Education films: a means of reducing Diabetic Foot Ulcers (DFU)? Dream or could it be reality?

Key words:
Education
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Co-production

Article points:

1. Improving access to patient education and support using modern information technologies could provide opportunities to engage and promote healthy lifestyle choices and good self-care practices.
2. Digital films for Diabetes Mellitus (DM) provide an opening or stepping-stone to engage patients to review their disease control and the implications it has on their foot health.
3. Including patient stories in education materials will improve relatedness and thus increase the likelihood of positive behavioural change.

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Abstract
The continued increase in patients diagnosed with DM coupled with NHS resources, stretched to cope with the increasing demands of managing the condition and its complications, directs health care providers to develop appropriate means to educate patients such that they can swiftly become experts in their condition. Accessing education and motivational messaging via prescribed film content designed to precipitate behavioural change as a vehicle to promote healthy lifestyle choices and good self-care practices could reduce the costly complications of DM such as DFU and potentially represents a scalable and cost effective approach. This concept is being evaluated in Wales.

Introduction.
DM is widely acknowledged as the fastest growing health threat of our times (Diabetes UK 2015). In Wales 182,600 people have DM but it is anticipated that this figure will exceed 300,000 by 2025 (Diabetes UK 2015). The annual NHS spend on DM is approximately £500m, 10% of the NHS Wales total budget, 80% of which is spent on managing the complications of DM such as DFU and amputations (Diabetes UK 2016), many of which are avoidable (International Best Practice Guidelines 2013). However the total cost of diabetic foot disease (DFD) is likely to be much higher when indirect costs such as lost productivity among workers and the use of social care services are taken into account (Kerr et al. 2014). Furthermore the cost to individuals in terms of pain, disability and the psychological impact of DFD are difficult to measure, but are nonetheless important (Weinger et al. 2012).

In a time of increasing financial constraints this demand for services is unsustainable and challenges the commissioners of services to ensure funding is spent effectively and within budget. The NHS in Wales introduced the principles of Prudent Healthcare in 2014 to respond to these challenges by ensuring that care is provided to those with the greatest health need first, doing only what is needed and ensuring that there is co-production or an equal partnership between patients and health care professionals (HCP) (Welsh Government, WG 2014) (*figure 1*).

Prevention.

Prevention of DFU in individuals 'at risk' and prevention of amputation in those with active diabetic foot disease (DFD) remains the cornerstone of diabetic foot services (Boulton et al. 2005). The National Institute for Health and Care Excellence (NICE 2015) guidance NG19 recommends that in addition to annual foot assessment, patients are to be given education on basic foot care, appropriate footwear, diabetes and the importance of blood glucose control and the importance of good foot care. It is widely recognised that good glycaemic control reduces the risks of developing microvascular complications such as peripheral neuropathy (The Diabetes Control and Complications Trial Research Group (DCCT) (1995); United Kingdom Prospective Diabetes Study Group (UKPDS) 1998), often a precursor to foot ulceration (International Best Practice Guidelines 2013) and poor glycaemic control is associated with delayed wound healing (Guo and Dipietro 2010). The importance of healthy lifestyles was also identified in the recent publication of the National Diabetic Foot Audit (NDFA) (2017), an audit of patients with active DFD. The audit found that only 35.2% of patients in Wales met the recommended target for their HbA1c in the previous year, had an average BMI of 31.3 kg/m² and 44.2% of patients were either smokers or ex-smokers which is associated with peripheral arterial disease and poor wound healing (Ahn et al. 2008). The average duration patients had DM in the NDFA (2017) was 16.4 years, during which time opportunities to provide education on the complications of the disease would have been expected. The characteristics of these patients with DFD may suggest that the current methods of education to promote lifestyles modifications are not sufficient.

Education.

The Diabetes Delivery Plan for Wales (WG 2016) acknowledged that patients spend only a small amount of time in direct contact with HCPs so need to be supported to take personal responsibility to manage their condition. This primarily involves making good lifestyle choices including physical activity, reducing alcohol intake, smoking cessation and participation in education programmes to minimise the risk of complications. This concept reflects one of the key principles of prudent healthcare, co-responsibility and co-production of care. However self-care requires information and providing this education is challenging. The Diabetes Annual Statement of Progress (WG 2017) reported that in Wales 76% of newly diagnosed diabetics were offered structured education courses but only 1.4% attended. In recent years investment in these courses such as X-PERT, DAFNE, Desmond, have shown to increase health literacy to some patients but is reliant on patients being able and motivated to attend such programmes (Clarke 2008). Furthermore, personal learning needs and preferences must also be considered to ensure a person-centred approach is adopted (Bullen et al.2017).This has been recognised in the Diabetes Delivery Plan for Wales (WG 2016) which recommends a suite of educational options to better meet the needs of the individual, to include structured education courses, peer support, written and electronic information, video prescriptions and referrals to other programmes such as national exercise referral scheme and education programme for patients (EPP Cymru).

