

# **Vascular access for haemodialysis in Scotland**

(Provisional)

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Renal Registry

# Introduction

- Widely accepted that a native arteriovenous fistula is the best form of vascular access for haemodialysis
- Central venous lines are associated with a higher risk of bacteraemia and higher mortality
- Dhingra *et al.*, 2001; *Kidney Int* 60:1443
- Pastan *et al.*, 2002; *Kidney Int* 62:620
- Xue *et al.*, 2003; *Am J Kidney Dis* 42:1013

# QIS Standards

- **Standard 4.4:**
  - A minimum of 70% of HD patients have an arteriovenous fistula or vein graft as their permanent access
  - 2002 Peer Review
    - 3 of 10 adult units reached target
  - UK Renal Association Survey 4/2005
    - 5 of 10 adult units reached target

- **Standard 4.5:**

- Permanent catheters are used as haemodialysis access in a maximum of 20% of patients

- Met in 3 of 10 units

# Questions

- How many HD patients with ERF have fistulas, grafts, tunnelled lines etc?
- What are the determinants of access type?
  - gender, age, PRD?
- Are there large differences in access type between units?

# **METHODS**



The SRR Steering Group has agreed to combine our regular audits of haemoglobin and URR with the first survey of Vascular Access for patients using hospital or home HD for ERF.

Please complete this form for every patient who dialyses in your unit on the census day. This includes patients who are normally registered with another unit but who are dialysing with you on that day. It also includes all your satellites. An expanded instruction sheet has been sent to each renal unit. A copy can be viewed on the SRR Website. Further copies of this document and the instruction sheet are available on the SRR website <http://www.show.scot.nhs.uk/SRR> or you can photocopy a blank form.

Once completed please give this form to the person responsible for entering data onto the Renal Unit Electronic Patient Record or the Scottish Renal Registry. They will deal with data entry and then send the form to the SRR office.

**Please complete all 7 Sections of this form.**

**1. Patient ID**

Name of Parent Renal Unit eg Monklands	
Location of the HD eg Home or Peterhead...	
Patient Name : Surname Forename	Hospital Patient ID Label would be ideal here
Date of Birth (dd/mm/yyyy)	/ /

**2. HD Details**

Date of HD reported for this Census	/ /						
HD Sessions per week	1	2	3	4	5	6	7
Please tick the appropriate box							
What is the planned Duration of this HD session	□□ : □□ (hh:mm)						
What time will (or did) this session start	□□ : □□ (hh:mm)						

**3. Today's Pre dialysis Weight and Blood Pressure**

Please record the patient's pre dialysis weight in kg wearing light indoor clothes without shoes.	□□□. □ kg
Please record the patient's pre dialysis sitting blood pressure	□□□ / □□□ mmHg

**4. Vascular Access**

Please tick one box which best describes the afferent (arterial) access used for HD on the Census Day

Fistula:	Right	Left
Radiocephalic		
Brachiocephalic		
Brachio basilic		
Ulna cephalic		
Radioulnar		
Popliteal to long saphenous		
AV Fistula details not known		

Vein Loop	Right	Left
Brachial artery to brachial vein		
Brachial artery to basilic vein		
Femoral artery to femoral vein		
Vein Loop details not known		

Graft:	Right	Left
Radial artery to antecubital vein		
Brachial artery to axillary vein		
Brachial artery to brachial vein		
Brachial artery to cephalic vein		
Brachial artery to basilic vein		
Axillary artery to axillary vein		
Femoral artery to femoral vein		
Popliteal artery to internal jugular vein		
Popliteal artery to femoral vein		
Axillary artery to jugular vein		
Femoral artery to jugular vein		
Femoral artery to renal vein		
AV Graft details not known		

Needed but details not known	Right	Left
Needles used through the skin but access type not known		

Non Tunnelled CV Catheters ("Lines")	Right	Left
Non tunnelled internal jugular vein catheter		
Non tunnelled subclavian vein catheter		
Non Tunnelled femoral vein catheter		
Non Tunnelled Line details not known		
Tunnelled CV Catheters ("Lines") Line	Right	Left
Tunnelled internal jugular vein catheter		
Tunnelled subclavian vein catheter		
Tunnelled femoral vein catheter		
Subcutaneous Implanted eg "LifeSite"		
Tunnelled Line details not known		

Comment: Please only use this box if required to explain a complex situation that is not covered in the list above. In that case please add you name so that we can contact you for further help if necessary	Comment Your Name:
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**5. URR Audit**

Please tick the box below to confirm that you have done or will do the routine April URR samples as described in the SRR guideline on the Census Day and that you will submit the result to the SRR in the normal way for your unit (eg via Electronic Patient Record). You do *not* have to enter the results here.

URR Samples taken	
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**6. Haemoglobin Audit**

Please tick 3 boxes below to confirm that you have or will measure the following as described in the SRR guideline on Haemoglobin Audit You do *not* have to enter the results here.

Haemoglobin Sample taken	
Serum Ferritin Sample taken	

Has the patient had a blood transfusion in the 28 days before the Hb audit sample?	Yes	No
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**7. Haemopoietic Drugs**

Please insert the prescription that is in force for the following medicines on the Census Day. Insert "0" dose for medicines which are not prescribed. A dose of a "0" should be entered in every box in the dose column.

Drug Name	Dose	Units	Frequency	Route
Example Epo	1000	u	3 x week	Sub cut
Example NESP	0			
Example Iron	75	mg	weekly	I V
<b>Complete Below</b>				
Epo (Alfa or Beta, aka Epoetin, Eprex NeoRecormon)				
NESP (aka Arenesp, Darbeprotein Alfa)				
CERA				
Iron Sucrose. (aka Iron Saccharate, Venofer)				
Iron Dextran (aka CosmoFer)				
Iron Sorbitol (aka Jectofer)				

