

# Journal of VASCULAR SOCIETIES

## GREAT BRITAIN & IRELAND

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## About the VSGBI

The Vascular Society of Great Britain and Ireland (VSGBI) is the pre-eminent organisation in the country promoting vascular health by supporting and furthering excellence in education, training and scientific research.

The Society represents and provides professional support for over 600 members, including vascular surgeons, vascular radiologists and others involved in independent vascular practices in Great Britain and Ireland.

The Society focuses on non-cardiac vascular disease, including diseases of peripheral arteries, veins and lymphatic. Vascular specialists are trained in the diagnosis and management of conditions affecting all parts of the vascular system.

The VSGBI is a charity organisation funded principally by Members who are vascular specialists in the UK and Ireland who treat non-cardiac vascular diseases. It has a professional structure including a permanent Secretariat, Executive Officers and Council elected by Members. The aim of the VSGBI is to have an interest in the provision of diagnosis and treatment of non-cardiac vascular diseases in the UK and Ireland.

## Benefits of Membership

The Society represents and provides professional support for over 600 members, including vascular surgeons, vascular radiologists and others involved in independent vascular practices in Great Britain and Ireland. Membership of the Society is widely recognised in the vascular community as a mark of professional achievement.

### The advantages of membership of the Vascular Society include:

- The VSGBI represents vascular specialists nationally and helps drive policy through its relations with Royal Colleges, other related professional Societies (e.g. BSIR) and the Department of Health. Members have access to the Executive and Council who prepare and enable these policies.
- The VSGBI promotes vascular training, runs training courses and has lobbied for positions such as the post CCT Fellowships, and the Endovascular Fellowships.
- The VSGBI organises specialist courses and meetings delivered locally, together with an annual meeting with scientific and political updates.
- The VSGBI publishes virtual educational resources which are available to members.
- The VSGBI publishes a quarterly journal, the *Journal of the Vascular Societies Great Britain and Ireland*, which is available to its members.
- The VSGBI publishes policy documents and quality improvement resources which are available on its website.
- ESVS Membership. VS members can enjoy ESVS membership at a discounted rate, and benefit from ESVS membership benefits.
- The VSGBI together with HQIP and the clinical effectiveness unit (CEU) at the RCS London maintains the **National Vascular Registry**, the principal outcomes database for vascular interventions in the UK and Ireland (and for the NHS AAA Screening Programme).
- The Society's Professional Standards Committee, (PSC) offers support to individuals and hospitals. For further information visit [www.vascularsociety.org.uk](http://www.vascularsociety.org.uk) Council and Committees page. Details of the support and advice scheme are given in the Professional Standards Committee section.
- The Society is an associate partner of the BJS. This entitles VS members to a reduced BJS subscription
- Actively supporting vascular research projects

## SIGN UP FOR VSGBI MEMBERSHIP

**If you are not already a member, visit the VSGBI registration desk in the foyer, and find out how to apply.**

### ORDINARY MEMBERSHIP IS JUST £250 PER YEAR –

Applications for Ordinary membership of the Society shall normally be restricted to Specialists at a level equivalent to Consultant in independent vascular practice; of good professional standing; on the Specialist Registers of the General Medical Councils of Great Britain and Ireland; and living and working in Great Britain and Ireland. Prospective ordinary membership should be proposed by two current ordinary members of the Society who are asked to ascertain that the applicant has an established vascular practice. Nominations will be considered by the Council. Applicants satisfying the above criteria can be admitted to membership.

### ASSOCIATE MEMBERSHIP IS £140 PER YEAR –

and is available to Specialists in vascular practice in non-consultant career grades, living and working in Great Britain and Ireland. Prospective associate members should be proposed by two ordinary members. Nominations will be considered by the Council. Applications satisfying the above criteria may be admitted to membership.



## Editor's foreword

It is with immense pride and satisfaction that I welcome you, on behalf of the Editorial Board, to the inaugural edition of the *Journal of Vascular Societies Great Britain and Ireland (JVSGBI)*.

The concept of a UK based specialty specific vascular journal began just over 2 years ago. It was born out of a frustration voiced by vascular clinicians, particularly vascular surgical trainees, with difficulty getting research published. Vascular research of reasonable quality was frequently rejected by established surgical journals. This research was frequently low-level evidence (e.g. surveys, cohorts and qualitative work) but often crucial work underpinning larger planned research programmes. Publication of such work is essential for it to be citable on funding applications. The journal concept was presented to the VSGBI open council who suggested a survey of all societies involved in the care of vascular patients, assessing opinion and enthusiasm regarding establishing a UK vascular journal. The results of this survey are presented by Long *et al* in this inaugural edition, and are generally positive and supportive. A Journal Working Group (Andy Garnham, Jon Boyle, Keith Jones, Gail Ryan, Helen McDonnell) was established. I am hugely grateful for their incredible commitment and hard work to deliver this inaugural edition in such a short time period. The *JVSGBI* is an online, open access journal published quarterly, which aims to deliver vascular research, education and news to the vascular community.

It would be remiss for the inaugural edition of the *JVSGBI* not to address the enormous challenges the coronavirus pandemic presented to vascular services, patients and clinicians. These challenges and our responses are succinctly explored and clarified by Sandip Nandhra (VERN President) in his guest editorial.

The in depth research priority setting endeavours of the VSGBI Research Committee and associated collaborators are also highlighted in this inaugural edition. The supplement (Vascular Priority Setting Partnership – setting the agenda for UK vascular research) summarises how patients and clinicians' research priorities were collated, combined and ranked across the complete spectrum of vascular care. The final excellent article by Bosanquet *et al* precisely details how this was specifically undertaken for lower limb amputation. The support of the James Lind Alliance (JLA) throughout this process merits specific acknowledgement and gratitude. We envisage these priorities will guide vascular research for the foreseeable future and hope other funders follow NIHR in promoting JLA identified research questions.

Finally, I hope you enjoy reading the *JVSGBI*, find it informative and will contribute to its future success by submitting articles for publication.



**Ian Chetter**  
*Editor in Chief JVSGBI*  
*VSGBI Research Committee Chair*

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EDITORIAL

# COVID-19 and vascular care: a tale of sorrow, relationships and evolution

Nandhra S<sup>1,2</sup>

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The catastrophic effects of the coronavirus pandemic in the UK have been well documented, with a reported death toll exceeding 160,000<sup>1</sup> and a crippling impact on healthcare provision and resources.<sup>2</sup> Vascular services were not immune to the impact of the pandemic, and in an attempt to better understand this, the Vascular and Endovascular Research Network (VERN) established the COVID-19 Vascular SERVICE (COVER) study.<sup>3,4</sup> Supported by global stakeholders and funded by the Circulation Foundation, the COVER study opened to recruitment in March 2020, taking just 14 days from conception to full ethical approval. The study documented the impact of the coronavirus pandemic on vascular services, patient outcomes and decision making through to April 2021. A fall in elective open aneurysm surgery, postponement of chronic limb threatening ischaemia (CLTI) interventions and the suspension of face-to-face clinics and MDT meetings were some of the observed findings.<sup>5-7</sup> There was a clear focus on protecting patients and staff by attempting to minimise exposure and cross-infection whilst accommodating pandemic-related pressure on healthcare resources. This was supported by timely guidance from organisations such as the Vascular Society of Great Britain and Ireland (VSGBI).<sup>8</sup>

Whilst prophylactic and elective services were reduced or suspended, urgent or emergency procedures were forced to continue in the face of reduced capacity and support. There was a natural concern amongst the workforce that these modifications to practice and the scarcity of resources might lead to adverse patient outcomes. The Tier 2 component of the COVER study<sup>9</sup> captured short- and long-term outcomes of these interventions. Over a three-month period, across a global population of 1,103 patients, the COVER study found an in-hospital mortality of

11% for all interventions. Aortic interventions reached a 15% mortality, irrespective of mode or type of repair (endovascular or open), symptomatic carotid intervention mortality was 10.7%, with a combined stroke or death rate of 13.6%. These figures were far higher than previously reported and may not have been completely attributable to positive SARS-CoV-2 infection alone as only 4% of the cohort had proven infection. However testing protocols were highly variable at that time. Perhaps we were witnessing the second-order mortality effects of healthcare within a pandemic?

