



Magnus Janzon, associate professor and Chief of Cardiology in Linköping, is in charge of the study on the clinical decision support.

# Computerized clinical decision support could prevent stroke

**Of Sweden's 30 000** cases of stroke each year, nearly 20 percent are caused by atrial fibrillation. To combat this the county council in Östergötland, along with Cambio, have created a computerized clinical decision support, aimed at increasing the prescription of blood-thinning medication, with the hope of preventing many cases of stroke.

Prescribing blood-thinning medication to patients with atrial fibrillation has proved to be an effective way of preventing stroke. Because of this Sweden's National Board of Health and Welfare has said that 80 percent of all patients with atrial fibrillation, and an elevated risk of stroke, should be treated with blood-thinning medications. According to a

2013 study, however, only 42 percent of these patients actually received the recommended treatment.

– It is a significant undertreatment, and it occurs despite the fact that we have scientific evidence of the benefits of anticoagulant medication, says Magnus Janzon, chief physician at the cardiological clinic in Linköping.

**To deal with** this issue, Magnus Janzon and his research colleagues at Region Östergötland have developed a new clinical decision support system together with Cambio. The idea behind the system is to gather information from the patients' charts, in order to identify those who run a higher risk of suffering a stroke. By showing the physician that the

patient has an elevated risk, and suggesting a treatment through a pop-up window on the computer screen, the hope is that the prescription of anticoagulants will increase and that lives, thereby, will be saved.

– We know that out of the approximately 30 000 Swedish stroke cases each year, at least one fifth are caused by atrial fibrillation. That's 6 000 patients. We could decrease the number of cases significantly by prescribing anticoagulants, says Magnus Janzon.

The clinical decision support system, or CDS, is now the subject of a scientific study being conducted in Östergötland. The county's health centers have been randomly divided into two groups, that have

both received information about the importance of prescribing anticoagulants. One group has also been equipped with the CDS, to see if it helps to increase prescriptions.

**The goal of** the study, according to Magnus Janzon, is to make sure that the system has the desired effect, before moving forward with a broader implementation. According to Tomas Block, physician and chief medical officer at Cambio, another invaluable benefit of the study is the input they get from the doctors using the system. For Tomas Block this input is critical, because a good user experience, he says, is the difference between a successful and a failed system.

– I think that it's very good that they did a pilot study first, where they looked at how the system was used and how it was perceived, instead of just going for a wide launch directly, says Tomas Block.

The study will be concluded in January of 2017 but Cambio has already noticed a great deal of interest from other counties, who already use their healthcare information system COSMIC. With all this interest the hope is that the decision support system might, in the future, be used to prevent strokes all over the Sweden. And significant interest for this type of platform has also been noted in the UK and the US.

**Microsoft, who develop** the technical platform that Cambio's system is based on, also see a great potential in the CDS. According to Mathias Ekman, Industry Market Development Manager at Microsoft, the system fits well with Microsoft's own vision of the future of healthcare.

– We want to democratize artificial intelligence and if you translate that into healthcare, it means some

kind of democratization and clinical knowledge. That is what this system does, it combines clinical knowledge and research and brings it extremely close to the physicians, he says.

With all this potential many people are now expectantly looking forward to this August, when the results of the study will be revealed at the world's largest cardiovascular congress, ESC in Barcelona. For Magnus Janzon, however, it is still the chance to make a difference that inspires the most.

– What has driven me, and everybody else who has worked on this, is that we can save lives. You don't have to develop a new drug to save lives, simply using the existing drugs in a better way can save many lives and spare people a lot of suffering.

## FACTS

### Cambio

Cambio Healthcare Systems is one of Scandinavia's leading suppliers of healthcare information systems and a growing player in the European market with just over 100,000 users across general and university hospitals, specialist units and outpatient units. Through the use of our integrated solutions, our customers provide services to 4 million patients.

The company started in 1993. We are growing continuously and currently have almost 400 employees globally with different backgrounds, skills and responsibilities, but who are all passionate about developing open and comprehensive e-healthcare solutions tailored towards the publicly-funded healthcare sector. We are geographically close to our customers with offices in Sweden, Denmark, England and Sri Lanka.

### Clinical Decision Support

A computerized clinical decision support service combines information that is specific to an individual patient, with regulations based on medical evidence, to provide guidance on compliance or advise on what is the best treatment for the patient.

Today there is overwhelming evidence that computerized clinical decision support improves patient safety and facilitates the use of evidence-based healthcare. It works best when it is seamlessly embedded in the workflow and does not need to be extracted from the medical record system or require data to be entered twice. COSMIC CDS is based on international standards and has been designed for easy integration with underlying, local medical records.

The product supports a learning organisation, where new knowledge in the form of medical rules can continuously be added and quickly put to use in everyday clinical practice. COSMIC CDS can be used in all areas of healthcare, regardless of clinical specialty and organisational affiliation.