

The National Diabetes Foot Care Audit of England and Wales: achievements and challenges

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- Audit
- Diabetic foot ulcer
- Healing

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The aim of the National Diabetes Foot Care Audit (NDFA) is to collect details of all newly occurring foot ulcers in England and Wales. It is designed to impose minimal burden on clinical staff because the use of the NHS number enables additional detail to be obtained by electronic linkage to data held by NHS Digital, hospital activity databases (admissions, operations) and the Office of National Statistics (death). Thus, details were obtained from over 33,000 ulcer episodes in over 27,000 people between from 2015–2018. The principal findings are: that ulcers referred for specialist assessment within 14 days are significantly less severe and are significantly more likely to have healed within 12 weeks; that time to referral and ulcer severity are also significantly related to other outcomes, including hospital admission and amputation; and that there is very wide geographical variation in the time to first specialist assessment.

The National Diabetes Foot Care Audit (NDFA) was launched in July 2014 and is ongoing. It is part of the family of audits linked to the parent National Diabetes Audit which holds anonymised data on over 98% of all people diagnosed with diabetes in England and Wales. The objective of the NDFA was (and is) to enable specialist services in England and Wales to document as many as possible of all diabetic foot ulcers (DFUs) in a way that permits comparison. In this respect, the term ‘specialist services’ (*Box 1*) includes any professional service that adopts responsibility for the management of the ulcer — whether community or hospital based. The hope is that the NDFA will promote better understanding of the causes of the very wide variation in clinical outcomes that exists between different localities and between different service providers (NHS Digital, 2019). The aim is that this will lead to reduced variation in clinical outcomes and improved overall outcome across the two countries.

What has been achieved so far? Registered ulcer episodes

The number of new ulcer episodes registered within any 12-month period from April 1 has increased year on year and a total of 33,155 ulcer episodes were registered in 27,700 people in the 3 years from 2015 and 2018. Over 15,000 episodes are currently being recorded each year and although the total number of new ulcers occurring annually throughout England and Wales is not known, it is thought that this represents at least 20% of the total (NHS Digital, 2019). If this percentage seems relatively low, the total number of episodes documented by the NDFA is far greater than any other population of DFUs followed prospectively from the time of presentation.

Moreover, the NDFA does not record every new ulcer but only those occurring in a person who did not have another active foot ulcer already. Similarly, when multiple new ulcers present together, the NDFA will select only one — that judged clinically to be the most significant — for each new episode. Another reason for the apparently low ascertainment is that the data submitted to the NDFA is almost exclusively from staff working in specialist services and it is known that only a minority of DFUs are referred to such

services by clinicians working in primary care (Guest et al, 2018). For these reasons, the actual percentage of new DFU episodes being recorded by the NDFA is likely to be reasonably representative of referrals to specialist services.

Overall findings

Details from three completed years of data collection and follow-up have recently been reported for April 2015–March 2018 (NHS Digital, 2019) and these have established that there is:

- A statistically significant direct relationship between the time that elapses between first presentation to any healthcare professional and being assessed by a specialist clinician and its severity at presentation: the longer the time to expert assessment, the more likely it is to be judged 'severe' using the SINBAD classification (Ince et al, 2008)
- A strong statistical relationship between time to first assessment and the primary clinical outcome — which is being alive and free from any ulcer (including related operation wounds such as for debridement, revascularisation or amputation) at 12 weeks (*Figure 1*). Ulcers that are more severe at presentation are less likely to be healed
- A significant link between time to referral, severity at first assessment and other clinical outcomes: hospital admission, hospital length of stay, incidence of major amputation within 6 months and death (NHS Digital, 2019).

Observations and conclusions

Perhaps the greatest benefit derived from the observations made to date is improved understanding of the multiple factors involved and the extent of the variation that exists in service provision. As a result, it is now possible to share this information with other professionals, with patients and their representatives, as well as with those responsible for commissioning clinical care. This has been associated with evolution of a new culture in podiatry services based on greater understanding of how multiple factors that contribute to clinical outcomes and raised awareness of how services can be re-designed to achieve the best outcomes.

