Developing a local diabetes network in Devon to reduce diabetic foot disease

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Citation: Pyle S, Palmer A (2017) Developing a local diabetes network in Devon to reduce diabetic foot disease. *The Diabetic Foot Journal* 20(3): 172–5

Article points

1. In 2012, Devon had the second highest rate of amputation in the south west with expected increases in both major and minor amputations.
2. Establishing the Improving Diabetic Foot Faculty to review and develop patient and healthcare professional NICE compliant structured education had been a key driver in reducing amputation rates.
3. Current amputation rates per thousand population are significantly below national average at 0.6 per thousand compared to 2.4.

Key words

- Local diabetes network
- Lower-limb amputation

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In 2012, healthcare professionals and patients at the Royal Devon and Exeter NHS Foundation Trust came together as a voluntary network to take action to reduce the increasing number of diabetes-related amputations in the county. As a result, they introduced a package of online and education resources for patients and healthcare professionals. Since 2012, the rate of major lower-limb (above ankle) amputations per 1,000 with diagnosed diabetes in the eastern locality has reduced from 1.4 per 1,000 between 2009-12 to 0.6 per 1,000 between 2014-16. Within 6 weeks of launching the online e-learning resources, 117 healthcare professionals had accessed the e-learning compared to 73 healthcare professionals who accessed face-to-face training in the previous 2 years.

Devon has 48,000 people living with diabetes and it is estimated that a further 16,340 are currently living with undiagnosed diabetes. Between 2011–2014 in Devon, the rate of all (major and minor) lower-limb amputations per 1,000 people with diagnosed diabetes was 3.9 per 1,000 — or 506 amputations per year — compared to a national average of 2.6/1000. In the same period, Devon saw the second highest amputation rate in the South West of England and the 12th highest in England. North, East and West (NEW) Devon CCG were forecasting increases in major and minor amputations due to the predicted increase in the prevalence of diabetes.

The Improving Diabetic Foot Faculty (IDFF) was initially established by a lead podiatrist at the Royal Devon and Exeter Hospital in an attempt to reverse this trend and to address the lack of coordination between primary and secondary care.

The former model of care was impacting patients in a number of ways:

- There was no evidence of providing patients with awareness of risks and there was a lack of reinforcement of messages
- There was inconsistent practice across Devon in offering up-to-date education on foot care and only 25% of 100 consecutive podiatry notes recorded the offer in patient notes
- A qualitative survey in 2012 within primary care revealed that 26% of respondents from practice nurses had not received any formal training in diabetic foot assessment and this was potentially resulting in delayed referrals to acute podiatry services. Forty-nine per cent of referrals were late referrals from GP practices
- There was no evaluation and assessment of the impact of advice provided to patients. No NICE-compliant, structured education was commissioned for those newly diagnosed with type 2 diabetes.

Developing the network

In November 2012, a voluntary group of healthcare professionals (HCPs) who work within and manage diabetes services in Devon came together to develop a network that also included patient representatives. More recently, the IDFF has expanded to include colleagues from South Devon and Torbay NHS Trust, as well as colleagues from primary care, Diabetes UK and support from a pharmaceutical company who have supported the development of type 2 diabetes group education.

Achievements

The IDFF made driving down the rate of amputation its key priority. As a result of action learning, which brought peers together in a supportive environment, and cardiovascular best practice sharing between healthcare professionals involved in the network, a range of resources and tools have been developed to promote consistency and standardisation of practice across Devon.

Education for people with diabetes

A package of education resources have been developed in accordance with NICE guidelines to help develop patient knowledge and understanding. These include:

- SOS emergency access cards for when a 'foot attack' occurs (*Figure 1*)
- Ten steps visual aid posters for patients on daily prevention, causes of ulceration, foot checks, warning signs, annual reviews and how to do a foot check (*Figure 2*)
- Education 'flashcards' available in waiting rooms
- Education on foot care available on VDU screens in waiting rooms
- Face-to-face training sessions with patients.

Each time a patient is seen in clinic, they are exposed to NICE-compliant education and this is supported by advice and recorded on their treatment plan.

