

The COvid-19 Vascular sERvice (COVER) Study Tier 1 UK report



With Thanks to:



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Introduction

The coronavirus disease 2019 (COVID-19) has profoundly affected the availability of surgical resources, globally and within the United Kingdom (1). Vascular services are included within this, with some Vascular Societies issuing guidance on how services, training and research should be implemented during the first wave of the pandemic (2). The Vascular & Endovascular Research Network established an international research collaborative, with the aim of surveying fluctuations in vascular services during the first wave of the pandemic.

A remote digital survey was developed (Tier 1 COVER study). The study protocol is available online:

(<https://www.medrxiv.org/content/10.1101/2020.05.27.20114322v1>; ISRCTN 80453162).

The international data were published, but no UK subgroup analysis was performed (3). The aim of this report is to outline the fluctuations in vascular practice within UK vascular centres during and in the months following the first peak in cases using data from Tier 1 COVER study.

Methods

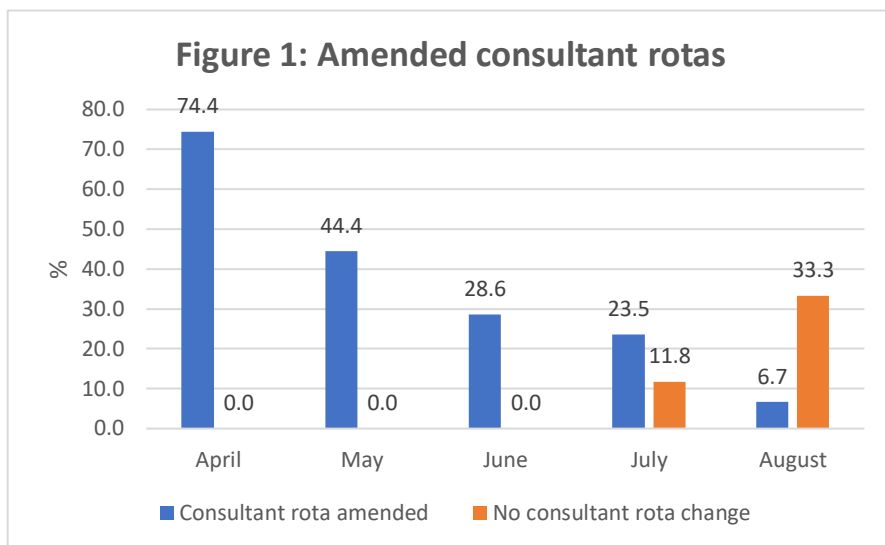
Data were collected from 49 vascular centres in the UK. Between 31/03/2020 to 31/08/2020 (phase 1), the data extracted for analysis included staffing levels, management of outpatient clinics and multi-disciplinary teams, vascular bed capacity, elective and emergency vascular surgical practice and availability of imaging modalities. After “passing the peak” of the pandemic in June 2020 (phase 2), data regarding perioperative COVID-19 precautionary practice and vascular research were collected. Estimations of operative and clinic waiting lists were also analysed. Data were evaluated on a monthly basis to assess for fluctuations in practice. 39 centres contributed data in April, 36 in May, 28 in June, 17 in July and 15 in August. Figures represented in the phase 1 and 2 results may not equal 100% due to some centres not supplying answers for all sections of analysis.

Results

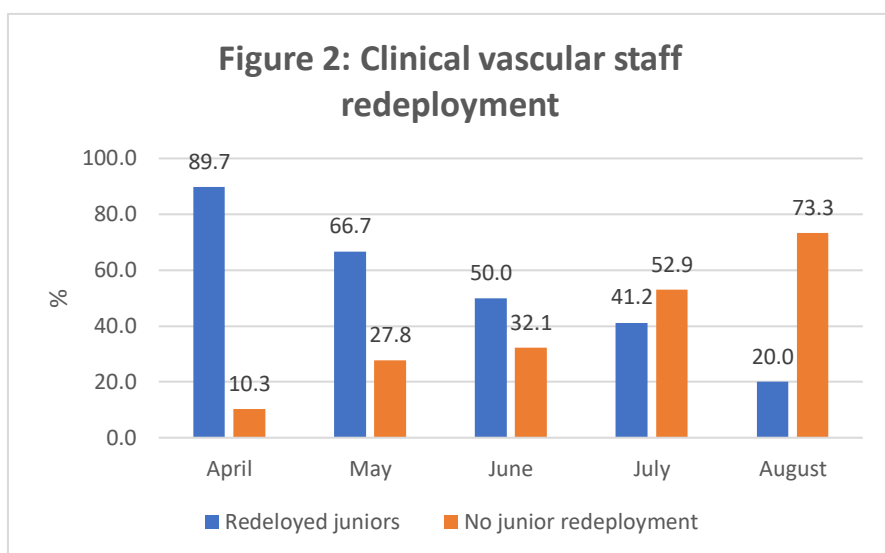
Phase 1

Vascular team staffing

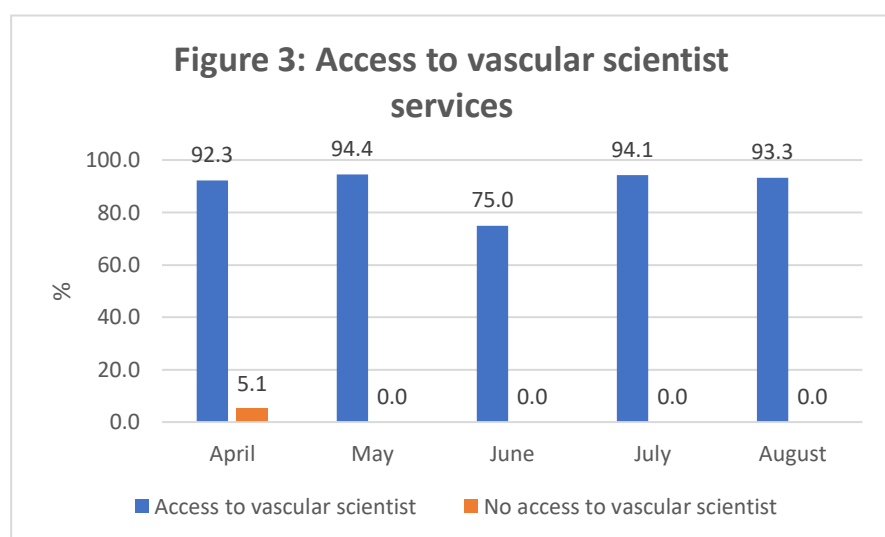
A significant proportion of centres amended consultant working patterns. This ranged from shadow on calls to reduced numbers of consultants working inside the hospital. At the peak in April, over 74% of centres described using amended consultant rotas. This reduced over the proceeding months (Figure 1).



Similar figures were shown for clinical vascular healthcare professionals, with 89.7% of centres describing vascular staff members being redeployed in April. This reduced over months, but remained at 20% in August (Figure 2).



Whilst the majority of clinical staff were redeployed, access to vascular scientist services remained high throughout the pandemic. Only 5.1% of centres described no access to these services in April (Figure 3).