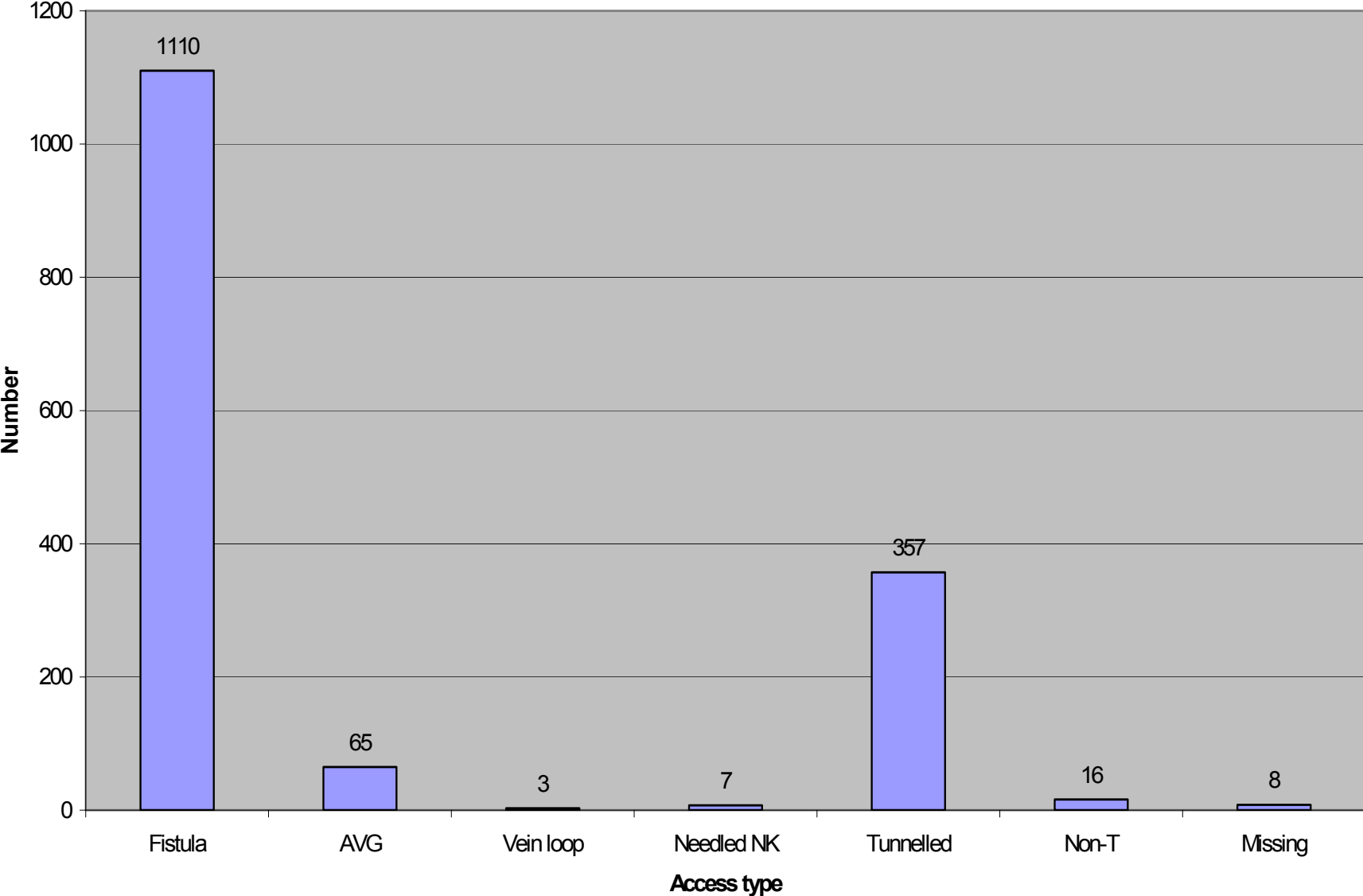
Now please ensure that this form is returned by your local coordinator as soon as possible to the Scottish Renal Registry, Glasgow Royal Infirmary, Walton Building, Glasgow, G4 0SF

# RESULTS

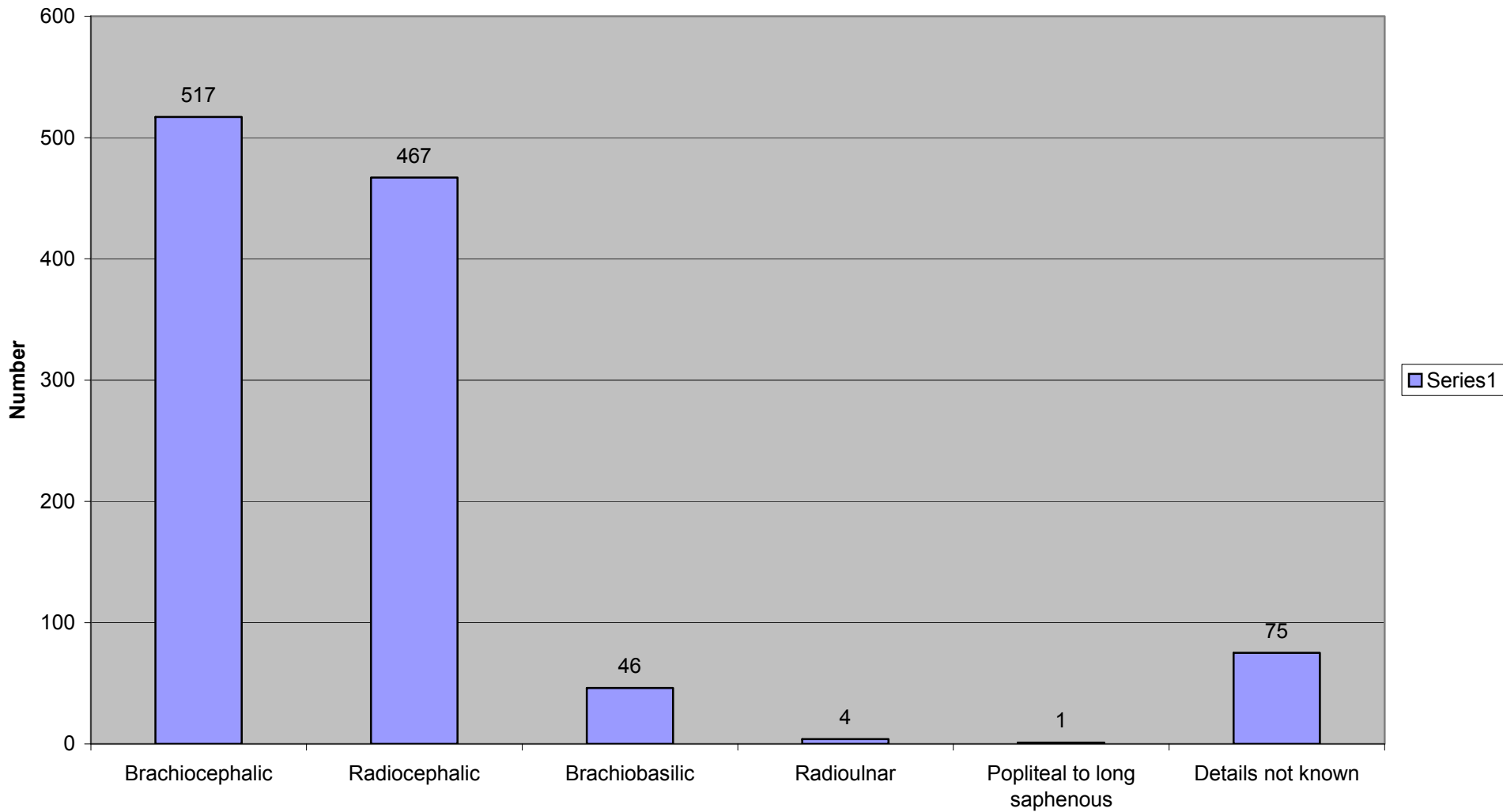


- 1566 patients
- Details of vascular access in 1558 patients
- 1550 prevalent patients on 5<sup>th</sup> April; 58% of these were male
- Primary renal diagnosis available for 1399 patients

