



## Recommendations for response services for security-creating technologies

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# PREFACE

*The Norwegian Directorate of Health hereby makes recommendations for receiving and responding to alerts from security-creating welfare technology solutions to municipalities and other suppliers.*

*Through RNB 2013 (Prop.149 (2011-2013)), the Storting established «National program for development and implementation of welfare technology 2014-2020». The national initiative's main objective is to meet the municipalities' need for information and knowledge to facilitate the widespread use of welfare technology solutions.*

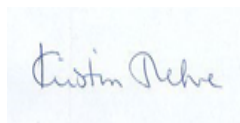
*The recommendations in this document are based on the sum of experience gained and knowledge summarized in a report. It has been prepared by a broad-based working group appointed by the National Program for Welfare Technology and in addition based on the Norwegian Directorate of Health's internal assessments.*

*This report launches two models:*

- *Response center service - a center based on the model of "call center" as many of today's professional actors run the service*
- *Direct response service - where alerts are managed using technology directly to other defined roles in the health and care service (home service, nursing home, relatives).*

*The assessments given are recommendations. Municipalities and others are free to choose whether they want to follow the Health Directorate's recommendations.*

Oslo, November, 2016.



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# 1 INTRODUCTION

This document is aimed at municipalities that need to consider ways to organize the reception of and respond to alerts from digital, security-creating solutions.

The National Program for Welfare Technology is a targeted initiative to further develop health and care services using various technological solutions and products that are intended to support and strengthen users' safety and security. Welfare technology will enable increased self-help, co-determination and quality of life.

The transition from analogue to digital welfare technology solutions will open up a whole new space of opportunity - both related to which events technology can register, how the service provider can communicate with the service recipient and how equipment is monitored and controlled. The digital development with constantly new innovations and products gives the municipalities the opportunity to cover the health and care needs of the future in new and better ways. It is therefore recommended to see this report together with report IS-2534 from the Directorate for e-Health, ["Recommendations related to technical requirements for security-creating technology"](#).

Through the national welfare technology program, the Norwegian Directorate of Health recommends that the municipalities actively use welfare technology with a focus on service innovation, implementation and realization of benefits. Reference is made here to the recommendations on technology areas that the Norwegian Directorate of Health has published and will publish in the future.

KS completed in 2014<sup>1</sup> a survey on municipalities' use of welfare technology solutions. The municipalities replied that the solutions in use are security alarms, door alarms, warning and location technology, fall alarms, security packages with sensors, electronic medication support, electronic door locks, digital surveillance, robot vacuum cleaners and medical distance monitoring. There is variation in the degree to which the solutions are an integral part of the service offer to the municipalities or only pilot projects.

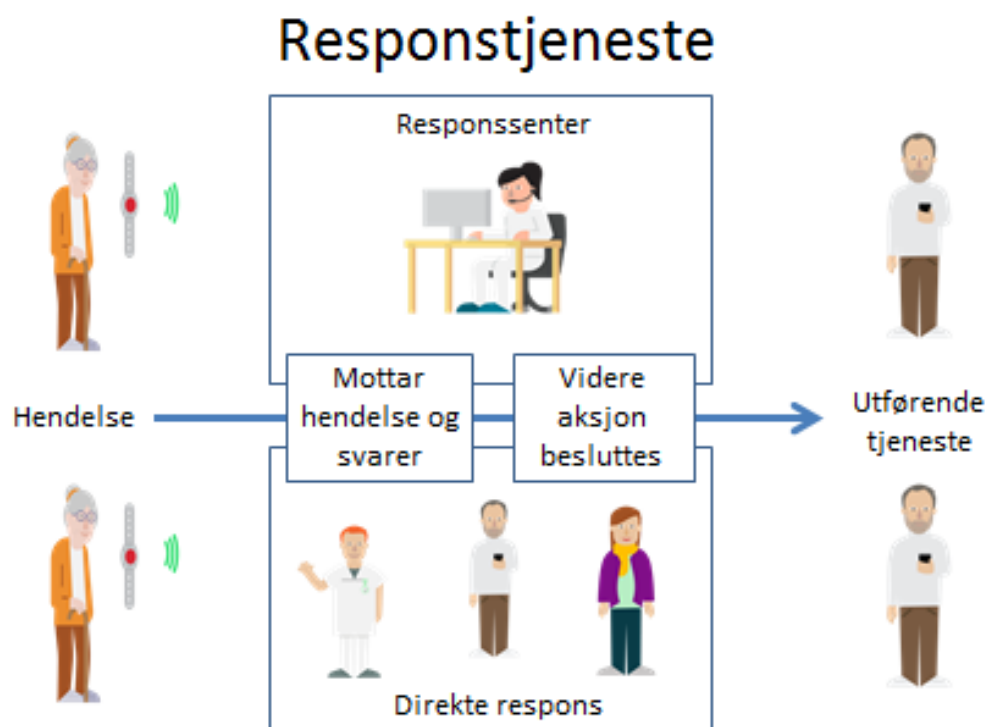
Parts of the welfare technology will only give signals and reminders to users themselves or the user's immediate environment, but many of the welfare technology solutions will require a response from

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<sup>1</sup> Hoen & Tangen (2014): Use of welfare technology in the municipalities. Survey conducted by KS in 2014

an actor outside the user's immediate environment. This report deals with organization and recommendations on requirements for quality, competence and dimensioning that the municipalities must consider in their planning of future response services for welfare technology solutions.

### The Response Service



This report launches two models for a response service:

- Response center - a center based on the model of "call center" as many of today's professional players run the service
- Direct response - where alerts are directed directly to other defined roles in the health and care service (eg home-based services, nursing home care, relatives).

Today's response service mainly consists of receiving alerts from security alarms and handling them. In the future, the service will have to deal with several service recipients and each user will probably receive health and care services where technology is a natural part of the service to a greater extent than is the case today. This entails increased complexity, which means that there is a need to organize and dimension these services in a different way.

than today's service. It must be possible to establish services with sufficient competence aimed at different user groups, e.g. people with somatic diagnoses, mental health challenges or in need of follow-up due to other reasons. The response service must to a greater extent ensure user participation and follow up individual adaptations both in relation to technological solutions, as well as involvement and division of labor between relatives, volunteers and service providers.

In order to handle the future complexity, as well as to ensure equal services to the inhabitants, requirements must be set for quality, competence and soundness in the response service.

*Response service is a service that receives, assesses, documents and responds to alerts from welfare technology solutions used by the service recipient.*

## 1.1 National Welfare Technology Program

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The National Welfare Technology Program is assigned a welfare technology assignment given by the Ministry of Health and Care Services to the Norwegian Directorate of Health and the Norwegian Directorate for e-Health. As of June 2016, the welfare technology program manages four national initiatives:

- Security and mastery at home. Main goal: Contribute to people gaining greater security to be able to live longer at home
- Distance follow-up of people with chronic diseases. Main goal: Give people with chronic diseases a better opportunity to master their own illness
  - o Be He @ lthy - Be Mobile. Main goal: Contribute to WHO world goal of 25% reduction of early deaths from non-communicable diseases will be achieved by 2025. Measures are included in the distance follow-up assignment.
- Development and testing of technological tools for social contact. Main goal: Counteract loneliness and maintain contact among the elderly and relatives using technology
- Support for leisure activities for children and young people with disabilities. Main goal: Contribute to children and young people with disabilities being able to more easily participate in and master leisure activities with the help of technology

## 1.2 National recommendations

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The Norwegian Directorate of Health and the Norwegian Directorate for e-Health have already given and will in the future make national recommendations in the area of welfare technology. The recommendations are used as a basis



the dissemination work of the welfare technology program, which for security technology is planned to start in 2017.

The first recommendation was published in the autumn of 2014<sup>2</sup> where the Norwegian Directorate of Health recommended that the municipalities start the transition from analogue to digital security alarms. The transition to digital solutions is a prerequisite for being able to utilize the opportunity space that welfare technology represents for the health and care sector. It was further recommended that the municipalities include mobile digital security alarms in their service offerings. The recommendations also include legal clarifications in relation to the Act on municipal health and care services etc.

The first profit realization report with recommendations was published in January 2016<sup>3</sup> and builds on experiences from the developing municipalities within completed trial areas. Based on preliminary experiences and benefit analyzes, the Norwegian Directorate of Health recommends that the municipalities acquire and include the following technology areas, in addition to digital security alarms, in their service offering:

- Alert and location technology (GPS)
- Electronic medication support
- Electronic door locks (e-lock)

Recommendations related to other technology areas within security-creating technologies is expected to be available in December 2016. The Norwegian Directorate of Health will make final recommendations related to medical distance follow-up when ongoing testing activity has been completed and summarized, probably at the turn of the year 2018/2019.

### 1.3 Background

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Since 2013, the national program for welfare technology has had security-creating, welfare technology solutions for testing in selected municipalities. Experiences and documentation have been obtained from these trials about how notifications are received and what kind of response services the municipalities use.

Some findings from the survey in 2014 are that the municipalities are awaiting government guidelines and standards related to receiving an increasing volume of alerts from security alarms and other security-creating, welfare technology solutions. There are different practices in the municipalities with the use of home-based services and the emergency services as respondents and there is a great burden on the practitioners in the home services. Different and lack of use of statistics prevents effective planning and makes the municipalities' decisions challenging.

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<sup>2</sup> Norwegian Directorate of Health (2014): IS-2225 « *The Norwegian Directorate of Health's recommendations in the area of welfare technology* »

<sup>3</sup> Norwegian Directorate of Health (2016): IS-2416 « *First gain realization report with recommendations - national welfare technology program* »

The program has therefore provided for the preparation of a report proposing recommendations for response services to welfare technology in the health and care service. A broad-based working group has discussed:

- Resource use in relation to scope of users, quality requirements and competence requirements
- The British Telecare Service Association <sup>4</sup> is a non-profit organization for Technology Enabled Care (TEC) and covers both Telecare and Telehealth. It has been assessed whether part or all of the TSA's framework and their "Integrated Code of Practice" are suitable and available for Norwegian response services.

## 1.4 Delimitation

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The report is limited to security and coping technology. Assessments on which this report is based are limited to technologies that enable people to feel safe and given the opportunity to live longer at home (security-creating services).

The welfare technology program does not currently have sufficient knowledge to say how medical distance follow-up will affect the response service in the future. Medical distance follow-up of people with chronic diseases is ongoing as a trial in four counties with 4-500 users. This trial is offered as a new, municipal health service, based on the patient's self-treatment plan. The patient / user reports answers to questions and their own measurements at individual, agreed times daily and / or weekly, mainly within normal, weekly working hours. The response service is organized differently in all projects. The effect study is expected to contribute relevant and new knowledge. There are also legal and financial challenges associated with medical distance follow-up that are not discussed in this report.

The government has appointed a separate expert committee to assess the policy on assistive technology. The committee will submit its recommendations at the turn of the year 2016/2017. This report therefore does not include aids provided by the NAV Assistive Technology Center.

