

Future health care

“Thorolv turned to face the beautiful morning. He knew that if his blood pressure rose quickly, the sensor on his belt would warn the nurse, who was working in the other building. No worries, he thought, if I need him he'll know in a second.”



Western healthcare is facing growing challenges in the years to come. Chronic lifestyle diseases such as diabetes, obesity and cardiovascular diseases are increasing dramatically.

Adding to the problem is the fact that the population is aging. This means that a growing proportion of us will be elderly and go into retirement. In other words, fewer health workers will have to care for more patients.

TTL - Tromsø Telemedicine Laboratory

Tromsø Telemedicine Laboratory was established in 2006 as a Centre for Research-based Innovation. We will combine human caring with new technologies, in order to provide better health care and reduce the increasing burden on the health care system.

Sensor-Based Systems

Sensor systems that collect medical information by monitoring the patient's health represent a rapidly growing area. A series of new products are being introduced, such as devices that continuously monitor the patient's

blood pressure and glucose levels.

But few of these products are integrated with health care systems today. The first of the three research groups in TTL will focus on making sensors more reliable, easier to use and able to handle a variety of medical tasks. For example, can we make them monitor cholesterol levels and heart rates at once?

Such sensor systems must be comfortable to wear. Who wants to go around carrying something the size of a brick on their wrist? Functional design is an important part of this research.

Extended Decision Support

These sensor systems will produce large volumes of data. We will develop technologies that can collect all this information and enable computers to run patient diagnostics. This is the focus of the second research group.

Extended Decision Support also includes the development of early warning systems that can detect starting epidemics, based on incoming data from patient sensors in a given area. This can enable health personnel and authorities to react faster to stop the spreading of an infectious disease.



Computer-Supported Cooperative Work

Thirdly, a key component for maximising the positive effects of new technologies is to reorganise the health services so that the technology and the health services complement each other.

But then we have to examine how patients and health personnel communicate with each other, and how this might be different in changing circumstances. Do patients give the same information to the doctor in an email as they do face to face?

Other important questions will be how we can use existing technology effectively, such as email as well as text and video messaging. What standards do we have to set for the next generation of such systems for medical use?

Partners

TTL will consist of the research organisations and commercial partners with the longest and broadest telemedicine and eHealth experience in Norway.

- The Norwegian Centre for Telemedicine, NST
- The University of Tromsø, UiT
- The University Hospital of North Norway, UNN
- Telenor R&I
- IBM R&D
- DIPS ASA
- Well Diagnostics
- NORUT IT
- Norsk Helsennett
- Helse Nord IKT

The research at the centre is financed by the partners and The Research Council of Norway (NFR).

Career opportunities

We need skilled scientists, and our ambition is to recruit at least 40% women for the PhD and the postdoctorate positions. Women will also be encouraged to accept positions as project managers.

Contact information

For questions about TTL and job opportunities, please contact the director or the administrative leader of the centre:

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Centres for Research-based Innovation - CRIs

- Promote innovation by supporting long-term research through close alliances between research-active companies, public organisations and leading research groups
- Develop expertise that sustains a high international standard in fields important for innovation and value creation
- Enhance technology transfer, internationalisation and researcher training