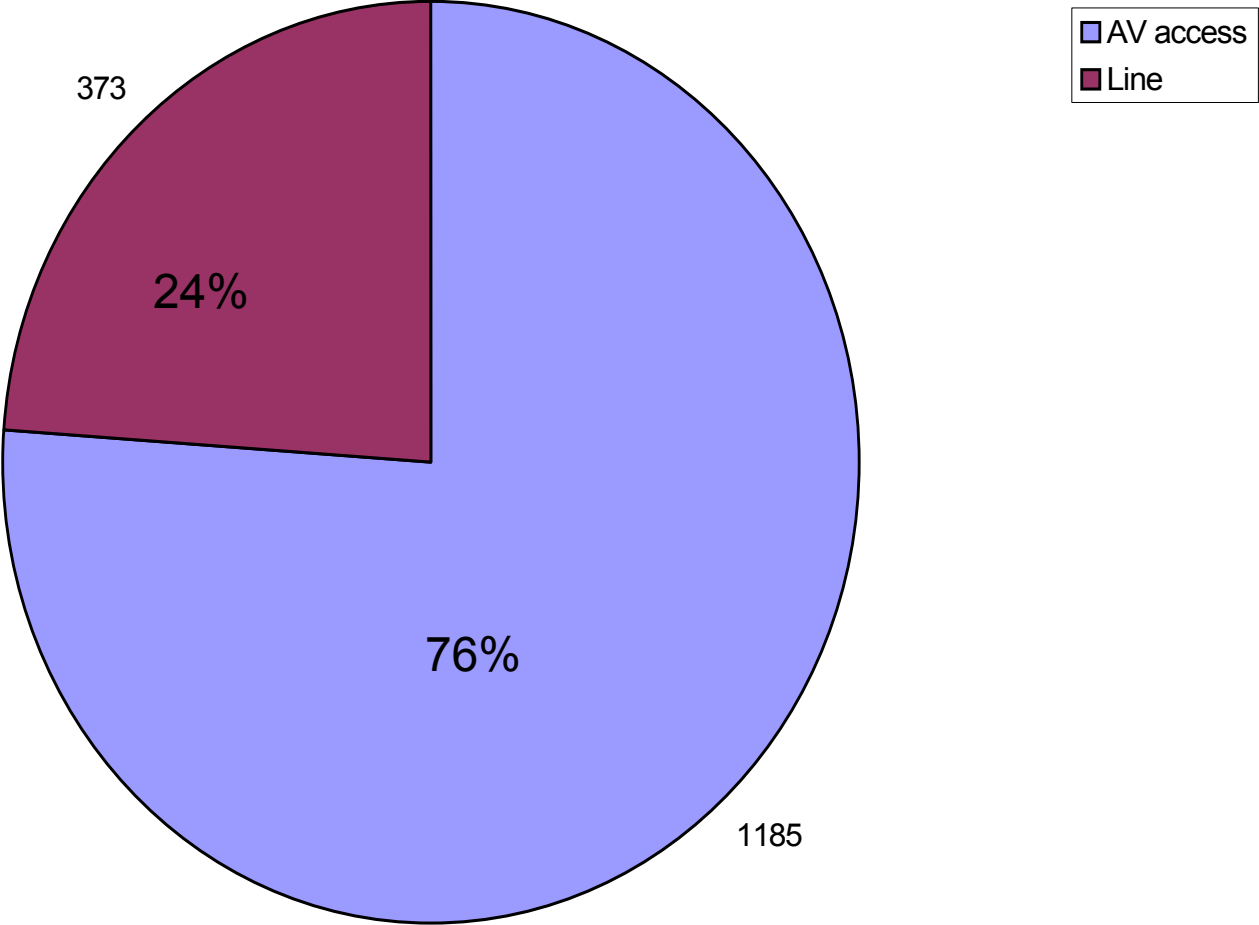
# Vascular access in Scotland



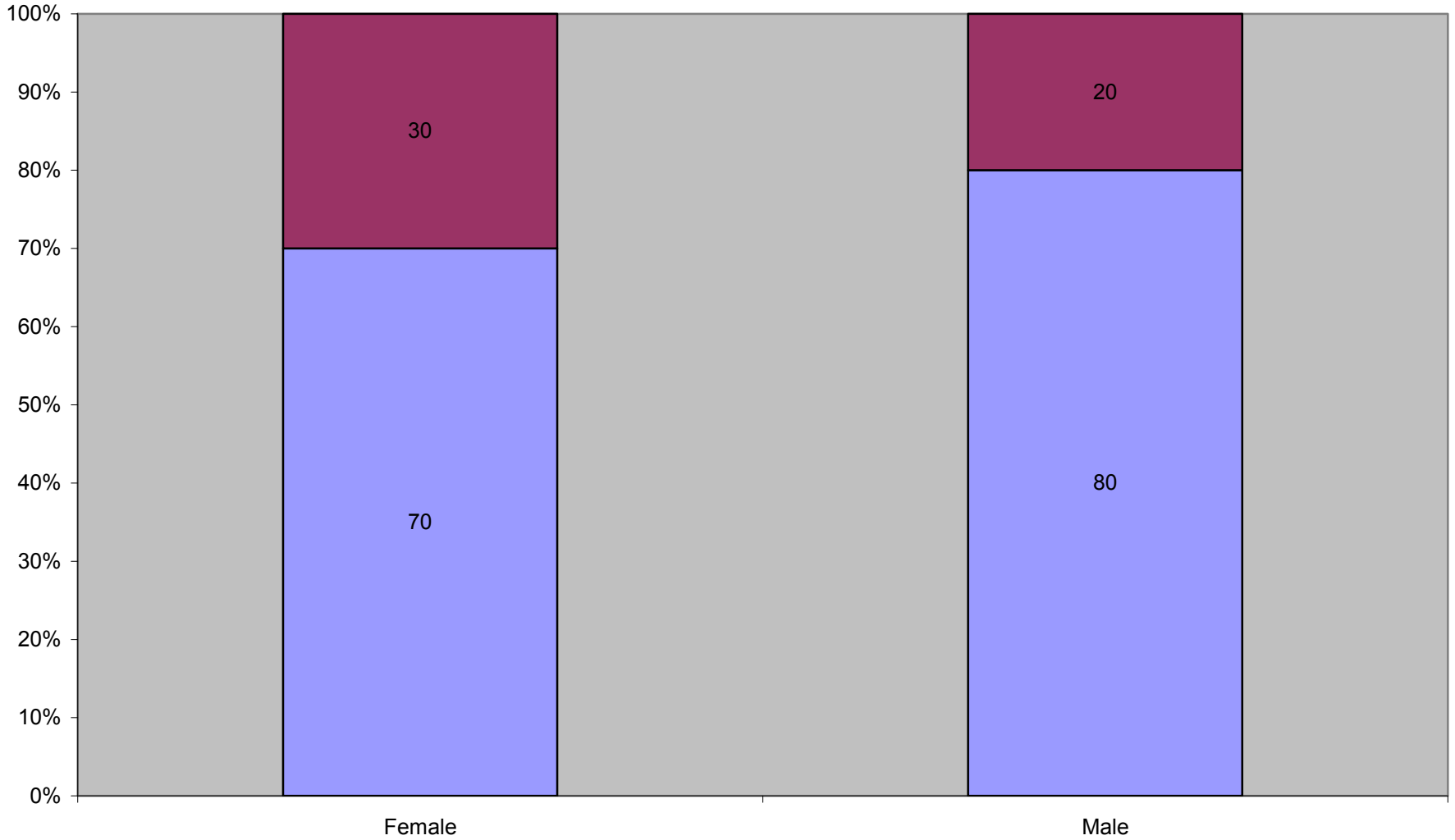