## 1.5 The work

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### 1.5.1 Working group

In 2015, the National Program for Welfare Technology appointed a working group composed of representatives of market participants that provide response services today, municipalities that have

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<sup>4</sup> <https://www.tsa-voice.org.uk/>

experience with welfare technology and response center, National Competence Center for Emergency Medicine (Nklm) and representatives from KS, the Directorate for e-Health and the Norwegian Directorate of Health. Service recipients, relatives and interest groups have not participated in the working group.

The group has had the following composition:

Thor Steffensen (Directorate for e-health - leader of the working group), Kirsti Fosslund Brørs (Trondheim municipality), Torge Børstad (Værnes region), Kjersti Linneberg (Kongsberg region), Ståle Sjaavaag (Risør municipality), Ann-Kristin Smilden (Bærum municipality), Ulf Harry Evensen (Fredrikstad Municipality), Inger Helene Larsen (Bergen Municipality), Siri-Linn Schmidt Fotland (National Competence Center for Emergency Medicine), Arvid Bakken (Trygghetscentralen AS / Doro Care), Geir Lægreid, (Aleris Omsorg Norge AS), Marit Hagland (Safemate AS), Kristin Standal (KS), Even Klinkenberg (Norwegian Directorate of Health), Jan Magne Linnsund (Norwegian Directorate of Health), Kristine Brevik (Norwegian Directorate of Health) and Lasse Frantzen (Norwegian Directorate of Health).

The work of assessing the legal framework for the organization of response services has been carried out by lawyers in the Norwegian Directorate of Health.

### 1.5.2 Knowledge base

In connection with the work with assessments regarding response services, the Norwegian Directorate of Health has had two external reports prepared:

- 1) « *Organization of alarm reception in Norway and abroad. Mapping and recommendations* » delivered by PA Consulting Group Norge AS in October 2014.
- 2) « *Organization and dimensioning of response center services* » Provided by PA Consulting Group Norge AS in September 2016.

These reports can be downloaded from the Norwegian Directorate of Health's website under the theme page for welfare technology. A literature search has been conducted to find relevant knowledge about response services and the security-creating services of the future. The two most relevant reports found are:

- 1) "*Response center services in the health and care service: Needs and future images. Part 1 and 2.*" published by SINTEF ICT and the University of Agder in 2016
- 2) "*The security alarm of the future: Knowledge development for functional content in the future security alarm*" published by SINTEF Technology and Society in 2016

These reports, in addition to a needs assessment made in Bærum municipality, the working group's total experience and the Norwegian Directorate of Health's assessments, form the basis for the recommendations in this report.

There is currently limited experience with response services for more than security alarms from a broad market, so the working group's own experiences have been given great weight. It is demanding to find specific and directly transferable literature related to the organization and operation of response centers. International literature largely deals with the organization of security alarms or distance follow-up, preferably in a more diagnostic and therapeutic context. The use of a wider range of welfare technology is rarely mentioned for anything other than smaller projects.

## 1.6 Welfare technology and the response service

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In order to be able to explain what a response service is, one must first see the connection between welfare technology and the need for a comprehensive, coherent service to the inhabitants. Below is therefore a description of key concepts and standard events in the event of notification from a security-creating technology.

### 1.6.1 Welfare technology

The definition of the term welfare technology follows from NOU 2011: 11 «Innovation in care»:

*"Welfare technology means first and foremost technological assistance that contributes to increased security, safety, social participation, mobility and physical and cultural activity, and strengthens the individual's ability to manage themselves in everyday life despite illness and social, mental or physical impairment. functional ability. Welfare technology can also function as technological support for relatives and otherwise help to improve accessibility, resource utilization and quality of service provision. Welfare technology solutions can in many cases prevent the need for services or hospitalization »*

### 1.6.2 Response Service

The following definition is used as a basis for the term *response services* in the health and care sector:

*Response service is a service that receives, assesses, documents and responds to alerts from welfare technology solutions used by the service recipient.*

The response service shall ensure that service recipients who use welfare technology receive advice and guidance and register, prioritize and, if necessary, implement the necessary and effective follow-up of the notification. The response service must not be confused with emergency centers and emergency medical services

communication centers (AMK) which are regulated in the emergency medicine regulations<sup>5</sup>, Ref Chapter 2

### 1.6.3 Execution service

In order to be able to follow up people who have welfare technology services, one must have an executive service. The following definition is used as a basis:

*Executing service is a service that assists the service recipient when the response service believes there is a need for assistance where the service recipient is located.*

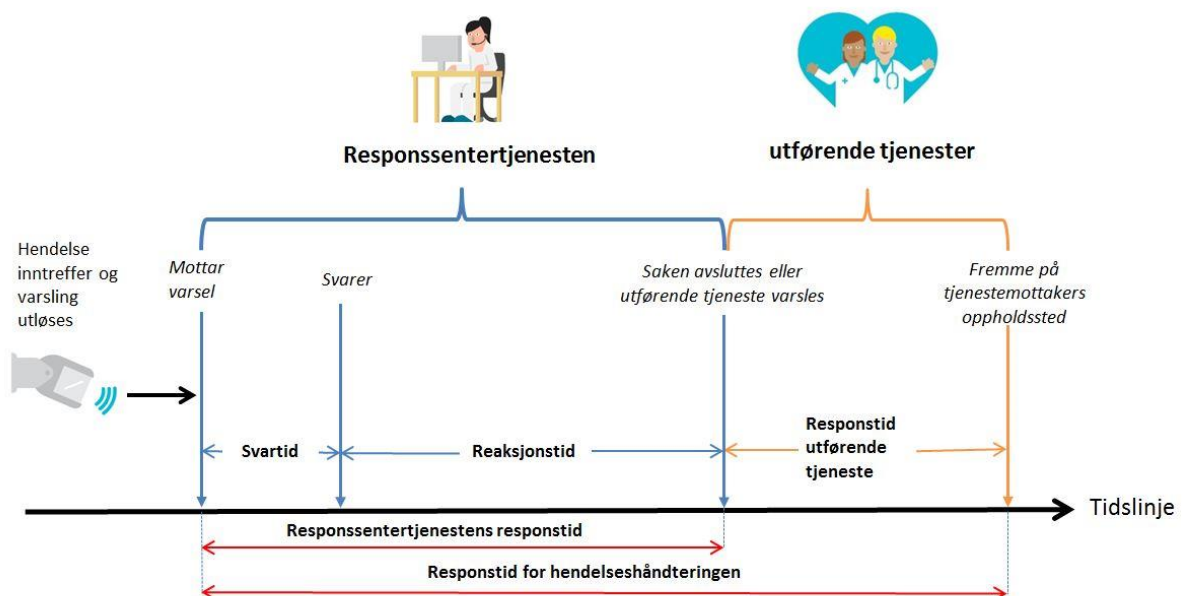
Executing service can, for example, be home nursing / home service or other service providers with whom the municipality has a service or collaboration agreement.

Relatives or other volunteers can also, by agreement with the municipality, take care of assistance needs for the service recipient, but they will not be part of the municipality's service offer. In such a situation, the municipality allows the relatives to use the municipality's infrastructure.

### 1.6.4 Course of events

In the illustration below, the response service is placed in the course of events for security-creating services.

Response services for welfare technology solutions will mainly have the following sequence of events:



For response services for welfare technology, the discussion in this document is limited to the timeline above.

<sup>5</sup> Regulations on requirements for and organization of municipal emergency care scheme, ambulance service, medical emergency service, etc.

## 2 FRAMEWORK CONDITIONS FOR RESPONSE SERVICE

### 2.1 Introduction

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A response service receives, assesses, documents and responds to alerts from welfare technology solutions at service recipients. A response service under municipal auspices handles alerts from welfare technology solutions among the municipality's residents.

The municipalities are not obliged to offer welfare technology solutions to their inhabitants, and a response service is therefore not a statutory task either. However, if the municipality chooses to offer welfare technology solutions, such as security alarms, it must also have a system for receiving and handling the alerts. The municipality can choose to let a response service receive the alerts, and in this chapter we review legal provisions that are relevant to the planning of and the activities of the response service.

### 2.2 Is the response service a health and care service?

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The Health and Care Services Act applies to health and care services offered or provided by a municipality or by private individuals who have an agreement with a municipality<sup>6</sup>. Whether a welfare technology solution is a health and / or care service therefore determines whether the law applies to the response service that receives and follows up on alerts.

The question must be considered specifically for the individual technological solution the municipality wants to offer to the inhabitants. Some security-creating services will obviously not be health and / or care services. An example of a non-health / care service is a fire alarm. But a common feature of welfare technology solutions is that the content of the service is determined on the basis of how it is used. Security alarms can, for example, be one of several measures that are necessary for sick elderly people to stay at home, or it can be an offer for anyone who is a little anxious about being alone. The municipality's purpose in offering the solution to one of its

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<sup>6</sup>[Health and Care Services Act § 1-2](#)

inhabitants is therefore decisive for whether it is a health and / or care service or a pure service service.

A response service will thus be part of the municipality's health and care services as long as the center receives alerts from technology that the users have been assigned as part of the municipality's health and care services. Then the Health and Care Services Act and other regulations that regulate health services apply.

It must be assumed that parts of the business of a response service for security-creating technology will always be considered part of the municipal health and care service, and the rules discussed below apply to this part of the business.

If the response service also provides services to the inhabitants as part of the municipality's general service offer, other rules apply to that part of the business. When a citizen receives a pure service offer, it is the agreement they have entered into that governs the content of the service and what rights and obligations the municipality and the service recipient have, in the same way as when people buy services from a private actor.

### 2.3 Requirements for sound services

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The Act on Municipal Health and Care Services etc. stipulates in § 4-1 that municipal health and care services must be justifiable and that the services are arranged so that:

- The individual patient or user is given a comprehensive and coordinated health and care service offer
- The individual patient or user is given a dignified service offer
- The health and care service and personnel performing the service are able to comply with their statutory duties and
- Sufficient professional competence is ensured in the services

It is the municipalities themselves who assess, ensure and follow up that the services they offer are justifiable.

The due diligence requirement is rooted in recognized professional knowledge, professional guidelines and universally valid societal ethical norms. The content of the due diligence requirement thus changes in line with the development of professional knowledge and changes in value perceptions.

When establishing a service offering of welfare technology solutions and response services, the municipality must take the current situation as a starting point in order to establish a sound service. At the same time is

it is necessary to take into account expected population development, development in service offerings, user expectations, etc. in planning and dimensioning the service.

Municipalities that plan and possibly procuring response services must consider what are the critical factors they must require to ensure good quality and sound response services<sup>7</sup>. For example, it will be relevant to set requirements for staffing, competence, systems for receiving and handling alerts and for response time. What specific requirements the municipality must set will i.a. depend on local conditions and on which user groups are relevant for the offer.

If the response service also provides services that are not health and care services, the requirements for the response service will follow from the agreement with the users.