PocketMedic.

There is little published material on alternative methods of delivering empirical education to patients with DM but providing educational and motivational films would seem a low cost viable option (Rice et al 2017). eHealth Digital Media (EHDM) (2017), a specialist health communications company, working in collaboration with HCP and patients in NHS Wales, two foundation trusts in NHS England and Swansea University has devised PocketMedic, to create and deliver such films. Using a web-based interface, HCPs can view and prescribe a series of films to patients. Patients are then able to access the link sent to them and watch their prescription on a personal computer, laptop, tablet or smartphone whenever or wherever they wish and share them with carers or family. The suite of available films include type 1 DM, type 2 DM, Gestational diabetes, Chronic Pain, Chronic Lung disease, Lymphoedema, Heart Failure, Life after Cancer, Pressure Ulcer Prevention and Wellbeing (anxiety and depression), most of which incorporate powerful patient stories. The simplicity, scalability and flexibility of this educational intervention provides a cost-effective way of helping patients become more expert in managing their health.

In a small service evaluation study of the suite of educational films for type 2 DM, Rice et al (2017) found a significant reduction in HbA1c among those patients who watched one or more of the prescribed films compared with no change in the non-watchers over a three month period. The authors recognised the limitations to this small study but suggested this type of educational delivery could provide a catalyst for patients to engage in structured education courses and develop autonomy in managing their health. Although this study was small and undertaken over a short period of time the results are encouraging and whilst there was no evaluation of any direct effect on the incidence of DFU, opportunities to engage with patients can only be positive. NHS Wales has signed up to enable the prescription of PocketMedic films to patients for the next three years.

The role of Podiatry Services / Foot Protection Teams.

Traditionally diabetic foot education has been provided during clinical consultations in verbal and or written format. Several small studies have demonstrated that both patient behaviour and knowledge of foot care were positively influenced by education in the short term (Corbett 2003; Lincoln et al. 2008; Monami et al. 2015). Although Dorresteijin et al (2014) in a Cochrane systematic review concluded there was little evidence to support the effectiveness of patient education for the prevention of DFD. However, the authors did acknowledge that the studies reviewed were generally underpowered and at high or unclear risk of bias. This could infer that education needs to be delivered in different ways. Podiatrists involved in diabetic foot care have countless opportunities to ‘transfer knowledge as care’ at each clinical consultation. The suite of PocketMedic films for DM are readily available for prescription by Podiatrists in Wales *(figure 2)*, to patients, providing an opening or stepping-stone to engage and discuss their health and the implications it has on their feet. The Podiatry Services across Wales recognise that the prescription of educational films alone will not prevent DFU so are investing time in delivering lifestyle modifications through the use of the methodology and principles of ‘Making Every Contact Count (MECC) (Public Health Wales 2017). In addition, behavioural change management is also being employed to support patients to make healthier lifestyle choices before they develop long term conditions and for those patients already with DM to reduce the risks of developing complications such as DFU and amputations. Patient involvement with decision making and treatment planning has been

associated with greater adherence to treatment and improved health outcomes (Edwards et al. 2009) which echoes the prudent healthcare principle of co-production.

Conclusion.

The rapidly rising numbers of patients diagnosed with DM and the need to provide economically and clinically effective care to reduce the costly complications is a challenge. PocketMedic films offer a simple cost effective method of delivering education in small 'bite' sized amounts, readily accessible to patients. Although evaluation of the effectiveness of these films is limited to date, a preliminary study has shown the potential of this method of education to improve DM management which in turn could reduce the risk of developing DFU. Further evaluation is required of this intervention and the employment of behavioural change management to determine if this can reduce DFU. Subsequent NDFA published reports may also provide additional substantiation.

For more information contact info@pocketmedic.org or see www.ehealthdigital.co.uk

Figure 1.

Figure 2.

Type 2 Diabetes	Type 1 Diabetes
1. At risk of type 2 diabetes?	1. Living with Type 1 Diabetes
2. What is type 2 diabetes?	2. Carb Counting
3. Jill's Story	3. T1 Diabetes and Family
4. What can I eat?	4. Exercise and Type 1 Diabetes
5. Medication and monitoring	5. The importance of Retinal Screening
6. The importance of Retinal screening	6. Driving and Diabetes
7. Introducing the Eatwell	7. Managing Hypo's
8. Looking after your Feet	8. Care of High Risk Foot
9. Jeff's story	9. Healthy Eating? Healthy Shopping!
10. Healthy Eating? Healthy shopping	10. Insulin Pumps
11. So what can I do?	11. Preconception Care
12. Diabetes and weight	12. Introducing X-PERT
13. Care of the High Risk Foot	13. Diabetes and Operations
14. Tony and Michelle both live with Diabetes	Understanding foot risk
15. Managing Hypo's	
16. Driving and Diabetes	
17. Stop Smoking	
18. Preconception Care	
19. Introducing X-PERT	
20. Diabetes and operations 21. Understanding foot risk	

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