Education for healthcare professionals

A package of education resources have been developed for healthcare professionals as a prompt for provision of optimum foot care. These include:

- Ten steps to education, wound care, caring for feet in hospital and provision of antibiotics (*Figure 3*)
- Education flyers produced for HCPs on peripheral neuropathy and Charcot foot (*Figure 4*)
- Structured education relating to diabetic foot disease for healthcare providers. This takes the form of dedicated study days for HCPs and patient education sessions for newly diagnosed people with diabetes or diabetic foot disease (*Figure 5*)
- A shared database of educational materials, including case studies, available to all HCPs in Devon

Figure 1. SOS emergency access cards for when a 'foot attack' occurs.

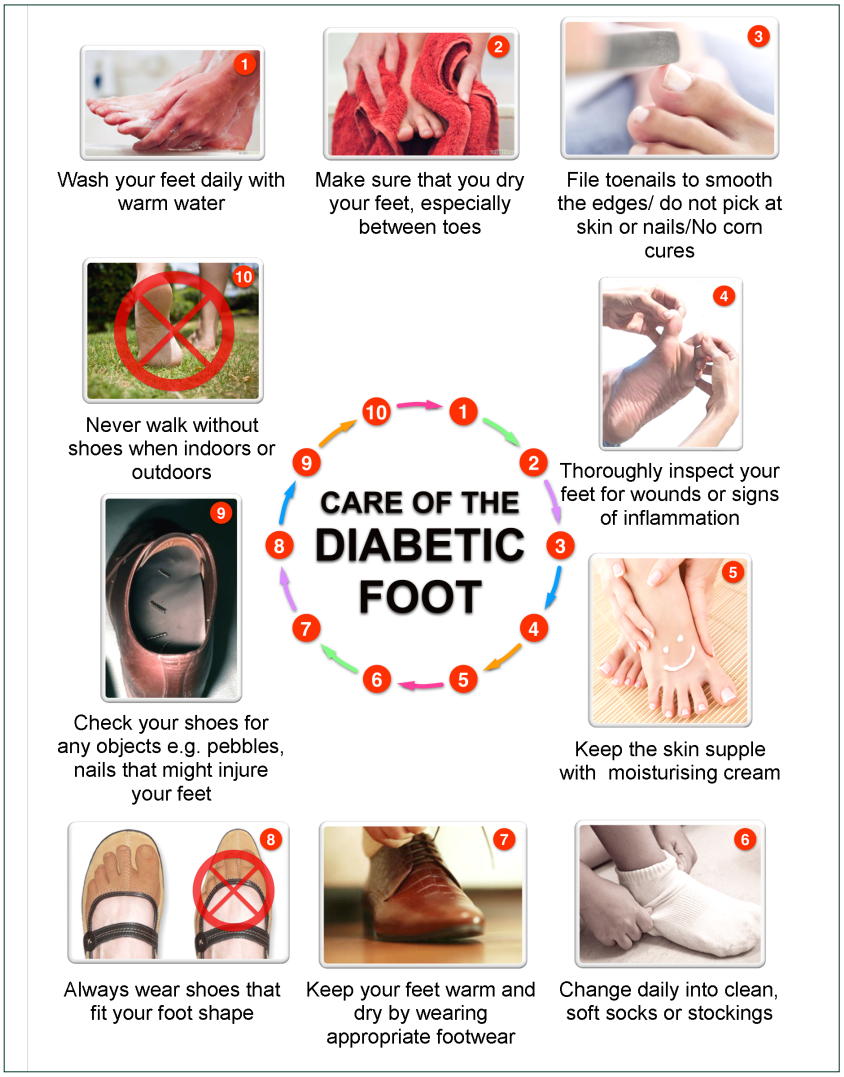
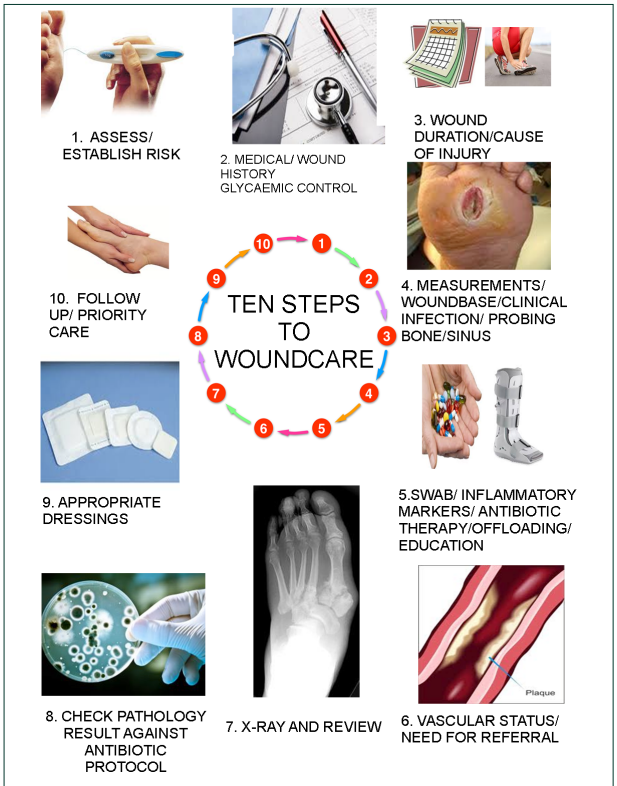