These procedural outcomes, whilst concerning, were perhaps inescapable. The severity of disease in these cases was significant, necessitating intervention for conditions such as severe CLTI, acute limb ischaemia and symptomatic aortic conditions. This cohort was therefore an inherently higher risk patient group.

Another area of concern were those patients not offered an intervention due to the resource pressures. Tier 3 of the COVER study evaluated the decision making over a one-month period. 1,800 patients were studied across 52 centres in 19 countries. CLTI (28.8%), diabetic foot complications (13.1%) and acute limb ischemia (12.5%) made up the top three presenting conditions. There was an overall shift in management plans towards delay, best medical therapy, or amputation in around a fifth of all presentations, the consequences of which are the subject of ongoing studies.

Away from the adverse effects of the pandemic on vascular surgery outcomes there was a transformation in the relationships between societies, nations and practitioners. The COVER study is one of the many global collaborations designed to produce rapid, real-time information to help guide and inform practice in a contemporaneous manner. Networking between

**Key words:** COVID-19, pandemic, vascular services

worldwide vascular communities was paramount and is ongoing. The vascular surgery coronavirus collaborative (VASCC) is studying coronavirus associated vascular thrombosis and its management globally,<sup>10</sup> whilst the COVIDsurg collaborative is informing healthcare practitioners with respect to vaccination.<sup>11</sup> Many other allied disciplines have shared their experiences or adaptations. Single centre experience from Scotland<sup>12</sup> reported updates to vascular technology laboratory protocols, enabling triaging of the most urgent imaging and providing guidance regarding appropriate personal protective equipment (PPE). This, alongside national guidelines released by the Society of Vascular Ultrasound (USA), both of which advise on education and training, are valuable resources for current and future pandemics. Interventional Radiology colleagues in Canada demonstrated a fall in elective interventions whilst maintaining emergency or urgent intervention<sup>13</sup> and shared learning with respect to PPE policy, triage and consultant-led operating, all of which was achieved through collaborative research. It is clear that collaborative research has grown exponentially over the past two years with a rapid increase in the number of collaboratives and recognition of this research model by a number of leading medical journals.

Throughout the pandemic, web-based methods have become a revolutionary tool in the delivery of up-to-date vascular education. Initial educational efforts at the beginning of the pandemic hinged around the dissemination of contemporary research and practices to a global audience. With the suspension of face-to-face meetings and teaching, it became critical for the vascular community to rapidly evolve the way it delivered professional development and education. Several virtual meetings were held with a great deal of interest from global audiences.<sup>14</sup> The virtual format facilitated engagement of international speakers and delegates with minimal travel and perhaps increased the reach of such meetings without the damaging effect of a carbon footprint. The VSGBI, in partnership with the British Society of Endovascular Therapy (BSET) and the Rouleaux Club (RC), were able to deliver a comprehensive educational series over 2020 and 2021 to meet the educational rigours of the vascular curriculum. Expert faculty were able to convene and deliver high quality, up to the minute educational material, a model replicated across the globe.<sup>15</sup> Feedback from trainees was hugely positive and attendance was recognised in trainee portfolio assessment. Development and delivery of these programs resulted from the motivation of a few individuals who should be congratulated. The expanse of virtual and online learning was unprecedented, but concerns were raised regarding a healthy work-life balance as much of the virtual education and conferencing happened 'out-of-hours'.

While theoretical education is important and evidence-based decision making underpins much of day-to-day practise within a specialty such as vascular surgery, the need for developing and refining craft skills is essential. The RC developed and delivered training workshops for medical students and junior trainees, using home-made equipment with online supervision. This remarkable

and innovative training model ensured a level of accessibility to aspiring vascular surgeons, helping to safeguard the future vascular workforce. The evaluation of the impact of the pandemic on vascular training is paramount. Several guidelines promoted consultant operating which, together with reduced case numbers, significantly restricted training opportunities. A UK wide analysis of all surgeons in training demonstrated a fall in log book numbers across all specialties, with emergency specialties being the least affected. Vascular surgery trainees witnessed a 40% fall in elective, but only a 5-10% fall in emergency procedure training opportunities. This equates to a concerning 30% reduction in overall operative training. Annual Review of Competency Progression (ARCP) outcomes were also significantly affected with 20% of trainees receiving an outcome of 10 (requiring further time for training), a worrying statistic given the current shortage of consultant surgeons<sup>16</sup> and the demanding post-pandemic recovery plans.

Clinical practice has evolved by necessity during the pandemic. Remote follow up often using innovative technology (virtual or telephone clinics), electronic record keeping (including wound progress images) and e-referral systems have all become common place.<sup>17,18</sup> Home-based exercise technology has the potential to optimise non-interventional management and enhance post-procedural recovery.<sup>19,20</sup>

The COVID-19 pandemic has had a profound, wide reaching impact on vascular surgery services worldwide, affecting all aspects of care. This has challenged many of the processes that we take for granted from education through to intervention delivery, peri-procedural care and workforce retention. The vascular community has demonstrated a desire and determination to maintain high quality standards and outcomes in the face of adversity. The adaptation of vascular registries,<sup>21</sup> improvement of online education and evolution of current services have been rapidly and dynamically adopted. COVID-19 will have ongoing and far reaching implications for the vascular community but, if we remain tenacious and flexible, we will continue to offer safe and effective vascular services which are responsive to the challenges ahead.

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ORIGINAL RESEARCH

# Do we need a UK vascular journal?

## Survey of multidisciplinary UK vascular specialists

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### Plain English Summary

**Why we undertook the work:** There are many vascular journals in circulation worldwide but none are dedicated to UK practice. This limits the opportunity for UK based vascular professionals to publish relevant research. A survey was developed to find out if UK based vascular healthcare professionals would support the development of a new UK-specific vascular journal.

**What we did:** In May 2020, an online questionnaire was sent out to different types of vascular health professionals including surgeons, nurses, technologists, trainees, physiotherapists and others, via email with links promoted on social media.

**What we found:** Responses were collated from 359 participants and the majority indicated they would be in favour of developing a UK-specific vascular journal. It was suggested that a new journal should be delivered online, four times per year and that the cost should be included in their society membership fees. Participants who thought a new journal was not needed suggested that instead it would be better to focus on improving links with existing journals. However, most participants welcomed the idea of a journal relevant to UK practice, in particular one that would include different types of vascular health and care professions and thereby encourage working together.

**What this means:** Overall, feedback collected from the survey was positive and suggested a demand for a UK-specific vascular journal. The results of this survey helped to inform the development of the *Journal of Vascular Societies Great Britain & Ireland (JVSGBI)*.

### Abstract

**Background:** Prior to the development of the *Journal of Vascular Societies Great Britain & Ireland (JVSGBI)*, there were limited opportunities for UK based vascular health professionals to publish research relevant for UK vascular practice. A survey was developed to evaluate the appetite and potential infrastructure for a UK vascular journal amongst vascular healthcare professionals.

**Methods:** In May 2020, an online questionnaire was administered by The Vascular Society of Great Britain and Ireland (VSGBI) Research Committee, surveying vascular health professionals regarding the development of a UK-specific vascular journal. The survey was disseminated via email to multi-disciplinary members of the vascular community with links promoted on social media.

**Results:** Responses were received from 359 individuals identifying predominantly as surgeons (38%), nurses (8%), technologists (10%), radiologists (20%), trainees (10%), physiotherapists (7%) and other (7%). The majority of participants (67%) indicated they would be in favour of a UK-specific vascular journal and that it should be available as an online quarterly publication. Almost three quarters (74%) of respondents thought a subscription fee should be included in societies' membership fees. Free text comments highlighted a few concerns, suggesting the focus should instead be to improve the quality of existing vascular journals. However, most respondents welcomed the idea of a journal relevant to UK practice, with inclusivity of all UK vascular professions to encourage more collaborative working.

