Digital supervision

— sensors and/or camera technology in the home

THE GLOBAL GOALS

Nordic Council
of Ministers

Government Offices of Sweden
Ministry of Health and Social Affairs

region
västerbotten

Summary

Digital supervision is also referred to as sensor technology or passive alerts. The technology can consist of different sensors that alert if a person falls or is not where he or she is supposed to be at the moment. There are many variants and the technology is constantly evolving. The Norwegian National Programme for Personal Connected Health and Care has recommended that this service is implemented nationally. This recommendation is based on the benefits from the development phase of this service.

Main effects of the solution

The documented effects of the trials in the municipalities that participated in the development phase have been summarized in the First and Second Benefit Realization Reports with recommendations (Norwegian Directorate of Health, 2016 and 2017).

- **Savings.** More targeted visits from the home service. "Digital supervision" allows to reduce assigned service time. The services are more targeted by service recipients who are visited when they trigger an alarm and require help, where previously they had received visits as part of permanent supervision (Farsund municipality, 2016). Digital supervision can lead to a reduction in the growth of health and care services through the effective use of resources (Risør municipality, 2016). Digital surveillance that includes cameras also makes fewer visits in response to error alarms as it allows the service to log on and "see" what's going on. This provides potentially significant savings for the municipality while also increasing the security of both users and employees.

- **Increased quality of service.** For service recipients and relatives, less physical supervision means they are not woken up by service employees who are checking up on them. This means they will sleep better. In home-based services, it is difficult to arrive in sufficient time to prevent people from wandering around at night or falling. However, with alerts from the sensors fewer assistance is needed and users can bee found earlier than they would otherwise (Hansen & Moe, 2016).

- **Remain longer at home.** In Bergen municipality, users, relatives and employees believe that the technology helps users to remain longer at home with reduced service(Bergen municipality, 2016b). This has been confirmed by several examples from Lindås and Grimstad municipality, as well as several municipalities in the Lister region (Lyngdal, Hægebostad municipality and Flekkefjord, 2016). Lindås and Grimstad municipalities also report that patients with technology installed in their homes can return home earlier after hospital stays, providing savings in terms of less hospital bed occupancy following discharge and fewer short-term stays in nursing homes (Lindås municipality; Grimstad municipality, 2016).

- **Digital supervision in the habilitation service.** Decisions on digital supervision in the habilitation service must be made in accordance with Chapter 9 of the Health and Care Services Act. Several municipalities that have tried out digital supervision in the habilitation service believe this leads to less use of measures for preventing injury in emergency situations (Risør municipality, 2016; Farsund municipality, 2016). Farsund, Grimstad, Risør, Tvedestrand and Meråker municipalities have all seen the positive benefits of digital supervision and can point to less recruitment or a reduction in the number of night-time employees in the 24-hour manned care homes for the mentally retarded (Farsund, Grimstad, Risør, Tvedestrand and Meråker municipalities, 2016). Grimstad municipality has estimated that a night watchman

corresponds to 1.8 man years and a saving of NOK 1,370,000 per year (Grimstad municipality, 2016). Selbu municipality has been able to reduce 1:1 staffing per day for a user who has been given a door alarm (Selbu municipality, 2016)

Users

The users are elderly people living at home who receive services from the municipal home and care services. In the development phase of this service, 34 municipalities were nominated as development municipalities. Currently, 80% of the municipalities in Norway are included in activities that are supported by the National Programme for Personal Connected Health and Care.

Quotes/Testimonials

"The most important gains we see are a reduced need for and fewer home care visits, a reduced need for placement in institutional care, increased security, freedom, a sense of power and independence for users and relatives, a reduced burden on the service and fewer compulsory measures."
– Service operative, Larvik Municipality

Elaboration

Needs and challenges

We are facing a double demographic challenge. The ageing population's need for health and care services is increasing, while access to the workforce is declining. Digitalisation can be increasingly important for enabling municipalities to offer quality health and care services.

Solution and function

Digital supervision can consist of various sensors such as a sensor sheet that detects when a person is absent from bed, motion sensors in motion detection rooms, door alarms that issue an alert when they are passed and fall detectors that detect abrupt movements.

