



***The expectations and perceived  
usefulness to a future secure “net-health”  
portal for patients with chronic diseases***

by

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**Thesis in partial fulfilment of the degree of  
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## Abstract

The recent advancements in technology are constantly changing the way healthcare is practiced and delivered. The number of patients receiving treatment at home will increase. The Internet as a source of information and a tool for electronic communication empowers the patient and put demands on the healthcare profession to allow the patient's active participation and control of his own situation.

Putting the patient in the centre, the main focus in this study will be asking the patients what they will need in future services concerning communication between healthcare personnel and themselves, within the frames of a secure web-based solution.

The idea of personal health records and the need for two-way communication between healthcare personnel and patients is not new. Worldwide there are several web-based solutions. However the uniqueness in this study will be to really put the patient as main contributor, to reveal the patient's view on what kind of services they expect.

The study will be conducted during spring 2006. The participants will mainly consist of chronic patients who will be asked about their expectations and requests concerning which services an individually adjusted web-portal for two-way communication should include.



## Introduction

This report is the final thesis in fulfillment of the degree of Master in Technology in Information and Communication Technology at Agder University College.

The thesis: “The expectations and perceived usefulness to a future secure “net-health” portal for patients with chronic diseases” was defined in cooperation with Rune Fensli and Tone Birkenes. The project was conducted during the period of January – May 2006.

The results of this report will also be presented at the Tromsø Telemedicine and eHealth conference (TTeC06) that is arranged in Tromsø June 12-14<sup>th</sup> 2006.

The report is written by Trude Buøy. I would like to give thanks to my guidance councilors Rune Fensli and Tone Birkenes for their advice and help through the entire project process. I would also like to give thanks to my boyfriend Bjarne and my family for their love and support.

Grimstad, May 29<sup>th</sup> 2006

Trude Buøy



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# **1 Introduction**

## **1.1 *Statement of the Problem***

The recent advancements in information technology are constantly changing the way healthcare is practiced and delivered. The number of patients receiving treatment at home will increase because of the ageing population. The Internet as a source of information and a tool for electronic communication both empowers the patient and put demands on the healthcare profession to allow the patient's active participation and control of his or her own situation. The desire is to combine technology with healthcare, in the form of a web-portal, to ensure safe Internet communication between patient and healthcare personnel.

Several projects nationally and internationally have suggested secure solutions for communication between patient and the medical practitioners using Internet. The future trend is developing new solutions for the patient to actively participate in his or her own medical treatment and follow-up, and it is important to use technology designed on the patient's demands and qualifications.

This main goal of this project is to map the patient's expectations and requests concerning which facilities should be provided in a future "net-health" portal, designed as an active tool in continued interaction between the patient at his home and the different health care services.

Based on the actual needs and preference given from the patient's side of view, some recommendations will be drawn with respect to the design of a future "net-health" portal.

## **1.2 *The importance of the study (Background/Framework)***

Due to the expanded use of internet as a source of information, people in general have increased knowledge about their own or their relatives' health situation. The number of individuals receiving some kind of treatment at their own homes is steadily growing.

e-health and telemedicine is the application of information- and communication technology in health service. By creating a web-portal for bidirectional communication, a patient at home can ask his or her physician questions, get answers and submit data from measuring devices without having to travel to the hospital or medical office. The patient will be more in control and have access to relevant information and statistics. By giving the involved parties access to a common system, everybody will have up to date information at all times.



The idea of personal health records and the need for two-way communication between healthcare personnel and patients is not new. Worldwide there are several web-based solutions. The uniqueness in this study will be to really put the patient as main contributor and to reveal the patient’s view on what kind of services they expect.

Originally this was meant to be a project about evaluating the security of a web portal. However after reviewing the literature, there seemed to be a lack of research done concerning which facilities the web portal should contain. Without knowing what kind of services potential users would be interested in using, and if they would actually use such a system, it seemed more important to investigate what services the solution should contain first.

### ***1.3 Description of the problem***

Today the trend is to keep patient records electronically and an increasingly part of the health care system use electronic patient record systems. This makes it easier to access information for the patient, so that they can be more responsible and that they are given the tools to able them to take more control of their own treatment.

At the same time the patient has a legal claim to access his or her patient record unless the health care personnel find it unjustifiable in respect to the patients’ health situation. This enables the possibility of the patient to access the patient record electronically. Also the government emphasizes the fact that the patient is to be liable and an active participant in his or her own health situation and treatment.

This Master Thesis aim to map what kind of services future users, with emphasis on chronic patients, consider to be useful and that they would use in a future “net-health” portal. The project aim to conclude with a proposal that describes the content in a future personal online patient portal.

### ***1.4 Delimitations***

The researcher of this project does not intend to construct a patient portal. Nor does the researcher intend to describe the technical solution or the presentation (design) of the content in the patient portal.





## **1.5 Sub-problems**

1. The first sub-problem is to determine the future users’ perceived usefulness of the portal solution and its facilities.
2. The second sub-problem is to determine if users will use a “net-health” portal solution and which facilities they require.
3. The third sub-problem is to describe a recommendation of the design of the portal.

The first hypothesis is that patients perceive a “net-health” as useful and wants to use it for communication with healthcare providers.

The second hypothesis is that patients have opinions and demands about which facilities they expect to see in a future solution.

The third hypothesis is that existing security solutions can meet the requirements of laws and regulation to secure a “net-health” portal solution.

## **1.6 Organization of the report**

During the research period of this project the researcher composed hypotheses as to what expectations people had concerning services to be included in a future “net-health” portal. To evaluate the validity of these hypotheses the researcher made use of questionnaires.

The report is designed so that you as reader first can obtain background information on the topic. Then my work and results are presented. The report concludes in a description of the solution of the research question.

### **Chapter 2: Literature review**

To give the readers insight into the theory concerning the research question, this section contains a literature review of relevant literature and prior research concerning the topic of the research project

### **Chapter 3: Method**

To be able to confirm the findings of the research, the research must rely on well known methods and theories. The theories and methods that are used are described in this section of the report.

### **Chapter 4: The Model**

This section describes the model that is used in the research, the questionnaire.



#### Chapter 5: Results

The results of the survey is described in this section of the report

#### Chapter 6: Discussion of the results

To validate the results of the survey, the results are discussed in this section

#### Chapter 7: Description of the solution

This section of the report describes the solution of the research question

#### Chapter 8: Conclusion

This final section describes the conclusions of the research study.

## 2 Theoretical Background

A research team in the Netherlands sought to investigate whether an information system [1], an electronic patient information system for children with amblyopia, would be able to improve the quality of care and increase patient satisfaction. They found that the system was little used due to the fact that the needs of the people who were to use the system had never been investigated. The designers had built the systems based on assumptions that showed to be wrong on so many levels that the system did not succeed. The importance of investigating the patients' needs is emphasized in this study. To enhance patient empowerment and improve the quality of care, the potential users must have a word.

### 2.1 Telemedicine

“Telemedicine”, “TeleHealth”, “Tele-Care”, “Health Telematics”, “eHealth”, “Medical Informatics” or simply “ICT for health” are used to describe the same phenomenon. The Norwegian Centre for Telemedicine (NST, Nasjonalt senter for telemedisin) has been using the following definition [2]:

*“Telemedicine is the investigation, monitoring and management of patients and the education of patients and staff using systems which allow ready access to expert advice and patient information no matter where the patient or relevant information is located”*

e-Health tools or solutions include products, systems and services that go beyond simply Internet-based applications. They include tools for health authorities and professionals as well as personalized health systems for patients and citizens. Examples include health information networks, electronic health records, telemedicine services, personal wearable and portable communicable systems, health portals, and many other information and communication technology-based tools assisting prevention, diagnosis, treatment, health monitoring, and lifestyle management [3].

### 2.2 Healthcare in Norway

In June 2001 the Norwegian Parliament (Stortinget) resolved that central government should take over responsibility for all public hospitals. These hospitals are to be operated as *health enterprises* and will be wholly owned by central government [4].

Norway has 85 hospitals for its 4.5 million inhabitants. In all, approximately 350 institutions in the central government specialist health service – including psychiatric institutions, the ambulance service etc. – will be transferred to the central government

sector. Five regional health enterprises have been established, which in turn have organized the hospitals under around 50 health enterprises [5].

The Ministry of Health and Social Affairs is planning a major strengthening of central government responsibility for development of information technology for the health service. They have the superior responsibility to digitalize Norway [6].

An increasing amount of public resources are spent on the health sector. Te@mwork 2007 [7] is the national strategy for ICT (Information and communication technology) development in the health and social sector for the period 2004-2007. The strategy shall give direction and continuity to ICT development in the sector. The vision for the work is that patients and clients shall experience continuity of care when using the services.

In the eNorway action plan from The Ministry of Trade and Industry, the Norwegian government emphasizes the need for restructuring in the health sector [8]:

*“New technology is an important means of improving the services available and can also contribute to increased efficiency through a better exchange of information and improved cooperation. An important area of commitment is to further develop the regional health networks, link these together to form a national health network, provide secure access to the Internet and establish a system of national information services.”*

Internationally and in Europe, the positive support from the Member States to the eHealth chapters of both policy initiatives, eEurope 2002 and eEurope 2005 was shown in particular in the 2003 Ministerial Declaration on eHealth, where also Norway participated. eHealth was brought to the forefront of European policy again, in April 2004, when the European Commission adopted a joint package of three health-related Communications, which included the Action Plan for a European eHealth Area [9]. The Commission adopted the initiative “i2010: European Information Society 2010” to foster growth and jobs in the information society and media industries in June of 2005 [10].

### **2.2.1 Laws and regulations**

Norway has a strong legislation regarding handling person related information. The use of telemedicine has the potential to conflict with strict information security regulations. Close cooperation with Norway's Data Inspectorate (Datatilsynet) is therefore crucial [11]. The inspectorate was set up to enforce legislation protecting the privacy of personal information. The Norwegian Data Inspectorates reference model provides an overview of the security needed and required to ensure secure communication and data handling.



The Personal Health Data Filing System Act § 13 [12] regulates access to medical records. The legal framework gives personnel employed by a specific institution access to journals in that specific institution, but non others, even with the approval of the patient. The information can be shared only by the act of an active concrete inquiry. A doctor at a medical office can not access the journal system of a hospital.

There are a number of rules in the health legislation concerning the rights to involvement and information of the general public. Net-based services may be an important instrument to fulfill these regulations.

### **2.2.2 Security**

Much of the information associated with the continuity of patient care is sensitive. This information must be protected against access by unauthorized persons (safeguarding the confidentiality and integrity of information). At the same time, complete, updated, correct and relevant information shall be available for those who have a legitimate need for information (safeguarding the quality and availability of information) [7]. On one hand, ICT applications are vulnerable in relation to information security. Breach of confidentiality can potentially have huge negative impacts and implications. On the other hand, ICT applications introduce new and improved possibilities for information security. Technical barriers can be used to check in advance that only authorized persons gain access to information, and tracking mechanisms can be used later to check access. In addition, ICT applications improve access to updated information about the individual patient, which in turn can improve the treatment provided to patients.

Included in the Government’s overall goals for information security (eNorway) is that ICT infra-structure shall be robust and secure and that we must develop a positive culture for ICT security in Norway. Everyone has an independent responsibility for acquiring the necessary information that they need in order not to be in breach of Norwegian legislation or ignore general ethical and democratic principles.

Information security will be addressed by establishing basic requirements for information security, which communicating partners have to follow. The Brønnøysund Register Centre, a government body under the Norwegian Ministry of Trade and Industry, has brought forward a solution with digital signature/PKI (public key infrastructure), which is available for the whole health care sector [13].



### **2.2.3 Traveling Norwegians**

At any given time a large number of Norwegian citizens travel or reside outside of Norway. The trend over the last few decades is that a growing number of the Norwegian population travel abroad for a number of reasons; many people work abroad or have to travel with their job, an increasing number of Norwegian citizens spend their holidays in other countries; approximately 55.000 holiday homes abroad are owned by Norwegian citizens, in the period of 2003-2004 23.000 Norwegians attended schools abroad, the number of retirees abroad increased from 25.000 to 35.000 during the years from 1999 to 2003, even more today, and not to forget the 109.109 Norwegian citizens that reside in foreign countries [14, 15]. A number of travelers will at some point in time be in need of medical services of some kind.

The quality of health care providers abroad are extremely varying, not to mention that they do not have the medical history of the visiting patients. Many travelers that get ill, wait until they return to Norway to seek medical treatment unless it is acute.

### **2.3 Electronic Health Record (EHR)**

There are many concepts used describing electronic medical information, where the most common are the Electronic Patient Record (EPR) and the Electronic Health Record (EHR) [16].

The health record is the core in the flow of information in the health service. It is here that all information is gathered from those who have an obligation to provide documentation. The immediate gains of introducing EHR are many. Routine work, such as writing prescriptions and issuing medical certificates, is done more quickly, the record is more easily readable and complete, and last but not least, physicians find the patient record when they need it. However, the potential gains of introducing EHR involves much more.

EHR can be used as a source of data for leadership, planning and research. Large amounts of resources are currently used to collect data manually for planning in specialist health services and in nursing and care services. By using EHR, collection of data can largely be automated and expanded. In addition, organization of data and information obtained from reports, diagnosis, treatment and evaluation of patients can be used to measure the quality and cost of the services that are provided. A thorough and general introduction of EHR is presumed to have the most potential gain of all the ICT measures in the health and social sector. EHR throughout the whole of the health services is a premise for continuity of patient care in general and in particular for patients with chronic complaints or complex needs.

EHR systems are generally used in general practitioner (GP) services today, 90 % of the general practitioners in Norway use EHR, but much is still to be done in other sections of primary health services. Electronic Health Record (EHR) Systems is the core of patient information. According to Norwegian legislation, each health care service provider has to keep its own record which can be on digital form, and information between service providers is only to be transferred on a need to know basis.

- “All” GPs and private specialists have EHR systems. With few exceptions, all GPs and private specialists have EHR systems; this has been the situation for some years.
- 80% of hospital patients are covered by EHR. All hospitals have or are introducing EHR systems. Surveys show however large variation in use of the functionality systems and to some extent parallel paper-based routines, but the situation is rapidly improving.
- 2/3 of the Norwegian hospitals have already acquired PACS systems, and all remaining hospitals are planning to implement PACS within 2005. A special emphasis is put on exchanging digital images between hospitals through the National Health Net, thus allowing cooperation and second opinions as well as rational operation and increased availability of radiology services.

## ***2.4 Telemedicine in Norway***

At present there is some level of telemedicine activity in all Norwegian health care regions. The Norwegian Centre for Telemedicine is the national resource organization for telemedicine in Norway [17]. Several other organizations in Norway are concerned with various aspects of telemedicine. In Trondheim, the KITH centre of competence in information and communication technology in health care develops standards for telemedicine solutions. Kokom is a national centre for emergency health care communication strategy, established in Bergen by the Ministry of Social Security and Health. The Interventional Centre at The National Hospital of Norway / Rikshospitalet university hospital in Oslo is a research and development centre for minimally invasive and image-guided therapy. There are also five regional health care networks in Norway.

Organization of telemedicine in Norway:

- KITH – Norwegian Centre for Health Informatics is a limited company established and owned by the Ministry of Health and Social Affairs, The Norwegian Association of Local Authorities and Sør-Trøndelag County. KITH was founded in 1991 to contribute to the standardized application of IT in the health and social care sector. KITH is developing and contributing to the implementation of standardized terminology and coding systems; secure

information exchange and standards for EHR and PACS (Picture Archive and Communication System) systems. KITHs main location is in Trondheim.

- NST – Norwegian Centre for Telemedicine is part of the University Hospital in Tromsø and aims at providing research, development and consulting in telemedicine, and to promote the introduction of telemedicine services in practice. Since 2002 NST has been designated by WHO as collaborating centre for telemedicine.
- KoKom – The National Centre on Emergency Communication in Health, is a national centre located in Bergen. The objective of the centre is to act as advisor to government, both centrally and locally (counties and municipalities) on the running of dispatch centers in the health care services. The centre is also a member of the national project committee concerning possible Norwegian acceptance of TETRA (Terrestrial Trunked Radio is an open digital trunked radio standard for professional mobile radio users) as the national standard for radio communication in emergency services.
- The Research Centre for Electronic Health Record (EHR) systems is recently established at Norwegian University of Science and Technology (NTNU) in Trondheim, with funding from the Research Council of Norway and the university itself. The objectives of the centre are to perform multidisciplinary research and university level education related to EHR systems.

Telemedicine is not a new medical discipline, but rather a set of communication services that enable medical resources to be utilized in a new and better way. To date telemedicine in Norway - particularly in Tromsø - has largely comprised telemedicine in the sense of remote consultations and remote diagnoses using sound/picture communications, with the patient and doctor both being present at the same time. In this type of communication a doctor or other health worker is usually present with the patient in a doctor's office or at a local/central hospital. From here they communicate with a specialist who gives a diagnosis or provides guidance on further treatment of the patient. Regular services are in operation in the fields of dermatology, ear, nose and throat, cardiology, pathology and psychiatry. As a method telemedicine compensates for distance.

At present a number of trials are being conducted in which patient information is transferred electronically as a basis for diagnosis and treatment. The information is sent to the recipient doctor/technical personnel in the form of a message which may contain attachments consisting of text, images, video etc. These electronic documents are then processed and answered within an agreed period of time. Consultations at which the doctor(s) and patient do not need to be present at the same time are easier to arrange and coordinate. Furthermore, the equipment and transmission capacity requirements are more modest because the time factor is, in theory, of secondary or minor importance.



### **2.3.1 eNorway 2009 Action Plan**

The eNorway 2009 Action Plan [8] is the fifth Action Plan (eNorway 1.0, 2.0, 3.0 and 2005) and aims to utilize and realize technological possibilities. The main focus concerning healthcare is the focus on the individual as a part of the information society. Digital services shall accommodate the needs of the individual. The government wants to use information technology to make improvements for the patients and those in need of nursing. Through the national strategy for ICT development in the health and social sector, Te@mwork 2007, the aim is to expand the use of the National Health Net .

### **2.3.2 Te@mwork 2007 (S@mspill 2007)**

The directorate for health and social affairs bears responsibility for the strategy of Te@mwork 2007 [7]. Te@mwork 2007 is projects related to the electronic collaboration in the sector of health and social affairs. They acknowledge the fact that good electronic applications are lacking in large areas of the continuity of patient care. Web sites for the public about health and health services are incomplete and quality control is lacking. Central actors in the continuity of patient care such as pharmacies and municipal services interact electronically only to a limited degree with their cooperative partners. In order to achieve continuity of care for patients and clients, electronic interaction in the sector must be expanded, such that more actors participate in electronic flow of information.

The strategy involve a municipal program where six municipal “lighthouses” are being followed for three years. The lighthouse projects aim to contribute to a coordinated development of electronic collaboration between local healthcare service, social services and the special healthcare services. The lighthouse projects shall identify needs, potential gains and possible solutions for electronic collaboration. The challenge is to integrate all municipal healthcare agencies in the National Health Net.

## **2.5 Telemedicine solutions in Norway**

Norway is well underway with the realization of a National Health Net (Norsk Helsennett) [18]. In 1998 the first regional network was established and today all five regions have their own networks, varying in structure and in coverage. During the first half of 2004 the five regional nets were merged into one integrated national.

In the first phase, all the hospitals and a large fraction of GPs and private specialists are connected, then pharmacies, central agencies and others are to follow. Many

local municipalities (of which Norway has 434) have their own nets, service providers within the municipality can be connected to the health net by a single contact point between the National Health Net and the municipality net.

Although, compared to other sectors of society, the health care sector still is in the initial phase of applying information technology; Norway by international comparison is quite advanced in its use, and is rapidly moving.

The Norwegian Centre for Telemedicine has developed different telemedicine solutions for health care professionals like electronic referrals (freeze-frame and video conferencing), health trade network, distance-teaching and the health networks. Other solutions, by NST and other organizations, emphasize the patient participation aspect of telemedicine solutions;

### **2.5.1 PatientLink**

Annual surveys conducted by the NST have shown that an increasing number of people request e-mail communication with their family doctor. Thus far, security issues have prevented this from becoming a reality. The NST is currently developing a prototype for Internet communication between patients and their GP in compliance with data protection regulations. The PatientLink (PasientLink) [19] allows patients to write questions and receive answers in a web-browser. They log on with a username and password and a one-time-code they receive on their mobile phone.

### **2.5.2 Well diagnostics: My doctor**

Well Diagnostics [20] is a spin-off from the Norwegian Centre for Telemedicine (NST), and together NST and the company make up one of the world's leading environments for developing new and cost-effective e-health solutions. Well Diagnostics' primary goal is to facilitate cooperation and the secure exchange of information within the health care sector.

