Repair of abdominal aortic aneurysm (AAA) to prevent rupture

AAA is an abnormal expansion of the aorta (the largest vessel taking blood away from the heart). If left untreated, it may enlarge and rupture causing fatal internal bleeding. An infra-renal aneurysm occurs below the level of the renal (kidney) arteries within the aorta.

There were 3,445 elective infra-renal AAA repairs submitted to the NVR in 2019, which is approximately 94% of all procedures carried out in the UK.

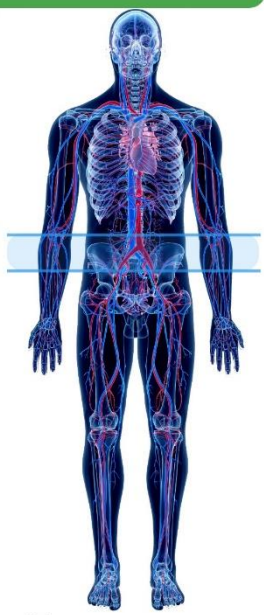
Of these

3,445

1,355 (39%) were open repair

2,090 (61%) were endovascular repair (EVAR)

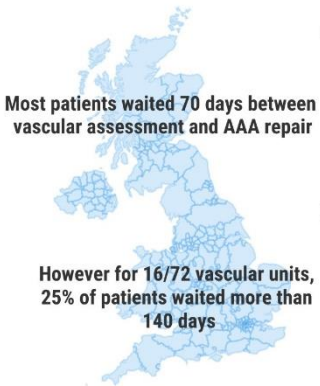
90% were male	90% were male
78% were older than 65 years	92% were older than 65 years
67% had hypertension	70% had hypertension
86% were a current or ex-smoker	85% were a current or ex-smoker



Glossary

The average is the median; "typical range" is the interquartile range.

Waiting Times



Most patients waited 70 days between vascular assessment and AAA repair

However for 16/72 vascular units, 25% of patients waited more than 140 days

The National AAA Screening Programme recommends that patients have their procedure within 8 weeks of referral.

In 2019, only 42% of patient met this target (50% in screened patients and 37% in non-screened patients).

How were patients assessed?

- 85% discussed at multi-disciplinary team meeting
- 83% had fitness measured
- 91% had pre-operative angiography assessment
- 95% had formal anaesthetic review
- 91% of these had review by consultant vascular anaesthetist

Patient outcomes after surgery

Open

- 2.3% died in hospital
- 4.7% were readmitted within 30 days
- 7 days (6-10 days) average length of stay (typical range)

EVAR

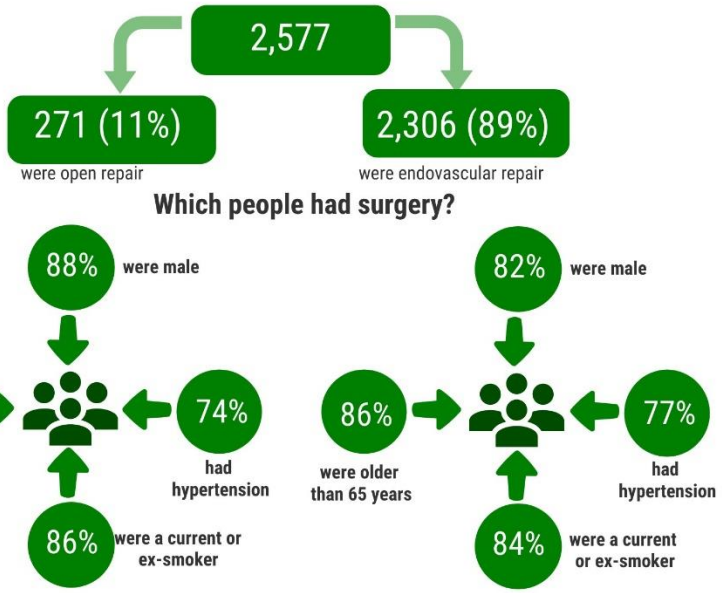
- 0.4% died in hospital
- 5.7% were readmitted within 30 days
- 2 days (1-3 days) average length of stay (typical range)

Repair of elective complex aortic aneurysms to prevent rupture

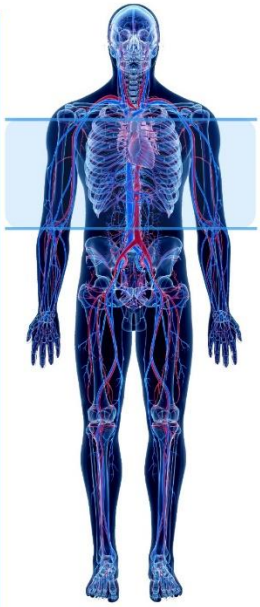
The term complex is used to describe those aneurysms that occur above the level of the renal (kidney) arteries. These are more complicated that the standard infra-renal repairs and require specialist teams, often within a specialist hospital.

