

# case study



**Sector:** Local Authority  
**Client:** West Lothian Council

**Application:** Diabetes

## the dilemma

The NHS expenditure on diabetes is over £5 billion pa. 1.8 million people suffer from diabetes in the UK and it is on the increase in all age groups. It is set to rise to over 4 million by 2010 (especially Type 2 diabetes). Diabetes as a chronic condition is difficult to manage, it is progressive and disabling. As diabetes progresses it can, in later life, lead to blindness, circulatory problems, poor kidney functions and sometimes lower limb amputation is necessary. People with diabetes can have a reduction in life expectancy by 10+ years with much of life spent in the acute care arena.



**West Lothian  
Council**



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## CLIENT

"I feel a lot more confident knowing that I can get hold of someone quickly. At first I didn't believe the fall detector was working - so I threw it on the floor to test it and sure enough a voice came out of the machine (Lifeline home unit) asking me if I was OK."

**Nicole, who has had diabetes for 16 years.**



## the need

Nicole (aged 31) lives with her husband and two young children who are 9 and 10, in the Livingston area of Scotland. Her life has been affected over the past 16 years by her type 1 diabetes. However since March 2003, Nicole has experienced more regular hypos which are often severe and violent in nature.

### The impact diabetes had on the family

- No longer felt confident, eg travelling on buses and shopping is a problem and she has had to take a lot of time off work
- Family would phone home several times a day to check that Nicole was OK
- It got so bad that her husband reduced his working hours and it is very lucky that he only works 5 minutes away
- No relatives or neighbours nearby except grandfather who is out a lot
- Nicole has experienced several injuries during her attacks and she is unable to use her left hand due to nerve damage
- Nicole has a hypo 7 or 8 times a week - the greatest damage can happen if a prolonged period of unconsciousness occurs

### How are the symptoms controlled?

For Type 1 diabetes the condition is controlled by daily injections of insulin as the pancreas cannot produce any of its own. The management of diabetes is very complex and involves:-

- Changes in lifestyle with self monitoring of dietary intake, physical activity levels and weight
- The need to take daily medication
- The monitoring and control of blood glucose levels
- Be watchful of the symptoms of hypoglycaemia
- Be watchful for the symptoms of long term complications

## the last straw

During a particularly bad attack, Nicole was stuck in a chair for 3 hours unable to get to the telephone. She had injured her head on the door frame and once at the phone, it took her another hour to dial 999. This incident prompted Nicole to call Lynn McAllister from West Lothian Council's Health and Social Care Team and within a couple of days, someone visited her to assess the situation and come up with a solution.



\* Names have been changed for privacy.

"I think my mum's a lot safer. And we know how to press the button if mum falls over." The children.



“The technology enables Nicole to live a normal life. A lot of the worry has been taken away.”

**Lynn McAllister, Health and Social Care Team Manager.**

## the solution

A package of technology was provided which works in conjunction with the Lifeline home unit. Should a sensor be activated, a message is sent to the West Lothian Careline who in turn take the most appropriate action, eg send for a family member, the emergency services or the Health & Social Care Team.

### The package of technology includes:

- Lifeline home unit.
- **Fall Detector** - Nicole wears her fall detector whenever she is alone in the house.
- **Personal Trigger** - her husband takes it to bed with him in case Nicole has an attack through the night.

### The package also consists of the following:

- **PIRs (Passive Infra Red)** - movement detectors protect from intruders and monitor inactivity.
- **Flood Detector** - protects from water leaks, eg if Nicole had an attack whilst running a bath.
- **Temperature Extremes Sensor** - raises an alert if high levels of heat or low temperatures are detected, eg cooker left on or freezing pipes.
- **Smoke Detector** - protects from potential fires.

Fall Detector



Personal Trigger



PIR's (Movement Detectors)



Temperature Extremes Sensor



Flood Detector



Smoke Detector



For further information please contact  
marketing on 01977 660325

## cost of diabetes to the NHS

Diabetes costs the NHS over £5 billion annually (9% of NHS resources).

- This is equivalent to £165 a second and has overtaken smoking as the most expensive medical problem.
- Diabetics are twice as likely to be admitted to hospital and once there the length of stay is twice the average.
- 1 in 20 incur costs from Social Services with an average annual cost of £3,000.

Tunstall has a range of solutions to manage diabetes including real time alert systems as described in this case study, as well as blood sugar level and blood pressure measurement, medication reminders and personal health management records to store patient data.

West Lothian Council Health and Social Care Team

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