Well Arena is a communications concept that gives patients, relatives and health personnel the opportunity to securely exchange patient sensitive information over the Internet. With access to the Internet and a mobile phone, the patient will be able to correspond with Health personnel, send attachments (electronic images or documents), schedule appointments, refill prescriptions, renew medical certificates, etc.

The Well Arena architecture is based on PatientLink and enables online communication between patient and primary physician on the web site

<http://www.mindoktor.no> (mydoctor.no). The solution also warrants communication with other healthcare personnel like nurses, specialist and hospital wards.



**Om tjenesten**  
Tjenesten mindoktor.no gir pasienter mulighet til å kontakte helsepersonell over Internett.

Innlogging på mindoktor.no skjer ved hjelp av et brukernavn og passord, og en engangskode som blir sendt til deg via din mobiltelefon.

**Hvordan legge inn og benytte tjenesten**  
Før du kan benytte tjenesten, må du kontakte ditt legekontor for å få tilsendt et brukernavn og passord.

1. Logg inn med brukernavn og passord
2. Engangskoden som skal benyttes får du i form av en tekstmelding (SMS)
3. Nå kan du velge tjenesten du ønsker hos din fastlege

**Sikkerhet**  
Løsningen er utviklet i samsvar med datatilsynets retningslinjer, og tilfredstiller kravene i personvernloven.

Løsningen er utviklet av Nasjonalt senter for telemedisin og Well Diagnostics AS og videreutvikles av Well Diagnostics AS.

WELL DIAGNOSTICS NST

<https://www.mindoktor.no/servlet/org.nst.pasientlink.client.Controller>

### 2.5.3 MedAxxess

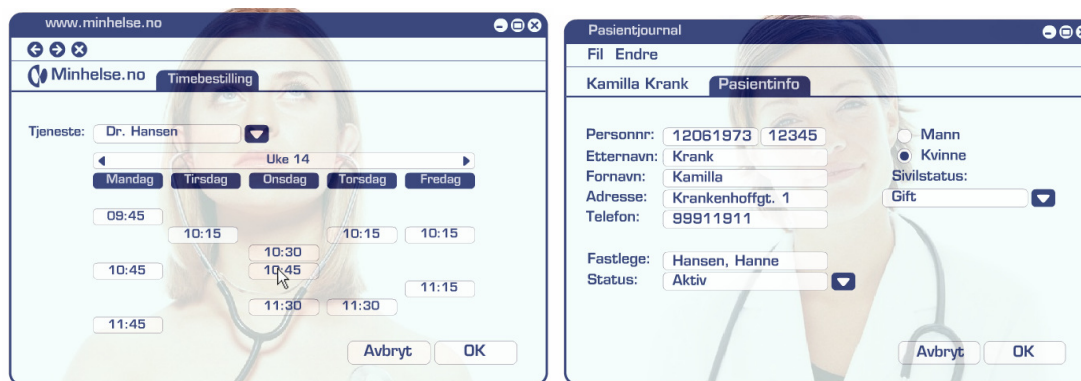
MedAxxess [21] are owned and managed by Deriga AS which is a part of Visma Software as. Deriga delivers solutions for electronic interaction and communication in the healthcare sector. Visma Software as is one of the leading suppliers of software solutions in Scandinavia.

MedAxxess is a solution provided to medical offices to simplify the communication with their patients. MedAxxess allows secure online communication between medical personnel and patient through minhelse.no (“myhealth.no”). The medical offices can purchase MedAxxess with different modules:

- Online or sms booking of doctors appointments
- Renewing of prescriptions
- Requesting referrals online
- Online consultation with patient
- SMS-alert that reminds patients about upcoming appointments
- MedAxxess website for your medical office

Example of online booking of doctors appointment in MedAxxess. The appointment can be automatically registered in the doctors Electronic Medical Record if the module is chosen by the medical office.

## The expectations and perceived usefulness of a future “net-health” portal



<http://www.deriga.no/index.php?page=27>

### 2.5.4 The web portal myTRSSite (minTRSSide)

The first Norwegian patient net portal was recently launched. The solution is developed by ITverket in cooperation with Sunnaas hospitals TRS department (a national competence centre) [22]. A three week pilot study just ended, and the TRS department has started work on implementing the system.

The participants of the pilot project had access to their own personal web pages where they could communicate with health service personnel in a secure system. The system contains a message service that enables two-way communication in a secure zone. The system makes it possible for the patient/user to gain access to personal journal information and other relevant information online in addition to electronic communication with health service providers. The aim of the system is to contribute to equality between provider and patient to raise the quality of services.

Primarily the service will be used for communication between TRS users and TRS. The solution is a supplement for those who want it. The solution is not meant to replace traditional means of communication. The portal provides the user with authority of personal health information and access privileges. The portal is integrated in the TRS EPR system SID. This enables direct access to up-to-date information. The user can grant access right to relatives or other sections of the health care system at wish, giving the involved parties access to accurate information at all times.

Further TRS is developing services like links to relevant information for the particular user and handling of test results that will be implemented at a later time.

### **2.5.5 Ask the doctor services online**

Several web sites allow users to ask the doctor online;

The website [lommelegen.no](http://lommelegen.no) is an online health centre. It is made by Norwegian physicians for the Norwegian public. The site aims to inform, guide and enlighten. The site is a reference book with articles about diseases and health, it contains an ask the doctor service, a health shop, health guide and discussion/chat groups.

The ask the doctor service allows users to ask questions to a panel of 20 physicians and other health care professionals. The service is anonymous and guarantees an answer within three to five days depending on type of question. However, the service is not free of charge.

One the web site [helsenett.no](http://helsenett.no) (healthnet) you can ask the doctor in an online forum. The questions and answers can be read by other users of the forum. Questions from members are prioritized. To become a member you have to register. The registration is free of charge and you only have to submit an e-mail address, a username and password of your choice. The site also contains articles and information about general health and illnesses.

Doctor Online ([doktoronline.no](http://doktoronline.no)) like [helsenett.no](http://helsenett.no) is a Norwegian meeting place about health and quality of life. It is an information service, not a virtual medical office. The medical staff of the service indicates possible diagnosis and treatments and gives information about illness and rights, but do not make diagnoses or treat illnesses. Doctor online is a discussion forum where everybody can ask questions and comment on others contribution. Most of the questions will be answered by qualified personnel within five days.

### **2.5.6 Using a Mobile and Wireless System for Blood Glucose Monitoring**

Children with diabetes type 1 and their parents have strong requirements to self inspection and regular glucose measurements. The Norwegian Centre for Telemedicine has developed a prototype that automatically transfers blood glucose readings from a blood glucose monitor to a mobile phone, using Bluetooth, after measurements are taken [23]. The mobile phones automatically send the measurement results by means of SMS to the parents' mobile phone. The mobile phone sends the SMS without intervention from the user. The measurement results can also be sent to the user's patient record. The solution can be used by others with the same or other illnesses that require frequent measurements.

### 2.5.7 E-mail communication with physician

In 2004/2005 the NST concluded a pilot project on e-mail consultation for parents of children with atrophic eczema [24]. The goal of the project was to develop and test a technical solution for advice reference, taking pictures and transfer information using e-mail to possibly accommodate the treatment program at a patient's home.

The project concluded that e-mail counseling had a positive effect for the parents [25]. They seemed to have improved management of the treatment. The study renders the possibility for e-mail consultation for everybody, independent of geographical location. Thus, telemedicine technology can be an aid for equal health service for everybody. Potential advantages of email in delivering health care [26]:

- Convenience
  - Increased convenience in time and space for patient and doctor. Email can be sent and received at any time from almost anywhere—via computer, digital television, personal digital assistant, or mobile phone
  - May reduce the need for face to face consultations (time savings)
  - Useful for information that patients would have to remember or write down if it were given orally
  - Unlimited length (in addition to text, users can send virtually any kind of electronic file as an attachment)
- Access
  - Increased access to care
  - Information sharing
  - User friendly medium for patients to ask for further clarification after a face to face consultation
  - Potential for increased reporting of unpleasant events
  - Allows patients to discuss content of messages with family or friends to improve understanding
- Satisfaction
  - Possibility of anonymity for patients
  - Speed of communication
  - May be particularly suitable for groups that are difficult to reach by traditional, face to face contact
- Quality of care
  - Doctors can consult with colleagues and other professionals to provide a more considered response
  - Email creates a written record of consultations and avoids possible problems of illegibility associated with handwritten notes
- Improved efficiency
  - Ability to offer routine transactions and patient education information to several people simultaneously
  - Potential cost savings



## 2.5.8 Health information sites

There exist a great amount of information sites about health and healthcare on the internet - from the general information sites about health, to the sites about a specific condition. The different patient organizations often have their own official web-sites. Many patient groups also have their own discussion groups and forums. Most of the information sites are static and directed to users with a specific illness. However, the internet is available for everybody, and thus everybody can supply information.

Several of the health related information services are partly funded by public funds. Some of the content of these sights are gathered at the directorate for health and social affairs web site [www.shdir.no](http://www.shdir.no) or the common entry for Norwegian public online information [www.norge.no](http://www.norge.no).

There is no reason why you should not use the internet for health purposes, but it may be sensible to be critical of health services offered on the web. On the site helse-vett.no you can find suggestions and tips that may be useful when analyzing online health information and health services. The site recommends that you check against the following points:

- Is there information on how to contact those responsible for the website?
- Is the overall purpose of the site stated?
- What audience is the website targeted at?
- Does the web site state that the information contained is subject to professional quality control?
- Does the web site cite sources of the information it presents?
- Do they indicate when the page was last updated?
- Has the site been updated recently?
- Do they say anything about how the site is financed?
- Is the site's advertising policy explicitly stated?
- Is there a clear distinction between editorial and advertising material?
- Do they state that potential information concerning you, will not be transferred to others?
- Is there information about the selection criteria in conjunction with links?
- Do you get the impression the web site and its editors are reliable?



## ***2.6 Telemedicine in Norway compared to the international society***

Norway by international comparison is quite advanced in its use, and is rapidly moving. The same are our neighbors Sweden, Denmark and England [27].

MEDCOM in Denmark, EVISAND in Spain, SJUNET in Sweden, and HYGEIANET in Greece are the national online health information services in the respective countries. MEDCOM currently handles over 80,000 messages daily. 100% of hospitals, pharmacies, emergency doctors, 90% of general practitioners, 98% of laboratories, 55% of specialists, and 20% of municipalities are connected to it. MedCom enables hospitals to use electronic referrals, and avoid data re-entry.

NHS Direct Online in UK was established in 1999 and provides health information online and access to a 24-hour nurse helpline via telephone to the UK public. Six million people had accessed NHS Direct Online website during a two year period. In January 2003 alone, there were half a million visitors. The website has been available since July 2000. It provides information on over 70,000 physical national health service (NHS) sites providing health services to the public. NHS Direct call centers direct people to these physical offices. NHS Direct has also put 200 touch screen kiosks in popular locations, equipped with printers and accessible to wheelchair users. Locations include NHS centers, chemists, libraries, and supermarkets. Around 300 people use each kiosk every month, which adds up to around 60,000 users a year.

In 1998 the Swedish non-commercial public health service Infomedica opened an Ask the Doctor service on its Internet portal. At no charge, anyone with Internet access can use this service to ask questions about personal health-related and disease-related matters.

Medical Office Online is a US solution that specializes in Healthcare Information services. They have provided health care providers with secure web based access to their medical records for over five years. The solution also contains a patient access module where the patient can log on and gain access to their medical record online from anywhere in the world. Patients can do the following online:

- View their demographics and insurance information including their photo id and insurance cards.
- Suggest changes to their demographics and insurance information.
- View their past and upcoming appointments.
- View their medical record (it looks similar to the clinical summary).
- View their current med list.
- View their test results with the provider's comments.
- View/Print their current statement.
- Securely message their healthcare provider or staff.



Christian Bourret’s paper “Data concerns and challenges in health: networks, information systems and electronic records” [Bourret, 2004] analyzes the French experience in healthcare networks and compare it with United States, Canada, United Kingdoms and Spain. He also studies the use of personal, sensitive and confidential medical data and how it will conform to a particular legislation, along with the patients Electronic Health Record (EHR). It is very useful to see how other countries are approaching medical health network and their experiences with this.

Despite the availability and proven benefits, e-Health systems and services are not yet widely used in real-life medical or health situations.

## **2.7 Prior research**

The new technology will fundamentally change the cooperation between the patients and doctors. The study Use of Internet health services in Norway by Andreassen, Sandaune, Gammon and Hjortdahl [19, 25] investigates the assumption that the Norwegian population’s use of Internet health services has an impact on health related attitudes and behavior. They concluded that the proportion of Norwegians that use the Internet for health purposes increased, that the proportion of those wishing to use e-mail in interaction with their doctor increased. The interpretation they made was that the Norwegian’s use of the Internet appears to supplement rather than replace ordinary health services.

The proportion of Norwegians who use the Internet for health purposes increased from 19 % in 2000 to 31 % in 2001. The proportion of those wishing to use e-mail in interaction with their doctor increased from 30 % to 45 %. Based on information from the Internet, 33 % of users in 2001 have asked their doctor specific questions; 11 % have suggested a diagnosis, 21% have altered their diet and/or lifestyle; 10 % have started with health products or programs without consulting their doctor. 13 % have experienced anxiety, while 48 % have experienced relief.

The Norwegian Centre for Telemedicine (NST) tested patient-physician interaction over the internet due to the fact that nearly half of the Norwegian population claim that they would like to use the internet to communicate with their general practitioner. The study demonstrated that it appears that electronic communication does replace some consultations and telephone inquiries. They expect that communication between patient and doctor using the Internet will have increased importance in the times to come.

Over a period of 6 weeks in 2004, users of a new wireless ECG-system participated in a research to investigate the perceived use of the system [28]. A survey study and interviews were conducted. Some questions concerning use of internet were also in

the survey. The results showed that 64.7% of the patients had Internet access from their homes, and 47.1% had used Internet some times to search for health related information. On the questions about preferred electronically access to medical information and overview of medication, more than 47% wished to ask questions to the doctor often, several times or sometimes with the use of a secure Internet communication, and more than 52% wished to ask for renewal of prescription of medication. Nearly all patients interviewed would prefer to use Internet access from their home PC in order to communicate with the doctor.

There are more than 580 million internet users world wide. Surveys consistently show that 60–80% of world-wide-web users have used it to obtain health information[29].

Why do people search the internet for health information? Eysenbach [30] researched the effects of online peer to peer interaction and investigated the reasons why people use internet to search for health related information. He concluded that the main reasons are;

- The desire to gain information they can discuss with their physician. Many patients are dissatisfied with the information provided by their physician. They feel they receive too little information.
- They want answers. Internet is available 24 hours a day in contrast to the medical office.
- They want to stay up-to-date after receiving the diagnosis.
- They want to meet and get support from others with the same illness. Many users find online self-help groups to be more useful than a practitioner.

In a pioneering study, conducted in 1997, Eysenbach [31] analyzed 209 questions sent by e-mail to a university dermatology hospital. The researchers found that a majority of the inquirers wanted a second opinion (while only 5% had not seen a physician before the inquiry), and that almost 1 of 5 expressed frustration with their previous patient-physician relationship.

A US Harris poll from 2002 [32] revealed that 90% of survey respondents would welcome the opportunity to communicate with their doctors by email, with 56% of those surveyed stating that ability to communicate with their doctors electronically would influence their choice of doctor. Perhaps more surprising is that 37% indicated that they would be willing to pay for email access to their doctor. Table 2-1 shows what the patients would like to be able to do online.

**Table 2-1: Results of a US Harris poll**

	%
Ask questions where no visit is necessary	77
Fix appointments	71
Get new prescriptions for medications you take	71
Receive the results of medical tests	70
None of these	6
Don't know	4

[http://www.harrisinteractive.com/news/newsletters/healthnews/HI\\_HealthCareNews2002Vol2\\_Iss08.pdf](http://www.harrisinteractive.com/news/newsletters/healthnews/HI_HealthCareNews2002Vol2_Iss08.pdf)

Between November 1, 2001, and January 31, 2002 a Web survey of the Swedish Ask the Doctor service (Informedica) was conducted [33]. The aim was to investigate the reasons for using the service. 1223 completed 26% male and 74 % female. As major reasons for choosing to consult previously-unknown doctors on the Internet participants indicated: convenience (52%), anonymity (36%), "doctors too busy" (21%), difficult to find time to visit a doctor (16%), difficulty to get an appointment (13%), feeling uncomfortable when seeing a doctor (9%), and not being able to afford a doctors' visit (3%). Further motives elicited through a qualitative analysis of free-text answers were: seeking a second opinion, discontent with previous doctors and a wish for a primary evaluation of a medical problem, asking embarrassing or sensitive questions, seeking information on behalf of relatives, preferring written communication, and (from responses by expatriates, travelers, and others) living far away from regular health care.

During the pilot project of PatientLink, 200 patients in Tromsø, Norway, and 6 doctors were part of the one year researched study about the use of the PatientLink solution [34]. 41% of the messages that were sent were inquiries about health issues, 22% were about renewals of prescriptions and sick leave notes, while 13% were requests for an appointment. The participants were of the opinion that the electronic communication substituted for visits and phone inquiries. The medical office had a 28% reduction in inquiries/visits. The reduction was equivalent to the number of messages.

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## The expectations and perceived usefulness of a future “net-health” portal

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The main reasons the participants gave for using the system was mainly practical reasons;

**Table 2-2: Reasons for using PatientLink**

	Important/ very important
<b>Accessible beyond office hours</b>	<b>98 %</b>
<b>Saves time</b>	<b>95 %</b>
<b>Not have to travel to the doctors office</b>	<b>95 %</b>
<b>Not have to wait on the phone line</b>	<b>93 %</b>
Cheap	73 %
Better time to explain desires	66 %
Easier to follow up own health situation	46 %
Better possibility to improve	45 %
Better to get answers in writing	44 %
Lower threshold for contacting doctor	41 %
Easier to tackle difficult subjects	36 %
Easier to express oneself in writing	34 %
Easier to keep an overview of history	21 %

The reasons those who didn't use the service gave was that they didn't need health services during the project period (43 %), the use of the system wasn't suitable for their use at that time (30 %) and 26 % had technical problems. Even though, 87 % of the participants that didn't use the service said that they would use it at a later time. Only 4 % said that they would never use the system.

Internet-based interactive websites for patient communication (patient portals) may improve communication between patients and their clinics and physicians. In a US research in 2005 [35], the aim was to assess the impact of a patient portal on patients' satisfaction with access to their clinic and clinical care. Another aim was to analyze the content and volume of email messages and telephone calls from patients to their clinic.

Portal group patients reported improved communication with the clinic (44 %), 59 % reported a higher satisfaction with overall care and 48 % felt improved control. Portal group patients also reported higher satisfaction with each of the portal's services. Physicians received 1 portal message per day for every 250 portal patients. Total telephone call volume was not affected. Patients were more likely to send informational and psychosocial messages by portal than by phone. Of all surveyed patients 48% were willing to pay for online correspondence with their physician. Patients in the portal group particularly valued the portal's convenience, reduced communication barriers, and direct physician responses.



## **2.8 Summary**

The increased focus on the patient, patient participation and increased patient responsibility has resulted in increased research on potential telemedicine solutions for electronic communication between the patient and health care providers. The idea of personal health records and the need for two-way communication between healthcare personnel and patients is not new. Worldwide there are several web-based solutions. However the uniqueness in this study will be to really put the patient as main contributor, to reveal the patient’s view on what kind of services they expect.

An important aspect of this project is to give the patient a chance to express their point of view. They are often forgotten in the process. Many episodes of patient care today begin and end in the patient’s own home. However, access to relevant information and appropriate electronic services are unsatisfactory for these phases of patient care. The possibilities to contact home nursing services or regular general practitioners, for example to book an appointment or to get advice, are limited. The possibilities for using telemedicine to enable one to treat oneself in the home are variable.

A stronger focus on users is a central issue in the Government’s work for a new welfare administration. This means, among other factors, that the individual user, to a larger degree, shall be able to choose between alternative services, and to choose where the service shall be provided. Several trends strengthen the need for electronic cooperation accommodation or in ones own home. More and more patients and relatives wish to participate in decision-making, and are able to participate to a larger degree in their own treatment. Recent health legislation acts, such as the Specialized Health Services Act and the Patients’ Rights Act, highlight health institutions’ duty to give information and training to patients.

