding in GP record systems of in a target area using novel CDRC tools. Identify patients with CKD based on lab results but not correctly coded. Support medicine optimisation in these practices. Establishing best practice for wider ICB rollout.	Increased CKD medication optimisation, reduced progression to ESKD, reduced need for dialysis and transplantation with associated cost savings, reduced mortality, improved patient quality of life, legacy of best practice learning and blueprint for national rollout.		Network to fund collaborative project with AHSN up to approx. £20K to enable pharmacist outreach into primary practice and to develop training and educational resources for long-term legacy of project as well as blueprint for wider implementation across the ICB and nationally.

Highlighted Local Solutions/Initiatives

The following examples highlight just a small proportion of the work been undertaken in the NE&Y region but serve as examples of both good practice and initiatives.

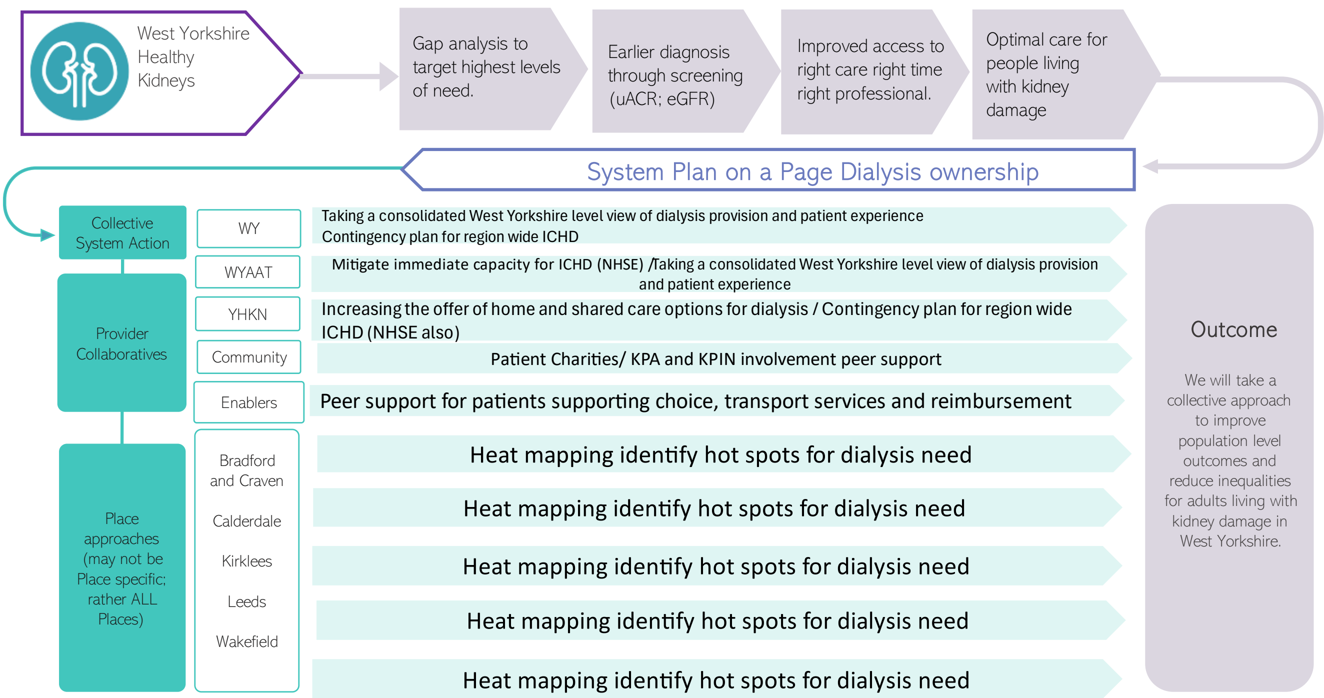
West Yorkshire System Renal Dialysis – Priority Pathway Improvement Programme

Priority pathways are a programme whereby Specialised Commissioning are trialling system working with ICB partners on whole pathway transformations. Following the outcome of this work, the aim is to take the learning and transfer into the wider systems across NEY.

Working in partnership with West Yorkshire ICB, the regional Renal Network and the West Yorkshire Association of Acute Trusts (WYAAT), a priority pathway has been established to look at how we reduce the need for in centre renal dialysis in West Yorkshire by focusing on intervention, prevention, and alternative treatments. This programme of work will deliver the triple aim of improving outcomes, tackling inequalities, and improving value.

To date there have been advanced discussions with the West Yorkshire ICB Long Term Conditions Lead regarding the current Chronic Kidney Disease (CKD) pathway in West Yorkshire to support improved treatment in primary care such as the use of preventative medication (e.g. SGLT2's) and the optimisation of these. Additionally, there are workstreams underway in the Y&H Renal Network to look at alternative treatments such as transplantation and home dialysis and how numbers accessing these treatments can increase.

A workshop took place in July 2024 between commissioners, ICB representatives and Yorkshire Renal Network representatives. This involved a deep dive on the data and modelling currently available, co-ordination of work currently underway, gap analysis and agreement of how the programme is taken forward.



Draft dialysis plan from the West Yorkshire priority pathway workshop

	Priority	Intervention	Output	System Outcomes (short & long term)
1	Mitigate immediate capacity for ICHD	LTHT & BTHT identify and make available identified space for ICHD at Skipton and Seacroft Consider mobile provision at BTHT	Short term increase in ICHD capacity	Short term increasing capacity for ICHD to meet immediate needs of patients (owners LTHT/BTHT/NHSE/ Joint commissioning Board)
2	Taking a consolidated West Yorkshire level view of dialysis provision and patient experience	Heat mapping dialysis patient population by postcode to 1 identify if current services are in the right place 2 Identify where additional capacity could be best delivered to meet patient needs 3 Plan in medium term West Yorks capacity requirements	Maps of current patient populations against service provision to enable a West Yorks footprint approach to ICHD and patient dialysing closest to home where possible.	Service delivered closer to home. Allowing planning of additional capacity in the medium term based on population health needs. Targeted health & prevention interventions (Network & ICB & WYAAT)
3	Increasing the offer of home and shared care options for dialysis	Best Practice sharing across networks Engage with Day Life national programme Reviewing staffing models for best use	Increase % patients dialysing at home/ shared care. Work towards 20% -30% as recommended nationally	Patient choice in dialysis modality through developing robust home offer to patients. (Network)
4	Contingency plan for region wide ICHD	Task and finish group to 1 review units contingency planning. 2 agree any updates 3 Y&H mitigations agreement 4 produce plan	Have an agreed contingency plan between units in Y&H, to include mitigating actions and mutual aid.	Robust ICHD services with crisis/ events mitigated. (Network & NHSE)
	Additional discussions/ Challenges / home dialysis Home dialysis recruitment challenges – staff don't drive! Lack of admin support HHD & PD Teams are separate (?)			

Draft dialysis prioritisations from the West Yorkshire priority pathway workshop

South Tyneside and Sunderland NHS Foundation Trust (STSFT) Approach

Maximising Capacity

Traditional inpatient dialysis services are delivered Monday to Saturday with morning and afternoon sessions. In response to a crisis point for their inpatient renal dialysis service capacity 6 years ago STSFT expanded their service without additional investment by offering the following:

- Twilight sessions (often delivered from 5pm). These sessions are started by a member of staff before they finish their working day, and the patient completes their session and leaves the unit unaided.
- Nocturnal sessions. Patients can let themselves into the unit via a coded door and self-start their session overnight. The clinical team then assesses the patient before they leave the unit when they start their shift. This can be of benefit to a patient who would prefer receiving a session while sleeping.
- Sunday sessions. Often an unused day due to staffing rotas, Sunday sessions have become a regular addition to STSFT dialysis offering.

Additional Initiatives to Reduce Dialysis Pressures

- Home Dialysis - STSFT rapidly increased their home HD patients by having an acute focus on this part of their service. Suitable patients were identified and approached with the benefits of home HD and support available to them.

- Increasing Transplantation - Additional focus was given to kidney transplantation and referral pathways were refined to the NE transplant centre. The renal network is continuing to develop this across the region.
- Medication Optimisation - As more recent development in renal care new SGLT2 inhibitor medication has been approved for the delivery of renal care. STSFT renal medical teams have linked into their primary care counter parts to ensure the optimisation of this medication that dramatically slows the decline of kidney function and reduce the need for dialysis services.

Newcastle Upon Tyne Hospitals ‘approach’

Growth in demand has required continued investment into additional capacity for haemodialysis (HD) patients, actions taken so far include:

- Opening of additional satellite sites through subcontractor DaVita
- Expansion of HD unit on Freeman Hospital into inpatient ward space
- Further additional capacity opened at North Tyneside satellite site
- Increase in haemodialysis capacity at Gateshead satellite site by 24 patients, move 24 patients from ward 32 to satellite, creating space on ward 32 to start 24 new patients on Dialysis.
- Investment in consultant and nursing workforce, drugs and consumables totalling approx. £2m since 2019.
- The increase in numbers since 2021 alone is the equivalent of a 14-station dialysis unit operating two shifts per day, approx. 8,500 dialysis sessions per year, approx. £2.4m increase income via PBR tariff, compared to 2019-20.

Dialysis Occupancy Measurement

In 2023-24 the London Kidney Network developed a Kidney DOM (dialysis occupancy measure) which provides a standard and consistent measure of in-centre haemodialysis (ICHD. It acts as a simple easy to measure and easy to report proxy indicator of clinical safety, patient experience and service resilience. See Appendix C: In-centre Haemodialysis Demand and Capacity Management in London December 2023

The Kidney Dialysis Occupancy Measure includes:

Estate Capacity: A metric measuring the maximum possible dialysis sessions/slots related to the number of physically available dialysis machines with plumbed water and power.

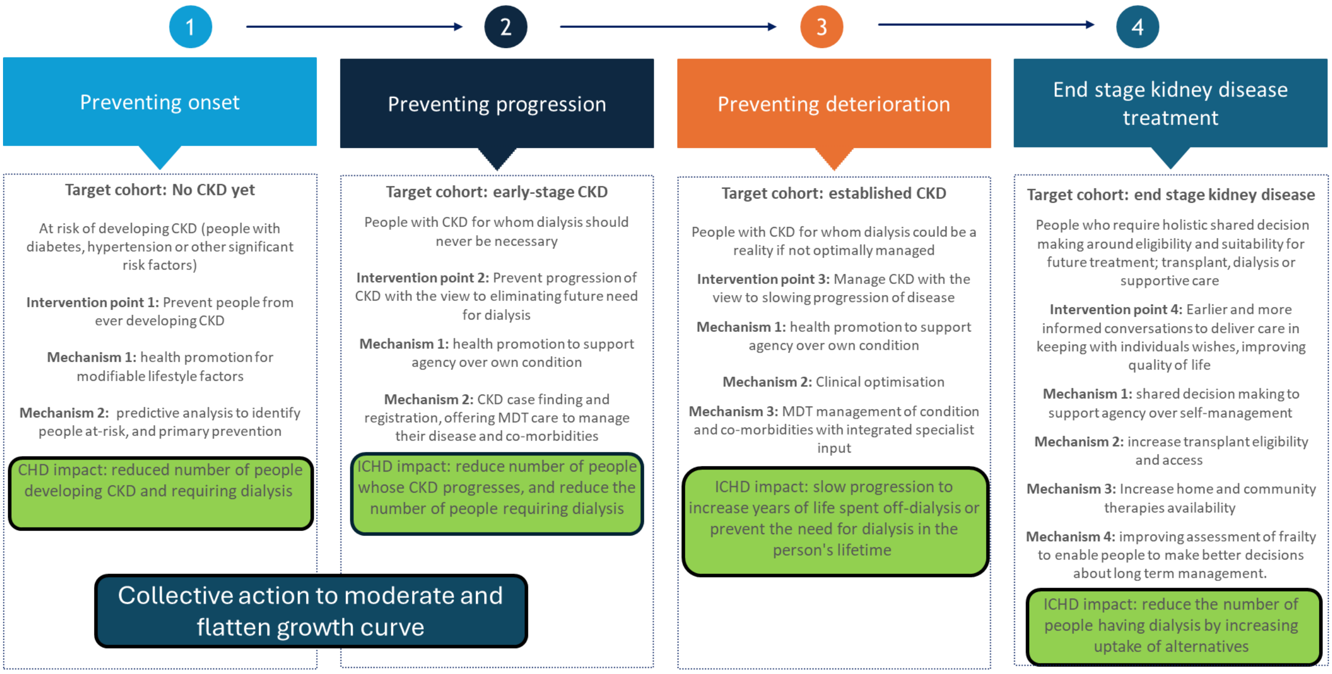
Available Staffed Capacity: A metric measuring the number of available dialysis sessions that are appropriately staffed for the acuity of the patient cohort, and ready for immediate use

Occupancy Measure: The ratio of Estate Capacity to the actual number of sessions/slots available and booked ready for patients and the ratio of Available Staffed Capacity to the actual number of sessions/slots available and booked ready for patients

Both the YH and NENC Networks have been using the DOM tool and an evaluation of its effectiveness will be undertaken in the near future.

Learning from Other Networks

There are number of networks across the UK all of whom share best practice and learning including tackling dialysis capacity. This is one example for prevention from the London Kidney Network and incorporates the DOM Tool.



Conclusion

In conclusion it is evident from the data ascertained that there is an increase in people requiring renal dialysis over recent years. Despite undertaking a detailed review of demand, it is still difficult to determine whether this growth in demand requires funding in excess of the annual uplift in the financial contract baseline given to trusts that should cover growth in specialised commissioned activity.

In 2024/25, an over and above growth uplift was applied to the contract baseline. As a result, there is no additional funding held by Specialised Commissioning to support activity growth for 24/25, both providers and the networks are aware of this. It is possible to consider investment as part of the processes for agreeing precommitments for 2025/26. However, with the current NHS financial challenges and competing priorities here is no guarantee of this.

In order to ensure the commissioning of dialysis services secures safe and sustainable provision for the coming years an action plan and staged approach, *as below,* have been developed. The action plan outlines the key work that stakeholders must undertake to monitor, improve and address short, medium and long-term capacity issues. The staged approach has been designed to ensure there is a systematic and well-managed approach to securing safe and sustainable provision of renal dialysis services for the future.

Action Plan

Action	Responsibility			
	Renal Networks	Clinical Teams	Providers	Systems/ Commissioning
Maximising use of current capacity	X	X	X	
Collaborative working and mutual aid amongst trusts	X	X	X	
Safe clinical models / clinical practice for addressing immediate/ short term capacity issues	X			X
Prevention of and limiting the progress of kidney disease - system working to transform of the whole patient pathway. (Long term solution)	X			X
Primary prevention of kidney disease	X			X
Treatments to limit the progress of kidney disease	X	X	X	
Implementation of Best Practice	X	X	X	
Home dialysis	X	X	X	
Transplant first	X	X	X	

Physical and workforce capacity development	X		X	X
Forward planning for future capacity requirements	X		X	X
Early engagement with networks and system commissioners regarding those plans	X		X	X
Demonstration that current capacity maximised and best practice has been appropriately implemented	X		X	X

Staged Approach

Stage 1	**Address any immediate/ short term risks to service delivery to patient needing renal dialysis (Provider and Networks)**	**Review and baseline any ongoing Service transformation and implementation of good practice (Providers and networks)**	**Trusts are required to address capacity issues from growth in contract baseline funding.**
Stage 2	**Review implementation of best practice (led by networks on behalf of commissioners)**	**Review of provider progress in delivery of best practice (led by networks on behalf of commissioners)**	

Stage 3	**Consideration of outstanding capacity requirements after stage 1 and 2 are undertaken.**	**Commissioner to assess all plans together to ensure that any additional funding requested linked to a clear long term development plan.**	**This will inform future decision on the commissioning intentions for 2025/26 and provide the basis for Stage 4.**
Stage 4	**Define the long-term strategic plan for the commissioning of renal dialysis services after 2025/26.**		

Next Steps

Regional Specialised Commissiong team will work with Providers, Clinical Teams, Regional Renal Networks and Systems to priorities and agree timescales to complete the action plan and ensure the progression of each stage of the above approach.

Appendices

Appendix 1	Kidney Research UK: Kidney disease: A UK Public Health Emergency: The health economics of kidney disease to 2033	Economics-of-Kidney-Disease-full-report
Appendix 2	PRN00115-prescribed-specialised-services-manual-v6.pdf (england.nhs.uk)	 Prescribed Specialised Services Manual
Appendix 3	Service Specification: A06/S/a In Centre Haemodialysis (ICHD): Main and Satellite Units.	In-centre-haemodialysis.pdf

Appendix 4: An updated analysis of Renal Dialysis demand in NEY – December 2023 V2.1

1. Introduction

This document is a rapid review of dialysis data for North East & Yorkshire (NEY)available to NHS England as the commissioner of dialysis services undertaken by NHS England Specialised Commissioning Public Health Team with support from the NHS England Business Intelligence Unit.

It is in response to concerns raised by individual providers of dialysis services in Yorkshire and the Humber (Y&H) and the Y&H Renal Network that demand on services was increasing much faster than previous growth prediction (especially since the end of COVID restrictions in 2021) and far above any activity uplift that NHS England pays to providers each year (c. 3% uplift per year).

A full epidemiological review of Chronic Kidney Disease and Renal Dialysis trends and data in NEY Specialised was undertaken in 2017/2018 by PHE (D Baggueley). This rapid review does not aim to re-examine all the epidemiological drivers of disease and dialysis but to answer a more focused set of questions in relation to current demand, trends and variables in relation to dialysis in NEY.