**Conclusions:** Overall, feedback collected from the survey was positive and suggested a demand for a UK-specific vascular journal, providing an indication that the development of such a journal should be further explored. The results of this survey helped to inform the development of the *JVSGBI*.

**Key words:** vascular, survey, journal

## Background

A number of vascular societies world-wide have an allied or specific vascular journal for the publication of work presented or conducted by their members. Now that UK vascular surgery is a speciality in its own right there are limited options for publication of UK vascular research, potentially compromising the opportunity of UK based vascular health professionals to share and disseminate their academic work.

Furthermore, the conglomeration of the Society of Vascular Nursing (SVN), Society of Vascular Technologists (SVT) and the Vascular Society of Great Britain and Ireland (VSGBI) each year at the annual scientific meeting (ASM) has led to the awareness of multi-disciplinary research relevant to day to day UK vascular practice with cross-pollination of ideas and research. The natural progression therefore is towards a UK vascular journal allied to UK vascular societies for the publication of work conducted by their membership. Prior to the development of the *Journal of Vascular Societies Great Britain & Ireland*, there was no dedicated UK vascular specific journal.

## Aim

The aim of this survey was to establish whether there was potential authorship, readership and sufficient demand for a UK vascular journal.

## Methods

### Survey design

This article adheres to the reporting recommendations from the Consensus-Based Checklist for Reporting of Survey Studies (CROSS).<sup>1</sup> The survey was devised by a sub-group of members from the Research Committee of the VSGBI. It was designed to obtain a high level overview of the opinions of vascular clinicians in the following areas; 1) to understand current levels of engagement with existing vascular journals, 2) to explore enthusiasm for developing a UK-specific vascular journal, 3) to gain feedback on format and content of a proposed new journal, 4) to capture contact details of those who would like to be involved in the development of a UK-specific vascular journal.

A pilot survey was undertaken and presented to the VSGBI research council on 6th February 2020. Following critique of the questionnaire, minor clarifications were made to wording of three questions, the option set was increased for demographic questions to widen the range of health or care professions, and additional choices suggested for the question about existing vascular journal titles. After corrections based on review by the VSGBI research council, an electronic survey, consisting of 17 questions, was generated using an online survey tool Qualtrics (Qualtrics, Provo, UT), see Appendix 1 (online at [www.jvsgbi.com](http://www.jvsgbi.com)). This survey was circulated by email to clinicians involved in the care of vascular patients including members of the VSGBI, SVN, SVT, the Vascular and Endovascular Research Network (VERN), the Rouleaux Club (RC), the British Society of Interventional Radiology (BSIR) and the

British Association of Chartered Physiotherapists in Amputee Rehabilitation (BACPAR). The survey opened on 12th May 2020 and remained open for 3 months until 13th August 2020. Direct emails and social media (twitter) were used to promote the survey.

The survey consisted of three main sections to cover demographics, current journal use and potential format and content of a new UK specific journal. Responses were designed to be either binary (Yes/No), or a selection of options from a pre-defined list. Where options were provided, instructions of select one or select as many as apply were clear. Where the option of 'other' was provided, space to give further detail was provided as a free text box. At the end of the survey, participants were invited to volunteer their contact information if they expressed an interest in being involved in the editorial committee or journal article reviewer.

### Data management

Data management followed requirements of the General Data Protection Regulation (GDPR 2018). Access to data within Qualtrics was restricted to authorised survey administrators, who were Good Clinical Practice (GCP) trained. Data were securely downloaded into a password protected excel file. Any incomplete or blank data sessions were excluded from the analysis. Numerical data from the questionnaire were collated and presented in a descriptive manner. Qualitative responses to open questions were categorised into key themes and representative statements reported. Data were analysed by a lead data coordinator and verified by two senior colleagues.

Ethical approval was not required for this survey as participants were invited to volunteer their information, however approval from the VSGBI Research Committee was obtained prior to survey distribution.

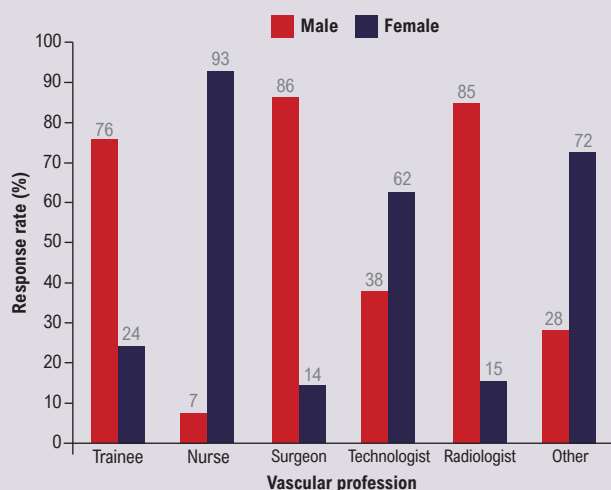
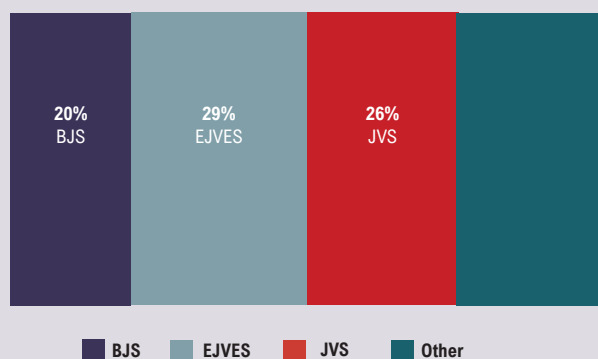
## Results

### Demographics

Details of respondents' age, gender, and profession were gathered. A total of 359 individuals submitted complete responses. Overall, 66% of respondents identified as male (n=237) and 34% female (n=122). The majority of responses were submitted by surgeons (38%) followed by radiologists (20%), trainees (10%), technologists (10%) and nurses (8%). The category of 'other' accounted for 14% of the overall response rate and included 25 responses from individuals that identified as physiotherapists. Figure 1 shows the total % response with breakdown by gender and profession.

### Engagement with existing vascular journals

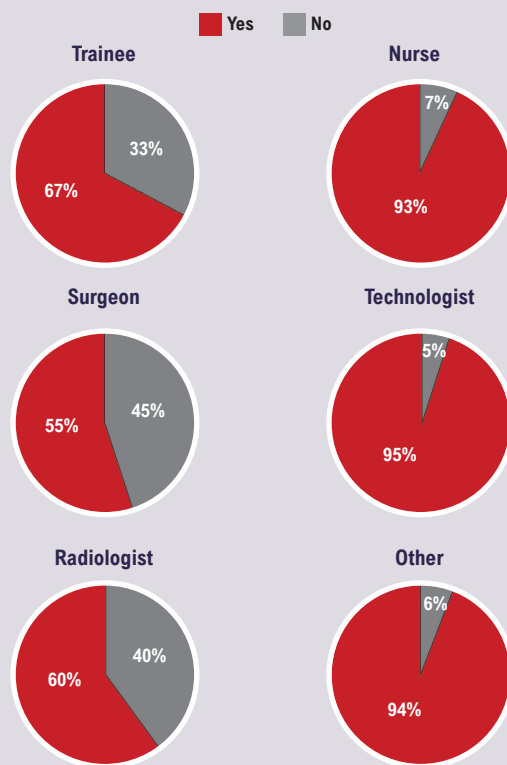
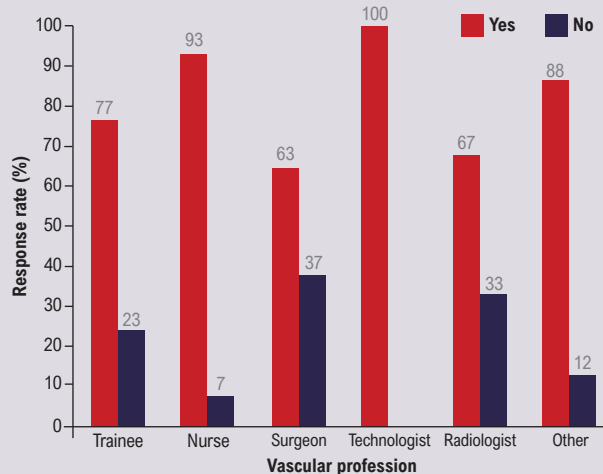
Almost 60% of respondents reported that they or their employer subscribed to a vascular journal and, of these, 57% reported this was an organisational subscription as opposed to a personal subscription. The survey asked participants to identify their top three journals for publication of research (Figure 2). Over 40 different journal titles were submitted in this section. The *European*