## Types of AV Fistula



**Access (simplified)**

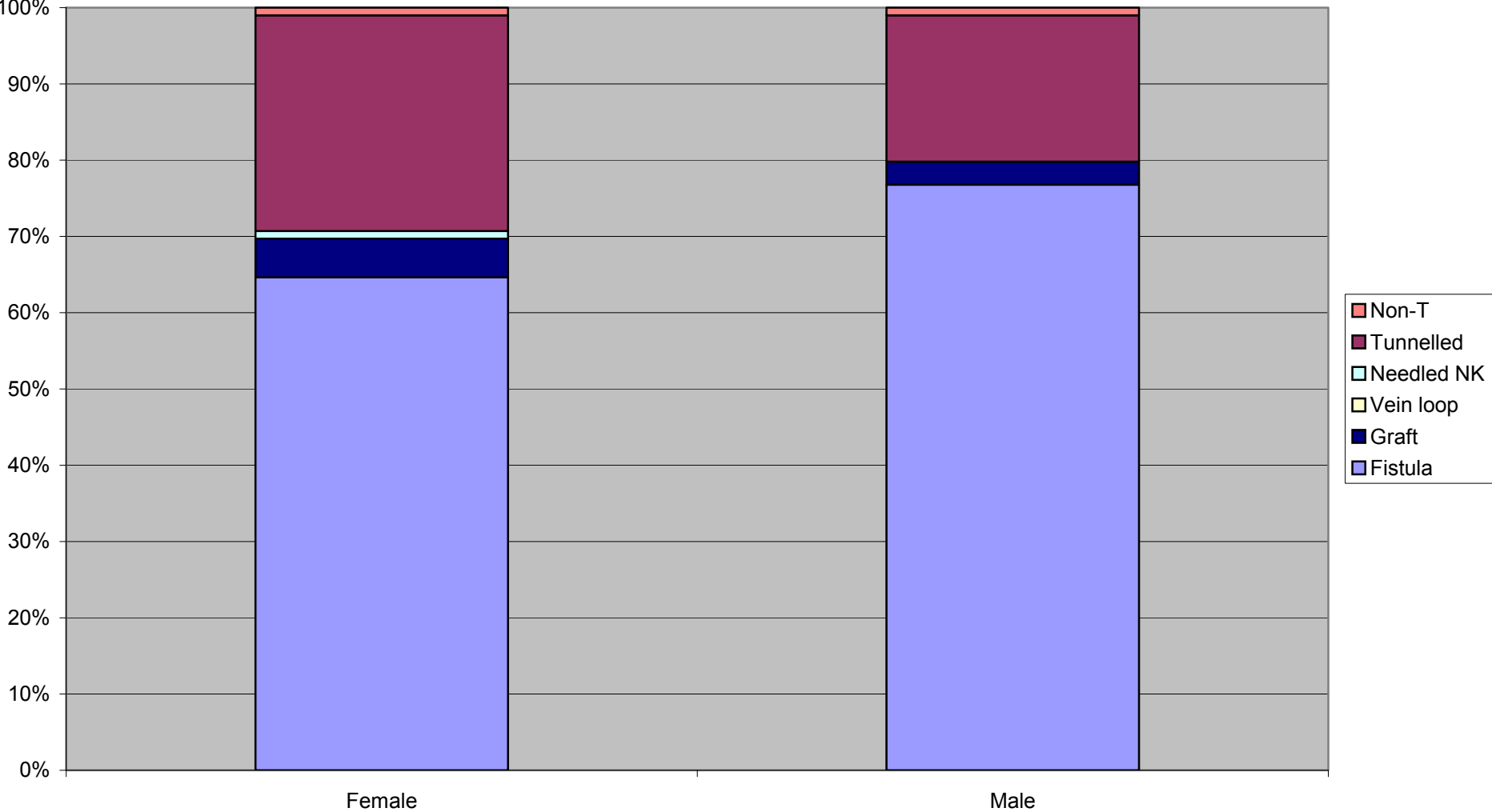


### Access by gender

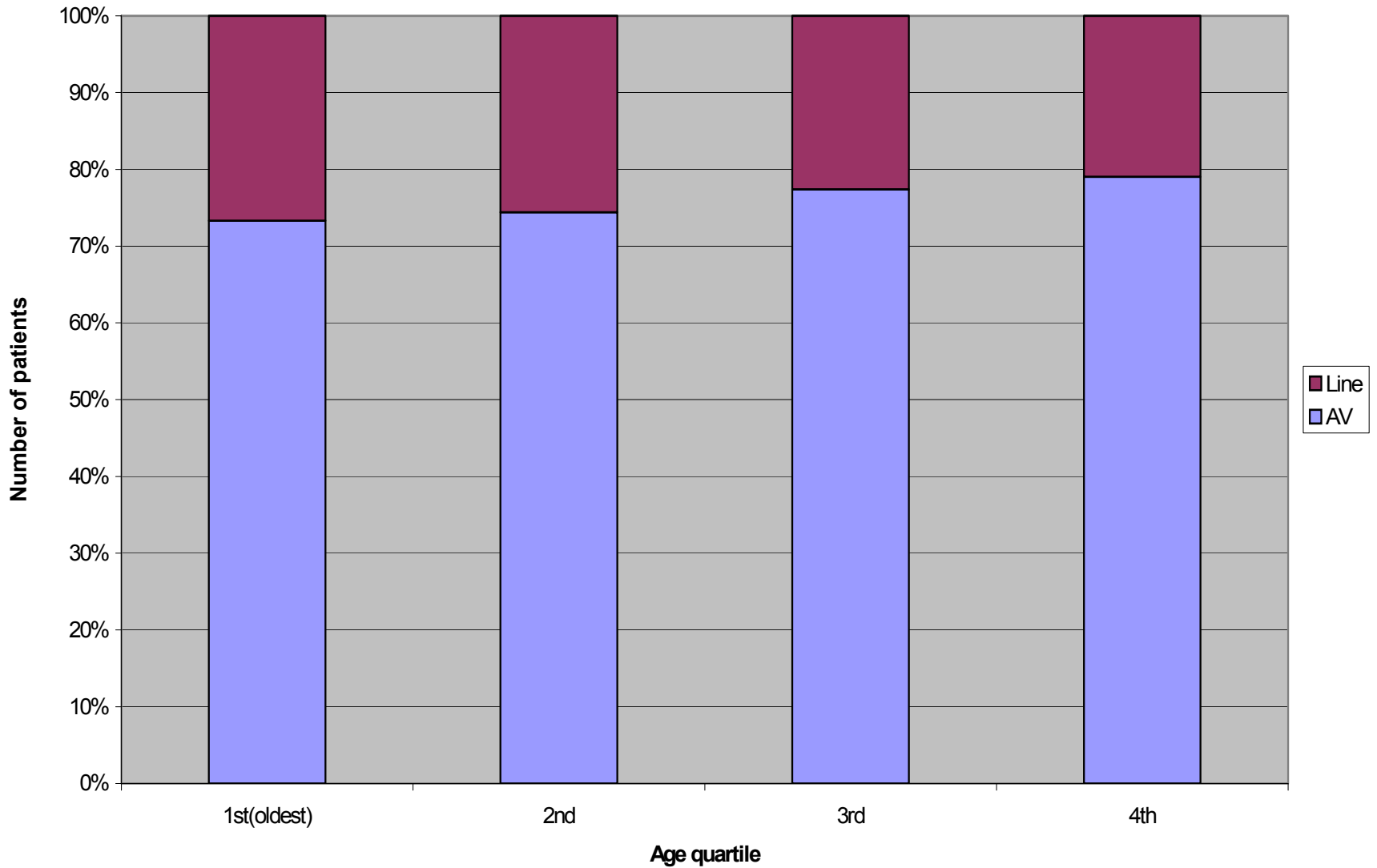