2. Methodology

This analysis attempts to answer wholly or in part the following questions:

- Is there a true increase in activity (numbers of patients, total activity, costs) which exceeds the expected growth of 3%?
- Is this across the whole region, or just in specific providers?
- How does this fit with wider national trends?
- Are there any confounding factors – areas of variance for particular providers in relation to regional and national comparators in terms of the number and modes of activity, demographics, trends?

The sources used for this rapid review are the National Renal Registry 25th Annual Report (published 2023 with data up to 2020/21, and provider information data extracted from the provider submitted PLCM (Patient Level Contract Monitoring) files. The PLCM data provides a more recent picture of dialysis demand with data up to month 2 of 2023/24.

3. Renal Registry Data (Up to 2021)

The following tables and data are extracts from the UK Renal Registry (2023) UK Renal Registry 25th Annual Report. https://ukkidney.org/audit-research/annual-report This report only includes data up until 2021 (published May 2023) but is useful for observing trends up until the end of

COVID restrictions. The table and chart references (2.1, 2.2 etc) have been kept to allow readers to easily find the relevant tables within the original document.

3.1 Adult Incident KRT Trends

Table 2.2 shows incident patient numbers (new cases) of all kidney replacement therapy (KRT) by year and centre and also displays the data as a crude rate (the proportion of the adult catchment population).

Table 2.2 Number of incident adult KRT patients by year and by centre; number of KRT patients as a proportion of the adult catchment population.

	N on KRT					Estimated catchment population (millions)	2021 crude rate (pmp)
Centre	2017	2018	2019	2020	2021		
ENGLAND							
Bham	385	370	372	332	352	2.05	171
Bradfd	82	71	106	83	80	0.49	163
Brightn	154	176	153	143	130	1.08	121
Bristol	157	166	165	131	157	1.22	128
Camb	94	121	135	136	150	0.94	160
Carlis	41	33	40	34	45	0.26	176
Carsh	229	244	229	296	294	1.63	180
Colchr	45	38	40	39	35	0.29	120
Covnt	120	128	141	141	150	0.80	189
Derby	89	84	90	72	88	0.56	157
Donc	56	52	53	47	44	0.38	117
Dorset	103	106	91	88	79	0.73	108
Dudley	58	53	56	61	60	0.34	174
EssexMS	142	125	149	127	134	0.99	135
Exeter*	140	132	157	105	157	0.95	165
Glouc	82	71	63	86	81	0.51	159
Hull	106	105	105	106	94	0.80	117
Ipswi	53	58	57	44	61	0.31	195
Kent	140	137	154	141	180	1.07	168
L Barts	342	344	311	320	253	1.59	159
L Guys	167	181	208	162	196	1.01	195
L Kings	170	150	186	159	219	0.93	234
L Rfree	236	244	265	232	283	1.33	213
L St.G	92	84	101	84	92	0.67	138
L West	408	392	392	364	418	1.96	213
Leeds	176	181	162	152	168	1.37	122
Leic	291	313	367	337	307	2.09	147
Liv Ain	55	66	57	53	63	0.43	146
Liv Roy	136	103	107	97	103	0.81	127
M RI	225	189	209	172	205	1.33	154
Middlbr	117	118	110	97	110	0.81	136
Newc	145	136	114	125	129	0.95	135
Norwch	80	83	105	96	96	0.69	139
Nottm	134	125	128	121	127	0.93	137
Oxford	217	216	203	203	193	1.45	133
Plymth	91	64	62	59	85	0.40	212
Ports	219	222	224	219	237	1.75	135
Prestn	169	180	156	167	197	1.23	160
Redng	105	103	116	100	107	0.70	153
Salford	173	161	172	173	143	1.15	124
Sheff	160	184	160	174	170	1.13	150

Table 2.2 Continued

Centre	N on KRT 2017	2018	2019	2020	2021	Estimated catchment population (millions)	2021 crude rate (pmp)
Shrew	62	77	66	45	62	0.41	151
Stevng	140	175	194	170	171	1.11	154
Stoke	100	105	100	117	131	0.73	179
Sund	95	89	88	68	69	0.55	126
Truro	59	61	55	45	71	0.36	198
Wirral	61	62	63	48	52	0.47	111
Wolve	90	94	95	109	121	0.55	220
York	59	51	58	47	49	0.49	101
TOTALS							
England	6,850	6,823	6,990	6,527	6,998	44.77	156
N Ireland	220	235	212	203	239	1.47	163
Scotland	634	605	561	536	585	4.45	131
Wales	386	415	402	353	353	2.49	142
UK	**8,090**	**8,078**	**8,165**	**7,619**	**8,175**	**53.19**	**154**

Country KRT populations were calculated by summing the KRT patients from centres in each country. Estimated country populations were derived from Office for National Statistics figures (see appendix A for details on estimated catchment population by kidney centre)

Firstly, it is worth noting that the incident number of patients receiving KRT in England is fairly static from 2017 through 2021. This is equally true for NEY centres. This suggests that up until 2021 at least, the numbers of new patients each year is not the primary driver behind any additional demand experienced by providers.

The rate per million population (PMP) is not particularly high across NEY compared with other regions or the England average (Carlise and Bradford are only slightly above the England average). Therefore, the numbers of new cases in the NEY region is unlikely to be a cause of any changing demand pattern up until 2021.

3.2 Adult KRT Country Incident Rates

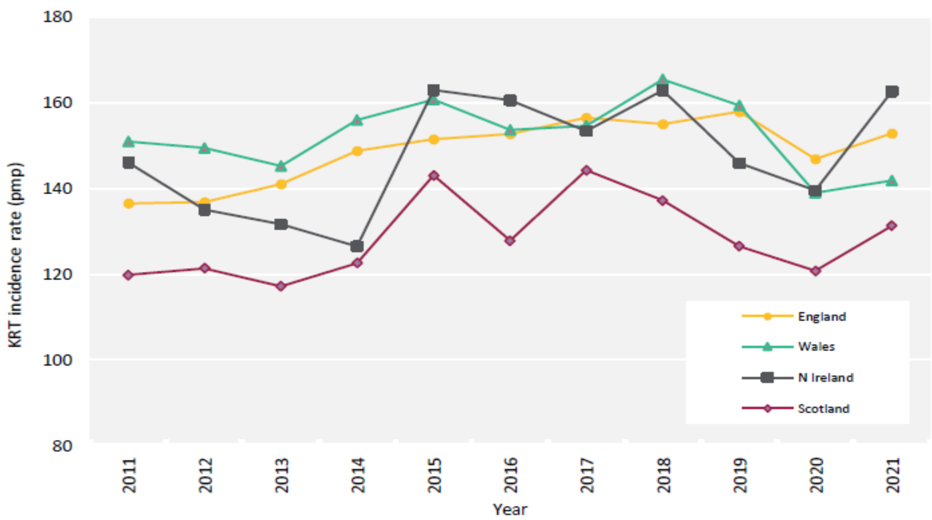


Figure 2.2 Adult KRT incidence rates by country between 2011 and 2021
pmp – per million population

Figure 2.2 displays the adult KRT incidence rates for the 4 UK countries from 2011 up until 2021. This longer-range trends shows a gradual rise from 2011 up until 2017, but although fluctuating, a more static trend between 2017 and 2021.

3.3 Age Groups Adult KRT Incidence

Figure 2.3 shows a break-down of the PMP incident rate for England by age group. It is in the 45-64 age group that the rate grew from 2011 up until 2017 where upon it has remained stable thereafter.

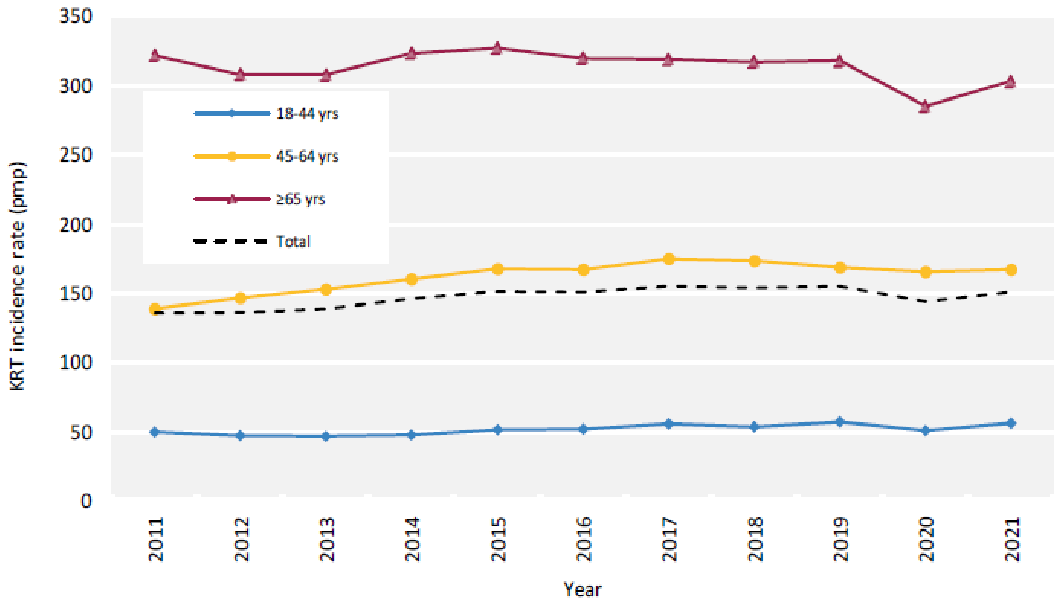


Figure 2.3 Adult KRT incidence rates by age group between 2011 and 2021
pmp – per million population

Figures 2.2 and 2.3 again reinforce the findings of table 2.1 – after 2017 and up until 2021 the numbers of new cases and incidence per million population has remained relatively stable and is unlikely to be driving any increased service demands.

3.4 Demographics and start modality of adult patients incident to KRT in 2021 by centre

Table 2.3 shows the adult incident patients on KRT broken down by treatment modality, age and ethnicity.

Nothing exceptional stands out in terms of overall treatment modality split for centres in our region which are largely in-line with England averages.

Again, for the variable of 'Age' there is nothing suggestive in the data that the NEY KRT population is different to other centres within England.

However, when looking at ethnicity Bradford stands out as having a much higher proportion of non-white (42.5%) compared to other centres in NEY (Leeds nearest NEY centre on 23.8%). This is due to the higher proportions of patients with Asian ethnicity. It should be noted that the Bradford ethnicity demographics are not dissimilar to those in many parts of London and also Birmingham. Carlisle also stands out in our region regarding ethnicity with 100% white ethnicity. This is in fact the only centre in the UK with a recorded 100% white ethnicity incident profile.

Another point to note is that Bradford (52.5%) and York (49 %) have the two lowest proportions of male patients (incident) in the country and therefore higher proportions of female patients starting treatment. This could have implications for prevalence and survival, as all things being equal women have a higher life expectancy than men.

Table 2.3 Demographics and start modality of adult patients incident to KRT in 2021 by centre

Centre	N on KRT	% on ICHD	% on PD	% on HHD	% on Tx	% pre-emptive listing/tx	Median age (yrs)	% male	Ethnicity % White	% Asian	% Black	% Other	% missing
ENGLAND													
Bham	352	67.6	29.0	0.6	2.8	12.8	64.1	65.9	60.6	26.7	10.3	2.4	6.3
Bradfd	80	72.5	27.5	0.0	0.0	11.3	62.1	52.5	57.5	35.0	1.3	6.3	0.0
Brightn	130	77.7	16.9	0.0	5.4	19.2	61.6	58.5	88.7	3.5	4.3	3.5	11.5
Bristol	157	71.3	22.9	0.0	5.7	17.2	59.9	60.5	81.0	8.5	8.5	2.1	9.6
Camb	150	72.7	8.7	0.0	18.7	22.0	64.8	64.0	94.5	3.9	0.8	0.8	15.3
Carlis	45	66.7	28.9	0.0	4.4	11.1	60.1	64.4	100.0	0.0	0.0	0.0	2.2
Carsh	294	79.6	20.1	0.0	0.3	4.8	64.1	61.2	66.7	18.4	8.0	6.9	11.2
Colchr	35	100.0	0.0	0.0	0.0	2.9	67.6	68.6	100.0	0.0	0.0	0.0	20.0
Covnt	150	75.3	19.3	0.7	4.7	13.3	67.6	68.0	82.7	12.7	4.7	0.0	0.0
Derby	88	62.5	27.3	6.8	3.4	13.6	66.5	60.2	83.5	12.7	1.3	2.5	10.2
Donc	44	79.6	20.5	0.0	0.0	13.6	63.2	61.4	97.7	2.3	0.0	0.0	2.3
Dorset	79	77.2	13.9	0.0	8.9	16.5	70.1	68.4	94.9	3.8	1.3	0.0	1.3
Dudley	60	83.3	16.7	0.0	0.0	13.3	61.0	75.0	76.7	18.3	3.3	1.7	0.0
EssexMS	134	67.2	29.9	0.0	3.0	5.2	67.6	73.9	86.3	3.4	7.7	2.6	12.7
Exeter*	157	77.7	18.5	0.6	3.2								
Glouc	81	80.3	16.1	0.0	3.7	16.0	67.5	64.2	86.8	5.3	5.3	2.6	6.2
Hull	94	80.9	18.1	0.0	1.1	3.2	61.0	62.8	96.8	3.2	0.0	0.0	1.1
Ipswi	61	85.3	8.2	0.0	6.6	14.8	72.9	62.3	84.2	1.8	5.3	8.8	6.6
Kent	180	77.8	20.0	0.0	2.2	10.6	65.5	66.1	91.4	2.9	2.3	3.4	3.3
L Barts	253	49.0	45.5	0.0	5.5	17.8	58.7	58.9	28.4	41.4	22.8	7.3	8.3
L Guys	196	78.6	14.3	0.0	7.1	15.3	63.2	59.7	51.0	11.1	32.7	5.2	21.9
L Kings	219	79.0	18.3	0.9	1.8	7.3	61.9	62.6	42.4	13.2	41.5	2.9	6.4
L Rfree	283	68.2	24.4	0.0	7.4	15.9	63.5	65.0	40.5	23.2	23.6	12.7	22.3
L St.G	92	63.0	28.3	0.0	8.7	25.0	60.3	70.7	36.0	20.0	16.0	28.0	18.5
L West	418	73.7	22.3	0.0	4.1	17.5	62.8	63.9	41.0	37.9	18.9	2.2	0.2
Leeds	168	79.2	13.7	0.6	6.6	25.6	61.3	65.5	76.2	15.5	6.0	2.4	0.0
Leic	307	78.8	18.6	0.0	2.6	13.7	66.1	66.5	72.6	20.7	4.4	2.2	12.1
Liv Ain	63	81.0	17.5	0.0	1.6	6.3	62.1	58.7	89.7	0.0	3.4	6.9	7.9
Liv Roy	103	68.0	16.5	2.9	12.6	18.4	58.3	68.0	93.6	3.2	1.1	2.1	8.7
M RI	205	62.0	22.0	6.3	9.8	20.5	62.8	62.4	60.5	16.2	20.4	3.0	18.5
Middlbr	110	85.5	9.1	0.0	5.5	12.7	63.2	59.1	93.1	3.9	2.0	1.0	7.3
Newc	129	69.8	19.4	0.0	10.9	24.0	62.9	67.4	89.8	4.7	2.3	3.1	0.8
Norwch	96	79.2	20.8	0.0	0.0	3.1	69.2	58.3	92.8	1.4	1.4	4.3	28.1
Nottm	127	58.3	36.2	0.0	5.5	19.7	63.6	73.2	85.5	8.1	5.6	0.8	2.4
Oxford	193	64.3	25.4	0.0	10.4	30.6	62.3	64.8					43.5
Plymth	85	70.6	17.7	0.0	11.8	23.5	63.1	70.6	98.8	0.0	0.0	1.2	2.4
Ports	237	74.7	17.3	3.4	4.6	13.5	66.1	58.7					30.4
Prestn	197	72.1	17.8	1.0	9.1	24.4	62.5	67.5	81.1	17.9	1.0	0.0	0.5
Redng	107	66.4	25.2	0.0	8.4	15.9	59.7	72.0	68.6	19.8	2.3	9.3	19.6
Salford	143	81.8	9.8	0.0	8.4	21.7	59.0	59.4	70.6	18.9	7.7	2.8	0.0
Sheff	170	70.0	24.1	0.6	5.3	14.1	62.0	62.9	89.1	4.8	4.2	1.8	2.9
Shrew	62	59.7	35.5	1.6	3.2	17.7	64.0	62.9	91.4	0.0	1.7	6.9	6.5
Stevng	171	79.0	16.4	1.2	3.5	11.7	63.0	69.6	66.7	21.3	8.0	4.0	12.3
Stoke	131	57.3	39.7	0.0	3.1	10.7	65.0	58.8	81.2	6.8	6.8	5.1	10.7

Table 2.3 Continued

Centre	N on KRT	% on ICHD	% on PD	% on HHD	% on Tx	% pre-emptive listing/tx	Median age (yrs)	% male	Ethnicity % White	% Asian	% Black	% Other	% missing
Sund	69	59.4	37.7	0.0	2.9	5.8	70.2	59.4	92.8	2.9	0.0	4.3	0.0
Truro	71	87.3	9.9	0.0	2.8	9.9	67.6	56.3	97.2	1.4	0.0	1.4	0.0
Wirral	52	71.2	28.9	0.0	0.0	5.8	67.4	67.3	98.1	0.0	1.9	0.0	0.0
Wolve	121	74.4	18.2	6.6	0.8	6.6	64.5	63.6	58.7	28.1	6.6	6.6	0.0
York	49	69.4	16.3	0.0	14.3	28.6	64.5	49.0	95.9	4.1	0.0	0.0	0.0

TOTALS													
England	6,998	72.4	21.7	0.7	5.2	15.1	63.6	63.9	72.1	15.0	9.2	3.7	9.8
N Ireland	239	67.8	18.4	0.0	13.8	25.1	66.8	60.3	98.8	1.2	0.0	0.0	27.6
Scotland	585	73.7	18.0	0.0	8.4	25.1	63.3	62.7					
Wales	353	79.6	13.9	0.6	6.0	12.7	64.0	68.3	96.1	2.6	1.3	0.0	12.2
UK	**8,175**	**72.6**	**21.0**	**0.7**	**5.7**	**16.1**	**63.7**	**63.9**	**74.0**	**14.0**	**8.6**	**3.4**	**10.5**

Blank cells - no data retuned by the centre or data completeness <70%

Breakdown by ethnicity is not shown for centres with <70% data completeness, but these centres were included in national averages

3.5 Modality trends KRT Adult Incident

Table 2.6 examines the KRT modality at the start and 90 days for incident adult KRT patients from 2015 through 2021.