**Figure 1** Total % response with breakdown by gender and profession.**Figure 2** Top three journals for publication.

*Journal of Vascular and Endovascular Surgery, EJVES* (29%), *Journal of Vascular Surgery, JVS* (26%), *British Journal of Surgery, BJS* (20%) were the most popular choice. If respondents were unsuccessful at their top three choice of journals for publication, the *Annals of Vascular Surgery* was rated as the next best option. *CardioVascular and Interventional Radiology (CVIR)* and *Journal of Vascular and Interventional Radiology (JVIR)* rated highly amongst BSIR members. Minor comments submitted by a few individuals at the end of this section suggest that aiming for a lower impact journal might also be an acceptable route to publication.

#### Potential for a UK-specific vascular journal

When participants were asked if they thought a UK vascular specific journal was required, 67% answered yes (Figure 3) and when participants were asked if they would consider submitting to a UK vascular journal first, 73% answered yes (Figure 4). This overall positive response was reflected across the breakdown of all vascular professions.

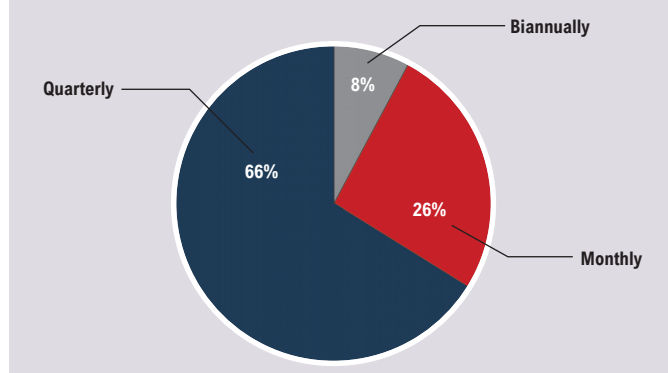
**Figure 3** Do you think a UK vascular specific journal is required?**Figure 4** Would you consider submitting to a UK vascular journal first?

#### Format and content of a UK-specific vascular journal

##### Journal access

The next section of the survey asked respondents about their preferences for accessing a new journal. Over half of respondents (60%) indicated online access would be preferable compared to 37% that favoured a mixture of online and paper (only 3% indicated paper as a preference).



**Figure 5** How frequently do you think the journal should publish?

### Frequency

A quarterly publication was rated the most popular frequency to publish (66%), followed by monthly publication (26%) (Figure 5). Additional comments included suggestions that the publication could begin as a quarterly and then adjust frequency according to demand. Individuals who did not welcome the idea of a UK specific vascular journal left comments to re-emphasise they thought it unnecessary.

### Sub-sections

When asked how the journal should feature sub-sections on vascular disease, 85% of respondents selected to format the journal by category of disease, compared to 10% who favoured arranging by vascular society. There were free text comments relating to advice or suggestions about the format of the journal with multiple references to inclusivity of all UK vascular professions that could be reflected in the journal title and layout. It was recommended that relevant sections for other clinical professionals such as physiotherapists, occupational therapy, nursing and podiatry should be included. Others also suggested including update sections for education and training as well as relevant opinion and news pieces.

### Title

A suggested journal title of 'UK Vascular Societies' Journal (UKVSJ) was given to respondents to rate on a scale of 0-10 but it did not prove popular. Respondents submitted over 100 suggestions for alternative titles such as the Journal of Vascular Societies Great Britain & Ireland (JVSGBI), British Journal of Vascular Surgery (BJVS), Journal of UK Vascular Societies, Flow, Vascular UK Today and others.

### Subscription

Just over half of respondents (51%) would not be willing to pay a subscription fee and 74% think a subscription fee should be included in societies' membership fees. One respondent commented that a subscription fee could potentially act as a deterrent.

### Editorial Committee

Respondents were asked if they would consider participating in the editorial committee or undertaking review of articles and reassuringly over half of respondents (54%) stated they would be willing and they identified from across the range of vascular professions.

### Comments section

Free text comments were submitted throughout the survey and included positive feedback such as "excellent idea" and "long overdue". Additionally it was suggested that a multi-professional journal, inclusive of all UK vascular professions, would encourage more collaborative working and promote more widespread evidence based care. There were also some negative comments such as "terrible idea" and "unnecessary". A number of individuals highlighted concerns that there are already "too many journals" and that the introduction of another could result in "poor quality" and "low impact" publications. There was a perception from some individuals that there is already an abundance of vascular journals with a variety of impact factors and that instead of creating another journal, a focus could instead be to improve links with existing journals such as *EJVES* and *BJS*.

### Limitations

Like most surveys, there is a potential issue around how representative the results are in reflecting the opinions of the UK vascular professions. The response rates are comparatively low to the numbers of vascular professionals registered with society memberships. However, when the data are categorised into those in favour of a new journal and those who find it unnecessary, there is general agreement across survey questions.

### Conclusion

Overall, the findings from the survey suggest there is a demand for a UK-specific vascular journal. Respondents who are supportive of the idea suggest it could provide opportunities to foster multidisciplinary collaboration as well as intersociety and interspecialty relations, perhaps resulting in improved patient care. Comments suggest readers would find it beneficial to be aware of

### KEY MESSAGES

- The Vascular Society of Great Britain and Ireland (VSGBI) Research Committee surveyed the opinions of vascular health professionals about the potential for developing a UK-specific vascular journal.
- 67% of respondents indicated they would be in favour of a UK-specific vascular journal.
- The results of this survey helped to inform the development of the new *Journal of Vascular Societies Great Britain & Ireland (JVSGBI)*.

the latest developments and current UK practices amongst different vascular fields. The preferred format and content would be to have a quarterly publication online, organised by category of disease. There are additional suggestions for special issues or separate sections to focus on news, education and training items.

Those not in favour of having a UK-specific vascular journal submitted similar comments regarding existing journals and that perhaps a better solution was to strengthen links with these journals and to focus on improving the quality of published research. They also highlighted important considerations such as cost and the implications of the huge amount of work involved in starting a new journal.

The results of this survey subsequently helped to inform the development of the new *Journal of Vascular Societies Great Britain & Ireland (JVSGBI)*.

**Conflict of Interest:** IC is Chair of the Research Committee VSGBI and Chief Editor of the *Journal of Vascular Societies Great Britain & Ireland (JVSGBI)*

**Funding:** None.

#### Reference

1. Sharma A, Minh Duc NT, Luu Lam Thang T, *et al.* A Consensus-Based Checklist for Reporting of Survey Studies (CROSS). *J Gen Intern Med* 2021;**36**(10):3179-87. <https://doi.org/10.1007/s11606-021-06737-1>

ORIGINAL RESEARCH

# Research priorities for lower limb amputation in patients with vascular disease

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## Plain English Summary

**Why we undertook the work:** Research is costly to the NHS and takes lots of time. It is therefore vital to make sure any research done is on topics which are important to patients, carers and clinicians. The 'James Lind Alliance' group have developed a process for asking patients and clinicians what topics are important to them within a given area of research. This paper presents the results of this process for the topic 'amputation surgery' (of the leg).

