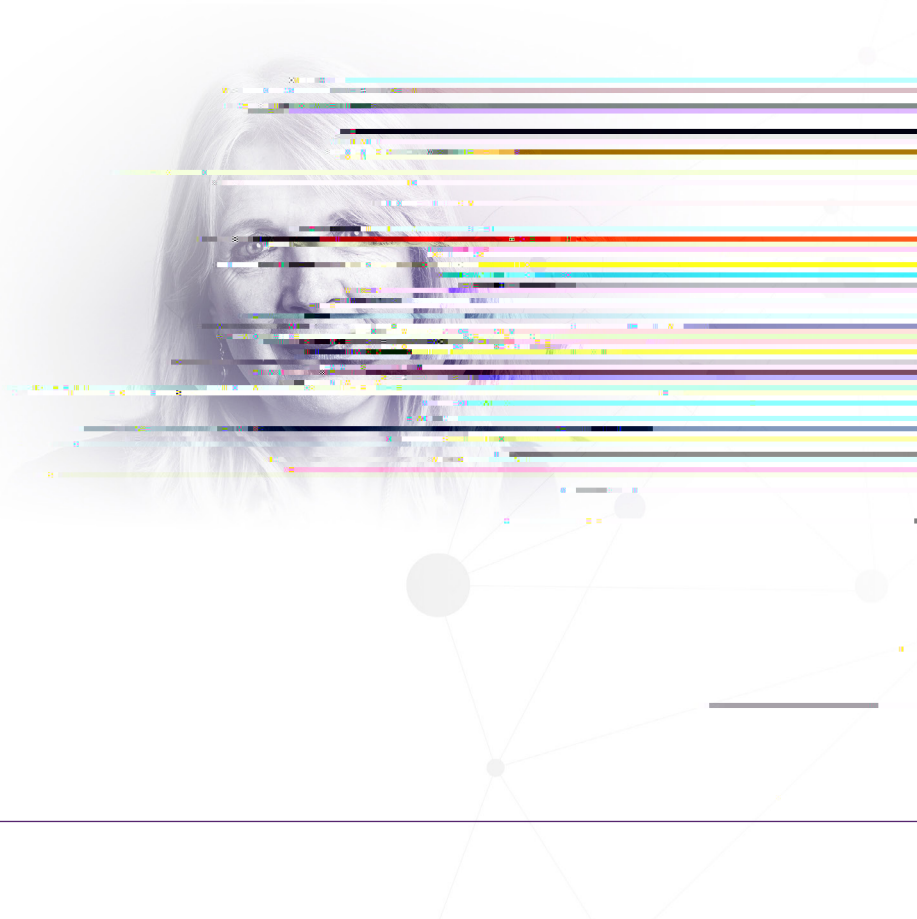


This report was funded by Baxter. Wilmington Healthcare was commissioned by Baxter to develop this report, which has been informed by input from experts working in renal care, including leading clinicians and patient charities. Baxter has had no editorial input on this report or its recommendations.

Foreword





Analysis style

This case study utilises a Delphi style consensus process involving experts in this specialist field alongside an economic analysis methodology. This has been developed using fictitious, but realistic, patient journeys which are compared to highlight potential care improvement opportunities.

Use of behavioural methodology drives engagement through the combination of objective clinical data, clinical expertise and financial analysis wrapped in a journalistic style. The study includes prompts for commissioners and service transformation leaders to consider when evaluating their local health economy.

The goal is to inspire more stakeholders to take note and act towards positive change by thinking strategically and collaboratively about engagement, education and designing optimal care for people with CKD.

Look out for red highlight boxes to see typical suboptimal / failure points in many pathways throughout the country.

Look out for green highlight boxes to see best practice points which are above and beyond the optimal pathway, which are already being trialled in some care pathways across the country.