Variation in outcome between localities

The NDFA has also shown that when different

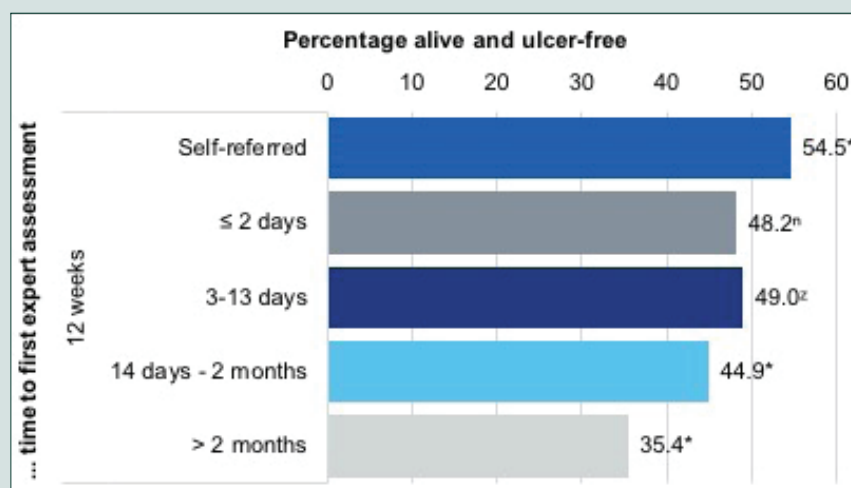


Figure 1 (top). Association between time from first presentation to a healthcare professional and first expert assessment and being alive and ulcer-free at 12 weeks. Data reproduced from the 4th annual report of the NDFA, March 2019). *statistically different (<0.05) from reference group (3–13 days); ⁿnot statistically different from reference group; ^zreference group.

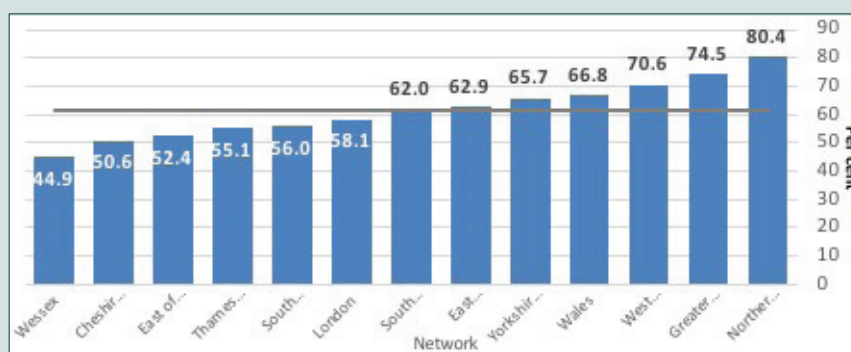


Figure 2 (above). Variation in percentage of new referral undergoing expert assessment within 14 days of first presentation to a healthcare professional expressed by strategic clinical network (England) and country (Wales). Data reproduced from the 4th annual report of the NDFA, March 2019).

localities are compared, there is very wide variation in the average time that elapses between first presentation to any healthcare professional and first expert assessment (*Figure 2*). The implication is that there are important differences in referral pathways and it follows that if these can be identified and optimised, variation will be reduced and outcomes improved.

Aims for 2019-2020 and 2020-2021

There will be no NDFA annual report this year because it has not been commissioned. Nevertheless, it is important that teams continue to record data on as many as possible of all new referrals in order both to strengthen analyses to be performed in late 2020 and

Article points

1. The wide variation in the time to first specialist assessment is clearly linked to the wide variation in clinical outcomes.
2. This variation is additional to any that might relate to relate to factors that are known to relate to clinical outcome (including age, comorbidities and the presence of particular risk factors, such as peripheral artery disease).
3. It is likely that variation in the structure and accessibility of healthcare services also contributes to the variation on outcome which exists.
4. It is hoped that as many foot care services as possible will participate in the ongoing audit because it will strengthen the statistical significance of any differences observed.
5. It is intended to define the core features of a core foot care service and that this will lead to improvement in both care quality and clinical outcomes.

Box 1: Specialist services.

- The term 'specialist services' is a term that can cover a large number of different groups, including community podiatry teams, foot protection teams as well as specialty groups in secondary care. Effective integration of all of these is a key aspect of good clinical practice.

in 2021, as well as to help them monitor local trends. The aim of future analyses will be to gain further insight into those aspects of the care pathway which are most closely linked to clinical outcomes. It will be possible to start examining changes that occur as time passes — changes in ulcer severity, for example, and trends towards earlier expert assessment and improving overall outcomes.

Links between outcome and details of care structure and delivery

The key features of good care delivery will be determined from a number of sources including the NDFA data already collected, the results of a survey conducted in 2018 of the structure of the care pathway used by 10 best-performing centres (NHS Digital, 2019), and work currently being undertaken by representatives of 12 further services which have been working as part of a HQIP Quality Improvement Collaborative undertaken in partnership with Diabetes UK. Once these key features are defined, a survey of provider services will seek to establish links between clinical outcomes and the structures of local care.

Changes to data collection to be implemented from April 1, 2020

As a result of greater understanding of data requirements the record form will be modified in 2020. Questions relating to ulcers being associated with Charcot disease will be omitted and one new question will also be included which asks if a newly presenting ulcer is or is not the first ulcer (on either foot) that that person has ever had. It is now recognised that it is essential that we distinguish between 'first ever' and 'not first ever' ulcers because available evidence suggests that people with recurrent ulcers present sooner to specialist services — often because they know the specialist staff and find it easy to contact them directly to organise an early review.

NHS Digital has also now introduced a facility for bulk data upload and this will help reduce the time taken.

Benefits for centres that take part

The portal through which local data is submitted to the NDFA (the Clinical Audit Platform or CAP) can also be used by individual centres to download details of their own population and outcomes, this can be used to monitor the success of any changes they make

to pathways of care. It is hoped that increased use of these resources will help services better understand the effects of changes introduced to improve the quality of care they deliver.

