

# The innovative delivery of an expanded foot clinic during the COVID-19 pandemic and beyond

Tricia Tay, Samantha Haycocks, Adam Robinson and Naseer Ahmad

Citation: Tay T, Haycocks S, Robinson A, Ahmad N (2021) The innovative delivery of an expanded foot clinic during the COVID-19 pandemic and beyond. *The Diabetic Foot Journal* 24(2): 1–4

## Key words

- COVID-19 pandemic  
- Digital implementation  
- Multidisciplinary foot clinic

## Article points

1. The COVID-19 pandemic saw disruption and opportunity for the delivery of foot care.
2. We adapted by working digitally and integrating podiatry with tissue viability and community nursing.
3. We expanded the foot multidisciplinary team clinic to all lower limb wounds and now accept referrals 'fuss-free', not only for foot wounds (regardless of diabetes status), but also leg/pressure ulcers and lymphoedema.
4. While challenges remain, we have achieved many of the strategic objectives of the National Wound Care Strategy Programme.

## Authors

Author details on page 2.

**The COVID-19 pandemic, while extremely challenging, produced significant opportunities for the rapid implementation of change. Many innovative practices were driven by urgency and the usual barriers being lifted. Following a return to more normal activity and evaluation, it is hopeful many of the positive advances will become embedded. This article describes the changes that occurred in a multidisciplinary foot clinic in Salford, Greater Manchester, and the likely future developments of the service.**

As the COVID-19 pandemic swept across the globe, many healthcare services saw a temporary cessation of services and/or a shift to digital consultations (Chadwick et al, 2020). While wound care services were relatively protected from service closure, in the authors' foot clinic in Salford, Greater Manchester, many of our frail, high-risk patients could not attend appointments because they were self-isolating. Therefore, the authors piloted the use of encrypted video consultation and used the mobile app WhatsApp. This allowed a community podiatrist or nurse to visit a patient in their home and gain a multidisciplinary team (MDT) opinion (*Figure 1*).

Patient consent was gathered before the consultation. This allowed safe social distancing of staff across sites and for patients to remain at home. These consultations involved history taking, examination and assessment, as well as counselling with appropriate safety-net advice (Jaly et al, 2020). Video augmented the consultation and enabled a MDT assessment. Patients with chronic limb-threatening ischaemia, severe infection or ulceration were invited to attend in-person appointments for potential life and limb preservation interventions. Those identified as 'at-risk' during digital consultations were fast-tracked into tertiary care (Foot in Diabetes UK, 2020).

These observations were echoed in a survey of podiatrists in the United States where there was a

significant increase in digital consultations and self-reported likelihood of using telecommunication after the pandemic (Neville et al, 2021). The authors believe digital consultations will remain although the software used will become more formalised.

The pandemic also saw the implementation of an electronic wound care assessment tool – the Salford Digital Wound Care Form. This replaced paper records in our centre and was integrated with the hospital-community electronic patient record. The resulting closer collaboration of wound care professionals, i.e. podiatrists, district nurses and tissue viability nurses, enabled team members to all use the same wound care form across community and hospital settings. This reduced repetition of assessments, facilitated communication and, with the reduction of paper waste, mitigated the spread of infection. Within this tool, health issues, allergies, intolerances and detailed information regarding plans for the wound were recorded. The assessment also included examination of lower-limb pulses, Doppler ultrasound signals and pressure indices. This, therefore, prevented duplication of vascular assessments and allowed faster clinical decision-making, e.g. initiation of compression. The assessment tool automatically calculated the risk scores that facilitated our audit (*Figure 2*). These scores included the Site, Ischaemia, Neuropathy, Bacterial infection, Area and Depth (SINBAD) score and the Wound, Ischaemia and

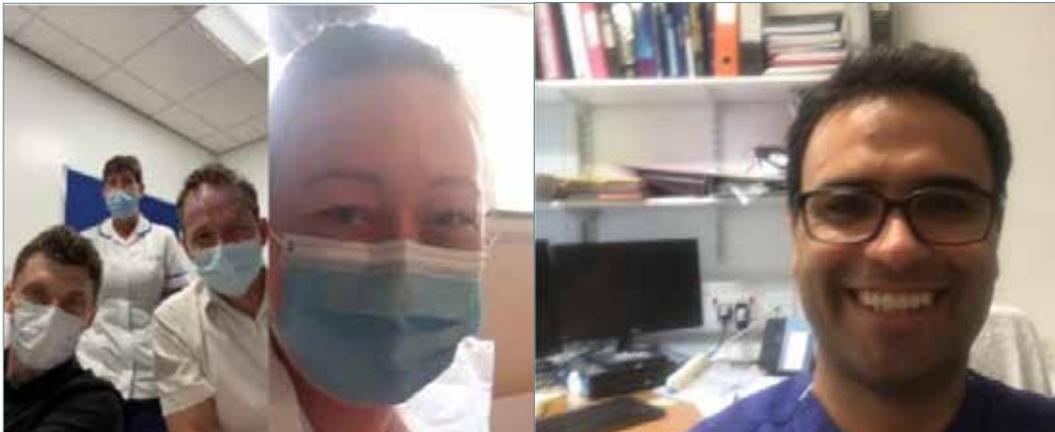


Figure 1. An example of a multidisciplinary digital consultation with a podiatrist in a patient's home with opinions provided by a consultant podiatrist, diabetologist and vascular surgeon.

