DSN support in a rural area through email and telephone contact

Gill Teft

Introduction

Telephone and internet communication is a fast growing area within the healthcare industry. Nurses are increasingly becoming computer literate and using the internet as a resource in their day-to-day activities (Lewis, 2003). In the Scottish Highlands we have found that using these methods of communication can be crucial in the provision of support for people with diabetes. This article discusses how three DSNs cope with increasing number of patients in extremely remote areas using the internet, email and telephone contact.

The diabetes centre at Raigmore hospital provides diabetes care to a wide area of Scotland. Three DSNs provide specialist support from Skye and Fort William in the west to Dornoch, Lairg and Ullapool in the north, Nairn in the east and Laggan in the southeast (see *Figure 1*). In addition, the service also provides support to the city of Inverness and the local area.

The DSNs divide up the area geographically. One DSN covers the west Highlands and Skye, another the east Highlands and the third Inverness city. Inverness and the east Highlands are the most densely populated areas, but the west Highlands hold a widely scattered population and it is in this area that overnight stays are required. In addition to these areas, the DSN who works in the west Highlands has responsibility for all of the obstetric patients in the area and in Caithness. The DSN who works in the east Highlands also has responsibility for the paediatric patients in the area.

Providing services to outlying areas in this way means that there is a more equitable service for those living at a distance from the hospital. However, it also means that two of the DSNs are frequently absent from the diabetes centre in Inverness, doing outreach clinics in local GP surgeries. The DSNs are sometimes difficult to contact, and providing ongoing support for those new to insulin for example, often requires innovative measures. We make extensive use of telephones and mobile telephones to keep in touch with patients and with each other,

and increasingly use the internet and email systems for this purpose. We often use text messaging to check that a DSN has arrived at clinic or home, especially in winter when roads can quickly become impassable due to snow. *Figure 2* illustrates the difficulties experienced on the roads in the Highlands!

A literature review

A literature search revealed a wealth of literature on the subject of using the internet to communicate with and teach patients about their medical conditions (Nahm and Resnick, 2001; Liss, et al, 2002; Loader, et al, 2002; Lewis, 2003).

The research shows that computer-based support and education is a new tool for healthcare professionals to use to provide care to rural areas (Liss et al, 2002). It is up to nurses to use these tools effectively for communication and education. A critical

Figure 1. Map of the Scottish Highlands indicating where we provide diabetes care

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1 The Scottish Diabetes Framework was launched in April 2002 and identified 11 clinical standards which include clinical review, patient-centred care and information management and technology

2 Computer technology systems are an important way of communicating between government departments and the NHS, between healthcare professionals, and between patients and healthcare professionals.

3 Dealing with complex problems over the phone can be difficult but may be the only option if the patient is unable to attend the diabetes centre or lives 40 or more miles away from the centre.

literature review (Lewis, 2003) found that most studies demonstrated increased levels of patient knowledge and improvements in self-care management and self-care behaviours through use of computer technology and web-based learning. Lewis also found that the benefits of using computer technology were not restricted to the young. Those in the older age groups were also able to benefit from computer-based education although they did require more assistance. In the Highlands there are increasing numbers of elderly people who have computers. One man from Skye had motor neurone disease and was unable to speak. However, he could use a computer to communicate. When he needed to go onto insulin the only way to keep in touch (because of his medical conditions and because Skye is 100 miles away from the diabetes centre) was email, which proved to be a very effective communication tool in this situation.

Methods of communication

The Scottish Diabetes Framework was launched in April 2002 and identified 11 clinical standards which include clinical review, patient-centred care and information management and technology (Scottish Executive, 2002). One of the aims of the framework is to have a national IT system to support all aspects of diabetes care by the year 2005. Using computer technology systems is vital for recording statistics and for auditing. Computer technology systems are also an important way of communicating between government departments and the NHS, between healthcare professionals, and between patients and healthcare professionals. In our area, use of technology

enables us to provide support and education at a distance. Fortunately, all three DSNs have access to a personal computer that is connected to the internet, and those of us who do outreach clinics also have laptops. We are all familiar with the hospital intranet system and the electronic recording system, and we make full use of the internet to keep in touch with patients and as a source of information.