There were 2,577 repairs of elective complex AAAs carried out in 2017-2019.

Of these

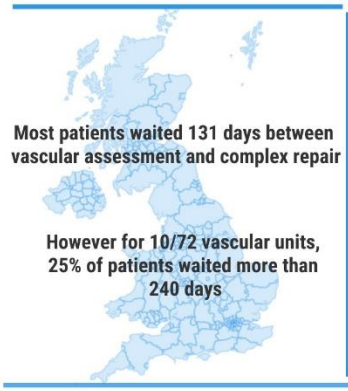


Which people had surgery?



Glossary

The average is the median; "typical range" is the interquartile range.



Most patients waited 131 days between vascular assessment and complex repair

However for 10/72 vascular units, 25% of patients waited more than 240 days

The most common complex endovascular procedures were:

Fenestrated EVARs (FEVAR), which involves a graft containing holes (fenestrations) to allow the passage of blood vessels from the aorta.
Branched EVAR (BEVAR), which involves separate grafts being deployed on each blood vessel from the aorta after the main graft has been fitted.
Thoracic endovascular aortic/aneurysm repair (TEVAR), which involves a repair of the aorta within the chest region of the body.

Patient outcomes after surgery

Lower limb bypass for peripheral arterial disease to prevent limb loss

Peripheral arterial disease (PAD) is a restriction of the blood flow in the lower limb arteries that can severely affect a patient's quality of life, and risk their limb.

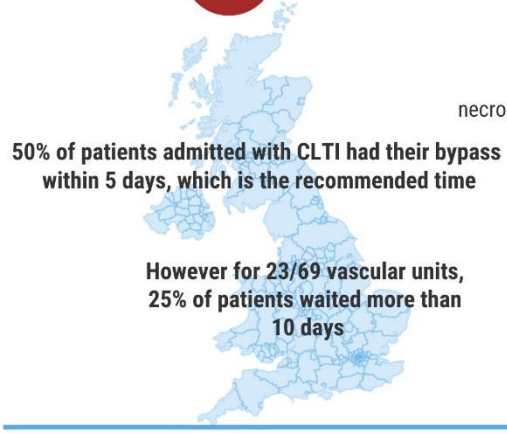
Open surgical (bypass) interventions become options when conservative therapies have proved to be ineffective.

18,090 lower limb bypass procedures carried out in 2017-2019

- **11,283** were admitted electively
- **6,807** were admitted in an emergency

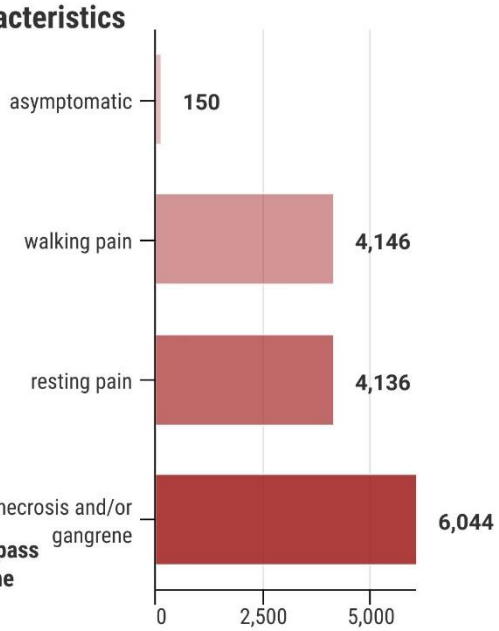
Patient characteristics

- **74%** were male
- **66%** were older than 65 years
- **35%** were diabetic
- **89%** were current or ex-smokers

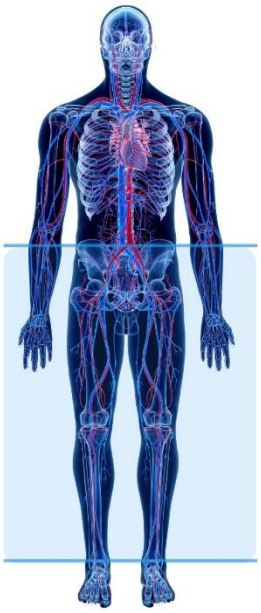


50% of patients admitted with CLTI had their bypass within 5 days, which is the recommended time

However for 23/69 vascular units, 25% of patients waited more than 10 days



In the NVR data, CLTI is defined as patients admitted in an emergency with either resting pain or necrosis and/or gangrene.