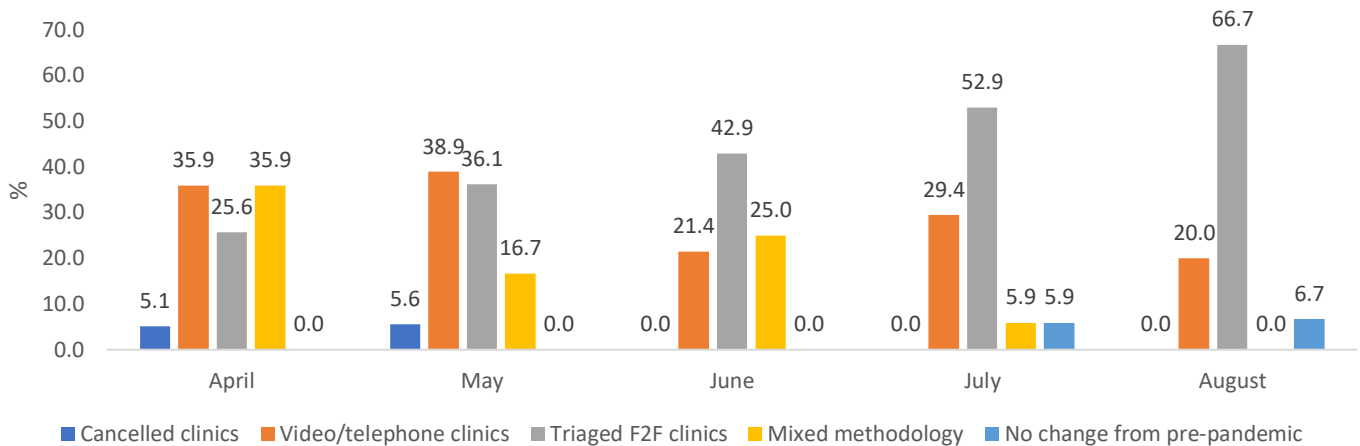


Outpatient clinic and Multi-Disciplinary Team (MDT) meeting management

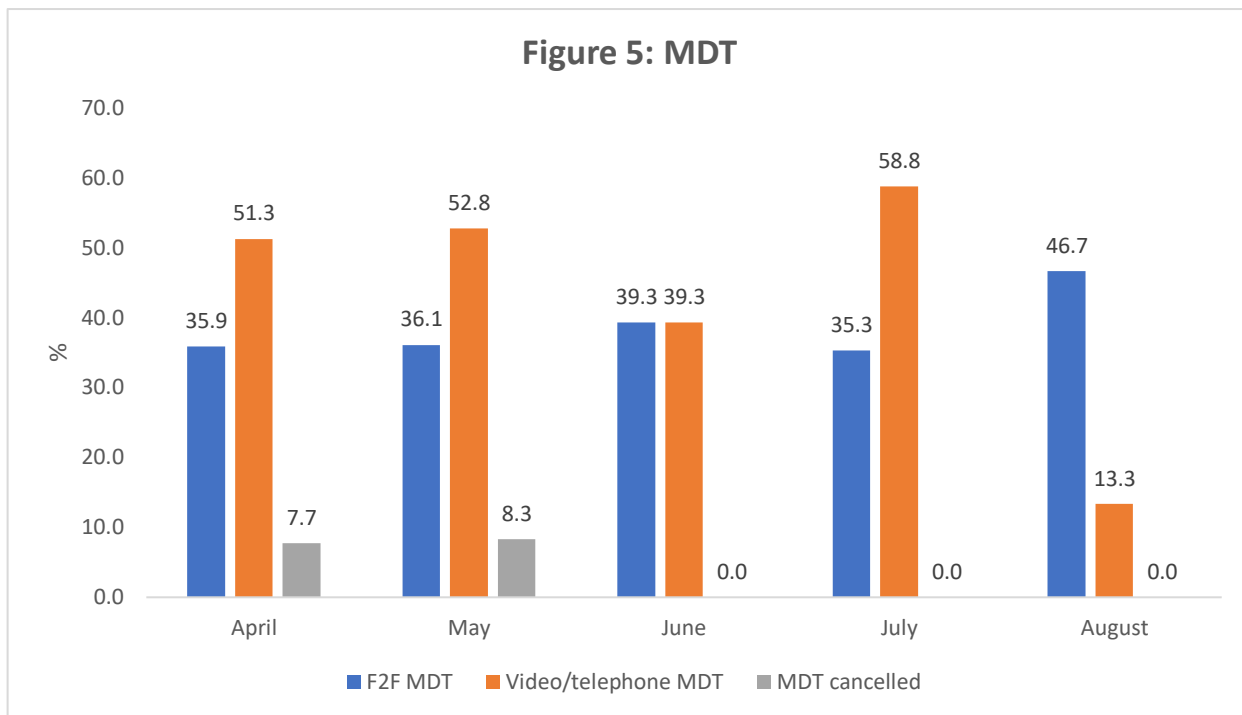
Vascular units used a number of different methods to manage outpatient clinics during the pandemic. This resulted in just over 5% of centres cancelling all outpatient clinic appointments in April and May, with no clinics cancelled from June to August, and normal activity returning in July and August in a small proportion of centres.

Video/telephone clinics, triaging then face to face clinic (F2F) or mixed methods were all utilised (Figure 4).

Figure 4: Organisation of outpatient clinics

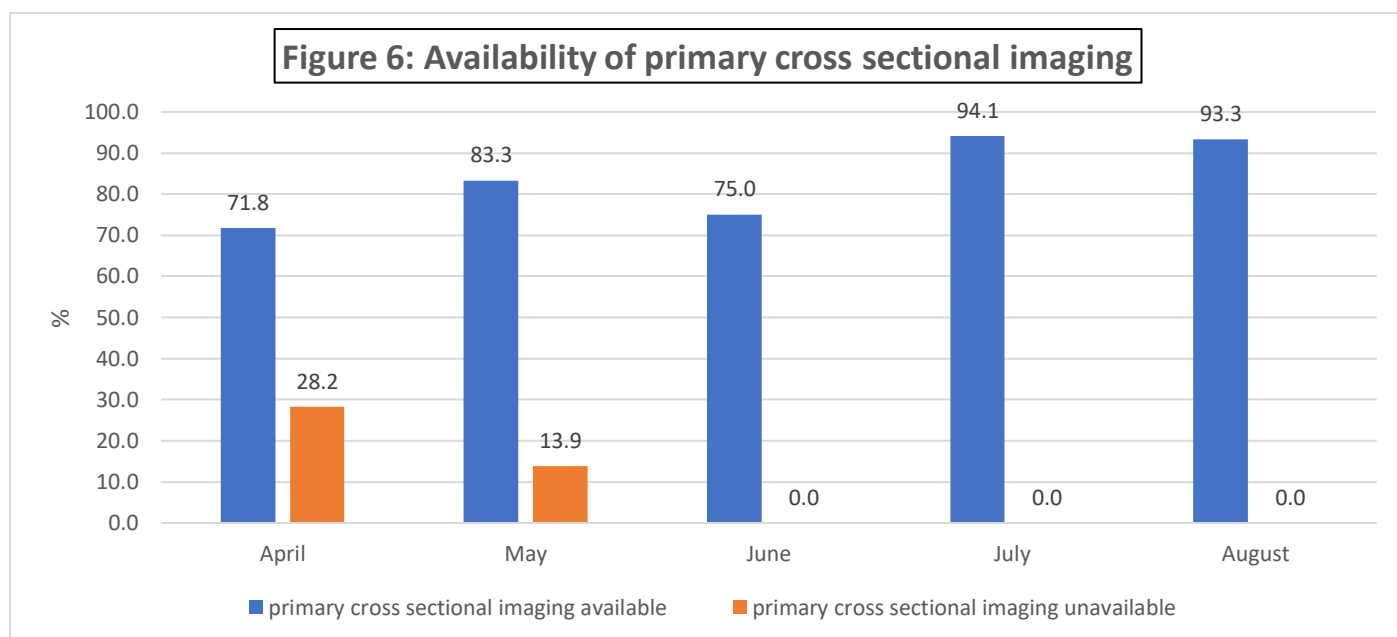


The majority of centres maintained MDT meetings through either reduced F2F meetings with reduced staff present, or through video/telephone conferencing. In May 8.3% of centres reported MDT cancellations (Figure 5).