## 2.4 About the allocation of services

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According to the Patient and User Rights Act, patients and users have the right to necessary health and care services from the municipality<sup>8</sup>. The decision to provide health services to a patient is a clinical assessment, and the Public Administration Act's case processing rules for individual decisions do not apply.<sup>9</sup>

What the measure entails, that the patient consents, what information is given, etc., is documented in the patient's medical record.

For decisions on municipal health and care services that are covered by the Health and Care Services Act § 3-2 no. 6, the rules of the Public Administration Act nevertheless apply, and the municipality shall make a decision on the allocation of the service. This includes home health services and personal assistance, including practical assistance and training. A welfare technology solution can constitute a "health service in the home" or "practical assistance", and in that case the municipality must make a decision on allocation. What decides whether a decision is to be made or not is whether the alternative to the technological solution is a service mentioned in § 3-2 no. 6. For example, that the home service must come by a few times a day if the user does not have a security alarm.

What the service entails, including the role of the response service, should in that case be described in the decision.

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<sup>7</sup>IN [regulations on management and quality improvement in the health service § 6](#) there is a list of different factors that the municipality must take into account when planning

a service. The regulations apply from 1 January 2017.

<sup>8</sup>[The Patient and User Rights Act § 2-1 a.](#)

<sup>9</sup>[The Patient and User Rights Act § 2-7](#)



## 2.5 Documentation of the business

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The Health Personnel Act applies to health personnel and to personnel who provide health and care services in accordance with the Health and Care Services Act. <sup>10</sup> Chapter 8 of the Health Personnel Act on the obligation to document requires the provider of health care to document relevant and necessary information about the patient and about the health care in the patient record. The documentation obligation under the Health Personnel Act only applies to personnel who provide services that are to be regarded as health care <sup>11</sup>.

In a response service, there will thus be special requirements for documentation of the activity if health care is provided, for example if the recipient of the notification provides specific advice or guidance on health that is individually tailored to the user and based on information from the user or a notification from a welfare technology solution. In these cases, health care must be documented in the patient record.

If the response service provides care services, the personnel do not have a duty to keep records. In most cases, however, it will be necessary for the municipality to be able to document that the services provided to the users are justifiable in accordance with the Health and Care Services Act. Thus, the business must still be documented in a case processing system, for example which services the individual has received a decision on and the content of the services.

If the response service also provides services that are not health and care services, the need for documentation will have to be seen in connection with the agreement entered into with the user.

## 2.6 Processing of personal data

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In connection with the use of welfare technology equipment, a large amount of personal information and health information is generated and processed by one or more actors.

A basic principle is that the person who processes personal data must have a processing basis, ie a legal basis for collecting, storing and handling the information. For health information, one must have legal authority, for personal information that is not sensitive, the consent of the individual is a sufficient basis for processing.

For a response service, it must be considered whether the information is received and generated whether the individual service recipient is health information or not. Treatment of

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<sup>10</sup> Cf. [The Health and Care Services Act § 2-1](#)

<sup>11</sup> Cf. [regulations on the application of the Health Personnel Act](#) There is no obligation to keep records for services such as practical assistance in the home, personal assistance, support contact or relief services, unless the personnel providing the service are health personnel and perform service actions that fall within the definition of health care.

health information is further regulated in the Health Personnel Act, the Act on the processing of health information in the provision of health care (the Patient Records Act), and the Personal Data Act. For information that is not health information, the Personal Data Act applies.

*What is health information and what is not*

The Patient Records Act defines health information as confidential information pursuant to section 21 of the Health Personnel Act, and other information on health matters or of significance to health matters that can be linked to an individual person. In practice, all information that may say something about health conditions will be considered health information, provided that the information has been exchanged for the purpose of providing health and care services. Patient information, ie information generated by the provision of health care, will be health information.

Security-creating technology that is used as part of care services will also generate information. Information from the provision of such care services will often contain information about individuals' health because a diagnosis or health challenges are often the reason for awarding care services. Although such information will contain health information about users, the information has been created as a result of the provision of services that are not health care, and in principle they are not patient information that requires a record.

Information from welfare technology must therefore be considered specifically. When the municipality offers security alarms to its residents, they must consider what need the alarm should cover in each individual case. If an alarm can be said to be part of the municipality's offer of emergency medical services and thus generate health information, information about the alarm must be stored in the patient record system and the information is confidential. If an alarm is to cover a need for security or care and is not justified in a health situation or illness, the information will still be confidential, but there is no obligation to keep records or access to store the information in the patient record system. If the alarm has both a health and a care purpose, it can be difficult to distinguish between health information and welfare information,

An offer of a bedwetting sensor will usually be a care offer from the municipality, and not an offer as part of medical follow-up. Data from the sensor will therefore, as a general rule, be regarded as information that is not subject to record keeping, even though the information in isolation may have the character of a health information. However, the information may be important in assessing the need for health care for the user in question, and when the municipality collects the information, it means that it is obliged to make assessments of whether the offer to the individual is justifiable or whether there is a need for other types of services. such as medical follow-up.

Information from welfare technology solutions that are not a municipal health and care service can only be processed with the consent of the service recipient himself and within the purpose for which they were collected.

#### *Duty to keep records and access to health information*

Relevant and necessary health information must be recorded in the patient record. Duty to keep records<sup>12</sup> is the legal basis for processing necessary and relevant health and personal information. There is no requirement for separate consent from the patients. The Journal Regulations<sup>13</sup> regulates in more detail what information can be documented in the patient record.

Healthcare professionals in a company must have access to necessary and relevant health information in the patient record when they have an official need for the information.<sup>14</sup> Others should not have access<sup>15</sup>, and the company must have an overview of who has had access to and received health information about the individual patient<sup>16</sup>.

#### *Processing of other information*

In the municipality's case processing system, it will be documented that the service recipient has been assigned a health and care service, with further justification. The municipality must also have routines for documentation, so that necessary information about the patient / user and the service provided to the individual is recorded in a responsible manner, and is available to personnel with service needs. The response service is part of the service the user has received a decision on. The response service must therefore also have systems for logging notifications and any follow-up so that the business is documented and the business can be evaluated with a view to soundness and quality.

## **2.7 The response service and the relationship with the emergency medical services**

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The municipalities have a duty to offer emergency care, round-the-clock medical emergency services and medical emergency services.<sup>17</sup> This responsibility is elaborated in the emergency medicine regulations, which, among other things, set more detailed requirements for the organization and staffing of emergency centers.<sup>18</sup> The regulations also regulate the VET centers and the ambulance service. There are special rules for the emergency medical services because they are an emergency service that is to take care of the population's need for immediate help and emergency medical services in situations where it is not

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<sup>12</sup> [The Health Personnel Act §§ 39 and 40](#)

<sup>13</sup> [Regulations on patient records](#)

<sup>14</sup> [Health Personnel Act §§ 25 and 45](#)

<sup>15</sup> [Health Personnel Act § 21a](#)

<sup>16</sup> [Patient Records Act § 18](#)

<sup>17</sup> [The Health and Care Services Act § 3-2 no. 3](#)

<sup>18</sup> [Regulations on requirements for and organization of municipal outpatient care scheme, ambulance service, medical emergency service, etc. § 13](#)

can be scheduled for. The emergency medical services must therefore fulfill a completely different function than the response service, which must receive alerts from welfare technology solutions from service recipients. This is particularly clear for the VET centers, which are part of the specialist health service and which are to handle inquiries about emergency medical assistance.

The emergency center will handle inquiries for immediate help, and will be staffed 24 hours a day with health personnel. In principle, it can appear to be a good use of resources to use the emergency center also as a response service for welfare technology solutions. The purpose of the emergency center is to be part of the medical emergency, and this emergency must not be weakened by adding other tasks to the emergency center. Therefore, it is necessary to distinguish organizationally between the emergency center and the response service. The two services do not have overlapping functions, tasks or responsibilities, and different rules apply to the companies. They must therefore be organized separately and must have different routines and different documentation systems. The same person can therefore not have been on duty at the same time at both the emergency center and the response service.

If the response service receives notifications of the need for outpatient services, the notification shall be forwarded to the outpatient department for handling, cf. the emergency medicine regulations. The response service does not dispose of the emergency room resources, but can thus be a way into the emergency room. The emergency service is responsible for prioritizing its resources and must make an independent assessment of how it should follow up inquiries that come from the response center service.

# 3 TODAY

## SECURITY ALARM SERVICE

### 3.1 Today's organization of security alarm service

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At the end of 2015, 74,736 people received security alarm services from municipal health and care services<sup>19</sup>. In addition, there are probably somewhere between 1,200 and 2,000 people who buy such a service directly from private providers. Security alarms are not a statutory service. All the country's municipalities offer security alarm services either by performing the service themselves, in collaboration with other municipalities or through an agreement with a private provider, but with very different criteria for allocation. The response service for security alarms is the most competitive municipal health and care service. The three largest private players in the market perform the response service for half<sup>20</sup> of all security alarms offered by the municipalities. Today's response services mainly consist of serving calls from analogue security alarms.

In the reports of PA Consulting<sup>21</sup> and SINTEF / University of Agder<sup>22</sup> describes the current security alarm service. Response service and executive service are in the municipalities today organized in different ways, influenced by rules for the security alarm service in the individual municipality and demographics.

It is mainly the home care service, fire service, emergency service, private actor or nursing home / care home that receives and responds to the security alarms and travels out and provides assistance to the service recipient. Municipalities may also have one or more combinations of these schemes. In 2015, PA Consulting conducted a survey commissioned by Kristiansand municipality, to which 201 municipalities responded. The survey shows that it is most common to

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<sup>19</sup> SSB (2015), *Municipal health and care services 2014. Statistics on services and service recipients*. Report 2015/42

<sup>20</sup> Based on figures obtained from Doro Care AS, Aleris Omsorg AS and HT Safe AS.

<sup>21</sup> PA Consulting (2014), *Organization of alarm reception in Norway and abroad, surveys and recommendations*

<sup>22</sup> Svagård et al. (2016), *Response center services in the health and care service: Needs and future images*

organize the security alarm service either by using the home service as a response service (79), or by purchasing services from a private service provider (58)<sup>23</sup>.

The home services in the various municipalities experience that calls from the security alarm service, either as the first recipient of a notification or as a performing service, disrupt everyday work. This applies to both planned tasks, the ethical aspect related to disturbances when you are with another service recipient and there may be a risk of incorrect assessment and possibly incorrect treatment.<sup>24</sup>

### 3.2 Prevalence of security alarm services

It can be useful to get an overview of the prevalence of security alarm services in Norway. The average age of a security alarm service recipient is 85 years. The age distribution for the security alarm service is as follows:

- 1.6% is allocated to service recipients under the age of 50
- 4.4% are allocated to service recipients between the ages of 50 and 64
- 9.5% is allocated to service recipients between the ages of 65 and 74
- 10.4% is allocated to service recipients between the ages of 75 and 79
- 74.1% is allocated to service recipients 80 years or older

There are few municipalities in Norway that have over 1000 service recipients of security alarms per. 1/1/2016 There is no overview of the total number of response centers in Norway.

