

The development of a new and innovative MSc programme in Advancing Practice in Peripheral Vascular Disease

Jayne Robbie and Alok Tiwari

Citation: Robbie J, Tiwari A (2022) The development of a new and innovative MSc programme in Advancing Practice in Peripheral Vascular Disease. *The Diabetic Foot Journal* 25(4): 22–5

Key words

- Continuing Professional Development (CPD)
- Peripheral vascular disease
- Vascular

Article points

1. The introduction of the new MSc in Advancing Practice in Peripheral Vascular Disease (PVD) addresses a need to provide up-to-date education in the field.
2. Students will learn new and emerging evidence, advance their knowledge and practice, develop their network, explore leadership and gain a critical understanding of the management of PVD.

Authors

Jayne Robbie is Senior Podiatrist, University Hospitals Birmingham NHS Trust & Senior Lecturer, Birmingham City University; Alok Tiwari is Visiting Professor of Vascular Surgery, Birmingham City University & Consultant Vascular Surgeon, University Hospitals Birmingham

The unique Master's level programme in Advancing Practice in Peripheral Vascular Disease is aimed at clinical specialists or those wishing to work with people living with peripheral vascular disease wishing to gain up-to-date education in the field. Students will work alongside clinical inter-disciplinary colleagues in both the vascular and diabetes services on an MSc pathway, which is both academically relevant but also clinically necessary and fully embedded in current surgical practice. It will blend theoretical approaches with the practicalities of service delivery and person-centred care approaches. The international dimension, and application of culturally appropriate surgical interventions in different environments and resources, underpins this programme. Through different modules, students will explore their employment situation, recognise the potential for excellence in practice-led care, extend and enhance their employability and extend their career progression by identifying ways in which they can improve their practice and services, in order to pioneer new interdisciplinary service developments that will improve the outcomes for people living with peripheral vascular disease

The global increase in the prevalence of diabetes is recognised as one of the leading non-communicable diseases of increased risk by the World Health Organization (WHO, 2016). Peripheral arterial disease (PAD) is commonly associated with diabetes and affects approximately one in five people over the age of 60 in the UK, with population studies acknowledging that the incidence increases with advancing age. It carries the risk of lower-limb loss and the increased risk of death from heart attacks and strokes (Vascular Society, 2022). PAD is more common in smokers, people with diabetes and those with coronary artery disease (cardiovascular disease). It is recognised as a major cardiovascular disease affecting approximately 236 million people worldwide (Song et al, 2019) and is more common in low-to-middle-income countries

(LMICs) than in high-income countries (HICs) (Song, 2019).

Peripheral arterial disease and diabetes

The diagnosis of diabetes has been widely recognised as a significant risk factor in the development of arteriosclerotic disease (Freisinger et al, 2017), and is estimated to increase the risk of PAD (Fowkes et al, 2013). The relative risk for PAD is shown to further increase with the increased duration of diabetes (Al-Delaimy et al, 2004).

The National Diabetes Audit report on complications and mortality suggested that people with diabetes (with or without PAD) account for between 40–70% of all hospital admissions for amputations and over 40% of all admissions for

major amputations (NHS Digital, 2019a; 2019b). It is therefore recognised that individuals with both PAD and diabetes comprise a major subcategory with an especially high risk of poor clinical outcomes (Marso and Hiatt, 2006)

Public Health England (2019) acknowledged that there were 7,545 major and minor amputations in people with diabetes in England between 2015 and 2018. Additionally, 84% of major lower-extremity amputations in people with diabetes are preceded by a foot ulcer (Pecoraro et al, 1990). It is also a worrying statistic that one in three people with diabetes will experience a foot ulcer during their lifetime (Edmonds et al, 2020) which are frequently complex and chronic in nature, and with major long-term impacts on morbidity, mortality and quality of life for the individual (Vainieri et al, 2022). They can often be life changing and limb threatening (Armstrong et al, 2017), especially when associated with peripheral arterial disease.

Many patients with diabetes and/or PAD present with intermittent claudication (pain in calf on walking due to the reduced blood supply to the limb) the symptoms of which remain stable, but approximately 20% will develop increasingly severe symptoms with the development of critical limb ischaemia. Overall, approximately 1-2% of people with intermittent claudication will eventually require an amputation (NICE, 2014).