The optimal story of Sid's experience

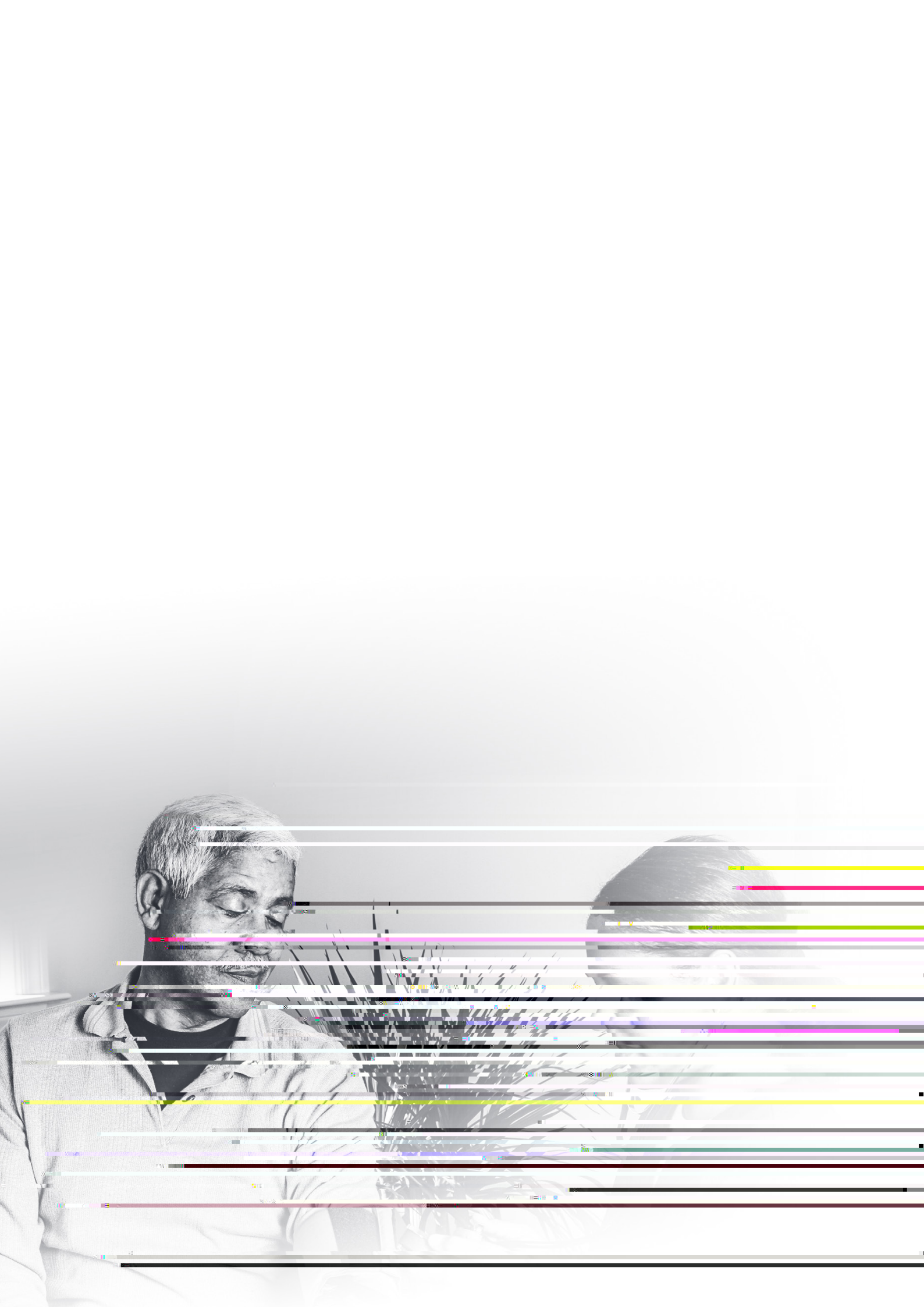
With choices and typical pathway failure points highlighted along the way

In this scenario using a fictional patient, we examine an optimal pathway for Sid who has CKD.

At each stage of his pathway we have modelled the costs of care, not only financial to the local health economy, but also the impact on the patient and their family's experience.