**What we did:** First, we asked individual patients and clinicians to list important areas of amputation surgery worthy of further research. We joined these two lists and removed any duplicates. We then held a remote meeting of patients, carers and all different types of healthcare professionals, facilitated by experts from the James Lind Alliance. The group discussed the proposed research topics and prioritised them into an ordered list which reflected their overall importance.

**What we found:** A total of 481 clinicians, and 373 patients or carers proposed research questions about vascular surgery in general, which were amalgamated into a list of 12 questions specifically about amputation surgery. These were discussed at the remote meeting and ordered in terms of their importance. The top 10 questions, which are given in full in this paper, related to: preventing amputation, supporting recovery after amputation, improving outcomes after amputation (such as preventing or treating pain, or helping wounds heal well) and giving people undergoing surgery the right information.

**What this means:** Research, which is important to both patients and healthcare professionals, can now be undertaken within these topics.

## Abstract

**Introduction:** Major lower limb amputation (MLLA) is a life-changing event often associated with high mortality and morbidity rates. Research into MLLA surgery is limited. The Vascular Society of Great Britain and Ireland (VSGBI) in partnership with the James Lind Alliance (JLA) aimed to identify and develop key research priorities for MLLA.

**Methods:** A modified JLA Priority Setting Partnership was undertaken, encompassing all vascular practice. Two separate Delphi processes to identify research priorities were undertaken with healthcare professionals, patients and carers, led by the VSGBI. The priorities were then scored by the same participants and amalgamated to produce a list for final ranking. The final consensus meeting was attended by patients, carers and healthcare professionals from a variety of backgrounds involved in the care of people with MLLA. Using a nominal group technique, a ranked list of the top ten research priorities were identified.

**Results:** A total of 481 clinicians submitted 1,231 research priorities relating to vascular surgery in general. Sixty-three MLLA-specific research priorities were combined into five final priorities. Three hundred and seventy-three patients or carers submitted 582 research priorities related to vascular surgery in general. Nine MLLA-specific research priorities were identified after combining similar priorities. The final consensus meeting produced a ranked top 10 list of research priorities relating to: MLLA prevention, supporting rehabilitation, improving clinical outcomes following MLLA (preventing/treating pain including phantom limb pain and improving wound healing) and research into information provision for patients undergoing MLLA.

**Conclusions:** The top 10 MLLA research priorities provide guidance for researchers, clinicians and funders on the direction of future research questions that are important to both healthcare professionals and patients.

**Key words:** amputation, research priorities, James Lind Alliance

## Introduction

Over 4,000 major lower limb amputations (MLLA) are performed per annum in the UK<sup>1</sup> for end-stage lower limb arterial disease or profound foot sepsis. Amputation is a significant life event for patients and their carers/families. Although supported by recommendations for optimal practice,<sup>2</sup> MLLA can be associated with high mortality and complication rates.<sup>3,4</sup> The process of a patient undergoing MLLA is a multi-faceted healthcare challenge, dependent on the complex integration of pre-operative assessment, peri-operative care techniques and postoperative rehabilitation.

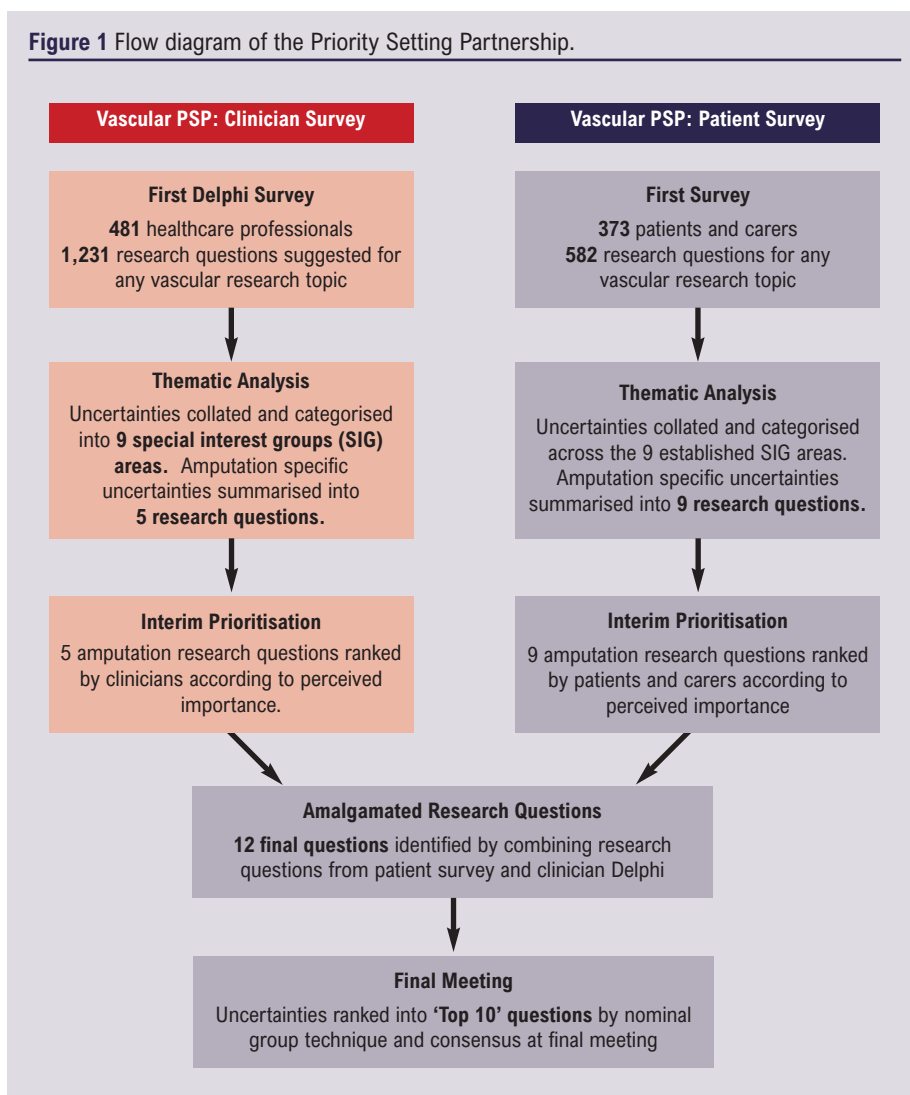
Within these care pathways, there are invariably numerous opportunities for interventions to improve clinical and patient-reported outcomes. At present, there is a paucity of high-quality research into MLLA care; for instance, the Cochrane vascular database of 177 systematic reviews contains only two on a topic pertinent to MLLA.<sup>5,6</sup> It is therefore imperative to understand where impactful research, valued by both patients and the healthcare professionals, should be focused, which can inform research funders, health commissioners and policy makers. Arguably, to develop research priorities which are generalisable and of broad value, they should be relevant to the patient and clinician and avoid wasted research efforts.<sup>7</sup> One validated approach is the James Lind Alliance (JLA) Priority Setting Partnership (PSP). This is a collaborative method of discerning key research questions of multi-disciplinary healthcare professionals and patients/carers with lived experience of the condition.<sup>8</sup> The Vascular Society of Great Britain and Ireland (VSGBI) has worked to define the priorities for vascular research in general from a healthcare professional perspective.<sup>9</sup> This initiative led to the development of nine focused special interest groups (SIGs), one of which is Amputation Surgery. The Amputation Surgery SIG comprises a multi-disciplinary team of clinicians and patients/carers with an interest in furthering research activity in the field of amputation surgery. The aim of this exercise was to create a hierarchical list of important clinical research questions in the field of amputation surgery, using the modified JLA PSP, to guide future investigative endeavours.

## Methods

A modified version of the JLA PSP methodology<sup>8</sup> was used to address vascular surgery research priorities in their entirety. The process began with a clinician-led priority setting process, followed by a similar patient-led process. Amputation surgery specific research questions were identified from both processes, duplicates removed and unclear language resolved, before a final priority setting workshop. The Vascular Condition PSP process is summarised in Figure 1.