Number of security alarms	Number municipalities
1000+	8
500-999	15
100-499	150
0-99	255

Table 1 Number of municipalities distributed according to how many security alarms they have

### Coverage

The municipalities' offer of security alarms has been relatively constant since 2010<sup>25</sup>. In the EU, the coverage rate of security alarms is measured in relation to how many people receive such a service

<sup>23</sup> Svagård et al. (2016), *Response center services in the health and care service: Needs and future images*

<sup>24</sup> Svagård et al. (2016), *Response center services in the health and care service: Needs and future images*

<sup>25</sup> Figures taken from Statistics Norway, table 07790 F1 - country figures incl. Oslo. Recipients of security alarms at the end of the calendar year

population 65 years and older. If you use that measurement method as a basis and look at the coverage rate in Norway since 2010, it has been somewhat declining:

	2010	2011	2012	2013	2014	2015
<b>Number of recipients of communal security alarms by end of the year <sup>26</sup></b>	73,037	73,603	73,994	73,429	73,219	73,394 / 74,736
<b>Coverage in relation to the number of people 65 years or older <sup>27</sup></b>	9.8%	9.6%	9.4%	9.0%	8.8%	8.8% / 9.0%

Table 2 Number of recipients of security alarms and coverage for the age group 65 years and older.

Comments on figures for 2015: 10 municipalities have not reported IPLOS figures as of 31.12.15. Adjusted for these, there are 74,736 security alarms as of 31.12.15. Based on preliminary IPLOS figures as of 31.12.15, 74.1% of the security alarms are used by service recipients who are 80 years or older. In the period 2010-2015, the coverage ratio has decreased from 9.8% to 9%. We can therefore expect a reduction in the coverage rate also in the next few years since the number of younger older people will continue to rise, while those in the age group 80+ will still be relatively constant. Below is an overview of the coverage rate in the counties of inhabitants over the age of 80 and this varies from 23% in Hordaland to 49% in Sør-Trøndelag with an average of 33.9%. Part of the explanation for the large differences is that there are no common criteria for allocating security alarms in the municipalities.

County	Residents 80+	Security alarms	Coverage
<b>01 Østfold</b>	12,990	3,438	26%
<b>02 Akershus</b>	21,701	6,959	32%
<b>03 Oslo</b>	21,571 th most common	9,681	45%
<b>04 Hedmark</b>	11,121	3,529	32%
<b>05 Oppland</b>	10,185	3,921	38%
<b>06 Buskerud</b>	12,143	5,225	43%
<b>07 Vestfold</b>	11,269	3,067	27%
<b>08 Telemark</b>	8,686	3,437 th most common	40%
<b>09 Aust-Agder</b>	4,753	1,683	35%

<sup>26</sup> Figures taken from Statistics Norway, table 07790 F1 - country figures incl. Oslo. Recipients of security alarms at the end of the calendar year

<sup>27</sup> Figures taken from Statistics Norway, table 07459 - country figures including Oslo with population per 1 January. The coverage rate is calculated with the number of security alarms per 31.12.2010 in relation to the number of persons 65 years or older per 1 January 2011 and correspondingly for the other years.

<b>10 Vest-Agder</b>	7,526	3,194	42%
<b>11 Rogaland</b>	16,141	5,747 th most common	36%
<b>12 Hordaland</b>	21,871 th most common	4,962	23%
<b>14 Sogn og Fjordane</b>	6,037	1,830 th most common	30%
<b>15 Møre og Romsdal</b>	13,471	4,223	31%
<b>16 Sør-Trøndelag</b>	12,704	6,174	49%
<b>17 Nord-Trøndelag</b>	6,693	1,958	29%
<b>18 Nordland</b>	12,070	3,158	26%
<b>19 Troms</b>	6,589	1,785 th most common	27%
<b>20 Finnmark</b>	2,916	765	26%

*Table 3 By county distribution of security alarms for residents over 80 years of age. For further information on coverage rates, see the attached county-by-municipality overview.*



# 4 THE RESPONSE SERVICES OF THE FUTURE

## 4.1 The needs of service recipients

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Service recipients express a need to be independent and master everyday life <sup>28,29,30</sup>. To be met with respect and dignity is emphasized as important and the same applies to security in that there is someone who assists, which in turn triggers the alarm <sup>31,32,33</sup>. Service recipients and relatives express a need for relatives to be able to receive notification and thus contribute to supporting security and coping <sup>34,35,36</sup>.

Service recipients and relatives express that the health professional competence of those who respond to alerts from security-creating technologies is important for the security provided by the service. <sup>37,38</sup>. It has been identified that the user's experience of "being known" is more important than knowing the person responding in the response service <sup>39,40</sup>. It is emphasized that with today's technology, the time for service recipients is experienced from the time you press the alarm until you get in touch, as well as the time it takes before you get help, which is longer than it actually is due to lack of feedback and updates. <sup>41,42</sup>.

Many users want to be able to communicate in several channels (for example video) and that there are different ways to activate an alarm <sup>43,44</sup>. Users also express that the service should also be able to work outside the home <sup>45,46</sup>. Many also demand different types

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<sup>28</sup> Svagård et al. (2016), *Response center services in the health and care service: Needs and future images*

<sup>29</sup> Das et al. (2016), *The security alarm of the future, Knowledge development for functional content in the security alarm of the future*

<sup>30</sup> Bærum municipality (2015), needs mapping security services

<sup>31</sup> Svagård et al. (2016), *Response center services in the health and care service: Needs and future images*

<sup>32</sup> Das et al. (2016), *The security alarm of the future, Knowledge development for functional content in the security alarm of the future*

<sup>33</sup> Bærum municipality (2015), needs mapping security services

<sup>34</sup> Svagård et al. (2016), *Response center services in the health and care service: Needs and future images*

<sup>35</sup> Das et al. (2016), *The security alarm of the future, Knowledge development for functional content in the security alarm of the future*

<sup>36</sup> Bærum municipality (2015), needs mapping security services

<sup>37</sup> Svagård et al. (2016), *Response center services in the health and care service: Needs and future images*

<sup>38</sup> Das et al. (2016), *The security alarm of the future, Knowledge development for functional content in the security alarm of the future*

<sup>39</sup> Svagård et al. (2016), *Response center services in the health and care service: Needs and future images*

<sup>40</sup> Das et al. (2016), *The security alarm of the future, Knowledge development for functional content in the security alarm of the future*

<sup>41</sup> Svagård et al. (2016), *Response center services in the health and care service: Needs and future images*

<sup>42</sup> Das et al. (2016), *The security alarm of the future, Knowledge development for functional content in the security alarm of the future*

<sup>43</sup> Das et al. (2016), *The security alarm of the future, Knowledge development for functional content in the security alarm of the future*

<sup>44</sup> Bærum municipality (2015), needs mapping security services

<sup>45</sup> Das et al. (2016), *The security alarm of the future, Knowledge development for functional content in the security alarm of the future*

<sup>46</sup> Bærum municipality (2015), needs mapping security services

sensors and the possibilities for other design of the security alarms than today's traditional jewelry or watch <sup>47,48</sup>. Different types of sensors can provide opportunities to be more specific in the notification, such as a fall alarm <sup>49</sup>.

## 4.2 Expected volume of security-creating technologies

There is a clear expectation that technology can contribute to increased security and coping and contribute to users being able to live longer at home. Trials and follow-up research carried out under the auspices of the national welfare technology program support this and are summarized in publications from the program. The national recommendations to the municipalities to use welfare technology solutions also mean that the volume of security-creating technologies must be expected to increase. Use of technology must be expected to include new user groups. New services can create new usage patterns that are not yet experienced.

The projection below is based on the population group 80 years and older <sup>50</sup>. The coverage ratio for this group in Norway was 33.9% on 31 December 2015.

Year	Number of people 80+	Number of security alarms at 33.9% coverage
2015	220,437	74,736
2020	226,940	76,932
2025	266,983	90,507
2030	346,983	117,627
2035	403,812	136,892
2040	455,588	154,444

F ORVENTED GROWTH IN NUMBER OF RECIPIENTS OF SECURITY-CREATING TECHNOLOGIES FOR THE GROUP 80+

With more service recipients, and more types of technologies, the need for a different type of incident follow-up will increase. The need for support for urgency assessments is emphasized by M4Almo <sup>51</sup>.

<sup>47</sup> Das et al. (2016), *The security alarm of the future, Knowledge development for functional content in the security alarm of the future*

<sup>48</sup> Bærum municipality (2015), needs mapping security services

<sup>49</sup> Das et al. (2016), *The security alarm of the future, Knowledge development for functional content in the security alarm of the future*

<sup>50</sup> The population projection is based on Statistics Norway's table 10213 «Projected population by sex and age» and is based on alternative

MMMM.

<sup>51</sup> Svagård et al. (2016), *Response center services in the health and care service: Needs and future images*

## 4.3 Quality framework and standardization

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### 4.3.1 Different frameworks and standardization

Two frameworks have been identified and a standardization work that is relevant to consider for a Norwegian response service.

**The Norwegian Directorate of Health recommends:**

- It is not appropriate to introduce the TSA's framework in Norway at this time.
- French "Qualité de service en téléassistance" is not suitable for direct introduction in Norway.

### 4.3.2 TSA "Integrated Code of Practice"

TSA "Integrated Code of Practice"<sup>52</sup> is a framework for response services and provides some guidelines for response service solutions. Response services also include routines for installing and uninstalling welfare technology solutions.

Today, the framework is primarily based on analogous welfare technology solutions and has the main emphasis on technical specifications and detailed procedure descriptions. An audit work has been started to adapt the framework to a future digital everyday life and to a greater extent take in service perspectives - both response services and executive service. This is done, among other things, via a development agreement between the TSA and the authorities in Wales.

The framework is only available to the organization's members, who are both public authorities, municipalities, private service providers, non-profit service providers and the supplier industry. For the actors that are approved according to the framework, accreditation with a separate audit regime is required. The framework is used by many service providers in the UK.

A detailed assessment has been made of each module in TSA's framework and through visits to two service providers in the United Kingdom that use the framework, an assessment has been made as to whether this can be used in Norway. In some cases, large discrepancies were identified between the TSA's detailed procedures and established practice and culture in Norway. TSA's requirements also overlap with several requirements that are already in use in Norway, such as the Norm. TSAs

accreditation / approval regime is a key part of the framework. Such a regime will impose a lot of work on Norwegian municipalities and will probably not be feasible without legal authority. The Norwegian Directorate of Health has therefore concluded that it is not appropriate to introduce the TSA's framework in Norway at the present time.

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<sup>52</sup> Telecare and Telehealth Code of Practice <https://www.tsa-voice.org.uk/standards/telecare-code-of-practice>

#### 4.3.3 French "Quality of service in telecommunications assistance"

A quality standard for security alarms has been established in France (Qualité de service en téléassistance)<sup>53</sup>. The standard is voluntary and is based on a system with the conclusion of an agreement between the provider of the security alarm service and the user. The standard contains a terminology for the sector, the service recipient's rights, requirements for the various players in the chain and some parameters for measuring and improving the service. The Norwegian Directorate of Health has assessed that this is not suitable for direct introduction in Norway. National recommendations established on the basis of this report may, however, to a large extent constitute something similar for Norway.

