Evaluation of the reform in the reimbursement system for Tumor Necrosis Factor alpha (TNF-α)- inhibitors

How are the national guidelines for TNF-inhibitors implemented at department level in hospitals?

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Master thesis

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Abstract

BACKGROUND: The aim of this study was to investigate how the national guidelines for the biological medicaments Tumor Necrosis Factor-alpha (TNF) inhibitors have been implemented at department level in hospitals. The study was performed as a part of the project entitled “Evaluation of the reform in the reimbursements system for TNF-inhibitors”, commissioned by the Ministry of Health and Care services. This study focuses on the use of the national guidelines for TNF-inhibitors published in June 2007. Clinical guidelines are developed in order to assist both practitioners and patients to reach appropriate health care decisions.

METHODS: In this study, two groups of specialists in rheumatology were confronted with different questions concerning the guidelines for TNF-inhibitors and the spreadsheet from “Legemiddelinnkjøpssamarbeidet” (LIS). 8 specialists in rheumatology were interviewed, while the questionnaire was answered by 32 other rheumatology specialists. All the interviewees were picked randomly, from different parts of the country. The questionnaires were sent to the remaining specialists in rheumatology working in Norway, with some exceptions.

RESULTS: The analyses show that the majority of informants are positive to the clinical guidelines for TNF-inhibitors. The respondents seem to accept these guidelines as a framework in their clinical work day. The spreadsheet from LIS on the other hand, is considered less useful than the guidelines, most of all because they are perceived as too time-consuming. However, the informants stressed that they use their clinical experiences which is within these recommendations.

CONCLUSION: The results based on this analysis show that the implementation of the clinical guidelines for TNF-inhibitors has been successful. The guideline is considered well suited due to rheumatologists clinical work day and provide for more equal treatment in the entire country. The spreadsheet from LIS, on the other hand, turns out to be considered less useful.

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Abbreviations and acronyms

DAS	**DISEASE ACTIVITY SCORE**
DMARD	**DISEASE MODIFYING ANTI-RHEUMATIC DRUG**
GP	**GENERAL PRACTITIONER**
HF	**HEALTH ENTERPRISE**
LIS	**LEGEMIDDELINNKJØPSSAMARBEIDET (DRUG PROCUREMENT COOPERATION)**
MTX	**METHOTREXATE**
NOK	**NORWEGIAN KRONER**
NSAID	**NON-STEROIDAL ANTI-INFLAMMATORY DRUG**
PSA	**PSORIATIC ARTHRITIS**
RA	**RHEUMATOID ARTHRITIS**
RHF	**REGIONAL HEALTH ENTERPRISE**
TNF-ALFA INHIBITOR	**TUMOR NECROSIS FACTOR-ALFA INHIBITOR (TUMORNEKROSEFAKTOR HEMMERE)**
WHO	**WORLD HEALTH ORGANIZATION**

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1. Introduction

Tumor Necrosis Factor-alpha (TNF) inhibitors and other biological inflammatory modifying pharmaceuticals[1] are used in the treatment of rheumatic diseases, in addition to patients with skin- and intestinal diseases. The financing of these medicaments was partly transferred from the National Insurance Scheme (Folketrygden) to the health enterprises` (RHF) budgets from June 1 2006. Prior to June 2006 the National Insurance Scheme paid for treatment with TNF-inhibitors outside hospitals, while the hospitals paid for the out-patient treatment. After June 1 2006 the ministry proposed that all TNF- inhibitors should be financed over the health enterprises` budgets, due to statements saying that differences in the financing of TNF- inhibitors may affect clinician's choice of medicament (St.prp. nr.1, 2005-2006).

TNF-inhibitors are a collective term for several different medicaments which mainly replace each other. The pharmaceutical group given in hospitals consists of the medicaments Remicade, MabThera and Orencia, whereas Enbrel, Humira and Raptiva are home-preparations. Among these, Enbrel and Remicade are the most used TNF-inhibitors, in fact, these were the most sold medicaments in 2008 (Apotekforeningen, 2009).

This study is part of a project on the evaluation of the changed funding for TNF-inhibitors, and is on commission by the Ministry of Health and Care Services. The project was requested in order to find out how the new financing system for TNF-inhibitors works.

Further, this study will take a closer look at the clinical guidelines for TNF-inhibitors which were introduced in June 2007. According to numbers from the Norwegian Prescription Database there seemed to be geographical differences in the use of TNF-inhibitors and therefore, the Ministry of Health and Care Services wanted to make national guidelines to secure quality and geographical similarity in use of TNF-inhibitors (St.prp. nr.1, 2005-2006).

[1] Further in this study, it will for simplicity be referred to as TNF- inhibitors

1.1 Background for the changed funding arrangement for TNF- inhibitors

Treatment with TNF- inhibitors is costly, roughly 80 000-150 000 Norwegian kroner (NOK) per patient each year, and there has been a considerably increase in consumption. The former financing system gave few incentives in proportion to the right prioritizing because a great portion of the costs were covered by the arrangement of blue prescription (blåreseptordningen). The proposal of transferring the financing liability for TNF-inhibitors to the health enterprises is mainly equivalent to the financing arrangements in Denmark and Sweden (St.prp nr.1, 2005-2006).

In some cases, medicaments will have a natural application both inside and outside hospitals, like the TNF-inhibitors Remicade and Enbrel (NOU 2003:1). Therefore, using Enbrel was free for the hospitals, whereas Remicade had to be paid for by the hospital. Thus, it was assumed that the hospitals could see in favor of prescribing Enbrel to patients to a greater extent than what it was medical motives for. Therefore, the Ministry of Health and Care Services decided that Enbrel no longer should be financed by the National Insurance Scheme; hence, it should be financed as Remicade was already financed. Hopefully, this would lead to a choice of Enbrel or Remicade made from purely medical considerations, and not based on differences in the funding basis (ibid, legemiddelgruppen TNF-hemmere, 2006). There are great costs related to these medicaments, the most sold drugs in Norway in 2008 was Enbrel, sold for 501, 9 million NOK. Further, Remicade was sold for 355, 8 million NOK, which was an increase of respectively 12, 2 percent for Enbrel and 22, 4 percent for Remicade, compared to 2007 (Apotekforeningen, 2009). Hence, it was therefore important to find a financing arrangement which does not affect the prescription of these medicaments.