Throughout the PSP, the intention was to follow the JLA process as closely as possible. However, initial resource limitation meant that the first survey, gathering research priorities, had to be confined to the clinical community only. The survey gathering questions from patients and supporters followed two years later, when resources permitted. The two sets of questions were analysed, summarised and ranked separately by their respective communities.

**Figure 1** Flow diagram of the Priority Setting Partnership.





### Setting up the Vascular Condition PSP

The Vascular Research Collaborative (VRC) was founded in 2016 and the Vascular Condition PSP was subsequently established in April 2019.<sup>10</sup> Both were funded by the VSGBI, aiming to develop a national strategy for vascular research and identify research priorities in sub-specialty areas within vascular surgery. The initial outcomes and processes have been published.<sup>9</sup>

### Scope of the Amputation Surgery SIG

The Amputation Surgery SIG PSP team comprised two clinical leads (RJH and DB), two surgeons in training (SN and KW), a JLA adviser (TG), one PSP information scientist (JL), one SIG coordinator (BC) and a patient representative (DC), who has bilateral MLLA with experience of amputation research.

The remit of the Amputation Surgery SIG is to support research into the process of a minor or MLLA in adults (18 years or older), including pre-, peri-, and post-operative care, and to develop the top 10 research priorities in amputation surgery. For the purpose of the PSP, MLLA was defined as surgical removal of the lower limb above the ankle. Minor amputation was defined as surgical removal of a toe(s) and/or part of the foot. The SIG considered amputations due to peripheral arterial disease, non-healing wounds and/or diabetes related complications within its remit.

### Clinician-led priority setting process

A clinician-led PSP process was completed in 2018,<sup>9</sup> which identified nine key areas from 45 potential topics using a modified Delphi approach with two rounds of online surveys involving the membership of the VSGBI, Society of Vascular Nurses (SVN), Society for Vascular Technology (SVT) and the Rouleaux Club (vascular surgical trainees). The first round invited any suggestions for research priorities in the broad scope of 'vascular surgery', which were then collated and categorised into pathological topics and research categories by the steering group. Priorities relating to the same fundamental issue were amalgamated into a single priority. The priorities were recirculated in the second round to the same participants for scoring according to importance. These results have been published<sup>9</sup> and are presented here briefly.

### Patient/carer-led research question identification process

The Vascular Condition PSP carried out a consultation to gather potential research priorities from vascular patients and carers for approximately six months (27 August 2019 to 17 March 2020) via online surveys, paper surveys in outpatient clinics and focus groups. SIG members, UK vascular units (as listed on the National Vascular Registry), charities and patient groups were contacted and asked to distribute (physically and electronically) a survey designed to gather potential research priorities in vascular surgery. The affiliated healthcare organisations listed above, the British Society of Interventional Radiology (BSIR) and the British Association of Chartered Physiotherapists in Amputee Rehabilitation (BACPAR) were also asked to circulate the survey. Amputation-specific

research priorities were identified and similar or duplicate questions merged. Generic priorities relating to the overall provision of vascular services (which may have included services related to amputation surgery) were considered outside the remit of the Amputation Surgery SIG and reviewed by the 'Service' SIG. Priorities were edited by the SIG chairs, with input from the SIG patient representative, to produce a list of easily understood research priorities with no overlap and minimal uncertainty. These minor edits were subsequently ratified by the rest of the SIG team.

### Interim patient/carer-led research question prioritisation process

Summarised research priorities were redistributed for scoring. Priorities from each of the SIGs were presented for completion at this point. Patients and carers with experience of amputation(s) were asked to score the priorities according to importance. This process was undertaken from 5 November 2020 to 27 January 2021. In order for results to be reviewed in time for the final prioritisation workshop, scoring of amputation-related questions was stopped on 9 December 2020.

### Final prioritisation workshop

Prior to the prioritisation workshop, the SIG team combined interim patient scored priorities with priorities from the clinician PSP survey and duplicates were merged. The patient representative was involved in this process and the end-result was again ratified by the Amputation Surgery SIG.

The final prioritisation process was conducted via a virtual online meeting on 25 January 2021. Patient/carer attendees were recruited via direct contact and if they expressed interest in supporting the prioritisation workshop during the research priority identification and scoring process. Healthcare workers were recruited via direct communication with national bodies (e.g. BACPAR and The Royal College of Occupational Therapy Specialist Section Trauma and Musculoskeletal Health; Prosthetic Amputee Forum; RCOTSST&MSH PAR) and via direct links with members of the SIG team.

The workshop was led by three advisers skilled in the JLA process. Members of the Amputation Surgery SIG provided general support, but had no influence over the process of priority setting. A nominal group technique was used to define the final, ranked top 10 research priorities. Workshop attendees were asked to review the final research priorities prior to attending the workshop and rank them in order of importance. After an overview of the JLA process, attendees were divided into three 'breakout' groups, each comprising an equal mix of patients, carers and healthcare professionals. The ranking in order of importance of research priorities was discussed three times. In the first breakout group, each participant presented their 'top three' and 'bottom three' of the shortlisted priorities. In the second round, the same groups discussed how to pool these individual rankings into a single priority listing (numbered 1-12). The priority listings from the three groups

were collated to generate an interim ranking of the research priorities. Finally, the attendees were allocated to different groups for a third round of breakout discussion, to discuss the finer details of the order of the interim ranking. The results of each group's rankings were again collated and summated, creating a final list. The final, ranked list of top 10 research priorities was presented to participants in a final session to facilitate discussion of overall acceptability. Members of the SIG PSP team observed all sessions (muted with cameras off) and noted key points arising from the discussion.

## Results

### Results from the clinician-led research priority identification and prioritisation

Some 481 healthcare professionals involved in the care of vascular patients engaged with the Vascular Condition PSP, suggesting a total of 1,231 research priorities.<sup>9</sup> Sixty-three amputation specific research priorities were reported. After combining similar research priorities, a final list of five important amputation research priorities was identified and redistributed to clinicians for scoring regarding importance. Priorities were ranked according to clinicians' scores. The resulting clinicians' research priorities ordered by importance, using mean score, are given in Table 1.

### Patient/carer-led research question identification and prioritisation

Three hundred and seventy-three vascular patients/carers suggested a total of 582 research priorities, relating to vascular surgery in general. Fourteen were specific to amputation surgery. After combining overlapping priorities, a total of nine research priorities were confirmed and redistributed to patients/carers for scoring regarding importance. Thirty-six patients/carers engaged with the scoring process. The resulting patient research priorities, ordered by importance using mean score, are given in Table 2.

### Final prioritisation workshop

Prior to the workshop, the Amputation Surgery SIG team pooled clinician and patient/carer research priorities, resulting in a final list of 12 priorities, detailed in Table 3. In order to reduce risk of bias, these priorities were randomly ordered and each assigned a letter (rather than a number).

The final prioritisation workshop was attended by 10 patients/carers and 12 healthcare professionals, with an additional eight observers. The prioritisation process resulted in a final, ranked, top 10 research priority list (Table 4). The priorities are ordered according to importance as determined by the workshop. The last three priorities all scored the same and are therefore ranked equal. There was general consensus amongst the participants that the list accurately and comprehensively reflected well the discussions and viewpoints which occurred in the breakout groups.

A number of key points were noted during the discussion. There

**Table 1** Priorities arising from the clinician question identification and prioritisation process, with their mean score obtained from scoring.

Question	Mean Score
How can we reduce the rates of major lower limb amputations?	8.17
How can we improve clinical outcomes for patients following major limb amputation?	8.12
How can we optimise rehabilitation following major lower limb amputation?	7.58
How can we optimise pain management (including phantom pain) following major lower limb amputation?	7.43
Which is better – above- or through-knee amputation?	6.72

**Table 2** Priorities arising from the patient/carer question identification and prioritisation process, with their mean score obtained from scoring.

