

# Teamwork makes the dream work

Benjamin Bullen

Citation: Bullen B (2021) Teamwork makes the dream work. *The Diabetic Foot Journal* 24(3): 38–43

## Key words

- Diabetic foot
- Interprofessional education
- Multidisciplinary teams
- Podiatry education
- Teamwork

## Article points

1. Podiatry students recognise the important contribution of podiatry, medical and nursing colleagues in the management of diabetes foot disease.
2. Understanding of the roles of fellow Allied Health Professionals is limited.
3. Future educational approaches should focus on improving awareness of the roles of the Allied Health Professions in optimising outcomes for people with diabetes.

## Authors

Benjamin Bullen is Programme Director/Lecturer in Podiatry, Wales Centre for Podiatric Studies, Cardiff School of Sport and Health Sciences, Cardiff Metropolitan University, Cardiff, UK

**Introduction: Diabetes foot disease demands a multidisciplinary approach. Undergraduate podiatry students, therefore, must appreciate the contribution of a range of healthcare professionals to the management of diabetes foot disease. Methods: Final-year podiatry undergraduates were asked to rationalise their multidisciplinary diabetes foot ‘Dream Team,’ including the professional groups involved. Responses were categorised into professional groups and frequencies of responses calculated. Results: All students included a podiatrist and a medical practitioner within their ‘Dream Team.’ Nursing and surgical practitioners were included by 18 of 20 (90%) and 16 of 20 (80%) participants, respectively. The allied health professions were relatively underrepresented, with the following proportions: dietitians (60%), orthotists (45%), occupational therapists (30%), physiotherapists (25%), radiographers (15%) and prosthetists (5%). Conclusion: Future educational efforts should focus on the contributions of the allied health professions to multidisciplinary diabetes foot management.**

Leading learning innovator, Professor Gilly Salmon (2021), recently observed: “As educators, our goal is to create the future, i.e., anticipate likely conditions for our students and ‘backcast’ them to now.” As diabetes rates continue to increase both at home and abroad, undergraduate podiatry programme’s must ensure that graduates are fit for the, constantly-evolving, world of work (Bonilla et al, 2016; Roglic, 2016; Saeedi et al, 2019). For many, this will involve regular management of diabetes foot disease, demanding specific attention within the undergraduate curriculum. Podiatrists cannot manage diabetes foot disease effectively in isolation and, therefore, the roles of key healthcare professionals and their contribution to physical and/or virtual multidisciplinary teams is paramount (Schaper et al, 2020).

Both NICE NG19 and SIGN 116 guidance recommend the diabetes foot multidisciplinary team

include a podiatrist, orthotist, diabetes specialist physician and nurse, radiologist, and vascular and orthopaedic surgeons (National Institute for Health and Care Excellence [NICE], 2015; Scottish Intercollegiate Guidelines Network, 2017). A recent *Redefining and Demystifying Offloading for Diabetes Foot Care* consensus statement further added a general practitioner (GP), infection specialist, dietitian, pharmacist, psychologist, social worker and a wound-specialist nurse to the ‘ideal’ multidisciplinary footcare team (Munro et al, 2021).

Interprofessional education (IPE) has been associated with positive outcomes for both students and service users with diabetes (Kangas et al, 2018). Interprofessional learning opportunities were challenged by the COVID-19 pandemic, however, as students and staff adapted to new ways of working (Ousey et al, 2021). Cardiff Metropolitan University, like many other Higher Education Institutions (HEIs), adopted a ‘hybrid’ approach to

teaching and learning, in light of social distancing constraints (Ousey et al, 2021). While intra-professional clinical activity continued on-campus, external placements provided the greatest source of inter-disciplinary teamworking exposure throughout this period.