This document is intended to help commissioners and providers understand the implications, both in terms of quality of life and costs, of different care pathways for individual patient needs and expectations.

It demonstrates how changes in treatment and management can help clinicians and commissioners improve the value and outcomes of the care pathway.





What happens when the critical window is missed?

In the suboptimal scenario the critical window for Sid's care was missed. When the GP referred him to the nephrology

Sid's suboptimal decline

After Sid missed his nephrology appointment, he became lost to the system, during which time his health declined significantly. One afternoon he started getting chest pain and went directly to A&E where he was seen by the on-call cardiology team. He had had a myocardial infarction (although did not receive an angiogram at this stage) and tests revealed that his eGFR was now 15 ml/min, the threshold for kidney failure. When he was discharged 48 hours later, his eGFR had dropped further to 13 ml/min and he was referred to the kidney clinic with an appointment in two weeks' time. Meanwhile his medication remained unchanged.

By the time he attended his first nephrology appointment two weeks later he was feeling achy and nauseous. His bloods were taken at the clinic – his eGFR was seriously low at 8 ml/min; however, these results were not available immediately and so an opportunity for earlier intervention was missed. Instead he is left to wait for a reassessment appointment to discuss the results which was booked for seven days later.

Limited options

During that week he was seriously unwell and called an ambulance to take him to A&E where he was treated for hyperkalemia. He was admitted to the local district general hospital and as they were unable to provide ward based haemodialysis, he was taken to the intensive care unit (ITU) for 48 hours. At this stage peritoneal dialysis was not an option and he had a neckline inserted for haemofiltration. His ACE inhibitor medication was finally stopped.

Sid then spent seven days on the acute medical ward awaiting transfer to the renal unit, where he received IV diuretics. His eGFR continued to reduce and he was not eating, drinking or mobilising. His condition became so severe that he was transferred to a specialist renal unit by ambulance (eGFR 5-6 ml/min; creatine 700 μmol/L). There were not any real treatment options presented to Sid at this stage: he was acutely unwell, and the decision was made to commence haemodialysis. His neck was very bruised and painful from the original neckline, so a second line was inserted in a new site.

Sid continued on inpatient hospital dialysis for 10 days. An arterio-venous fistula was also created for long-term access during this admission – but there were not any opportunities to discuss the various treatment options with the clinical team (i.e. PD); he neither had any choice about haemodialysis, nor indeed the location in which he would receive the treatment. A full physiotherapy and occupational therapy assessment was requested as Sid was still not mobilising. He had a bedside assessment within 72 hours and was discharged with an appointment for ongoing hospital-delivered HD.

The 'bills' and how they compare

Financial calculation notes

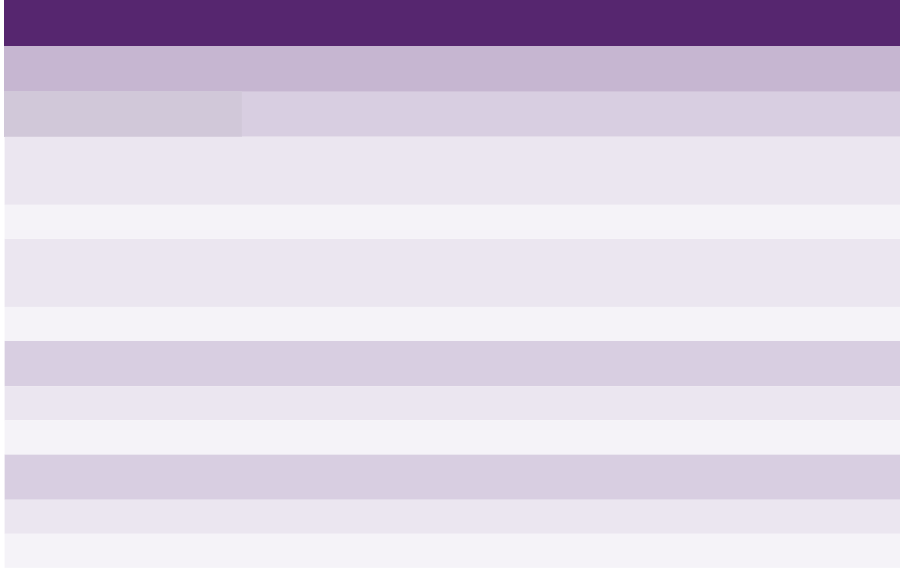
As noted above, the financial calculation presented here represents an indicative level of efficiency potential of the case only. Firstly, as the case is an example pathway, differential pathways for other patients may increase or reduce the potential benefit. Secondly, the potential releasing of resource associated with implementing the optimal pathway across a larger cohort of patients will be subject to the overarching contractual arrangements in place between providers and commissioners, which may differ across the country. For example, some of the financial benefits identified in the case may not be fully realisable where the elements of the pathway are subject to block contracts or risk/gain shares in place between contracting parties. Equally, the release of resource may only be realised should there be a critical mass from within the targeted patient population.

