

ACT NOW! Reducing amputations during the COVID-19 pandemic and beyond

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Amputation is one of the most feared complications of diabetes (Wukich et al, 2018). There were 7,545 major amputations in people with diabetes (PwD) in England between 2015 and 2018 (Public Health England, 2019). It is important to note that 84% of lower-extremity amputations are preceded by a foot ulcer (Pecoraro et al, 1990). With one in three people diagnosed with diabetes experiencing a foot ulcer during their lifetime (Armstrong et al, 2017; Edmonds et al, 2020), it is suggested that these amputations could be avoided if foot ulcers are effectively detected, assessed, referred and rapidly treated, in order to optimise healing (Boulton et al, 2015; Phillips and Mehl, 2015).

In response, the iDEAL (Insights for Diabetes Excellence, Access and Learning) Group has made recommendations to improve foot care and education, promote effective and timely referral, and to reduce the unacceptable numbers of major amputations in people with diabetes (iDEAL, 2020). This is especially timely. The COVID-19 pandemic has caused major disruption to many healthcare services, including hospital and community services, and has resulted in delayed assessment and treatment for many patients (Chadwick et al, 2020). There has been an increase in avoidable late referrals into multidisciplinary diabetes footcare teams (MDFT) and foot examinations have not been routinely undertaken (Rogers et al, 2020).

One of the major problems during the COVID-19 pandemic, with increasing numbers of remote/virtual consultations becoming the norm in diabetes care, is that potentially serious and limb-threatening foot problems can be missed. This is especially relevant if individuals cannot check their own feet or do not know how to undertake a foot check or know what they should be looking for, in order to initiate reporting for further assessment (Phillips et al, 2020). Practitioners cannot assume people with diabetes (PwD) know what

to look for or what foot checks to do daily, especially if they have poor eyesight or cannot reach their feet.

A foot ulcer is defined as a full-thickness wound of any duration, below the ankle, in a person with diabetes (International Working Group on the Diabetic Foot [IWGDF], 2019) and affects between 15% and 25% of people with diabetes at some point during their lifetime (Dorresteijn and Valk 2012). The pathway to ulceration and, therefore, amputation is often complex and multifactorial (*Figure 1*), and it is now generally agreed that there is no single, magic bullet for long-term prevention of foot ulceration and amputation in diabetes.

Even when immediate and intensive treatment is provided, these wounds may take weeks or months to heal or may not heal at all. This not only leads to physical disability and marked reduction of quality of life, but also precedes the majority of lower-extremity amputations. In addition, patients with neuropathic foot ulceration have a 7% risk of amputation in the next 10 years (Margolis et al, 2005; Dorresteijn and Valk, 2012) and 70% of foot ulcer patients have recurrent lesions within 5 years after the initial treatment (Dorresteijn and Valk, 2012).

Treatment of diabetic foot ulceration is, therefore, challenging and often needs to be of long duration. It requires not only expert attention, appliances and antimicrobial drugs, but also costly topical dressings, oral antibiotics and frequently results in extended hospital admissions for inpatient care. Delays in reaching specialist care can take place in three locations along the person's healthcare journey:

1. Delay by the PwD in seeking and reaching specialist care.
2. Delay by HCPs in referring to specialist care.
3. Delay in actually accessing care from the MDFT

Poor symptom recognition and a lack of knowledge,

or failure to understand the severity of a foot problem in a PwD can lead to a lack of urgency. Both PwD and healthcare professionals (HCPs) may not appreciate the warning signs that precede the need for an amputation thereby reinforcing the requirement for foot problems to receive urgent attention (Pankhurst and Edmonds, 2018). Even after PwDs have reached an HCP, there may be delay in referring to specialised care because of a failure to make a diagnosis. HCPs may fail to recognise infection or ischaemia in the absence of pain due to concomitant neuropathy and even after recognition of the seriousness of foot disease, the importance of specialised care may not be appreciated by some HCPs due to inaccurate healthcare assessments (Pankhurst and Edmonds, 2018).