Question	Mean Score
In a person who has undergone amputation, how do you reduce the chances of amputation in the other limb?	4.69
What are the best ways to support rehabilitation following amputation?	4.57
How do we optimise prosthetic limb use following amputation?	4.55
When is it appropriate to perform a major amputation?	4.39
What are the best ways to prevent or treat pain after amputation?	4.36
In a person who has undergone a minor amputation in the foot, how are the chances of a subsequent major lower limb amputation above the ankle reduced?	4.34
How do you improve healing of the amputated stump?	4.28
What are the best mobility aids following amputation?	4.26
How do we improve the information provided to patients undergoing amputation?	4.17

was clearly a difference between participants who thought amputation prevention was paramount (priorities 1, 6 and 8a) and those who felt improving outcomes following amputation was paramount (priorities 2, 3, 4, 5, 7, 8b and 8c). Many participants individually remarked that there was significant overlap between research priorities. For example, priorities 1, 6, and 8a all pertained to amputation rate reduction. It was also noted that priority 3 (improving clinical outcomes following amputation) could encompass some of the other research priorities, such as improving healing (priority 7) and pain (priority 4) outcomes. Priority 2 (What are the best ways to support rehabilitation following amputation?) could encompass priority 8b (How do we optimise prosthetic limb use following amputation?) and priority 12 (What are the best mobility aids following amputation?).

**Table 3** Collated research priorities listed by letter (not number) for review by participants prior to the prioritisation meeting.

- A What are the best ways to prevent or treat pain (including phantom pain) after amputation?
- B In a person who has undergone amputation, how do you reduce the chances of amputation in the other limb?
- C How do you improve healing of the amputated stump?
- D What are the best ways to support rehabilitation following amputation?
- E Is through- or above-knee amputation better?
- F How can we improve clinical outcomes for patients following major limb amputation?
- G How do we improve the information provided to patients undergoing amputation?
- H In a person who has undergone a minor amputation in the foot, how are the chances of a subsequent major lower limb amputation above the ankle reduced?
- I When is it appropriate to perform a major amputation?
- J What are the best mobility aids following amputation?
- K How do we optimise prosthetic limb use following amputation?
- L How can we reduce the rates of major lower limb amputations?

**Table 4** Final ranked list of 'top 10' research priorities in amputation surgery. Note the last three of the 'top 10' scored the same, and are considered equal 8th priority.

1. How can we reduce the rates of major lower limb amputations?
2. What are the best ways to support rehabilitation following amputation?
3. How can we improve clinical outcomes for patients following major limb amputation?
4. What are the best ways to prevent or treat pain (including phantom pain) after amputation?
5. How do we improve the information provided to patients undergoing amputation?
6. In a person who has undergone a minor amputation in the foot, how are the chances of a subsequent major lower limb amputation above the ankle reduced?
7. How do you improve healing of the amputated stump?
- 8a. In a person who has undergone amputation, how do you reduce the chances of amputation in the other limb?
- 8b. How do we optimise prosthetic limb use following amputation?
- 8c. When is it appropriate to perform a major amputation?

The two research priorities which did not make the top 10 were priority number 11 ("Is through- or above-knee amputation better?") and 12 ("What are the best mobility aids following amputation?"). It was noted that the low ranking of priority 11 (through-knee versus above-knee amputation) may have been influenced by through-knee amputations being less commonly performed in the UK. Furthermore, there were no patients with a through-knee amputation in the workshop. Participants expressed that the lack of awareness and experience within this cohort

(particularly from the patient representatives present) could have led to a perceived lower importance of this research question.

## Discussion

### Summary

Using modified JLA methodology, we identified key research priorities in amputation surgery. A two-round Delphi process covering all aspects of vascular surgery care identified five amputation research priorities from clinicians, which were pooled with priorities raised by patients and carers to produce 12 priorities for final ranking according to importance. Following discussion with patients, carers and healthcare professionals, a final, ranked, top 10 list of clinical research priorities in amputation was produced by consensus.

### Strengths and limitations

The strengths of this study include the use of a well-established systematic and transparent process to identify research priorities of patients and healthcare professionals across the UK, under supervision from a steering group and experienced JLA advisors. The priority setting process included a variety of stakeholders, to provide a broad view of unanswered questions. Facilitation by JLA advisors ensured that all parties contributed actively to discussion.

There are several limitations to consider in this PSP. Firstly, due to the survey-based nature of the process, there is a potential for responder bias for both clinicians and patients, which may not be representative of all patients with amputations and healthcare professionals involved in their care. We attempted to include patients from a wide range of geographical, socio-economic and health literacy backgrounds, as well as healthcare professionals who may interact with patients differently (carers, nurses, doctors, AHPs). However, not all were available for the final prioritisation process. In particular, there is potential bias involved when considering the research question of comparing through-knee versus above knee amputations: the lack of awareness, experience and representation in this cohort may have impacted on the perceived relative importance of this topic.

The PSP was conducted using a modified approach to conventional JLA priority setting methodology, to capture the broad scope of questions in vascular care. The key modification was the disconnect between the patients and healthcare professional research priority identification and scoring process, which were only pooled later. Typically both groups undertake a single identification and scoring process. Due to the inherent subjective process of PSP, prioritisation may have been biased by initial survey approaches. It is not possible to assess whether the top 10 research priorities may have differed, had all questions been analysed, summarised and scored by all participants. However, it is clear that the chosen top 10 priorities included those of specific importance to patients/carers, to clinicians and to both groups. Finally, the overlap in research priorities occasionally made the ranking process more

## KEY MESSAGES

- A total of 12 research priorities relating to major lower limb amputation were considered by a group of patients, carers and healthcare professionals.
- Following a Delphi process, a final list of 10 priorities were decided upon, ordered according to their importance.
- Research priorities broadly encompassed two main aspects: research aimed at reducing amputation, and research aimed at improving outcomes after amputation surgery.

difficult; often participants grouped certain priorities together or ranked them higher if they encompassed parts of other topics. Research priorities identified as missing at the final prioritisation workshop included psychological well being and support. These priorities do feature in the Service SIG however, encompassing priorities spanning the entire scope of vascular surgery. It was also noted by participants that there was no podiatry representation, recognised as an important stakeholder group.

## Implications for future research

Defining a specific top 10 research priorities provides an invaluable starting point for future research in amputation surgery. The top 10 research priorities will guide researchers and funders to the most important research questions for both healthcare professionals and patients. Specific research strategy will be decided upon by further evaluation of individual research questions. Amputation surgery research in the United Kingdom and the wider global amputation community is likely to be guided by this work for many years to come. It is important to recognise that all priorities discussed were considered of value: priorities 11 and 12 remain important areas for future research. It is expected the Amputation Surgery SIG will select individual research priorities, with the aim of specifically developing ongoing research strategy. The overall aim of the Amputation Surgery SIG is to develop a national research group for amputation surgery, with patients, carers and amputation experts from around the country, supported by national bodies such as the VSGBI and the Vascular and Endovascular Research Network (VERN).

**The Amputation SIG team comprised:** Participants: Annie Clothier, Barrie Evans, Bernie Wilkes, Chantel Ostler, Clifton Henry, Damien Harper, Dave Buchanan, David Bradley, Eddie Bowen, Harvey Solomons, Hayley Crane, Ian Baxter, John Horsfall, Lucy Wales, Michelle Stubley, Natalie Vanicek, Neil Head, Paul Stopforth, Rachael Lovegrove, Rahul Velineni, Sam Eldabe, Sarah Day, Shigong Guo, Sue Ward; **Facilitators:** Judith Long, Maryrose Tarpey, Toto Gronlund; **Observers:** Dave Bosanquet, Esmee Hanna, Ian Chetter, Kitty HF Wong, Robert Hinchliffe, Sandip J Nandhra; **Technical Support:** Becky Carthy

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# Annual Specialist Registrar Educational Programme (ASPIRE)



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The Annual Specialist Registrar Educational Programme (ASPIRE) supports the education and development of trainee vascular surgeons throughout their eight years of training, which in turn complements the national curriculum.

The Vascular Society Education and Training Committee, which is currently chaired by Mr Keith Jones, develops, manages and delivers the ASPIRE programme.