#### 4.3.4 European standardization work

Work has been initiated to develop a European standard for digital security alarms under the auspices of CEN, where Standard Norway is the Norwegian coordinator (CEN / TC431 / SNK554). The work with technical specifications has been transferred to CENELEC from 2016. Work on the service chain has stopped in 2015. Further work is about to begin, with new management in CEN / TC 431 and several active countries, including France and the Netherlands. Norway has an active role in this work, both from the public and private sides.

### 4.4 Quality follow-up of the response service

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A quality indicator system has been established today for the primary and specialist health services for statutory services. The current security alarm service is not currently covered by this, but the Norwegian Directorate of Health considers it important to be able to follow up the quality of the services provided. By doing a systematic quality follow-up, the services are made more measurable and transparent, which in turn can contribute to more equal services.

**The Norwegian Directorate of Health's recommendations for quality requirements:**

- The response service must always be available
- A minimum of 95% of all alerts must be answered within 60 seconds.
- Lowest possible response time for performing services, requirements adapted to local conditions

#### 4.4.1 Especially about IPLOS

The municipalities currently report the number of security alarms to IPLOS. In the near future, this reporting will not provide a sufficient picture of the welfare technology services. It is considered necessary to initiate work to further develop the IPLOS register to cover expected developments in the area of welfare technology and ensure that municipalities and national

<sup>53</sup> Norme Française (2013): NF X 50-520: 2013-09 «Quality of service in telecommunications assistance. Version of 2013-09-F. ICS: 03.080.30

authorities are given access to necessary statistics and management information. It is also desirable that this is coordinated with the establishment of the Municipal Patient and User Register (CPR).

Security-creating services must ensure that the service recipient is given sufficient security and the opportunity to better master their own life situation and health. This requires that the response service is available and has clearly defined and predictable quality requirements. Below is a description of some measurement indicators that the Norwegian Directorate of Health recommends and what level these should be at. The measurement indicators must be considered in a holistic context.

Since security-creating services beyond security alarms are being introduced in the municipalities, the Norwegian Directorate of Health recommends starting with a few, selected measurement indicators. The need for further work with measurement indicators is emphasized to ensure a good quality follow-up of the services.

#### 4.4.2 Availability

The Norwegian Directorate of Health recommends that the response service for security-creating technologies be continued as a 24/7/365 service. The security alarm service is today a 24/7/365 service. 24/7 availability requires that there is a sufficient number of personnel at work and that the tools and applications that employees use to perform their tasks are available. This means that a response service with sound operations must have both organizational and technical readiness to operate soundly.

#### 4.4.3 Response time

The response service for security-creating technologies is a service offered to residents who in their own home will experience security, increased mastery and independence. It requires a predictable service where the service recipient can quickly get in touch with those who can provide assistance.

Response time is a measurement indicator that is important to ensure predictability and security through the service recipient quickly coming into contact with the response service.

*Response time is the time it takes from an inquiry being received until it is answered by a person in the response service.*

In some municipalities, the security alarm service is municipally operated, while other municipalities have exposed the service to a private player to competition. The municipalities that currently set a response time for the service have had a response time requirement that varies between 30 - 60 seconds. In comparison, the emergency centers have a response time requirement that 80% of all inquiries be answered within 120 seconds. This response time is authorized in the emergency medicine regulations. Nothing has been said about the time interval to be used as a basis for reporting. Most quality indicators in the Norwegian health service are often measured per term and on

on an annual basis, but it should be a goal that a measurement indicator such as response time must be able to be published on a daily basis.

The Norwegian Directorate of Health recommends the following requirements for response time: A minimum of 95% of all alerts must be answered within 60 seconds. This is in accordance with the TSA framework's quality indicator, which is also at a similar level. It is considered particularly relevant to look at other countries' quality indicators within the same type of service. The reason why a shorter response time is recommended than for the emergency centers is due to the fact that many of the service recipients have a level of function that indicates that they are unable to request assistance in other ways.

There will be a need for revision of this measurement indicator as new services are developed and new types of technology become available to citizens. With a more specialized technology, it will be possible to determine the urgency of the need to a greater extent and thus also differentiate the response time requirements.

#### 4.4.4 Degree of clarity for incidents

The task of a response service is to clarify a service recipient's situation related to an incident and to find out what type of assistance the service recipient needs. The degree of clarification depends on what competence and tools the response service has available. In the future, one must expect that this service will be able to use both audio, video and video. With the necessary expertise in this area, more service recipients will be able to get help from the response service without the need to travel to the service recipient. This becomes an important tool for reducing the burden on the home care service when the number of service recipients increases.

*Clarification rate is the percentage of incidents that are resolved by the response service without the need for follow-up of performing services. <sup>54</sup>*

Today's established response centers that have statistics on degree of clarity have a degree of clarity of between 75 and 90%. This includes both public and private actors.

As you gradually get more specialized technology, some of what is currently done manually will disappear as tasks. Then the degree of clarity will also decrease somewhat. The Norwegian Directorate of Health does not consider it appropriate to recommend a measurement indicator for the degree of clarity on the basis that it will vary based on which services can be offered in the years to come.

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<sup>54</sup> Events to be reckoned with are alerts and signals from security-creating technology. Pure technical alerts and signals are not considered incidents.

#### 4.4.5 Response time performing service

Based on the assessment made in the response service, it will be decided whether it is a performing service or travel to the service recipient.

*Response time performing service is the time it takes from the event is clarified in the response service until the service recipient has received the necessary assistance from performing service.*

If the response service is to be able to provide predictable and justifiable security services, requirements must be set for the performing service that travels to the service recipient. The differences in the municipalities in terms of, among other things, geographical and traffic conditions mean that it must be differentiated what the requirement should be in the various municipalities.

### 4.5 Competence

The transition from a pure security alarm service to several security-creating services that will handle a wide range of welfare technology solutions will create an even greater need for health professional assessments. Assessments related to medication support and falls are examples of this. Svagård etc.<sup>55</sup> write; *"The operator's ability to carry out the correct assessments and contribute to a comprehensive service is assumed to be primarily related to professional qualifications (competence), training, clear routines for the assessment process (triage) and access to information."* Systems that support the person's work, a professionalized response service with a solid professional environment, as well as a good and clarified course of service will be fundamental for the person in question to be able to utilize the competence he / she possesses.

**The Norwegian Directorate of Health's recommendations for competence:**

- The response service is served by personnel who can carry out correct assessments and contribute to a comprehensive and sound health and care service.
- At least one person on duty has relevant education at bachelor level Good
- qualities in oral dialogue and human understanding Writing and speaking
- fluent Norwegian and mastering English orally Mastering Sami where
- local needs indicate this
- Interpreting services must be used when needed

Today's practice in professional response centers is that the respondents have a minimum health professional education or equivalent. It is also practice that at least one of these has a three-year bachelor's degree, preferably a nurse. Today's response services emphasize the importance of employees having good relational skills. Personnel in the response service

<sup>55</sup> Svagård et al. (2016), *Response center services in the health and care service: Needs and future images*

must be able to meet the communication needs of the service recipients with regard to dialects and languages. This is important in order to provide an adapted service offer to immigrants and the Sami-speaking proportion of the population.

The response service staff must have sufficient competence to:

- Create security in dialogue with service recipient
- Maintain a high clearance rate through qualified assessments
- Provide an overall good professional environment that can take turns in difficult assessments

## 4.6 Competence development

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As previously described, the use of welfare technology as an integral part of the health and care service will place new demands on the response service. This entails requirements for competence beyond the pure health and care professional competence. The Norwegian Directorate of Health considers it important that further education and competence building are put into a system and followed up in a systematic way.

## 4.7 Sizing analysis

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**The Norwegian Directorate of Health recommends:**

- Minimum two people on duty at the same time for reasons of propriety, even with a low number of service recipients
- Major potential gains can be achieved by several municipalities collaborating on procurement of either a technical response solution or a fully staffed response service. A technical response
- solution that will serve several municipalities must be able to handle different variants of service setups.
  - o For example, that the alerts are managed in an intelligent way directly to home-based services, nursing homes or relatives

Alarm frequency, response time and response time affect the need for staffing in a response service. At present, it has been possible to obtain data on the expected alarm frequency, response time and response time from only a few municipalities. There is also little knowledge and experience of how new services and new technology will affect alarm frequency, response time and response time.

More people at work provide greater flexibility in handling different sequences of incidents, for managing personnel in the event of illness, for example, and for skills development. Short response time requirements require available respondents at all times. By having several people on duty



at the same time, the probability that everyone is busy will be reduced and the availability of the service for the inhabitants will remain high.

For reasons of prudence, two people are recommended on duty at the same time, even with a low number of service recipients. This soundness can be achieved by different types of organization, the individual municipality decides this itself. Two people on duty means an organization of approx. 10 man-years including management, at a 24/7 service every day of the year. In addition to these two on each shift, resources must be set aside for personnel and competence follow-up. Establishment of a service with a certain minimum staffing will increase the soundness of handling sick leave mv. and the establishment of a professional environment for the response service. Such a service of a certain size will have opportunities for flexibility and be able to adapt more quickly to new ways of delivering services, and thus be able to provide a wide range of welfare technology services.

The curves below have been prepared by PA Consulting and taken from the report from 2016. The curves show how alarm frequency, response time and response time affect the staffing needs of up to 10,000 users.