The National Diabetic Footcare Audit (NHS Digital, 2019) noted that there is a direct relationship between the time between first presentation to a HCP and being assessed by a specialist clinician and the severity of the ulcer at presentation to that specialist. The longer the time to expert assessment, the more likely the ulcer is to be judged 'severe' using the SINBAD classification, (Jeffcoate et al, 2020). These difficulties in accessing specialised services are strongly linked with worse outcomes, lower rates of healing, higher rates of major amputations and a higher mortality risk, (NDEFA Quality Improvement Collaborative, 2020). Even after appreciation of the need for specialised care, the pathway to treatment may be compromised due to poor communication, difficulty in referral between HCPs in primary and secondary care, and reduced access to specialised care because of actual lack of multidisciplinary foot teams (MDFTs) (Pankhurst and Edmonds, 2018). An association has also been noted between the number of HCPs in the referral pathway and increased delays in PwD reaching specialised care. The more complex the referral pathway, the greater the delay (Sanders, 2013).

The importance of early referral has been highlighted by the NHS England Diabetes Programme (2020). Such prompt referral should lead to ulcers being less severe on presentation and, thereby, result in better outcomes (NDEFA Quality Improvement Collaborative, 2020). In order to promote this, the iDEAL group (a multidisciplinary team of specialists with a key interest in improving diabetes care outcomes across the UK) has devised the acronym ACT NOW! with direct input from a PwD, for PwD and their carers to recognise the warning signs, which may result in amputation (Figure 2)

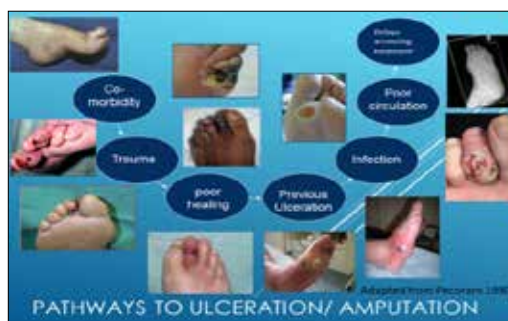


Figure 1. Pathways to ulceration.



Figure 2. The warning signs of ACT NOW!

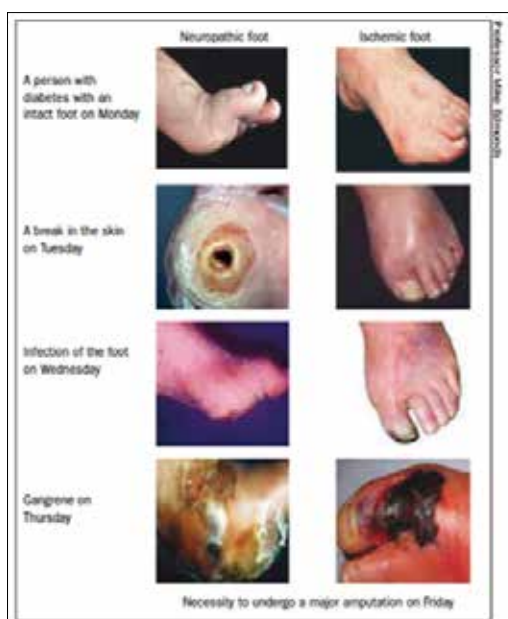


Figure 3. The pathway of infection to gangrene (Edmonds and Foster 2014).

The identification of such signs as indicated in Figure 2 should give PwDs permission and confidence to seek urgent help and to activate rapid referral to specialised care. It has been designed to be easy to use, effective and reliable, and is particularly relevant during these times of remote digital consultations, social distancing and with reduced numbers of diabetes foot care checks being undertaken. It has also been devised to be similar to the acronyms STOP and FAST, which

ACT NOW!

Tool for all NHS Primary and Secondary Care services to promote prompt and rapid referral to the MDT (Multidisciplinary Foot Care Team) (Edmonds et al, 2020). Refer the PWD (Person/People With Diabetes) if they present with any of the following to their foot/feet:

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ASSESSMENT OF FOOT		Tick if present	Digital photo taken to include with referral	Date referred	Document referral to Specialist MDT
	A - ACCIDENT? Recent or history of an accident or trauma?				
	C - CHANGE? Is there any new swelling, redness or change of shape of the foot?				
	T - TEMPERATURE? If there is a change in temperature present? Could this be an infection or possible Charcot?				
	N - NEW PAIN? Is there pain present? Is it localised or generalised throughout the foot?				
	O - OOZING? What colour is any exudate? Is there an odour?				
	W - WOUND? Can you document the size, type and position of the wound in the foot affected?				