There has not been significant change since 2016 in terms of modality at a National level, with the only change of note being the reduction in Tx during COVID years of 2020 and 2021 with a corresponding increase in the proportion on PD.

Table 2.6 KRT modality at start and 90 days after start of KRT for incident adult KRT patients by year of start

KRT start year	% on ICHD	% on HHD	% on PD	% with Tx
Day 0 modality				
2016	71.7	0.5	20.0	7.8
2017	71.5	0.4	19.2	9.0
2018	71.7	0.4	19.6	8.3
2019	71.0	0.4	20.1	8.4
2020	71.9	0.4	21.8	6.0
2021	72.5	0.7	21.0	5.8
Day 90 modality				
Oct 2015 - Sept 2016	68.5	0.9	20.4	10.2
Oct 2016 - Sept 2017	68.5	0.8	20.0	10.7
Oct 2017 - Sept 2018	69.1	1.0	19.8	10.2
Oct 2018 - Sept 2019	68.3	1.1	20.8	9.9
Oct 2019 - Sept 2020	69.8	1.0	21.5	7.7
Oct 2020 - Sept 2021	70.5	1.1	21.4	7.1

For 90 day analyses, the incident cohort from the 12 months starting 1 October of the previous year was used, so that follow-up to 90 days was possible for all patients

3.6 Modality at 1 year

Figure 2.6 highlights the adult KRT modality for patients starting KRT in 2020 by centre. NEY centres have been highlighted in yellow. There is significant variation across the UK in terms of starting modality, and variation within our region.

Some of our centres (Doncaster, York, Bradford, Middlesborough, Leeds) have lower proportions of patients on PD than the UK or England averages.

Figure 2.6 KRT modality at 1 year for incident adult KRT patients who started KRT in 2020 by centre

Number of patients in a centre in brackets

Out – moved out of a centre but did not reappear in another centre; Rec – recovered kidney function; Stop – treatment withdrawal

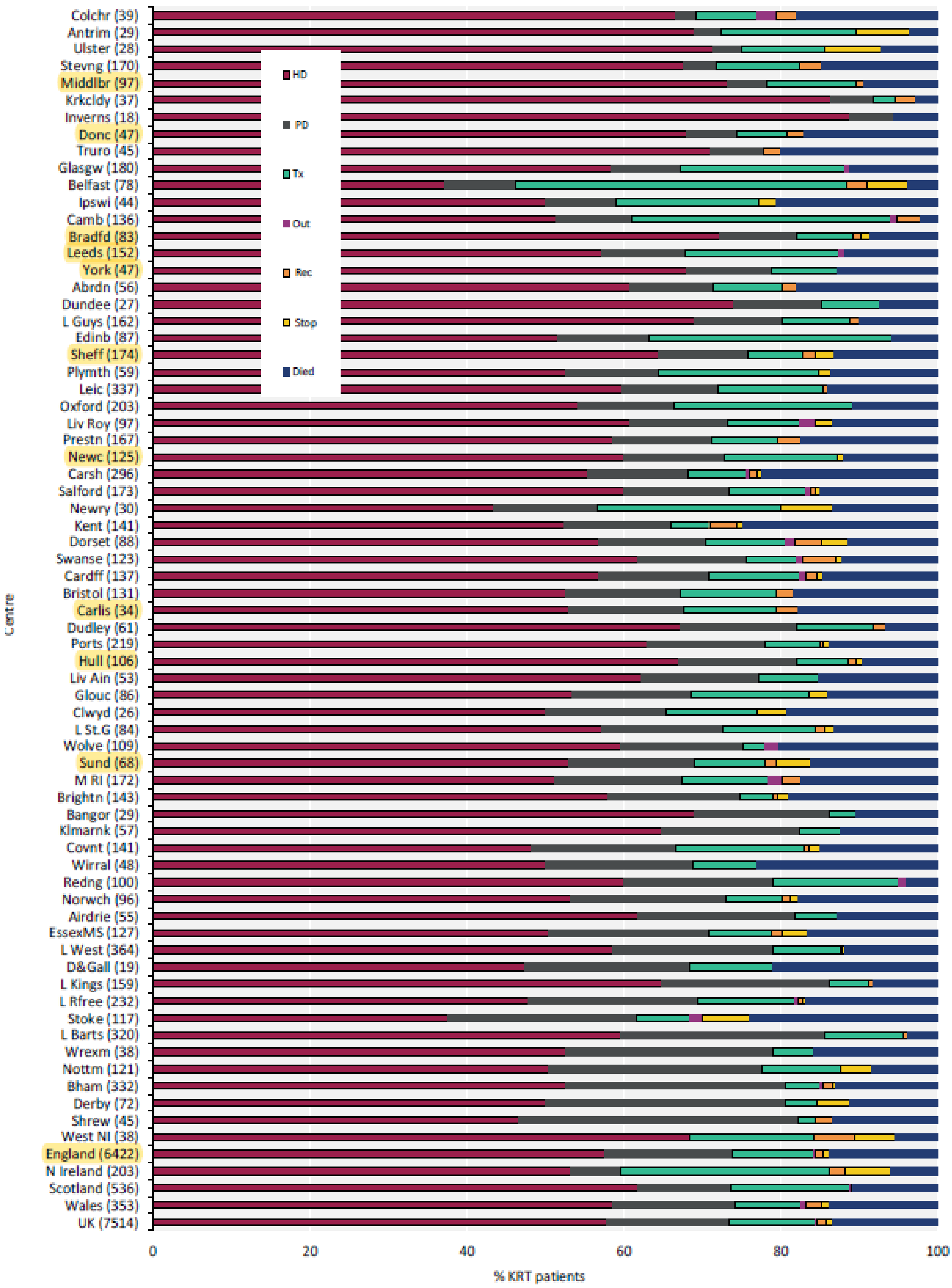
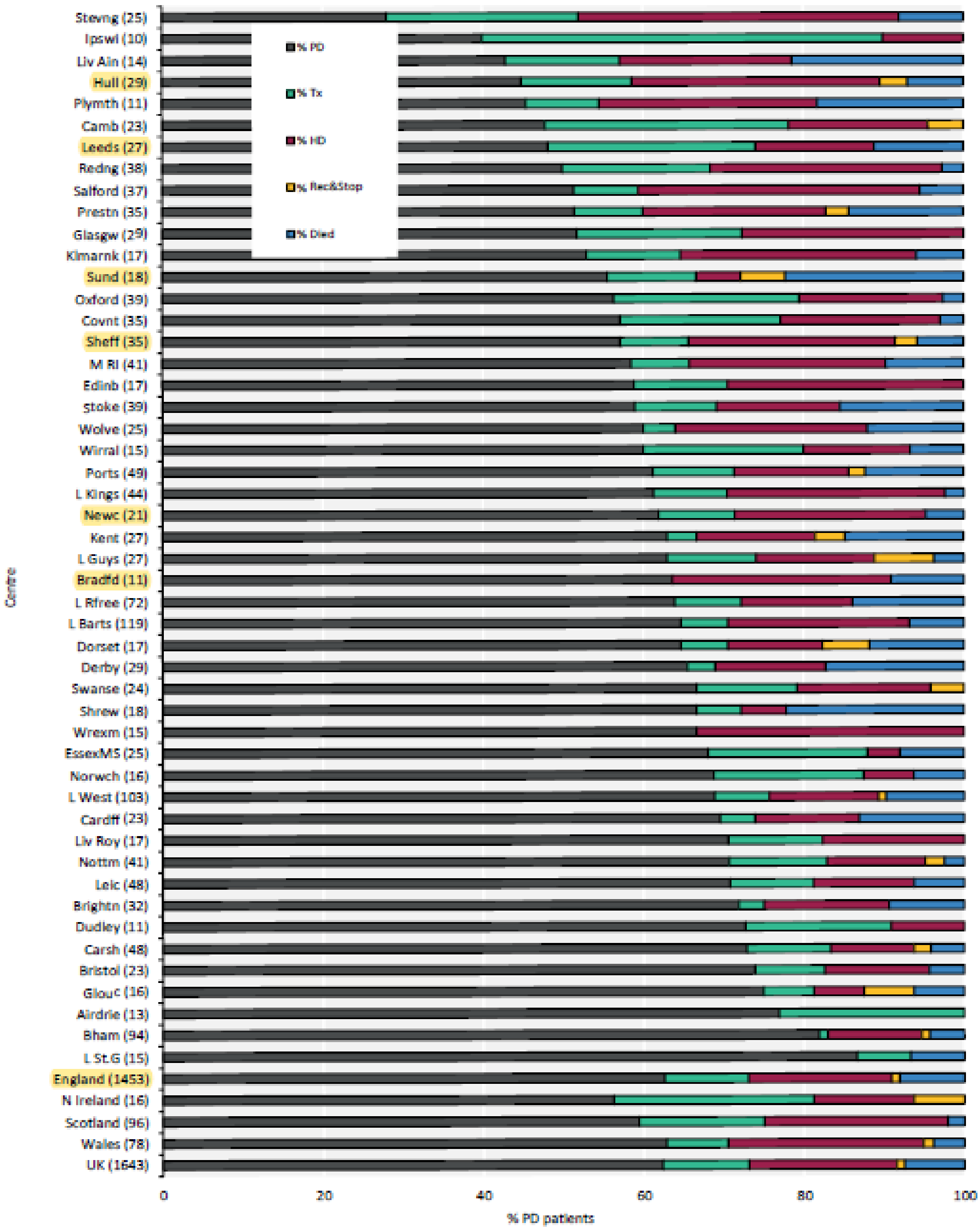


Figure 2.7 shows the KRT modality for the incident (new) adult PD patients who started KRT in 2020. The percentage on PD varies by centre across England and within NEY. One anomaly of note is that in this dataset there were no PD patients in Bradford who started KRT in 2020 who then received a transplant at 1 year. There is only one other centre (Wrexham) in the UK that is true for over the same time period.

Figure 2.7 KRT modality at 1 year for incident adult PD patients who started KRT in 2020 by centre
Number of patients in a centre in brackets
Rec – recovered kidney function; Stop – treatment withdrawal



3.7 Adult KRT Late presentation

Figure 2.8 displays the percentage of incident adult KRT patients presenting late to a nephrologist for a 2 year cohort (2019 – 2020). The majority of NEY centres have levels of late presentation below or similar to the national average.

Doncaster and Bradford had very low levels of late presentation. Hull is an outlier for (High) late presentation and the difference to the national average is statistically significant.

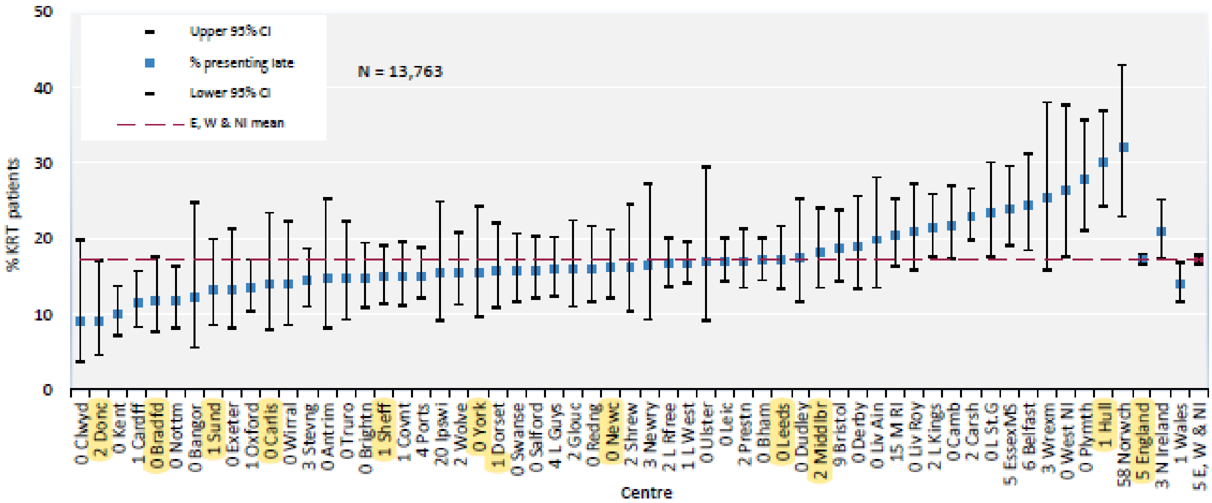


Figure 2.8 Percentage of incident adult KRT patients presenting late (<90 days) to a nephrologist (2019–2021 2 year cohort)
CI – confidence interval

3.8 UK Survival of incident Adult KRT Patients

Table 2.18 shows the UK survival of adult KRT patients (<65) between 2001 and 2020. Overall, the 10 year survival for under 65's is increasing year on year with roughly an extra 10% of patients surviving to 10 years for every ten cohorts of patients that has passed.

Table 2.18 Survival (unadjusted) of incident adult KRT patients aged <65 years (2001–2020)

	Unadjusted survival (%)									95% CI for longest survival	
Cohort	1 yr	2 yr	3 yr	4 yr	5 yr	6 yr	7 yr	8 yr	9 yr	10 yr		N
2020	92.2										91.3-92.9	4,142
2019	93.2	86.4									85.3-87.4	4,195
2018	92.9	86.9	80.1								78.8-81.3	4,253
2017	93.0	87.2	81.6	76.4							75.1-77.7	4,235
2016	92.9	87.5	82.1	77.2	71.4						69.9-72.8	4,015
2015	92.3	86.4	81.4	76.9	72.6	68.3					66.8-69.8	3,923
2014	92.8	86.8	81.4	77.0	73.4	69.2	65.0				63.5-66.6	3,668
2013	93.7	88.2	83.1	77.7	73.2	68.6	64.6	60.2			58.5-61.8	3,572
2012	93.1	87.4	81.9	76.9	72.6	68.6	64.9	60.9	57.5		55.8-59.1	3,516
2011	93.2	88.6	83.6	79.0	74.5	70.9	67.7	64.7	60.7	57.5	55.7-59.2	3,339
2010	92.3	86.6	81.7	77.4	72.8	69.6	66.4	62.5	59.5	56.6	54.9-58.3	3,363
2009	91.2	85.1	80.4	76.3	71.1	67.0	63.8	60.4	57.4	54.6	52.9-56.3	3,392
2008	91.5	86.0	81.2	76.9	73.2	69.6	65.7	62.4	59.4	56.5	54.8-58.2	3,450
2007	92.5	86.9	81.7	76.6	72.9	69.1	65.8	62.4	59.1	56.1	54.3-57.8	3,310
2006	90.6	84.9	80.0	75.5	71.7	67.9	63.7	60.8	57.8	55.1	53.3-56.8	3,149
2005	89.6	83.5	78.4	73.7	69.0	65.5	62.4	59.4	56.4	53.8	51.9-55.6	2,830
2004	89.6	83.3	77.9	72.5	67.8	64.0	60.9	57.1	54.6	53.0	51.0-54.9	2,536
2003	89.3	82.5	77.2	72.4	67.1	62.9	59.3	56.6	54.0	51.5	49.3-53.6	2,176
2002	88.8	81.1	75.2	69.6	65.5	61.5	58.0	55.0	51.9	49.8	47.5-52.0	1,981
2001	88.0	81.0	75.4	70.0	65.1	60.4	56.4	53.0	50.1	48.0	45.5-50.4	1,678

CI – confidence interval

Table 2.19 Survival (unadjusted) of incident adult KRT patients aged ≥65 years (2001–2020)

	Unadjusted survival (%)										95% CI for longest survival	
Cohort	1 yr	2 yr	3 yr	4 yr	5 yr	6 yr	7 yr	8 yr	9 yr	10 yr		N
2020	79.4										78.0-80.7	3,674
2019	80.0	64.4									62.8-65.8	3,949
2018	79.3	65.3	51.7								50.1-53.3	3,817
2017	79.3	67.4	53.6	42.0							40.4-43.6	3,834
2016	80.1	65.2	52.8	40.3	30.8						29.3-32.3	3,756
2015	78.2	64.8	52.2	42.0	32.0	24.8					23.5-26.2	3,811
2014	78.5	64.2	52.2	41.3	32.8	26.2	19.8				18.5-21.1	3,588
2013	78.5	64.6	53.1	42.9	34.5	27.6	20.7	15.5			14.3-16.8	3,436
2012	77.2	65.1	54.2	44.0	35.4	27.7	21.8	17.1	13.3		12.1-14.5	3,328
2011	77.2	62.7	51.2	41.1	32.4	24.7	18.9	14.4	11.1	7.9	7.0-8.9	3,353
2010	76.0	63.0	51.1	41.8	32.1	25.4	19.6	14.5	11.3	8.3	7.4-9.3	3,282
2009	76.4	63.0	52.4	41.4	32.8	26.1	20.0	15.3	11.2	8.2	7.3-9.2	3,376
2008	74.6	61.0	49.7	40.3	32.0	25.6	20.4	16.1	12.1	9.0	8.0-10.0	3,180
2007	74.9	61.1	49.5	40.3	31.8	25.2	20.0	15.3	11.7	9.1	8.1-10.1	3,219
2006	72.0	58.1	46.8	37.2	28.8	22.9	17.4	13.2	10.5	8.3	7.4-9.4	3,110
2005	71.2	57.3	45.5	36.3	27.9	21.2	16.6	12.5	9.9	7.7	6.8-8.8	2,942
2004	68.9	53.9	42.2	33.8	26.6	20.8	16.1	12.8	9.7	7.4	6.4-8.5	2,599
2003	68.3	53.2	41.4	31.6	24.3	18.1	14.0	10.8	8.2	6.5	5.5-7.6	2,230
2002	65.9	50.9	40.4	31.8	24.0	18.4	13.7	10.8	8.1	6.4	5.4-7.5	2,039
2001	66.1	51.7	38.2	28.6	21.4	15.9	11.9	8.7	7.0	5.4	4.3-6.6	1,636

CI – confidence interval

Table 2.19 displays the UK survival of incident adult KRT patients aged 65 or over between 2001 and 2020. For the over 65′s, 10 year survival has not increased by the same rate as for under 65′s, with about a 2-3% increase in patients surviving to 10 years over a 10 cohort period. The total proportion of incident over 65 patients surviving to 10 years is just 7.9% (patients starting treatment in 2010) compared with 57.5% for under 65′s.