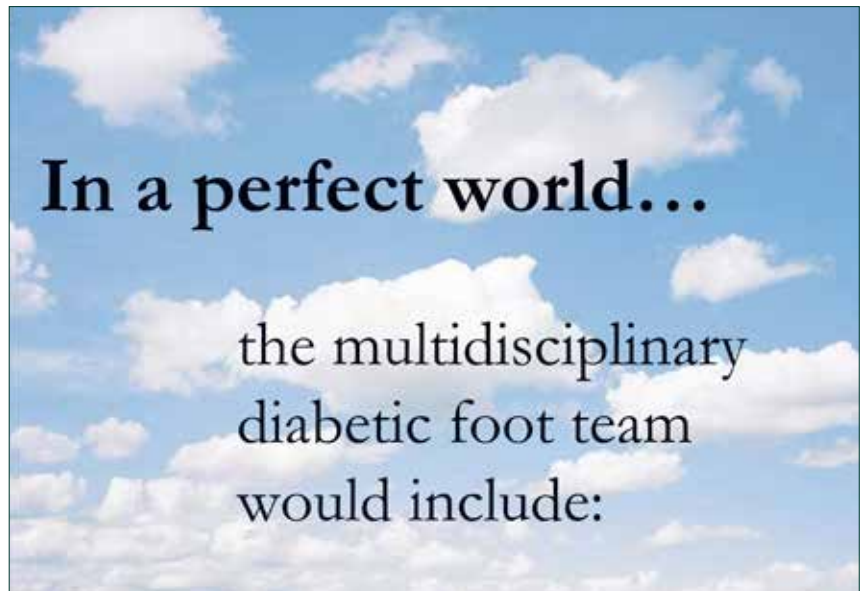
Final-year students received 1 day each week dedicated to on-campus clinics and online clinical practice tutorials, 126 hours respectively. Total contact hours dedicated to clinical activities increased by 16% from 475 hours in 2019-2020 to 550 hours in 2020-2021. This change afforded a unique opportunity to embed critical thinking and clinical decision-making skills within online teaching. Online clinical workshops and tutorials included interactive groupwork, featuring simulated case studies, constructively aligned to final clinical assessment delivery.

For final year students, learning about the multidisciplinary management of diabetes foot disease was a priority. To help facilitate this learning, students were divided into smaller groups to participate in an online 'Multidisciplinary teams, dressings and advanced wound therapies' day, during their allocated online clinical tutorial sessions. This event occurred in the third and fourth weeks of the 2020-2021 academic year, following a refresher of the Risk Awareness and Management Education (FRAME) e-learning module (Scottish Diabetes Group Foot Action Group 2017).

This day commenced with a whistle-stop tour of the impact of insulin and penicillin on morbidity and mortality before celebrating the successes of global diabetes foot multidisciplinary teams (MDTs) (Kerr et al, 2019; Blanchette et al, 2020). Examples from the UK spanned the advances made at King College Hospital, including early limb-salvaging ray resections of McKeown and Lawrence in 1941 (Pearse and Zierold, 1939; McKeown, 1995), Professor Mike Edmonds' pioneering MDT (established in 1981) and similar successes at Ipswich Hospital, UK, among others.

## Methods

Data were collected during online clinical tutorials, using Microsoft Teams software, with final year Cardiff Metropolitan University BSc (Hons) Podiatry students. Following a brief introduction, as described earlier, a shared PowerPoint presentation



was stopped on an, 'In a perfect world ... the multidisciplinary diabetic foot team would include' slide (Figure 1).

Groupwork was permitted and all groups were advised to include a podiatrist in their team. Thirty minutes were allowed for this exercise, with participants reconvening after to discuss as a group. The exercise was described as "a bit like fantasy football ... you could find the people that would be on your dream team or you could choose the professions that are on your dream team." Microsoft Stream recordings provided raw data for calculation of responses per category. A 'running tally' of professional groups and named individuals was kept on the day to facilitate group discussions. All students were aware they were being recorded and consented to having their results collated. These recordings were made available to all participants, via the University's virtual learning environment, Moodle, and securely stored on Microsoft Stream.

