the Telehealth Revolution Comes to Northern Ireland

One way to tackle unnecessary long and frequent stays for patients being monitored in hospital is to have them monitored at home. This would also free up beds for those most in need of hospital treatment. Monitoring at home is made possible by new medical technology. It's called Telehealth and it could be the next health revolution.

Telehealth is monitoring of patients' vital signs in their own home. It is used to monitor patients with long term conditions such as hypertension, heart failure, diabetes and respiratory problems. This emerging technology is transforming the approach taken to managing those with long term chronic conditions and will have an increasingly important role in delivering health care in Northern Ireland in coming years.

Long term chronic conditions make up a large, and growing slice, of health care provision: long term conditions account for 60% of hospital bed days and two thirds of emergency admissions. 80% of GP consultations are related to chronic disease.

Patients with such long term conditions often become anxious and do not always manage their medication adequately which results in frequent hospital admissions – becoming known as "frequent flyers". Their stays in hospital are usually limited to monitoring. For example at this time of year those suffering from respiratory diseases such as COPD often have several visits to hospital. It is now possible to monitor these patients in their own homes by using remote monitoring equipment which can detect any change in their vital signs.

Telehealth Case Study: **Mr M**

Mr M is a 69yr old gentleman who lives in Belfast. He lives in sheltered housing and has no family or care support. He suffers from a range of medical conditions which include congestive heart failure, hypertension and is also an insulin dependent diabetic.

Mr M was referred by his GP as one of the first three patients in Ireland to have their vital signs monitored on a daily basis using Telehealth services provided by Quality Healthcare At Home, a member of the Quality Healthcare Group. Mr M uses the Honeywell Hommed Genesis monitor which measures his weight, blood pressure, heart rate and oxygen saturation. In addition to this the monitor also asks him up to 10 subjective questions which include "Are you having problems controlling your blood sugar?" Mr M answered yes to this question over a number of days and was consequently contacted by the Telehealth Nurse to check the results of his blood sugars. The nurse was informed it was approximately 10 MMOLS three days in a row. Quality Healthcare At Home contacted his GP to discuss the monitoring of Mr M's fasting blood sugar using the Genesis monitor and it was agreed to implement this as soon as possible with the patient's consent. Later that day an appointment was made for a Telehealth Technician to visit Mr M and program the monitor for blood glucose monitoring. Upon checking to see if Mr M's meter was compatible, Mr M admitted that he had not taken his blood sugar for over 3 years and was not managing his blood sugar levels or diabetes very well.

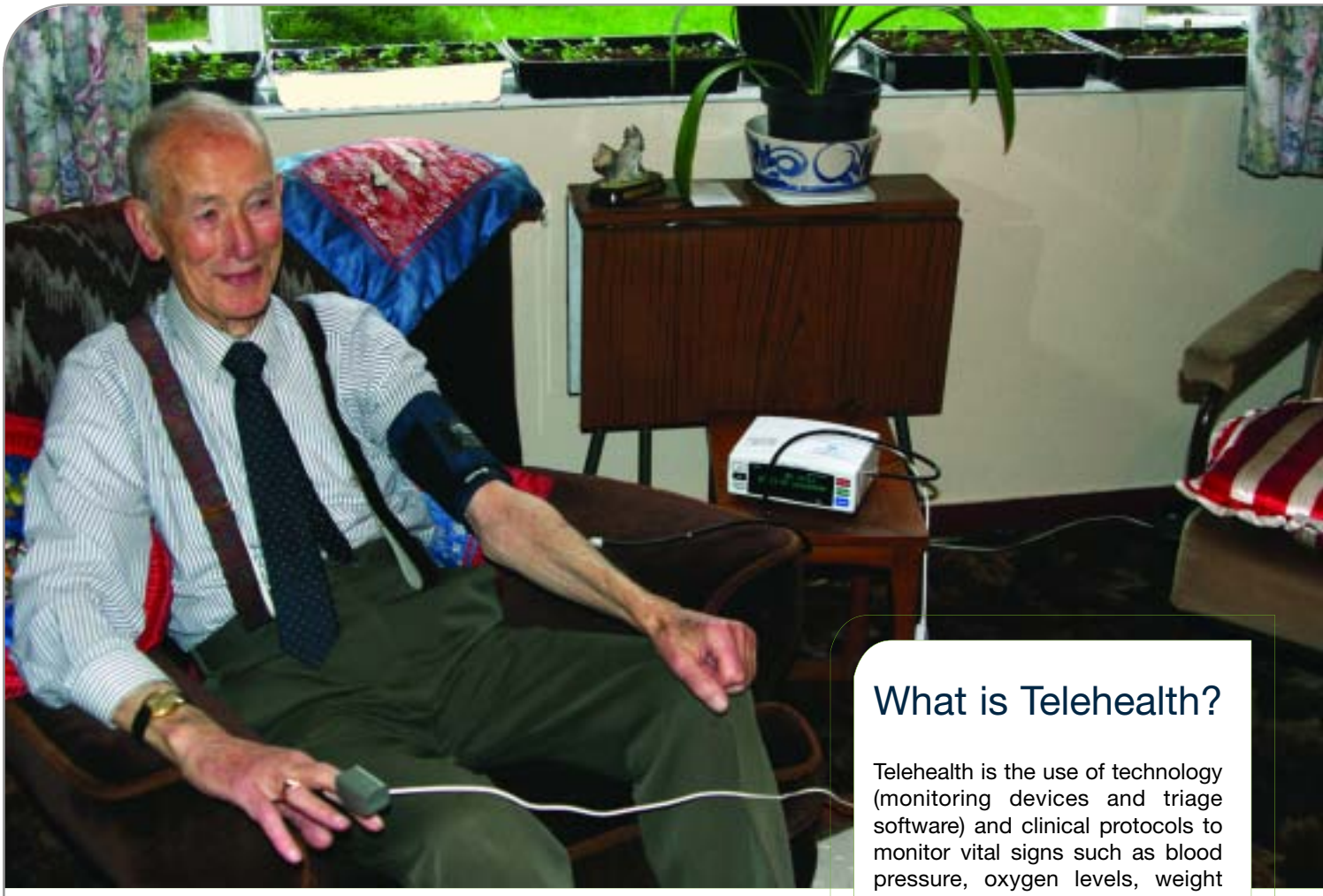
Mr M started to carry out blood sugar readings that afternoon and his monitoring was increased from once a day to twice a day. Over the next few days the Telehealth Nurse noted his blood sugar was very high and contacted him about this. It was discovered while talking to him and asking some subjective questions that his insulin pen had been empty and in fact he had not been taking any insulin over the past few days at all. This has now been resolved and Mr M has subsequently had an urgent appointment made with his GP for review of his diabetes. Quality Healthcare At Home will continue to monitor Mr M and will send a report of his readings to the GP on the morning of his appointment. This report will provide all the vital signs readings including his blood sugar results to allow the GP to have a better picture of his health. The Telehealth Nurse will also contact Mr M the day before and on the day of the appointment as he has forgotten some of his appointments in the past.