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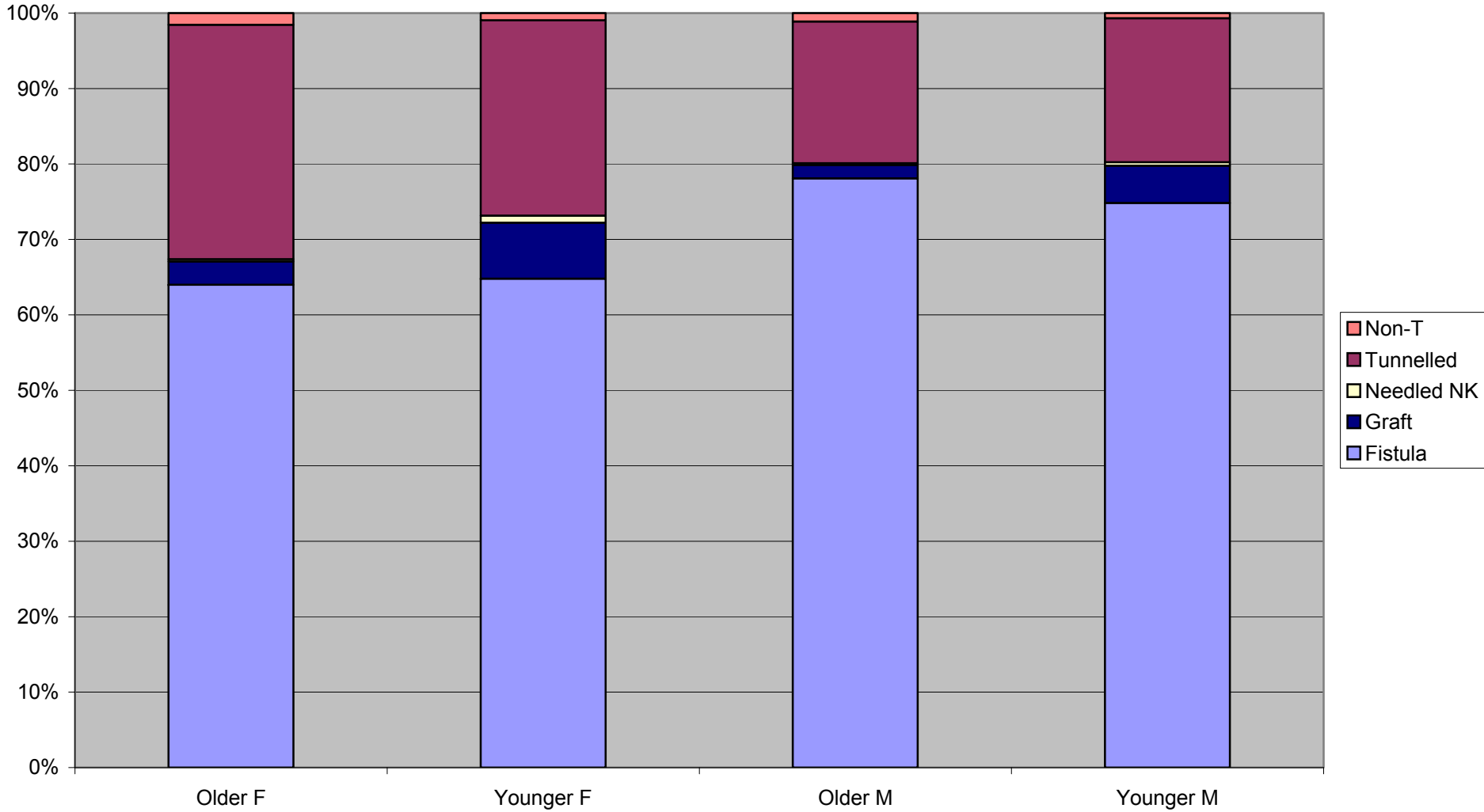
### Access in males and females