It should also be noted that the financial calculation is considered from a commissioner perspective. The impact on income and costs (including capacity management) for provider organisations will require consideration in the implementation of the optimal pathway.

Each healthcare organisation and system will need to assess the potential for realising the financial benefits identified within the case.

Appendix 2: Tables of coding scenarios

Suboptimal



This admission would probably have more than one episode but the HRG is likely to remain the same. There would be an additional tariff for the critical care days.

Suboptimal

Suboptimal management pathway – Version 2		
In this scenario the patient has now been transferred to a hospital with a specialist renal facility. The coding reflects the scenario with acute kidney injury remaining as the main condition treated.		
ICD10 code	Condition	
N179	Acute renal failure	
N185	Chronic renal failure CKD5	
E119	Type 2 diabetes mellitus	
I10X	Hypertension	
I252	Old MI	
Z501	Physiotherapy	
Z507	Occupational therapy	
Z921	Use of anticoagulants	
Z922	Use of aspirin	
OPCS4.9 code	Intervention	
L915	Insertion of tunnelled central venous catheter	
Y539	Image guidance	
Z917	Jugular vein	
Z943	Left	
L912	Insertion of central venous catheter	
Y539	Image guidance	
Z981	Common femoral vein	
Z942	Right	
X403	Haemodialysis	
X603	Rehabilitation assessment	
HRG	Description	Tari
LA07K	Acute Kidney Injury with Interventions, with CC Score 0-5	£3,820 planned £4,090 emergency
LE01A	Haemodialysis for Acute Kidney Injury, 19 years and over	Local price
VC01Z	Assessment for Rehabilitation, Unidisciplinary	Local price

Optimal

Appendix 3: Chronic Kidney Disease (CKD) 'Day case' Proforma

([H P S O D U & . ' ¶ ' D \ & D V H · & R G L Q J E S W R e l s NHS Foundation Trust

Surname:	Forename:
Consultant:	Patient ID:
D.O.B:	Postcode:
NHS Number:	

' L D J Q R V L V & R G H

- Chronic Renal Failure, Stage 5; N18.5
- Chronic Renal Failure, Stage 3; N18.3
- Acute Kidney Injury, unspecified; N17.9
- Chronic Renal Failure, Stage 4; N18.4
- Chronic Renal Failure, unspecified; N18.9
- Chronic Pain Syndrome; G89.4*

& R P R U E L G L W L H V

- Hypertension
- Ischaemic Heart Disease
- COPD
- Asthma
- Peripheral vascular disease
- Cerebrovascular event/disease
- Long Term Oxygen dependant
- Cancer – state site:
- History of Cancer – state site:
- Anaemia
- Obesity
- Anxiety disorders
- Depressive episodes
- Tendency to fall
- Osteoporosis/Osteoarthritis
- Difficulty walking
- Diabetes Type 1
- AF
- Diabetes Type 2
- Thyroid disorder

3 U R F H G X U H & R G H

- Creation of arteriovenous fistula for dialysis; L74.6
- Placement of ambulatory peritoneal dialysis catheter; X411

5 7 7 6 W D W X V

- 1st Treatment given (30)
- Patient watchful wait (31)
- Consultant watchful wait (32)
- DNA and Discharge (33)
- Decision not to treat (34)
- Treatment not commenced – further investigation (20)

) R O O R Z X S , Q V W U X F W L R Q V

- Clinic Appointment:
- Timescale:

Adapted from: Fraser et al (2015), The burden of comorbidity in people with chronic kidney disease stage 3: a cohort study, BMC Nephrology, 16, 193 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4666158/>
*ICD10 2020; New diagnosis code for chronic pain syndrome.