For both the under and over 65′s we do not yet have the 10 year survival data for those starting KRT treatment on or after 2012, but it is highly likely that the increased 10 year survival trend will have continued.

As each cohort of patients is surviving longer, this will lead to an increased prevalence of KRT over the long-term. This is great news for patients on dialysis – however services will need to be able to respond to the cumulative demand.

3.9 Prevalent Adult KRT

Table 3.1 displays the number of prevalent (total number - new and existing per year) adult KRT patients from 2017 to 2021 and also includes a crude rate 9 per million population (PMP) by each treatment centre.

Between 2017 and 2021 there has been a gradual rise in patient numbers across the different centres in the UK as a whole – with the average around the 8-9% mark. This is not true of all centres in our region – Doncaster for example did not see a prevalent rise during these years, whereas Leeds and Bradford saw rises similar to the national average.

The Prevalent crude rate (total number of patients in a service each year per million population) has most NEY centres in line with or below England average (all of NENC centres are below the England rate of 1,314 pmp). So collectively as a region, we are *not* seeing a higher prevalence of dialysis than the England average. The exception here is Bradford which is higher than the England average and highest in the region PMP. However, there are 7 centres in England with a higher PMP than Bradford.

Table 3.1 Number of prevalent adult KRT patients by year and by centre; number of KRT patients as a proportion of the catchment population

	N on KRT						
Centre	2017	2018	2019	2020	2021	Estimated catchment population (millions)	2021 crude rate (pmp)
ENGLAND							
Bham	3,174	3,249	3,312	3,261	3,309	2.05	1,611
Bradfd	674	688	732	724	735	0.49	1,496
Brightn	1,012	1,055	1,064	1,077	1,092	1.08	1,013
Bristol	1,473	1,471	1,487	1,476	1,497	1.22	1,225
Camb	1,336	1,387	1,456	1,509	1,629	0.94	1,739
Carlis	281	293	301	297	305	0.26	1,194
Carsh	1,696	1,752	1,781	1,850	1,907	1.63	1,170
Colchr	129	122	145	150	145	0.29	497
Covnt	966	959	1,076	1,102	1,119	0.80	1,407
Derby	555	586	654	676	689	0.56	1,227
Donc	333	330	342	341	339	0.38	903
Dorset	730	764	773	798	786	0.73	1,077
Dudley	366	360	366	372	398	0.34	1,157
EssexMS	831	844	851	885	895	0.99	900
Exeter	1,057	1,083	1,089	1,092	1,077	0.95	1,130
Glouc	511	522	531	522	546	0.51	1,070
Hull	872	880	904	914	919	0.80	1,148
Ipswi	436	428	428	426	421	0.31	1,347
Kent	1,091	1,112	1,139	1,143	1,192	1.07	1,114
L Barts	2,498	2,600	2,659	2,685	2,750	1.59	1,729
L Guys	2,166	2,231	2,321	2,317	2,322	1.01	2,307
L Kings	1,155	1,183	1,247	1,252	1,334	0.93	1,428
L Rfree	2,191	2,233	2,344	2,337	2,380	1.33	1,792
L St.G	839	834	852	852	866	0.67	1,302
L West	3,475	3,560	3,607	3,531	3,556	1.96	1,810
Leeds	1,619	1,683	1,727	1,752	1,784	1.37	1,299
Leic	2,357	2,452	2,580	2,621	2,640	2.09	1,265
Liv Ain	210	217	226	242	264	0.43	611
Liv Roy	1,253	1,271	1,258	1,208	1,207	0.81	1,486
M RI	2,052	2,066	2,048	1,986	2,077	1.33	1,556
Middlbr	904	930	953	946	955	0.81	1,183
Newc	1,116	1,153	1,172	1,197	1,226	0.95	1,286
Norwch	781	788	810	808	784	0.69	1,136
Nottm	1,184	1,197	1,217	1,210	1,220	0.93	1,313
Oxford	1,880	1,943	1,973	2,016	2,003	1.45	1,385
Plymth	541	540	535	542	548	0.40	1,365
Ports	1,746	1,763	1,881	1,899	1,941	1.75	1,109
Prestn	1,272	1,322	1,342	1,368	1,379	1.23	1,117
Redng	795	814	862	869	877	0.70	1,256
Salford	1,117	1,173	1,243	1,268	1,215	1.15	1,054
Sheff	1,442	1,482	1,489	1,490	1,496	1.13	1,319
Shrew	387	430	437	427	442	0.41	1,077

Table 3.1 Continued

Centre	N on KRT 2017	2018	2019	2020	2021	Estimated catchment population (millions)	2021 crude rate (pmp)
Stevng	884	938	961	974	1,014	1.11	913
Stoke	811	806	806	813	845	0.73	1,154
Sund	544	560	570	556	547	0.55	999
Truro	425	437	450	445	461	0.36	1,287
Wirral	390	400	416	414	412	0.47	877
Wolve	583	609	614	655	691	0.55	1,259
York	557	569	582	572	581	0.49	1,196
TOTALS							
England	54,697	56,069	57,613	57,867	58,817	44.77	1,314
N Ireland	1,836	1,922	1,932	1,993	2,030	1.47	1,381
Scotland	5,099	5,242	5,355	5,336	5,376	4.45	1,207
Wales	3,169	3,252	3,316	3,272	3,274	2.49	1,315
UK	**64,801**	**66,485**	**68,216**	**68,468**	**69,497**	**53.19**	**1,307**

Country KRT populations were calculated by summing the KRT patients from centres in each country. Estimated country populations were derived from Office for National Statistics figures (see appendix A for details on estimated catchment population by kidney centre)

3.10 Adult KRT Prevalence Country Rate

Figure 3.2 displays the per million population rate for each of the four UK countries as a line graph for easier interpretation, with a longer trend analysis back to 2011. Here you can clearly see the year-on-year increase in the prevalence of adult KRT. The rate of growth is greater up until 2018 where it begins to slow, even prior to the COVID outbreak. Also note how (other than for Northern Ireland) each of the countries increase faltered from 2019 to 2021 (COVID restrictions).

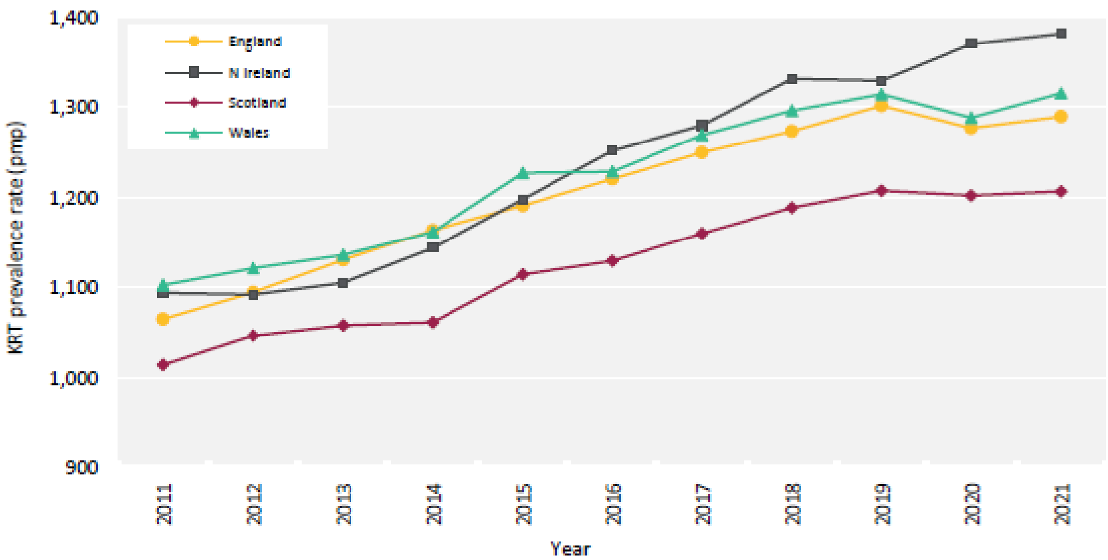


Figure 3.2 Adult KRT prevalence rates by country between 2011 and 2021

pmp – per million population

3.11 Adult KRT Prevalence rates by Age Group

Figure 3.3 shows the Adult KRT prevalence rates by age group. The increased prevalence for the over 45 and over 65 groups is likely related to increased survival, up until the impact of the COVID pandemic in 2019/20.

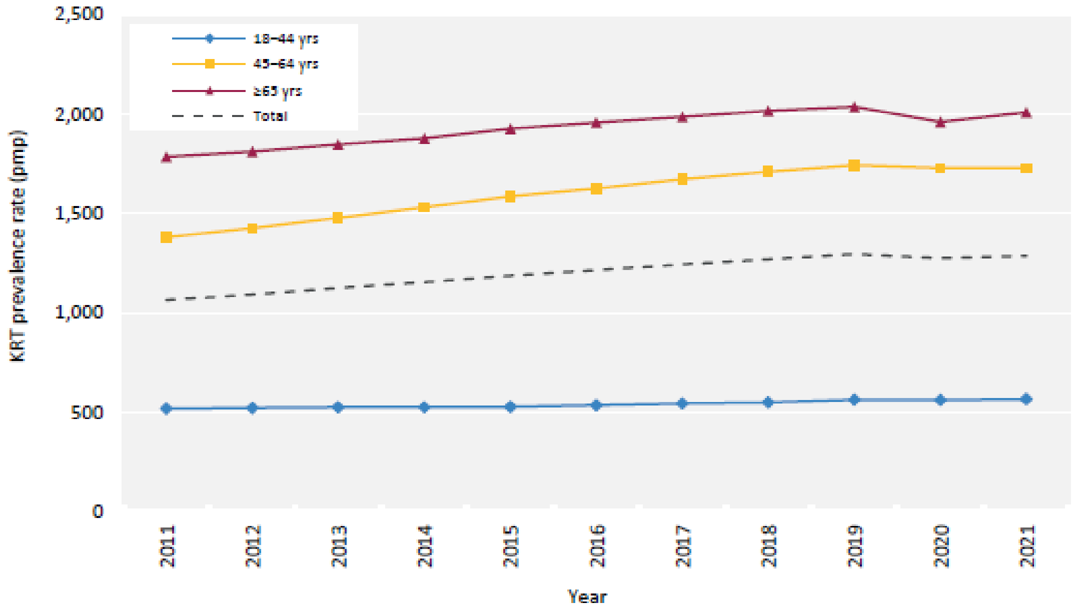


Figure 3.3 Adult KRT prevalence rates by age group between 2011 and 2021
pmp – per million population

3.12 Demographics and start modality of adult patients prevalent to KRT in 2021 by centre

Table 3.2 shows the adult incident patients on KRT broken down by treatment modality, age and ethnicity for 2021.

Nothing exceptional stands out in terms of overall treatment modality split for centres in our region which are largely in-line with England averages.

For the variable of Age (median years) it is worth noting that Bradford has the lowest prevalent median age of any centre in the country at 56.7 yrs.

As with incident adult patients, the percentage of adult prevalent patients who are non-white is higher in Bradford (48.8%) compared to other centres in NEY and the UK average. This is due to the higher proportions of patients with Asian ethnicity. It should be noted that the Bradford ethnicity demographics are not dissimilar to those in many parts of London and also Birmingham.

The lower prevalent age in Bradford may be associated with the ethnicity profile and/or the higher proportion of female patients noted previously, or related to the very low levels of late referrals that Bradford experiences (or any combination of these and other factors).

Table 3.2 Demographics and treatment modality of adult patients prevalent to KRT on 31/12/2021 by centre

								Ethnicity				
Centre	N on KRT	% on ICHD	% on PD	% on HHD	% with Tx	Median age (yrs)	% male	% White	% Asian	% Black	% Other	% missing
ENGLAND												
Bham	3,309	40.7	8.4	2.1	48.8	58.9	59.2	56.7	29.6	10.8	2.9	1.5
Bradfd	735	37.4	5.0	1.0	56.6	56.7	60.0	51.2	43.7	2.7	2.4	0.0
Brightn	1,092	38.8	6.3	2.7	52.1	61.3	62.4	89.4	6.1	2.1	2.4	3.7
Bristol	1,497	31.8	5.1	1.2	61.9	59.0	61.0	88.4	4.0	5.7	1.9	1.1
Camb	1,629	21.8	1.8	1.5	75.0	58.0	63.1	90.0	5.9	2.5	1.6	3.2
Carlis	305	37.4	9.8	1.0	51.8	60.1	60.7	99.0	1.0	0.0	0.0	0.0
Carsh	1,907	46.4	7.0	1.5	45.1	61.7	61.3	65.7	17.3	11.2	5.7	3.9
Colchr	145	100.0	0.0	0.0	0.0	73.7	64.8	96.4	0.7	0.7	2.2	4.8
Covnt	1,119	33.1	7.2	2.0	57.7	59.9	62.5	77.9	16.8	5.1	0.2	0.2
Derby	689	38.0	9.6	8.0	44.4	61.8	63.1	82.3	12.2	2.9	2.5	1.6
Donc	339	51.6	3.8	1.5	43.1	62.4	61.7	93.8	3.0	1.2	2.1	0.6
Dorset	786	38.7	2.9	1.8	56.6	65.5	60.8	96.4	1.7	0.4	1.5	0.0
Dudley	398	55.3	10.1	2.5	32.2	63.6	64.8	78.6	14.6	5.8	1.0	0.0
EssexMS	895	47.9	10.4	2.3	39.3	63.1	66.3	85.3	5.9	5.3	3.4	3.9
Exeter	1,077	44.2	6.8	1.5	47.5							
Glouc	546	41.4	6.6	0.0	52.0	63.2	61.9	90.9	3.9	2.8	2.4	1.3
Hull	919	39.3	5.7	1.3	53.8	59.3	64.2	95.7	2.3	1.0	1.0	0.5
Ipswi	421	33.3	7.8	0.5	58.4	63.1	62.5	82.4	2.2	4.5	10.9	4.0
Kent	1,192	38.4	6.0	1.5	54.0	60.7	60.9	91.7	3.3	2.1	2.9	1.4
L Barts	2,750	39.8	9.4	0.9	49.9	58.0	58.9	32.3	35.3	25.3	7.2	2.3
L Guys	2,322	31.4	3.0	1.8	63.8	57.1	59.1	57.8	10.4	27.3	4.5	4.0
L Kings	1,334	50.4	7.3	2.5	39.7	59.6	60.6	42.5	14.5	38.8	4.3	1.5
L Rfree	2,380	30.9	7.3	0.4	61.4	58.5	60.5	42.5	22.8	22.6	12.1	7.5
L St.G	866	37.2	6.1	0.6	56.1	60.0	59.0	40.2	25.2	23.6	11.1	5.4
L West	3,556	36.3	6.0	1.0	56.6	61.0	61.6	38.1	36.5	19.2	6.2	0.1
Leeds	1,784	32.5	3.0	0.9	63.6	57.6	61.3	76.2	16.8	5.4	1.6	0.2
Leic	2,640	38.0	5.2	1.8	55.0	60.3	60.9	72.9	20.3	5.2	1.7	4.7
Liv Ain	264	68.6	8.3	4.9	18.2	62.4	63.3	94.2	1.2	1.9	2.7	2.3
Liv Roy	1,207	30.7	2.7	3.6	63.0	58.0	61.0	90.4	3.2	3.4	3.0	1.9
M RI	2,077	24.6	4.7	4.0	66.7	57.9	59.9	66.6	13.8	17.4	2.2	2.6
Middlbr	955	36.5	2.1	1.8	59.6	59.8	63.9	93.5	4.5	0.7	1.3	0.8
Newc	1,226	28.6	4.7	1.5	65.2	59.5	60.2	92.9	4.5	1.2	1.4	0.2
Norwch	784	36.2	5.7	1.3	56.8	62.6	60.6	96.8	1.2	0.9	1.1	3.2
Nottm	1,220	29.8	8.4	2.3	59.5	58.6	61.8	81.0	8.5	7.7	2.7	0.2
Oxford	2,003	23.1	3.3	0.9	72.6	58.4	61.3	78.9	11.2	5.1	4.8	14.3
Plymth	548	30.1	6.2	0.0	63.7	62.4	66.6	97.3	0.7	0.4	1.6	0.0
Ports	1,941	33.4	4.6	4.4	57.5	60.5	60.2	91.9	4.5	1.1	2.5	9.3
Prestn	1,379	36.3	4.0	3.0	56.6	59.6	60.9	82.5	15.9	0.9	0.7	0.0
Redng	877	34.7	5.7	1.0	58.6	60.1	62.7	64.6	23.4	5.5	6.5	6.5
Salford	1,215	33.9	6.9	2.6	56.6	58.5	61.0	76.5	17.7	3.7	2.1	0.0
Sheff	1,496	37.0	5.5	3.7	53.7	59.5	62.8	87.8	6.8	2.7	2.7	1.8
Shrew	442	41.4	11.5	8.4	38.7	61.8	64.3	90.6	3.9	2.3	3.2	1.8
Stevng	1,014	52.2	3.6	3.8	40.4	61.6	62.8	70.9	17.1	9.2	2.9	3.2
Stoke	845	31.4	12.7	4.9	51.1	59.6	63.3	89.5	5.9	2.3	2.2	3.8