Several trends strengthen the need for electronic cooperation between service providers and patients, clients and relatives: People are more concerned about, better informed about, and partly more worried about, their own health. More patients expect to be given adequate information before, during and after treatment. They expect to be able to choose between different types of treatment, and they expect services to be easily available. This is related, among other things, to the increased importance given to patient rights in health policy and health legislation, and to a stronger consumer focus in relation to public services in general.

### 3. Method

This project proposes to map the patient’s expectations and requests concerning which facilities should be provided in a future “net-health” portal, designed as an active tool in continued interaction between the patient at his home and the different health care services.

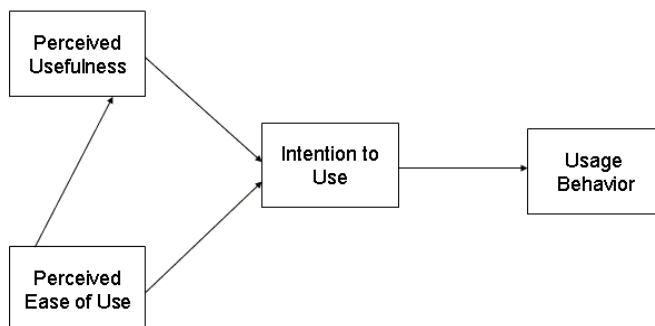
#### 3.1 Theory

##### 3.1.1 Technology Acceptance Model (TAM)

Measuring success of an Information System (IS) is difficult because success is complex and difficult to measure. Based on the logic that a system must first be accepted to be used ensuring acceptance should increase the probability of system success. One of the more popular theoretical frameworks that predicts system acceptance of technology is the Technology Acceptance Model (TAM) [36].

Davis et al.’s (1989) work on the TAM Information Systems theory, is a user centered approach which has gained popularity as a measure of technology acceptance. The model, shown in Fig. 1, was originally developed to understand the causal link between external variable and user acceptance of PC-based applications. TAM suggests that when users encounter a new IS innovation there are two main factors which will influence how and when they will use it. These are perceived usefulness and perceived ease-of-use. Perceived usefulness is “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis 1989). Perceived ease-of-use is “the degree to which a person believes that using a particular system would be free from effort” (Davis 1989).

**Figure 3-1: Technology Acceptance Model**

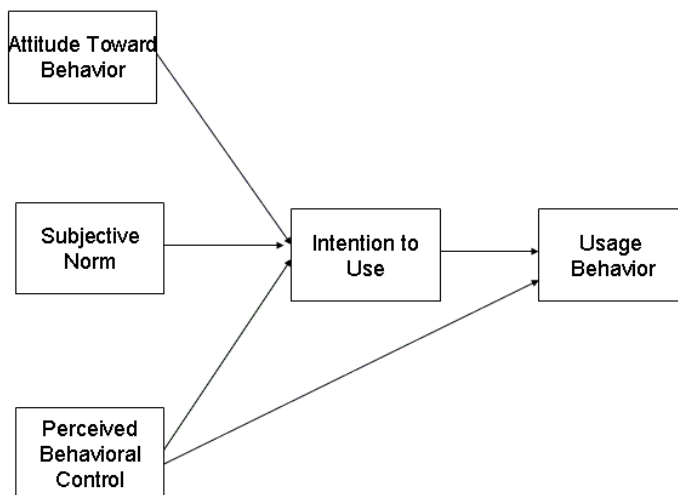


In this study the actual system does not exist. The focus will therefore be on measuring perceived usefulness of a described future system.

### 3.1.2 Theory of Planned Behavior

Another model that has been shown to be useful in predicting computer usage is the Theory of Planned Behavior (TPB) [37].

**Figure 3-2: Theory of Planned Behavior**



Subjective Norm (SN) refers to individuals' perceptions of others' opinions of their behavior. SN has been shown to be a predictor of behavior (Bagozzi et al., 1992; Fishbein & Ajzen, 1975; Mathieson, 1991). Perceived Behavioral Control (PBC) refers to an individual's perception of whether or not he or she can perform a particular behavior.

Based on previous research using the Technology Acceptance Model (TAM) and user acceptance studies focusing on individual differences, subjects with greater prior experience with a technology will more likely use it than those who lack experience. Previous research indicates that Internet experience and perceived usefulness were the strongest predictors of behavioral intent to use Internet communication tools.

To predict the actual use the questionnaire contains questions about the participants' use of internet, to be able to evaluate answers based on prior knowledge of the technology in question.

The research may not lead to generalizations; the goal is to show trends.

## **3.2 Methodology/Research approach**

This research focused on determining the expectations and requests concerning which facilities should be provided in a future “net-health” portal, or in other words determining the perceived usefulness of such a system. Given that this is an in-depth investigation, the case study (Hamel 1993) approach was chosen.

Selection of the research site is the most critical decision in the analytic process of case study research. Due to the fact that the system in question is an addition to the healthcare providers, the main contributors should be users of healthcare services. The choice of medical offices and hospital wards as investigation site was logical.

### **3.2.1 Case study design**

This case study is an investigation into determining if a future “net-health” portal will be a success and which services it should contain to be a success. With TAM and TBP as theoretical framework, exploratory and descriptive (Yin 1994) case design was employed.

To answer the problem the first step was to map the extent of the subject literature (chapter 2). Several surveys map the existing use of existing solutions and how satisfactory the users find these. Despite the extensive amount of health information on the internet, there seem to be little research done as to asking the future potential users what they expect and require of new services.

Due to the limited literature on the specific subject in this thesis, the need for additional research was of importance. In order to obtain information about future users perceived usefulness and use of a net-health portal, a survey in the form of a questionnaire was conducted.

### **3.2.2 Data collection**

This case study made use of the more traditional methods of collecting data. These were questionnaires and the review of documents.

The data needed in this project were opinions from potential users of the solution. The means of obtaining the data were mainly based on response methods, the questionnaire, where the subjects answered questions about opinions about perceived usefulness and expected use of a non existent future solution. By combining structured and unstructured questions, the data obtained were both qualitative and quantitative in nature.



The primary data were the results from the questionnaires and the secondary from previous surveys. The latter consist of results from the study: “Use of Internet Health services in Norway” conducted by Andreassen, Sandaune, Gammon and Hjortdahl, Questionnaire about heart rate equipment by Rune Fensli and other surveys relevant to the research.

The survey targeted chronic patients, but non-chronic patients were also invited to participate. Although chronically ill participants might have a stronger perception and insight of what kind of services they need, at some point in life most people need increased communication with healthcare professionals and have opinions of what they expect of such services in the future.

### ***3.3 Implementation***

To ensure a wide range of respondents from different patient groups, the survey was administered at four different medical offices where there is a continuous flow of visitors and one hospital ward. Visitors were asked to participate in a voluntary survey by completing a paper-pencil questionnaire titled: “Expectations and Perceived Usefulness of a Future Secure “Net-Health” Portal”. The participants could answer while sitting in the waiting room and hand it in at the location they received it or bring the questionnaire home with them and mail it in post paid envelopes.

The questionnaire was designed to be easy and quick to answer so that the majority of visitors would have time to answer while waiting to ensure a high response rate.

Each medical office were given 30 questionnaires, the hospital ward was given 15. 135 questionnaires were distributed. 103 answers were received and are included in the analysis. The questionnaire is described in chapter 4 and included in whole in appendix 1.

### ***3.4 Discussion of methodology***

It's important to meet the requirements concerning reliability and validity in the research. Reliability has to do with the quality of measurement. In its everyday sense, reliability is the "consistency" or "repeatability" of the measures. In statistics a valid measure is one which is measuring what it is supposed to measure. Validity implies reliability (consistency). A valid measure must be reliable, but a reliable measure need not be valid. Validity refers to getting results that accurately reflect the concept being measured.

Some of the questions asked for pure facts. High reliability in the answers of these were expected and also met. Some of the questions were about personal opinions.

The participants were informed that the questionnaires would be confidential and anonymous, this fact and the fact that the answers show a high degree of coherence, the reliability of these questions are assessed to be high.

Based on the answers and the response from the participants, there seem to be no questions as to the concept of the investigation. The number of participants gives sufficient data to ensure a representative sample.

The case study is a popular research approach across many disciplines both basic and applied (Hamel 1993). Despite their popularity they have many strong critics due to the belief that the approach lacks insufficient objectivity and concern over the ability to generalize research results (Berg 2004). The researcher has been careful and tried to maintain objectivity through deliberate construction of a research design. Construction of such a design does much to increase the rigor of a study and counter the claims of “weak research” (Yin 1994). The findings have been examined within the context of the chosen theoretical frameworks; TAM and TPB.

As far as generalizing the results of this research is concerned, Berg (2004) states that:

*“When case studies are properly undertaken, they should not only fit the specific event studied but also generally provide understanding about similar ... events. The logic behind this has to do with the fact that few human behaviors are unique, idiosyncratic and spontaneous.” (Berg 2004).*

### **3.5 Survey Data Analysis**

The data from the questionnaires is described by frequency, correlation and general statistics. SPSS 14.0, statistical software for social statistics (SPSS, 2000), were used to analyze the data

Statistical analysis consisted of descriptive analysis. Frequency analyses were used to describe the results in terms of number and percentage of response. Cross tabulation analyses were used to compare and correlate relationship between variables. Pearsons bivariate correlation, Pearsons coefficient of correlation (Pearsons  $r$ ) were used to measure the relation between answers.

#### **3.5.1 Pearsons Coefficient of Correlation, $r$**

Pearson Coefficient of Correlation is one of the most common measures of correlation or predictability. Pearsons  $r$  can have a value anywhere between -1 and 1. A correlation of 1 or -1 mean that the two variables are perfectly correlated, meaning that you can predict the values of one variable from the values of the other variable



with perfect accuracy. An  $r$  of zero implies an absence of a correlation. The sign of the correlation implies the "direction" of the association. A positive correlation means that relatively high scores on one variable are paired with relatively high scores on the other variable, and low scores are paired with relatively low scores. On the other hand, a negative correlation means that relatively high scores on one variable are paired with relatively low scores on the other variable.

When interpreting the size of a correlation, it is common to square it. When the correlation is squared ( $r^2$ ), we get a measure of how much of the variability in one variable can be "explained by" variation in the other. There are no clear guidelines for determining how much variability explained is a "large" or "important" amount. Pearson's  $r$  is a measure of linear association between two variables. Optimally Pearson's  $r$  is 1, however  $r$  larger than 0.6 tends to show a strong correlation and  $r$  between 0 and 0.2 tends to show a very small correlation.

The results of the research are described in chapter 5. The analyses are given in appendix 2.

## **4 The Questionnaire**

To forecast trends, expert models base its information on questionnaires and interviews. In this research the main source of information is results from the questionnaire. Successful processing of information rests on three pillars. The first, relevance, is guaranteed through a well-designed questionnaire.

### ***4.1 The design of the questionnaire***

The first thing a potential participant notices on a questionnaire is the introduction page. He might flip through the pages of the questionnaire to estimate how long it will take, but most will browse through the information page to see what the survey is about. The information page is thus of great importance. Further the potential participant will consider the timeframe of answering and then at last the participant will look at the actual questions.

#### **4.1.1 The Information Page**

The information page is of great importance. Potential participants will usually decide whether or not to participate based on the information in the information page. The page should therefore be motivational, emphasize the ease of responding and the importance of the research. The information should convince the reader to participate by clearly explaining the importance and how it applies to the potential participant.

In the information page for this survey the participants were given an overview of the project, the solution in question, the researcher and the importance of the study. Based on the fact that all of us at some time or another will be in need of increased communication with health care personnel, the participants were given a chance to be a part of the construction and decision making of what future services will contain.

The participants were informed that participation was voluntary and anonymous. They were also given contact information in case they had questions or comments.

#### **4.1.2 The time-frame**

The time-frame of answering was of great importance due to the fact that the questionnaire was to be administered at a hospital ward and medical offices. The respondents should be able to answer the questionnaire while waiting, where the aim was to get a higher response rate. Every question was important and the questionnaire had to consist of a few concisely formulated and easy to understand

questions. The respondents would not answer if it took too long and the questions were difficult to understand.

To ensure that the questions were easy and quick to answer, the questionnaire mainly consisted of structured check off response categories. The participants were to choose one (or more) suitable answer, or range the answers on a scale. To give the respondents a possibility to elaborate, the questionnaire contained a few open questions, where the respondents could answer freely.

### **4.1.3 The questions**

The first question tends to define the questionnaire as being easy or difficult to complete. If the content of the first question is hard to understand, response rates are likely to suffer.

The initial question should be interest-getting and confirm to the respondent that it is worthwhile to continue. One should start with the easier questions and work through to the more difficult. This is usually not the place to list a series of background characteristics or demographic questions. However, due to the fact that the general demographic questions in this survey were the easy and non-threatening questions, it seemed beneficial to start with the general and easy to answer questions, to keep the flow of the questionnaire.

The conventional wisdom with respect to question ordering is that general questions should precede specific questions. Questions on one topic should be completed before embarking on a new topic. To ensure this, the questions were grouped according to topic, and the general questions were ordered before the specific questions.

The questions were clearly formulated and precise, to avoid misunderstandings. The questions had to be presented in a way that they would be understood and answered accurately by all recipients. The general questions were formulated in short terms and the more difficult questions were given an introduction to ensure that the participants understood what the questions were about.

Most of the questions were closed, both because they are easier to analyze and that they can be presented in a perspicuous fashion. Some of the general questions have also been used in prior research. This enables that the results of this research to be compared with prior research results.

## 4.2 Grouping of questions

The questions in the questionnaire were grouped together in sections according to theme, to maintain continuity in the questionnaire. General background questions, health related questions, internet use and usefulness and use. Usually one would initiate the questionnaire with an interesting question to get the attention of the participant. In this questionnaire however, the most practical was to start with the background information to keep the flow of the questionnaire.

### 4.2.1 General information

The general background information consisted of general the demographics age, gender, education, marital status and living arrangements. The purpose of these questions was to be able to categorize the answers concerning usefulness and use to find potential differences of opinions based on demographics.

Except for the age question, the questions were closed with answering choices.

Kjønn:		Utdanning:	
Mann	<input type="checkbox"/>	Ungdomsskole	<input type="checkbox"/>
Kvinne	<input type="checkbox"/>	Videregående skole	<input type="checkbox"/>
		Høgskole/Universitet	<input type="checkbox"/>
		Annet	<input type="checkbox"/>

Figure 4-1: General demographic questions

The general questions concerning health comprised of yes or no response categories for the general questions, and a defined scale response choices to answer the question about contact with medical personnel.

Hvor ofte er du i kontakt med:	Fastlege	Psykiater	Spesialist/ Sykehuslege	Hjemme sykepleier	Fysioterapeut
1-2 ganger i uken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1-2 ganger i måneden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1-2 ganger i halvåret	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1-2 ganger i året	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sjelden eller aldri	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Har du noen gang lest din pasientjournal eller deler av den?	Ja <input type="checkbox"/>	Nei <input type="checkbox"/>
Har du bedt om en kopi av din pasientjournal eller deler av den?	Ja <input type="checkbox"/>	Nei <input type="checkbox"/>

Figure 4-2: Contact with health care personnel

## 4.2.2 Use of Internet

In this research project it was of great interest to investigate the participant’s use of the internet. Because the technical solution described and investigated is internet based, both general information about the participants use of internet and internet based services besides health informatics were of interest.

The questions sought to gain information about the participants’ availability of internet and frequency of use in addition to the use of online health related services. In the question about frequency of internet use, the participants were given 4 choices were they were to chose one that most accurately described their frequency use. The general internet questions consisted of Yes and No answers, while the section on health related online services consisted of 5 scale response categories from very often to never.

	Veldig ofte	Flere ganger	Noen ganger	Sjeldent	Aldri
Undersøkt ventelister på sykehus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lest informasjon på sykehusenes nettsider?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lest informasjonssider om helsestoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Søkt etter behandling for din sykdom?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Søkt etter livsstils/kostholdsråd?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Figure 4-3: Frequency of use of online health information**

## 4.2.3 Perceived usefulness and expected use of the functions

Given that the participants were asked to assess the usefulness of a system that they could not try out, it was practical let them categorize the perceived usefulness on a scale from 1 to 5, with 5 being very useful and 1 being not useful. Thus, giving the participants a way of ranging the features according to which functions were of importance to them. Which services they perceived as being more useful compared to the others.

	Veldig nyttig		Ikke nyttig		
	5	4	3	2	1
Bestille legetime	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spørre legen/sykepleier om behandling av din sykdom og få svar (meldingsfunksjon)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spørre legen om sykemelding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Figure 4-4: Assessment of usefulness**

## The expectations and perceived usefulness of a future “net-health” portal

One might feel that something is extremely useful, but never actually use it. The questions about expected use would give more accurate assessment of the expected use by ranking the answers by how often they thought they might use the different functions. The response categories consisted of 5 choices ranging from daily to never.

	Daglig	1-2 ganger i uken	1-2 ganger i mnd	1-2 ganger i året	Aldri
Bestille legetime	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spørre legen/sykepleier om behandling av din sykdom og få svar (meldingsfunksjon)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spørre legen om sykemelding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Figure 4-5: Expected use**

### 4.2.4 Use of the system

The final questions about the expected use of the system consisted of two questions concerning in which situations the participants would use the system and the likeliness that they would want to use the system. The response choices for when to use the participants were multiple choice were the participants could chose between 4 responses, by marking all, none or any given number of them.

The response groups for one of the most important questions in the research study, the likeliness that participants would use the described system. The response categories consisted of a scale from one to five, with 1 being not likely and 5 being very likely. The participants were asked to assess the likeliness that they would use the system immediately if it existed, within a year, in the next few years or never at all.

	Veldig sannsynlig			Ikke sannsynlig	
	5	4	3	2	1
Umiddelbart dersom den var tilgjengelig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Innen ett års tid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Innen 2-3 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Innen 3-5 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aldri	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Figure 4-6: Likelihood of use of the system**

### 4.2.5 Final open questions

To enable the participants to elaborate their answers, the questionnaire was rounded up with two open ended questions.

Because the participants had been asked to assess the perceived usefulness and expected use of different functions, it was of great importance to allow the participants the possibility to suggest functions they would expect to see and use in the future.



The questionnaire only contained a selection of potential functions; the participants might expect and want other functions. They were therefore asked to list other potential services or functions that might be of importance.

The open ended questions at the end also gave the participants a possibility to evaluate and review the questionnaire and the research study. They were encouraged to express comments and viewpoints.

### ***4.3 Enhancing the response rate***

High survey response rates are desirable because they increase the precision of parameter estimates and reduce the risk of non-response bias. Many factors may combine to influence the decision of a recipient of a questionnaire to respond;

- Potential respondents must have both the means to complete the questionnaire and the will to do so; the perceived costs of responding must not exceed the benefits.

In this research the participants were targeted at medical offices. Usually when you have an appointment with the doctor, you will have to spend some time in the waiting room. By administering the questionnaire to the people waiting, they would have an opportunity to answer while waiting. Thus the participants would have something to do while waiting. The cost of responding would not effect the personal time for participants, thus enhancing the probability that the visitors at the medical office would take the time to answer. Additionally the participants could hand in the response at site, giving them no excuse not to return the questionnaire once finished.

- The apparent relevance, importance and interest of the survey to the respondent are very important influences on response rates. Fortunately, health-related surveys are likely to be perceived as salient.

Once again the fact that the questionnaire was administered at a medical office is of importance in enhancing the response rate. People take an interest in health. Additionally this survey emphasized on the fact that the reason for the survey was to gather information of the general public, the future users of the systems. Often the users will not be asked for their opinion about a system before the system actually exists. The fact that the participants could contribute to the development of the system at an early stage, might enhance the response rate given the importance put on the participants' contribution.

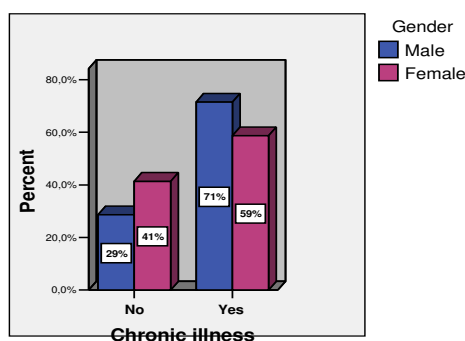
## 5 Results from the Questionnaire

During the period of the survey a total of 103 people participated in the survey. The frequencies of the multiple-choice alternatives were computed using the software SPSS 14.0. The free-text answers were analyzed using a grounded theory approach.

### 5.1 Demographics

The majority of respondents were female (73%). The inquirers were asked to indicate their age in number of years. The mean age of the participants was 43, with a range from 17 to 83. Of the participants, 3 did not enter their age. Nearly half of the participants had higher education with a college or university degree.