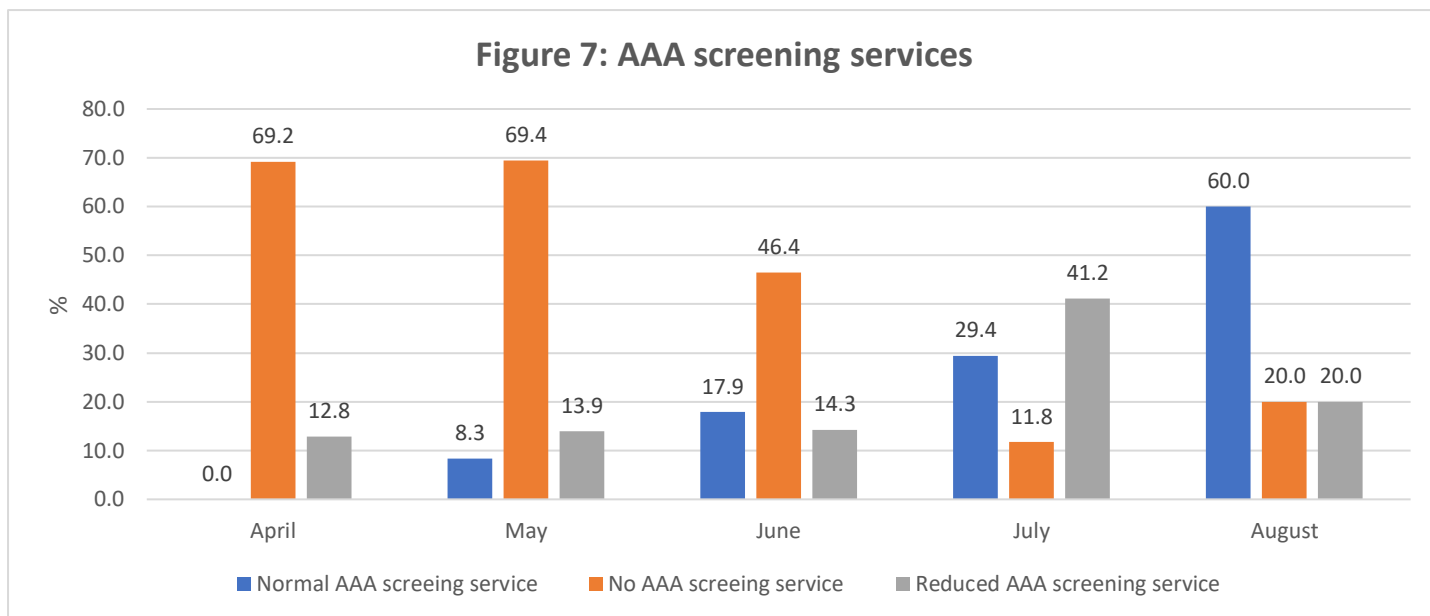
Vascular imaging

The majority of centres maintained the availability of primary cross-sectional imaging throughout the first wave of the pandemic. However, in April more than a quarter of centres' primary cross-sectional imaging was unavailable (Figure 6).

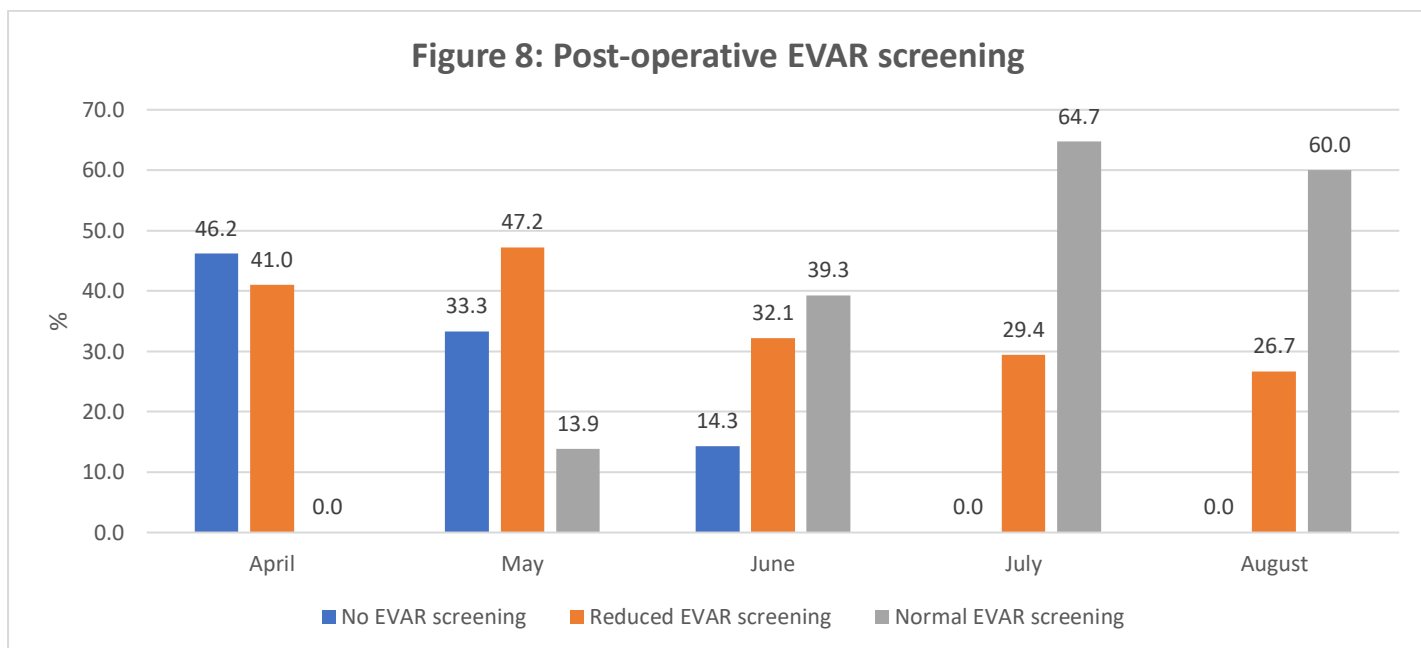


Abdominal aortic aneurysm (AAA) screening was significantly affected in the UK's first wave of the pandemic. In April and May, almost 70% of centres had no AAA screening.

By August, 40% of centres still had either reduced or no AAA screening services running (Figure 7).