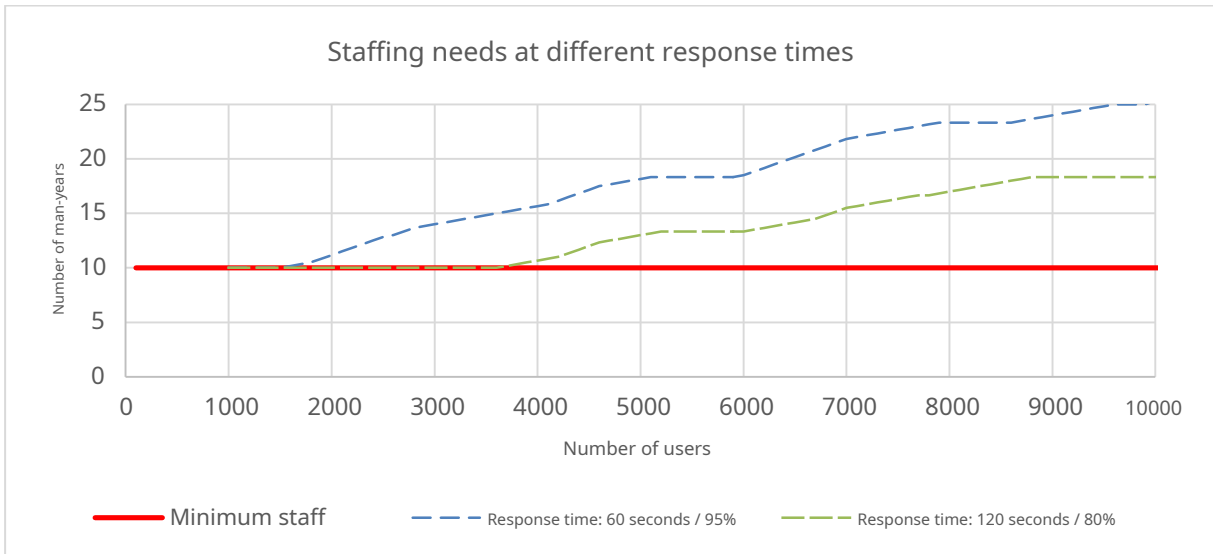
The following assumptions form the basis for the calculations <sup>56</sup>:

	Response time	Reaction time	Alarm frequency
<b>Staffing needs</b> at different response times	Variable	300 seconds	0.05 triggered alarm per day per user
<b>Staffing needs</b> at different reaction times	95% within 60 seconds	Variable	0.05 triggered alarm per day per user
<b>Staffing needs</b> by different alarm frequency	95% within 60 seconds	300 seconds	Variable

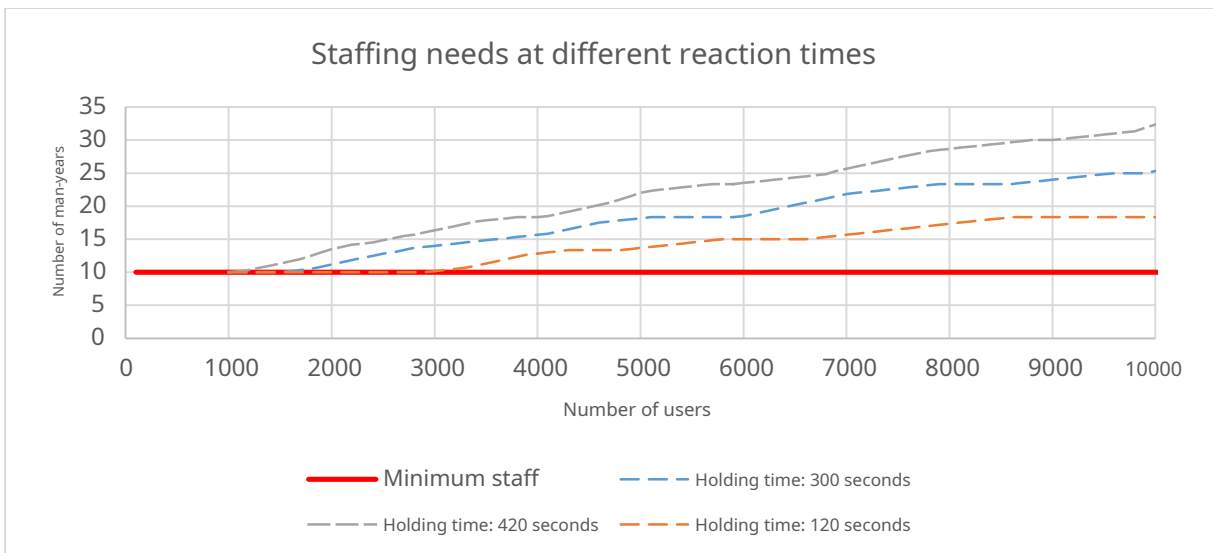
The red line in the graphs is the minimum staff required to ensure sound operation as described above.

For each of the graphs below, there is one variable that varies and two that are fixed. These graphs are only examples that indicate dependencies for dimensioning the response service and are not suitable for use for the individual municipality's own needs.

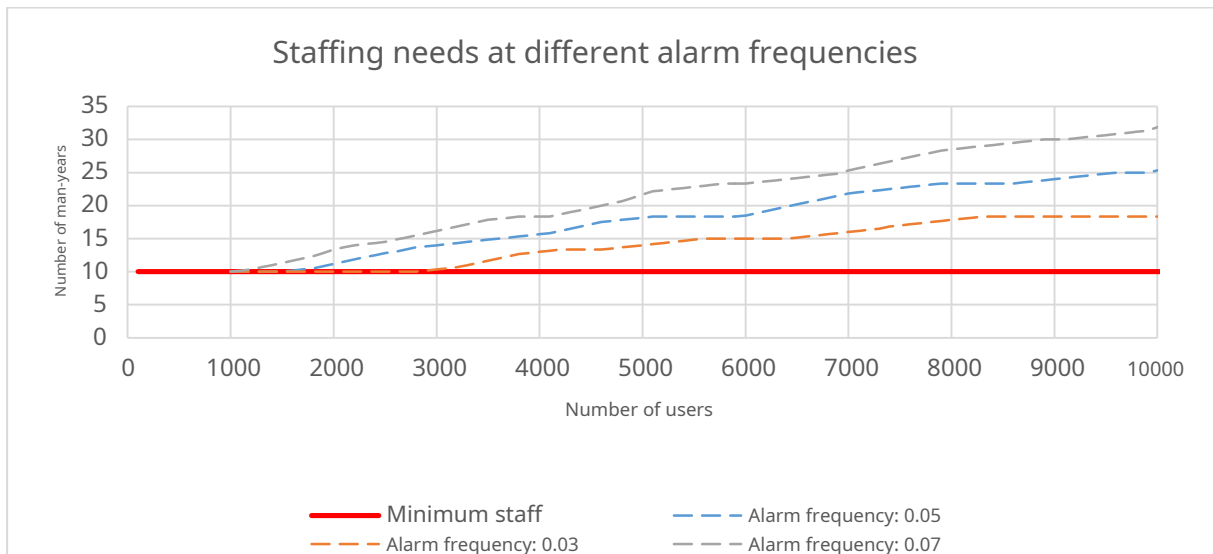
<sup>56</sup> Organization and dimensioning of response center services, provided by PA Consulting Group Norge AS in September 2016.



The example above shows the difference in staffing at the recommended response time for the response service and requirements for response time for the emergency center, where response time and alarm frequency are fixed. The graph indicates that a minimum staffing of 10 man-years, ie two on each shift, provides the opportunity to serve approx. 2,000 users. Response centers that serve fewer users than this do not provide optimal utilization of resources. The emergency service's requirement for response time indicates the possibility of serving approximately twice the number of users with the same staff.



As shown in the figure about the course of events, reaction time, also called holding time, is the time the respondent is busy answering an incident until the case is closed or the performing service is notified. When the time the person is busy increases, the need for staffing also increases when the response time and alarm frequency are fixed.



Alarm frequency is expressed by the average number of alarms per user per day. The significance of the alarm frequency is shown in the curve above, response time and response time are fixed. The municipalities must know the alarm frequency to assess their staffing needs and must measure this regularly in order to be able to dimension the staffing when the alarm frequency changes. For handling 3,000 users in the example, there is a difference of approx. 5 man-years between the highest and lowest specified alarm frequency.

An organization of approx. 20-25 man-years including management, corresponds to approx. 4-5 people on each shift. It can provide significant economies of scale and will be able to serve up to approx. 10,000 users as shown in the graph. Some economies of scale are flexibility in relation to changes in pressure patterns and room for competence development in a professional environment. More people at work provide greater flexibility in handling different sequences of incidents, for managing personnel in the event of illness, for example, and for skills development. Another economies of scale are the technical solutions. Short response time requirements require available respondents at all times. By having several people on duty at the same time, simultaneous conflicts will be reduced, and the availability of the service for the inhabitants will remain high. More uniform technological solutions for more users provide a basis for equal services and a better basis for development cooperation with the solution provider. Another advantage is a more concentrated work related to adaptations and integration with other e-health solutions.

The dimensioning analyzes and discussions show that it is appropriate to consolidate response services in larger dedicated units if municipalities want to solve the challenge with an increasing number of alerts from security-creating technology in this way.

The Norwegian Directorate of Health recommends below two models that municipalities can use in establishing a response service. It is referred to [IS-2534 "Recommendations related to technical requirements for safety-creating technology"](#).

**Model A: Establishment of a complete response service (technical solution and staffing)**

An agreement is entered into with one or more suppliers who provide a complete response service with a business model where, for example, a fixed price is paid per service recipient per month. Such an agreement provides good flexibility to scale the volume requirement up and down quickly, and expand with new services.

The supplier provides staffed response service and the municipalities handle the home visits themselves. There are examples where the supplier also delivers home visits related to alerts. Equipment for service recipients, communication, installation and technical monitoring and operation of the equipment can also be included in the agreement.

This option requires good definitions of the interfaces in the services. For example; when and how the responsibility is transferred from the supplier to the municipality's home service. It is recommended that several municipalities join forces on such a procurement in order to increase the market basis for the supplier and to raise the bargaining power of the municipalities. A collaboration will also be able to reduce the work with contract management in each municipality.

**B: Establishment of response solution only**

An agreement is entered into with one or more suppliers who deliver the technical response solution. Equipment for service recipients, communication, installation and technical monitoring and operation of the equipment can also be included in the agreement. It is recommended that the technical operation of the solution is performed by a professional operating partner, who may be the solution provider himself. The main reason for this is economies of scale in operations management and quality assurance. A typical pricing model would be subscriptions per user per month. This model will easily be able to scale with the number of connected users (service recipients, service providers, etc.).

The solution should be able to manage the alerts to various recipients within the health and care service, for example response service, right to the home service or to individual recipients such as relatives. This will make it possible for the same solution to solve different needs in the municipalities and in the services. However, it must also be considered how recommended requirements for response time and competence are met.

It is also recommended in this alternative that several municipalities join forces on such a procurement in order to increase the market basis for the supplier and to raise the bargaining power of

municipalities. A collaboration will also be able to reduce the work with contract management in each municipality.

The Norwegian Directorate of Health has considered whether it would be recommended to organize a given number of response services in Norway. The result of that assessment is that such a recommendation is not appropriate. It could slow down development if the municipalities have to wait for national management of response services. In addition, in the view of the Norwegian Directorate of Health, it is necessary to obtain more knowledge and experience of how such consolidation will have an effect on the services in the health and care service, and which services a future response service is included in.

# 5 THE DIRECTORS OF HEALTH

## RECOMMENDATIONS - SUMMARY

On the basis of the considerations surrounding increased complexity, the challenge picture and the need for skills development of the response service, the Norwegian Directorate of Health recommends that municipalities seek to solve these challenges together.

When welfare technology solutions are integrated into the municipalities' health and care services, a response service must be established that can respond to alerts from the solutions. Such a service can, for example, be established in its own municipality, in collaboration with other municipalities or via the purchase of response services from private actors. It is also possible with different combinations of several options. The basic assessment elements are sound and cost-effective response services.

If a municipality wishes to establish a response service itself, the investment must be assessed in relation to the service to be provided. In order to achieve professional soundness, competence, staffing and preparedness must be considered. In the Directorate of Health's assessment, it will not be professionally justifiable to have a response service with only one employee on duty based on these factors.