**Figure 5-1: Chronic illness according to gender**



A majority of the participants had chronic illnesses (62 %) and about half of them (54%) used medicine on a daily basis. A substantial minority of the participants made use of medical measuring devices. It is also interesting to see that the majority (67%) of the participants had never reviewed their medical records. A substantial majority of the participants had contact with their general practitioner at least once or twice a year (95%).

	Male	Female	Total
Mean age	51	40	43
Gender	28 (27 %)	75 (73 %)	103
College/University degree	16 (57 %)	31 (42 %)	47 (46 %)
Reviewed parts of their medical records	9 (36 %)	24 (33 %)	33 (34 %)
Chronic illness	20 (71 %)	44 (59 %)	64 (62 %)
Daily use of medicines	17 (63 %)	38 (51 %)	55 (54 %)
Use of medical measuring devices	7 (19 %)	17 (22 %)	24 (21 %)

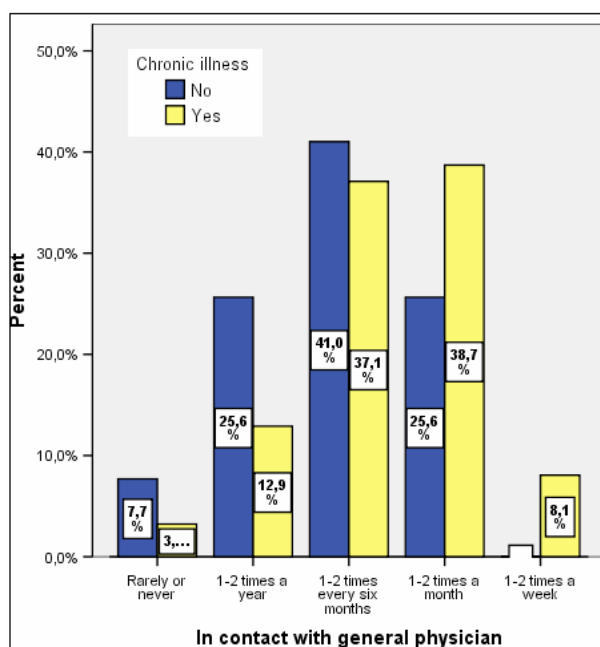
**Table 5-1: General demographics**

As to contact with general physician, most of the participants visited their doctor once or twice a month or once or twice every six months. A great minority of the participants sat their physician more often than once or twice a month.

Doctors visits	1-2 times a week	1-2 times a month	1-2 times every six months	1-2 times a year	Rarely or never
Total	5 (4,9%)	34 (33%)	39 (37,9%)	18 (17,5%)	5 (5%)
Chronic participant	5 (8,1%)	24 (38,7)	23 (37,1%)	8 (12,9%)	2 (3,2%)
Female	4 (5,5%)	23(31,5%)	31 (42,5%)	13 (17,8%)	2 (2,7%)
Male	1 (3,6%)	11 (39,3%)	8 (28,6%)	5 (17,9%)	3 (10,7%)

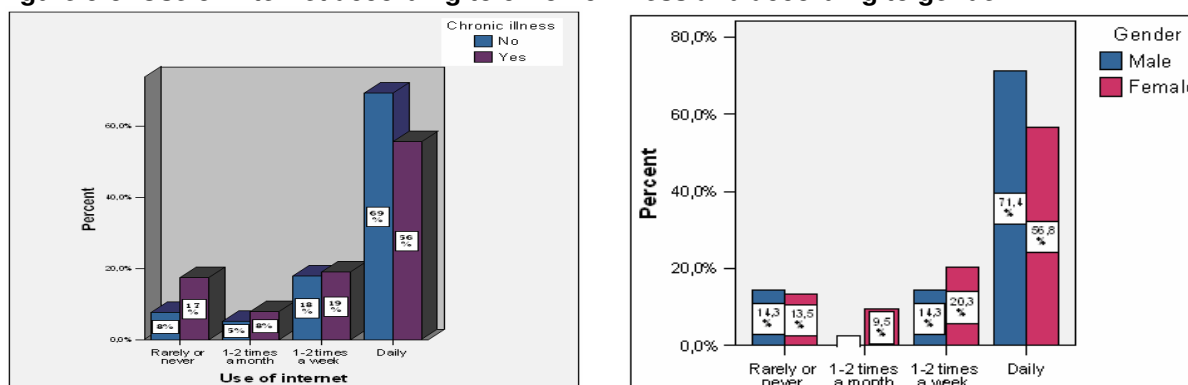
**Table 5-2: Contact with general physician**

**Figure 5-2: Chronic patients contact with general physician**



## 5.1 Use of internet

Most of the participants used internet on an everyday basis (62%) or once or twice a week (19%). Only a considerably minority (14%) of the participants answered that they rarely or never use internet.

**Figure 5-3: Use of internet according to chronic illness and according to gender**


The majority of the participants had internet access at home (84% and 87% of those with chronic illnesses). The majority of participants used online bank services (79%) and many of the participants had searched the net for health related information (67%, 73% of the female participants).

	Male	Female	Total	Chronic illness
Internet access at home	23 (82 %)	63 (85 %)	86 (84 %)	55 (87 %)
Online health information search	14 (50 %)	54 (73 %)	68 (67 %)	39 (62 %)
Online purchases	15 (54 %)	47 (64 %)	62 (61 %)	35 (56 %)
NetBank	19 (68 %)	61 (84 %)	80 (79 %)	50 (81 %)

**Table 5-3: Internet demographics**

Despite the high percentage of internet use and use of internet to search for health information, a majority of the participants had never used internet to read information on hospital web-sites (76%) or look into hospital waiting lists. 41% of the participants of the participants with chronic illnesses had never used internet to search for information about treatment of their disorder (42% of the participants without chronic illness).

## 5.2 Usefulness of the functions in the solution

To map what kind of online services users expect in the future, the participants were asked their opinions about the usefulness of a number of services that might be a part of a future personal “net-health” portal. The results are shown in table 5-4, ranked by order of highest perceived usefulness.

The participants agreed to great extent that services like renewing prescriptions, ordering medicines from the pharmacy and get test results were very useful. About 80% of the participants agreed and only 10-12% thought they were of little or no importance. The services the respondents found to be of least usefulness was the health journal, entering data from measuring devices and chatting with others in the same situation.

Usefulness	Very useful	Not useful
Renew prescriptions	82,3 %	9,4 %
Get test results	80,3 %	12,5 %
Order medicines from the pharmacy	78,7 %	11,7 %
Find previous answers from doctor/nurse	75,5 %	13,9 %
Information about effect/side effect of your medicines	75,0 %	12,5 %
Relevant and quality assured information	73,7 %	12,6 %
Order appointment with doctor	72,4 %	13,3 %
Access to your patient record	70,2 %	12,8 %
Accommodated training and directions about treatment	67,4 %	15,8 %
Ask the doctor/nurse message service	67,3 %	14,3 %
Overview of medicines	66,7 %	16,2 %
Decide which health practitioners get access	65,3 %	14,8 %
Statistics of progress/improvement	61,7 %	20,3 %
Health and diet tips	59,8 %	20,6 %
Evaluation of your effects of medicines	55,6 %	23,3 %
Ask for medical certificate	53,2 %	28,7 %
Participation applications to relevant conferences	53,2 %	19,1 %
Health journal (your data)	43,5 %	31,6 %
Enter data from measuring devices	39,3 %	37,2 %
Chat with others in your situation	38,7 %	26,9 %

Table 5-4: Perceived usefulness

### 5.3 Expected use of the functions in the solution

In this research the aim was to determine the expectations and request. Based on the fact that this is not a system the users could try out, it was important to not only investigate the perceived usefulness of different facilities, but also the expected use of these facilities. The participants were asked to give an estimate of how often they thought they would use the different services they had graded according to usefulness. The results are shown in table 5-5, ranged with the functions with the highest percentage of never be used at the bottom.

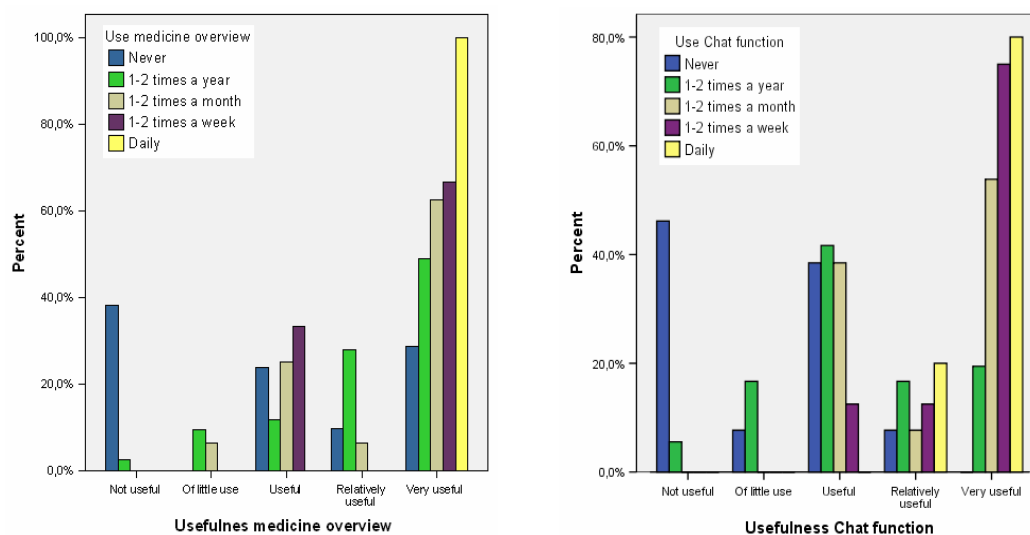
Use	Daily or 1-2 times a week	1-2 times a month	1-2 times a year	Never
Order appointment with doctor	7,6 %	34,8 %	48,9 %	8,7 %
Relevant and quality assured information	14,6 %	21,4 %	54,0 %	10,0 %
Find previous answers from doctor/nurse	4,5 %	18,0 %	66,3 %	11,2 %
Renew prescriptions	4,5 %	31,8 %	52,4 %	11,4 %
Ask the doctor/nurse message service	10,1 %	27,0 %	48,3 %	14,6 %
Accommodated training and directions about treatment	10,0 %	26,1 %	48,9 %	14,8 %
Get test results	4,4 %	28,9 %	51,1 %	15,6 %
Access to your patient record	5,7 %	24,0 %	54,6 %	16,0 %
Health and diet tips	17,0 %	20,0 %	47,0 %	16,0 %
Information about effect/side effect of your medicines	9,2 %	19,5 %	55,2 %	16,1 %
Decide which health practitioners get access	9,0 %	20,0 %	52,0 %	19,0 %
Order medicines from the pharmacy	6,9 %	32,2 %	40,2 %	20,7 %
Overview of medicines	5,8 %	19,5 %	50,6 %	24,1 %
Statistics of progress/improvement	8,0 %	21,6 %	45,5 %	25,0 %
Participation applications to relevant conferences	3,4 %	20,0 %	50,6 %	26,0 %
Chat with others in your situation	15,0 %	15,0 %	40,5 %	29,5 %
Evaluation of your effects of medicines	8,2 %	22,4 %	38,8 %	30,6 %
Ask for medical certificate	3,3 %	11,1 %	46,7 %	38,9 %
Health journal (your data)	16,0 %	16,0 %	26,0 %	42,0 %
Enter data from measuring devices	5,8 %	15,0 %	30,0 %	49,5 %

Table 5-5: Expected use

## The expectations and perceived usefulness of a future “net-health” portal

Most of the participants would use most of the services, but most of them not more than once or twice a year. The expected use correlated to a relatively high degree on the measurements concerning very useful/relatively useful and use once or twice a year, and the measurements concerning not useful and never use.

By using Pearsons correlation analysis of the perceived usefulness of a service and the use of the service, the variables had a tendency to follow each other. If the perceived usefulness was high, the expected use was high. If the expected usefulness was low, so was the expected use of the service and vice versa. The correlation was on an intermediate level between high and low correlation, with a Pearsons coefficient of correlation, Pearsons  $r$ , at a minimum of 0.353 for the overview of medicines to a maximum of 0.641 for the chat function. Values of  $r > 0.6$  tends to show a strong relation, while values of  $0.2 > r < 0$  tends to show a weak relation.



**Figure 5-4: Cross tabulation Use and Usefulness of medicine overview function and chat function**

## 5.4 Expected use of the solution

The participants were asked to assess the likeliness that they would use the “net-health” portal solution. The majority of participant (70.8 %; 70.3 % of the chronically ill participants) answered that it was very likely or reasonable likely that they would start using the portal immediately if it existed. 61.1 % within a year, 50 % within 2-3 years and 3-5 years. 77.6 % of the participants that used internet daily would start using the solution immediately and 80 % of the participants that used internet once or twice a week.

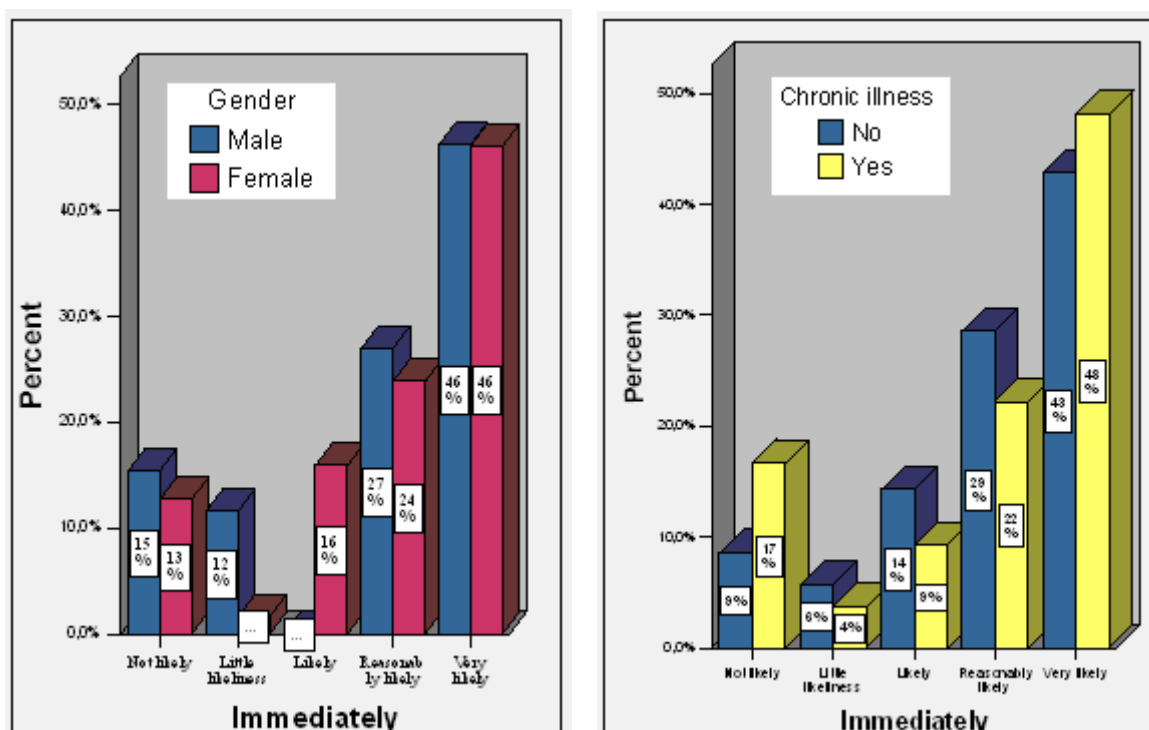


Figure 5-5: Likelihood of immediate use of the “net-health” portal according to gender and chronic illness

Relations between use of internet and likeliness of use of the "net-health" portal

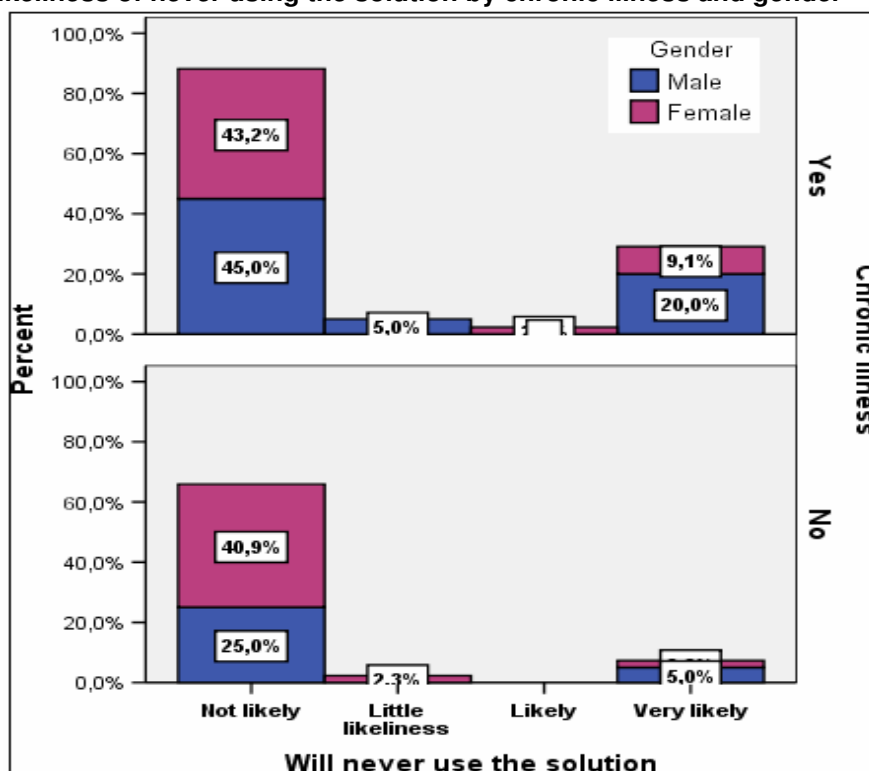
	Very likely	Reasonably likely	Likely	Little likelihood	Not likely
Daily	55,2 %	22,4 %	6,9 %	5,2 %	10,3 %
1-2 times a week	33,3 %	46,7 %	6,7 %	6,7 %	6,7 %
1-2 times a month	33,3 %		66,7 %		
Rarely or never	22,2 %	22,2 %	11,1 %		44,4 %

Table 5-6: Relations between internet use and assumed immediate use of the service



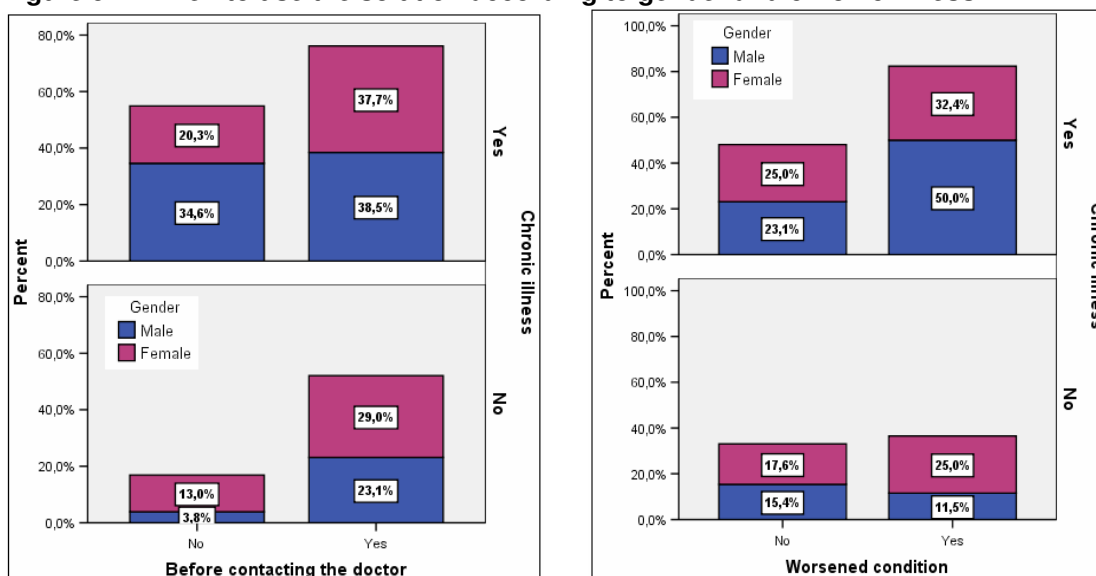
Only a considerable minority of the participants claimed that it was very likely that they would never use the service (15.6 %). 11 participants to be exact, 9 of them participants with chronic illnesses, explicitly answered that they would never use the solution. Interestingly 11 participants with chronic illnesses rarely or never used internet. 44.4 % of the participants that answered that they would never use the service, never or rarely used internet. 23.7% of the chronically ill participants (9 participants) answered that it was most likely that they would never use the solution, while only 7.7 % of the not chronic participants claim the same.

