

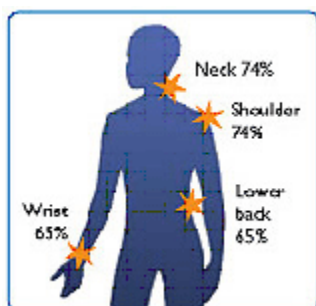
# Editor's Chronicle

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## Developments for a future health care at home step by step

Ultrasound examinations of the heart have become a very important method to diagnose different cardiac diseases, including the confirmation or exclusion of cardiac insufficiency.

These types of examinations are a difficult specialty which requires specially trained staff. Only after several years of practice can a sonographer be considered as fully trained



Ultrasound examinations of the heart involve a static and very uncomfortable working posture for the sonographer. As a result many sonographers experience shoulder and neck pains which can result in long term sickness leaves. Because of the difficulty in replacing these highly skilled individuals this can cause big disruptions at the cardiac- or medicine departments. In the worst case the sonographer might not be able to return to this job again.

### Step 1



With a robot for ultrasound examination the physiology assistant doesn't have to work in the uncomfortable posture and will be spared the shoulder and neck pain. Instead the robot does the heavy and static work while the physiology assistant controls it comfortably using a control stick.



## **Example of patient being examined in a hospital**

During this echocardiography examination the transducer is held by the robot thus helping the sonographer achieve maximum comfort as well as an optimal patient position during the exam.

## **Step 2**

### **Ultrasound examinations performed over distance**

Long geographical distances often make it difficult to perform cardiac ultrasound examinations. Providing local care centres with the ultrasound robot allows these examinations to be performed remotely by a sonographer. Thus the long travel times can be avoided for both the sonographer and the patients saving money and improving care.



By using a video conferencing system the echocardiography expert can examine the patient without being present in the examination room. The ultrasound images, video information and all required sound information are transferred in real-time to the echocardiography expert.

The echocardiography expert can act as the sonographer and control the transducer through the robot.

## **Step 3**

The next step is to adapt the equipment to a more mobile design. This in combination with the fast growing extension of digital network communication in housing will lead to possibilities for examination of patients at home with the expert being at the hospital.

This is an example of development that starts from work injuries and ergonomical problems and step by step can end up as equipment for examination and treatment of patients at home.

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