There is therefore a need to be able to disseminate knowledge on the recognition and management of PAD to a multi-disciplinary audience. This can be done through a variety of means including the development of dedicated post-graduate course not just for education but also upskilling of health care professionals to work more proactively with people living with PAD nationally and globally.

This can reduce unacceptable variations in services for people with PAD with the development of evidence-based, multi-disciplinary pathways to improve patient outcomes (Vascular Society, 2022) for life-limiting pathological PAD conditions that affect approximately 20% of people aged over 60 years in the UK (CG147; NICE, 2014).

The MSc programme

As a result, the innovative sector-first MSc in Advancing Practice in Peripheral Vascular Disease (PVD) from Birmingham City University has been

specifically designed to equip students with greater and advanced understanding of the complexities of diagnosing and managing PAD and venous disease and to support and enable effective individualised self-management through bespoke course design.

The course has drawn on global evidence and follows discussions with a range of stakeholders from clinical practice and education to develop this innovative and flexible curriculum. Healthcare professionals can be awarded 60 credits at Level 7 to be attaining the Postgraduate Certificate (PG Cert), 120 credits at Level 7 to be awarded a Postgraduate Diploma (PG Dip) or the full 180 credits at Level 7 to be awarded the MSc in Advancing Practice in Peripheral Vascular Disease. In addition, core modules are designed as standalone options for personal development and professional CPD.

Additionally, for individuals who wish to be recognised as an Advanced Clinical Practitioner they will be able to map their education and clinical experience and capabilities to gain this recognition in the future.

The MSc programme has been developed following collaboration between Birmingham City University and the University Hospitals Birmingham NHS Trust Vascular surgery and Diabetes Teams to be a highly focussed and clinically relevant programme with strong links into current surgical and clinical practice. This has resulted in an MSc which is accessible, inclusive, academically rigorous, and firmly embedded in current clinical and surgical practice which will have a positive impact on national and international PAD services and addresses a public health gap where currently there is no provision on the UK mainland. This course has intentionally been validated with a 100% online delivery, with modules accessible to national and international partners via synchronous and asynchronous delivery to account for challenges in geography and time zone.

It affords a unique student experience enabling the development of individual skills, confidence and competence as they gain a greater understanding of the complexities of assessing and treating peripheral vascular diseases (with or without diabetes) and how best to support and enable effective surgical management. It is suitable for all healthcare professionals working within the vascular or diabetes multi professional team.

All modules will be studied at Level 7: Full time (MSc completed in 1 year), Part time (MSc completed in 3 years)

PG Cert	PG Dip	MSc
*Assessment and Management of Peripheral Vascular Disease (20 credits)	*Assessment and Management of Peripheral Vascular Disease (20 credits)	*Assessment and management of Peripheral Vascular Disease (20 credits)
*Principles of Limb Salvage (20 credits)	*Principles of Limb Salvage (20 credits)	*Principles of Limb Salvage (20 credits)
Leadership in Peripheral Vascular Disease (10 credits)	**Leadership in Peripheral Vascular Disease (10 credits)	*Leadership in Peripheral Vascular Disease (10 credits)
AND		
**Optional Module (10 credits)	**Optional Module (10 credits)	**Optional Module (10 credits)
	***Research: Methods of Enquiry (20 credits)	***Research: Methods of Enquiry (20 credits)
	AND	
	Two **Optional 20 credit Modules	Two **Optional 20 credit Modules
		AND
		****MSc Dissertation – 40 credits
		Or
		****MSc Dissertation – 60 credits
<i>To be awarded the PG Cert students must have completed 60 level 7 credits. This will be made up of the two new 20 credit core modules (to be approved), plus one other 10 credit core (to be approved) and a 10 credit optional module (to be approved).</i>	<i>To be awarded the PG Dip students must have completed 120 level 7 credits. This will be made up of the 60 credits achieved at PG Cert, plus two new 20 credit optional modules (to be approved), plus Research: Methods of Enquiry (20 credits core module).</i>	<i>To be awarded the MSc students must have completed the requirements for the PG Dip plus the 40 credit dissertation module plus one other optional module, or the 60 credit dissertation module.</i>

Figure 1. The structure of the MSc programme.