Services with sensor technology are often included in so-called security packages in which alerts/alarms/signals are sent to the service or the municipality's response service. These can also be combined with a camera for image transfer so that the response service can log in at the agreed time or image transfer can be activated in the event that an alarm is triggered, resulting in the required measures.

Preparation

To ensure service volume, an important task is standardisation in order to ensure that personal connected health and care is implemented in Norway on the basis of internationally accredited standards.

Other essential prerequisites to be solved to ensure the volume and success of this kind of service include good systems for the response service, procurement practice, integration of patient record systems, changes in mindset and, most of all, solutions that meet the users' needs.

Implementation

The Norwegian Directorate of Health, together with the Norwegian Association of Local and Regional Authorities (KS) and the Norwegian Directorate for eHealth run the National Programme for Personal Connected Health and Care (NVP). The overall goal of this programme is to ensure that personal connected health and care becomes an integral part of health and care services by 2020. The objective is to meet the municipalities' information and knowledge needs in order to facilitate broad use of welfare technology solutions.

From 2013 to 2016, 31 municipalities were included as development municipalities in the programme. Currently, in the escalation phase, 80% of the municipalities in Norway are engaged in the programme. The NVP is providing a wide range of implementation tools and support to the municipalities engaged in the programme.

The tools and support offered by the programme comprise:

- National Recommendations
- Guidelines for service innovation and benefits realization management
- Guidelines for implementation: Roadmap and quick guide
- Courses in "Velferdsteknologiens ABC"
- Process support
- Conferences, workshops, seminars

Since 2013, digital supervision or various individual sensors have been tried out in the Lister region, Østre-Agder, the Værnes region, Vestre Toten, the southern counties, Bergen, Tromsø, Skien, Stord, Larvik and Lindås municipalities. From the early trial period until the present time, the municipalities appear to have gained increasing benefits. The service seems to be particularly relevant to people with cognitive impairment in order to prevent them from "walking" at night, in both an institutional-based care and a home-based services setting, as well as reducing the need for one-man staffing in the habilitation service.ing, battery replacement).

Economy

The price varies depending on the specific technology chosen. Cost-saving estimates have been made in some of the development municipalities. These are described under Effects.

Follow-up/monitoring

In order to scale the solutions in operation, in 2016 the development municipalities worked systematically on acquiring technology solutions, organizing the reception of alerts and implementing good routines for training, follow-up and adaptation of technology solutions.

The municipalities have also worked systematically on profit planning, as well as identifying good measurement indicators for welfare technology, evaluation and documentation.

From 2017, the NVP programme entered the dissemination and escalation phase. The transition to operational phase can be critical. For some municipalities, the transition will be greater than for other municipalities as they have chosen different ways of implementing the new services. Some municipalities have chosen to utilise the technology solutions and set up the organization, adapted and further developed the service as more service recipients arrived. Others have chosen to set

up and prepare the service for a high number of users before deploying the technology, which has required a lot of advance work. Regardless of which approach the municipalities have chosen, it is important that the transition to ordinary operations is considered early in the process.

Learning and tips

In the development phase of the national programme, the municipalities have worked systematically on project management, service development, evaluation and documentation work, gaining expertise and general knowledge of personal connected health and care/welfare technology. These municipalities now have valuable expertise regarding opportunities and utility for end users, their relatives and the service as a whole.

Further information

- Roadmap for service innovation »
- Quick guide to welfare technology »
- About digital supervision at Helsedirektoratet.no »
- Profit Realization Reports - National Welfare Technology Program »
  (PDF reports available for download)

Context

The NVP programme in Norway emphasises the realization of the effects, depending on the context and the individual municipality's service. Different municipalities will have a different potential for savings and the benefits in one municipality will not be transferable to another municipality utilising the same technology. This relates to how health and care services are organized, as well as resources and demographics. Every municipality must identify its own potential to deliver better and more efficient services.

If you want to succeed in introducing welfare technology, the municipality must succeed in changing the way services are delivered. Welfare technology must also be seen in the context of other user-oriented services such as everyday exercise and everyday rehabilitation, where relevant (health and the Ministry of Care, 2015). It appears that the municipalities that adapt the technology to their existing service have the greatest potential of gaining major benefits from welfare technology.