Continuing challenges faced by the NDFA

The main challenge is to continue increasing the participation of specialist services. The larger the population documented, the more robust will be the statistical analyses and this will allow better benchmarking and will help define the reasons for better or worse outcomes in different localities. ■

Acknowledgement

We believe the work of the NDFA to be very important in providing evidence to justify the continuing drive to improve care standards across England and Wales. All recognise that this field is one that has been neglected over the decades by both healthcare professionals and healthcare managers, despite the enormous physical, emotional and financial burden the disease imposes on people affected by diabetic foot ulcers and their families. The ultimate aim of the NDFA is to improve services such that the overall standard of care is of equal high-quality across England and Wales. This work would not and cannot, however, be done without the continuing input and support of many people working in the front line and their participation is very gratefully acknowledged.

About the NDFA

The NDFA is accumulating a very valuable body of data on the outcome of diabetic foot ulcers managed in everyday clinical practice in England and Wales. The information it produces is being used to guide the structure and delivery of best practice. However, to be most successful, it needs every clinical team to join in. The more that are involved, the more representative the data will be and the broader will be its impact. If you want to take part, please look at the NDFA website:

<https://digital.nhs.uk/data-and-information/clinical-audits-and-registries/national-diabetes-foot-care-audit>

NHS Digital (2019) *National Diabetes Foot Care Audit, 2014–2018*. Available at: <https://bit.ly/3clt5d9> (accessed 10.03.2020)

Guest JF, Fuller GW, Vowden P (2018) Diabetic foot ulcer management in clinical practice in the UK. *Int Wound J* 15(1): 43–52

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Online CPD activity

Visit www.diabetesonthenet.com/cpd to record your answers and gain a certificate of participation

Participants should read the preceding article before answering the multiple choice questions below. There is ONE correct answer to each question. After submitting your answers online, you will be immediately notified of your score. A pass mark of 70% is required to obtain a certificate of successful participation; however, it is possible to take the test a maximum of three times. A short explanation of the correct answer is provided. Before accessing your certificate, you will be given the opportunity to evaluate the activity and reflect on the module, stating how you will use what you have learnt in practice. The new CPD centre keeps a record of your CPD activities and provides the option to add items to an action plan, which will help you to collate evidence for your annual appraisal.

- What approximate percentage of people diagnosed with diabetes mellitus in England and Wales have their anonymised data held by the National Diabetes Foot Care Audit (NDFA)? Select ONE option only.
 - 33
 - 50
 - 66
 - 75
 - 100
- Approximately how many new diabetic foot ulcer episodes in England and Wales are currently registered with the NDFA in any 12-month period? Select ONE option only.
 - 7,500
 - 15,000
 - 30,000
 - 60,000
 - 120,000
- In any 12-month period, what percentage of the estimated total number of new diabetic foot ulcers occurring annually in England and Wales are currently registered with the NDFA? Select ONE option only.
 - 10
 - 20
 - 40
 - 60
 - 80
- Which one of the following most accurately represents how the NDFA records new foot ulcers? Select ONE option only.
 - Every new ulcer
 - Every new ulcer which does not heal within 12 weeks
 - Every new ulcer in people who have never had an ulcer before
 - Every new ulcer in people who have no co-existent ulcer already
 - Each episode of one or more ulcers occurring in a person who was free from any other active ulcers on either foot at the time it started
- According to NDFA guidance, how many ulcers will be officially registered? Select ONE option only.
 - 0
 - 1
 - 2
 - 3
 - 4
- According to the 2019 NDFA annual report, which has NOT been shown to be linked to ulcer severity at the time of first expert assessment. Select ONE option only
 - Time elapsed since first presentation to any healthcare professional
 - Being alive and ulcer-free 12 weeks after presentation
 - Major (above ankle) amputation within 6 months
 - Minor (below ankle) amputation within 6 months
 - Death within 6 months
- Which is the single most likely explanation for the lack of an NDFA annual report this year? Select ONE option only.
 - A decision to avoid highlighting locality variation
 - Failure to comply with new GDPR regulations
 - Insufficient referrals from primary care clinicians
 - Insufficient referrals from secondary care clinicians
 - Lack of commissioning
- Which single additional question will be included, from April 2020, in the proposed new NDFA data collection forms? Select ONE option only.
 - First ever ulcer on the currently affected foot
 - First ever ulcer on either foot
 - History of previous re-vascularisation
 - History of chiropody treatment in the previous three months
 - Presence of Charcot foot
- According to the 2019 NDFA annual report, 54.5% of people with a new diabetic foot ulcer were alive and ulcer free at 12 weeks if they were referred by which one of the following routes? Select ONE option only.
 - Community NHS chiropody
 - GP
 - Hospital specialist
 - Private podiatrist
 - Self
- According to the 2019 NDFA annual report comparing clinical care networks in England and Wales, what approximate percentage of new referrals underwent expert assessment within 14 days of first presentation? Select ONE option only.

	Worst network	Best network
A	10	50
B	20	60
C	30	70
D	40	80
E	50	90