Telephone

Another method of communication we use extensively in our area is the telephone. Many of our patients live over 50 miles away from the diabetes centre, with some over 100 miles away, so it is important that they are able to get in touch with us in urgent situations and for ongoing support and advice. All three DSNs have separate telephone lines and answering machines and the two nurses who do outreach clinics carry mobile phones. Getting a signal in some of the more remote areas can cause problems and may result in some calls being missed or not answered until the nurse comes back into signal range. Messages cannot be picked up until the nurse returns unless she has made a prior arrangement with the patient for a phone call. A useful way of getting around this is to use email, which can be accessed at any convenient time.

Dealing with complex problems over the phone can be difficult but may be the only option if the patient is unable to attend the diabetes centre or lives 40 or more miles away from the centre.

The digital divide

It is known that less people in rural as opposed to urban areas have and use a computer because of inequalities in education and economic status (Lewis, 2003). The Highlands is a mainly rural area with a large elderly population living in remote areas. Although a number do own and use computers the vast majority do not. Not everyone has the same access to technology and those that do have a computer may not necessarily have access to internet. So although using the internet is a workable option for increasing flexibility for some, this does not apply to all of our patients.

Figure 2. Driving conditions can be difficult and not always weather-related

Confidentiality

As use of computer systems and email has become more popular a number of policies have been developed to ensure that confidentiality is maintained, at government (NHS, 1993) and local levels. Our local IT department have been very helpful in advising us of levels of security and IT security policy. Writing an email is similar to sending a postcard in that it could be read by other users. Patients must be aware that confidentiality cannot be guaranteed. There is a secure hospital system, which is used by GPs and others but it is not feasible to add patients to it as users. As our patients mostly send emails about blood glucose readings none to date have had a problem with confidentiality. However, if this is not acceptable or there is a more intimate matter to discuss, email can be used to arrange a mutually convenient time for a telephone call or a visit to the diabetes centre.

Using telephone and email

Telephone and email contact is usually with people with diabetes who are new to insulin and have either been started as an outpatient or hospital inpatient. Because of the geography of the area, a number of patients stay in accommodation situated within the hospital grounds but are not actually admitted to the wards. The contact is to check how the individual is getting on, managing their injections and blood glucose testing and to review control.

Patients are asked to send their blood glucose recordings for the last week via email or have them ready for telephone contact. The information is discussed and any changes required to insulin doses are agreed. When this is done via email, the advice is emailed back to the patient who is advised to make the proposed changes and get in touch by telephone should any problems arise. Further contact is then arranged usually for a week's time. Patients are advised to contact the DSN before then if they are worried or concerned.

Problems and solutions

Making use of new technology is important to improving communication between healthcare professionals and patients and improving care of people with diabetes.

Email is becoming widely used by young and old and is now an important means of communication. Although we do not currently provide education online, this is an area to be explored.

As identified previously, there are still large numbes of people who do not have access to computers or the internet which future developments need to take into account. Using email to improve communication in rural areas is clearly beneficial for some people, but is also likely to be inequitable for others due to the digital divide. These people are likely to be those who already have inequitable care because of the geography of the area. Providing internet access at local healthcare centres, or as has been suggested in a recent service review, setting up 'virtual clinics' using computer or video links could address the problem. This idea would also address the issues of travelling to outlying rural areas, which is time consuming and expensive for staff and patients. Although many people with diabetes are willing to travel sometimes great distances for their diabetes care, in winter when roads are often either dangerous or completely impassable due to snow travelling even short distances is simply not an option.

Providing equitable diabetes care for people who live in the Highlands is challenging because of the increasing numbers of people diagnosed and the distances involved. Not all of our patients have access to a telephone; keeping in touch with this group of patients can be a real challenge as they also tend to be those who live in the most remote areas. For this group of people, keeping in touch through personal contact or using other health professionals such as district nurses is vital.

Conclusion

The geographic nature and widely spread population in the Highlands presents unique challenges for people with diabetes and healthcare professionals alike. Using and becoming familiar with new technology as it becomes available also presents challenges. However, many patients and nurses are embracing these challenges and are looking forward to developing services using this new technology. ∎

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