Figure 4. The ACT NOW! Checklist.

were successfully associated with the campaigns to inform the public of the early warning signs of heart attack and stroke. Like stroke, diabetes foot disease and foot infection are time sensitive and can lead to rapid destruction of tissue, which often regrettably necessitates hospital admission for surgical intervention and amputation (Figure 3).

It is, therefore, important that HCPs should be aware of the ACT NOW! tool. This consists of the ACT NOW! acronym and also a checklist (Figure 4), which enables PwD, their carers and HCPs to enquire and document the ACT NOW! symptoms or signs and to take possible further information, such as a digital photo. The checklist can then be used as a referral document to specialist care. Alternatively, the checklist can be used when PwDs present for routine assessment with their HCPs. The iDEAL group suggests that if

ACT NOW! becomes routine in clinical practice a 50% reduction in major amputations could be achieved among people with diabetes within 5 years (Edmonds et al, 2020).

So, how may this 50% reduction in amputations be achieved? There are four main strategies:

1. To heal ulcers as rapidly as possible — the primary aim is to prevent unnecessary amputations, by healing ulcers as quickly as possible, and to prevent infection or ischaemia leading to gangrene
2. To prevent the development of ulcers — diabetes-related foot disease should be prevented by optimising risk factors for neuropathy and vascular disease such as raised glucose levels, blood pressure and lipids
3. To educate people living with diabetes — HCPs and all members of MDFTs. There should be increased access to education in foot assessment and urgent referral for all HCPs working with people with diabetes. Improved foot care knowledge with practical practice-facing useful information are essential.
4. To maintain a sufficient, sustainable and supported workforce — improvement of foot care and foot assessment in people living with diabetes is dependent on well-informed and educated HCPs who recognise the importance of foot care from diagnosis and at every diabetes review (Edmonds et al, 2020).

The iDEAL group, therefore, recommends that the ACT NOW! assessment tool is used for everyone with diabetes presenting with any type of foot problem and by all HCPs in all locations when assessing an individual with diabetes to promote effective and urgent referral and, ultimately, to save limbs and avoid unnecessary amputations (Edmonds et al, 2020; iDEAL Group, 2020).

The ACT NOW! acronym and checklist are designed to be simple to use and to empower PwD, their carers or healthcare professionals with the skills to ACT NOW! (Robbie, 2021). Improved foot care knowledge, assessment and urgent referral with practical information are essential and the ACT NOW! acronym provides resilient safety netting for high-risk PwD by reducing delays, which may result in poor morbidity outcomes (in terms of ulcer healing and amputations) for this patient cohort. The adoption and regular use of the ACT NOW! tool

can keep a focus on the vital nature of assessment and the need for education, knowledge, awareness to expedite timely referral to save limbs and lives (Phillips et al, 2020).

This practical and innovative approach to encourage people with diabetes and a foot problem to ACT NOW! has been endorsed by Diabetes UK, the International Diabetes Federation (Europe), D-Foot International, the Royal College of Podiatrists, the Foot in Diabetes UK, the English Diabetes Footcare Network, Diabetic Foot Network Wales, Diabetes Network Northern Ireland, the Juvenile Diabetes Research Foundation and the Primary Care Diabetes Society, who all recognise its valuable contribution to footcare services.

Adopting and using the ACT NOW! acronym and checklist, therefore, have the potential to make a profound impact and to help PwDs to access timely assessment and referral, as 'delays lead to dire results' (Robbie et al, 2020). Rapid assessment and treatment of ischaemia, as well as treatment of infection and the recognition of the important role of podiatry, alongside the application of robust protocols, including the ACT NOW! checklist, will achieve better healing rates, as well as reducing hospital admissions for major amputations (Vainieri et al, 2020). This, in turn, can reduce the unacceptably high volume of major amputations (Phillips et al, 2020), which cannot be tolerated. ■

Resources

iDEAL has downloadable ACT NOW! resources and educational material, which can be accessed from the website at <https://idealdiabetes.com/act-now-education-resources/>

Diabetes UK provides steps to prevent foot problems and offers tips for everyday foot care: <https://www.diabetes.org.uk/guide-to-diabetes/complications/feet/taking-care-of-your-feet>

Diabetes UK shows how people with diabetes can check their feet and recognise a serious foot problem: <https://www.diabetes.org.uk/guide-to-diabetes/complications/feet/serious-foot-problem>

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