Foot Infection (WIFI) classification (Monteiro-Soares et al, 2020).

The Salford Digital Wound Care Form further comprises offloading and weight-bearing instructions, wound descriptions, including location, dimensions and signs of infection which, augmented by tissue sampling and microbiology advice, contribute to the development of the treatment and dressing plan. Should the patient fit the inclusion criteria for the National Diabetes Foot Care Audit, patient consent was gathered before adding to the audit (National Diabetes Audit, 2018).

Although a formal evaluation of the new self care advice and practice has, as yet, not been undertaken,

self care as a concept was broadly welcomed by patients. However, as many of the authors' patients were frail with mobility issues the degree to which self-care was delivered varied.

Factors that affect healing were highlighted in the initial assessment; these included presence of peripheral vascular disease, poor nutrition, poor mobility, anaemia, diabetes, incontinence, immunosuppression, rheumatoid arthritis and smoking. The risk factors for diabetic foot disease include peripheral neuropathy, peripheral artery disease, previous foot ulcer, previous amputation, foot deformity and diabetes (Zhang et al, 2021). The National Diabetes Foot Care Audit noted that

Figure 2. The Salford Digital Wound Care Form is used by podiatrists, tissue viability and community nurses and automatically calculates SINBAD and Wifi scores.

### Authors

Tricia Tay is Medical Student, Manchester Medical School, University of Manchester, UK; Samantha Haycocks is Consultant Podiatrist, Salford Royal NHS Foundation Trust, UK; Adam Robinson is Consultant Endocrinologist, Salford Royal NHS Foundation Trust, UK; Naseer Ahmad is Consultant Vascular Surgeon and Director Manchester Amputation Reduction Strategy (MARS)



Figure 3: Podiatrists have learned to apply compression bandaging from tissue viability staff.

higher mortality was found in patients who were ex-smokers, presence of ischaemia, age  $\geq 65$  years, and those with hospital admissions for heart failure or renal replacement therapy (National Diabetes Audit, 2018; NHS Digital, 2019). Reversible factors identified during the initial assessment acted as the cornerstone for motivational interviewing and to empower patients in making the decision to improve their lifestyle.

Remote consultations enabled patient advice leaflets to be sent electronically or posted to patients. For example, self-care advice on offloading and regular foot examinations were offered over teleconsultations. Patients were advised to inspect for signs of skin breakdown and suspected local infection. They were also directed to online support, such as Diabetes UK and One You (Public Health England, 2021). These platforms serve to educate and empower patients to lead healthier lifestyles focusing on both their physical and mental health.

### Changing skillset of podiatrists

As the public was encouraged to minimise journeys during the lockdown, district nurses and community podiatrists saw an exponential increase in demand for home visits (Lancaster et al, 2020). This was enabled by a redeployment of staff, which created the opportunity for the cross-pollination of skills

and ideas. The traditional focus of podiatry focusing solely on the foot and tissue viability/community nursing focusing solely on the leg became blurred as both, working collaboratively, gained confidence through training and supervision to develop new skills. Podiatrists were trained in compression bandaging (Figure 3), with reciprocal development of community nurses undertaking toe pressure measurements. Effective communication was key in ensuring continuity of care between primary and secondary care and avoiding hospital admissions (Chadwick et al, 2020).

### Multidisciplinary approach to foot ulcers

It takes a village to care for the surgical patient (Kashikar and Arya, 2020), and the concept of working as part of a MDT in caring for patients is not a novel concept. A meta-analysis on the effectiveness of MDTs on changes in major amputation rates among patients with diabetic foot ulcers found a significant reduction in the estimated odds ratio of amputation among patients cared for by a MDT (Musuuza et al, 2020). A similar meta-analysis on the use of structured multidisciplinary diabetic foot care also found a significant reduction in lower-extremity amputation rates (Monteiro-Soares et al, 2021). Yet the COVID-19 pandemic posed its own set of challenges in the delivery of care with more than half of vascular teams stopping all face-to-face meetings and 39% not replacing this with remote conferencing (Vascular and Endovascular Research Network COVER study collaborative, 2020).

Since the start of our original foot service over 30 years ago, patients with and without diabetes were seen in the outpatient secondary care setting. Members of this one-stop foot clinic now include vascular and orthopaedic surgeons, diabetologists, diabetes and vascular specialist nurses, microbiologist, podiatrists, tissue viability nurses, offloading biomechanics, podiatrists and radiologists.

This is congruent with the fact that of the patients who use the service, 74% had vascular surgery, 67% had orthopaedic surgery, 56% had nursing input and 52% had podiatry input (Musuuza et al, 2020). A one-stop clinic with all these specialities allows collaboration and immediate discussion for the formulation of an appropriate management plan for the patient.