Glossary

The average is the median; "typical range" is the interquartile range.

Chronic limb-threatening ischaemia (CLTI) is the most severe form of PAD, where the blood flow to the legs becomes severely restricted.

Patient outcomes post bypass

Elective

- **1.0%** died in hospital
- **10.2%** were readmitted within 30 days
- **5 days (3-8 days)** average length of stay (typical range)

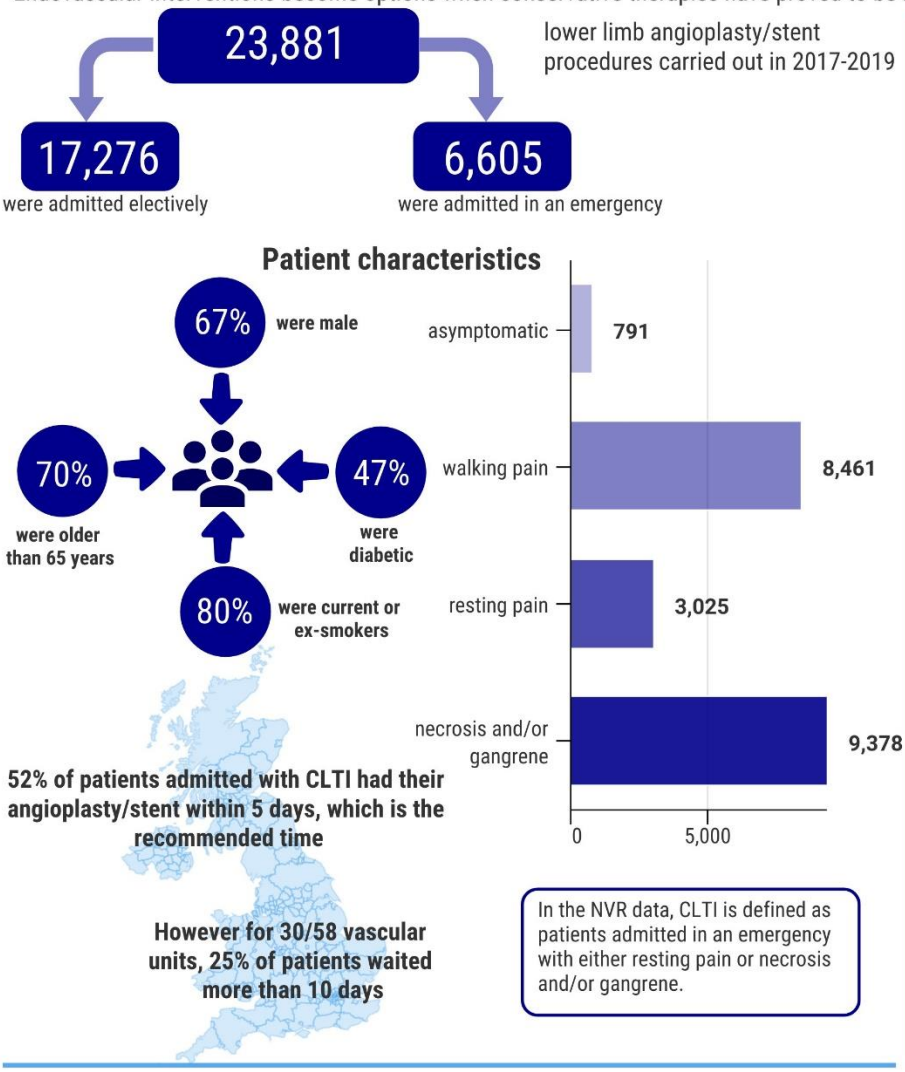
Emergency

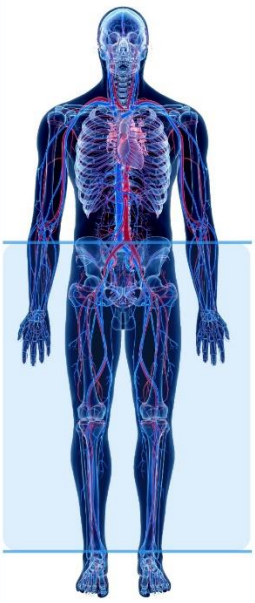
- **4.8%** died in hospital
- **15.1%** were readmitted within 30 days
- **14 days (9-25 days)** average length of stay (typical range)

Lower limb angioplasty/stenting for peripheral arterial disease

Peripheral arterial disease (PAD) is a restriction of the blood flow in the lower limb arteries that can severely affect a patient's quality of life, and risk their limb.