The international dimension and application of culturally appropriate surgical interventions also underpins the programme. Through different modules, students will explore leadership, recognise the potential for excellence in practice-led care, extend and enhance their employability and extend their career progression. They will develop a wide range of academic, clinical and surgical skills, learn about new and emerging evidence and gain a critical understanding of current PVD management. This programme has been designed collaboratively to blend theoretical approaches with the challenges of service development and cutting edge care surgical approaches.

It will enable practitioners working in various aspects of vascular medicine to develop their knowledge and skills by developing analytical skills

through interactive online learning opportunities, and to critically examine practices within the context of the legislative and professional frameworks of their own country.

What students will study

Students will develop a range of skills, learn new and emerging evidence, advance their knowledge and practice, develop their network, explore leadership and gain a critical understanding of the management of PVD. The aim is that they will acquire knowledge and skills to develop and improve clinical practice for people at risk of or living with PVD across the age span by taking an evidence-based holistic approach to the provision and delivery of individualised PVD care. In addition, there is little national continuing professional development (CPD) for enhanced or extended scope practitioners (nursing or allied health professionals) working within vascular services. This programme enables students to build their own bespoke course of study that fully supports their own clinical and personal development. Offering the students the opportunity to develop their knowledge and skills in an individualised manner allows them to structure their learning to suit their developmental, operational, and educational requirements.

This MSc programme will therefore provide valuable and bespoke CPD, supporting the changing face of healthcare in the UK and fills a skills gap which currently exists for healthcare professionals and meets the advancing needs of multi-professional colleagues.

Students will study core modules in: (Figure 1)

- Assessment & management of peripheral vascular disease (20 credits)
- Strategies in limb salvage (20 credits)
- Leadership in Diabetes & Peripheral Vascular Disease (10 credits)
- Research: Methods of Enquiry (20 credits)
- Dissertation (40/60 credits)

*40 credits if the student has been awarded Non Medical Prescribing annotation by previous study

With the additional credits required for the MSc qualification being taken from existing MSc programmes within Birmingham City University; including the Advancing Diabetes Care and/or

Wound Healing and Tissue Repair programmes and could include optional modules such as:

- Wounds Affecting the Lower Leg
- Debridement and Advanced Wound Care
- Foot Care Complexities and Treatment in Diabetes and PVD (10 credits)
- Care and Prevention of Diabetes Related Complication
- Safeguarding Contemporary Issues
- Psychology and Psycho-social Aspects of Peripheral Vascular Disease (10 credits)
- Pressure Ulcers: Prevention and Treatment
- Prevention, Recognition and Management of Sepsis
- Quality Improvement in Wound Healing and Tissue Repair
- Managing Behaviour of Self, Teams and Organisations (online)

*all modules are 20 credits at Level 7 unless otherwise stated.

Students will be encouraged, via the online platform, to develop a professional support network and collegiate community of practice (Maor et al, 2015), which will further facilitate their development, enhance patient care, and expand student capability. Utilising external expertise, via visiting lecturers and interactive webinars or pre-recorded specialist presentations, will enrich student learning, with the bonus of developing collaborative networks and professional support structures. The learning platform also enables the revisiting of taught material so that students can replay and revise content or watch back at a convenient time (irrespective of geography or time-zone) thereby increasing the inclusivity and accessibility of the programme.

Assessments will enable the students to utilise a variety of presentation mediums (and will not solely rely on written assignments) to encourage critical thinking and analysis while enabling students to explore different methods of submission (e.g., narrated presentation, recorded conversation, or quality improvement project). This increases the relevance and application of learning to their current clinical scope of practice and enables the development of transformational skills.