Having a National Insurance Scheme funding of medicaments outside the institution, involves third party financing, and thus weak price sensitivity (NOU 2003:1). Third party financing means that the one that pays for the medicament, in this case the National Insurance Scheme, is someone else than the one who decides the pharmaceutical use, which is the physician. The physician, on the other hand, is someone different than the user of the medicament, which is the patient. The individual physician who initiates the costs of medicines is therefore not faced with the costs of medicament use. However, when the

hospitals themselves finance their medicament use, they have a financial incentive to try to negotiate discounts on the purchase and select the cheapest among equivalent drugs (ibid).

Before the financing arrangement, there were no existing price competitions between these medicaments, even if the medicaments are equivalent, because of the financing through the National Insurance Scheme and because of use of different reimbursement systems. The transfer of the financing responsibility would give equal financing arrangement for the medicaments, and hopefully that would stimulate to price competition (Legemiddelgruppen TNF- hemmere, 2006). Further, different financing arrangements between these medicaments may have lead to a choice of medicament which to a large extent was based on economic and not medical considerations; however, that is just a hypothesis.

Previous studies show that the demand for health care services is dependent on what price the patients have to pay for the treatment. In several countries, Norway included, the Government subsidizes the price of the health care services. This means that the consumer does not have to pay the total cost for the treatment they demand. This will lead to higher demands of these services, which is too high when it leads to services where the benefit of health is not in a reasonable relation to the production costs. Because of missing price mechanism, this might happen, and it will lead to irrational resource use, seen from a socio-economic point of view (NOU 2003:1).

1.2 Evaluation of the changed funding for TNF- inhibitors

By transferring the financing of all the medicaments to the health enterprises, this would adjust for price competition between the producers through "Legemiddelinnkjøpssamarbeidet"[2] (Drug procurement cooperation) and justify for more accurate prioritizing (Legemiddelgruppen TNF-hemmere, 2006, St.prp nr. 1, 2005-2006). LIS is an organization owned by the regional health enterprises, which task is to create competitive tendering on the hospitals` pharmaceutical procurement. LIS negotiate the prices with the pharmaceutical wholesalers on behalf of the hospitals through competitive biddings for selected drugs (Apotekforeningen, 2009). In addition, LIS has made a spreadsheet the specialists in rheumatology can use in order to find out which medicament is the cheapest for

[2] Further in this study, it will for simplicity be referred to as LIS

each patient. A third element, the Ministry of Health and care Services introduced clinical guidelines for use of TNF- inhibitors, in order to support right use professionally and economically, and contribute to secure equal treatment of patients in the entire country.

The project on the evaluation of the changed funding for TNF- inhibitors is tripartite, with the following problems to be addressed:

- *How has the changes in the financing responsibility affected the distribution and use of TNF- inhibitors?*

- *How has the transfer of the financing responsibility affected the price competition in this area?*

- *How are the national guidelines for TNF- inhibitors implemented at department level in hospitals?*

The last question is the problem that will be addressed in detail in this study. However, the two other studies might be of interest since they address the other aspects of this project. Hence, I refer the reader to the studies "An analysis of consumption and use of TNF-inhibitors", written by Silje Hobbel and "Price and competition in the market for TNF-α inhibitors in Norway", written by Irina Bjarkum.

1.3 National clinical guidelines

According to Grimshaw & Russell (1993), clinical guidelines are statements which are systematically developed in order to assist practitioner's decisions about appropriate health care for specific clinical circumstances. In these statements there is a thoroughfare of available knowledge in the special field.

1.3.1 Introduction of national guidelines for TNF- inhibitors

The Norwegian Directorate of Health published the national professional guidelines for clinicians prescribing TNF-inhibitors in Norway: "National professional guidelines for the use of TNF- inhibitors and other biological inflammation calming medicaments within rheumatology, gastroenterology and dermatology". Clinical practice guidelines are developed in order to improve health care outcomes and health service efficiency, and hopefully reduce levels of inappropriate practice (Grimshaw & Russell, 1993, Conroy & Shannon, 1995). In addition to the national guidelines, every hospital department is recommended by the guidelines work group to make procedures suitable for treatment with TNF- inhibitors in their hospital department. This is because the recommendations in the national guidelines neither are detailed nor complete (Retningslinjer for TNF-hemmere, 2007).

1.3.2 The aim of the national guidelines

The aim of clinical guidelines is to gather sources of knowledge with a basis for education, in order to create a tool in practice for the clinicians. However, guidelines are also policy, which is meant to be a basis for quality evaluations and a basis for co-operation between disciplines. Further, guidelines can secure a good relationship between costs and utility and at last, work as a tool for rationing of services. Finally, the aim of the clinical guidelines shall secure high quality, secure right prioritizing and reduce unwanted variation (Carlsen, 2008).

The Ministry of Health and Care Services gave the Directorate of Health commission to work out national guidelines for use of biological inflammation calming medicaments. The Ministry of Health and Care Services requested for guidelines that should support right use of the medicaments both professionally and financially, and contribute to ensure equal treatment of patients in the entire country. By creating these guidelines, the Government wanted to make superior instructions for the particular professional environment based on today's knowledge for the registered medicaments. The national guidelines are based on international reputable principles, for treating patients with seriously inflammatory rheumatic diseases (Henriksen, 2005).