## Results

All 23 enrolled Level 6 BSc (Hons) Podiatry students participated in this activity, either on October 21, or October 28, 2020. Most (18/25; 72%) students elected to create an individual list, with one pairing and one group of three students preferring to work together initially. Twenty separate entries were, therefore, recorded. All students chose to have a podiatrist on their 'dream team,' with some students specifying a particular

Figure 1. 'In a perfect world ... the multidisciplinary diabetic foot team would include' PowerPoint slide.

**Table 1. Ten most recognised professional groups.**

Professional Group	Response rate (out of 20)	Response (%)
Podiatrist*	20	100%
Medical Practitioner*	20	100%
Nurse*	18	90%
Surgical Practitioner*	16	80%
Vascular Surgeon	14	70%
Diabetologist/Endocrinologist	13	65%
Orthopaedic surgeon	12	60%
Dietitian	12	60%
General Practitioner	11	55%
Ophthalmologist	11	55%

\* = any specialism.

**Table 3. Most recognised medical specialties.**

Medical Specialism	Response rate (out of 20)	Response (%)
Diabetologist/Endocrinologist	13	65%
General Practitioner	11	55%
Microbiologist	8	40%
Radiologist	7	35%
Nephrologist	4	20%
Neurologist	2	10%
Cardiologist	1	5%
Dermatologist	1	5%
Epidemiologist	1	5%
Pain Management Specialist	1	5%
Psychiatrist		

**Table 4. Most recognised surgical specialties.**

Surgical Specialism	Response rate (out of 20)	Response (%)
Vascular surgeon	14	70%
Orthopaedic surgeon	12	60%
Plastic surgeon	2	10%

specialist area, such as wound care, vascular and musculoskeletal specialisms. Named individuals included the students themselves, members of Cardiff Metropolitan University's podiatry team, inspirational podiatrists met on placement and prominent authors.

An additional 37 different professional groups were also mentioned over the course of these events. Most students elected to list professional groups, rather than individuals, however, inclusion

of named individuals did lead to the inclusion of additional profession groups. Examples included 'Dr Pimple Popper,' Sandra Lee, and William Ostler, who led to the inclusion of a dermatologist and clinical educator, respectively. The 10 most recognised professional groups are included in *Table 1*.

Podiatrists and combined medical specialists were mentioned by all participants, while combined nursing specialists were mentioned by 18 of 20 participants (90%). Individual medical and surgical specialists were also recorded individually, to determine their recognisability among this student cohort. Individual medical (*Table 2*) and surgical specialties (*Table 3*) are presented on this page.

## Discussion

Data were collected in the third and fourth weeks of the academic year and, as such, will have been minimally influenced by Level 6 teaching. While it is interesting to speculate why surgical specialties were less recognised than medical ones, of greater concern is a lack of awareness of the role of the other AHPs in the multidisciplinary management of diabetes foot disease. This activity was well-received by students, allowed for generative discussions around the individual and collaborative efforts required to maximise diabetes foot outcomes. Future work could look at larger student cohorts, across different Levels and, perhaps, across HEIs. While a modest sample size limits generalisability, this preliminary data suggests more can be done to improve interprofessional awareness among undergraduate podiatry students.

## Conclusion

This project sought to explore podiatry student recognition of the contribution of different professional groups to the multidisciplinary management of diabetes foot disease. While the role of the podiatrist was appreciated, recognition of the roles of fellow AHP groups was limited among podiatry undergraduates. Future educational efforts should focus on the contributions of the allied health professions to multidisciplinary diabetes foot management. ■

Blanchette V, Brousseau-Foley M, Cloutier L (2020) Effect of contact with podiatry in a team approach context on diabetic