Patients listed in the multidisciplinary foot clinic include those admitted to hospital and referred to the foot clinic, those arriving for their outpatient appointment and home visits by podiatrists on the day. A virtual review of hospitalised patients is conducted during the clinic.

Since the start of the COVID-19 pandemic, patients were triaged over the phone by podiatrists or the community team before being offered a face-to-face review. Patients were also invited if specialist scans were required to guide management, such as ultrasound, ankle-brachial pressure index or toe-pressure index, computed tomography angiography or diagnostic angiogram.

The pandemic has allowed us to develop the traditional foot clinic into a more comprehensive lower-limb wound clinic. This clinic, managed by a consultant podiatrist now has ‘fuss-free’ access for all lower-limb wounds from tissue viability and district nursing colleagues. This opening up has fostered closer working across teams with the associated transfer of knowledge, skills and confidence allowing referral of only appropriate cases (*Figure 4*).

## Conclusion

The COVID-19 pandemic created challenges and opportunities for the delivery of healthcare. In our MDT, we began using digital consultation and a single online wound care form used by podiatry, tissue viability and community nurses, plus there was an integration and expansion of both podiatry and nursing skill sets and greater collaboration across teams for treating lower-limb wounds. This system-wide change has improved the care available to the 270,000 residents served by the teams by creating a culture of ‘fuss-free’ referrals. This has allowed us to remove a significant inequality in the system as now, all lower-limb wounds have the same access to services as diabetic foot ulcers. There are significant challenges ahead formalising this approach, however, working in a more integrated and digital way has allowed us, for now, to achieve many of the strategic objectives of the National Wound Care Strategy Programme. ■

Chadwick P, Ambrose L, Barrow R, Fox M (2020) A commentary on podiatry during the Covid-19 pandemic: Podiatry during the Covid-19 pandemic. *J Foot Ankle Res* 13(1): 63

Foot in Diabetes UK (2020) *COVID-19 Situation v1.3: Limb Amputation Prevention Guidance*. Available at: <https://>



*Figure 4: The pre-COVID 19 pandemic weekly foot clinic, led by a consultant podiatrist, is now, a lower-limb clinic seeing all wounds and accepting referrals from community nursing colleagues.*

- [www.wounds-uk.com/resources/details/lower-limb-amputation-prevention-guidance](http://www.wounds-uk.com/resources/details/lower-limb-amputation-prevention-guidance) (accessed 18.05.21)
- Jaly I, Iyengar K, Bahl S et al (2020) Redefining diabetic foot disease management service during COVID-19 pandemic. *Diabetes Metab Syndr* 14(5): 833–8
- Kashikar A, Arya S (2020) The role of multidisciplinary team comanagement of the surgical patient – it takes a village. *JAMA Netw Open* 3(5):e204354
- Lancaster EM, Wu B, Iannuzzi J et al (2020) Impact of the coronavirus disease 2019 pandemic on an academic vascular practice and a multidisciplinary limb preservation program. *J Vasc Surg* 72(6): 1850–5
- Monteiro-Soares M, Russell D, Boyko EJ et al (2020) Guidelines on the classification of diabetic foot ulcers (IWGDF 2019). *Diabetes Metab Res Rev* 36(S1): e3273
- Monteiro-Soares M, Vale-Lima J, Martiniano J et al (2021) A systematic review with meta-analysis of the impact of access and quality of diabetic foot care delivery in preventing lower extremity amputation. *J Diabetes Complications* 35(4): 107837
- Musuuza J, Sutherland BL, Kurter S et al (2020) A systematic review of multidisciplinary teams to reduce major amputations for patients with diabetic foot ulcers. *J Vasc Surg* 71(4): 1433–6.e3.
- National Diabetes Audit (2018) *National Diabetes Foot Care Audit: Are services providing good quality foot care? A summary report of the National Diabetes Foot Care Audit for England and Wales*. Available at: <https://bit.ly/3fHAigs> (accessed 27.05.2021)
- Neville K, Black AT, Fridman R (2021) Epidemiological Survey of the Impact of COVID-19 on Telemedicine in the Practice of Foot and Ankle Surgery in the United States. *J Foot Ankle Surg* 60(3): 455–60
- NHS Digital (2019) *National Diabetes Foot Care Audit: Fourth Annual Report*.
- Public Health England (2021) *One You*. Available at: <https://www.nhs.uk/oneyou> (accessed 18.05.21)
- Vascular and Endovascular Research Network (VERN) COVER study collaborative (2020) Global impact of the first coronavirus disease 2019 (COVID-19) pandemic wave on vascular services. *Br J Surg* 107(11): 1396–400
- Williams CM, Couch A, Haines T, Menz HB (2021) Experiences of Australian podiatrists working through the 2020 coronavirus (COVID-19) pandemic: an online survey. *J Foot Ankle Res* 14(1): 11
- Zhang Y, van Netten JJ, Baba M et al (2021) Diabetes-related foot disease in Australia: a systematic review of the prevalence and incidence of risk factors, disease and amputation in Australian populations. *J Foot Ankle Res* 14(1): 8