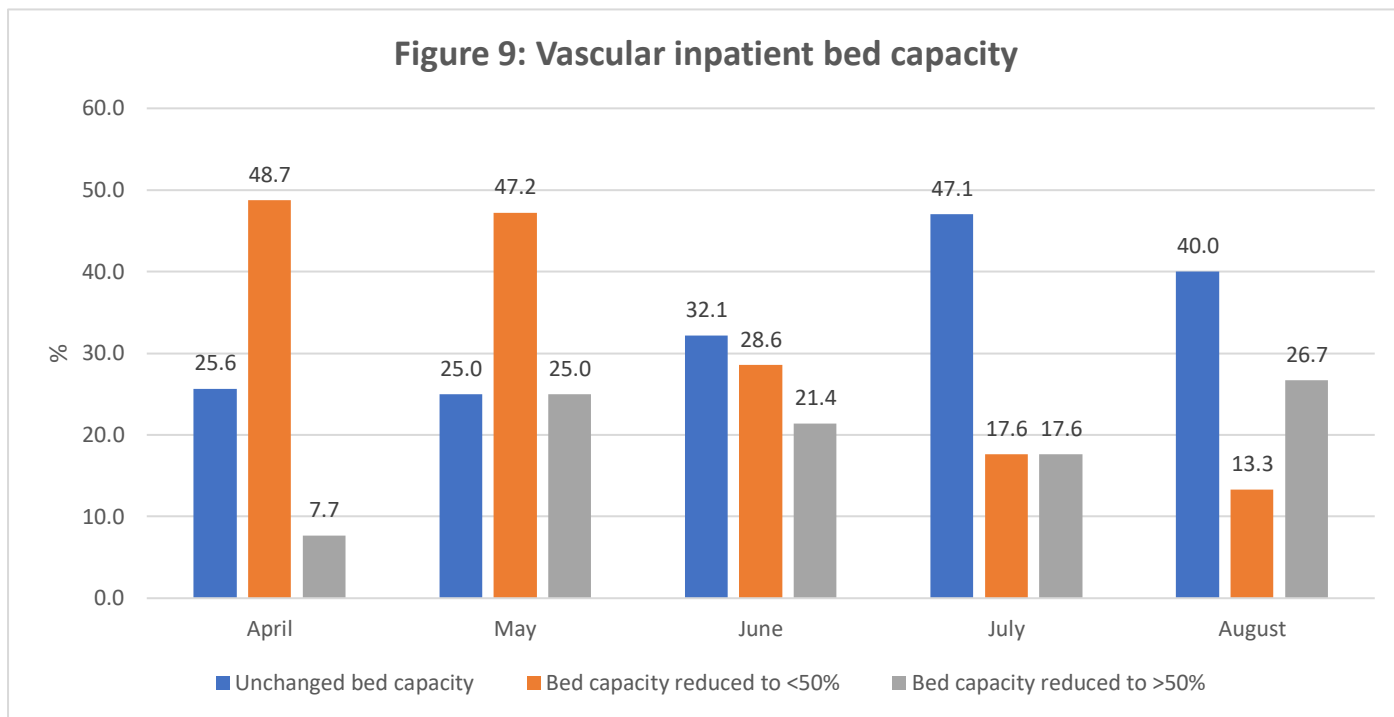


Post-operative endovascular aortic repair (EVAR) screening was similarly affected. 87.2% of centres in April had either reduced or no post-EVAR screening and by August there were still over a quarter of centres running at a reduced capacity to perform post-EVAR screening (Figure 8).



Vascular inpatient bed capacity

In April and May, only 25% of centres had their standard number of allocated vascular inpatient beds available. This improved to around 40% by July and August (Figure 9).



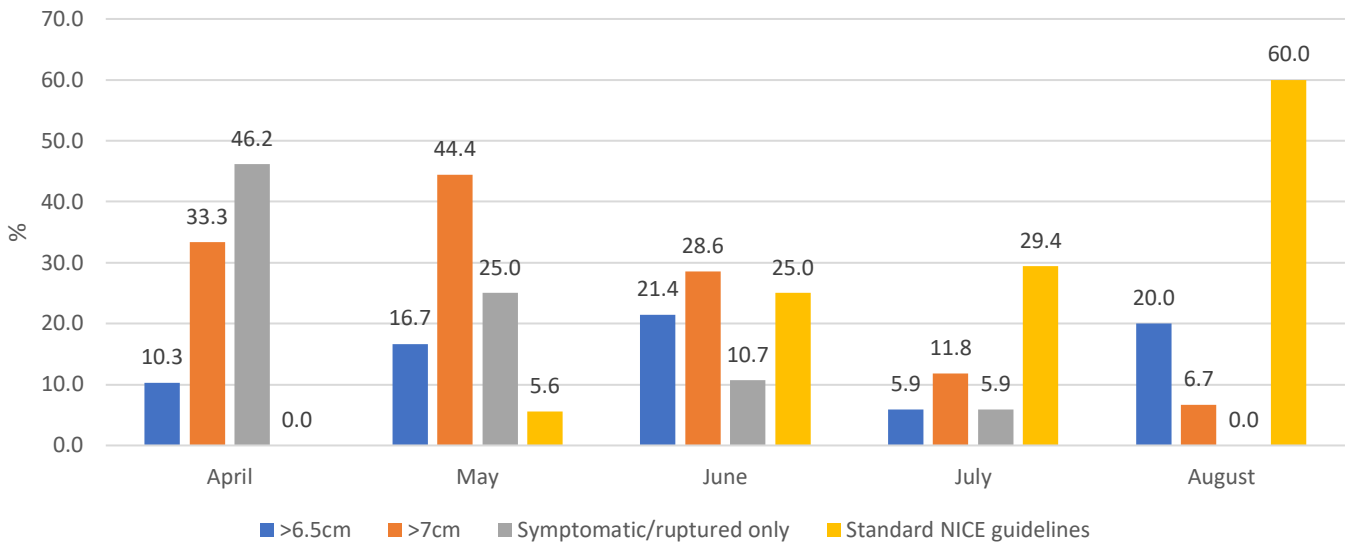
AAA management

The threshold for intervention in AAA surgery was raised in the majority of centres in the UK.

In April no centres stated they were following standard National Institute for Health and Care Excellence NICE guidelines for AAA intervention.

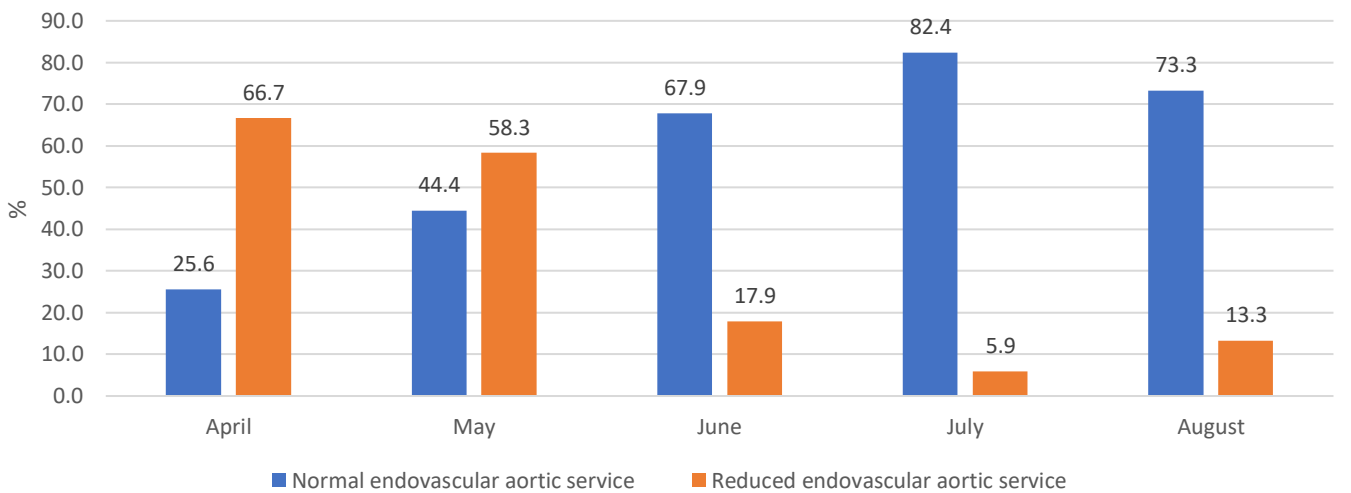
Centres utilised a number of elective thresholds including >6.5cm and >7cm. 46.2% of centres in April were only operating on symptomatic or ruptured AAAs. By August, 60% of centres were following standard NICE guidelines for elective AAA repair (figure 10).

Figure 10: AAA Management



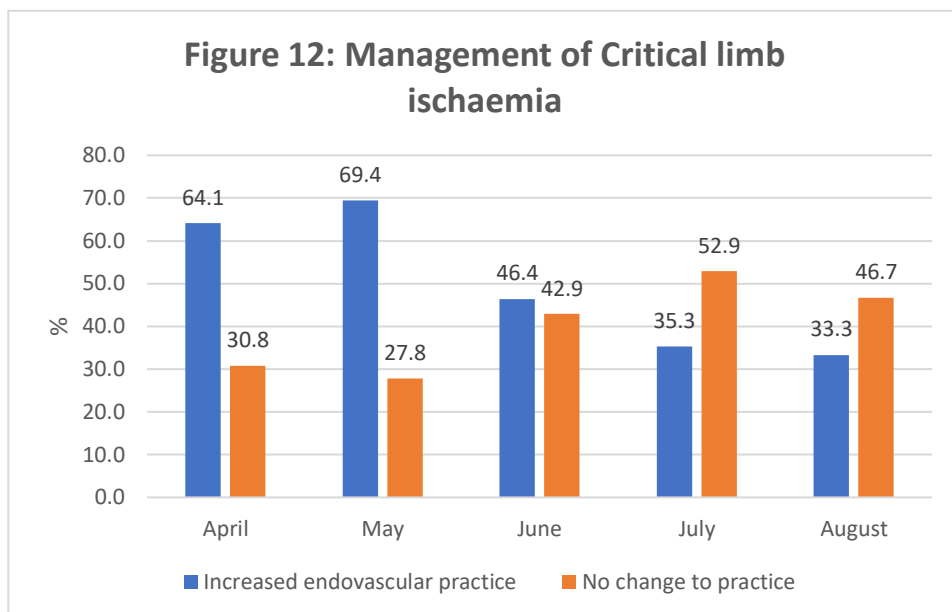
The majority of centres were unable to provide normal endovascular aortic services in April and May. Many centres were running either adhoc, urgent, or no service for AAA repair (Figure 11).