1.3.3 Contens of the national guidelines for TNF-inhibitors

The national professional guidelines for TNF-inhibitors are applicable within rheumatology, gastroenterology and dermatology, and were prepared by a composed group, set up by the Directorate of Health. The work group consisted of representatives from Norwegian Medicines Agency, Norwegian Knowledge Centre for the Health Services, the regional health enterprises and the Directorate of Health. In addition, "Norsk revmatologisk forening", "Norsk dermatologisk forening" and "Norsk gastroenterologisk forening"; which are the Norwegian associations in rheumatology, dermatology and gastroenterology, participated in this work. The national guidelines for TNF-inhibitors are threefold, and discuss guidelines for respectively inflammatory rheumatic diseases, inflammatory intestinal disease and dermatological diseases. Further in this study, the national guidelines for the use of biological medicaments in inflammatory rheumatic diseases will be the focus.

Mainly, each chapter in the guideline is divided into instructions according to prescription, which medicaments the recommendation relates to, treatment with biological drugs, current contra- indications of treatment, follow- up of patients under treatment and finally, the end of treatment. In the first subchapter, the guidelines examine prescription and prescription practices for TNF-inhibitors. Here it is described that biological medicaments have to be prescribed by specialists in rheumatology, further, the prescription have to be approved by the professional environment at a public or a non-commercial private hospital, with at least to specialists in rheumatology. Further, there is a short description of which medicaments the recommendation relates to and for which approved indications this applies, while other indications have to be approved at a university department. In the guidelines there is set different requirements for disease activity. The TNF-inhibitors are to be used in the treatment of patients with active inflammatory disease, which have not responded satisfactory on conventional treatment using Disease Modifying Anti-Rheumatic Drug (DMARDs), antiphlogistic medicaments or possibly intraarticular steroid injections. The evaluation of disease activity should be based on relevant parameters for inflammation like laboratory tests, clinical status and pictorial-diagnostics. The patients must have completed previous treatment and have to be without contra-indications in accordance with international approved literature at the start of the treatment and are to be checked regularly. These contra-indications are among others, infections, malignity, pregnancy and

contemporary treatment. Finally, all treatment has to be ended after 3-6 months if the patient has not achieved intended treatment response.

1.4 Use of theory

The theoretical framework in this study will handle the principal-agent theory, including different uncertainties and conflicts. According to Chambliss and Schutt (2006), theories help us make connections to general social processes and large bodies of research.

1.4.1 The agency theory (principal-agent theory)

Despite the fact that clinical guidelines are made to facilitate better practice, many practitioners are sceptical as to whether the clinical guidelines can improve their clinical work day. Hence, uncertainty persists concerning whether guidelines are effective or not (Grimshaw & Russell, 1993), and negative issues due to the introduction of guidelines are the same as those affecting any new health care development (Conroy and Shannon, 1995).

In the principal-agent theory we analyze the relationship between a principal (P) and an agent (A). According to Busch and Vanebo (2003) an agent relation is:”A contract in which one or more persons (the principals) engage another person (the agent) to do a job for them and this implies that a certain way of decision-making authority is delegated to the agent” (Jensen and Meckling, 1976 in Busch and Vanebo, 2003, p. 118). Because of reliance on the agent, the agent has more information than the principal, and this might lead to asymmetry of information. Furthermore, the agent does not necessary have the same goals and/or objectives as the principal, and therefore this might lead to problems (Smith et al., 1997). In this case, the Government (P) is dependent upon the hospital and the employees’ (A) performance to be able to achieve the goals that are formulated; that is, implementation of the national guidelines for TNF-inhibitors.

In this study, due to the implementation of clinical guidelines for TNF-inhibitors, some problems may arise. The principal and the agent might have conflicting goals, like different preferences. Additionally, there might be asymmetric information between the principal and the agent.

Based on the data from the interviews and the survey, there will be an analysis and discussion, taking a closer look at these data and then discussing the findings in this study. In the analysis there are made use of results from the survey and the interviews, first of all to show the reader some of the answers from the data collection. Among other factors, the questions deals with the respondents' knowledge of and access to the clinical guidelines for TNF-inhibitors, where they got it, and whether they know the content of the guidelines. Further, they were questioned whether the guidelines are made use of in their clinical work day.

1.4.2 Former studies

In order to get a better understanding of the need for an evaluation of the new financing system for TNF-inhibitors, and the implementation of the clinical guidelines, it is of interest to take a look at former studies concerning clinical guidelines. In addition, the principal-agent set of problems and earlier composed reports on the use of biological inflammation calming medicaments within rheumatology, will be briefly discussed.

The Norwegian Knowledge Centre for the Health Services has made a study where they investigated the economic aspects of TNF-inhibitors in Norway. Their results reported that TNF-inhibitors can be cost effective, compared to treatment with DMARDs. This was especially the case where it was used in early stages of the disease; less than three years, and by patients witch, among others, had a good DAS 28 response (DAS 28 indicates the disease score). Further, they found that prevention of productivity loss might lead to great potential savings for the society; however, this was only discussed in a few of the economic evaluations done (Movik, 1997).

According to the article "What lies beneath it all? – an interview study of GPs' (general practitioners) attitudes to the use of guidelines", GP`s adopt clinical practice guidelines to varying degrees (Carlsen & Nordheim, 2008). Here, it is stated that GPs attitudes towards guidelines identified common barriers to implementation, and these barriers are similar across studies and countries (ibid). There might be different reasons for this; however, whether the guidelines are trustworthy, whether they suit the patients and whether the recommended action is feasible, are important considerations for the GP. Further, there were two important findings, according to the paper. First of all, the GP`s suspects that clinical guidelines from the Government are strongly affected by financial considerations. Second, in

contrast to earlier findings, the article have come to the result saying that even if some clinicians indicate that recommendations at times might seem confusing, they still think it is of importance to have a debate about, and updates of, clinical guidelines. This is other results than similar studies have shown in other countries, however, an explanation might be that there are a relatively small number of guidelines in Norway, which means less to keep track of. On the other hand, it is possible that evidence based medicine and transparent academic debate has become more accepted the last couple of years (Carlsen & Nordheim, 2008).