### Access and Age

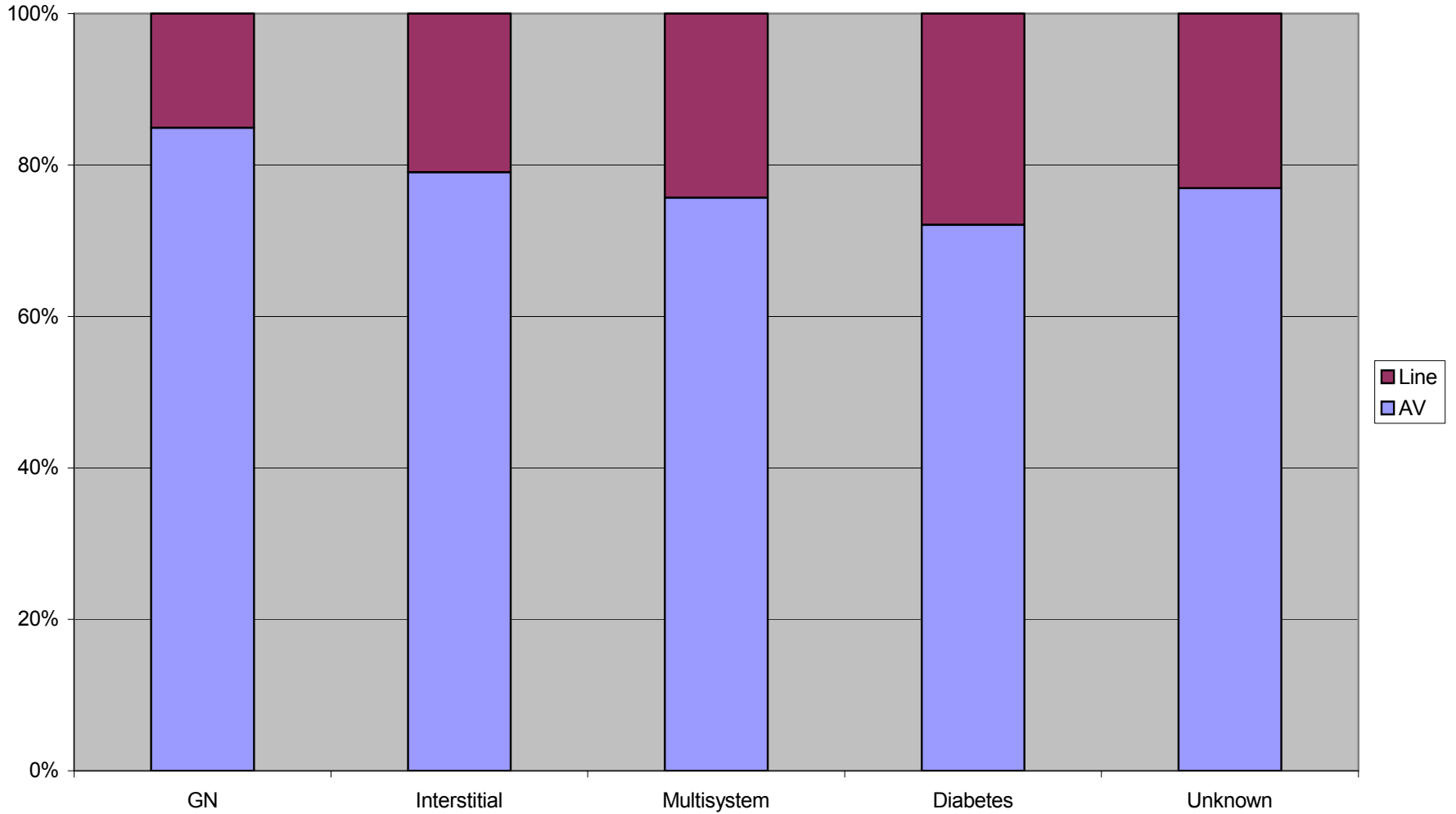


Access by Age and Gender



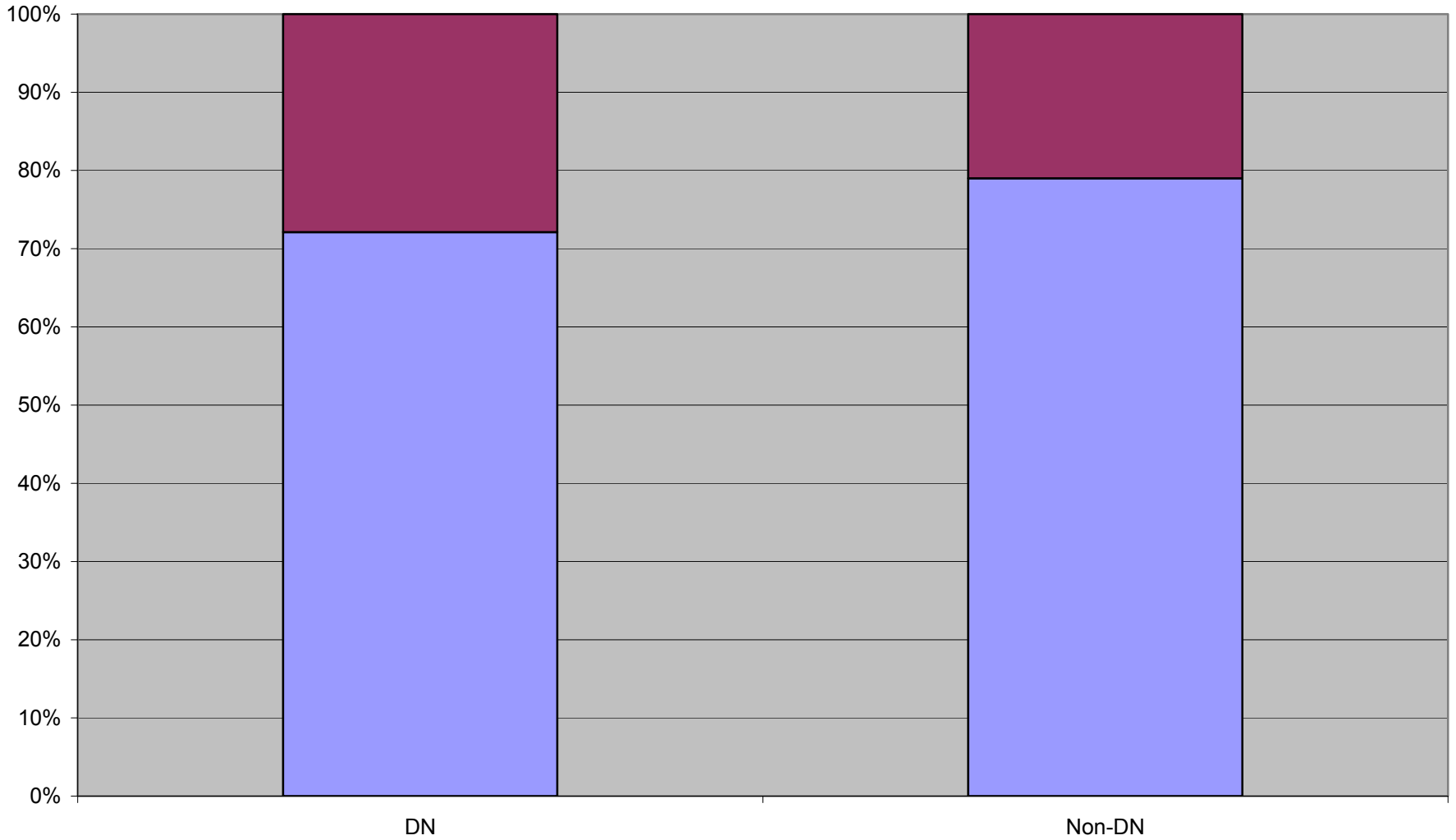


### Access and Primary Renal Disease



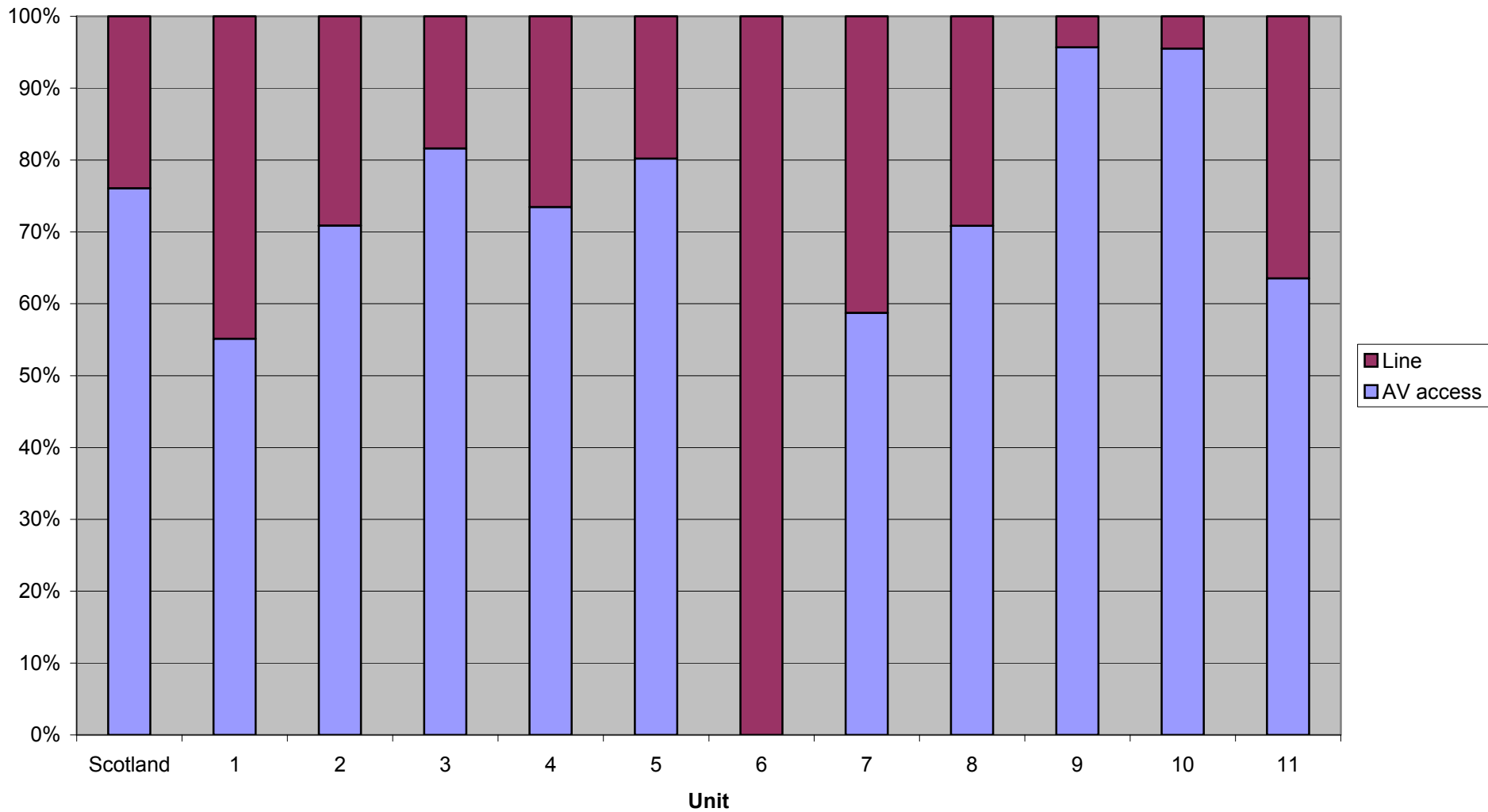