A summary of the Norwegian Directorate of Health's recommendations:

- Dimensioning
  - o It is recommended to gain more knowledge and experience before it can conclude with what is optimal resource use and critical mass for response services.
  - o It is recommended that several municipalities join forces to establish response services either as outlined in
    - model A, to procure a complete response service with technical solution and staffing, or
    - model B establishment with procurement of response solution only

o A minimum staff of two respondents on duty is recommended

at the same time, which gives approx. 10 man-years at a 24/7 service every day of the year. In addition to these, allocated resources are required for personnel and competence follow-up.

- Quality requirements:

- o *Availability*

- The response service for security-creating technologies must always be available

- o *Response time*

- A minimum of 95% of all alerts must be answered within 60 seconds

- o *Degree of clarity*

- It is not considered expedient to recommend a measurement indicator for degree of clarity on the basis that it will vary based on which technologies are included in the services that may be offered in the years to come. Today's established response centers that have statistics on degree of clarity have a degree of clarity of between 75 and 90%. This includes both public and private actors. As you gradually get more specialized technology, some of what is currently done manually will disappear as tasks. Then the degree of clarity will also decrease somewhat.

- o *Response time performing service*

- The municipalities are recommended to set requirements for performing service in their own municipality. If the response service is to be able to provide predictable and justifiable security services, requirements must be set for the performing service that travels to the service recipient. The differences in the municipalities in terms of, among other things, geographical and traffic conditions mean that it must be differentiated what the requirement should be in the various municipalities.

- Competence requirements:

- Be able to carry out correct assessments and contribute to a sound and comprehensive health and care service
  - At least one person on duty has relevant education at bachelor level. Good
  - qualities in oral dialogue and human understanding Writing and speaking
  - fluent Norwegian, and mastering English orally Mastering Sami where
  - local needs indicate this
  - Interpreting services must be used when needed

It is recommended that requirements for competence and competence development be seen in connection with a competence platform that is studied in connection with the medical emergency service.

Competence-enhancing measures can often take place through e-learning.

- **Economic effect:**

Towards 2020 and the end of the welfare technology program, it is recommended that a thorough professional and financial analysis of response services be carried out. Both the service perspective, including medical distance follow-up, the technical platform and other technological development are assessed on the basis of the prudence principle. A version 2 of the report on recommendations on response services can then also assess the need for legal regulation and indicate the need for the number of response services in a national perspective.

- The conclusion regarding the TSA's framework is that it is not appropriate to introduce this in Norway at present. Large discrepancies have been identified between TSA's detailed procedures and established practice and culture in Norway. TSA's requirements also overlap with several requirements that are already in use in Norway, for example the Safety Standard.



# 6 THE DIRECTORS OF HEALTH

## FOLLOW-UP OF THE RECOMMENDATIONS

- The Norwegian Directorate of Health has registered the need for the establishment of a common competence module (e-learning module) for personnel in response services and will contribute to this happening.
- A further development of the IPLOS register is initiated to cover expected developments in the area of welfare technology and ensure access to necessary statistics and management information.
- Towards 2020 and the end of the welfare technology program, a thorough professional and financial analysis of response services will be carried out.
- Resources will be available for discussions and advice related to the recommendations

## 7 APPENDIX 1: COUNTY OVERVIEW OF RECIPIENTS OF SECURITY ALARM

The following is a county-by-county overview where the number of security alarms is seen in relation to the population aged 80 and older at the end of 2015. The figures are based on the municipalities' IPLOS reporting as of 31.12.2015. For the municipalities of Råde, Kongsvinger, Sør-Odal, Notodden, Risør, Lillesand, Flekkefjord, Lindesnes, Utsira, Midsund, Osen and Lavangen, no safety alarms have been reported via IPLOS and these figures have been obtained directly from the municipalities themselves.

	Number	% -vis
<b>01ØSTFOLD</b>	<b>security alarms</b>	<b>Coverage 80+</b>
0101Halden	332	21.9
0104Moss	537	37.8
0105 Sarpsborg	754	30.7
0106 Fredrikstad	445	12.6
0111Hvaler	31	18.7
0118Aremark	31	40.3
0119Marker	53	25.4
0121 Rømskog	8	14.8
0122 Trøgstad	71	28.5
0123 Spydeberg	83	36.6
0124Askim	229	36.3
0125 Eidsberg	160	28.6
0127 Skiptvet	66	44.3
0128 Rakkestad	204	47.1
0135 Advice	100	30.4
0136 Rygge	232	34.1
0137Våler (Østf.)	46	36.2
0138Hobøl	56	33.1

	Number	% -vis
<b>02AKERSHUS</b>	<b>security alarms</b>	<b>Coverage 80+</b>
0211Vestby	172	40.2
0213 Ski	264	25.3
0214Ås	167	24.5
0215 Frogn	220	38.8
0216Nesodden	210	34.4
0217Oppegård	345	31.7
0219 Bærum	1653	28.6
0220Asker	698	29.4
0221Aurskog-Høland	196	27.3
0226 Sørumsund	194	36.0
0227 Fet	134	37.2
0228 Rælingen	101	24.5
0229 Enebakk	129	51.0
0230 Lørenskog	392	33.9
0231 Skedsmo	719	37.9
0233Nittedal	176	28.7
0234Gjerdrum	59	29.6
0235Ullensaker	278	29.8
0236Nes (Ak.)	267	35.3
0237 Eidsvoll	217	27.1
0238Nannestad	130	38.0
0239Hurdal	38	25.2

### 03 OSLO

Oslo Municipality had 9,681 security alarms, which gives a coverage rate of 44.9% in relation to the number of inhabitants 80 years and older.

	Number	% -vis	
<b>04HEDMARK</b>	<b>security alarms</b>	<b>Coverage 80+</b>	
0402 Kongsvinger	200	21.6	Agreement with private offering
0403Hamar	754	41.1	
0412 Ringsaker	649	39.8	
0415 Løten	97	27.5	
0417 Stange	118	11.6	
0418Nord-Odal	62	20.4	
0419 Sør-Odal	0	0.0	Agreement with private offering
0420 Eidskog	159	39.6	
0423Grue	146	38.3	
0425Åsnes	167	31.3	
0426Våler (Hedm.)	77	30.2	
0427 Elverum	481	44.0	
0428 Trysil	114	23.8	
0429Åmot	87	32.6	
0430 Stor-Elvdal	52	30.2	
0432 Rendalen	79	50.6	
0434 Engerdal	40	42.1	
0436 Tolga	18	17.8	
0437 Tynset	85	28.4	
0438Alvdal	54	34.2	
0439 Folldal	40	39.2	
0441Os (Hedm.)	50	39.4	

As of mid-June 2016, Kongsvinger and Sør-Odal do not have a municipal security alarm service, but pass on contact to a private provider. The figures for Kongsvinger are as of 31.12.15 when Glåmdal fire brigade IKS was in charge of the service.

	Number	% -vis
<b>05OPPLAND</b>	<b>security alarms</b>	<b>Coverage 80+</b>
0501 Lillehammer	430	30.2
0502Gjøvik	763	52.5
0511Dovre	34	18.4
0512 Lesja	39	28.5
0513 Skjåk	50	34.2
0514 Lom	46	31.5
0515Vågå	96	39.8
0516Nord-Fron	108	33.0
0517 Sel	132	33.2
0519 Sør-Fron	85	41.5
0520 Ringebu	75	25.2
0521Eyes	120	48.2
0522Gausdal	123	31.1
0528East Toten	379	44.9
0529Vestre Toten	273	40.9
0532 Jevnaker	126	40.1
0533 Lunner	111	33.8
0534Gran	304	42.0
0536 Søndre Land	146	51.8
0538North Land	201	52.3
0540 Sør-Aurdal	74	35.9
0541 Etnedal	37	35.2
0542Nord-Aurdal	66	18.9
0543Vestre Slidre	24	19.2
0544Eystre Slidre	41	26.8
0545Vang	38	38.8

	Number	% -vis
<b>06 BUSKERUD</b>	<b>security alarms</b>	<b>Coverage 80+</b>
0602Drammen	1322	45.0
0604 Kongsberg	445	37.6
0605 Ringerike	749	48.5
0612Hole	88	31.8
0615 Skin	28	33.7
0616Nes (Busk.)	95	39.3
0617Gol	90	34.1
0618Hemsedal	27	28.4
0619Ål	119	39.3
0620Hol	110	40.7
0621 Sigdal	104	46.2
0622 Krødsherad	56	48.3
0623Modum	363	53.7
0624Øvre Eiker	287	35.3
0625Nedre Eiker	454	54.4
0626 Lier	340	38.3
0627 The smoke	224	41.3
0628Hurum	179	44.1
0631 Flesberg	40	28.6
0632 Rollag	49	41.5
0633Nore and Uvdal	56	29.8

	Number	% -vis
<b>07VESTFOLD</b>	<b>security alarms</b>	<b>Coverage 80+</b>
0701Horten	405	31.6
0702Holmestrand	158	33.3
0704 Tønsberg	379	18.4
0706 Sandefjord	559	26.4
0709 Larvik	613	27.3
0711 Svelvik	95	41.5
0713 Sande (Vestf.)	144	38.4
0714Hof	44	36.7
0716 Re	94	29.1
0719Andebu	68	29.6
0720 Stokke	85	22.5
0722Nøtterøy	334	30.4
0723 Tjøme	54	24.1
0728 Lardal	35	28.5

	Number	% -vis
<b>08 TELEMARK</b>	<b>security alarms</b>	<b>Coverage 80+</b>
0805 Porsgrunn	776	45.9
0806 Skien	1066	42.7
0807Notodden	254	32.2
0811 Siljan	24	21.6
0814 Bamble	265	50.8
0815 Kragerø	145	27.2
0817Drangedal	78	30.0
0819Nome	145	35.6
0821 Bø (Telem.)	99	31.4
0822 Sauherad	93	38.9
0826 Tinn	175	44.5
0827Hjartdal	29	25.7
0828 Seljord	46	25.3
0829 Kviteseid	42	25.0
0830Nissedal	31	40.8
0831 Fyresdal	31	49.2
0833 Tokke	72	50.0
0834Vinje	66	36.5

	Number	% -vis
<b>09AUST-AGDER</b>	<b>security alarms</b>	<b>Coverage 80+</b>
0901 Risør	150	43.1
0904Grimstad	361	45.4
0906Arendal	685	36.9
0911Gjerstad	52	38.8
0912Vegårshei	50	45.9
0914 Tvedestrand	110	35.3
0919 Froland	54	28.9
0926 Lillesand	200	52.4
0928 Birkenes	53	33.5
0929Åmli	30	34.5
0935 Iveland	14	25.9
0937 Evje and Hornnes	55	31.8
0938 Bygland	23	35.9
0940Valle	33	47.1
0941 Bykle	13	59.1