**Figure 5-6: Likelihood of never using the solution by chronic illness and gender**



As to the question concerning which situations the service were likely to be use, the majority of the respondents answered that they would use the solution before contacting the doctors office (65.3%), in the case of worsened condition (58.5%) or on vacation (52.1%).

**Figure 5-7: When to use the solution according to gender and chronic illness**



Neither the chronically ill participants or the participants with no chronic illness were likely to use the service for daily follow-up (72.3%).

### 5.5 Response from the open ended questions

The participants were given an opportunity to express their opinions in two open questions. Many of the participants had no other services to recommend, but said that they hoped to see the solution soon. A few commented that the most important was the physical contact with their doctor.

The participants that had recommendations about functions that should be added were for the most part similar. They often mentioned that it would be important with links to information sites like patient organizations, rights, offers for people with special needs/same diagnosis like travel arrangements, and general information about services, treatment and overview of doctors and specialists. A few did also emphasize the need to gain access to relatives' personal portal pages, mainly for their children and elders.

## 6 Discussion of the results

In this research study the aim was to map patients' expectations and requests concerning which facilities should be provided in a future “net-health” portal. The basis of the project was a combination of factors; The expanded use of internet as a source of information, people in general have increased knowledge about their own health situation together with the governments focus on the individual. The number of individuals receiving treatment of some kind at their own homes grows. The governments focus on the individual. The patient is to be in the centre of treatment and the health care system, as an active participant and in control of his own situation. And most importantly the fact that an increasing portion of people want to be able to communicate electronically with their health care providers.

By creating a personal web portal, the patient will be in control and have access to all relevant information about his own health situation. At the same time everybody that needs it will have access to relevant and accurate information at all times.

### ***6.1 Discussion of the results in relation to the research question***

The aim of the research was to map patients' expectations and requests concerning facilities in the future. To answer this, a survey among potential future users was conducted. The users were asked to evaluate the perceived usefulness of a number of services. Most of the services described was perceived as very usefulness and should therefore be essential and easy to access in the solution.

As to the expected frequency of use, most of the participants expected that they would use the services described once or twice a year. The expected use of the services should also be seen in relation with how often the participants used to visit their general physician. 33% of the participants usually saw their doctor once or twice a month or 37.9 % once or twice every six months. Based on the answering choices, the participants could only choose from: daily, 1-2 times a week, 1-2 times a month, 1-2 times a year or never. In further surveys it might be an idea to add at least one more option to find out if the participants that answered once or twice a year might actually use the service more than once or twice a year, say 3-5 times a year or so (one of the participants said so in the questionnaire). Even though, a high percentage of the participants agreed to the usefulness of the services and that they expected that they would use them.

According to the participants' comments, the survey included most of the essential functionality they expected to see in the future. The other services they mentioned were aspects that would fall in under the described services. Like links to information

sites would be a part of quality approved and relevant information to the individual. Most of the comments were about easy access to relevant information and sites. The services that ranked highest on both usefulness and use should be the main services in the “net-health” portal. Even though some of the services didn’t obtain a very high ranking, it might not mean that it is not useful and shouldn’t be a part of the solution. However it might not be the most important feature and should therefore not be prioritized in the index page of the portal.

## ***6.2 Discussion of the results in relation to prior research***

Prior research emphasize that an increasing proportion of Norwegians (and people all over the world) use internet for health purposes. Increasingly more people want to be able to communicate electronically with their health care professionals. Internet based health services are never meant to replace the traditional doctor-patient relationship, but be a supplement to improve health services. However, research show that internet communication appears to replace some consultations and telephone inquiries but that this reduction is equivalent to electronic communication.

In this research a major part of the participants had used internet to search for health related information, and is thus collaborated by earlier studies. The fact that a great portion of the participants would want to use a personal “net-health” portal, shows that they want electronic communication with their health care providers. Again prior research and this research obtain similar results. As many as 82.8% of the participants answered that it was not likely or little likeliness that they would never use the solution, thus the participants expect to be using the solution described or other similar solutions in the future. Comments from the participants in the open question also emphasized that many of them hoped to see the solution soon.

In the PatientLink study the main reasons the participants gave for using the system was practical reasons like accessibility beyond office hours, saves time, saves trips to the medical office and you don’t have to wait on the phone line. In this study some of the services that were perceived as most useful and would be used the most were services like order appointment, renew prescriptions and get test results. These are services that would require time, possible trips to the medical office and/or phone calls.

### ***6.3 Discussion of the results in relation to theory***

The services that were perceived as very useful by a large portion of the participants were also assessed to be the services that would be used most often. Of the top ten most useful services, only 1 of them was not within the top 10 of use. The 6 services that were perceived as least useful were also the bottom 6 on the list of use of services (not in the same order).

These results support the theory of the Technology Acceptance Model (TAM) that states that perceived usefulness is a factor in the prediction of system use. The services that are perceived as most useful are also expected to be used more often.

The majority of the participants had internet access at home (84%) and used internet daily or once or twice a week (62%, 19%). According to the theory of planned behavior (TPB), subjects with prior experience with a technology will be more likely to use it. Thus, the participants that used internet on a regular basis were more likely to be expected to use the service.

According to the results 77.6% of the participants that used internet daily and 80% of the users that used internet once or twice a week answered that it was very or relatively likely that they would start using the solution immediately if it existed. Of the participants that rarely or never used internet 44.4% answered that it was very or relatively likely that they would use the solution. 44.4% in itself is not a bad result considering that they didn't use internet on a regular basis, but compared to those who did, it shows great difference between those who have experience with the technology and those who don't thus supporting the theory of planned behavior.

Additionally 62.5% of the participants that rarely or never used internet answered that it was very likely that they would never use the solution, while only 11.9 % of the participants that used internet daily or once or twice a month answered the same.

## 7 The future “Net-health” portal – design recommendation

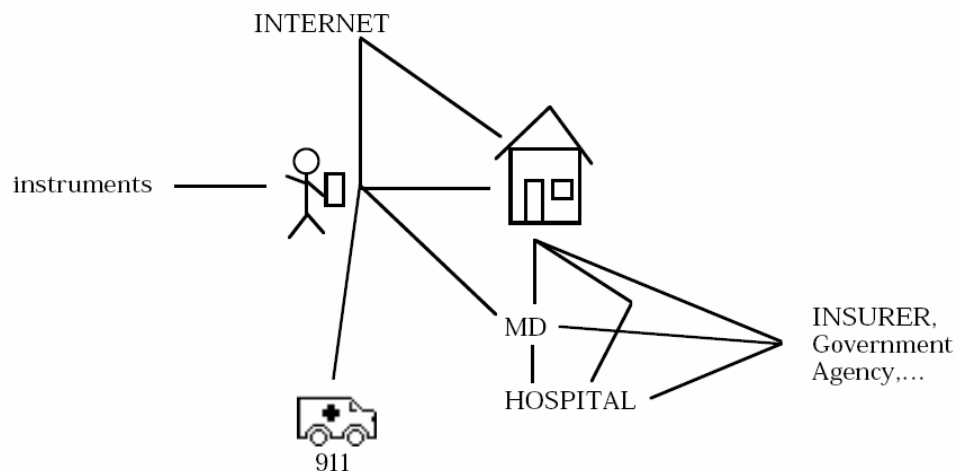
Current health information systems are built for the convenience of health care providers. The goal is to construct an information system centered on the individual patient instead of the provider to help track, manage and interpret the subject’s health history, and offer advice to both patient and provider.

The relationship between doctors and patients are changing, and can be noted in the growing body of data suggesting that patients are very interested in exchanging emails with their physicians. Health care seems to be shifting toward a cultural belief in personal responsibility for one’s health, the informed consumer. Patients and physicians alike will need to develop a partnership rather than the passive, submissive patient model of the past.

As medical practice has become more capable and more complex, it has become more and more difficult to explain all this to the average patient. The rapidly increasing pace of medical care means that there is no leisure time for the doctor to provide lengthy explanations and to make sure that the patient actually understands. Health information systems should be designed and built specifically to meet the need of their subjects, the patients.

The idea with a personalized health information system is to help patients understand and make them confident to make decisions about their own health, and to educate them about their choices and obligation to take charge over their own situation.

The personal “net-health” portal is to be designed based on the needs and requests of the patient, where the patient is to be in the centre with control of his own situation. The aim is to coordinate all relevant parties in a patient’s treatment program into one service to ensure interaction between the health care sectors with main focus on the patient.



## ***7.1 General design recommendation***

The “net-health” portal is not meant to replace traditional doctor-patient relationship. The portal is meant to be an amendment. In the long run the portal is meant to be used as a routine health assistant for everyone when they are in need of health services.

To be accessible to everybody, the solution must be highly flexible. First of all it has to work on different types of electronic devices like Personal Computers, PDA's and advanced mobile phones. To be able to do that the solution must not rely on or require particular types of operating systems. The users must be able to access the portal from anywhere in the world with no other requirements than an internet access.

Users may need the system at any given time. Therefore the system must be online and working around the clock. The system should be dynamic and change according to the needs of the individual user and it must be flexible about adding new services. When the system is up and running it cannot be reset for any reason, because that would mean that the extensive information that is stored will be lost.

At a minimum the system should maintain comprehensive, cumulative, correct and coherent medical records. When a patient moves or otherwise changes doctors or hospitals, chances are that many of his or her medical records become effectively lost. By gathering and storing information about each patient in one joint system, the information will never be lost, no matter how many times the patient changes doctors or how many specialist the patient visits.

To accommodate all kinds of users the service should be intuitive and easy to use, so that anybody can use it regardless of prior technical insight and with minimal training. When a user log on to the portal he should see a well arranged page. There is no need for flashy design features; they will only take the attention away from the services. The information and services must be presented in an educational fashion with icons and informative tabs that allow the user to easily find and use the different services.

The security of the portal must at least be as secure as internet bank solutions. This is extremely important because of the sensitive information that will be stored and transferred through the system. Because of the strong Norwegian legislation regarding handling of person related information, the system must be built to meet the requirements of the Data Inspectorate.

## **7.2 Service Recommendation for the personal “net-health” portal**

The services in the system should be based on evaluation of future users, in this case the participants of the survey. The recommendation is therefore based mainly on the research results of the survey conducted in this project.

According to the analyses of the results, a ranking of the services were made. Because the perceived usefulness corresponded to some extent with the expectation to use the service, the researcher have assessed that the services with the highest degree of usefulness that are also the highest on expectation to use were the most important services. The ranking list according to both usefulness and use;

1. Renew prescriptions
2. Find previous answers from doctor/nurse
3. Order doctors appointment
4. Access to relevant and quality assured information
5. Get test results
6. Ask the doctor/nurse message service
  - Information about effect/side effects of your medicines
  - Order medicines from the pharmacy
  - Accommodated training and directions about treatment

The final four received an equal score when combining the results, thus they are all equally important. 10<sup>th</sup> place was shared between “Decide who get’s access” and “Health and diet tips”, 12<sup>th</sup> place Overview of medicines and 13<sup>th</sup> place was Statistics of progress/improvement.

The top 6 ranked services should be the basis of the solution and available for everybody. When a user log on to the “net-health” portal, he or she should immediately see these services represented. It might be an icon that says: “Order appointment” or “Renew prescription” and an inbox with new and old messages from the doctor/nurse. The user must be able to use these services without having to look for them and by one click on the mouse.

The message service can be a form of email service integrated in the solution. It must be as easy or easier to use than regular mail systems. For example, the user that wants to send a message can click a button or an icon, and be directly in a new message where he or she can chose recipient from a list of people that have access to parts of the patients personal pages. The user can then write the message and click the send button. The service should be that easy. The message service can be an adjacent to personal communication, while information from websites or support groups will enhance instructions obtained directly from the physician.



If the patient wants to order a new appointment with his doctor, he should be able to do so by clicking a button or an icon that represents ordering doctors appointment, chose doctor from a list if he has more than one, and then either automatically send a request for appointment or chose from available appointments in the doctors schedule.

Patients who were to use this solution should be in control of who have access. Certain people like their general physician might be obvious. However, participants in the survey commented that they should be able to access relatives personal pages. Parents must automatically have access to their minor children personal pages. In some cases it might be vital that relatives have access to each others pages or parts of the pages, and this should therefore be an option. The decision must fall on the individual.

Access to relevant and quality assured information scored high on the ranking of preferred services and were also mentioned several times by the participants of the survey in the comments. General information about health should be available to everybody. Information about different conditions should be grouped so that the individual gets an information package that fits his condition. The information might be links to open sites with especially interesting information to the particular patient. It might be links to up-to-date diagnose description, recent research articles, treatments or current courses of interest. The portal should also contain links to other relevant institutions and patient organizations.

### **7.3 Module recommendations**

The fundamental services should be available to everybody. However certain groups of patients might be in need of additional services. These additional services can be placed in different modules that are added to the users who need them. Examples of such modules are;

The medication module; for patients that require different kinds of medication at different times a day, it would be favorable to have access to a medication list where all administered medicines, the quantity and time were registered. It might also be useful to have information about effects and side effects of the different medicines. Often the patients do not remember exactly what the different medicines are for and what effects they have. An accurate medication list will also help reduce the chance of medicating mistakes by ensuring that all involved medical personnel will have access to the same information.

The measurement module; some patients have to measure certain functions on a regular basis. For patients that use medical measurement devices at a regular basis it might be favorable to be able to transmit data electronically in stead of having to go



the medical office. The readings can easily be transmitted from a medical measurement device to a pc, PDA or mobile phone and thus be electronically transmitted to the portal.

The monitor module; might be an option for patients that require extensive treatment and monitoring of medicines, effects, and measurements of different functions. In addition to the medical list and the electronic transmission of measuring data, the patient might need to be able to self-report on own condition. By adding a health journal, the patient can enter self-reports and evaluations on effects of medicines, state of health or even detailed information on diet, activities and exercise. The patient might also prosper from having statistics on progress and progress in comparison with expected progress. For some patients it will be essential to get regular feedback and especially if measurements vary from the regular pattern. Perhaps should the patient increase a dosage of a medicine or have eaten something special that day that may affect the reading. Regardless the patient should be warned and a suggestion of action should be given.

## **7.4 Summary**

By active monitoring of accurate and comprehensive information the quality of health care can be greatly improved. Errors can be reduced and it can help people to make better personal decisions about their care. Benefits for doctors and other health-care providers include access to accurate, comprehensive data, the opportunity to be alerted to changes in the patient’s health, and the ability to communicate reliably with the patient.

The system should be based on the preferences of future users, to ensure that they receive the services they expect and need. In the long run the portal is to be used as a routine health assistant for everyone, in the short term it might be easier to apply it to specific populations of people who are undergoing active and complex therapy, chronic patients.



## 8 Conclusion

The introduction of a personal “net-health” portal in the health care system can greatly improve the quality of health care services. With the increasing number of people receiving treatment at home and the expanded use of internet to obtain health information, future health consumers expect more from the health care system. Health care system has to follow the trends in the society and the advances in technology to meet the demands of the active and participating patient.

The main goal of this project was to investigate patient’s expectations and requests to a future “net-health” portal, designed as an active tool in continued interaction between the patient at his home and the different health care services. The survey study in this research project showed that there is a major interest in using an online portal solution. A great portion of the participants expected that they would use the “net-health” portal. However, the use of the different services in the portal would mainly be once or twice a year. This might not be the case for patients with a greater need for monitoring.

The survey also showed what kind of services the participants perceived to be useful and expected that they would use in the portal solution. Based on the participants’ answers, some services stood out as more important. The design of the solution should include these services as a basic offer to everybody as described in the design recommendation.

Because the needs of people concerning health care change with time, the solution must be highly flexible and dynamic. Users should get an accommodated solution that changes with the user.



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## **Appendix A**

### **The Questionnaire**





## **INFORMASJON TIL DELTAKERE AV SPØRREUNDERSØKELSE**

Denne spørreundersøkelsen er en del av en masteroppgave ved Høgskolen i Agder våren 2006. Formålet med undersøkelsen er å kartlegge forventninger og oppfattet nytte av en fremtidig sikker Nett-Helse portal for kroniske pasienter.

Selv om du ikke har en kronisk lidelse er ditt synspunkt relevant. De aller fleste av oss vil på ett tidspunkt eller et annet ha behov for økt kommunikasjon med helsevesen. Det er med bakgrunn i dette vi ønsker din deltakelse i undersøkelsen.

Den teknologiske fremgangen fører også til endringer i helsevesenet og pasienters kontakt med helsevesenet. Samtidig med økt bruk av internett som kilde for informasjon, mottar stadig flere behandling i eget hjem. Regjeringens mål er at behovet til den enkelte pasient eller bruker skal være utgangspunktet for tjenestetilbudet i helse- og sosialsektoren. Pasienten selv får økt ansvar og tar en mer aktiv del i egen behandling.

Tidligere undersøkelser viser at stadig flere ønsker kontakt med helsevesenet over internett, men vi vet lite om hva pasienten ønsker eller har behov for i en slik type tjeneste.

En Nett-Helse portal er en sikker internettside som kan tilby en rekke resurser og tjenester, samlet på et sted. Dette kan være et grensesnitt mellom deg og helsevesenet. Du som bruker kan kontrollere hvem som skal få tilgang til dine fortrolige helseopplysninger, og portalen vil være individuelt tilpasset deg som bruker.

Det er viktig for deg å vite at undersøkelsen er frivillig å delta på. Denne undersøkelsen er anonym. Det blir ikke bedt om noen personopplysninger så det vil ikke være mulig å finne tilbake til den enkelte deltaker.

Takk for din deltakelse!

Ved spørsmål eller kommentarer, ta kontakt med:

Trude Buøy

Telefon.: 922 34 746

E-post: [tbuoy00@student.hia.no](mailto:tbuoy00@student.hia.no)



The expectations and perceived usefulness of a future “net-health” portal

**Generelle opplysninger:**

**Hva er din alder?.....**

**Kjønn:**

**Utdanning:**

Mann ☐

Kvinne ☐

Ungdomsskole ☐

Videregående skole ☐

Høgskole/Universitet ☐

Annet ☐

**Sivilstatus:**

**Boforhold:**

Enslig ☐

Gift/samboer ☐

Bor du i enebolig/leilighet ☐

Omsorgsbolig ☐

Sykehjem/Institusjon ☐

Annet ☐

**Har du vedtak på helsetjenester som hjemmesykepleier el.?**

Ja ☐ Nei ☐

**Har du trygghetsalarm?**

Ja ☐ Nei ☐

**Helsetilstand:**

**Bruker du medisiner daglig?**

Ja ☐ Nei ☐

**Har du en kronisk lidelse?**

Ja ☐ Nei ☐

**Hvis ja, innen hvilken kategori av kronisk lidelse?**

Hjerte- og karsykdom ☐

Lungesykdom ☐

Ledd- og muskellidelser ☐

Fibromyalgi ☐

Kreft ☐

Diabetes ☐

Psykisk lidelse ☐

Annet ☐

**Bruker du i dag noen medisinske apparater for måling eller behandling av din sykdom:**

Måling av blodtrykk Ja ☐ Nei ☐

Måling av blodsukker Ja ☐ Nei ☐

Måling av lungefunksjoner Ja ☐ Nei ☐

Pulsklokke Ja ☐ Nei ☐

Oksygenbehandling Ja ☐ Nei ☐

CPAP/pustemaske Ja ☐ Nei ☐

Annet Ja ☐ Nei ☐

## The expectations and perceived usefulness of a future “net-health” portal

### Hvor ofte er du i kontakt med:

	Fastlege	Psykiater	Spesialist/ Sykehuslege	Hjemme sykepleier	Fysioterapeut
1-2 ganger i uken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1-2 ganger i måneden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1-2 ganger i halvåret	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1-2 ganger i året	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sjelden eller aldri	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Har du noen gang lest din pasientjournal eller deler av den? Ja ☐ Nei ☐

Har du bedt om en kopi av din pasientjournal eller deler av den? Ja ☐ Nei ☐

### Om bruk av internett i helsesammenheng

#### Hvor ofte bruker du internett?

Daglig	<input type="checkbox"/>
1-2 ganger i uken	<input type="checkbox"/>
1-2 ganger i mnd	<input type="checkbox"/>
Sjeldent eller aldri	<input type="checkbox"/>

Har du tilgang til internett hjemme? Ja ☐ Nei ☐

Har du noen gang benyttet internett til å søke etter medisinsk informasjon? Ja ☐ Nei ☐

Har du noen gang benyttet internett til å kjøpe varer eller tjenester? Ja ☐ Nei ☐

Bruker du i dag nettbank tjenester på internett? Ja ☐ Nei ☐

#### Har du benyttet internett på følgende måte?

	Veldig ofte	Flere ganger	Noen ganger	Sjeldent	Aldri
Undersøkt ventelister på sykehus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lest informasjon på sykehusenes nettsider?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lest informasjonssider om helsestoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Søkt etter behandling for din sykdom?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Søkt etter livsstils/kostholdsrad?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Om personlig "nett-helse" portal:

Hvordan vil du vurdere nytteverdien av følgende tjenester i en personlig brukerside der du har en sikker Internett kommunikasjon med lege/sykepleie/andre helsefag personer (nettbank-lignende løsning der du kan kontrollere hvem som skal få tilgang til dine fortrolige helse-opplysninger) ?

