

## **WEST YORKSHIRE VASCULAR NETWORK - CLINICAL INTERDEPENDENCIES (particularly Vascular-Renal)**

1. Clinical Interdependencies were identified as one of the differentiating factors in determining the choice of the other West Yorkshire (WY) arterial centre between Bradford Teaching Hospitals NHS FT (BTHFT) and Calderdale and Huddersfield NHS FT (CHFT).
2. Vascular services have clinical interdependencies with many other services. The South East Coast Clinical Senate (SECCS) clinical co-dependencies review identified the most critical and differentiates between those which must be co-located on the same site (Purple), provided by a visiting or inreach service (Red), or ideally on same site but could alternatively be networked via robust emergency and elective referral and transfer protocols (Amber). The full table of co-dependencies is at Appendix 1.
3. The WY Vascular Network Clinical Working Group (CWG) reviewed the key interdependencies between vascular and other services and identified that the only one which might differentiate between the choice of site for the other arterial centre was with renal services. This is because BTHFT has an acute inpatient renal unit at Bradford Royal Infirmary (BRI) but CHFT does not.
4. There are two established renal dialysis services in West Yorkshire, one run by Leeds Teaching Hospitals NHS Trust (LTHT) and one run by BTHFT. The LTHT service has over 1000 dialysis patients. It provides an inpatient renal unit at St James' University Hospital (SJUH) and a number of outpatient satellite units including those at Calderdale Royal Hospital (CRH) and Huddersfield Royal Infirmary (HRI). LTHT also provides the regional kidney transplant service. The BTHFT renal dialysis service has 300 dialysis patients. It provides an inpatient renal unit at BRI and runs outpatient satellite units at St Luke's Hospital and Skipton. CHFT has an established renal team consisting of 2 CHFT nephrologists and one LTHT nephrologist providing in-reach and a link to the SJUH renal service. The team provides outpatient clinics and support to inpatients and the satellite units.
5. A number of documents and other evidence have been reviewed to determine the strength of the interdependency:
  - a. **Yorkshire & Humber Clinical Senate Review of Vascular Services, Part 2.** The review notes that "Bradford Teaching Hospitals Foundation Trust is a renal centre and the presence of a renal centre does support this trust as the location of the arterial centre".
  - b. **NHS England In Centre Haemodialysis Service Specification (A06/S/a).** The specification states that patients on haemodialysis present some of the most serious challenges encountered by vascular surgeons and interventional radiologists. Patients are dependent on the maintenance of vascular access and have a high susceptibility to cardiovascular disease. Therefore there should be:
    - i. Clear referral pathways to vascular surgery and interventional radiology (VIR) for vascular access, maintenance and salvage
    - ii. 24/7 and urgent on-site cover available from vascular surgeons and interventional radiologists

Patients should not be transported to another hospital for regular maintenance or acute dialysis during a hospital stay, other than in exceptional circumstances such as admission for treatment by a specialised service which is not co-located with a renal unit.

- c. **NHS England Vascular Service Specification (170004/S).** The vascular specification identifies the infrastructure/facilities required for the service and interdependent services. It identifies inpatient renal units as interdependent, but not necessarily co-located, services and does not mention ward based dialysis as a requirement for vascular wards.

In relation to provision of peripheral angioplasty or stenting at non-arterial sites by VIR, it specifically states that “renal patients requiring intervention can be treated within a designated renal access/transplant centre so long as there are firm 24/7 protocols for vascular referral if required”. In line with the service model described by the CWG, the specification states that inpatient VIR at a spoke site should be restricted to patients who can remain under a medical team, such as renal, for their overall care.

- d. **The Clinical Co-dependencies of Acute Hospital Services: A Clinical Senate Review (SECCS).** The review specified the inter-dependencies as follows:

- i. Vascular Hub (ie Arterial Centre) on Nephrology (not including dialysis): Red - provided by a visiting or inreach service.
- ii. Vascular Hub on Dialysis: Amber - ideally on same site but could alternatively be networked via robust emergency and elective referral and transfer protocols
- iii. Vascular Spoke on Nephrology: Green - no direct relationship
- iv. Vascular Spoke on Dialysis: Green - no direct relationship
- v. Renal service inpatient hub on Vascular Hub: Amber - ideally on same site but could alternatively be networked via robust emergency and elective referral and transfer protocols
- vi. Renal service inpatient hub on Vascular Spoke: Purple - must be co-located on the same site

It also states “renal inpatient services are either collocated with vascular centres or where that is not possible served by spoke vascular services”.

- e. **Current locations of Arterial Centres and Renal Units.** Based on data from the Renal Association on renal centres and the Vascular Society on arterial centres, there are 56 renal centres and 76 arterial centres in England. 40 are co-located on the same site. 16 renal units are not co-located with an arterial centre, but of these 3 are paediatric only and 7 (including the LTHT services) are in the same trust but not on the same site. 36 arterial centres are not co-located with a renal unit, but of these 9 do not provide a full range of arterial services. Therefore, while the majority are co-located (especially for renal units where over 70% are co-located, compared to 53% for arterial units), this shows that it is possible to provide either service on its own.
- f. **The Renal Association - advice from Professor Donal O’Donoghue.** Professor O’Donoghue highlighted the NHS England renal service specification and the Renal Association NICE accredited guidelines on the importance of access to vascular surgery and VIR for timely treatment of vascular access problems. He also references

the conclusions of the Y&H Clinical Senate Review, the SECCS co-dependencies review and notes the Vascular Society recommendation which “emphasises the importance of vascular surgery and radiology input into renal MDT meetings”. He makes a number of recommendations, of which the key one for the preferred option for the other arterial centre in WY is that the requirements for creation and maintenance of vascular access and the frequent need for complex vascular intervention in renal patients are both considered as separate decision making criteria.

g. **Kidney Care UK.** Kidney Care UK, both the national and regional officers, also highlights the NHS England renal service specification and notes the BTHFT service is currently compliant with it (with the current networked vascular service between BTHFT and CHFT). They raise concerns about patient safety, experience and travel and would want to see evidence of arrangements out of hours and analysis of the impact on patients and equity of access for Leeds and Bradford patients.

