



Hermie Hermens

Telemedicine has reached the stage at which it can stop being just another 'eternal promise', according to Hermie Hermens. He sees the publicity for remote monitoring already being created by some health insurers as a sign on the wall. And the University of Twente has the best combination of disciplines to make it a success.

ICT starts making a difference in healthcare

"The MobiHealth platform is an excellent example. I am convinced that it is set to be one of the most effective remote monitoring and treatment platforms in the world. You can connect a variety of sensors to it, embedded in patients' clothing or on their skin. It is a modular system, and it can interface to a care provider's decision support system. It is one step away from being a 'context aware' system, which can sense the patient's environment and respond to possible health hazards. We at the University of Twente have the necessary knowledge of biosignals and sensors, we have the IT platform, and we are also aware of the change processes taking place in the care sector. We also have behavioral scientists on staff, whose expertise includes providing appropriate feedback to patients. We therefore cover the entire chain."

"Obviously, expectations have been inflated at times, and never more so than at the height of the internet boom. It seemed then that as soon as we reported promising results from a small-scale pilot, doctors would be queuing up to take delivery of the equipment. The time is ripe for larger scale research and proper market validation. An

example of our approach is the European Myotel project, with Roessingh Research and Development. This project happens to be closely connected with my original scientific discipline: analysing and controlling human movements. The traditional approach was always in the lab, but in Myotel we want people to wear a gown containing sensors for measuring muscle tension. The people we are interested in have neck and shoulder problems, and they can be given feedback when they need to relax more. We now want to extend the system with a remote consultation facility. We are applying the MobiHealth platform for that as well."

"We are moving beyond monitoring into influencing behavior, which opens up many new opportunities, leading to what might be called 'assisted living'. This concept surpasses current ideas of home automation, or 'domotica'. For example, anyone with a respiratory disorder who has ever been seriously short of breath will intuitively withdraw from certain situations for fear of a new attack. This response can have a detrimental effect, in that the condition recedes into the background, and the probability of an attack actually increases. But what is the best way to give feedback, to encourage activity and influence behaviour favourably? That is where behavioral scientists come in."

"Is remote consultation actually feasible: is it what the patient wants, and will the doctor be willing, you may well ask. Research has shown that both doctor and patient may be well motivated provided they meet each other in person at the start. A relationship of trust has to be established before people are comfortable 'relying' on a remote relationship. Another important point is controllability. It will be no problem

for a doctor to monitor a couple of patients remotely, but large-scale monitoring is a different matter. You then need suitable decision support systems to act as a filter. The doctor should not be troubled with every single message, but if something really has gone wrong, the electronic patient statements need to be on hand quickly, and the right people alerted. Of course, computers cannot, and should not, ever take over the decisions, but they can help marshal the flow of messages. These decision support systems are an absolute top priority at the moment, and are crucial to the success of remote monitoring."

'We are moving beyond monitoring into influencing behavior, which opens up many new opportunities, leading to what might be called 'assisted living'.'

"Information technology can make a real difference, in the form of novel intelligent care services. For instance, consider chronic illness: as people live longer, they also set higher requirements, particularly on their freedom of movement. Remote monitoring can restore this freedom to them and, provided there are alternative ways of providing any care required, it can also help reduce the pressure on hospitals. And that is not just a question of technology."