	Veldig nyttig			Ikke nyttig	
	5	4	3	2	1
Bestille legetime	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spørre legen/sykepleier om behandling av din sykdom og få svar (meldingsfunksjon)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spørre legen om sykemelding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spørre legen om fornyelse av medisiner/resepter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kontakt med apoteket for bestilling av medisiner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Få oversikt over alle dine medisiner/medisinliste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Informasjon om virkning og bivirkning av dine medisiner (medisinhåndbok)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legge inn egenverdier av virkning av medisiner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Finne svar på blodprøver/undersøkelser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Finne tidligere svar fra din lege eller sykepleier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Se statistikk over egen fremgang	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legge inn egenverdier av daglig helsetilstand (helsedagbok)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legge inn data fra måleapparater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Få innsyn i egen pasientjournal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Få tilrettelagt opplæring/instruksjoner om hvordan du skal følge opp behandling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Få helse og kostholdstips	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Få relevant og kvalitetssikret informasjon om din helsetilstand/diagnose/sykdom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Søke om deltagelse på kurs og møter som er relevante for egen diagnose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bestemme hvilke deler av tjenesteapparatet som skal ha tilgang til dine helseopplysninger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ha kontakt med andre med samme helseproblem/interesseforeninger (chattefunksjon)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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The expectations and perceived usefulness of a future “net-health” portal

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Hvor ofte tror du at **du** ville benyttet deg av disse tjenestene (i en personlig brukerside på internett) ved sykdom?

	Daglig	1-2 ganger i uken	1-2 ganger i mnd	1-2 ganger i året	Aldri
Bestille legetime	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spørre legen/sykepleier om behandling av din sykdom og få svar (meldingsfunksjon)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spørre legen om sykemelding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spørre legen om fornyelse av medisiner/resepter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kontakt med apoteket for bestilling av medisiner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Få oversikt over alle dine medisiner/medisinliste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Informasjon om virkning og bivirkning av dine medisiner (medisinhåndbok)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legge inn egenvurderinger av virkning av medisiner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Finne svar på blodprøver/undersøkelser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Finne tidligere svar fra din lege eller sykepleier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Se statistikk over egen fremgang	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legge inn egenvurdering av daglig helsetilstand (helsedagbok)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legge inn data fra måleapparater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Få innsyn i egen pasientjournal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Få tilrettelagt opplæring/instruksjoner om hvordan du skal følge opp behandling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Få helse og kostholdstips	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Få relevant og kvalitetssikret informasjon om din helsetilstand/diagnose/sykdom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Søke om deltagelse på kurs og møter som er relevante for egen diagnose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bestemme hvilke deler av tjenesteapparatet som skal ha tilgang til dine helseopplysninger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ha kontakt med andre med samme helseproblem/interesseforeninger (chattefunksjon)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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The expectations and perceived usefulness of a future “net-health” portal

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I hvilke situasjoner tror du at **du** ville hatt bruk for personlige brukersider på internett (Nett-Helse portal)?

- |  |                          |
|--|--------------------------|
| Før du oppsøker lege                   | <input type="checkbox"/> |
| Daglig oppfølging av sykdom/behandling | <input type="checkbox"/> |
| Ved forverret sykdomstilstand          | <input type="checkbox"/> |
| Under ferie/reise                      | <input type="checkbox"/> |

Hvor stor sannsynlighet er det at **du** ville tatt i bruk tjenesten?

	Veldig sannsynlig				Ikke sannsynlig
	5	4	3	2	1
Umiddelbart dersom den var tilgjengelig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Innen ett års tid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Innen 2-3 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Innen 3-5 år	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aldri	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Er det andre tjenester eller funksjoner du forventer å finne i en individuelt tilpasset Nett-Helse portal?

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Har du andre kommentarer eller synspunkter?

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.....

.....

.....

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Takk for at du tok deg tid til å svare på spørsmålene!

## **APPENDIX B**

### **Results from the Questionnaire**

## Results from the Questionnaire

**Antall besvarelser:** 103

### Generelle opplysninger:

**Alder:** Yngste: 17 Eldste: 83 Gjennomsnitt: 42,9

**Kjønn:** 75 Kvinner (72,8 %) 25 Menn (27,2 %)

**Kronisk lidelse:** Totalt: 64 (62,1 %) Kvinne: 44 (58,7 %) Mann: 20 (71,4 %)

### **Utdanning:**

Utdanning	Kvinne	Mann	Totalt	Kronisk lidelse
Ungdomsskole	7 (9,5%)	4 (14,3%)	11 (10,7%)	8 (12,7 %)
Videregående	27 (36,5%)	5 (17,9%)	32 (31,1%)	18 (28,6%)
Høgskole/Universitet	31 (41,9%)	16 (57,1%)	47 (45,6%)	29 (46,0%)
Annet	9 (12,2%)	3 (10,7%)	12 (11,7%)	8 (12,7%)

### **Sivilstatus:**

Sivilstatus	Kvinne	Mann	Totalt	Kronisk lidelse
Enslig	19 (25,7%)	7 (25,0%)	26 (25,5%)	18 (28,1)
Samboer/gift	55 (74,3%)	21 (75,0%)	76 (74,5%)	46 (71,9%)

**Boforhold:** 99 (98 %) bodde i enebolig/leilighet, 2 (2%) svarte annet (en med kronisk lidelse 1 uten).



## The expectations and perceived usefulness of a future “net-health” portal

### Helseinformasjon:

		Kvinne	Mann	Totalt	Kronisk lidelse
Vedtak på helsetjenester	Antall	1	4	5	5
	Prosent	1,3	14,8	4,9	7,9
Trygghetsalarm	Antall	0	0	0	0
	Prosent	0	0	0	0
Daglig medisinbruk	Antall	38	17	55	50
	Prosent	50,7	63,0	53,9	79,4
Lest pasientjournal	Antall	24	9	33	20
	Prosent	33,3	36,0	34,0	33,9
Kopi av pasientjournal	Antall	12	5	17	13
	Prosent	16,7	20,0	17,5	22,0

### Bruk av medisinske måleapparater:

		Kvinne	Mann	Totalt	Kronisk lidelse
Måling av blodtrykk	Antall	2	2	4	3
	Prosent	2,7	7,7	4,0	4,9
Måling av blodsukker	Antall	3	3	6	6
	Prosent	11,5	4,1	6	9,8
Måling av lungefunksjoner	Antall	2		2	1
	Prosent	2,7		2	1,6
Oksygenbehandling	Antall	1		4	1
	Prosent	1,4		5,4	1,6
Annet	Antall	1		4	3
	Prosent	1		4	4,9

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The expectations and perceived usefulness of a future “net-health” portal

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**Kontakt med helsepersonell:**

Fastlege		Kvinne	Mann	Totalt	Kronisk lidelse
1-2 ganger i uken	Antall	4	1	5	5
	Prosent	5,5	3,6	5,0	8,1
1-2 ganger i måneden	Antall	23	11	34	24
	Prosent	31,5	39,3	33,7	38,7
1-2 ganger i halvåret	Antall	31	8	39	23
	Prosent	42,5	28,6	38,6	37,1
1-2 ganger i året	Antall	13	5	18	8
	Prosent	17,8	17,9	17,8	12,9
Sjelden eller aldri	Antall	2	3	5	2
	Prosent	2,7	10,7	5,0	3,2

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Psykiater		Kvinne	Mann	Totalt	Kronisk lidelse
1-2 ganger i uken	Antall	1	1		2
	Prosent	1,4	3,6		3,2
1-2 ganger i måneden	Antall	4	1	5	5
	Prosent	5,4	3,6	4,9	7,9
1-2 ganger i halvåret	Antall	1	1	2	1
	Prosent	1,4	3,6	2,0	1,6
1-2 ganger i året	Antall	2		2	2
	Prosent	2,7		2,0	3,2
Sjelden eller aldri	Antall	66	25	91	53
	Prosent	89,2	89,3	89,2	84,1

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## The expectations and perceived usefulness of a future “net-health” portal

Spesialist/sykehuslege		Kvinne	Mann	Totalt	Kronisk lidelse
1-2 ganger i uken	Antall	1		1	1
	Prosent	1,4		1,0	1,6
1-2 ganger i måneden	Antall		2	2	2
	Prosent		7,1	2,0	3,2
1-2 ganger i halvåret	Antall	4	3	7	5
	Prosent	5,5	10,7	6,9	8,1
1-2 ganger i året	Antall	11	5	16	12
	Prosent	15,1	17,9	15,8	19,4
Sjelden eller aldri	Antall	57	18	75	42
	Prosent	78,1	64,3	74,3	67,7

Hjemmesykepleier		Kvinne	Mann	Totalt	Kronisk lidelse
1-2 ganger i uken	Antall	1	4	5	5
	Prosent	1,4	14,3	5,0	8,1
Sjelden eller aldri	Antall	72	24	96	57
	Prosent	98,6	85,7	95,0	91,9

## The expectations and perceived usefulness of a future “net-health” portal

Fysioterapeut		Kvinne	Mann	Totalt	Kronisk lidelse
1-2 ganger i uken	Antall	6,0	2,0	8,0	6,0
	Prosent	8,2	7,1	7,9	9,7
1-2 ganger i måneden	Antall	2,0		2,0	2,0
	Prosent	2,7		2,0	3,2
1-2 ganger i halvåret	Antall	1	1	2	1
	Prosent	1,4	3,6	2,0	1,6
1-2 ganger i året	Antall	2	2		1
	Prosent	2,7	2,0		1,6
Sjelden eller aldri	Antall	62	25	87	52
	Prosent	84,9	89,3	86,1	83,9

### Bruk av internett:

Internett bruk		Kvinne	Mann	Totalt	Kronisk lidelse
Daglig	Antall	42	20	62	35
	Prosent	56,8	71,4	60,8	55,60 %
1-2 ganger i uken	Antall	15	4	19	12
	Prosent	20,3	14,3	18,6	19,00 %
1-2 ganger i måneden	Antall	7		7	5
	Prosent	9,5		6,9	7,90 %
Sjeldent eller aldri	Antall	10	4	14	11
	Prosent	13,5	14,3	13,7	17,50 %

## The expectations and perceived usefulness of a future “net-health” portal

	Male	Female	Total	Chronic illness
Internet access at home	23 (82 %)	63 (85 %)	86 (84 %)	55 (87 %)
Online health information search	14 (50 %)	54 (73 %)	68 (67 %)	39 (62 %)
Online purchases	15 (54 %)	47 (64 %)	62 (61 %)	35 (56 %)
NetBank	19 (68 %)	61 (84 %)	80 (79 %)	50 (81 %)

Undersøke venteliste		Mann	Kvinne	Totalt	Kronisk lidelse
Aldri	Antall	24	55	79	47
	Prosent	85,7	74,3	77,5	74,6
Sjeldent	Antall		11	11	8
	Prosent		14,9	10,8	12,7
Noen ganger	Antall	4	5	9	6
	Prosent	14,3	6,8	8,8	9,5
Flere ganger	Antall		3	3	2
	Prosent		4,1	2,9	3,2

Lest info på sykehus nettsider		Mann	Kvinne	Totalt	Kronisk lidelse
Aldri	Antall	17	40	57	38
	Prosent	63,0	54,8	57,0	62,3
Sjeldent	Antall	4	15	19	12
	Prosent	14,8	20,5	19,0	19,7
Noen ganger	Antall	6	12	18	9
	Prosent	22,2	16,4	18,0	14,8
Flere ganger	Antall		5	5	2
	Prosent		6,8	5,0	3,3
Veldig ofte	Antall		1	1	
	Prosent		1,4	1	



## The expectations and perceived usefulness of a future “net-health” portal

Helsestoff		Mann	Kvinne	Totalt	Kronisk lidelse
Aldri	Antall	10	18	28	18
	Prosent	37,0	24,7	28,0	29,5
Sjeldent	Antall	5	4	9	8
	Prosent	18,5	5,5	9,0	13,1
Noen ganger	Antall	7	22	29	18
	Prosent	25,9	30,1	29,0	29,5
Flere ganger	Antall	2	21	23	10
	Prosent	7,4	28,8	23,0	16,4
Veldig ofte	Antall	3	8	11	7
	Prosent	11,1	11,0	11	11,5

Lest/søkt om behandling		Mann	Kvinne	Totalt	Kronisk lidelse
Aldri	Antall	12	29	41	25
	Prosent	44,4	40,3	41,4	41,0
Sjeldent	Antall	4	8	12	7
	Prosent	14,8	11,1	12,1	11,5
Noen ganger	Antall	5	16	21	10
	Prosent	18,5	22,2	21,2	16,4
Flere ganger	Antall	4	17	21	15
	Prosent	14,8	23,6	21,2	24,6
Veldig ofte	Antall	2	2	4	4
	Prosent	7,4	2,8	4,0	6,6

## The expectations and perceived usefulness of a future “net-health” portal

Info og kost og livsstil		Mann	Kvinne	Totalt	Kronisk lidelse
Aldri	Antall	10	18	28	22
	Prosent	37,0	24,7	28,0	36,1
Sjeldent	Antall	7	13	20	10
	Prosent	25,9	17,8	20,0	16,4
Noen ganger	Antall	3	18	21	11
	Prosent	11,1	24,7	21,0	18,0
Flere ganger	Antall	4	18	22	14
	Prosent	14,8	24,7	22,0	23,0
Veldig ofte	Antall	3	6	9	4
	Prosent	11,1	8,2	9,0	6,6

### Sannsynlighet for å ta i bruk portalen:

Sannsynlighet for bruk		Ikke sannsynlig																Veldig sannsynlig							
		1				2				3				4				5							
		M	K	T	KL	M	K	T	KL	M	K	T	KL	M	K	T	KL	M	K	T	KL				
Umiddelbart ders	Antall	4	8	12	9	3	1	4	2		10	10	5	7	15	22	12	12	29	41	26				
	Prosent	15,4	12,7	13,5	16,7	11,5	1,59	4,49	3,7		15,9	11,2	9,26	26,9	23,8	24,7	22,2	46,2	46	46,1	48,1				
Innen ett års tid	Antall	4	4	8	5	1	1	2	2		4	4	4	1	6	7	4	5	10	15	7				
	Prosent	36,4	16	22,2	22,7	9,09	4	5,56	9,09		16	11,1	18,2	9,09	24	19,4	18,2	45,5	40	41,7	31,8				
Innen 2-3 år	Antall	4	5	9	5		2	2	1		1	1	1	1	3	4	2	3	5	8	6				
	Prosent	50	31,3	37,5	33,3		12,5	8,33	6,67		6,25	4,17	6,67	12,5	18,8	16,7	13,3	37,5	31,3	33,3	40				
Innen 3-5 år	Antall	4	6	10	7		1	1			1	1		1	2	3	1	3	6	9	7				
	Prosent	50	37,5	41,7	46,7		6,25	4,17			6,25	4,17		12,5	12,5	12,5	6,67	37,5	37,5	37,5	46,7				
Aldri	Antall	14	37	51	28	1	1	2	1		1	1	1	5	5	10	8	20	44	64	38				
	Prosent	70	84,1	79,7	73,7	5	2,27	3,13	2,63		2,27	1,56	2,63	25	11,4	15,6	21,1	100	100	100	100				

## The expectations and perceived usefulness of a future “net-health” portal

### Om personlig ”nett-helse” portal:

#### Antatt nytte av de ulike tjenestene i portalen:

Nytte av tjenestene		Ikke Nyttig																Veldig nyttig							
		1				2				3				4				5							
		M	K	T	KL	M	K	T	KL	M	K	T	KL	M	K	T	KL	M	K	T	KL				
Bestille legetime	Antall		9	9	6	1	3	4	3	5	9	14	10	2	14	16	6	18	37	55	34				
	Prosent		12,5	9,2	10,2	3,8	4,2	4,1	5,1	19,2	12,5	14,3	16,9	7,7	19,4	16,3	10,2	69,2	51,4	56,1	57,6				
Meldingsfunksjon	Antall	1	9	10	6	2	15	4	3	6	12	18	12	2	15	17	9	15	34	49	30				
	Prosent	3,8	12,5	10,2	10,0	7,7	20,8	4,1	5,0	23,1	16,7	18,4	20,0	7,7	20,8	17,3	15,0	57,7	47,2	50,0	50,0				
Sykemelding	Antall	6	14	20	14	1	6	7	4	7	10	17	10	2	11	13	6	9	28	37	21				
	Prosent	24,0	20,3	21,3	25,5	4,0	8,7	7,4	7,3	28,0	14,5	18,1	18,2	8,0	15,9	13,8	10,9	36,0	40,6	39,4	38,2				
Fornye resepter	Antall		7	7	5		2	2		2	6	8	5	6	9	15	12	17	47	64	37				
	Prosent		9,9	7,3	8,5		2,8	2,1		8,0	8,5	8,3	8,5	24,0	12,7	15,6	20,3	68,0	66,2	66,7	62,7				
Kontakte apotek	Antall		9	9	7		2	2		3	6	9	6	4	15	19	9	17	38	55	35				
	Prosent		12,9	9,6	12,3		2,9	2,1		12,5	8,6	9,6	10,5	16,7	21,4	20,2	15,8	70,8	54,3	58,5	61,4				
Medisinliste	Antall	1	9		8	10	5	5	3	5	11	16	8	4	14	18	11	13	31	44	27				
	Prosent	4,3	12,9		14,0	10,8	7,1	5,4	5,3	21,7	15,7	17,2	14,0	17,4	20,0	19,4	19,3	56,5	44,3	47,3	47,4				
Medisin håndbok	Antall	3	8	11			1	1		4	8	12		7	12	19		12	41	53					
	Prosent	11,5	11,4	11,5			1,4	1,0		15,4	11,4	12,5		26,9	17,1	19,8		46,2	58,6	55,2					
Egenvurd. Med.	Antall	2	7	9	6	6	6	12	7	4	15	19	9	5	15	20	13	8	22	30	20				
	Prosent	8,0	10,8	10,0	10,9	24,0	9,2	13,3	12,7	16,0	23,1	21,1	16,4	20,0	23,1	22,2	23,6	32,0	33,8	33,3	36,4				
Svar på prøver	Antall	1	8	9	8	1	2	3	2	3	4	7	4	7	16	23	16	13	41	54	29				
	Prosent	4,0	11,3	9,4	13,6	4,0	2,8	3,1	3,4	12,0	5,6	7,3	6,8	28,0	22,5	24,0	27,1	52,0	57,7	56,3	49,2				
Bestemme tilgang	Antall	2	9	11	8	1	2	3	2	7	12	19	15	4	9	13	7	11	38	49	26				
	Prosent	8,0	12,9	11,6	13,8	4,0	2,9	3,16	3,4	28,0	17,1	20	25,9	16,0	12,9	13,7	12,1	44,0	54,3	51,6	44,8				
Tidligere svar	Antall	2	7	9	8	2	2	4	4	2	8	10	8	6	16	22	10	12	37	49	28				
	Prosent	8,3	10,0	9,6	13,8	8,3	2,9	4,3	6,9	8,3	11,4	10,6	13,8	25	22,9	23,4	17,2	50	52,9	52,1	48,3				
Statistikk fremgå	Antall	3	8	11	8	2	7	9	7	7	9	16	8	1	17	18	8	12	28	40	27				
	Prosent	12,0	11,6	11,7	13,8	8,0	10,1	9,6	12,1	28,0	13,0	17,0	13,8	4	24,6	19,1	13,8	48	40,6	42,6	46,6				
Helsedagbok	Antall	5	13	18	13	3	8	11	5	7	16	23	12	4	13	17	11	5	18	23	16				
	Prosent	20,8	19,1	19,6	22,8	12,5	11,8	12,0	8,8	29,2	23,5	25,0	21,1	16,7	19,1	18,5	19,3	20,8	26,5	25,0	28,1				
Data måleapp.	Antall	5	17	22	15	3	10	13	8	5	17	22	12	4	6	10	6	8	19	27	18				
	Prosent	20,0	24,6	23,4	25,4	12,0	14,5	13,8	13,6	20,0	24,6	23,4	20,3	16	8,7	10,6	10,2	32	27,5	28,7	30,5				
Innsyn pasientjour	Antall	2	6	8	7	2	2	4	2	4	12	16	13	3	8	11	4	14	41	55	32				
	Prosent	8,0	8,7	8,5	12,1	8,0	2,9	4,3	3,4	16,0	17,4	17,0	22,4	12	11,6	11,7	6,9	56	59,4	58,5	55,2				