6. Based on this evidence, the CWG concluded that it was clearly preferable for an inpatient renal unit and arterial centre to be co-located, but it was not absolutely essential.

7. If they were not co-located (ie CHFT is chosen as the other arterial centre) the following would need to be provided to maintain high quality, safe renal services at BTHFT and to provide renal support to vascular patients at CHFT:

a. Vascular Access Surgery. The proposed service model envisages that the vast majority of vascular access procedures would be delivered as daycases on spoke sites. The small number which may need an overnight stay could also be provided at spoke sites, particularly BRI, by patients being admitted to the renal ward overnight.

b. Blocked Fistulae. The majority of blocked fistulae need to be treated urgently, but not as an emergency out of hours. VIR will be available at spoke sites M-F, daytimes, to provide fistula clearance for these patients. The small number of bleeding fistulae which do need to be treated as emergencies would need to be transferred to an arterial centre for treatment out of hours.

c. Support to renal MDTs. This would be provided as part of consultant job-planning.

d. Vascular advice to renal services. There will be vascular surgery and VIR presence at spoke sites M-F, daytimes. This would include daycase operating, clinics and a proposal for a vascular surgeon to be available for 1 PA per day without other commitments for advice, admission avoidance and to support repatriation of vascular patients from the arterial centre to spoke site.

e. Dialysis for vascular patients at CHFT. As discussed with LTHT renal team, it is proposed that a bedside dialysis service would be established at CHFT to support vascular patients needing renal dialysis. Based on assumptions of around 80 vascular patients per year, with an average 2 week length of stay and 3 dialysis sessions per week, this would require 480 treatments per year. To accommodate peaks in demand the service could provide dialysis for up to 3 patients on dialysis per day, 6 days per week. It would require:

- i. 6 bedspaces to be equipped for bedside dialysis at a cost of approximately £100 per bedspace
- ii. 4 RO and 4 Haemodialysis machines with an estimated total capital cost of £60k
- iii. Nursing team of (wte): 1x Band 6, 1.88 x band 5, 1.44 x Band 3, 1.44 x Band 2, at a total cost of approximately £154k per year

NB. There is the potential to expand this service to provide bedside dialysis for other specialties at CHFT to provide care closer to home and relieve pressure on the LTHT service. This has not, however, been considered as part of the work on the WY Vascular Network.

- f. Renal support to vascular patients at CHFT. CHFT currently has a team of 2 nephrologists plus a visiting LTHT nephrologist who provide OP clinics and support to inpatients. It is likely that this would need to be increased to cover the additional workload generated by an additional 80 dialysis patients per year undergoing major vascular treatment.
8. If BTHFT was selected as the preferred option for the arterial centre, an additional 30 vascular patients needing dialysis would need to be accommodated in the BRI renal service requiring an estimated 180 dialysis treatments (2 week length of stay, 3 treatments per week). The BRI inpatient renal unit currently has capacity to provide around 2500 treatments per year (4 dialysis stations, 2 sessions per day, 6 days per week, 52 weeks per year) but in the last 3 months (Jan-Mar 18) has only provided 400 treatments out of a potential capacity of 624. Therefore the additional treatments could be accommodated within the existing unit without additional cost.
9. **Conclusion.** The discussion above demonstrates that it is possible to implement practical and affordable service models which would maintain high quality, safe care for vascular and renal patients whichever site is chosen as the preferred option for the other arterial centre in WY. However, all other things being equal, the evidence also shows that it is preferable (although not absolutely essential) that arterial and renal centres are co-located.

## Appendix:

- 1. Vascular Clinical Co-dependencies

## References:

- A. Yorkshire & Humber Clinical Senate Review of Vascular Services, Part 2, Jan 17
- B. NHS England In Centre Haemodialysis Service Specification (A06/S/a)
- C. NHS England Vascular Service Specification (170004/S)
- D. The Clinical Co-dependencies of Acute Hospital Services: A Clinical Senate Review (South East Coast Clinical Senate), Dec 14
- E. The Renal Association - advice from Professor Donal O'Donoghue, 19 Feb 18
- F. Kidney Care UK, National Policy Director, 15 Feb 18
- G. Kidney Care UK, North East, Yorkshire & Humber, 19 Feb 18
- H. WY Vascular Network, Service Model and High Level Pathways, 10 Jan 18
- I. Email from Dr E Dunn, LTHT Renal Clinical Lead, re CHFT Bedside Dialysis Service, 15 Mar 18
- J. Email from Dr J Stoves, BTHFT Renal Clinical Lead, re BTHFT renal unit capacity, 28 Mar 18