1.5 Use of method and the task ahead

1.5.1 Use of method

In this study it is both made use of qualitative-and quantitative methodology. By making a survey we reached out to several rheumatologists, and therefore got several views on the guidelines for TNF-inhibitors, while using qualitative method, we got more detailed answers, based on the interviewees' experiences, thoughts, expectations and attitudes towards the guidelines.

Further, the interviews will serve as data base, while the survey is intended as a supplement. It was conducted six interviews with clinicians from four different hospitals in Norway, in addition to one private clinic. The first two interviews were carried out with two interviewees in each interview; hence, the last six interviews were conducted with one interviewee. While one of the interviews was a telephone interview, the others took place at the hospitals and the clinic. The survey was sent out to a great number of rheumatologists in Norway; however, the response rate was only 32 percent. Thus, the interviews were chosen to be the main source of data, while the survey was included as a supplement, which captured knowledge about the guidelines more widely.

The study further, beyond what has already been mentioned, will examine the pharmaceutical market and the overall pharmaceutical policy objectives in addition to a short description of the rheumatic diseases and treatment. Chapter 2 is included in order to provide a better understanding of the mechanisms in the pharmaceutical market, while chapter 3 is intended to provide an understanding of why it was important to implement clinical guidelines in relation to the use of TNF-inhibitors for these diseases. Further, there will be an

analysis and discussion in chapter 6. In the analysis of the data from the interviewees there has been made use of statements, which will hopefully give the reader an impression of the interaction during the interviews. Hopefully, this will exemplify the material, which forms the basis for the analysis. Further, the survey results will hopefully give an impression of the response rate and then what results was found based on the data collection. Finally, in chapter 7 there will be concluding remarks, discussing the findings and summing up this study.

2. The pharmaceutical market and overall pharmaceutical policy objectives

This chapter will examine some of the pharmaceutical sales, market conditions and the participants involved in the pharmaceutical market. These are challenges, which have to be resolved in order to achieve a best possible use of pharmaceuticals. Hopefully, this will provide a better understanding of why the government wants to introduce guidelines for the use of certain medications, in this case the TNF-inhibitors.

Pharmaceuticals are partly financed by the Government through the arrangement of blue prescription, partly by the regional health authorities, partly by other health institutions, and partly by patients through out-of-pocket payment for blue prescriptions, white prescriptions and nonprescription pharmaceuticals. For some pharmaceuticals, the regional health authorities have a distinct financing responsibility. This is applicable for disease modifying biological medicaments for treatment of rheumatic diseases, the so-called TNF-inhibitors (Apotekforeningen, 2009). In 2008, there were sold medicaments for 17, 1 billions in Norway, which was an increase in 2, 9 percent compared to 2007. The sale was divided between marketed prescription required medication, prescribed drugs given authorization exemption (godkjenningsfritak) and nonprescription drugs. According to the ATC-classification, which is an international classification system for pharmaceuticals recommended by the World Health Organization (WHO); the ATC-group consisting of antineoplastic and immunmodulating agents increased 11 percent from 2007. This group is mainly dominated by pharmaceuticals for arthritis and similar and for cancer treatment. The high increase is related to the fact that there has been a large increase in the sale of the TNF-inhibitors Enbrel, Remicade and Humira (ibid).

2.1 The participants in the pharmaceutical market in Norway

The pharmaceutical market is a market, which is different from other markets; hence, it is a strictly regulated market. There are different strong and dominating participants in the market, at the same time as there are great economic interests from the different participants. The most central participants on the pharmaceutical market in Norway are the public

authorities, the pharmaceutical industry, the pharmaceutical wholesalers, the pharmacies, the patients and the health personnel (Apotekforeningen, 2008, St.meld. nr. 18, 2004-2005).

2.1.1 The public authorities

The public authorities, represented by the Ministry of Health and Care Services, are responsible for the administration of the pharmaceutical politics. This includes regulation by law and financing of the pharmaceuticals over the National Insurance Scheme. In addition, other tasks are delegated to underlying departments. The Norwegian Medicines Agency ensures the consumers and health services` needs for effective and secure medicaments, and also contributes to accurate medicament use. Further, the agency is responsible for approval of medicaments` quality, safety and effect, admission of medicaments on the arrangement of blue prescription, pricing and supervision of the medicaments. Finally, the agency also supervises production, testing, distribution, sale and marketing of different medicaments. The Norwegian Directorate of Health is responsible for coordination of development and implementing professional guidelines at national level. Medicaments are one of several treatment alternatives that have to be evaluated. Further, the Directorate is responsible for the regulations of requisition and handling medicaments in the health service, and finally, preparedness. The Norwegian Institute of Public Health is a national centre, which is doing research, health supervision and counseling within infectious disease control, environmental medicine and demographic surveys. The Institute also has the responsibility for vaccination; among others, the Norwegian Prescription Database (Reseptbasert legemiddelregister). Hence, the National Insurance Scheme administers the arrangement of contribution and individual reimbursement for medicaments, keeps control with the prescriptions written on the National Insurance Schemes account, and stands for the refund settlements with the pharmacies. Finally, the Norwegian Board of Health Supervision is responsible for the supervision of the health care services and medical personnel; including clinicians` prescription of medicaments and handling of medications in institutions (Dalen, 2003, St.meld. nr. 18, 2004-2005).

2.1.2 The pharmaceutical industry, pharmaceutical wholesalers and the pharmacies

First, the pharmaceutical industry develops, produce and sell medicaments, and there are made considerable demands for safety, quality control and follow-ups in these stages. Today there are more than 40 different pharmaceutical agencies in the Norwegian market and about 300 pharmaceutical companies with marketing permission in this market (St.meld. nr. 18, 2004-2005). Second, the pharmaceutical wholesalers buy medicaments from the pharmaceutical companies and resell them to the pharmacies. There are three full assortment wholesalers in Norway: Norsk Medisinaldepot, Tamro and Holtung (ibid). Third, the pharmacies process the medicaments to the patient prescribed by a physician, and have to distribute all medicaments that are demanded by the patients. The pharmacies incidentally buy all medicaments and most of the other products from the pharmaceutical wholesalers (ibid).