# The expectations and perceived usefulness of a future “net-health” portal

## Antatt bruk av de ulike tjenestene:

Bruk av tjenestene		Aldri				1-2 ganger i året				1-2 ganger i mnd				1-2 ganger i uken				Daglig			
		M	K	T	KL	M	K	T	KL	M	K	T	KL	M	K	T	KL	M	K	T	KL
Bestille legetime	Antall	1	7	8	7	10	35	45	21	12	20	32	24		5	5	3	1	1	2	1
	Prosent	4,2	10,3	8,7	12,5	41,7	51,5	48,9	37,5	50,0	29,4	34,8	42,9		7,4	5,4	5,36	4,2	1,5	2,2	1,79
Meldingsfunksjon	Antall	3	10	13	9	10	33	43	20	7	17	24	19	2	5	7	6	1	1	2	1
	Prosent	13,0	15,2	14,6	16,4	43,5	50,0	48,3	36,4	30,4	25,8	27,0	34,5	8,7	7,6	7,9	10,9	4,3	1,5	2,2	1,82
Sykemelding	Antall	10	25	35	24	10	32	42	21	2	8	10	7		2	2	2		1	1	1
	Prosent	45,5	36,8	38,9	43,6	45,5	47,1	46,7	38,2	9,1	11,8	11,1	12,7		2,9	2,2	3,64		1,5	1,1	1,82
Fornye resepter	Antall	1	9	10	8	10	36	46	20	10	18	28	24		2	2	1	1	1	2	2
	Prosent	4,5	13,6	11,4	14,5	45,5	54,5	52,3	36,4	45,5	27,3	31,8	43,6		3,0	2,3	1,82	4,5	1,5	2,3	3,64
Kontakte apotek	Antall	5	13	18	12	6	29	35	13	9	19	28	25		4	4	3	1	1	2	2
	Prosent	23,8	19,7	20,7	21,8	28,6	43,9	40,2	23,6	42,9	28,8	32,2	45,5		6,06	4,6	5,45	4,76	1,52	2,3	3,64
Medisinliste	Antall	6	15	21	15	9	35	44	20	5	12	17	16	1	2	3	2		2	2	2
	Prosent	28,6	22,7	24,1	27,3	42,9	53	50,6	36,4	23,8	18,2	19,5	29,1	4,8	3,03	3,45	3,64		3,03	2,3	3,64
Medisin håndbok	Antall	5	9	14	10	12	36	48	27	5	12	17	13	1	4	5	4		3	3	2
	Prosent	21,7	14,1	16,1	17,9	52,2	56,3	55,2	48,2	21,7	18,8	19,5	23,2	4,35	6,25	5,75	7,14		4,69	3,45	3,57
Egenvurd. Med.	Antall	6	20	26	15	11	22	33	19	4	15	19	14	1	5	6	5		1	1	1
	Prosent	27,3	31,7	30,6	27,8	50	34,9	38,8	35,2	18,2	23,8	22,4	25,9	4,55	7,94	7,06	9,26		1,59	1,18	1,85
Svar på prøver	Antall	2	12	14	13	10	36	46	18	11	15	26	23		3	3	2		1	1	1
	Prosent	8,7	17,9	15,6	22,8	43,5	53,7	51,1	31,6	47,8	22,4	28,9	40,4		4,48	3,33	3,51		1,49	1,11	1,75
Bestemme tilgang	Antall	3	14	17	13	13	33	46	22	6	12	18	14		3	3	2	1	4	5	4
	Prosent	13	21,2	19,1	23,6	56,5	50	51,7	40	26,1	18,2	20,2	25,5		4,55	3,37	3,64	4,35	6,06	5,62	7,27
Tidligere svar	Antall	4	6	10	8	14	45	59	31	4	12	16	13		2	2	1		2	2	2
	Prosent	18,2	8,96	11,2	14,5	63,6	67,2	66,3	56,4	18,2	17,9	18	23,6		2,99	2,25	1,82		2,99	2,25	3,64
Statistikk fremgang	Antall	6	16	22	14	9	31	40	20	7	12	19	14	1	4	5	4		2	2	2
	Prosent	26,1	24,6	25	25,9	39,1	47,7	45,5	37	30,4	18,5	21,6	25,9	4,35	6,15	5,68	7,41		3,08	2,27	3,7
Helsedagbok	Antall	9	28	37	22	7	16	23	11	5	9	14	10	1	9	10	9		4	4	3
	Prosent	40,9	42,4	42	40	31,8	24,2	26,1	20	22,7	13,6	15,9	18,2	4,55	13,6	11,4	16,4		6,06	4,55	5,45
Data måleapp.	Antall	11	32	43	29	6	20	26	11	5	8	13	11		2	2	1	1	2	3	2
	Prosent	47,8	50	49,4	53,7	26,1	31,3	29,9	20,4	21,7	12,5	14,9	20,4		3,13	2,3	1,85	4,35	3,13	3,45	3,7
Innsyn pasientjour	Antall	4	10	14	10	12	36	48	24	6	15	21	16	1	1	2	2		3	3	3
	Prosent	17,4	15,4	15,9	18,2	52,2	55,4	54,5	43,6	26,1	23,1	23,9	29,1	4,35	1,54	2,27	3,64		4,62	3,41	5,45
Tilrettelagt oppl.	Antall	2	11	13	8	9	34	43	22	8	15	23	17	1	4	5	5	1	3	4	3
	Prosent	9,52	16,4	14,8	14,5	42,9	50,7	48,9	40	38,1	22,4	26,1	30,9	4,76	5,97	5,68	9,09	4,76	4,48	4,55	5,45
Helse/kosthold	Antall	3	11	14	8	13	29	42	24	4	14	18	13	2	9	11	7	1	3	4	3
	Prosent	13	16,7	15,7	14,5	56,5	43,9	47,2	43,6	17,4	21,2	20,2	23,6	8,7	13,6	12,4	12,7	4,35	4,55	4,49	5,45
Relevant info	Antall	2	7	9	5	13	35	48	26	7	12	19	17	1	9	10	5		3	3	2
	Prosent	8,7	10,6	10,1	9,09	56,5	53	53,9	47,3	30,4	18,2	21,3	30,9	4,35	13,6	11,2	9,09		4,55	3,37	3,64
Søke kurs	Antall	5	18	23	13	14	31	45	25	4	14	18	15		1	1	1		2	2	1
	Prosent	21,7	27,3	25,8	23,6	60,9	47	50,6	45,5	17,4	21,2	20,2	27,3		1,52	1,12	1,82		3,03	2,25	1,82
Chatte funksjon	Antall	7	19	26	16	11	25	36	20	2	11	13	8	1	7	8	8	1	4	5	3
	Prosent	31,8	28,8	29,5	29,1	50	37,9	40,9	36,4	9,09	16,7	14,8	14,5	4,55	10,6	9,09	14,5	4,55	6,06	5,68	5,45

## The expectations and perceived usefulness of a future “net-health” portal

### Når portalen vil bli brukt:

Tidspunkt for bruk		Mann	Kvinne	Kronisk lidelse	Totalt
Før legekontakt	Antall	16	46	36	62
	Prosent	61,5	66,7	61,0	65,3
Daglig oppfølging ved sykdom/behandling	Antall	4	22	16	26
	Prosent	15,4	32,4	27,6	27,7
Ved forverret tilstand	Antall	16	39	35	55
	Prosent	61,5	57,4	60,3	58,5
Under ferie/reiser	Antall	12	37	27	49
	Prosent	46,2	54,4	46,6	52,1

### Kryssreferanse sannsynlighet for å ta i bruk portalen og internett bruk:

Internett_bruk * Umiddelbart Crosstabulation								
		Umiddelbart				Total		
		Ikke sannsynlig	Lite sannsynlig	Sannsynlig	Forholdsvis svært	Veldig sannsynlig		
Internett_bruk	Sjeldent eller	Count	4	0	1	2	2	9
	% within Internett_bruk	44,4	0	11,1	22,2	22,2	100	
	1-2 ganger i u	Count	0	0	4	0	2	6
	% within Internett_bruk	0	0	66,7	0	33,3	100	
	1-2 ganger i m	Count	1	1	1	7	5	15
	% within Internett_bruk	6,7	6,7	6,7	46,7	33,3	100	
	Daglig	Count	6	3	4	13	32	58
	% within Internett_bruk	10,3	5,2	6,9	22,4	55,2	100	
Total	Count	11	4	10	22	41	88	
	% within Total	12,5	4,5	11,4	25	46,6	100	

Internett_bruk * Innen_ett_år Crosstabulation								
		Innen_ett_år				Total		
		Ikke sannsynl	Lite sannsynl	Sannsynlig	Forholdsvis s	Veldig sannsynlig		
Internett_bruk	Sjeldent eller	Count	3	0	0	0	1	4
	% within Internett_bruk	75	0	0	0	25	100	
	1-2 ganger i u	Count	0	0	0	1	0	1
	% within Internett_bruk	0	0	0	100	0	100	
	1-2 ganger i m	Count	1	0	1	3	4	9
	% within Internett_bruk	11,1	0	11,1	33,3	44,4	100	
	Daglig	Count	4	2	2	3	10	21
	% within Internett_bruk	19,0	9,5	9,5	14,3	47,6	100	
Total	Count	8	2	3	7	15	35	
	% within Total	22,9	5,7	8,6	20	42,9	100	

## The expectations and perceived usefulness of a future “net-health” portal

Internett_bruk * Innen_2_til_3_år Crosstabulation							
		Innen_2_til_3_år				Total	
		Ikke sannsynlig	Lite sannsynlig	Sannsynlig	Forholdsviss	Veldig sannsynlig	
Internett_bruk Sjeldent eller	Count	3	0	0	0	1	4
	% within Innen	75,0	0	0,0	0,0	25,0	100
1-2 ganger i n	Count	1	0	0	0	0	1
	% within Innen	100	0	0,0	0	0,0	100
1-2 ganger i u	Count	0	1	0	1	2	4
	% within Innen	0,0	25,0	0,0	25,0	50,0	100
Daglig	Count	5	1	1	2	5	14
	% within Innen	35,7	7,1	7,1	14,3	35,7	100
Total	Count	9	2	1	3	8	23
	% within Innen	39,1	8,7	4,3	13,0	34,8	100

Internett_bruk * Innen_3_til_5_år Crosstabulation							
		Innen_3_til_5_år				Total	
		Ikke sannsynlig	Lite sannsynlig	Sannsynlig	Forholdsviss	Veldig sannsynlig	
Internett_bruk Sjeldent eller	Count	3	0	0	0	1	4
	% within Innen	75,0	0	0,0	0,0	25,0	100
1-2 ganger i n	Count	1	0	0	0	0	1
	% within Innen	100	0	0,0	0	0,0	100
1-2 ganger i u	Count	0	1	1	1	2	5
	% within Innen	0,0	20,0	20,0	20,0	40,0	100
Daglig	Count	6	0	0	2	5	13
	% within Innen	46,2	0,0	0,0	15,4	38,5	100
Total	Count	10	1	1	3	8	23
	% within Innen	43,5	4,3	4,3	13,0	34,8	100

Internett_bruk * Aldri Crosstabulation					
		Aldri			Total
		Ikke sannsynlig	Lite sannsynlig	Sannsynlig	Veldig sannsynlig
Internett_bruk Sjeldent eller	Count	3	0	0	5
	% within Innen	37,5	0	0,0	62,5
1-2 ganger i n	Count	3	0	0	0
	% within Innen	100	0	0,0	0
1-2 ganger i u	Count	8	2	0	0
	% within Innen	80,0	20,0	0,0	0,0
Daglig	Count	36	0	1	5
	% within Innen	85,7	0,0	2,4	11,9
Total	Count	50	2	1	10
	% within Innen	79,4	3,2	1,6	15,9

## The expectations and perceived usefulness of a future “net-health” portal

Internett_bruk * Nytte_Chatterfunksjon Crosstabulation							
		Nytte_Chatterfunksjon				Total	
		Ikke nyttig	Litt nyttig	Nyttig	Forholdsvis nytt/Veldig nyttig		
Internett_bruk	Sjeldent eller	Count	4	1	3	0	3
	% within Intern	36,4	9,1	27,3	0,0	27,3	100
1-2 ganger i n	Count	1	0	2	0	3	6
	% within Intern	16,7	0	33,3	0	50,0	100
1-2 ganger i u	Count	1	3	7	3	5	19
	% within Intern	5,3	15,8	36,8	15,8	26,3	100
Daglig	Count	8	6	20	8	14	56
	% within Intern	14,3	10,7	35,7	14,3	25,0	100
Total	Count	14	10	32	11	25	92
	% within Intern	15,2	10,9	34,8	11,95652174	27,2	100

Internett_bruk * Bruk_Meldingsfunksjon Crosstabulation							
		Bruk_Meldingsfunksjon				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk	Sjeldent eller	Count	5	3	1	0	1
	% within Intern	50	30	10	0	10	100
1-2 ganger i n	Count	2	1	0	2	0	5
	% within Intern	40	20	0	40	0	100
1-2 ganger i u	Count	1	7	7	2	0	17
	% within Intern	5,9	41,2	41,2	11,8	0,0	100
Daglig	Count	5	31	16	3	1	56
	% within Intern	8,9	55,4	28,6	5,4	1,8	100
Total	Count	13	42	24	7	2	88
	% within Intern	14,8	47,7	27,3	7,954545455	2,3	100

Internett_bruk * Bruk_Bestille_legetime Crosstabulation							
		Bruk_Bestille_legetime				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk	Sjeldent eller	Count	5	2	2	0	1
	% within Intern	50,0	20	20,0	0,0	10,0	100
1-2 ganger i n	Count	1	2	1	2	0	6
	% within Intern	16,7	33,3	16,7	33,3	0,0	100
1-2 ganger i u	Count	0	10	5	2	0	17
	% within Intern	0,0	58,8	29,4	11,8	0,0	100
Daglig	Count	1	31	24	1	1	58
	% within Intern	1,7	53,4	41,4	1,7	1,7	100
Total	Count	7	45	32	5	2	91
	% within Intern	7,7	49,5	35,2	5,5	2,2	100

Internett_bruk * Bruk_Spørre_om_sykemelding Crosstabulation							
		Bruk_Spørre_om_sykemelding				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk	Sjeldent eller	Count	8	1	1	0	0
	% within Intern	80,0	10	10,0	0,0	0,0	100
1-2 ganger i n	Count	2	2	2	0	0	6
	% within Intern	33,3	33,3	33,3	0	0,0	100
1-2 ganger i u	Count	6	8	2	1	0	17
	% within Intern	35,3	47,1	11,8	5,9	0,0	100
Daglig	Count	18	31	5	1	1	56
	% within Intern	32,1	55,4	8,9	1,8	1,8	100
Total	Count	34	42	10	2	1	89
	% within Intern	38,2	47,2	11,2	2,2	1,1	100

Internett_bruk * Bruk_Fornyelse_av_resept Crosstabulation							
		Bruk_Fornyelse_av_resept				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk	Sjeldent eller	Count	6	2	2	0	0
	% within Intern	60,0	20	20,0	0,0	0,0	100
1-2 ganger i n	Count	1	1	3	1	0	6
	% within Intern	16,7	16,7	50,0	16,7	0,0	100
1-2 ganger i u	Count	0	9	7	0	0	16
	% within Intern	0,0	56,3	43,8	0,0	0,0	100
Daglig	Count	3	33	16	1	2	55
	% within Intern	5,5	60,0	29,1	1,8	3,6	100
Total	Count	10	45	28	2	2	87
	% within Intern	11,5	51,7	32,2	2,3	2,3	100

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Internett_bruk * Bruk_Kontakt_med_apotek Crosstabulation							
		Bruk_Kontakt_med_apotek				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk Sjeldent eller	Count	7	1	2	0	0	10
	% within Intern	70,0	10	20,0	0,0	0,0	100
1-2 ganger i n	Count	1	1	3	1	0	6
	% within Intern	16,7	16,7	50,0	16,7	0,0	100
1-2 ganger i u	Count	4	5	7	1	0	17
	% within Intern	23,5	29,4	41,2	5,9	0,0	100
Daglig	Count	6	28	15	2	2	53
	% within Intern	11,3	52,8	28,3	3,8	3,8	100
Total	Count	18	35	27	4	2	86
	% within Intern	20,9	40,7	31,4	4,7	2,3	100

Internett_bruk * Bruk_Medisinliste Crosstabulation							
		Bruk_Medisinliste				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk Sjeldent eller	Count	7	2	1	0	0	10
	% within Intern	70,0	20	10,0	0,0	0,0	100
1-2 ganger i n	Count	3	1	1	1	0	6
	% within Intern	50	16,7	16,7	16,7	0,0	100
1-2 ganger i u	Count	1	12	4	0	0	17
	% within Intern	5,9	70,6	23,5	0,0	0,0	100
Daglig	Count	10	28	11	2	2	53
	% within Intern	18,9	52,8	20,8	3,8	3,8	100
Total	Count	21	43	17	3	2	86
	% within Intern	24,4	50,0	19,8	3,5	2,3	100

Internett_bruk * Bruk_Medisinhåndbok Crosstabulation							
		Bruk_Medisinhåndbok				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk Sjeldent eller	Count	7	2	1	0	0	10
	% within Intern	70,0	20	10,0	0,0	0,0	100
1-2 ganger i n	Count	1	4	0	1	0	6
	% within Intern	16,7	66,7	0,0	16,7	0,0	100
1-2 ganger i u	Count	1	9	4	2	0	16
	% within Intern	6,3	56,3	25,0	12,5	0,0	100
Daglig	Count	5	32	12	2	3	54
	% within Intern	9,3	59,3	22,2	3,7	5,6	100
Total	Count	14	47	17	5	3	86
	% within Intern	16,3	54,7	19,8	5,8	3,5	100

Internett_bruk * Bruk_Egenvurdering_virkning Crosstabulation							
		Bruk_Egenvurdering_virkning				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk Sjeldent eller	Count	6	4	0	0	0	10
	% within Intern	60,0	40	0,0	0,0	0,0	100
1-2 ganger i n	Count	3	0	2	1	0	6
	% within Intern	50	0	33,3	16,7	0,0	100
1-2 ganger i u	Count	6	4	4	1	0	15
	% within Intern	40,0	26,7	26,7	6,7	0,0	100
Daglig	Count	11	24	13	4	1	53
	% within Intern	20,8	45,3	24,5	7,5	1,9	100
Total	Count	26	32	19	6	1	84
	% within Intern	31,0	38,1	22,6	7,1	1,2	100

Internett_bruk * Bruk_Svar_på_prøver Crosstabulation							
		Bruk_Svar_på_prøver				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk Sjeldent eller	Count	6	3	1	0	0	10
	% within Intern	60,0	30	10,0	0,0	0,0	100
1-2 ganger i n	Count	3	0	2	1	0	6
	% within Intern	50,0	0,0	33,3	16,7	0,0	100
1-2 ganger i u	Count	1	10	6	0	0	17
	% within Intern	5,9	58,8	35,3	0,0	0,0	100
Daglig	Count	3	33	17	2	1	56
	% within Intern	5,4	58,9	30,4	3,6	1,8	100
Total	Count	13	46	26	3	1	89
	% within Intern	14,6	51,7	29,2	3,4	1,1	100

## The expectations and perceived usefulness of a future “net-health” portal

		Bruk_Finne_tidligere_svar				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk	Sjeldent eller	Count	6	3	1	0	10
	% within Internett_bruk		60,0	30	10,0	0,0	100
	1-2 ganger i n	Count	1	4	1	0	6
	% within Internett_bruk		16,7	66,7	16,7	0,0	100
	1-2 ganger i u	Count	0	11	4	2	17
	% within Internett_bruk		0,0	64,7	23,5	11,8	100
	Daglig	Count	3	40	10	0	55
	% within Internett_bruk		5,5	72,7	18,2	0,0	100
Total	Count		10	58	16	2	88
	% within Total		11,4	65,9	18,2	2,3	100