The outcome of this situation for Mr M could have been very serious but for the intervention of Telehealth and his ongoing monitoring. Mr M is very enthusiastic about the use of Telehealth and admits it has made him more involved in his own health care and continues to be monitored on a daily basis.

Telehealth has made him more involved in his own healthcare and he continues to be monitored.

These types of services are now offered by Quality Healthcare At Home, a local Telehealth company run by medical services entrepreneur Brian O'Connor. Quality Healthcare At Home's first patient was a 91 year-old with heart failure. Quality Healthcare At Home takes a 'care centre' approach and employs qualified nurses in the care centre – rather than the approach companies in Great Britain have taken of forwarding all data to a call centre who then contact the patient's GP. This 'care centre' approach rather than the 'call centre', provides expert monitoring that can pick up many problems and sort them out without having to refer to the patient's GP. For example a patient with heart failure put on 3-4lb over two days. A call from the nurse ascertained the cause of the sudden weight gain (often a sign of something wrong). He had put on three extra jumpers with the cold weather!

Remote monitoring stops people going into hospital by detecting important early changes in the patient's condition.



What is Telehealth?

Telehealth is the use of technology (monitoring devices and triage software) and clinical protocols to monitor vital signs such as blood pressure, oxygen levels, weight and blood glucose levels of chronically ill patients outside of a clinical setting (usually their own homes or a nursing home).

Telehealth involves:

- a health management programme drawn up by the patient's GP or hospital consultant;
- patient monitoring of vital signs at home, up to four times a day;
- transmission of this data, via a telephone line, to a dedicated Telehealth centre;
- interpretation of this data and trend analysis by a Telehealth nurse using medical triage software;
- intervention by the nurse in accordance with pre-determined protocols if the data received is outside of pre-set parameters in the patient's health management programme.

Telehealth in action

agendaNi attended a demonstration of the remote monitoring technology in Quality Healthcare At Home's care centre in Belfast.

The monitor, which is placed in the patient's home, is connected to a telephone line. It looks like an alarm clock with a small cable attached to a blood pressure cuff and another attached to a set of digital scales. The patient is asked to step on the scales and their weight is taken. They are then instructed to put on the blood pressure cuff. The patient is trained in using the equipment and there is 96.4% compliance in using this Telehealth monitor. The data is then downloaded to a care centre; this process takes about 45 seconds. Each patient has a unique ID number. The data is linked to this number and downloaded onto a secure server. The use of the numbering system ensures complete patient confidentiality. The monitor is then cleared after this data has been downloaded to avoid any cross contamination of data. This type of equipment is simple to use and is the most widely accepted with 500,000 users in the US.

The data is sent over the phone line to Quality Healthcare At Home's monitoring centre, where the Telehealth nurse uses software to prioritise patients who require intervention. The nurse operating the station can also look at seven day trends.

Telehealth Seminar

The Belfast Boston Connection

Developing Economic and Knowledge Links

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