As a result, the MSc in Advancing Practice in Peripheral Vascular Disease has been commended

for good practice for the range and inclusivity of its assessments and its mutually beneficial relationships with healthcare trusts and the West Midlands Vascular Research and Innovation Consortium (VARICS). The course has additionally been commended for addressing a public health need, as well as addressing a gap in healthcare training and professional development. ■

Al-Delaimy WK, Merchant AT, Rimm EB et al (2004) Effect of type 2 diabetes and its duration on the risk of peripheral arterial disease among men. *Am J Med* 116(4): 236–40

Armstrong DG, Boulton AJM, Bus SA (2017) Diabetic foot ulcers and their recurrence. *N Engl J Med* 376(24): 2367–75. <https://doi.org/10.1056/NEJMra1615439>

Edmonds M, Phillips A, Holmes P et al (2020) To halve the number of major amputations in people living with diabetes, 'ACTNOW.' *Diabetes Primary Care* 22(6): 1–5

Freisinger E, Malyar NM, Reinecke H, Lawall H (2017) Impact of diabetes on outcome in critical limb ischemia with tissue loss: a large-scaled routine data analysis. *Cardiovasc Diabetol* 16(1): 41. doi: 10.1186/s12933-017-0524-8.

Marso SP, Hiatt WR (2006) Peripheral arterial disease in patients with diabetes. *J Am Coll Cardiol* 47(5): 921–9

Maor D, Ensor J, Fraser B (2016) Doctoral supervision in virtual spaces: A review of research of web-based tools to develop collaborative supervision. *Higher Education Research & Development* 35(1): 172–88

Fowkes FG, Rudan D, Rudan I et al (2013) Comparison of global estimates of prevalence and risk factors for peripheral artery disease in 2000 and 2010: a systematic review and analysis. *Lancet* 382(9901): 1329–40. doi:10.1016/S0140-6736(13)61249-0 (Review).

National Institute for Health and Care Excellence (2014) *Peripheral Arterial Disease Quality Standard. CG147*. Available at: www.nice.org.uk/guidance/qs52 (accessed 23.11.2022)

NHS Digital (2019a) *National Diabetes Foot Care Audit, 2014–2018*. Available at: <https://digital.nhs.uk/data-and-information/publications/statistical/national-diabetes-footcare-audit/2014-2018> (accessed 23.11.2022)

NHS Digital (2019b) *National Diabetes Foot Care Audit, 2014–2018. Report 2a: Complications and Mortality (Complications of Diabetes)*. Available at: <https://www.hqip.org.uk/wp-content/uploads/2019/12/National-Diabetes-Audit2017-18-Report-2a.pdf> (accessed 9 April 2022)

Pecoraro RE, Reiber GE, Burgess EM (1990) Pathways to diabetic limb amputation. Basis for prevention. *Diabetes Care* 13(5): 513–21. <https://doi.org/10.2337/diacare.13.5.513>

Public Health England. Diabetes foot care profiles. 2019. <https://fingertips.phe.org.uk/profile/diabetes-ft> (accessed 9 April 2022)

Song P, Rudan D, Zhu Y et al (2019) Global, regional, and national prevalence and risk factors for peripheral artery disease in 2015: an updated systematic review and analysis. *Lancet Glob Health* 7(8): e1020–e1030. doi: 10.1016/S2214-109X(19)30255-4.

Vainieri E, Ahluwalia R, Slim H et al (2022) Outcomes after emergency admission with a diabetic foot attack indicate a high rate of healing and limb salvage but increased mortality: 18-month follow-up study. *Exp Clin Endocrinol Diabetes* 130(03): 165–71. <https://doi.org/10.1055/a-1322-4811>

Vascular Society for Great Britain and Ireland (2022) A Best Practice Clinical Care Pathway for Peripheral Arterial Disease. *J Vasc Soc GB Irel* 1(Supp3): S1–S13. <http://doi.org/10.54522/jvsgbi.2022.017>

World Health Organization (2016) *Global Report on Diabetes*. Geneva: WHO. Available at: https://apps.who.int/iris/bitstream/handle/10665/204871/9789241565257_eng.pdf;jsessionid=39AF69136EC9BF288E366EE9DD0DBA05?sequence=1 (accessed 23.11.2022)

Further information

Contact Jayne Robbie at jayne.robbie@bcu.ac.uk or take a look at the website: <https://www.bcu.ac.uk/nursing-and-midwifery/courses/advancing-practice-in-peripheral-vascular-disease-msc-2022-23>