Resources

Kidney Care UK;
<https://www.kidneycareuk.org/>

National Kidney Federation;
<https://www.kidney.org.uk/>

The Renal Association;
<https://renal.org/>

British Renal Society;
<https://britishrenal.org/>

Acknowledgements

Our thanks to the working group who have contributed their invaluable expertise to assist the development this document:

- Professor Edwina Brown
Professor of Renal Medicine,
Hammersmith Hospital and Imperial College London
- Retha Steenkamp
Head of Operations
Renal Registry
- Fiona Loud
Policy Director
Kidney Care UK
- Sue Eve-Jones
Clinical Coding Lead
Getting It Right First Time (GIRFT)
- Dr Jyoti Baharani
Consultant Nephrologist
University Hospital Birmingham
- Sue Thomas
Chief Executive, Commissioning Excellence
Wilmington Healthcare
- Claire Oates
Renal and Urology Lead Pharmacist
Barts Health NHS Trust
- Roger Tomlins
Senior Consultant
Wilmington Healthcare
- Sally Punzalan
Lead Nurse Renal Home Therapies
Hammersmith Hospital and Imperial College London

References

1. UK Renal Registry 21st Annual Report. Data to 31/12/2017 Chapter 1 Adults starting RRT for end-stage kidney disease (ESKD) in the UK in 2017
https://www.renalreg.org/wp-content/uploads/2019/05/21st_UKRR_Annual_Report.pdf
2. NICE (2020), Covid-19 rapid guideline: dialysis service recovery
<https://www.nice.org.uk/guidance/ng160>
3. NICE (2014), Clinical Guideline 182, Chronic kidney disease in adults: assessment and management, <https://www.nice.org.uk/guidance/cg182/resources/chronic-kidney-disease-in-adults-assessment-and-management-pdf-35109809343205>
4. Kidney Care UK (2015), Dialysis: making the right choice for you, The Dialysis Decision Aid Booklet, <https://kidneyresearchuk.org/wp-content/uploads/2019/05/KR-decision-aid-colour-July2015.pdf>
5. NHSE (2018), Abdul's Story, Progressive Chronic Kidney Disease, <https://www.england.nhs.uk/rightcare/wp-content/uploads/sites/40/2018/02/abduls-story-progressive-chronic-kidney-disease-full-narrative-1.pdf>
6. UK Renal Registry 21st Annual Report. Data to 31/12/2017 Chapter 2 Adults on RRT in the UK in 2017
https://www.renalreg.org/wp-content/uploads/2019/05/21st_UKRR_Annual_Report.pdf
7. <https://www.thinkkidneys.nhs.uk/ckd/wp-content/uploads/sites/4/2017/05/Interventions-Toolkit-FINAL-2.pdf>
8. NHS England and NHS Improvement (2019) 2019/20 National Tari Payment System. Available at: https://improvement.nhs.uk/documents/4980/1920_National_Tari_Payment_System.pdf
9. NHS Improvement (2018) NHS Reference Costs. Available at: <https://improvement.nhs.uk/resources/reference-costs/>
10. Data source: Dr Gareth Roberts Clinical Business lead ABUHB data conference presentation (2017) presented in Buss P, Lewis S, Gray M Value Based Healthcare Impact of Quality of Care and Cost; The Welsh NHS Confederation Conference. Available at: https://www.nhsconfed.org/~/_media/Confederation/Files/Wales%20Confed/Value%20Based%20Healthcare.pdf. Data includes 6% inflation.