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### Access in patients with Diabetes as PRD



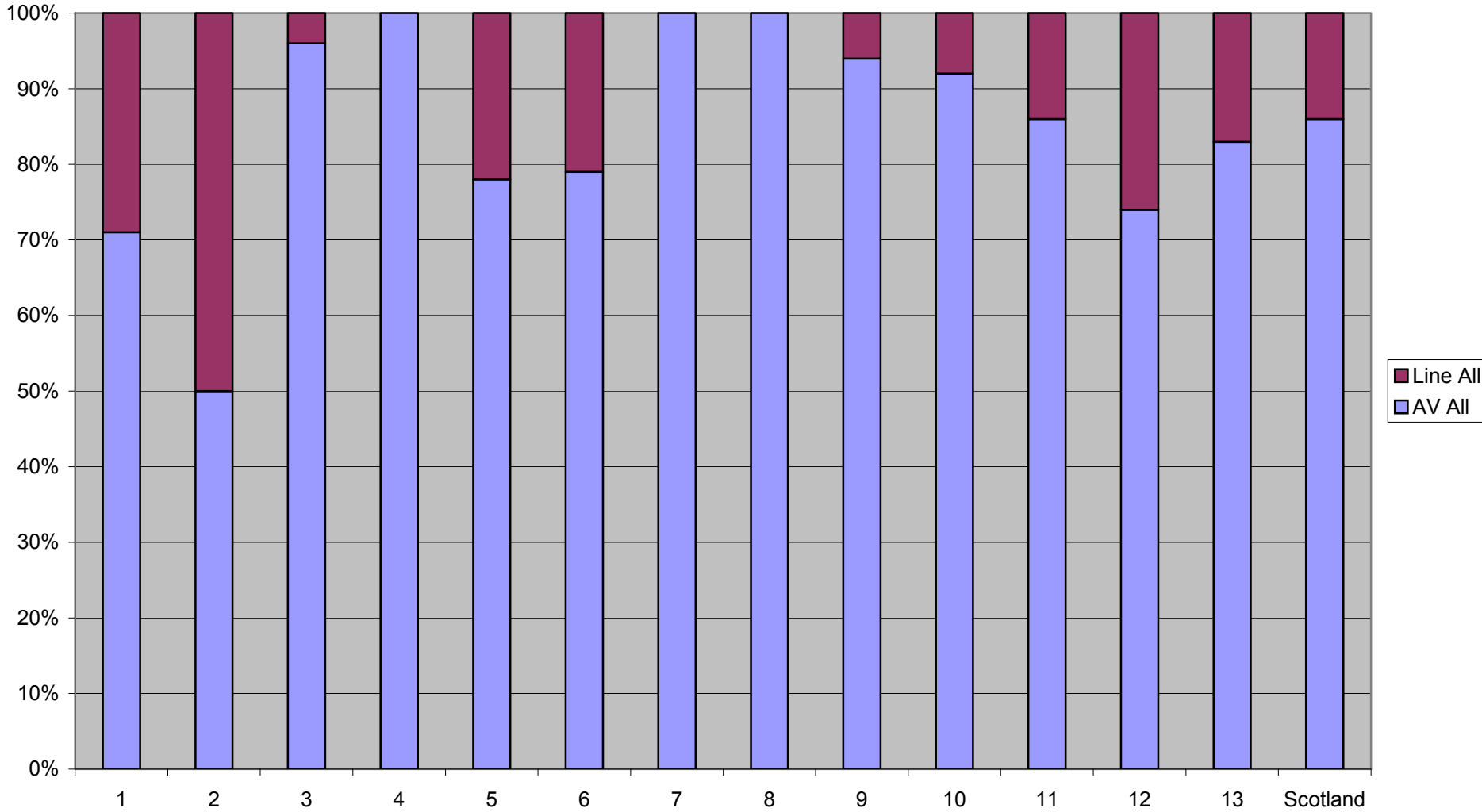
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### Access by Unit