Figure 11: Aortic endovascular service provision



Management of critical limb ischaemia (CLI)

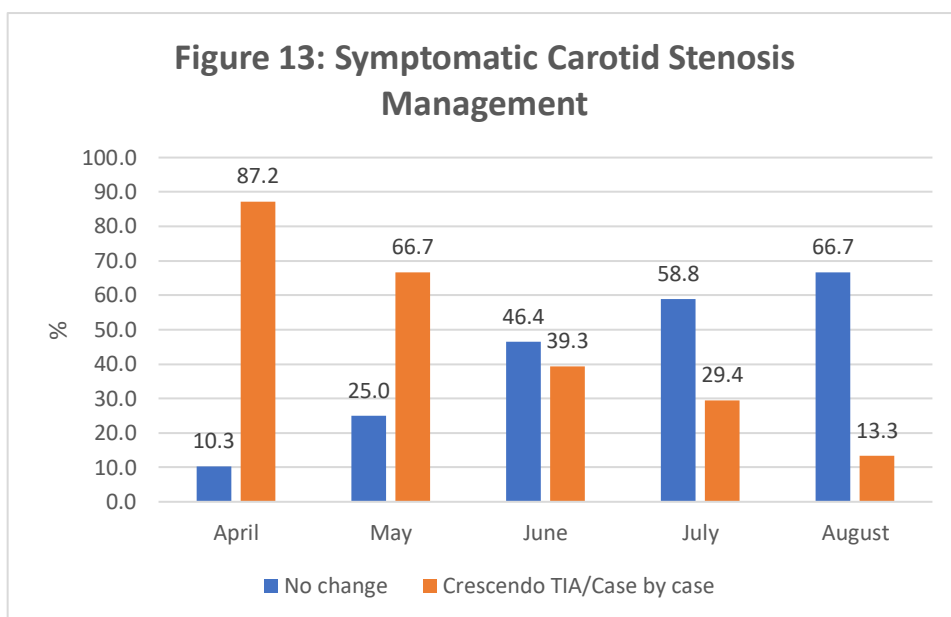
In the early months of the pandemic, two thirds of centres were utilising an increased endovascular strategy. This remained high through to August, with one third of centres continuing with increased endovascular practice as a result of the pandemic (figure 12).



There was increased endovascular management of CLI throughout the study period in the UK.

Management of symptomatic carotid stenosis

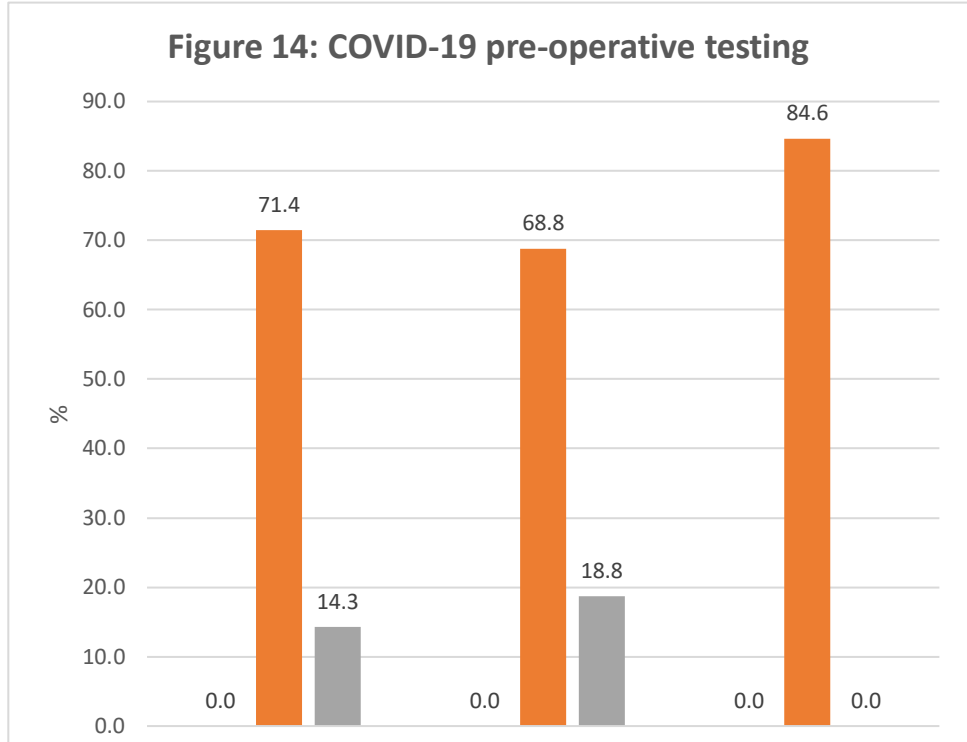
Symptomatic carotid stenosis management was altered in 87.2% of centres in April. Intervention in these centres was either on a case by case basis or for crescendo Transient Ischaemic Attacks (TIAs) only. Despite improvements over the following months, 13.3% of centres continued with this practice in August (figure 13).



Phase 2

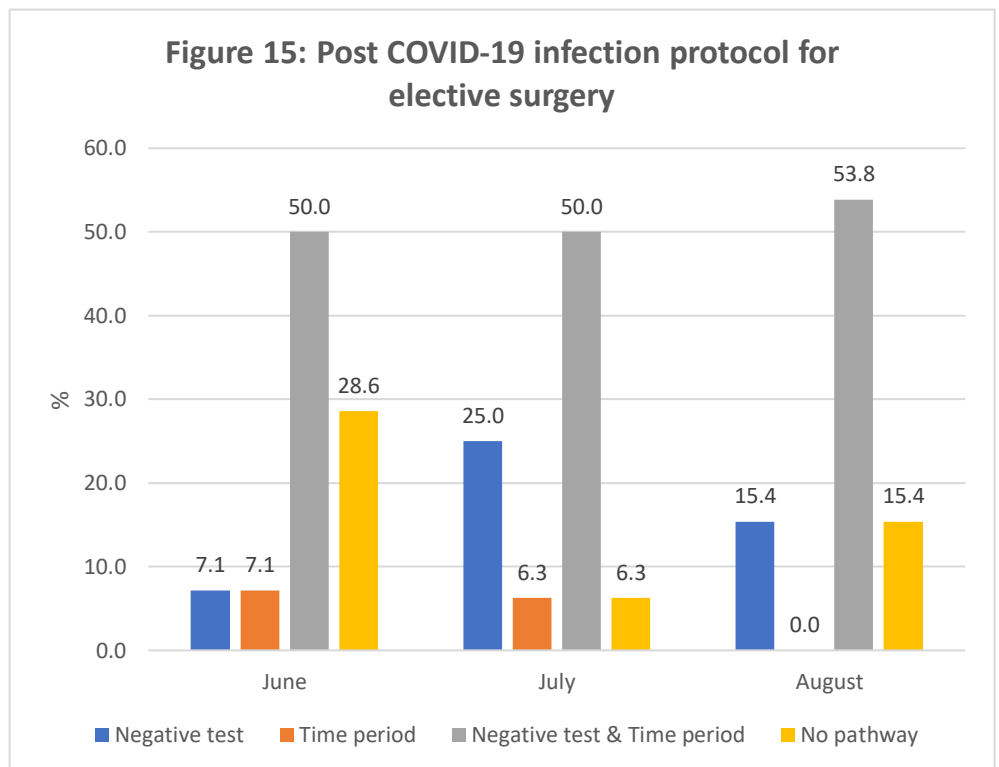
Peri-operative COVID-19 precautionary practices

In order to prevent COVID-19 infection in elective surgery, a number of precautionary mechanisms were trialled across the country. There was not a uniform response. From June, all UK centres were performing pre-operative elective COVID-19 testing. Centres used either one or two negative tests before elective surgery (figure 14).