Table 3.2 Continued

								Ethnicity				
Centre	N on KRT	% on ICHD	% on PD	% on HHD	% with Tx	Median age (yrs)	% male	% White	% Asian	% Black	% Other	% missing
Sund	547	39.3	6.8	1.8	52.1	60.3	59.6	95.2	3.3	0.6	0.9	0.4
Truro	461	39.9	4.8	1.1	54.2	63.4	58.6	98.0	0.7	0.0	1.3	0.0
Wirral	412	46.6	4.9	1.5	47.1	61.0	64.3	96.1	1.9	1.2	0.7	0.0
Wolve	691	50.1	9.3	5.5	35.2	59.9	61.2	60.3	27.7	10.0	2.0	0.1
York	581	32.7	4.6	2.9	59.7	61.3	60.6	95.7	1.6	0.3	2.4	0.5

TOTALS												
England	58,817	36.4	5.9	2.1	55.6	59.7	61.2	71.9	15.1	9.5	3.5	2.8
N Ireland	2,030	26.5	3.3	0.8	69.5	60.0	60.9	97.9	1.4	0.5	0.2	4.3
Scotland	5,376	34.2	3.6	0.9	61.3	59.5	60.9					62.0
Wales	3,274	36.7	4.5	3.5	55.3	60.1	63.3	94.0	3.9	0.8	1.3	2.3
UK	69,497	36.0	5.6	2.0	56.4	59.7	61.3	74.3	13.9	8.6	3.2	7.5

Table 3.4 Change in adult KRT prevalence rates by modality between 2017 and 2021

	Prevalence (pmp)					% growth in prevalence				
Year	HD	PD	Dialysis	Tx	KRT	HD	PD	Dialysis	Tx	KRT
2017	490	67	558	687	1,244					
2018	490	68	558	711	1,269	-0.1	1.2	0.1	3.5	2.0
2019	490	69	559	736	1,295	0.0	1.3	0.2	3.5	2.0
2020	477	71	548	726	1,274	-2.6	2.6	-2.0	-1.4	-1.6
2021	487	72	559	727	1,286	2.1	1.5	2.0	0.2	1.0
Average annual growth 2017-2021						**-0.1**	**1.6**	**0.1**	**1.5**	**0.8**

pmp – per million population

Table 3.4 displays the changes to the national adult KRT prevalent rates by modality between 2017 and 2021. There has been a slight growth in Peritoneal Dialysis over this time period (average annual growth of 1.6% per annum) and similarly for transplant (1.5% per year average growth).

For the two years prior to the COVID outbreak (2018 and 2019 (Outbreak start in December 2019) the average KRT prevalence growth was 2% per year.

Overall KRT prevalence has risen by an average of 0.8% per year between 2017 and 2021, and 2% per year during the two fastest years of growth (2018 and 2019). That growth rate is less than the annual contractual uplift to NHS England specialised (and Hospital Trust) budgets, and therefore any financial pressures experienced by Trusts as a result of increases in prevalence (and total patient numbers) from 2017 until 2021 have already been accounted for within their budgets during this time.

3.13 Detailed analysis of Adult Prevalent modality by centre – HHD/Main Site/Satellite

In the analysis of the detailed dialysis modality by centre in Table 3.7 one can see that Bradford has a high proportion of patients on HD receiving their care at the Main Hospital site (73.7%) with very little Satellite provision relative to other centres in our region. (Please note that Bradford's 'Main Hospital Site' for renal dialysis is not the Bradford Royal Infirmary but is at St. Lukes).

Although there are other centres in England with a similar distribution it is by far the highest within NEY and over 42% higher than the England Average. This difference in the distribution of dialysis modality may not have any significance, but it is worth considering in relation to total dialysis capacity in Bradford and whether the reliance on a main hospital site impacts on future growth of provision.

At the other end of the spectrum is Leeds with 74.7% of dialysis being satellite provision, the highest in the region, and Middlesborough with 61.7%.

Table 3.7 Adult patients prevalent to dialysis on 31/12/2021 by detailed dialysis modality and centre

Centre	N on dialysis	% Tx wait-listed <65 yrs	% Tx wait-listed ≥65 yrs	% on HD				% on PD		
				All HD	HHD	Hospital	Satellite	All PD	CAPD	APD
ENGLAND										
Bham	1,694	34.2	5.1	83.7	4.0	28.6	51.0	16.4	3.0	13.4
Bradfd	319	34.3	5.8	88.4	2.2	73.7	12.5	11.6	7.8	3.8
Brightn	523	34.5	5.9	86.8	5.7	38.2	42.8	13.2	8.4	4.8
Bristol	571	31.6	4.7	86.5	3.2	15.1	68.3	13.5	8.1	5.4
Camb	408	26.0	1.6	92.9	5.9	34.6	52.5	7.1	4.9	2.2
Carlis	147	31.2	5.7	79.6	2.0	46.9	30.6	20.4	4.8	15.7
Carsh	1,047	27.2	4.3	87.2	2.7	20.7	63.8	12.8	3.3	9.5
Colchr	145	6.1	3.1	100.0	0.0	69.0	31.0	0.0	0.0	0.0
Covnt	473	38.7	6.4	82.9	4.7	78.2	0.0	17.1	17.1	0.0
Derby	383	32.2	4.7	82.8	14.4	60.1	8.4	17.2	11.5	5.7
Donc	193	25.0	6.7	93.3	2.6	53.4	37.3	6.7	2.6	4.2
Dorset	341	31.8	10.4	93.3	4.1	23.8	65.4	6.7	2.4	4.1
Dudley	270	29.8	5.1	85.2	3.7	35.6	45.9	14.8	9.6	5.2
EssexMS	543	33.8	2.6	82.9	3.9	72.4	6.6	17.1	2.6	12.3
Exeter										
Glouc	262	34.0	8.0	86.3	0.0	73.7	12.6	13.7	0.8	13.0
Hull	425	22.3	5.5	87.8	2.8	42.8	42.1	12.2	7.1	5.2
Ipswi	175	17.7	2.7	81.1	1.1	74.3	5.7	18.9	10.3	7.4
Kent	548	29.1	6.8	86.9	3.3	29.2	54.4	13.1	11.0	2.2
L Barts	1,377	36.1	5.5	81.3	1.8	32.5	47.0	18.7	9.2	9.6
L Guys	841	36.4	7.5	91.7	4.9	14.0	72.8	8.3	1.8	6.5
L Kings	804	25.9	5.4	87.8	4.2	15.1	68.5	12.2	5.0	7.2
L Rfree	918	34.4	9.4	81.2	1.1	2.9	77.1	18.9	8.8	10.0
L St.G	380	41.9	8.8	86.1	1.3	28.2	56.6	14.0	2.4	11.6
L West	1,542	49.5	15.5	86.1	2.3	14.6	69.2	13.9	10.6	3.3
Leeds	649	35.2	12.3	91.8	2.5	14.6	74.7	8.2	2.0	6.2
Leic	1,188	36.2	10.0	88.4	4.0	15.2	69.2	11.6	2.0	9.6
Liv Ain	216	20.4	7.4	89.8	6.0	13.4	70.4	10.2	1.9	8.3
Liv Roy	446	23.3	9.5	92.8	9.9	28.3	54.7	7.2	3.8	3.4
M RI	692	35.5	13.9	86.0	12.1	12.9	61.0	14.0	6.4	7.7
Middlbr	386	35.1	4.7	94.8	4.4	28.8	61.7	5.2	5.2	0.0
Newc	427	33.0	8.1	86.4	4.2	57.4	24.8	13.6	1.4	12.2
Norwch	339	14.6	.	86.7	3.0	47.2	36.6	13.3	9.7	3.5
Nottm	494	35.7	5.7	79.2	5.7	31.0	42.5	20.9	5.5	15.4
Oxford	548	41.8	11.8	88.0	3.5	31.4	53.1	12.0	4.0	8.0
Plymth	199	31.5	5.6	82.9	0.0	77.9	5.0	17.1	6.0	11.1
Ports	824	30.5	9.4	89.1	10.3	18.7	60.1	10.9	3.8	7.2
Prestn	598	35.8	11.4	90.8	7.0	17.7	66.1	9.2	2.3	6.9
Redng	363	37.7	5.3	86.2	2.5	32.2	51.5	13.8	11.3	2.5
Salford	527	41.1	21.6	84.1	5.9	20.1	58.1	15.9	7.4	8.5
Sheff	692	29.1	6.2	88.2	8.1	44.5	35.6	11.9	3.8	8.1
Shrew	271	29.2	5.3	81.2	13.7	39.5	28.0	18.8	1.5	17.0
Stevng	604	32.5	7.9	94.0	6.5	50.5	37.1	6.0	2.8	3.2
Stoke	413	31.4	4.8	74.1	9.9	42.1	22.0	25.9	3.2	18.2
Sund	262	31.0	7.5	85.9	3.8	48.5	33.6	14.1	1.5	12.6
Truro	211	31.3	6.1	89.6	2.4	49.3	37.9	10.4	4.3	6.2
Wirral	218	31.0	12.7	90.8	2.8	40.8	47.3	9.2	0.9	8.3
Wolve	448	28.9	4.7	85.7	8.5	70.3	6.9	14.3	2.0	11.2
York	234	37.1	7.3	88.5	7.3	30.8	50.4	11.5	2.1	9.4
TOTALS										
England	25,578	33.6	7.7	86.6	4.7	31.7	50.2	13.4	5.4	7.8
N Ireland	620	26.9	4.7	89.2	2.6	86.6	0.0	10.8	1.6	8.4
Scotland	2,081	41.0	9.9	90.6	2.3	88.4	0.0	9.4	3.1	6.3
Wales	1,463	27.2	6.8	90.0	7.9	35.7	46.4	10.0	4.5	5.5
UK	**29,742**	**33.7**	**7.7**	**87.1**	**4.6**	**37.0**	**45.5**	**12.9**	**5.1**	**7.6**

The proportion of patients on HHD versus satellite HD is displayed in figure 3.10, this time as a bar chart. The remaining patients not displayed on the chart are receiving dialysis at the main hospital site.

Bradford (2.2%) in particular has a low proportion of patients on Satellite Haemodialysis compared with Main Hospital based dialysis. Although again it should be stated that there is significant variation by region and across the country. A number of NEY Trusts have relatively low level of home haemodialysis (Carlisle (2.0%), Bradford (2.2%), Leeds (2.5%), Doncaster (2.6%), Hull (2.8%) in particular).

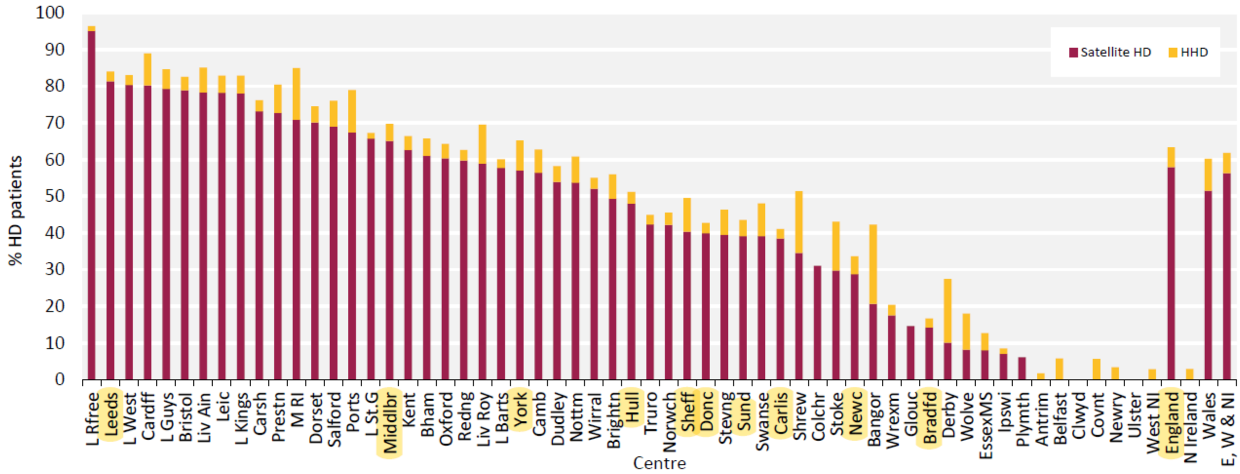


Figure 3.10 Adult patients prevalent to HD on 31/12/2021 treated with satellite HD or HHD by centre

3.14 Number of prevalent adult PD patients & proportion of KRT patients on PD by Centre and Year

Table 6.2 highlights that there is variation in the proportions of KRT patients on PD by NEY centre. Leeds (3% & 39 pmp) and Middlesborough (2.1% & 25 pmp) are quite low compared with national average (5.9% & 78 pmp). Carlisle has the highest proportion of KRT patients on PD (119 pmp).

The change in number and proportion of adult patients on PD is different at different centres. Bradford, Sheffield, Sunderland and Middlesborough has seen a growth in percentage of PD patients between 2017 and 2021; whereas Doncaster and York have seen a fall in the proportion of patients on PD. Other centres have remained relatively stable. The reason for this difference is not clear. Overall, the England average has shown a slight growth during these years.