		Bruk_Statistikk_over_fremgang				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk * Bruk_Statistikk_over_fremgang	Sjeldent eller	Count	6	3	1	0	10
	% within Internett_bruk * Bruk_Statistikk_over_fremgang		60,0	30	10,0	0,0	100
	1-2 ganger i n	Count	1	3	1	1	6
	% within Internett_bruk * Bruk_Statistikk_over_fremgang		16,7	50,0	16,7	16,7	100
	1-2 ganger i u	Count	4	5	5	1	15
	% within Internett_bruk * Bruk_Statistikk_over_fremgang		26,7	33,3	33,3	6,7	100
	Daglig	Count	11	28	12	3	56
	% within Internett_bruk * Bruk_Statistikk_over_fremgang		19,6	50,0	21,4	5,4	100
Total	Count		22	39	19	5	87
	% within Total		25,3	44,8	21,8	5,7	100

		BrukHelsedagbok				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk	Sjeldent eller	Count	7	2	1	0	10
	% within Internett_bruk		70,0	20	10,0	0,0	100
	1-2 ganger i n	Count	3	1	0	1	6
	% within Internett_bruk		50,0	16,7	0,0	16,7	100
	1-2 ganger i u	Count	8	3	4	2	17
	% within Internett_bruk		47,1	17,6	23,5	11,8	100
	Daglig	Count	19	16	9	7	54
	% within Internett_bruk		35,2	29,6	16,7	13,0	100
Total	Count		37	22	14	10	87
	% within Total		42,5	25,3	16,1	11,5	100

		Bruk_data_fra_måleapparater				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk	Sjeldent eller	Count	7	2	0	1	10
	% within Internett_bruk		70,0	20	0,0	10,0	100
	1-2 ganger i n	Count	4	1	0	0	6
	% within Internett_bruk		66,7	16,7	0,0	0,0	100
	1-2 ganger i u	Count	9	3	3	1	16
	% within Internett_bruk		56,3	18,8	18,8	6,3	100
	Daglig	Count	22	20	10	0	54
	% within Internett_bruk		40,7	37,0	18,5	0,0	100
Total	Count		42	26	13	2	86
	% within Total		48,8	30,2	15,1	2,3	100

		Bruk_Innsyn_journal				Total	
		Aldri	1-2 ganger i å	1-2 ganger i n	1-2 ganger i uk	Daglig	
Internett_bruk	Sjeldent eller	Count	7	2	1	0	10
	% within Internett_bruk		70,0	20	10,0	0,0	100
	1-2 ganger i n	Count	2	1	2	0	6
	% within Internett_bruk		33,3	16,7	33,3	0,0	100
	1-2 ganger i u	Count	1	11	5	0	17
	% within Internett_bruk		5,9	64,7	29,4	0,0	100
	Daglig	Count	4	34	13	2	55
	% within Internett_bruk		7,3	61,8	23,6	3,6	100
Total	Count		14	48	21	2	88
	% within Total		15,9	54,5	23,9	2,3	100



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Internett_bruk * Bruk_Tilrettelagt_opplæring Crosstabulation							
		Bruk_Tilrettelagt_opplæring				Total	
		Aldri	1-2 ganger i u	1-2 ganger i n	Daglig		
Internett_bruk	Sjeldent eller	Count	5	3	2	0	10
		% within Intern	50,0	30	20,0	0,0	100
	1-2 ganger i n	Count	2	2	2	0	6
		% within Intern	33,3	33,3	33,3	0,0	100
	1-2 ganger i u	Count	4	5	7	1	17
		% within Intern	23,5	29,4	41,2	5,9	100
	Daglig	Count	2	32	12	4	54
		% within Intern	3,7	59,3	22,2	7,4	100
	Total	Count	13	42	23	5	87
		% within Intern	14,9	48,3	26,4	5,7	100

Internett_bruk * Bruk_Helsekostholdstips Crosstabulation							
		Bruk_Helsekostholdstips				Total	
		Aldri	1-2 ganger i u	1-2 ganger i n	Daglig		
Internett_bruk	Sjeldent eller	Count	6	2	2	0	10
		% within Intern	60,0	20	20,0	0,0	100
	1-2 ganger i n	Count	1	4	0	1	6
		% within Intern	16,7	66,7	0,0	16,7	100
	1-2 ganger i u	Count	3	8	4	1	16
		% within Intern	18,8	50,0	25,0	6,3	100
	Daglig	Count	4	28	11	9	56
		% within Intern	7,1	50,0	19,6	16,1	100
	Total	Count	14	42	17	11	88
		% within Intern	15,9	47,7	19,3	12,5	100

Internett_bruk * Bruk_Kvalitetssikret_informasjon Crosstabulation							
		Bruk_Kvalitetssikret_informasjon				Total	
		Aldri	1-2 ganger i u	1-2 ganger i n	Daglig		
Internett_bruk	Sjeldent eller	Count	5	3	2	0	10
		% within Intern	50,0	30	20,0	0,0	100
	1-2 ganger i n	Count	0	4	1	1	6
		% within Intern	0,0	66,7	16,7	16,7	100
	1-2 ganger i u	Count	2	8	5	2	17
		% within Intern	11,8	47,1	29,4	11,8	100
	Daglig	Count	2	32	11	7	55
		% within Intern	3,6	58,2	20,0	12,7	100
	Total	Count	9	47	19	10	88
		% within Intern	10,2	53,4	21,6	11,4	100

Internett_bruk * Bruk_Søke_deltakelse_på_kurs Crosstabulation							
		Bruk_Søke_deltakelse_på_kurs				Total	
		Aldri	1-2 ganger i u	1-2 ganger i n	Daglig		
Internett_bruk	Sjeldent eller	Count	5	5	0	0	10
		% within Intern	50,0	50	0,0	0,0	100
	1-2 ganger i n	Count	1	3	2	0	6
		% within Intern	16,7	50,0	33,3	0,0	100
	1-2 ganger i u	Count	5	5	7	0	17
		% within Intern	29,4	29,4	41,2	0,0	100
	Daglig	Count	12	31	9	1	55
		% within Intern	21,8	56,4	16,4	1,8	100
	Total	Count	23	44	18	1	88
		% within Intern	26,1	50,0	20,5	1,1	100

Internett_bruk * Bruk_Bestemme_tilgang Crosstabulation							
		Bruk_Bestemme_tilgang				Total	
		Aldri	1-2 ganger i u	1-2 ganger i n	Daglig		
Internett_bruk	Sjeldent eller	Count	6	3	1	0	10
		% within Intern	60,0	30	10,0	0,0	100
	1-2 ganger i n	Count	2	2	1	0	6
		% within Intern	33,3	33,3	16,7	0,0	100
	1-2 ganger i u	Count	3	8	4	1	16
		% within Intern	18,8	50,0	25,0	6,3	100
	Daglig	Count	6	32	12	2	56
		% within Intern	10,7	57,1	21,4	3,6	100
	Total	Count	17	45	18	3	88
		% within Intern	19,3	51,1	20,5	3,4	100

Internett_bruk * Bruk_Chatterfunksjon Crosstabulation							
		Bruk_Chatterfunksjon				Total	
		Aldri	1-2 ganger i u	1-2 ganger i n	Daglig		
Internett_bruk	Sjeldent eller	Count	6	3	1	0	10
		% within Intern	60,0	30	10,0	0,0	100
	1-2 ganger i n	Count	1	2	0	2	6
		% within Intern	16,7	33,3	0,0	33,3	100
	1-2 ganger i u	Count	3	6	4	3	17
		% within Intern	17,6	35,3	23,5	17,6	100
	Daglig	Count	15	25	8	3	54
		% within Intern	27,8	46,3	14,8	5,6	100
	Total	Count	25	36	13	8	87
		% within Intern	28,7	41,4	14,9	9,2	100

## The expectations and perceived usefulness of a future “net-health” portal

### Pearsons korrelasjon av nytte og bruk:

#### Correlations

		Bruk_Bestille	Bruk_Melding	Bruk_Spørre	Bruk_Fornyet	Bruk_Kontakt	Bruk_Medisin	Bruk_Medisin	Bruk_Egenvu	Bruk_Svar_på
Nytte_Bestille	Pearson Correlation	0,395	0,456	0,358	0,404	0,333	0,271	0,363	0,331	0,370
	Sig. (2-tailed)	0,000	0,000	0,001	0,000	0,002	0,012	0,001	0,002	0,000
	N	91	88	89	86	86	86	86	84	88
Nytte_Melding	Pearson Correlation	0,419	0,498	0,393	0,374	0,324	0,264	0,329	0,329	0,403
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,002	0,014	0,002	0,002	0,000
	N	91	89	89	86	87	87	86	85	89
Nytte_Spørre	Pearson Correlation	0,388	0,399	0,556	0,381	0,265	0,243	0,258	0,218	0,367
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,014	0,025	0,018	0,049	0,001
	N	89	86	88	85	85	85	84	82	86
Nytte_Fornyet	Pearson Correlation	0,437	0,439	0,431	0,453	0,362	0,331	0,273	0,237	0,426
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,001	0,002	0,011	0,030	0,000
	N	90	87	89	88	87	87	86	84	88
Nytte_Kontakt	Pearson Correlation	0,450	0,444	0,423	0,491	0,504	0,339	0,391	0,335	0,440
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,002	0,000
	N	89	86	88	86	86	86	85	83	86
Nytte_Medisin	Pearson Correlation	0,452	0,392	0,383	0,397	0,413	0,353	0,314	0,372	0,460
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,001	0,004	0,001	0,000
	N	88	85	87	85	85	85	83	82	85
Nytte_Medisir	Pearson Correlation	0,364	0,409	0,240	0,460	0,410	0,313	0,442	0,430	0,431
	Sig. (2-tailed)	0,000	0,000	0,024	0,000	0,000	0,004	0,000	0,000	0,000
	N	90	87	88	86	85	85	86	83	88
Nytte_Egenvu	Pearson Correlation	0,358	0,361	0,275	0,394	0,407	0,347	0,427	0,514	0,429
	Sig. (2-tailed)	0,001	0,001	0,011	0,000	0,000	0,001	0,000	0,000	0,000
	N	86	84	84	83	83	83	82	82	84
Nytte_Svar_på	Pearson Correlation	0,492	0,414	0,414	0,445	0,335	0,244	0,341	0,382	0,525
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,002	0,024	0,001	0,000	0,000
	N	91	88	89	87	86	86	86	84	89
Nytte_Finne_t	Pearson Correlation	0,456	0,433	0,388	0,440	0,309	0,267	0,445	0,417	0,544
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,004	0,013	0,000	0,000	0,000
	N	90	87	89	86	86	86	84	83	87
Nytte_Statistikk	Pearson Correlation	0,496	0,493	0,397	0,422	0,372	0,336	0,466	0,474	0,512
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000
	N	90	88	89	87	87	87	86	84	89
Nytte_Helsede	Pearson Correlation	0,393	0,399	0,307	0,449	0,368	0,362	0,421	0,565	0,504
	Sig. (2-tailed)	0,000	0,000	0,004	0,000	0,000	0,001	0,000	0,000	0,000
	N	89	87	88	85	86	86	84	83	87
Nytte_legge_i	Pearson Correlation	0,330	0,385	0,293	0,440	0,368	0,360	0,405	0,363	0,462
	Sig. (2-tailed)	0,002	0,000	0,006	0,000	0,000	0,001	0,000	0,001	0,000
	N	89	87	88	86	86	86	85	83	88
Nytte_Innsyn	Pearson Correlation	0,431	0,436	0,373	0,358	0,365	0,328	0,458	0,411	0,477
	Sig. (2-tailed)	0,000	0,000	0,000	0,001	0,001	0,002	0,000	0,000	0,000
	N	90	88	89	87	87	87	86	84	89
Nytte_Tilrettel	Pearson Correlation	0,466	0,441	0,336	0,430	0,409	0,329	0,434	0,456	0,503
	Sig. (2-tailed)	0,000	0,000	0,001	0,000	0,000	0,002	0,000	0,000	0,000
	N	91	88	90	87	87	87	85	84	88
Nytte_Helsekr	Pearson Correlation	0,269	0,322	0,266	0,309	0,407	0,312	0,415	0,377	0,383
	Sig. (2-tailed)	0,010	0,002	0,011	0,003	0,000	0,003	0,000	0,000	0,000
	N	91	88	90	88	87	87	86	84	89
Nytte_Kvalitet	Pearson Correlation	0,410	0,399	0,343	0,332	0,398	0,318	0,375	0,369	0,449
	Sig. (2-tailed)	0,000	0,000	0,001	0,002	0,000	0,003	0,000	0,001	0,000
	N	90	88	88	85	86	86	85	84	88
Nytte_Søke_c	Pearson Correlation	0,429	0,457	0,299	0,419	0,401	0,351	0,425	0,467	0,403
	Sig. (2-tailed)	0,000	0,000	0,004	0,000	0,000	0,001	0,000	0,000	0,000
	N	90	88	89	87	87	87	86	84	89
Nytte_Bestem	Pearson Correlation	0,461	0,462	0,277	0,408	0,383	0,346	0,448	0,418	0,462
	Sig. (2-tailed)	0,000	0,000	0,008	0,000	0,000	0,001	0,000	0,000	0,000
	N	92	89	90	87	87	87	86	85	89
Nytte_Chatterf	Pearson Correlation	0,457	0,457	0,353	0,466	0,379	0,369	0,376	0,443	0,374
	Sig. (2-tailed)	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000
	N	89	87	88	86	87	87	85	84	87



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Bruk_Finne	ti Bruk	Statistik	BrukHelsedağ	Bruk_data	fra Bruk	Innsyn	Bruk	Tilrettel	Bruk	Helsekc	Bruk	Kvalitet	Bruk	Soke_d	Bruk	Bestem	Bruk	Chattefi
0,336	0,384	0,301	0,141	0,285	0,387	0,353	0,458	0,226	0,362	0,325								
0,001	0,000	0,005	0,198	0,008	0,000	0,001	0,000	0,034	0,001	0,002								
88	86	87	85	86	87	87	89	88	88	87								
0,368	0,297	0,292	0,208	0,324	0,438	0,326	0,463	0,205	0,402	0,315								
0,000	0,005	0,006	0,055	0,002	0,000	0,002	0,000	0,055	0,000	0,003								
89	87	88	86	87	88	88	89	88	89	88								
0,272	0,364	0,239	0,235	0,267	0,367	0,298	0,394	0,263	0,321	0,318								
0,011	0,001	0,026	0,031	0,013	0,001	0,005	0,000	0,014	0,003	0,003								
87	85	86	84	85	86	86	87	87	86	86								
0,318	0,307	0,223	0,123	0,258	0,344	0,190	0,400	0,191	0,354	0,289								
0,002	0,004	0,037	0,261	0,016	0,001	0,076	0,000	0,074	0,001	0,006								
88	87	88	86	87	87	88	87	88	87	88								
0,350	0,438	0,256	0,200	0,230	0,426	0,239	0,357	0,195	0,452	0,295								
0,001	0,000	0,017	0,068	0,034	0,000	0,027	0,001	0,070	0,000	0,006								
87	85	87	84	85	86	86	87	87	86	87								
0,353	0,349	0,261	0,255	0,265	0,450	0,290	0,401	0,270	0,362	0,347								
0,001	0,001	0,015	0,020	0,015	0,000	0,007	0,000	0,012	0,001	0,001								
86	84	86	83	84	85	85	85	85	85	86								
0,384	0,353	0,301	0,173	0,351	0,423	0,304	0,384	0,283	0,453	0,341								
0,000	0,001	0,005	0,113	0,001	0,000	0,004	0,000	0,008	0,000	0,001								
87	86	86	85	86	86	87	87	87	87	86								
0,349	0,377	0,454	0,296	0,361	0,456	0,336	0,379	0,406	0,403	0,405								
0,001	0,000	0,000	0,007	0,001	0,000	0,002	0,000	0,000	0,000	0,000								
84	83	84	82	82	83	84	84	83	84	84								
0,411	0,360	0,250	0,238	0,293	0,353	0,206	0,354	0,194	0,423	0,327								
0,000	0,001	0,020	0,028	0,006	0,001	0,054	0,001	0,070	0,000	0,002								
88	87	87	86	87	87	88	88	88	88	87								
0,482	0,395	0,325	0,248	0,325	0,401	0,253	0,379	0,248	0,416	0,310								
0,000	0,000	0,002	0,022	0,002	0,000	0,018	0,000	0,021	0,000	0,003								
88	86	87	85	86	87	87	87	87	87	87								
0,473	0,569	0,464	0,331	0,467	0,482	0,301	0,450	0,282	0,423	0,331								
0,000	0,000	0,000	0,002	0,000	0,000	0,004	0,000	0,007	0,000	0,002								
89	88	88	87	88	88	89	88	89	88	88								
0,414	0,517	0,561	0,348	0,392	0,493	0,324	0,409	0,348	0,400	0,475								
0,000	0,000	0,000	0,001	0,000	0,000	0,002	0,000	0,001	0,000	0,000								
88	86	87	85	86	87	87	87	87	87	87								
0,388	0,450	0,371	0,460	0,368	0,538	0,355	0,388	0,309	0,354	0,330								
0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,003	0,001	0,002								
88	87	87	87	88	87	88	87	88	87	87								
0,491	0,451	0,397	0,248	0,446	0,433	0,278	0,406	0,272	0,439	0,330								
0,000	0,000	0,000	0,021	0,000	0,000	0,008	0,000	0,010	0,000	0,002								
89	88	88	87	88	88	89	88	89	88	88								
0,456	0,435	0,426	0,362	0,341	0,481	0,318	0,406	0,330	0,449	0,402								
0,000	0,000	0,000	0,001	0,001	0,000	0,003	0,000	0,002	0,000	0,000								
89	87	88	86	87	88	88	88	88	88	88								
0,377	0,370	0,336	0,312	0,267	0,351	0,505	0,376	0,286	0,315	0,294								
0,000	0,000	0,001	0,003	0,012	0,001	0,000	0,000	0,007	0,003	0,005								
89	88	88	87	88	88	89	88	89	88	88								
0,407	0,327	0,360	0,223	0,337	0,411	0,306	0,386	0,258	0,390	0,266								
0,000	0,002	0,001	0,041	0,001	0,000	0,004	0,000	0,016	0,000	0,013								
88	86	87	85	86	87	87	88	87	88	87								
0,359	0,386	0,383	0,305	0,370	0,533	0,398	0,405	0,560	0,441	0,466								
0,001	0,000	0,000	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000								
89	88	88	87	88	88	89	88	89	88	88								
0,432	0,466	0,327	0,293	0,373	0,458	0,326	0,400	0,303	0,484	0,244								
0,000	0,000	0,002	0,006	0,000	0,000	0,002	0,000	0,004	0,000	0,022								
89	87	88	86	87	88	88	89	88	89	88								
0,342	0,372	0,393	0,206	0,277	0,465	0,331	0,327	0,459	0,458	0,641								
0,001	0,000	0,000	0,059	0,010	0,000	0,002	0,000	0,000	0,000	0,000								
88	86	88	85	86	87	87	87	87	87	88								



### **Svar og kommentarer fra åpne spørsmål:**

Helsetilbud I utlandet

Legemiddelkatalog

Kommentarer på bruk/virkning av legemidler fra pasienten

Tilbud som kan være tilpasset for oss litt yngre. Ikke bare tilpasset den eldre

Linker til pasient organisasjoner

Linker til rettigheter som individuell plan

Linker til feriereiser for folk med spesielle behov/samme diagnose som meg

Gjerne pårørende tilgang ved for eksempel demens pasienter/pasienter som ikke kan gjøre rede for seg. Men med god sikkerhet selvfølgelig

Linker til de forskjellige bruker organisasjonene eks. diabetes.no

Lokal info m.m kurs, møter , sosiale aktiviteter

Lærings- og mestringssentra

Oversikt over leger og spesialister i nærområdet

Oversikt over opptreningssentre og kurs relevant for sykdommen

Siste forskningsdata fra inn- og utland

I dagens helse norge må pasienten være prosjektleder for egen situasjon. Dette må det informeres om. Synes som det = lite samarbeid på tvers av hjelpeapparatet.

Felleskatalogen.no

Info om henvisning til spesialist og oversikt over spesialister

Oversikt over mulige behandlingsformer og opplysning om disse, f.eks operasjoner, inngrep

Opptrening

Mulighet for å kjøpe reseptfrie medisiner og helseprodukter over nett

Mor og barn kobling. At man kan enkelt komme inn på eget barns individuelle sider

Info om ulike barnesykdommer + råd

”Linker” til videre lesning om sykdommer og tema

Info om kosthold og vaksinasjon av spedbarn/småbarn

Kontakt lege – pasient bør ikke bli mer upersonlig!



Dersom jeg har time hos lege ønsker jeg å se om legen har forsinkelser, slik at jeg ikke trenger å sitte å vente på venteværelset.

Samarbeid med trygdekontor