Endovascular interventions become options when conservative therapies have proved to be ineffective.





Glossary

The average is the median; "typical range" is the interquartile range.

Chronic limb-threatening ischaemia (CLTI) is the most severe form of PAD, where the blood flow to the legs becomes severely restricted.

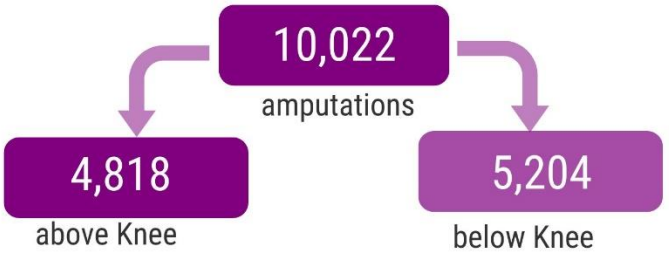
Patient outcomes post procedure

Lower limb major amputation for peripheral arterial disease

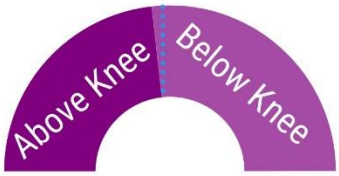
Peripheral arterial disease (PAD) is a restriction of the blood flow in the lower limb arteries that can severely affect a patient's quality of life, and risk their limb.

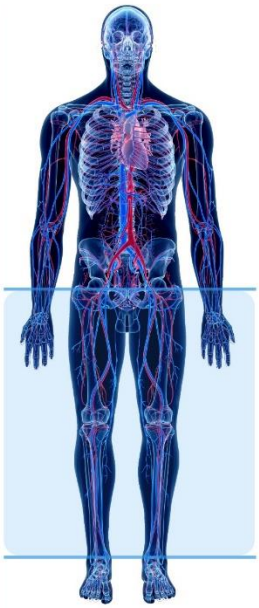
PAD can gradually progress in some patients and an operation to improve blood flow may no longer be possible. In these situations, people will require amputation of the lower limb.

In 2017-2019 there were 10,022 major lower limb amputations submitted to the NVR.



Hospitals should aim to have an above knee amputation to below knee amputation ratio below 1. In 2017-2019, the national ratio was 0.93, but it varied greatly across the country. 27 hospitals had a ratio above 1, and of these, 10 were above 1.5.

