



eksote

© Tommi Ulmanen Photography. [www.tommiulmanen.fi](http://www.tommiulmanen.fi)



[www.eksote.fi](http://www.eksote.fi)

# The Development of Prehospital Emergency Medical Service in South Karelia Social and Health Care District

## Introduction

There are many problems with the design of existing ambulances that may impact negatively on patient's care and frontline ambulance clinicians alike. Some of the most pressing issues concern the interior treatment space in the back of the ambulance. Given the frequency of use, this environment is difficult to keep clean, and can lead to hygiene and infection control problems. Ambulances also suffer from poorly thought-out ergonomics, badly laid out equipment and difficult-to-access storage spaces, all of which can affect performance in critical, life-threatening situations.

The Smart Ambulance European Procurers Platform (SAEPP) is comprised of a group of ambulance services, academic healthcare research bodies, hospitals and other healthcare organizations (in total 16 partners) who have formed a consortium with the objective of designing and building a 21st century prototype emergency ambulance vehicle which will allow frontline clinicians to provide more high-level patient care on-scene and thus help reduce the number of unnecessary hospital transports currently made by ambulance services across the Euro-Zone. The project was funded by the EC under the ICT 35-f European Procurers Platform (EPP) strand, which aimed to bring together partners from across the EC zone to solve shared challenges in healthcare by forming consortiums to share healthcare and technology resources.

The SAEPP project built on the Helen Hamlyn Centre for Design's involvement in the Smart Pods research study completed in 2009, which proposed a new system of mobile healthcare to treat patients in the community as well as in hospitals. It is estimated that, for example, in the UK alone by providing appropriate on-the-spot treatment, up to 40 percent of patient journeys to hospital could be avoided, resulting in a significant reduction in operational costs for the NHS and a significant increase in quality of the overall patient experience. Within the SAEPP project each consortium member organization was represented by one or more individuals with specialist expertise in areas such as ambulance vehicle manufacture, frontline emergency healthcare, project management or public healthcare innovation.

## Prehospital emergency care in South Karelia Social and Health Care District

South Karelia Social and Health Care District (Eksote) provides health services, family and social welfare services, and services for senior citizens that promote health, wellbeing, and the ability to function well in everyday life. Eksote enters into service contracts with the participating municipalities based on the needs of the residents of those areas. Nine municipalities of South Karelia region participate in the operations of Eksote.

The population of the social and health care district is circa 135,000. The services produced by Eksote include outpatient care, oral and



mental healthcare and substance abuse services, laboratory and imaging examination services, medicinal care, and rehabilitation center, hospital and paramedic services, family and social services for adults, special services for the disabled, and flexible services for the elderly that can be adapted to the needs and age structure of the population. The reorganization of social and health care in South Karelia makes it possible to develop really integrated care processes.

Eksote's aim regarding the SAEPP project was to increase integration of the processes of paramedic services, of home care and of an enhanced discharge nursing unit (home hospital unit). When the elderly are discharged from hospital it is very important that co-operating between home care, paramedic services and an enhanced discharge nursing unit works fluently. This requires integrated care pathways and also technology, for example video consulting and integrated electrical health records. The vision of

South Karelia Social and Health Care District is better functional capacity at home for inhabitants of South Karelia.

Finland is divided into five Emergency Response Center (ERC) areas, and all of the ERC operators are trained to evaluate risks into four different urgency classes. We have a dynamic emergency medical system and a director of field who operates the system. In Finland there are 21 social and healthcare districts which have the responsibility to arrange the paramedical service of the area. The changes in the social restructuring cause the challenges we meet nowadays: the ageing of the population and depopulation of rural areas whilst the number of inpatient places are reduced. Prehospital care is the institution to tackle these challenges. This also increases the responsibility of paramedics.

South Karelia Social and Health Care District are producing all the social and health care services in region of South Karelia, including paramedical



care. The importance of prehospital emergency care in relation to the structural changes in the population has been well understood. The aim is to support patients ability to cope at home and to offer consumer friendly services. The services imported to patients are homecare, home nursing and mobile healthcare centers.