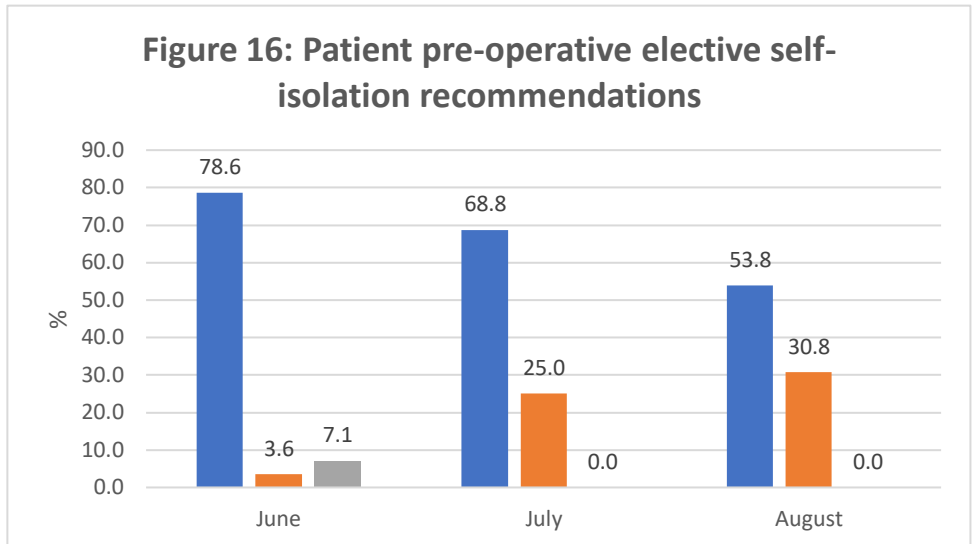


In July 2020, NICE published guidelines stating that all patients undergoing elective surgery should have a COVID-19 test 3 days prior to surgery (4).

If patients had been infected with COVID-19 prior to surgery, there was a broad range of pathways that centres introduced before patients could proceed to an elective operation. This was either a pre-determined time period, a negative COVID-19 test or both. However, in June over a quarter of centres had no pathway for this scenario (figure 15).

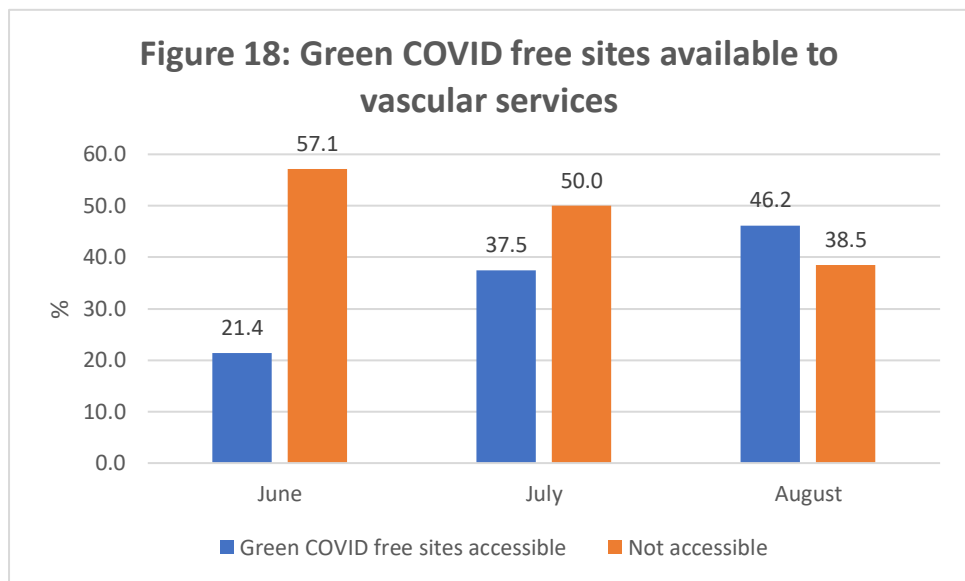


In July, the NICE guidelines stated that patients “should consider self-isolating for 14 days before a planned procedure” if they were “at greater risk of getting COVID19, or having a poorer outcome from it” (4).



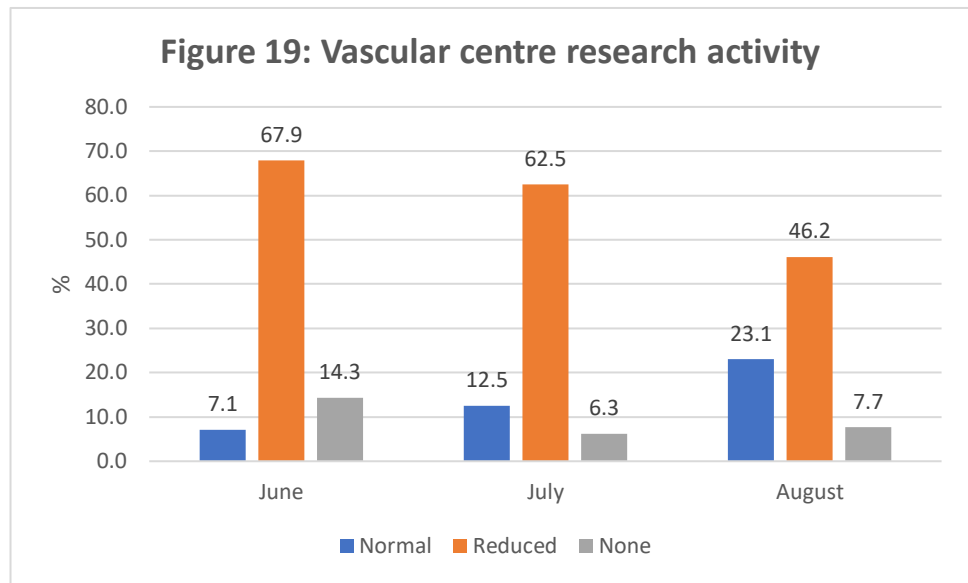
Prior to surgery, the majority of UK vascular centres were asking patients to self-isolate. This was for either 7 or 14 days (figure 16).

Another method used by surgical centres to reduce exposure to COVID-19 was by creating “green COVID-19 free” sites. This was not available to the majority of vascular centres across the UK in June, and by August it remained that over one third of centres still did not have access to green sites (figure 17).



Vascular Research

Very few vascular centres in the UK managed to maintain normal research practices. In June 82.2% of centres had either reduced or no vascular research activity. By August, only 23% had normal research activity (figure 19).



Elective vascular surgery waiting lists

The impact of the pandemic on elective vascular waiting lists in the UK has been significant.

A high proportion of UK vascular centres that were not able to estimate the number of patients awaiting elective AAA repair, open or endovascular intervention for lower limb revascularisation or for superficial lower limb venous surgery.

Some centres reported more than 20 patients awaiting either open AAA or open lower limb revascularisation surgery and more than 30 patients awaiting endovascular lower limb intervention. There was also a significant proportion of centres with more than 200 patients awaiting superficial lower limb venous surgery (figures 20, 21, 22 and 23).