Table 6.2 Number of prevalent adult PD patients and proportion of adult KRT patients on PD by year and by centre; number of PD patients as a proportion of the catchment population

	N on PD					% on PD					Estimated catchment population	2021 crude rate
Centre	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	(millions)	(pmp)
ENGLAND												
Bham	249	257	257	268	277	7.8	7.9	7.8	8.2	8.4	2.05	135
Bradfd	20	26	34	26	37	3.0	3.8	4.6	3.6	5.0	0.49	75
Brightn	59	60	55	65	69	5.8	5.7	5.2	6.0	6.3	1.08	64
Bristol	58	56	63	68	77	3.9	3.8	4.2	4.6	5.1	1.22	63
Camb	26	32	28	26	29	1.9	2.3	1.9	1.7	1.8	0.94	31
Carlis	27	30	35	32	30	9.6	10.2	11.6	10.8	9.8	0.26	117
Carsh	96	99	72	121	134	5.7	5.7	4.0	6.5	7.0	1.63	82
Colchr	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.29	0
Covnt	52	52	81	84	81	5.4	5.4	7.5	7.6	7.2	0.80	102
Derby	78	78	62	69	66	14.1	13.3	9.5	10.2	9.6	0.56	118
Donc	29	23	25	19	13	8.7	7.0	7.3	5.6	3.8	0.38	35
Dorset	35	38	33	34	23	4.8	5.0	4.3	4.3	2.9	0.73	32
Dudley	57	38	36	32	40	15.6	10.6	9.8	8.6	10.1	0.34	116
EssexMS	93	87	85	83	93	11.2	10.3	10.0	9.4	10.4	0.99	94
Exeter	75	77	84	84	73	7.1	7.1	7.7	7.7	6.8	0.95	77
Glouc	45	37	31	30	36	8.8	7.1	5.8	5.7	6.6	0.51	71
Hull	56	45	49	57	52	6.4	5.1	5.4	6.2	5.7	0.80	65
Ipswi	45	40	42	33	33	10.3	9.3	9.8	7.7	7.8	0.31	106
Kent	51	43	50	62	72	4.7	3.9	4.4	5.4	6.0	1.07	67
L Barts	236	237	228	266	258	9.4	9.1	8.6	9.9	9.4	1.59	162
L Guys	39	43	53	64	70	1.8	1.9	2.3	2.8	3.0	1.01	70
L Kings	97	89	95	101	98	8.4	7.5	7.6	8.1	7.3	0.93	105
L Rfree	143	163	165	179	173	6.5	7.3	7.0	7.7	7.3	1.33	130
L St.G	37	40	43	48	53	4.4	4.8	5.0	5.6	6.1	0.67	80
L West	120	135	155	200	214	3.5	3.8	4.3	5.7	6.0	1.96	109
Leeds	59	64	67	64	53	3.6	3.8	3.9	3.7	3.0	1.37	39
Leic	96	108	126	120	138	4.1	4.4	4.9	4.6	5.2	2.09	66
Liv Ain	21	25	22	25	22	10.0	11.5	9.7	10.3	8.3	0.43	51
Liv Roy	70	57	35	32	32	5.6	4.5	2.8	2.6	2.7	0.81	39
M RI	71	69	76	84	97	3.5	3.3	3.7	4.2	4.7	1.33	73
Middlbr	23	29	32	28	20	2.5	3.1	3.4	3.0	2.1	0.81	25
Newc	58	60	59	46	58	5.2	5.2	5.0	3.8	4.7	0.95	61
Norwch	43	36	46	45	45	5.5	4.6	5.7	5.6	5.7	0.69	65
Nottm	69	70	76	95	103	5.8	5.8	6.2	7.9	8.4	0.93	111
Oxford	67	70	58	68	66	3.6	3.6	2.9	3.4	3.3	1.45	46
Plymth	49	40	42	33	34	9.1	7.4	7.9	6.1	6.2	0.40	85
Ports	84	94	87	101	90	4.8	5.3	4.6	5.3	4.6	1.75	51
Prestn	35	39	43	50	55	2.8	3.0	3.2	3.7	4.0	1.23	45
Redng	39	40	56	61	50	4.9	4.9	6.5	7.0	5.7	0.70	72
Salford	117	115	120	106	84	10.5	9.8	9.7	8.4	6.9	1.15	73

Table 6.2 Continued

	N on PD					% on PD					Estimated catchment population	2021 crude rate
Centre	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	(millions)	(pmp)
Sheff	55	61	60	77	82	3.8	4.1	4.0	5.2	5.5	1.13	72
Shrew	42	58	55	51	51	10.9	13.5	12.6	11.9	11.5	0.41	124
Stevng	23	28	37	25	36	2.6	3.0	3.9	2.6	3.6	1.11	32
Stoke	72	81	71	94	107	8.9	10.0	8.8	11.6	12.7	0.73	146
Sund	16	17	26	32	37	2.9	3.0	4.6	5.8	6.8	0.55	68
Truro	15	17	21	23	22	3.5	3.9	4.7	5.2	4.8	0.36	61
Wirral	20	20	18	18	20	5.1	5.0	4.3	4.3	4.9	0.47	43
Wolve	54	54	49	59	64	9.3	8.9	8.0	9.0	9.3	0.55	117
York	35	29	33	24	27	6.3	5.1	5.7	4.2	4.6	0.49	56

TOTALS												
England	3,056	3,106	3,176	3,412	3,494	5.6	5.5	5.5	5.9	5.9	44.77	78
N Ireland	68	77	70	46	67	3.7	4.0	3.6	2.3	3.3	1.47	46
Scotland	188	206	206	195	195	3.7	3.9	3.8	3.7	3.6	4.45	44
Wales	201	188	190	182	147	6.3	5.8	5.7	5.6	4.5	2.49	59
UK	**3,513**	**3,577**	**3,642**	**3,835**	**3,903**	**5.4**	**5.4**	**5.3**	**5.6**	**5.6**	**53.19**	**73**

4. Regional PLCM Data (2018/19 – 2023/24 Month 2)

The following charts and tables are based on the "All Renal Dialysis Data" extract for North East and Yorkshire Providers from 2018/19 to 2023/24 YTD. The data has been extracted from the provider submitted Patient Level Contract Monitoring (PLCM) file. Data has been extracted where the service line equals 'NCBPS11C (Adult Specialist Renal Services: Access For Renal Dialysis (ARD)' or 'NCBPS11B (ALL Adult Specialist Renal Services)'. The ARD data set has lower volume of activity as it purely codes for renal dialysis, whereas the ALL code is slightly larger and encompasses other renal related specialised activity.

4.1 ARD Activity (Numbers of Patients)

Chart A: Adult Renal Dialysis (POD 'ARD' ONLY); Patient Overview - Past 5 Complete Years and up to M2 23/24

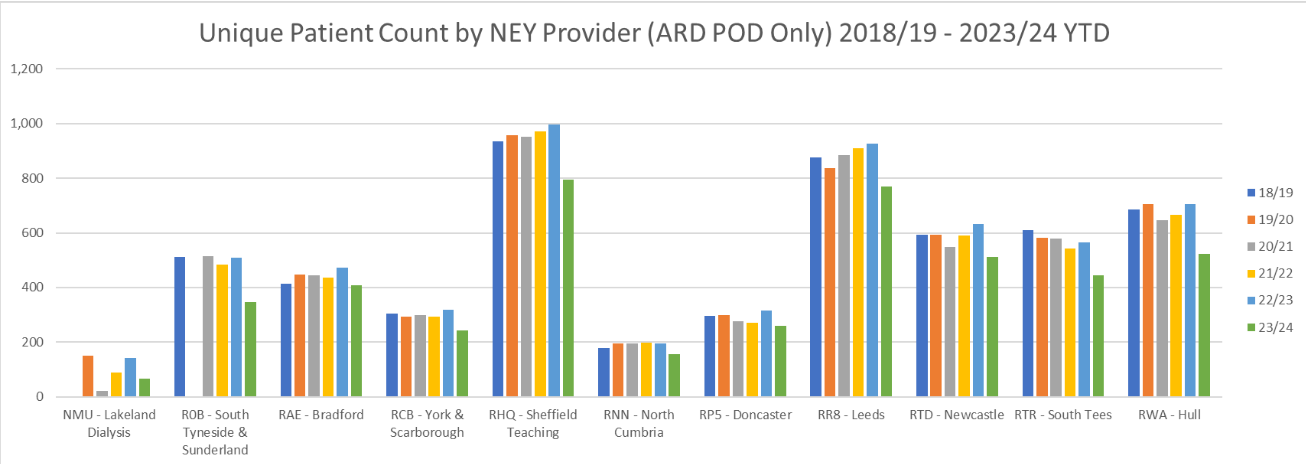
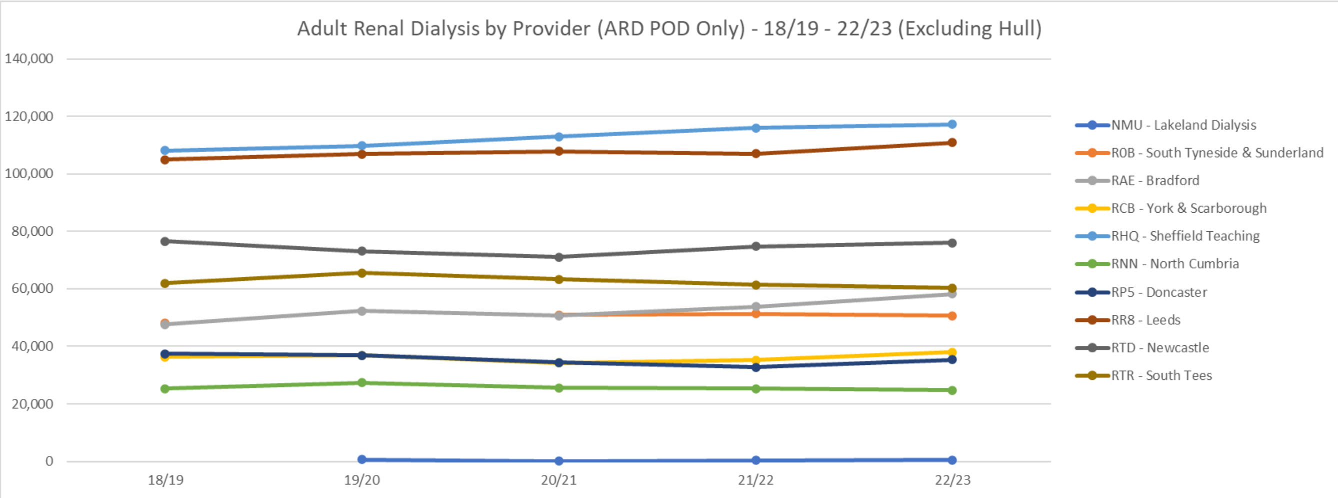


Chart A shows that after 19/20 and to some degree 20/21 (COVID) there was a 're-set' in patient numbers (prevalence) with 21/22 and 22/23 bringing a sharp increase for some centres.

Newcastle, Leeds, Doncaster, Hull and Bradford all had sharp increase in one or both of these years.

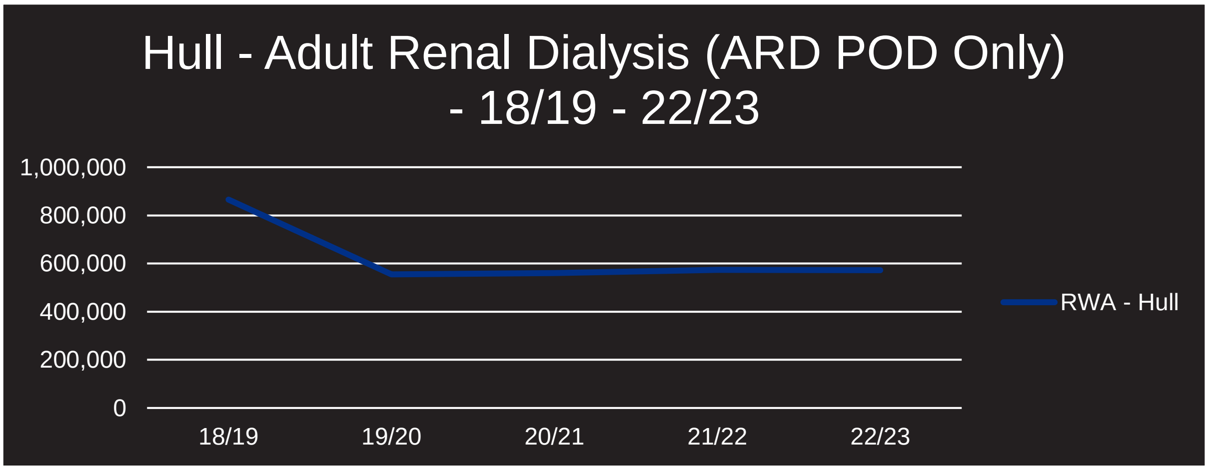
Chart B shows the dialysis activity (units) by centre for ARD code. Please note that the chart does not include Hull as a data error does not allow the Hull figures to be displayed correctly – a separate chart for Hull has been provided below (Chart C). Chart B shows that activity has risen overall for some Trusts from 18/19 through to 22/23 (Leeds, Bradford, Sheffield) whereas for others activity has plateaued or even fallen slightly across this time period largely resulting from a dip in activity from 18/19 to 20/21 (North Cumbria, South Tees, Doncaster).

Chart B: Adult Renal Dialysis Activity by Provider (POD 'ARD' ONLY); 18/19 -22/23 (Excluding Hull)



For completeness Chart C displays the same data as for Chart B but only for Hull. It appears there is a counting and coding error as the activity is far higher than would be expected and displays an unusual trend pattern. The higher numbers for Hull are likely due to large volumes of activity with no HRG assigned in the PLCM.

Chart C: Adult Renal Dialysis Activity (POD 'ARD' ONLY); 18/19 -22/23 (Hull)



4.2 Year on Year Difference (ARD Only)

Chart D describes the year on year difference in percentage terms for growth/shrinkage in patient numbers, activity and price for the ARD only code. Please note that 23/24 is in an incomplete year so does not show the true change. Please also note this is data from the PLCM data (Trust submitted) where price represents the equivalent tariff price for activity (as Trusts are currently paid on block).

Bradford, Newcastle, Doncaster and Leeds have seen similar patient number increases. South Tees, York & Scarborough & South Tyneside & Sunderland slightly less so, but still significant increases. However, activity increases are at different rates across these same Trusts – Newcastle recorded a smaller increase in activity related to patient number increases as has Doncaster, with Bradford much higher.

Chart D: Year on Year Difference (%) (POD 'ARD' ONLY) 19/20 -23/24

Year on Year Difference			
Year	**Patient**	**Activity**	**Price**
NMU - Lakeland Dialysis			
19/20 vs 20/21	-87%	-88%	-88%
20/21 vs 21/22	340%	351%	351%
21/22 vs 22/23	60%	62%	65%
22/23 vs 23/24	-54%	-63%	-62%
R0B - South Tyneside & Sunderland			
19/20 vs 20/21	1%	6%	5%
20/21 vs 21/22	-6%	1%	-1%
21/22 vs 22/23	5%	-1%	5%
22/23 vs 23/24	-32%	-76%	-74%
RAE - Bradford			
18/19 vs 19/20	7%	10%	12%
19/20 vs 20/21	0%	-3%	-3%
20/21 vs 21/22	-2%	6%	5%
21/22 vs 22/23	8%	8%	14%
22/23 vs 23/24	-14%	-74%	-72%
RCB - York & Scarborough			
18/19 vs 19/20	-4%	1%	9%
19/20 vs 20/21	2%	-7%	-1%
20/21 vs 21/22	-2%	3%	6%
21/22 vs 22/23	8%	8%	7%
22/23 vs 23/24	-23%	-74%	-73%
RHQ - Sheffield Teaching			
18/19 vs 19/20	2%	2%	6%
19/20 vs 20/21	-1%	3%	2%
20/21 vs 21/22	2%	3%	6%
21/22 vs 22/23	3%	1%	3%
22/23 vs 23/24	-20%	-75%	-73%
RNN - North Cumbria			
18/19 vs 19/20	9%	8%	19%
19/20 vs 20/21	-1%	-7%	-7%
20/21 vs 21/22	2%	-1%	6%
21/22 vs 22/23	-1%	-2%	7%
22/23 vs 23/24	-19%	-76%	-74%
RP5 - Doncaster			
18/19 vs 19/20	1%	-1%	0%
19/20 vs 20/21	-8%	-7%	0%
20/21 vs 21/22	-1%	-5%	-5%
21/22 vs 22/23	17%	8%	19%
22/23 vs 23/24	-18%	-73%	-72%
RR8 - Leeds			
18/19 vs 19/20	-4%	2%	9%
19/20 vs 20/21	5%	1%	1%
20/21 vs 21/22	3%	-1%	4%
21/22 vs 22/23	2%	4%	9%
22/23 vs 23/24	-17%	-76%	-74%
RTD - Newcastle			
18/19 vs 19/20	0%	-5%	4%
19/20 vs 20/21	-8%	-3%	-2%
20/21 vs 21/22	8%	5%	6%
21/22 vs 22/23	7%	2%	8%
22/23 vs 23/24	-19%	-75%	-73%
RTR - South Tees			
18/19 vs 19/20	-5%	6%	8%
19/20 vs 20/21	0%	-4%	-2%
20/21 vs 21/22	-6%	-3%	2%
21/22 vs 22/23	4%	-2%	-100%
22/23 vs 23/24	-21%	-74%	
RWA - Hull			
18/19 vs 19/20	3%	-36%	3%
19/20 vs 20/21	-9%	1%	2%
20/21 vs 21/22	3%	2%	4%
21/22 vs 22/23	6%	0%	5%
22/23 vs 23/24	-26%	-96%	-74%

* There are no costs flowed in the PLCM for South Tees in 2022/23 for these service lines due to a known arrangement to pay as a block

Price increase is even more difficult to track and may relate to different models of care, case mix, treatment regimen etc. Leeds, Bradford, Newcastle & North Cumbria have price increases above their levels of patient number and activity increases, whereas Doncaster, South Tyneside and Hull are more in-line. Understanding this non-linear relationship will require conversations with individual Trusts to understand any variables. The tables containing the ARD patient numbers, activity and costs can be found in Appendix 1.

4.3 Adult Renal Dialysis (ALL PODs) Numbers of Patients

This section presents the same charts as 4.1, except here we are examining the wider ALL dataset which encompasses all specialised renal activity. Please note some additional Trusts are therefore present (e.g. Calderdale).

Chart E displays similar patterns of patient increases as described for Chart A (ARD only data), however the growth is accentuated for some Trusts such as Leeds and Doncaster.