- foot ulcer and lower extremity amputation: systematic review and meta-analysis. *J Foot Ankle Res* 13(1): 15
- Bonilla GS, Rodriguez-Gutierrez R, Montori VM (2016) What we don't talk about when we talk about preventing type 2 diabetes: addressing socioeconomic disadvantage. *JAMA Intern Med* 176(8): 1053–4
- Connor H (20008) Some historical aspects of diabetic foot disease. *Diabetes Metab Res Rev* 24 (Suppl 1): S7-13
- Kangas S, Rintala TM, Jaatinen P (2018) An integrative systematic review of interprofessional education on diabetes. *J Interprof Care* 32(6): 706–18
- Kerr M, Barron E, Chadwick P et al (2019) The cost of diabetic foot ulcers and amputations to the National Health Service in England. *Diabet Med* 36(8): 995–1002
- McKeown KC (1995) The history of the diabetic foot. *Diabet Med* 12(1): 19–23
- Munro W, Stang D, Fletcher J et al (2021) *Consensus Document: Redefining and Demystifying Offloading for Diabetes Foot Care*. London: The Diabetic Foot Journal. Available at: <https://bit.ly/3j35J8f> (accessed 14.09.2021)
- NICE (2015) *Diabetic Foot Problems: Prevention and Management. NG19*. London: NICE Available from: <https://bit.ly/2YLS1Du> (accessed 14.09.2021)
- Ousey K, Bullen B, Hodgson H, Atkin L (2021) How has the COVID-19 pandemic changed the way we teach? *Wounds UK* 17(1): 19–22
- Pearse HE, Zierold AB (1939) Gangrene of the extremity in the diabetic. *Ann Surg* 110(4): 723–30
- Roglic G (2016) WHO Global report on diabetes: a summary. *International Journal of Noncommunicable Diseases* 1(1): 3–8
- Saeedi P, Petersohn I, Salpea P et al (2019) Global and regional diabetes prevalence estimates for 2019 and projections for 2030 and 2045: results from the International Diabetes Federation Diabetes Atlas, 9th edition. *Diabetes Res Clin Pract* 157: 107843
- Salmon G (2021) As educators, our goal is to create the future, i.e. anticipate likely conditions for our students and 'backcast' them to now. How are we doing? [Twitter] August 15 Available at: <https://twitter.com/gillysalmon/status/1426826279370858496> (accessed 14.09.2021)
- Schaper NC, van Netten JJ, Apelqvist J et al (2020) Practical guidelines on the prevention and management of diabetic foot disease (IWGDF 2019 update). *Diabetes Metab Res Rev* 36(Suppl 1): e3266
- Scottish Diabetes Group Foot Action Group (2017) *Diabetes Foot Screening: Foot Risk Awareness and Management Education (FRAME)*. Available at: <https://bit.ly/2Xhv9pQ> (accessed 14.09.2021).
- Scottish Intercollegiate Guidelines Network (2017). *Management of Diabetes: A National Clinical Guideline. 116*. Available from: <https://bit.ly/3tRY68p> (accessed 14.09.2021)

# Expert commentary: Teamwork makes the dream work

William Munro is Orthotist & Honourary Clinical Research Fellow, Department of Biomedical Science, University of Strathclyde, Glasgow, Scotland

Lawrence Ambrose is Head of Policy & Public Affairs, Royal College of Podiatry, London, UK

Ross Barrow is Policy & Public Affairs Officer, Royal College of Podiatry, London, UK

Debbie Wilson is Lecturer in Podiatry (Clinical Academic), Glasgow Caledonian University, UK & Clinical Specialist in Diabetes and Vascular Disease for NHS Lanarkshire

**T**he provision and delivery of optimal load redistribution and gait training is fundamental to the effectiveness of the multidisciplinary team (MDT). It is, therefore, very important that undergraduate students in the disciplines that treat foot disease in diabetes are exposed to the principles of biomechanics and gait, and the practitioners that are responsible for the delivery of these elements of care.