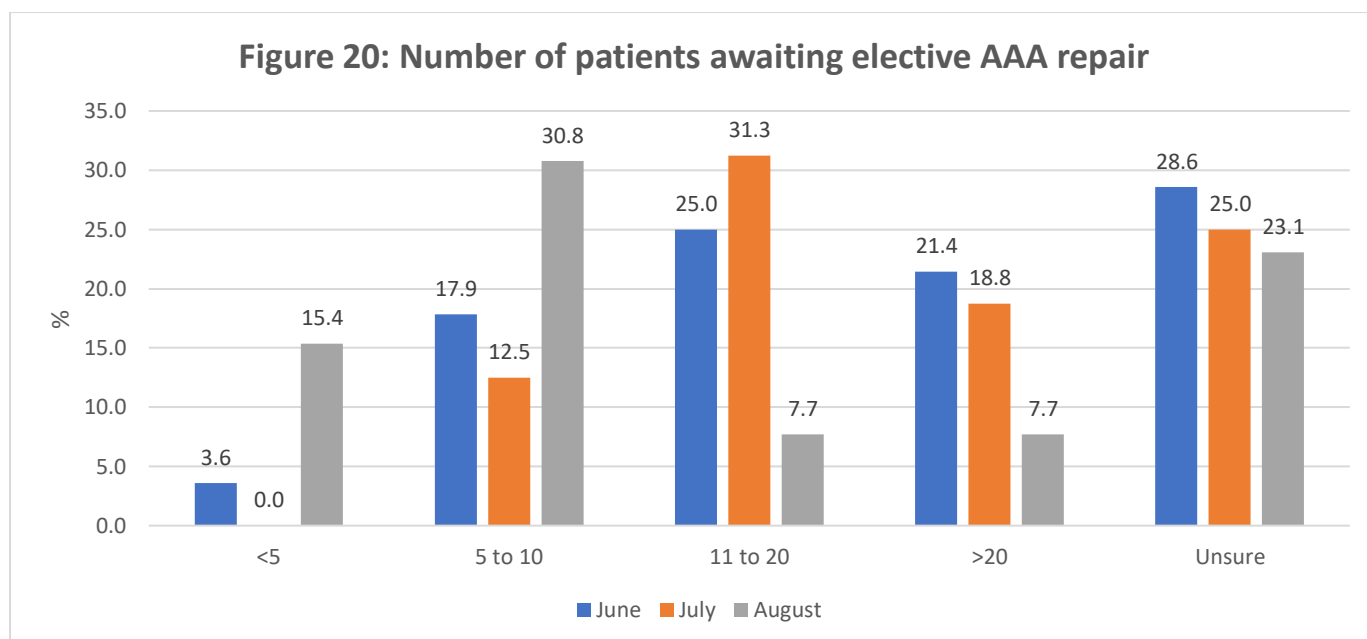


Figure 21: Number of patients awaiting elective open lower limb revascularisation

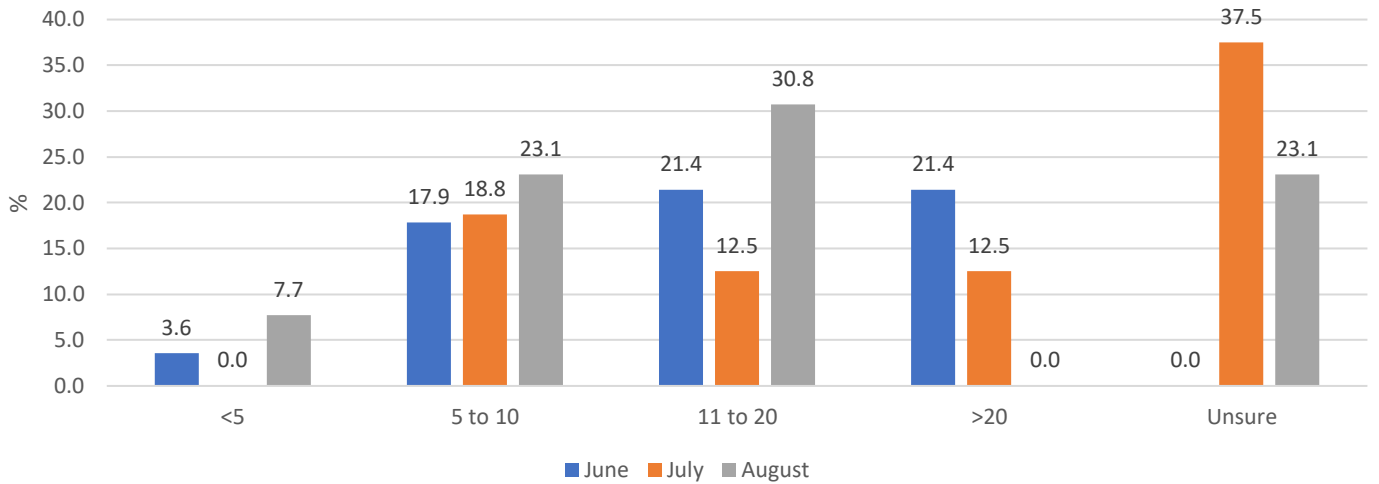


Figure 22: Number of patients awaiting elective endovascular lower limb revascularisation