40 percent of all the interventions are evaluated and treated at the scene so that there is no need for transport to hospital. It is managed without compromising patient safety because paramedics are highly educated, medical equipment in the ambulances is of a high standard and paramedics use point of care testing, for example: CRP, hemoglobin, cardiac enzymes, blood gas analyze, electrolytes, carbon monoxide and ultrasound. Paramedics can also perform some procedures, such as pharmacological cardioversion in SVT-cases, using tissue adhesives, suture, removal of stitches, introducing intravenous antibiotics and

analgesia. All of these procedures are done on the basis of doctor's consultation and general guidelines. New approaches in the communication and co-operation between different participants in the patients care pathway are being tested and developed in rural areas. The co-operation between paramedics and staff of home care has already begun earlier this year and some process models have already been developed.

The quality of Eksote's ambulance service and patient safety is ensured by self-monitoring. Self-monitoring requires regular and systematic data collection, particularly on the critical points. Monitoring data allows us to identify risks associated with prehospital emergency care in our area. We monitor the quality and patient safety with several indicators, and observations made by the field manager and the senior physician of paramedical care. The staff also has the opportunity to report any hazardous events anonymously. These reports

are used to develop patient safety further in paramedical care. Eksote in co-operation with the South Karelian University of Applied Sciences (Saimaa UAS) and Lappeenranta University of Technology (LUT) participated in the SAEPP project. Another objective of SAEPP was to work together as a pan-European partnership to create a mobile treatment unit, so called Smart Ambulance.

An ambulance designed and manufactured to exacting regulations and standards is an important part of patient safety and quality in prehospital care. Providing services like this up north means that ambulances and equipment must function in harsh environments and in temperatures ranging from +30 to -30 degrees Celsius. European Whole Vehicle Type Approval guides the manufacturing of ambulances. In Finland there are three high quality vehicle manufacturers that sell modern M-class ambulances according to required standards (CEN 1789 + A2). Finnish vehicle conversion companies manufacture ambulances and export them around the world.

In Eksote all the staff are open to innovations such as video consultation, smart stocking boxes, smart hygienic materials, integrated patient database, checklists combined with e-patient data recording etc. Because of the long distances in rural areas, we became enthusiastic about the new idea taken from the SAEPP project: minimizing vehicle fuel consumption with the help of proper stocking. Eksote has also set an aim to further inspect the synergy benefits with home nursing and the possibility to monitor risk patients passively in their daily lives with help of smart bracelets. So the Smart Ambulance European Procurers Platform project was very valuable for development of Eksote's prehospital emergency medical service.

## Conclusion

The introduction of new, cost-effective, flexible, integrated and innovative operating models enabled by digitalization also concerns the operating environment of the prehospital emergency medical service. New operating models allow the opportunity for paramedics to assess and treat more patients so that patients can stay at home or on location. Digitalisation and new technology allow also better quality of life for citizen who can be treated and monitored at their home by co-operation with paramedics and other health care professionals. The results reached by SAEPP project were encouraging. The focus of SAEPP was to develop the information and the communication technology (ICT) opportunities that could be incorporated into mobile healthcare. It was important that Eksote was involved in the project. This is to ensure that future ICT development also in emergency medical service would align with the needs of a wider clinical/non-clinical user group and ensure that the outcomes would be exploited at a national level in Finland. It is important to understand that challenges in the emergency medical service are common in all European countries. So it is important to create international networks which will continue developing these technologies in the emergency medical service in the future.

### **Katri Länsivuori**

Functional Domain Manager, Ambulance service

### **Mika Mitikka**

Project Manager

### **Merja Tepponen**

Chief Development Officer, Doc.Sci (Health and Social care)

**Tel:** +358 400 655197

**Email:** merja.tepponen@eksote.fi

# Digitalising healthcare in Finland

**Maritta Korhonen, Head of Development at the Ministry of Health and Social Affairs in Finland tells Adjacent Government about the changes being implemented to health and social care services to bring Finland into the digital world...**

According to a survey published by the European Commission in 2000, Finland has the highest number of people who are satisfied with their hospital care system in the EU. The quality of service from healthcare in the country is considered to be good. In the same survey 88% of respondents were satisfied with the service, compared with the EU average of 41.3%.