For MDTs to succeed in the future, it is important that awareness at an early stage in the training programmes of allied health, nursing and medical students is implemented to allow interest to develop in the capabilities that are required to deliver the best possible MDT service. ■

William Munro

**N**H S Scotland whole time equivalent (wte) workforce figures for allied health professions, as a whole, have increased year on year from 2011 to 2021 (NHS Education for Scotland, 2021). When looking at 14 professions (NHS Scotland) as a whole, it is easy to disguise individual professions reductions in numbers. Hidden in these positive figures is a sharp decrease in NHS Scotland wte podiatry numbers over the past 10 years, by 15%. This comes while Scotland, and the rest of the world, has seen a dramatic increase in people with diabetes; 243,500 in 2011 to 312,000 in 2019 (Diabetes in Scotland, 2021). Thus, the numbers of people in Scotland categorised as at high risk of ulceration increased in the same period (2011–2019) by 3,648 to 18,270; and those who had active foot ulceration increased by 1,366 to 6,240 (Diabetes in Scotland, 2021).

There are clearly insufficient numbers of podiatrists being trained to meet the diabetic foot issue alone, let alone those people who require podiatric interventions in the fields of vascular, rheumatological, musculoskeletal, children's podiatry, sports medicine, podiatric surgery, neurology, falls prevention and the myriad long-term conditions and complications we treat.

There are a number of things that need to happen to ensure that the current NHS podiatric workforce do not burn out, and that podiatry is able to thrive as an essential preventative healthcare discipline. Increased numbers are needed to be trained to qualify as a podiatrist and a career in the NHS needs to be an attractive option. We also need increased options for training, such as apprenticeship degrees. We would urge those with their handles on the levers of change to provide long-term investment in a healthcare profession that is cost-effective through preventing people's health deteriorating. ■

Lawrence Ambrose & Ross Barrow

Diabetes in Scotland (2021) *Publications*. Available at: <https://bit.ly/3tYKZSy> (accessed 21.09.2021)  
NHS Education for Scotland (2021) *TURAS: Data Intelligence. Allied Health Professions*. Available at: <https://bit.ly/3Czupfm> (accessed 21.09.2021)  
NHS Scotland (2021) *Careers*. Available at: <https://bit.ly/3zvaxw2> (accessed 21.09.2021)

**I** found this a thought-provoking article where two points stood out.

The first point being that preliminary data suggested 'more can be done' to improve inter-professional awareness of the roles of allied health professionals in optimising outcomes for people

with diabetes among undergraduate podiatry students. As a clinical educator within a higher education institution, I know there are high-quality, dedicated modules delivered to all levels of undergraduate teaching within our health and social care departments, where both theoretical and practical perspectives are taught and experienced by the students. This article is suggesting this may not be enough. If so, what more can be done? My own thoughts go to enhanced AHP networking and clinical inter-professional placements.

The second, and most pertinent, point in my opinion was that the study reported that among podiatry undergraduate students' recognition of the roles of fellow AHP groups was limited', suggesting the students knew more about the roles of medics and surgeons in diabetes foot care and management than fellow allied health professionals. It must be recognised, however, that this is a modest piece of work with a very small sample size and, therefore, limited generalisability of results. However, I must

admit that the point did trigger a spark of reluctant recognition. Let's be honest, are we truly confident that podiatrists have fully de-robed the toenail-cutting stigma from all our AHP colleagues? Alas, recent personal experience has led me to believe we still have some work to do. The flip side, however, I'm also not so confident that all podiatrists know the difference between a diagnostic and therapeutic radiographer, or a prosthetist and orthotist, and the vital roles they have.

So back to my first point — more can be done. A small piece of work, I agree, but more can and should be done to greater enhance the understanding between AHPs about their clinical expertise and contributions to a unified and expert patient experience in diabetes foot care and management. How this is done, I think may be worthy of further research and investigation, triggered by this thought-provoking piece. ■

Debbie Wilson