Figure 2. Ten steps visual aid poster.

- An online training package has also been developed for the assessment of the diabetic foot with links to referral pathways and resource files
- Lunchtime educational sessions are available on request for GP practices



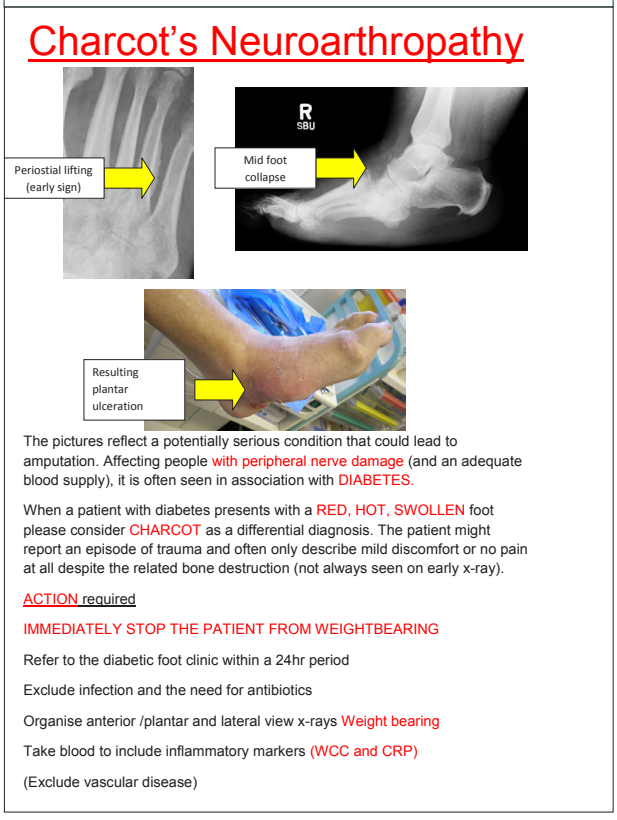


Figure 3 (top) Ten steps to education, wound care, caring for feet in hospital and provision of antibiotics. Figure 4 (bottom) Education flyers produced for healthcare practitioners.

- Masterclass education sessions are offered for HCPs working with diabetes.

How was the change achieved?

The members of the IDFF committed to meeting outside of clinician time to secure progress. The meetings enabled the group to review where the current challenges were, and where improvements needed to be made. The IDFF focused on specific goals and set specific outcomes as a way of measuring initial success and regularly evaluated the effectiveness of the network to achieve these goals. This evaluation led to changes in the structure of the IDFF with the introduction of sub-groups with specific focus areas.

Outcomes

The IDFF has been the key driver in bringing about service development and change in the way diabetes education is offered to patients and in how healthcare professionals are supported and trained within the community.

- The rate of major lower-limb (above ankle) amputations per 1,000 with diagnosed diabetes in the Eastern Locality has reduced from 1.4 per 1,000 to 0.6 per 1,000; lower than the national average
- Patient recall of information and understanding improved as demonstrated through session evaluations
- Evaluation of healthcare professional training shows a perceived improvement in knowledge as demonstrated through the use of Likert scales
- In the 2015 audit, 100% of podiatry notes recorded education provision. Seventy-eight percent of all patients had been educated on the 10-step poster and 98% of all patients had been issued with SOS cards.
- Patient education is now fully compliant with NICE guidelines
- Within 6 weeks of launching the new online training module, 117 healthcare professionals completed the course
- Resources and learning are now being shared across the South West region through the South West cardiovascular network
- Root cause analysis has been recently conducted on minor amputations.