Each year, the **ASPIRE** programme takes the form of eight residential courses, which are 2-3 days duration as follows:

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A residential 2.5 day course providing a full introduction and overview of vascular surgical training
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The ASPIRE course has proved invaluable to the future of vascular surgery. Evaluation and feedback from each course has proved unanimously excellent.

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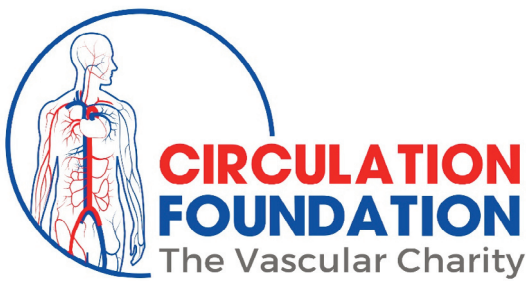
## ASPIRE Digital

In response to the global challenge, posed by the COVID-19 pandemic, the Vascular Society took an early innovative decision to continue to deliver education via the **ASPIRE Digital** platform. This has resulted in an overwhelming response, and provided a growing resource of education for vascular surgeons.

Each of the recorded sessions are included on the Vascular Society members' website. Here's a list of sessions that are readily available for members of the VS website:

- Management of the Diabetic Foot Attack
- Surgical management of CLTI
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- Current Management of Acute Aortic Syndrome
- Principles of major lower limb amputation
- How to write a paper
- Strategies for Vascular Trauma
- EVAR planning
- Concept of angiosomes
- Tips and tricks for safe open AAA repair
- Renal Access
- Mesenteric ischaemia
- Carotid Disease Management - Symptomatic and Asymptomatic
- Upper limb ischaemia
- Management of the infected groin
- Managing the rupture AAA - building a team approach
- TOCS
- Why should I consider a career in academic vascular surgery?
- Management of acute / chronic deep venous disease
- Open management of complex AAA
- Options for treating superficial venous reflux
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***Our Vision:- is a society free of vascular disease, and its associated suffering.***

***Our Mission:- is to promote awareness into Vascular conditions and to support vital research.***

Established in 1992 by vascular surgeons, the Circulation Foundation is the only UK Vascular charity, dedicated to vascular health. It is the charitable foundation of the Vascular Society of Great Britain and Ireland, run by a committee which are accountable to the Trustees of the Vascular Society of Great Britain and Ireland.

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- Help to raise awareness of vascular disease.
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- Learn new skills.
- Be able to network with like-minded people.
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- Be part of a professional and committed charity and a valued member of the team.
- Recognition on social media, newsletter and on the website.
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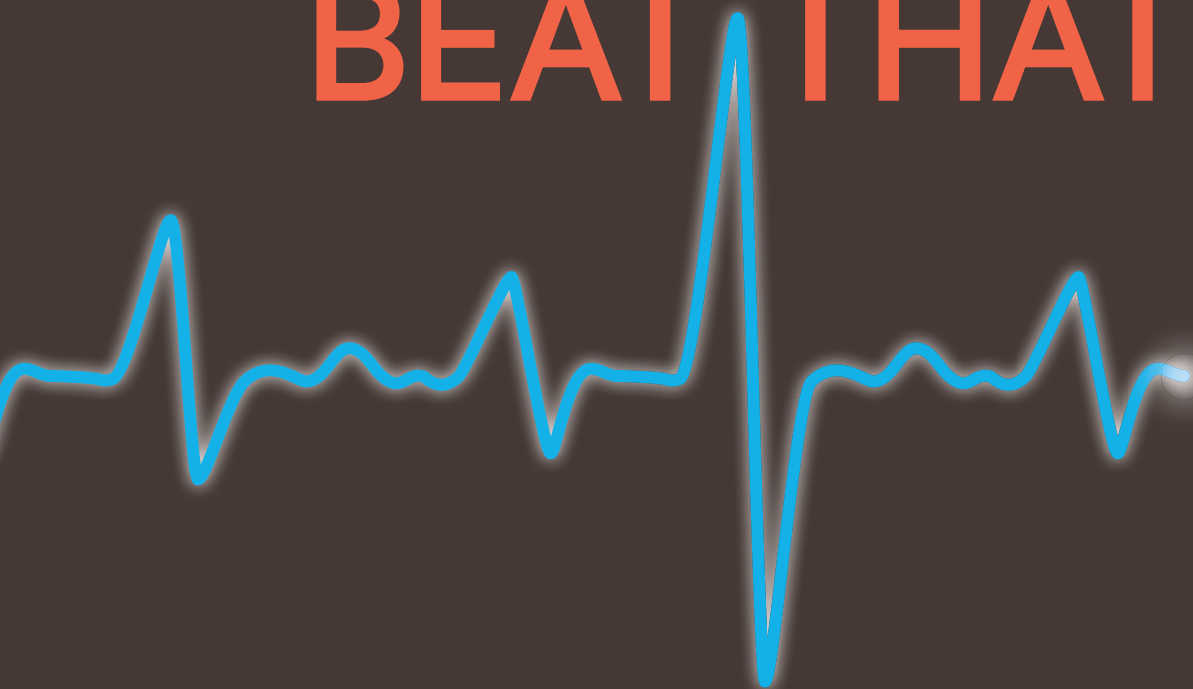
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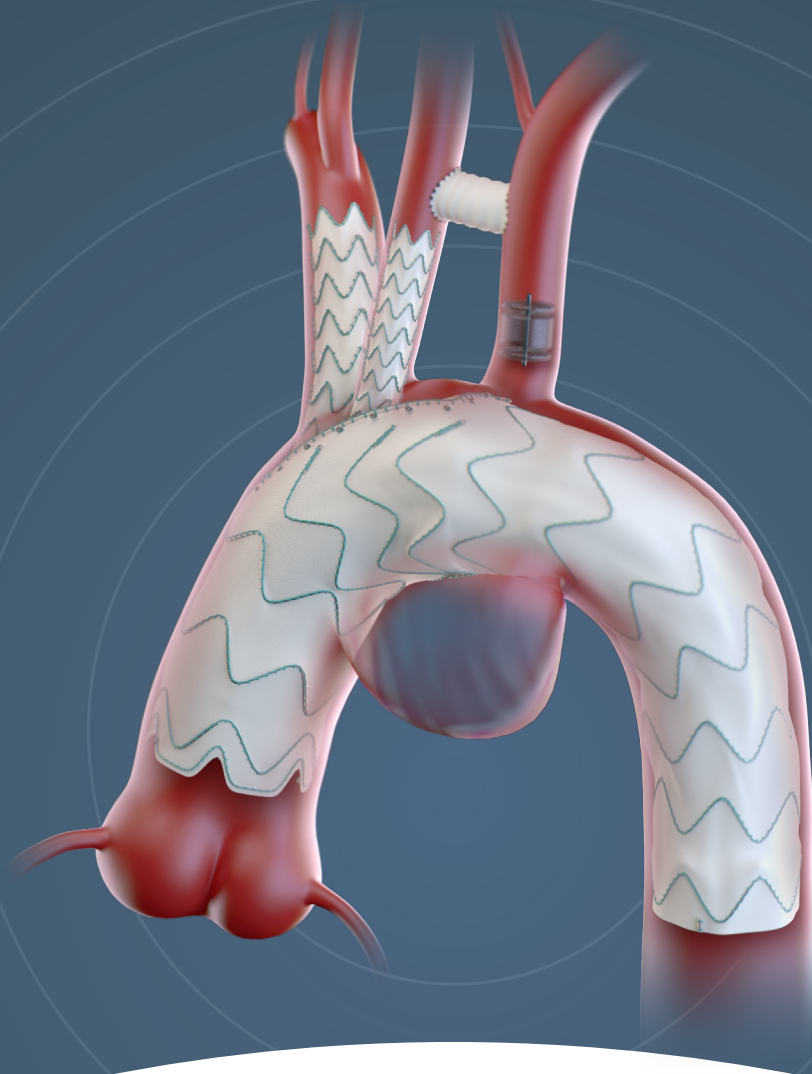
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