Although the current situation is satisfactory, things are changing in Finland. With the big wave of digitalisation that is hitting public services, Finland is jumping aboard and reforming their health and social care sector. eHealth refers to tools and services using information and communication technologies (ICTs) in the health care sector. Not only can patients benefit from improved access to care and quality of care, healthcare providers can also profit from improved efficiency for their work and more user-friendly systems.

Finland has been a forerunner in the adoption of electronic health care records and electronic tools. In the last 30 years, the country has moved from local systems to regional information exchange and national information standardisation and availability. Editor Laura Evans spoke to Maritta Korhonen, Head of Development at the Ministry of Health and Social Affairs in Finland about the changes being made and the challenges that come with them.

“At the moment we have national centralised services for e-prescription and for the archiving and sharing of the patient data, between different health care service providers,” explains Korhonen.

“We also have a national user interface for patients who can see their e-prescriptions and their health records and manage and monitor the use of their data. Not all patient data has been nationally standardised but by 2020 we hope to have the majority on the national database.”

Korhonen believes that the benefits of these changes are monumental to patients and health care professionals throughout the country. As well as ensuring patients can view information regarding their healthcare, it can also speed up the processes. As she outlines:

“There are many ways in which these new ideas of sharing the data can benefit both the patient and healthcare professional. It speeds up and standardises processes. For example, if you go to the pharmacy you no longer need paper and all the data is there when needed.

“Also, the health care record can now be shared with the patient. They can see all the medication information, and it allows him or her to become more active in the process. As we believe in Finland, the patient is not an object anymore, but he or she is a responsible subject in his or

her process and in decisions made together with health care professionals.”

One of the main priorities of the new government in Finland, as a tool in social and health care reform is digitalisation. Healthcare reforms are high on the government’s agenda, with an aim to join up social welfare and health care services. This means new opportunities for health and social care process renewal and reassessment of old practices.

“One of the most important issues in our new government programme is this reform in the next few years, to be fulfilled in 2019,” explains Korhonen.

“Social care and healthcare will be joined together, so they are no longer separate service sectors for citizens. Part of this solution will be that the data must be shared. Research conducted in the northern part of Finland revealed that 10% of our patients use about 70-80% of the services in the healthcare sector.

“But, the same patients also use 70-80% of social care services. Which is why it is important that the details shared between social and health care, for patients using both services – in the future is totally integrated.”

As part of the National Finnish eHealth and eSocial strategy 2020, the government aims to make digital health and social care services more accessible to patients. The plan is to have all the information and data that patients need in one place.

“If for example, you have a minor healthcare problem, or need information on how to eat more healthily, reliable information for that will be easily available,” she says.

“We are trying to make some services digital. For example, if you have an uncomplicated illness with typical clear symptoms, online services would advise the type of medication and treatment you might need, dependant on



your symptoms. The system would in the future also give you a hint of what to do by yourself and also the prescription you would need. All in all the idea is making the process simpler and accessible for the patient.”

There could be many challenges that come with making such major changes to healthcare services. However, Korhonen believes that the biggest challenge is changing the attitudes of healthcare professionals. “Usually when you are digitalising services, the problems are wide-ranging, but we have found in Finland that problems due to technology are usually quite easy to solve,” she explains.

“Changing the attitudes of the professionals and sometimes also those of the patients – this is the most difficult challenge. It comes along with how to change the processes, the way we have been working. However, digitalisation and eHealth is here, it’s not something that is coming or something that we must discuss or can prevent. Its here and we just have to see the change as a possibility to make things happen in a new and better way. ”

### **Maritta Korhonen**

Head of Development

Ministry of Health and Social Affairs in Finland

maritta.korhonen@stm.fi

[www.stm.fi/en/frontpage](http://www.stm.fi/en/frontpage)



eksote

The South Karelia Social and Health Care District

[www.eksote.fi](http://www.eksote.fi)