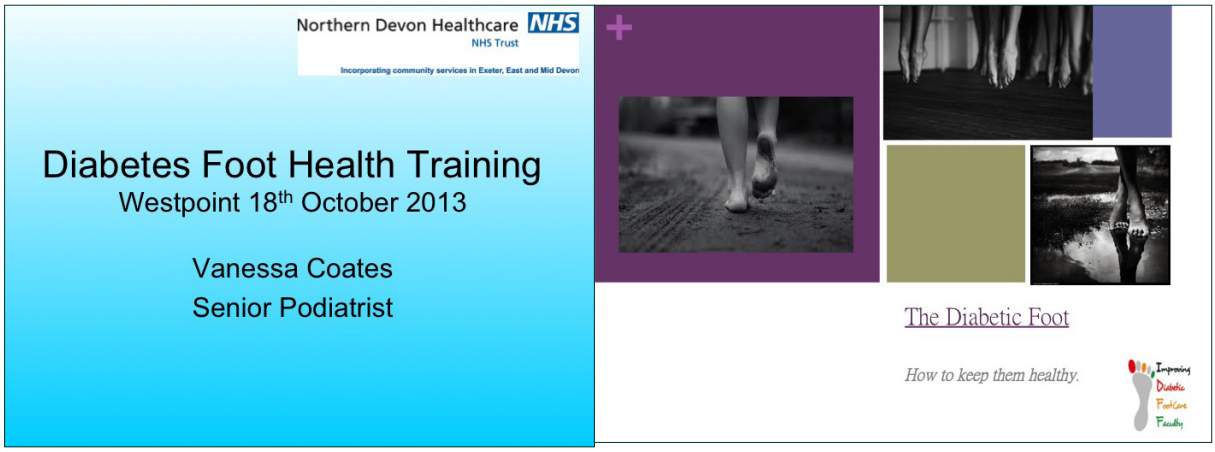


Figure 5. Structured education relating to diabetic foot disease.

Lessons Learned

1. The IDFF concepts were originally planned within clinician time and while this generated lots of ideas and innovation, they were not all implemented due to time and capacity pressures. The IDFF then moved out of clinician time to meet after work hours on a 'voluntary basis' in order to be proactive.
2. The network started as a multidisciplinary working group, however, to ensure a balance of responsibilities and roles evolved into an established network with agreed terms of reference.
3. The network has needed to become more structured with sub-groups working on specific focus areas. This supports the long-term sustainability of the network as it is not reliant on one lead figure.
4. It was recognised that not enough baseline data were collected at the start of the network — as a consequence, identifying SMART goals and identifying the impact of the network became more challenging.
5. The need to have commissioned support for structured education via a contractual mechanism, such as Commissioning for Quality and Innovation (CQUIN), would have provided additional funding and allowed the network to reach a wider audience with a standardised approach.
6. The network could have used validated questionnaires to assess patient and healthcare professional knowledge to acquire more robust evidence.

Next steps

Next steps include evaluating the overall impact of the IDFF and using Diabetes UK's Network Effectiveness Scorecard to review the efficacy of the network and share the learning and development with other CCGs.

Root cause analysis undertaken in 2015 showed that minor amputations are still a concern as 52% of minor amputations are potentially linked to late referral from primary care. The network has worked hard to secure commitment from practice nurses and district nurses. The IDFF agreed that 2016 was a year of evidence and data gathering aiming to target and support GP education and training from 2017 onwards. The SOS audit data suggest that 32% of patients still present to a GP with a foot emergency.

The IDFF, in conjunction with Plymouth University, is in the process of applying for a research grant to test the efficacy of the education tools they have developed.

Plymouth Hospitals NHS Trust has now established a similar network, based on the IDFF model, within Derriford Hospital, as a way of reducing the increasing number of diabetes-related amputations within their population. ■

Further information

For more information on this case study or about the IDFF, please contact Sue Pyle at spyle@nhs.net or Ian Robinson at lrobinson2@nhs.net

Public Health England (2015) *Diabetes Prevalence Estimates for Local Populations*. Public Health England, London. Available at: https://www.gov.uk/government/publications/diabetes-prevalence-estimates-for-local-populations (accessed 10.07.2017)