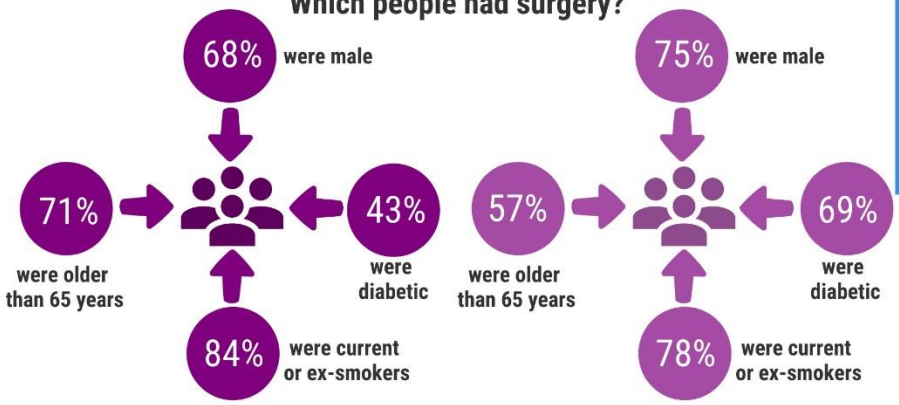




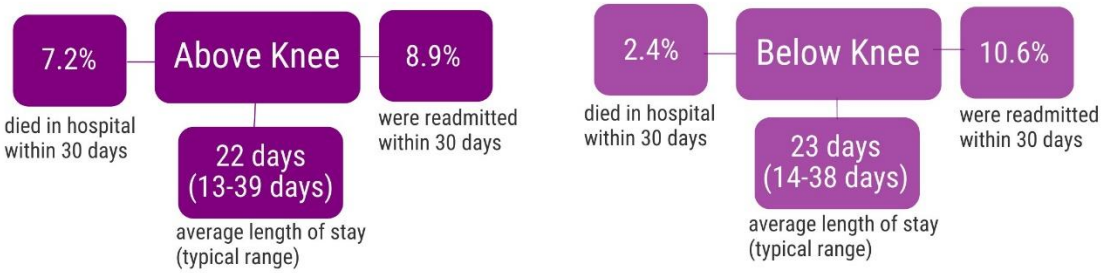
Glossary

The average is the median; "typical range" is the interquartile range.

Which people had surgery?



Patient outcomes after surgery

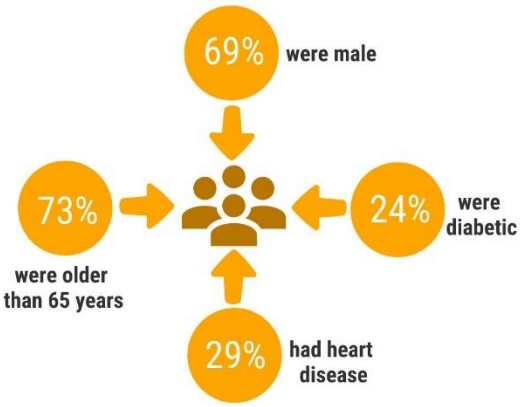


Carotid artery surgery to prevent stroke

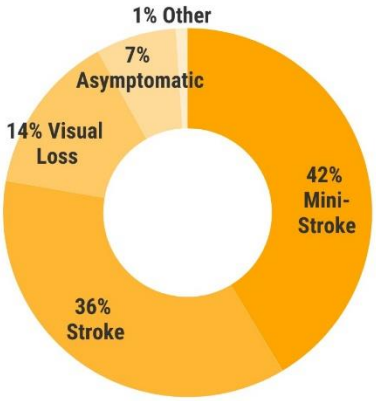
A procedure in which build-up of plaque is removed from the carotid artery in the neck is called a carotid endarterectomy (CEA).

There were 4,141 CEAs submitted to the NVR in 2019, which is approximately 97% of all procedures in the UK.

Which people had surgery?

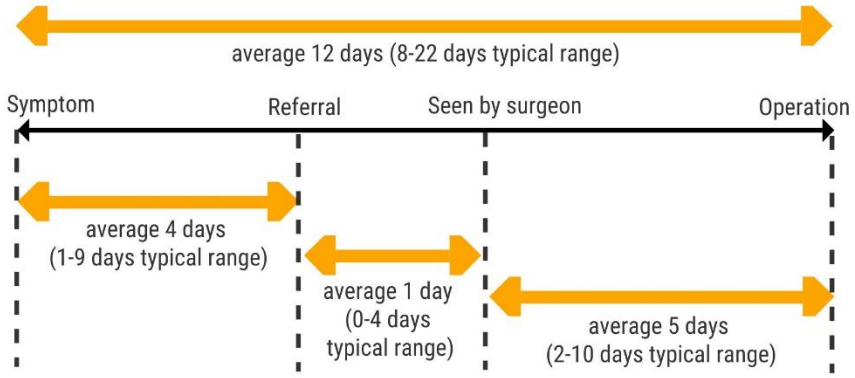


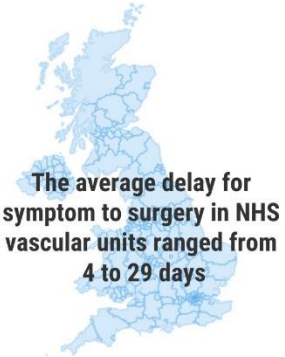
Reasons for surgery



Treatment times for symptomatic patients

Recommended time from symptom to surgery is within 14 days





The average delay for symptom to surgery in NHS vascular units ranged from 4 to 29 days

Glossary

A mini stroke, also known as a transient ischaemic attack (TIA), resolves completely within 24 hours.

Visual loss, also know as amaurosis fugax, is the loss of vision in one eye due to an interruption of blood flow to the retina.

The average is the median; "typical range" is the interquartile range.

A patient showing symptoms is known to be symptomatic.

Outcomes of surgery