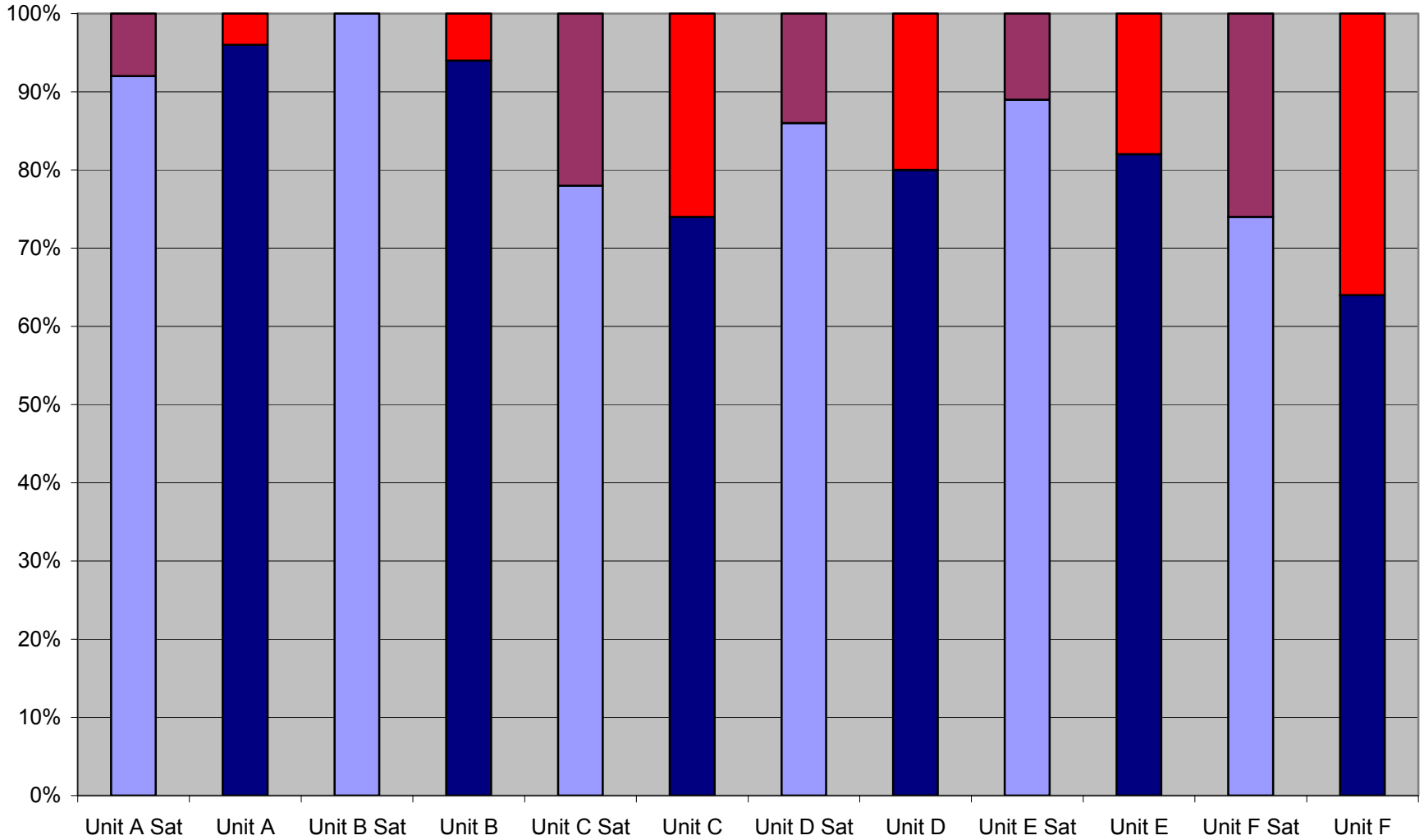


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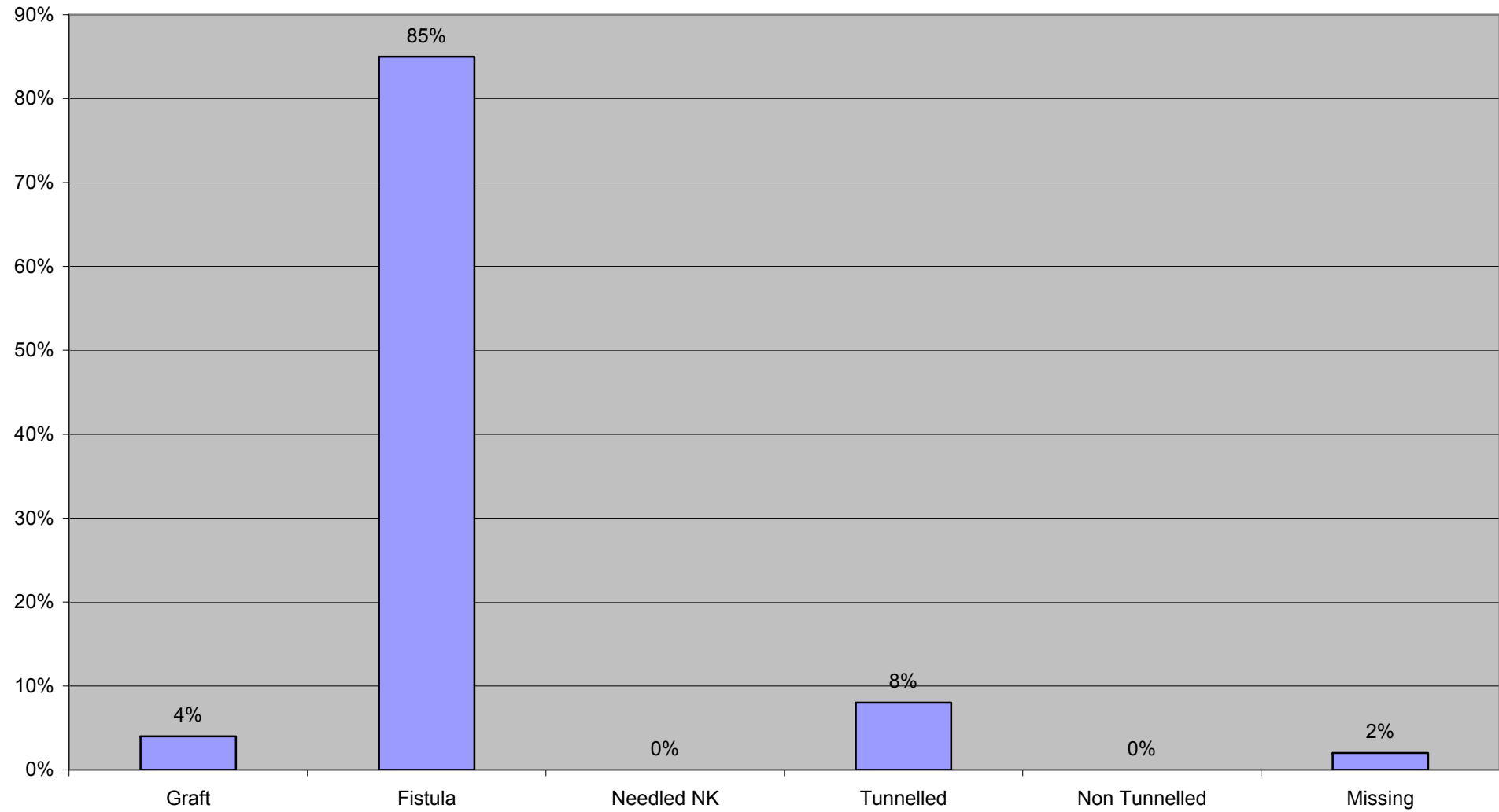
### Access by Satellite Unit



### Satellite Units vs Parent Unit



## Home Haemodialysis



# Conclusions

- Access is dependent on:
  - Renal Unit
  - Sex
  - Primary Renal Disease
- The number of units reaching targets is improving and is now 70% of adult units

# Future Work

- Association with haemoglobin and erythropoietin data.
- Association with URR and dialysis time data.
- Grant applied for to allow prospective data collection to look more fully at vascular access practice and impact on outcomes.