2.1.3 Patients and health personnel

Patients can improve their knowledge and understanding about the use of medicaments by gathering information, due to today's technology, which makes it simpler for the patient to obtain this information. Patients with chronic diseases often gather a lot of information about their health condition and their treatment possibilities (St.meld. nr. 18, 2004-2005).

The relationship between the patient and the clinician used to be characterized by more confidence and accept than what is the case today. Now the patient' have a more participating role, due to more knowledge about own health and about the health care services. There has been a change as a result of co-operation, co-determination and joint responsibility. Further, the treatment of many diseases has become more complicated with more and more medicaments and a number of advanced types of treatment. In different cases, it requires many years of experience and high skills in order to give patients the right information and good advice about treatment and medicaments. Hence, it is important that the clinician does not act contrary to health personnel's duty of providing good care and economically correct use. Research shows that patients have significant influence over what happens during the consultation, due to the fact that they have become more informed and often know a lot about different treatments and medicaments. Hence, it is important that the

treatments and the medicaments are used as they are supposed to, both professionally and financially. Appropriate pharmaceutical use is the ministry's primary objective of pharmaceutical policy, thus it is important to have a good prescription culture and patient follow-ups to ensure right use of medicaments (St.meld. nr. 18, 2004-2005).

In total, 70 % of the pharmaceutical costs are paid by the National Insurance Scheme, while the patients cover the rest through out-of-pocket payment, and payment for white prescriptions and nonprescription drugs. The reimbursement arrangement for pharmaceuticals is part of the Governments management tool within health-and welfare policy, and is established with two different purposes. First of all, it is established to ensure that the whole population has access to necessary medicaments, independent of their ability to pay. Secondly, the arrangement will help to ensure correct and cost-effective use of medicaments (St.meld. nr. 18:2004-2005).

As mentioned, there are great costs related to medicaments in Norway every year. Every year there is great demand for health services in Norway, and the demand only increases. Rheumatic diseases is one of the major disease groups in Norway, around 300 000 have a rheumatic disease (Revmatikerguiden, 28.04.09). This will be discussed further in this study.

3. Rheumatic diseases and treatment

Since rheumatic diseases are common in Norway and attended with great costs, it is important to have a framework for treatment of such diseases. The guidelines for TNF-inhibitors have requirements for how the worst cases of these diseases should be treated, and therefore, the last part of this chapter discusses treatment of rheumatic diseases in order to provide a better understanding of the importance of requirements due to such treatment.

3.1 The rheumatic diseases

Rheumatic disease is an umbrella term for more than 80 diseases that affects the moving body, additionally; internal organs may in some cases be affected as well. Inflammatory joint diseases are serious, and in total, nearly 300 000 Norwegians are expected to have a kind of rheumatic disease. In most cases, the causes of rheumatic diseases are unknown. Still, inheritance, environment and mode of living are important factors for the development of these diseases. However, common for the diseases under this term, is that our own immune response of unknown cause attacks the body's own tissues and organs. What difficulties the diseases provide, both partly depends on which tissues and organs are attacked, and partly on how active and aggressive the disease is (Revmatikerguiden, 20.01.09).

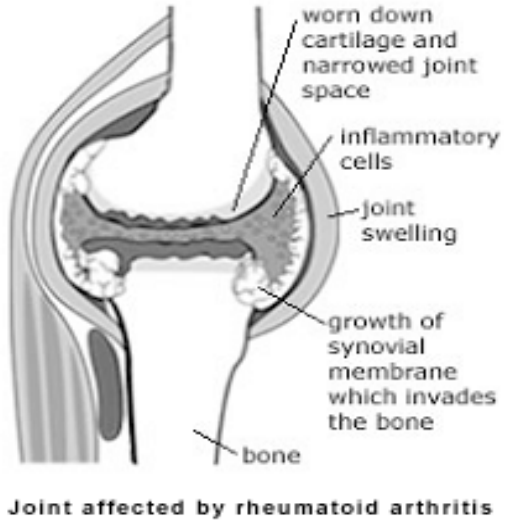


Fig. 1: Joint affected by rheumatoid arthritis (1)

3.1.1 Rheumatoid arthritis (RA)

According to McRae & Kinninmonth (1997), Rheumatoid arthritis is a chronic, systemic inflammatory disorder of unknown aetiology. Rheumatoid arthritis is characterized by inflammation in joints, and for most people the disease first affects hands and feet, with symptoms like stiffness, soreness and pain. The inflammatory process is often recurrent, and this often leads to progressive joint destruction, deformity and incapacity.

According to Revmatikerguiden (20.01.09), a webpage with information about rheumatic diseases, between 0, 5 and 2, 0 percent of the Norwegian population has Rheumatoid arthritis in Norway. The disease is more common among women, with a peak onset between the ages 50 and 60; however, both young and elder might get the disease. It is unknown what the cause of this effect is, but there are several factors that contribute to the disease. Since more women get the disease we can assume that it has to do with female hormones, additionally, heritability does also affect the chance of developing the disease. RA develops over several years, with constantly reduced mobility. The reduced movement due to the joint cartilage is gradually broken down and replaced by connective tissue fibers that get smaller. In the most extreme cases the binding tissue is destroyed, and all movement in the joint ends, however, it is only in 10 percent of the cases the disease leads to complete disability (Bjålie et.al, 2000).

3.1.2 Bechterew's- disease

Bechterew's-disease or Ankylosing Spondylitis, is a disease grouped under the Seronegative Spondyloarthropathies. Bechterew's-disease is a chronic inflammatory arthritis, which injures the articulars between spine (columna) and the sacroilium (ileum). Further, the small articulars in the back develop inflammation, and in some cases other organs like eyes, heart and kidney might be affected. The cause of Bechterew's-disease is not known, however, it is well known that the disease brakes out at a young age; often before turned 45. Getting the disease after turning 45- 50 years is unusual, and we see that males are affected more often than women. According to Revmatikerguiden, between 0, 6 and 1, 8 percent of the population in Norway has Bechterew's- disease. The disease occurs more often in areas were the disease predisposing heredity factor (sykdomsdisponerende arvelighetsfaktor) HLA-B27 is frequent, like in North-Norway and among the Sami people (Revmatikerguiden, 09.02.09).