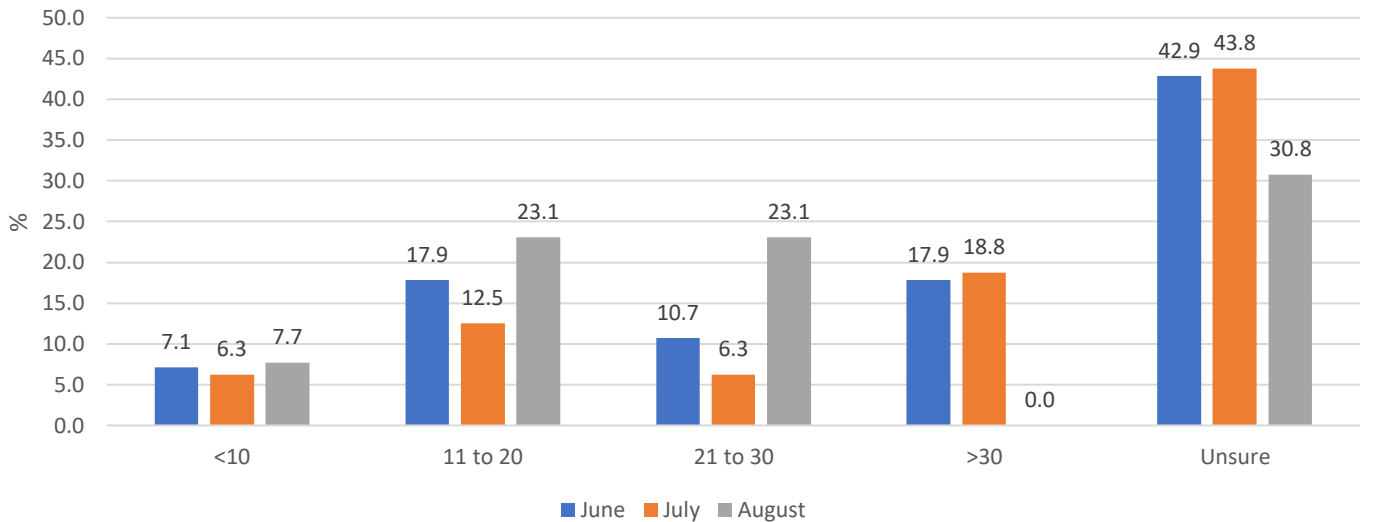
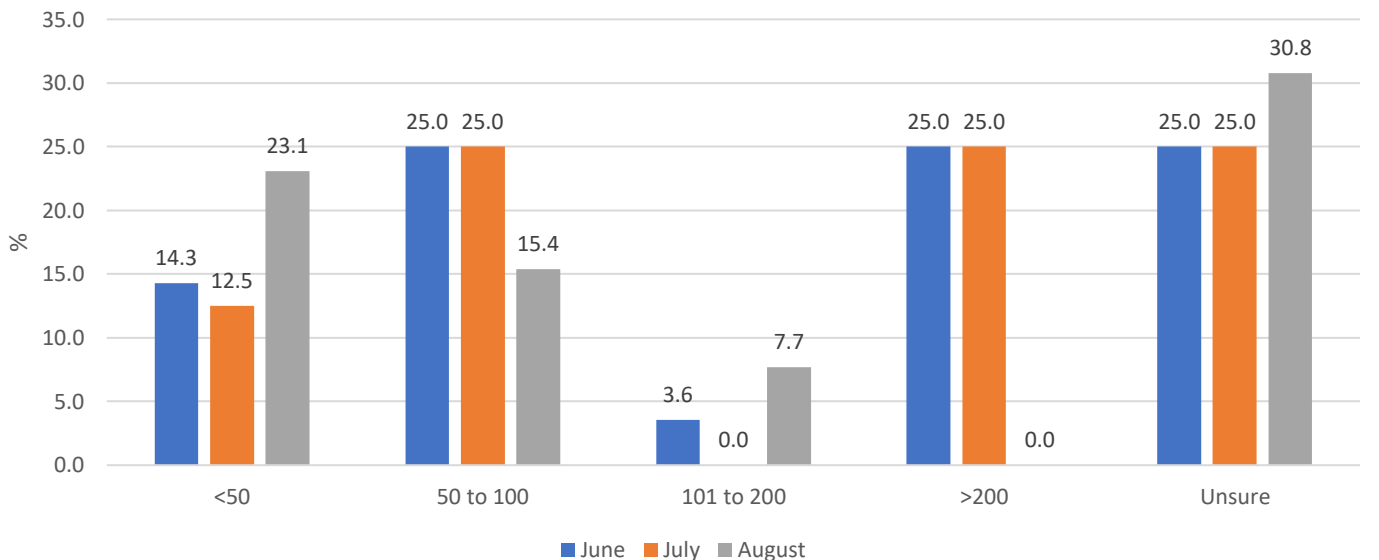
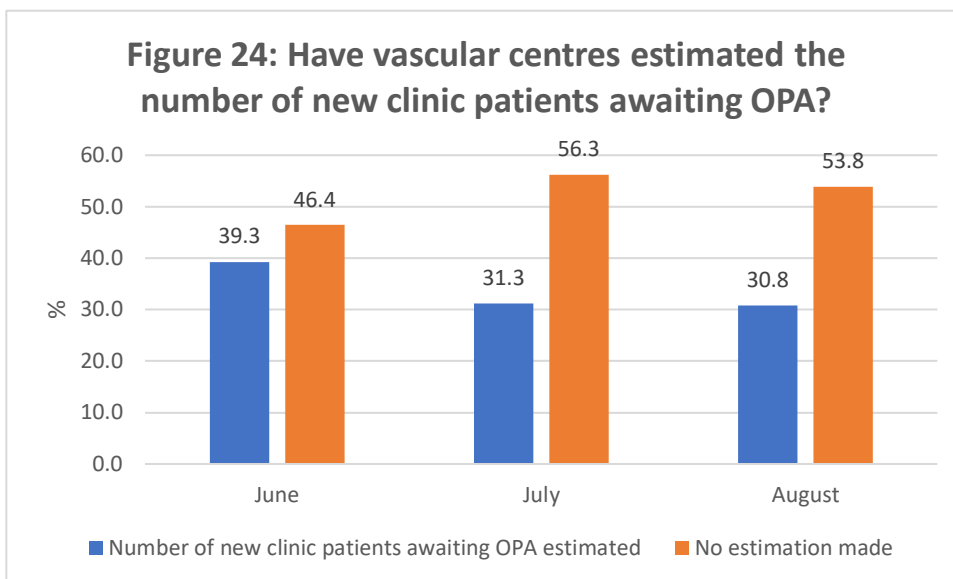


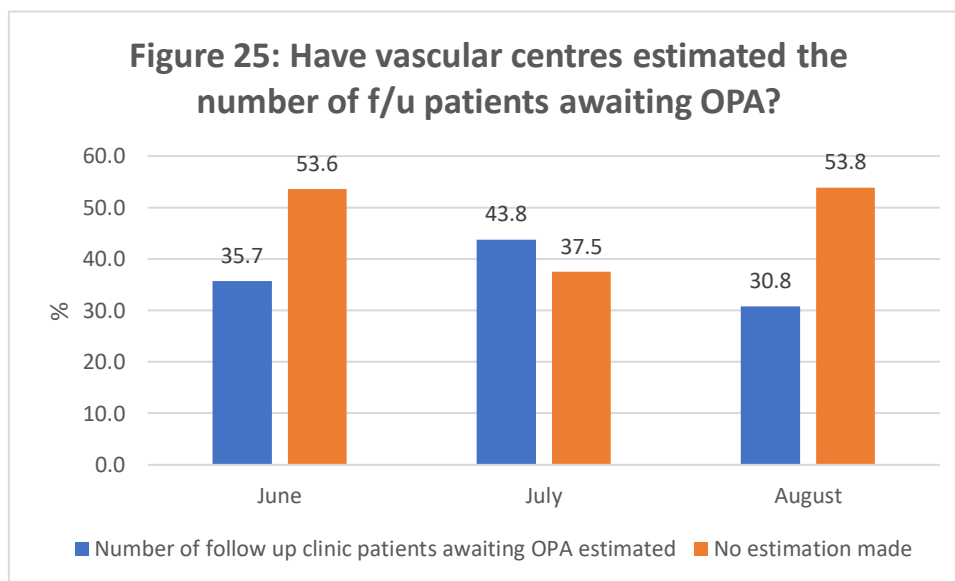
Figure 23: Number of patients awaiting superficial venous surgery



Vascular outpatient clinic waiting lists



There were many centres in the UK that had not estimated the number of new clinic patients awaiting an outpatient appointment (figure 24). Estimates of how many patients awaiting were broad, with a quoted range of between 0 – 1000 between June and August.



There were similar findings when analysing outpatient appointments for follow patients (figure 25). Centres again quoted broad ranges of waiting lists, from 30 – 2100 patients awaiting follow up outpatient clinic appointment.

Comments

The COVID-19 pandemic has had a significant impact on NHS services. The COVER study has highlighted reductions in elective operative activity, clinics, research and staffing in vascular centres. As a result of this, the waiting lists for elective operations and clinics are substantial.

Given that the UK has gone through numerous regional and national restrictions since these data were collected, it is extremely likely that these waiting lists have increased further. However, our understanding of the virus has improved. There are also now better mechanisms that aim to reduce COVID-19's direct and indirect consequences. These are highlighted in this study, such as video/telephone conferencing for MDTs and clinics, pre-operative COVID-19 testing, pre-operative self-isolation and green sites for elective operating. These data will therefore support vascular centres in their future practice.

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Freeman Hospital
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Hull Royal Infirmary
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Leicester Vascular Institute
Lister Hospital
Manchester Royal Infirmary
Mid Essex Hospital Services NHS trust
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Musgrove Park Hospital
Norfolk & Norwich University Hospital
Northwick Park Hospital
Nottingham University Hospitals
Oxford University Hospitals
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Royal Bournemouth Hospital
Royal Cornwall Hospitals Trust

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References

1. COVIDSurg Collaborative. Global guidance for surgical care during the COVID-19 pandemic. *Br J Surg* 2020; **107**: 1097– 1103.
2. The Vascular Society for Great Britain and Ireland. *COVID-19 Virus and Vascular Surgery*; 2020. www.vascularsociety.org.uk/professionals/news/113/covid19_virus_and_vascular_surgery (accessed 15/02/2021)
3. Vascular and Endovascular Research Network (VERN) COVER study collaborative*. Global impact of the first coronavirus disease 2019 (COVID-19) pandemic wave on vascular services. *Br J Surg*. 2020 Oct;107(11):1396-1400
4. National Institute for Health and Care Excellence. NICE publishes new COVID-19 rapid guideline on arranging planned care in hospital and diagnostic services, 2020
<https://www.nice.org.uk/news/article/nice-publishes-new-covid-19-rapid-guideline-on-arranging-planned-care-in-hospitals-and-diagnostic-services> (accessed 17/02/2021)