Chart E: Adult Renal Dialysis (POD 'ALL'); Patient Overview - Past 5 Complete Years and up to M2 23/24

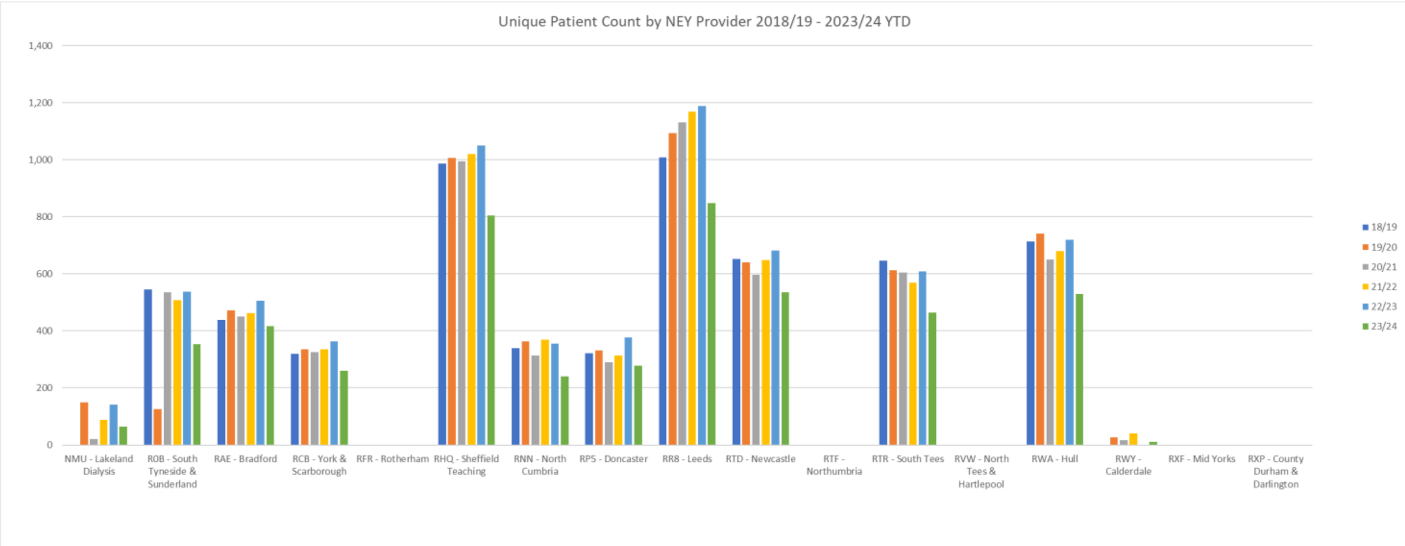
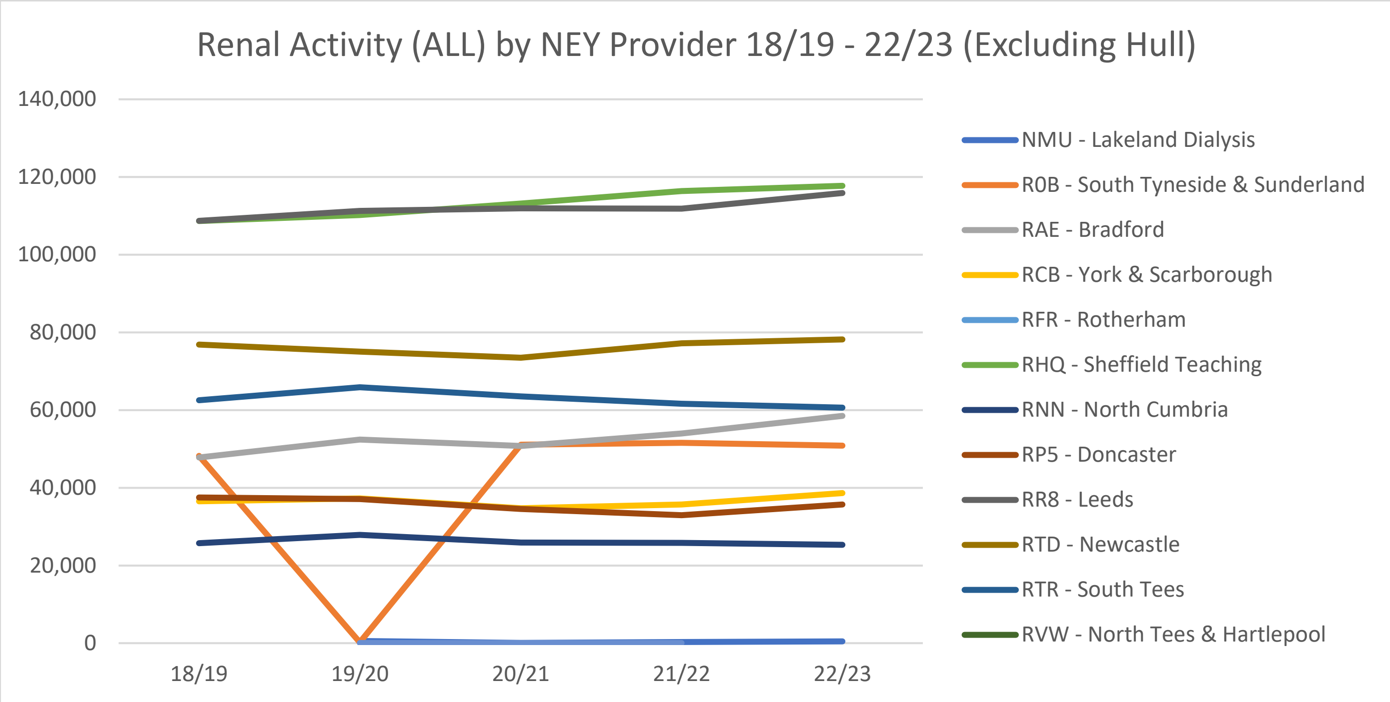


Chart F displays the activity trends by centre for the wider ALL dataset. As for Chart B, Chart F does not include Hull due to large volumes of activity with no HRG assigned in the PLCM for that provider.

There are similar patterns to ARD Only patient numbers in Chart B, with Bradford, Sheffield and Leeds showing the greatest activity increases.

Chart F: Regional Data (M2 23/24) – ALL PODS's code



4.4 Year on year Difference – ALLL POD'S

Looking at the ALL POD's data in Chart G there have are several Trusts with Patient number, Activity and Price increases on a similar level (Bradford, Newcastle, Hull, Doncaster, York & Scarborough).

Not including the current part year Doncaster (19%) has seen the largest growth in Patient Numbers (Leeds 16%, Bradford 15%, York & Scarborough 13% - NENC Newcastle 5%, North Cumbria 5%).

However – Bradford has seen the largest growth in Activity (21%) compared with Sheffield (8%), Leeds 7%, Y&S 6%, Doncaster -5% (in NENC Newcastle 2%, South Tees -2%, North Cumbria -1%). It is not clear from the data as to why similar growth in patient numbers between some Trusts results in dissimilar growth in activity in the same Trusts. This may relate to case mix, modality, treatment regimen etc.

Equally price increases are highest in Bradford over the same period (30%) compared with North Cumbria (26%) York & Scarborough (25%). Leeds 25%, Doncaster 18%, Sheffield 17%) – again it is not clear as to why a given patient number increase and/or activity increase results in very different price increases across Trusts.

-As an example the Trust with greatest increase since 19/20 in patient numbers (Doncaster 19%) does not have the highest activity increases (Bradford 21%) or cost increases (Bradford 30%) over the same time period. In fact, Doncaster's activity levels actually fell by 5% over that period. North

Cumbria is another good example, with patient numbers increasing by 5%, yet activity drops by 1%, resulting in a price rise of 26%?

The tables containing the ALL POD patient numbers, activity and costs can be found in Appendix 2.

Chart G: Year on Year Difference (%) (ALL POD) 19/20 -23/24

Year on Year Difference

Year	Patient	Activity	Price
NMU - Lakeland Dialysis			
19/20 vs 20/21	-87%	-88%	-88%
20/21 vs 21/22	340%	351%	351%
21/22 vs 22/23	60%	62%	65%
22/23 vs 23/24	-54%	-63%	-62%
R0B - South Tyneside & Sunderland			
19/20 vs 20/21	-77%	-100%	-95%
19/20 vs 20/21	325%	23990%	2129%
20/21 vs 21/22	-5%	1%	0%
21/22 vs 22/23	6%	-1%	4%
22/23 vs 23/24	-34%	-76%	-75%
RAE - Bradford			
18/19 vs 19/20	8%	10%	12%
19/20 vs 20/21	-5%	-3%	-5%
20/21 vs 21/22	3%	6%	8%
21/22 vs 22/23	9%	8%	15%
22/23 vs 23/24	-18%	-74%	-73%
RCB - York & Scarborough			
18/19 vs 19/20	5%	2%	12%
19/20 vs 20/21	-3%	-7%	-1%
20/21 vs 21/22	3%	3%	6%
21/22 vs 22/23	8%	8%	8%
22/23 vs 23/24	-28%	-74%	-73%
RHQ - Sheffield Teaching			
18/19 vs 19/20	2%	1%	6%
19/20 vs 20/21	-1%	3%	2%
20/21 vs 21/22	3%	3%	6%
21/22 vs 22/23	3%	1%	3%
22/23 vs 23/24	-23%	-75%	-74%
RNN - North Cumbria			
18/19 vs 19/20	7%	8%	23%
19/20 vs 20/21	-14%	-7%	-8%
20/21 vs 21/22	18%	0%	7%
21/22 vs 22/23	-4%	-2%	4%
22/23 vs 23/24	-32%	-76%	-73%

RP5 - Doncaster			
18/19 vs 19/20	3%	-1%	3%
19/20 vs 20/21	-12%	-7%	-5%
20/21 vs 21/22	8%	-5%	-3%
21/22 vs 22/23	20%	8%	23%
22/23 vs 23/24	-26%	-73%	-73%
RR8 - Leeds			
18/19 vs 19/20	8%	2%	11%
19/20 vs 20/21	3%	1%	-2%
20/21 vs 21/22	3%	0%	6%
21/22 vs 22/23	2%	4%	10%
22/23 vs 23/24	-29%	-76%	-73%
RTD - Newcastle			
18/19 vs 19/20	-2%	-2%	4%
19/20 vs 20/21	-7%	-2%	-2%
20/21 vs 21/22	9%	5%	7%
21/22 vs 22/23	5%	1%	8%
22/23 vs 23/24	-21%	-75%	-73%
RTR - South Tees			
18/19 vs 19/20	-5%	5%	4%
19/20 vs 20/21	-1%	-4%	-2%
20/21 vs 21/22	-6%	-3%	4%
21/22 vs 22/23	7%	-2%	-100%
22/23 vs 23/24	-24%	-74%	
RWA - Hull			
18/19 vs 19/20	4%	-36%	2%
19/20 vs 20/21	-12%	1%	1%
20/21 vs 21/22	5%	2%	5%
21/22 vs 22/23	6%	0%	6%
22/23 vs 23/24	-26%	-96%	-75%
RWY - Calderdale			
19/20 vs 20/21	-35%	-10%	-11%
20/21 vs 21/22	135%	46%	45%
21/22 vs 23/24	-73%	-37%	-49%

* There are no costs flowed in the PLCM for South Tees in 2022/23 for

5. Predicting Future Demand

We have explored the feasibility of predicting the future dialysis demand across NEY, based on pre-2021 average annual growth and also post COVID (2021 onwards) growth trends. The results are unsatisfactory and have not been included here – the variation and potential for error is simply too great. As an example, included below is Figure 1 – produced by Public Health England in 2016 to forecast growth in expected prevalence of CKD which is closely associated with KRT growth. It suggested that Bradford would be one of the CCG's with the lowest levels of CKD prevalence growth by 2036 – yet we know just 7 years later that has one of the highest prevalences and growth of any centre in NEY. This illustrates how difficult predicting future demand can be.

Figure 1: Expected prevalence of CKD. Source: Chronic Kidney Disease (CKD) prevalence model (publishing.service.gov.uk), Technical document for Chronic Kidney Disease prevalence model (publishing.service.gov.uk)

Table 3: CCGs with the highest expected increase in prevalence (%)

CCG	2011 (%)	2036 (%)	Increase
Milton Keynes	4.8	7.6	57.5%
Halton	5.6	8.8	57.2%
West London (K&C & QPP)	4.2	6.5	55.9%
Northumberland	7.0	10.8	54.6%
Telford & Wrekin	5.5	8.5	54.3%
Newbury and District	5.9	9.1	54.1%
South East Staffs	6.6	10.1	53.0%
Cannock Chase	6.1	9.3	52.8%
Wiltshire	6.6	10.1	52.0%
Harrogate and Rural District	7.1	10.7	51.1%

Table 4: CCGs with the lowest expected increase in prevalence (%)

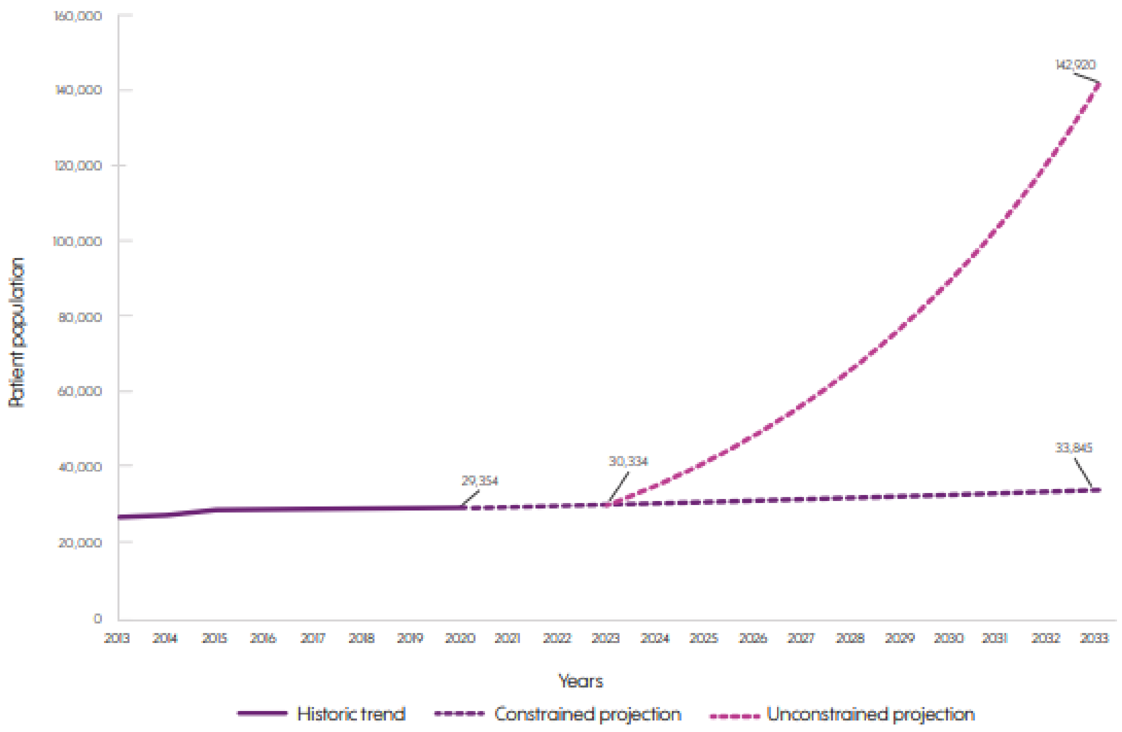
CCG	2011 (%)	2036 (%)	Increase
Barking & Dagenham	4.7	4.9	3.9%
Redbridge	5.5	5.8	4.3%
Bradford City	4.0	4.4	10.2%
Birmingham CrossCity	5.8	6.5	12.6%
Sandwell and West Birmingham	5.4	6.2	15.1%
Birmingham South and Central	5.2	6.0	15.6%
Luton	5.1	5.9	15.9%
Hillingdon	5.4	6.3	16.2%
Harrow	6.1	7.2	16.9%
Bristol	5.0	5.9	18.3%

Figure 2 is taken from 'Kidney disease: A UK public health emergency The health economics of kidney disease to 2033' (June 2023, Kidney Research UK). For dialysis a broad range of potential future demand was calculated. The constrained view assumes NHS capacity continues to grow at current rates based on the actual numbers of patients treated over the past 10 years, while the unconstrained view estimates the number of people who may need dialysis based on how quickly people progress through the stages of kidney disease. In the unconstrained view of demand, which factors in all potential unmet need, the number of patients requiring dialysis could rise to 142,900 per year, compared with 33,845 in the constrained view.

This 4-fold difference in predicted demand between the two models again highlights that predicting future demand for dialysis is very difficult and any models have a very low degree of certainty.

It should be noted that from a public health and prevention perspective, the only medium to long-term solution to any growth in dialysis demand to bring about a constrained rather than unconstrained growth in demand is for health systems to further invest in prevention of type 2 diabetes, obesity prevention, hypertension case-finding and treatment and smoking cessation. However, in the short-term it is highly likely that demand for dialysis will continue to grow.

Figure 2: Constrained vs unconstrained projections of dialysis in adults with ESKD in the UK



https://www.kidneyresearchuk.org/wp-content/uploads/2023/06/Economics-of-Kidney-Disease-full-report_accessible.pdf

6. Summary of Findings

A summary of the finding is below and has been split into two parts: firstly, of the renal registry data up until 2021, and secondly of the regional PLCM data up to month 2, 2023/24.

6.1 Summary – Renal Registry data up to 2021

- Overall, the PMP KRT is **not** higher in NEY than other areas of England up to 2021.
- The incident (new cases) number of patient is not likely the primary driver that is increasing total patient numbers – that is more likely a result of year-on-year prevalence increases due to better survival, especially in those starting KRT under the age of 65 (extra 10% surviving 10 years for every 10 cohorts that have passed). Although a good news story that patients are living longer, the rising prevalence is putting operational pressures on services in NEY.
- Both nationally and regionally there has **not** been a significant change in modality since 2016 (outside of the temporary reduction in transplants during COVID).