3.1.3 Psoriatic arthritis (PsA)

Psoriatic arthritis is a chronic inflammatory disease, caused by inflammation of the skin (psoriasis) and joints (arthritis). There is a relation between psoriasis and arthritis: 7 percent of those suffering from psoriasis will develop arthritis (McRae & Kinninmonth, 1997). The prevalence of Psoriasis arthritis is expected to be 0, 1 percent; in other words, 1 in 1000 Norwegians is expected to have PsA, however, this is just estimation. Most common for Psoriatic arthritis, is that the patient gets the skin disease first and thereafter the arthritis. This turns out in nearly 75 percent of the cases, however, both diseases might develop at almost the same time, or the arthritis might develop first. People in all age groups can be affected; however, it is rare that children are affected by PsA. In most cases one can see that PsA starts in the age group 20-40 years, and women and men are affected equally (Revmatikerguiden, 09.02.09).

3.2 Treatment of rheumatic diseases

In cases with inflammatory articular diseases, the pharmaceuticals play an important role in the treatment. By using different medicaments one can reduce the pain or prevent inflammation in the affected joints. The medicaments make sure that the joints and muscles still functions by preventing inflammation. Often, patients with inflammatory articular diseases have to try different medicaments to find a proper treatment. It is not unusual to combine different medicaments to achieve the best possible treatment, however, what medicaments to use depends, among other factors, on what kind of disease there is, how serious the clinical picture is and the general health of the patient (Revmatikerguiden, 30.03.09). This study mainly concentrates on medicaments with more long-term and vigorous effect against the inflammation, with focus on the biological medicaments. These are medicaments that are specifically aimed at one particular molecule which plays an important role in the inflammation process in the joints.

3.2.1 Treatment with biological medicaments

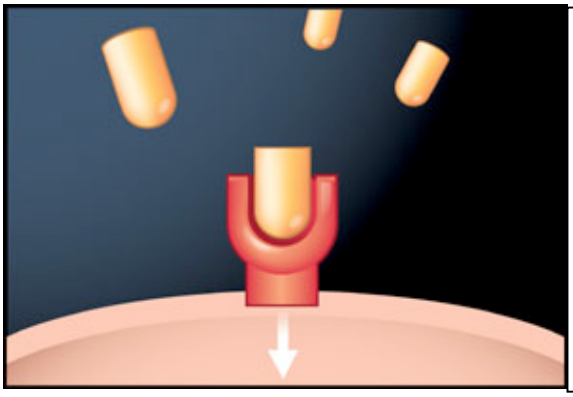
Treatment with DMARDs or other conventional treatment might reduce or delay the development of functional loss, and irreversible damages caused by the disease. Patients with either Rheumatoid arthritis or Psoriasis arthritis, should have tried at least one disease

modifying medicament; preferably Methotrexate. When it comes to Bechterew's-disease, the patient must have tried at least two different NSAIDs (Non-Steroidal Anti- Inflammatory Drug) (Retningslinjer for TNF-hemmere, 2007). However, there are many examples where patients experience that these medicaments do not have any effect, particularly after long time usage. Treatment with TNF-inhibitors is an alternative for these patients. Based on knowledge about the prevalence, and the diseases degree of seriousness, today there are merely between 8000 and 9000 patients with inflammatory rheumatic diseases in Norway per year, which might be topical for treatment with TNF-inhibitors (Granum et al. 2006). The treatment is not curing, and the joint elements will come back after ended treatment, thus, there is still great uncertainty associated with this type of treatment (ibid). Common for all TNF-inhibitors is that the patients should be followed up by a specialist. Most specialists are employed at a hospital or have a contract with a regional health enterprise (Legemiddelgruppen TNF- hemmere, 2006).

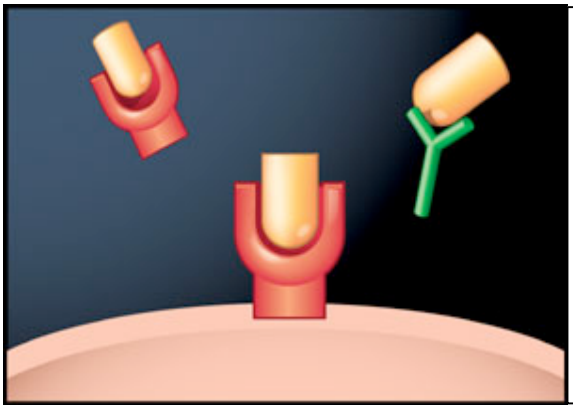
TNF-inhibitors were adopted in Norway in 1999. The straining point is a molecule called TNF-α; the protein TNF-α is being blocked. Usually, inflation is a useful reaction in the body, because the body is activated to render harmless enemies, for instance infectious material. However, for patients with arthritis or other inflammatory diseases, the immune system does not work the way it is supposed to, and therefore the inflammatory reaction is directed against the body's tissues (Revmatikerguiden, 01.05.09).

The biological medicaments might either be given intravenous in an outpatients` clinic within a couple of hours or as an injection the patient takes at home. These biological medicaments can be divided into three groups: Antibodies against the inflammatory substance TNF-α, contact Substance (receptor); which inhibits the inflammation substance TNF-alpha, and preparation inflammatory drug, which inhibits IL-1 (interleukin-1) (Biologiske lægemidler, 2009). In the first group we find the medicaments Remicade, which is given as an infusion at a hospital, and Humira, which is given as an injection the patients can take at home. In the second group we find Enbrel, which also is given as an injection, taken by the patient, at home. The last group includes Kineret, which, as in the case for Humira and Enbrel, also is given as an injection the patients takes themselves (ibid).