	Number	% -vis
<b>10VEST-AGDER</b>	<b>security alarms</b>	<b>Coverage 80+</b>
1001 Kristiansand	1683	47.8
1002Mandal	261	36.9
1003 Farsund	151	32.8
1004 Flekkefjord	200	37.6
1014Vennesla	163	30.2
1017 Songdalen	89	44.7
1018 Søgne	161	44.8
1021Marnardal	28	24.3
1026Åseral	13	28.3
1027Audnedal	28	33.7
1029 Lindesnes	137	60.9
1032 Lyngdal	108	37.4
1034Hægebostad	39	59.1
1037 Kvinesdal	114	40.7
1046 Sirdal	49	48.5



	Number	% -vis
<b>11 ROGALAND</b>	<b>security alarms</b>	<b>Coverage 80+</b>
1101 Eigersund	332	53.6
1102 Sandnes	689	32.6
1103 Stavanger	1744	38.1
1106Haugesund	461	30.1
1111 Sokndal	90	44.6
1112 Lund	74	51.7
1114 Bjerkreim	34	29.3
1119Hå	247	42.0
1120 Klepp	176	37.7
1121 Time	198	35.9
1122Gjesdal	123	52.3
1124 Sola	187	26.7
1127 Randaberg	110	38.3
1129 Forsand	27	47.4
1130 Strand	209	45.1
1133Hjelmeland	24	19.0
1134 Suldal	79	35.3
1135 Sauda	159	46.5
1141 Finnøy	46	29.1
1142 Rennesøy	54	37.2
1144 Kvitsøy	19	63.3
1145 Bokn	17	31.5
1146 Tysvær	114	32.9
1149 Karmøy	393	25.1
1151Utsira	5 or less	
1160Vindafjord	140	28.9

	Number	% -vis
<b>12HORDALAND</b>	<b>security alarms</b>	<b>Coverage 80+</b>
1201 Bergen	1706	14.8
1211 Etne	57	24.7
1216 Sveio	46	22.7
1219 Bømlo	195	36.1
1221 Stord	290	42.5
1222 Fitjar	62	43.7
1223 Tysnes	59	28.2
1224 Kvinnherad	250	34.1
1227 Jondal	29	36.3
1228Odda	168	32.6
1231Ullensvang	71	31.8
1232 Eidfjord	22	37.9
1233Ulvik	30	37.5
1234Granvin	23	36.5
1235Voss	156	16.5
1238 Kvam	179	32.7
1241 Fusa	84	35.6
1242 Samnanger	24	15.8
1243Os (Hord.)	176	31.7
1244Austevoll	70	32.6
1245 Sund	58	28.3
1246 Fjell	153	26.0
1247Askøy	330	41.5
1251Vaksdal	130	39.2
1252Modalen	5 or less	
1253Osterøy	82	21.1
1256Meland	84	37.7
1259Øygarden	49	24.7
1260 Radøy	80	33.2
1263 Lindås	238	37.7
1264Austrheim	31	28.7
1265 Fedje	5 or less	
1266Masfjorden	26	17.6

	Number	% -vis
<b>14 PARISH AND FJORDANE security alarms Coverage 80+</b>		
1401 Flora	152	31.7
1411Gulen	43	27.9
1412 Solund	9	17.3
1413Hyllestad	27	33.8
1416Høyanger	79	28.4
1417Vik	63	26.7
1418 Balestrand	25	30.1
1419 Leikanger	47	42.3
1420 Sogndal	104	30.5
1421Aurland	51	41.5
1422 Lærdal	49	36.6
1424Årdal	120	32.7
1426 Luster	92	27.8
1428Askvoll	54	23.5
1429 Fjaler	61	34.7
1430Gaular	59	31.7
1431 Jølster	57	34.3
1432 Førde	124	31.8
1433Naustdal	46	30.5
1438 Bremanger	68	22.1
1439Vågsøy	121	31.3
1441 Selje	64	37.9
1443 Eid	78	27.7
1444Hornindal	11	13.1
1445Gloppen	137	36.1
1449 Stryn	89	24.8

<b>15MØRE AND ROMSDAL</b>	<b>Number</b>	<b>% -vis</b>
	<b>security alarms</b>	<b>Coverage 80+</b>
1502Molde	475	37.3
1504Ålesund	585	28.9
1505 Kristiansund	349	32.8
1511Vanylven	49	20.5
1514 Sande (M. and R.)	31	16.8
1515Herøy (M. and R.)	146	31.4
1516Ulstein	96	31.6
1517Hareid	84	31.1
1519Volda	82	17.3
1520Ørsta	130	20.6
1523 Ørskog	56	47.1
1524Norrdal	27	22.0
1525 Stranda	115	35.7
1526 Stordal	19	32.2
1528 Sykkylven	105	26.0
1529 Skodje	65	38.2
1531 Sula	136	31.0
1532Giske	97	29.2
1534Haram	174	32.7
1535Vestnes	179	55.9
1539 Rauma	194	37.6
1543Nesset	51	26.6
1545Midsund	66	46.8
1546 Sandøy	34	34.0
1547Aukra	74	40.9
1548 Fræna	132	32.1
1551 Eide	63	37.1
1554Averøy	75	28.0
1557Remember	33	22.1
1560 Tingvoll	81	42.9
1563 Sunndal	136	30.2
1566 Surnadal	80	25.0
1567 Rindal	44	28.4
1571Halsa	27	25.7
1573 Smøla	32	22.9
1576Aure	101	43.3

<b>16 SØR-TRØNDELAG</b>	<b>Number security alarms</b>	<b>% -vis Coverage 80+</b>
1601 Trondheim	3929	59.9
1612 Hemne	119	50.9
1613 Snillfjord	16	22.2
1617 Hitra	110	47.6
1620 Frøya	80	29.7
1621 Ørland	105	42.2
1622 Agdenes	25	17.0
1624 Rissa	113	31.7
1627 Bjugn	120	46.5
1630 Åfjord	79	32.4
1632 Roan	16	22.9
1633 Osen	10	11.6
1634 Oppdal	117	33.0
1635 Rennebu	52	30.6
1636 Meldal	136	45.5
1638 Orkdal	202	36.1
1640 Røros	92	27.3
1644 Holtålen	56	52.3
1648 Midtre Gauldal	79	22.1
1653 Melhus	249	37.8
1657 Skaun	117	44.7
1662 Klæbu	57	42.9
1663 Malvik	162	44.4
1664 Selbu	105	40.2
1665 Tydal	28	42.4

<b>17NORD-TRØNDELAG</b>	<b>Number</b>	<b>% -vis</b>
	<b>security alarms</b>	<b>Coverage 80+</b>
1702 Steinkjer	438	37.5
1703Namsos	140	22.3
1711Meråker	67	37.2
1714 Stjørdal	414	45.0
1717 Frosta	82	55.0
1718 Leksvik	73	36.7
1719 Levanger	26	3.1
1721Verdal	154	25.8
1724Verran	66	32.2
1725Namdalseid	39	34.2
1736 Snåase - Snåsa	24	17.6
1738 Lierne	36	36.4
1739 Raarvihke - Røyrvik	10	31.3
1740Namsskogan	27	45.8
1742Grong	36	20.8
1743Høylandet	25	32.1
1744Overhalla	41	22.7
1748 Fosnes	11	20.4
1749 Flatanger	19	32.8
1750Vikna	56	27.7
1751Nærøy	67	23.5
1755 Leka	9	22.0
1756 Inderøy	98	31.7

	Number	% -vis
<b>18NORDLAND</b>	<b>security alarms</b>	<b>Coverage 80+</b>
1804 Bodø	461	26.3
1805 Narvik	261	25.0
1811 Bindal	24	22.6
1812 Sømna	42	34.7
1813 Brønnøy	131	37.0
1815 Vega	19	26.0
1816 Vevelstad	5 or less	
1818 Herøy (Nordl.)	33	38.4
1820 Alstahaug	101	34.1
1822 Leirfjord	44	35.2
1824 Vefsn	156	21.6
1825 Grane	14	14.7
1826 Hattfjelldal	39	40.2
1827 Dønna	21	25.9
1828 Nesna	31	32.6
1832 Hemnes	58	20.4
1833 Rana	222	17.5
1834 Lurøy	10	9.3
1835 Train	5 or less	
1836 Rødøy	16	23.9
1837 Meløy	121	30.5
1838 Gildeskål	54	35.1
1839 Beiarn	25	30.1
1840 Saltdal	80	34.0
1841 Fauske	117	24.0
1845 Sørfold	17	15.3
1848 Steigen	27	16.6
1849 Hamarøy - Hábmer	41	34.5
1850 Divtasvuodna - Tysfjord	12	11.1
1851 Lødingen	36	23.2
1852 Tjeldsund	25	25.3
1853 Evenes	15	15.5
1854 Ballangen	49	33.3
1856 Voice	12	31.6
1857 Værøy	5 or less	
1859 Flakstad	12	13.3
1860 Vestvågøy	252	44.6

1865The wave	33	7.1
1866Hadsel	117	27.5
1867 Bø (Nordl.)	118	51.1
1868Øksnes	77	35.6
1870 Sortland	155	36.6
1871Andøy	45	14.2
1874Moskenes	24	28.2

	Number	% -vis
<b>19 TROMS</b>	<b>security alarms</b>	<b>Coverage 80+</b>
1902 Tromsø	650	34.0
1903Harstad	425	37.9
1911 Kvæfjord	31	18.7
1913 Skånland	33	18.5
1917 Ibestad	38	28.8
1919Gratangen	28	29.5
1920 Loabák - Lavangen	24	35.3
1922 Bardu	55	28.2
1923 Salangen	24	26.4
1924Målselv	55	16.3
1925 Sørreisa	44	30.8
1926Dyrøy	21	26.9
1927 Tranøy	23	19.7
1928 Cod	5 or less	
1929 Berg	14	25.5
1931 Lenvik	20	3.9
1933 Balsfjord	50	14.8
1936 Karlsøy	31	22.1
1938 Lyngen	41	20.9
1939 Storfjord - Omasvuotna - Omasvuono	18	25.4
1940Gáivuotna - Kåfjord	28	21.9
1941 Skjervøy	47	34.3
1942Nordreisa	63	26.3
1943 Kvæningen	17	23.3



	Number	% -vis
<b>20 FINNMARK</b>	<b>security alarms</b>	<b>Coverage 80+</b>
2002Vardø	43	33.6
2003Vadsø	72	34.4
2004Hammerfest	118	34.1
2011Guovdageaidnu - Kautokeino	10	10.1
2012Alta	103	17.6
2014 Loppa	7	9.2
2015Hasvik	11	18.6
2017 Kvalsund	16	28.6
2018Måsøy	15	19.5
2019Nordkapp	25	15.3
2020 Porsanger - Porsángu - Porsanki	33	19.6
2021 Kárásjohka - Karasjok	18	15.7
2022 Lebesby	36	56.3
2023Gamvik	9	26.5
2024 Berlevåg	30	46.9
2025Deatnu - Tana	19	14.4
2027Unjárga - Nesseby	11	20.0
2028 Båtsfjord	13	18.3
2030 Sør-Varanger	176	42.4



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