- There is considerable variation (in region and across UK) in terms of proportions of patients on home dialysis. Carlisle (2.0%) and Bradford (2.2%) have particularly low proportions of patients on Home Haemodialysis up until 2021.
- Other than Hull (which is a statistical outlier for higher levels of late referral) – NEY centres are the same as or better than average (low) for late presentation.
- Bradford is higher both regionally and against the England average for PMP Prevalent KRT (although 7 other centres in England are higher still). All of the NENC centres are below the England average prevalence rate.
- Bradford has a notably higher proportion of patients receiving care at the Main Hospital site and less at satellite sites than other NEY centres or England average (Bradford 42% higher). There are 3 other centres in England with a higher reliance on main Hospital sites than Bradford. Both Leeds (74.7) & Middlesborough(61.7%) have a high percentage of KRT at satellites rather than the main hospital site. The main site vs satellite split may have implications for different centres physical capacity and ability to respond to spikes in demand.
- Bradford stands out as having a much higher proportion of non-white (42.5%) patients (incident) compared to other centres in NEY (Leeds nearest NEY centre on 23.8%). This is due to the higher proportions of patients with Asian ethnicity. It should be noted that the Bradford ethnicity demographics are not dissimilar to those in many parts of London and also Birmingham. Carlisle also stands out in our region regarding incident ethnicity with 100% white ethnicity.
- Bradford (52.5%) and York (49 %) have the two lowest proportions of male patients (incident) in the country and therefore higher proportions of female patients starting treatment. This could have implications for prevalence and survival, as all things being equal women have a higher life expectancy than men.

6.2 Summary – Regional Data to M2 23/24

- For both ARD (Access Renal Dialysis Only) and ALL Renal POD's several centres across NEY have seen a steep increase in patient numbers since 2021. These include Newcastle, Leeds, Hull, Doncaster, Bradford, York and Scarborough to name a few.
- Particularly in the ALL POD specialist renal code, the relationship between increases in Patient numbers, Activity, and Cost is complex and non-linear.

    - As an example the Trust with greatest increase since 19/20 in patient numbers (Doncaster 19%) does not have the highest activity increases (Bradford 21%) or cost increases (Bradford 30%) over the same time period. In fact, Doncaster's activity levels actually fell by 5% over that period.

    - North Cumbria is another good example of this phenomena – patient numbers have increased 5%, whilst activity dropped 1%, with a price rise of 26%.

- Several Trusts have seen Price increases over 17% since 19/20 (Sheffield 17%, Doncaster 18%, York & Scarborough 25%, Leeds 25%, North Cumbria 26%, and Bradford 30%).
- Activity increases since 19/20 are notably higher in Bradford (21%) than the next highest Sheffield (8%), Leeds 7%, York & Scarborough 6%. (Newcastle 2%, South Tees -2%, North Cumbria -1%).
- Bradford (and Leeds to a lesser extent) growth in Activity and Costs appear particularly non-linear in relation to their increases in patient numbers (higher than expected).
- North Cumbria also has particularly non-linear growth in price in relation to patient numbers, yet activity falls.
- Some possible explanations for the non-linear and different relationship between patient numbers, activity and price between Trusts include case-mix, modality variations, and also the possibility of different dialysis regimens (some Trusts may have reduced the weekly number of dialysis sessions from 3 to 2 for some patients during and after COVID – please note this is a suggestion to be explored, not a statement of fact).
- The only notable difference found in the Renal Registry data between Bradford and other NEY (and national) centres relates to the proportions of patients receiving dialysis in the Main Hospital site (higher in Bradford) and a relatively high PMP prevalence of KRT overall.

6.3 Summary - Predicting future demand

At this stage it is not possible to provide with any degree of certainty a prediction of future dialysis demand for NEY. As outlined in section 5 the possibilities range from a constrained projection of return to a stable growth of under 1% per year through to an unconstrained growth of 10%+ per year for the foreseeable future, or anywhere in-between. With that level of uncertainty in the forecasts, the current best option may be to plan on the basis of the current levels of growth rolling forwards each year until such time as the rate of growth falls.

Authors:

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Inna Hanlon, Public Health Specialist, Specialised Commissioning, NHS NEY

Appendix 1: Provider patient numbers, Activity and Costings Tables (ARD)

Provider / Year	Unique Patients	Activity	Cost
NMU - Lakeland Dialysis			
19/20	149	561	£167,419
20/21	20	68	£20,577
21/22	88	307	£92,885
22/23	141	498	£153,563
23/24	65	185	£58,702
NMU - Lakeland Dialysis Total	**363**	**1,619**	**£493,147**
R0B - South Tyneside & Sunderland			
18/19	512	48,001	£6,285,243
20/21	515	50,932	£6,614,741
21/22	484	51,410	£6,544,252
22/23	510	50,648	£6,850,042
23/24	345	12,170	£1,764,919
R0B - South Tyneside & Sunderland T	**1,311**	**213,161**	**£28,059,197**
RAE - Bradford			
18/19	415	47,682	£6,059,086
19/20	446	52,286	£6,789,060
20/21	444	50,715	£6,615,291
21/22	437	53,824	£6,944,047
22/23	473	58,311	£7,908,670
23/24	407	14,964	£2,175,125
RAE - Bradford Total	**954**	**277,782**	**£36,491,280**
RCB - York & Scarborough			
18/19	304	36,348	£4,342,586
19/20	292	36,820	£4,724,481
20/21	298	34,287	£4,681,637
21/22	293	35,207	£4,945,483
22/23	317	38,044	£5,297,242
23/24	244	9,813	£1,439,617
RCB - York & Scarborough Total	**664**	**190,519**	**£25,431,046**
RHQ - Sheffield Teaching			
18/19	936	108,123	£14,212,819
19/20	957	109,862	£15,097,309
20/21	951	112,929	£15,341,078
21/22	971	116,052	£16,300,315
22/23	996	117,262	£16,717,823
23/24	795	29,648	£4,447,205
RHQ - Sheffield Teaching Total	**2,129**	**593,875**	**£82,116,548**
RNN - North Cumbria			
18/19	179	25,337	£2,614,323
19/20	195	27,349	£3,114,334
20/21	194	25,520	£2,900,166
21/22	197	25,248	£3,060,593
22/23	195	24,763	£3,281,231
23/24	157	5,983	£854,197
RNN - North Cumbria Total	**406**	**134,200**	**£15,824,844**

⊟ RP5 - Doncaster			
18/19	295	37,412	£4,789,417
19/20	299	36,857	£4,799,228
20/21	275	34,387	£4,789,423
21/22	271	32,811	£4,528,007
22/23	316	35,300	£5,401,595
23/24	260	9,447	£1,489,210
RP5 - Doncaster Total	**658**	**186,214**	**£25,796,880**
⊟ RR8 - Leeds			
18/19	877	105,011	£13,369,923
19/20	838	106,914	£14,550,800
20/21	884	107,927	£14,767,214
21/22	911	107,006	£15,322,016
22/23	926	110,964	£16,628,887
23/24	771	26,807	£4,286,488
RR8 - Leeds Total	**1,903**	**564,629**	**£78,925,327**
⊟ RTD - Newcastle			
18/19	593	76,626	£9,023,991
19/20	593	73,097	£9,366,348
20/21	547	71,058	£9,203,868
21/22	591	74,815	£9,733,492
22/23	631	75,975	£10,467,752
23/24	512	19,035	£2,850,682
RTD - Newcastle Total	**1,295**	**390,606**	**£50,646,132**
⊟ RTR - South Tees			
18/19	611	61,976	£8,339,731
19/20	582	65,613	£9,007,395
20/21	580	63,283	£8,824,793
21/22	543	61,381	£9,028,140
22/23	565	60,291	£0
23/24	445	15,930	£2,658,202
RTR - South Tees Total	**1,355**	**328,474**	**£37,858,261**
⊟ RWA - Hull			
18/19	685	865,408	£10,434,907
19/20	706	554,914	£10,742,786
20/21	645	559,817	£11,007,009
21/22	665	573,485	£11,483,998
22/23	705	572,419	£12,070,422
23/24	523	20,848	£3,088,756
RWA - Hull Total	**1,627**	**3,146,890**	**£58,827,879**
Grand Total	**11,803**	**6,027,970**	**£440,470,541**

Appendix 2: Provider patient numbers, Activity and Costings Tables (ALL)

Provider / Year	Unique Patients	Activity	Cost
⊟ NMU - Lakeland Dialysis			
19/20	149	561	£167,419
20/21	20	68	£20,577
21/22	88	307	£92,885
22/23	141	498	£153,563
23/24	65	185	£58,702
NMU - Lakeland Dialysis Total	**363**	**1,619**	**£493,147**
⊟ R0B - South Tyneside & Sunderland			
18/19	545	48,204	£6,590,714
19/20	126	212	£305,597
20/21	536	51,070	£6,810,518
21/22	507	51,575	£6,826,276
22/23	537	50,808	£7,116,656
23/24	354	12,193	£1,801,845
R0B - South Tyneside & Sunderland T	**1,383**	**214,062**	**£29,451,605**
⊟ RAE - Bradford			
18/19	439	47,798	£6,318,783
19/20	472	52,425	£7,108,552
20/21	450	50,778	£6,781,839
21/22	463	53,975	£7,317,571
22/23	506	58,502	£8,422,281
23/24	416	14,988	£2,241,241
RAE - Bradford Total	**1,008**	**278,466**	**£38,190,267**
⊟ RCB - York & Scarborough			
18/19	320	36,546	£4,597,526
19/20	336	37,225	£5,143,168
20/21	325	34,732	£5,110,188
21/22	336	35,657	£5,408,131
22/23	364	38,631	£5,821,275
23/24	261	9,919	£1,547,788
RCB - York & Scarborough Total	**769**	**192,710**	**£27,628,076**
⊟ RFR - Rotherham			
18/19	1	1	£9,084
RFR - Rotherham Total	**1**	**1**	**£9,084**
⊟ RHQ - Sheffield Teaching			
18/19	986	108,666	£14,693,732
19/20	1,007	110,211	£15,560,561
20/21	995	113,199	£15,842,798
21/22	1,020	116,349	£16,853,248
22/23	1,049	117,731	£17,346,888
23/24	805	29,746	£4,592,385
RHQ - Sheffield Teaching Total	**2,234**	**595,901**	**£84,889,611**
⊟ RNN - North Cumbria			
18/19	339	25,702	£2,755,264
19/20	364	27,878	£3,387,207
20/21	313	25,872	£3,112,733
21/22	370	25,859	£3,345,202
22/23	355	25,317	£3,487,066
23/24	241	6,138	£940,841
RNN - North Cumbria Total	**788**	**136,766**	**£17,028,312**

RP5 - Doncaster			
18/19	321	37,499	£4,977,805
19/20	331	37,119	£5,129,323
20/21	290	34,521	£4,883,216
21/22	314	32,938	£4,760,284
22/23	377	35,717	£5,844,774
23/24	278	9,506	£1,606,993
RP5 - Doncaster Total	**778**	**187,300**	**£27,202,395**
RR8 - Leeds			
18/19	1,009	108,718	£14,888,671
19/20	1,093	111,253	£16,555,362
20/21	1,130	111,918	£16,157,092
21/22	1,168	111,882	£17,093,807
22/23	1,188	115,879	£18,757,113
23/24	848	27,868	£5,072,924
RR8 - Leeds Total	**2,816**	**587,518**	**£88,524,968**
RTD - Newcastle			
18/19	653	76,857	£9,491,494
19/20	641	75,051	£9,870,856
20/21	596	73,477	£9,672,202
21/22	648	77,225	£10,323,139
22/23	681	78,187	£11,160,288
23/24	536	19,645	£3,000,806
RTD - Newcastle Total	**1,441**	**400,442**	**£53,518,784**
RTF - Northumbria			
23/24	1	12	£16,909
RTF - Northumbria Total	**1**	**12**	**£16,909**
RTR - South Tees			
18/19	647	62,520	£9,025,736
19/20	612	65,875	£9,398,700
20/21	604	63,489	£9,180,081
21/22	568	61,660	£9,515,223
22/23	608	60,629	£0
23/24	465	15,990	£2,766,435
RTR - South Tees Total	**1,440**	**330,163**	**£39,886,176**
RVW - North Tees & Hartlepool			
21/22	1	5	£1,443
RVW - North Tees & Hartlepool Total	**1**	**5**	**£1,443**
RWA - Hull			
18/19	714	865,588	£10,832,269
19/20	742	555,082	£11,090,740
20/21	650	559,897	£11,228,941
21/22	680	573,617	£11,794,533
22/23	720	572,618	£12,476,457
23/24	530	20,880	£3,179,356

RWA - Hull Total	**1,670**	**3,147,681**	**£60,602,296**
RWY - Calderdale			
19/20	26	31	£62,231
20/21	17	28	£55,542
21/22	40	41	£80,597
23/24	11	26	£41,080
RWY - Calderdale Total	**89**	**126**	**£239,450**
RP5 - Doncaster			
18/19	321	37,499	£4,977,805
19/20	331	37,119	£5,129,323
20/21	290	34,521	£4,883,216
21/22	314	32,938	£4,760,284
22/23	377	35,717	£5,844,774
23/24	278	9,506	£1,606,993
RP5 - Doncaster Total	**778**	**187,300**	**£27,202,395**
RR8 - Leeds			
18/19	1,009	108,718	£14,888,671
19/20	1,093	111,253	£16,555,362
20/21	1,130	111,918	£16,157,092
21/22	1,168	111,882	£17,093,807
22/23	1,188	115,879	£18,757,113
23/24	848	27,868	£5,072,924
RR8 - Leeds Total	**2,816**	**587,518**	**£88,524,968**
RTD - Newcastle			
18/19	653	76,857	£9,491,494
19/20	641	75,051	£9,870,856
20/21	596	73,477	£9,672,202
21/22	648	77,225	£10,323,139
22/23	681	78,187	£11,160,288
23/24	536	19,645	£3,000,806
RTD - Newcastle Total	**1,441**	**400,442**	**£53,518,784**
RTF - Northumbria			
23/24	1	12	£16,909
RTF - Northumbria Total	**1**	**12**	**£16,909**
RTR - South Tees			
18/19	647	62,520	£9,025,736
19/20	612	65,875	£9,398,700
20/21	604	63,489	£9,180,081
21/22	568	61,660	£9,515,223
22/23	608	60,629	£0
23/24	465	15,990	£2,766,435
RTR - South Tees Total	**1,440**	**330,163**	**£39,886,176**
RVW - North Tees & Hartlepool			
21/22	1	5	£1,443
RVW - North Tees & Hartlepool Tota	**1**	**5**	**£1,443**

RWA - Hull			
18/19	714	865,588	£10,832,269
19/20	742	555,082	£11,090,740
20/21	650	559,897	£11,228,941
21/22	680	573,617	£11,794,533
22/23	720	572,618	£12,476,457
23/24	530	20,880	£3,179,356
RWA - Hull Total	**1,670**	**3,147,681**	**£60,602,296**
RWY - Calderdale			
19/20	26	31	£62,231
20/21	17	28	£55,542
21/22	40	41	£80,597
23/24	11	26	£41,080
RWY - Calderdale Total	**89**	**126**	**£239,450**
RXF - Mid Yorks			
18/19	1	3	£3,855
RXF - Mid Yorks Total	**1**	**3**	**£3,855**
RXP - County Durham & Darlington			
20/21	1	1	£1,396
RXP - County Durham & Darlington T	**1**	**1**	**£1,396**
Grand Total	**13,789**	**6,072,777**	**£467,687,775**

Appendix 3: Terminology

KRT – Kidney replacement Therapy (HD, PD & Tx)

HD – Haemodialysis (All) - (Blood pumped out and filtered)

- **HHD – Home Haemodialysis**
- **ICHD – In-Centre Haemodialysis**

PD – Peritoneal Dialysis – (Blood filtered inside body through abdomen lining)

- **CAPD – Continuous ambulatory peritoneal dialysis (4x a day for 40 minutes)**
- **APD – Automated peritoneal dialysis (overnight with help of a machine**

Tx – Kidney Transplant

Appendix 4: Notes on Data

The difference between the prevalence across different resources, including [Demographics | The UK Kidney Association](#) where the RRT prevalence is available and UKRR (UK Renal Registry) 25th Annual Report https://ukkidney.org/audit-research/annual-report usually can be explained by the difference in the methodology and data completeness.

The difference between NHSE and UKRR data could be due to several factors:

1. In the NEY analysis the numbers of patients are all unique patients that entered dialysis during a certain year at certain centre, whereas in the UKRR they excluded patients who had transferred out, recovered kidney function, stopped treatment without recovery of function, died or were lost to follow-up before the end of the year, (31 December, not the financial year). Prevalent adult in-centre haemodialysis (ICHD) population in the UKRR is described as the population of adult patients with end-stage kidney disease (ESKD) who were receiving ICHD at the end of the year.

2. In the UKRR report patient calculated only once if the modality switch between PD and HD or other way round and in the NEY report the same patient could be calculated in both categories if they switched the modality or hospital (as it is difficult to decide which to delete). Though, it was only a few patients who switched the hospital. Therefore, if you look at the column unique patients the total number for the certain provider would be different from the sum of unique patients by different modalities. However, you still can see the dynamic over the years. In UKRR some other patients were excluded for various sections of the report.

The difference in the 1 Renal service report May 2022 (a total 181 patients dialysing in unit, PD 33 patients and HD 19 patients) and NEY report also could be explained that, if patients switched the modality, they calculated twice.