3.2.2 Biological medications` effects and side-effects



The normal component mechanism: The inflammation occurs when the immune system affects the body's own cells. This happens when an inflammatory substance attach to a receiver at a cell's surface, and thus activates the cell to create inflammation.



Biological medicaments can attach to the inflammatory substance, such that the inflammatory substance can not attach to the recipient on the cell surface. This can be done by using drugs that are either antibodies (Remicade and Humira), or constitute a false receive drug (Enbrel).

Fig. 2: a) The normal component mechanism and b) the biological medicaments way to neutralize the inflammatory mechanism (2)

According to Revmatikerguiden, choice of medicament is taken by the clinician, based on knowledge of the different medicaments. The efficacies of biological medicaments are best documented in patients with prolonged and severe rheumatoid arthritis. Approximately 1/3 of the patients have very good effects of these medicaments, 1/3 have moderate to good effects and 1/3 have little or no effects of the medicaments. When it comes to the group of RA patients, who could benefit from biological medicaments, it is likely to increase as experience with the substances increases (Biologiske lægemidler, 2009). TNF- inhibitors often provides significant reduction of pain, morning stiffness, tiredness and clinical disease activity; reduced number of swollen and sore joints (Revmatikerguiden, 19.03.09).

There are elements of uncertainty when it comes to use of biological medicaments and side-effects. Since biological medicaments only have been used for a few years, one does not know the long-run side-effects, and should therefore oversee for these side-effects. According to the guidelines for TNF-inhibitors, there is still some uncertainty in whether

treatment with TNF- inhibitors gives higher risk for cancer (Retningslinjer for TNF-hemmere, 2007). In some studies, the data indicates that there is a possible higher risk of cancer, while in other large patient follow-ups this is not documented. It is therefore important to use the medicaments with precautionary measures (Biologiske lægemidler, 2009).

4. Theoretical framework

4.1 Agency theory (principal-agent theory)

In the agency theory we analyze the relationship between a principal and an agent. According to Smith et al. (1997, p. 41), "the principal-agent relationship implies the existence of a contract (either explicit or implicit) under which one or more persons (the principals) engage another person or persons (as agents) to perform a service on their behalf". In such a contract, the agent undertakes some of the decision-making authority, and because of the reliance on the agent, it is likely that information asymmetry will exist, due to the fact that the agent has more information than the principal. Further, the principal and agent may have different goals and/or objectives and their attitudes towards risk might as well be different (ibid).

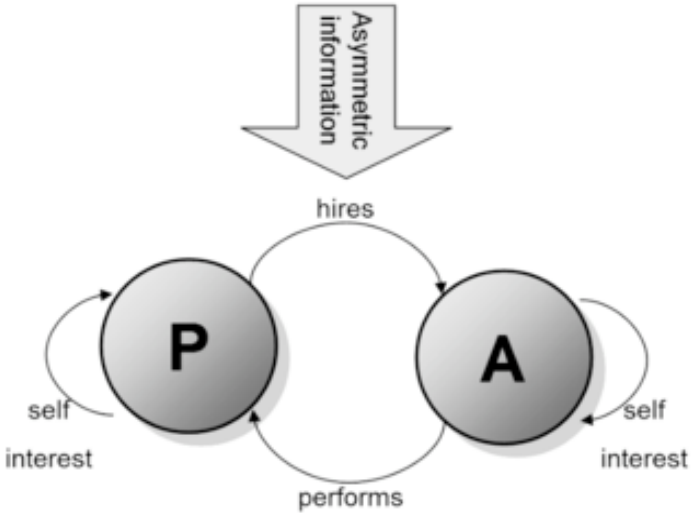


Fig. 3: The basic idea of agency theory (3)

As we can see from the figure, the basic idea of agency theory is the relationship between a principal (P), and an agent (A). The agent is the one that performs on behalf of the principal, which is the one that hires the agent to act on its behalf. If there are no conflicting interests between the principal and the agent, there is no problem; however, conflicts of interests might occur. Hence, as in this case, the principal might therefore be dependent on giving the agent appropriate incentives to assure that the agent will act as required. Since economic rewards are not applicable, monitoring can provide better information and basis for possible

sanctions if the agent does not accomplish the tasks as the principal requires (NOU 2003:1, Smith et al., 1997). In an owner-manager relationship the owner is the principal and the manager of the organization is the agent. Often in such relationships, the agent possesses skills and abilities that are needed in order to perform the tasks. The principal might lack these skills and abilities, might be less effective in performing the tasks compared to the agent, or might spend its time more productively on other tasks (Petersen, 1993). Appropriate principal-agent relations in the health care service might be Government/regional health enterprises, regional health enterprises/health enterprises (hospitals) and hospital management/hospital department (NOU 2003:1). In this study, the principal-agent relationship between the Government and the hospitals, with a focus on the specialists in rheumatology, is what is interesting to study. Whether the clinical guidelines for TNF-inhibitors are being used, is also to be examined. If the guidelines are being used, there are no problems due to this, however, if they are not being used, that might lead to both information asymmetry and conflicts of interest.

4.1.1 Asymmetric information

The main issue concerning the principal-agent relationship is asymmetric information, which means that one party possesses more information than the other party. In a principal-agent relationship the main focus is the essential information the agent holds and which the principal does not have available (Sando & Andersen, 2007). In cases where the principal can observe all the actions the agent performs, there is symmetric information. However, in many case the agent has information about its action which the principal cannot observe, while the outcome, on the other hand, usually is observable for both. Earlier, the Government assumed it had the same information concerning the hospitals` cost structure and patient composition as the hospitals` management and employees. Though, most often this is not the case. The management and the employees will have more information both concerning the possibility for cost reduction and other organization methods, and with regard to the prioritization decisions taken. Here we talk about information imbalance, challenges which occur in cases of asymmetric information (NOU 2003:1). In other words, the specialists observe their own action while the Government can not observe it. Therefore, the principal cannot be sure whether the agent acts in its best interest. The action of the agent will always be important to the principal, and therefore, an agent problem will always exist as long as one actor’s interests depend on the achievement of another part (Petersen, 1993).

In this case, asymmetric information means that it is difficult for the Government to evaluate the number of patients treated with TNF-inhibitors in the hospitals. The rheumatologists are expected to be willing to treat more patients than the Government requests. Further, it is difficult to see whether the agent behaves in the manner the principal wants, in terms of treating patients in accordance to what is required, with a view to the recommendations in the guidelines. Moreover, it is also difficult for the principal to see if the patients are treated equally regardless of where they live in the country. Without any methods of treating this problem there might be a twist away from the desired tasks, hence, introduction of clinical guidelines is a way to handle this problem. Hence, this study shows one way of handlings this problem.

4.1.2 Conflict of interests

Conflict of interests, on the other hand, might occur in cases where the agent has other goals than the principal. Here, the information the two parties possesses is not longer the issue, however, their contrast of interest is. The specialists in the hospital (A) treat patients on behalf of the Government (P); however, the specialists might have different goals, even though that is in conflict with the principals` requests. In this case, the Government delegates the treatment responsibility of rheumatic patients to the specialists; however, there are some uncertainties in terms of whether the agent works as preferred, and in a way that benefits the principal (Petersen, 1993). The principal and the agent might have different goal structure and different procedures. The agent might work toward own goals and act opportunistic. This is difficult for the principal to discover, and therefore insecurity arises between the two parts (Smith et al., 1997).

With a view to the guidelines, one might question whether the guidelines for TNF-inhibitors are being followed, and whether the principal-agent problems exist here. Information inequality exists between the regulating authority, the Ministry of Health and Care Services, and the specialists; hence, the ministry's challenge is therefore to find solutions on the conflict of interest in which encourage the hospitals` management and employees to act in accordance with the principal's interests (NOU 2003:1). Such conflict of interest might consist of the specialists' wishes in order to treat all patients in the need for the treatment while the Government wants to reduce the treatment.

4.1.3 Possible solutions for management-related problems

Implementation of the clinical guidelines for TNF-inhibitors is the main-perspective in this study. As mentioned, in the agency theory management-related problems might occur, due to different incompatible goals and asymmetric information. Often the principal lack different skills in order to accomplish different tasks, hence, the agent is hired based on possessing these skills and abilities (Petersen, 1993). However, there might be conflicts between the principal and agent due to these tasks. The specialists in rheumatology have been delegated the decision making responsibility by the Government, in treatment of rheumatic patients with TNF-inhibitors. Whether the delegation leads to conflicts of interests, depends on whether the agent's preferences differ from the principals (Sørensen, 2005).

Since the Government does not have full information about the agent`s actions, there might be conflicts due to the implementation of the required tasks. Hence, it is important that the Government can put to use different instruments in order to make the agent accomplish these tasks as the Government prefer. Implementation of measures to ensure that the agent acts match the principal`s requirements, is the main issue here. Hence, first the principal-agent theory point out two different actions which might ensure that the agent does not make allowances for own interests in stead of the principal's interests. The first action is monitoring, which can be carried out in two different ways. Ex post control is direct monitoring which is supposed to provide for "correct decisions". Examples on this kind of monitoring might be active controls, however, such controls are often costly to accomplish. Implementation of clinical guidelines is another solution, which this study is an example of. The rheumatologists' actions are here the independent variable, in other words, the reason why the Government wants to implement guidelines, to get more control of the prescription practice for the TNF-inhibitors This is done by the authorities in order to achieve what they want, as a prerequisite in order to make sure that the rheumatologists act as the Government wants, in cases where there might be conflicts of interests. In this case, the clinical guidelines are bipartite. One the one hand, the guidelines is meant to advice the rheumatologists in what the principal requests from the agent. On the other hand, the guidelines say more about the Government`s goals, for instance due to patient treatment. There might be a conflict of interests between the principal and the agent as a result of how many patients they should treat with TNF-inhibitors. Hence, the principal creates clinical guidelines in order to tell the

agent how the treatment progress ought to be. This is one way the principal can assure that the agent acts as supposed to, even though their requests disagree.

Clinical guidelines are an increasingly familiar part of clinical practice, and by creating guidelines one creates instructions in detailed clinical treatment. Due to challenges in today's health care systems; rising healthcare costs, increased demand for health, more expensive technologies and an aging population, clinical guidelines are seen as a tool in order to make health care more consistent and efficient. Furthermore, clinicians, policy makers and payers also see guidelines as a tool for closing the gap between what clinicians do and what scientific evidence supports (Woolf et al., 1999).

How the agent will behave in relation to such management decisions differs. The agent might accept such decisions, however, in cases where the agent is forced to accept them, there might be protests. Further, the principal and the agent might have different goals; there might for instance be cases where the principal wants to save money, while the agent does not agree. In such cases, there are contrasts of interests between the two parts. However, there might be cases where the decisions are in line with what the agent wants, hence, the accomplishment will neither be affected by conflicts of interest nor asymmetric information.

The other way of monitoring the agent, is ex ante-control. Here, the authorities establish institutional mechanisms, which secure control of the public administration (Sørensen, 2005). "Fire alarms" is a way to carry out ex-ante control and might function as a management tool for the Government. Fire alarms are informed third parties in which alarm when public services fail its mission. Interest groups, like the Norwegian association in rheumatology, often have good information about how the situation is for specific groups, and can therefore give information about services in cases where it is revealed information about failures, or possible failures, to the Government. There are different arrangements, which are established in order to help individuals and interest groups with alarm activity, mainly by giving access. Examples of such arrangements are ombud schemes, like "Pasientombudet", and statutory rights, like "Pasientrettighetsloven". Such statutory rights give the population a legal basis to promote their case (ibid).

Due to a successful implementation in this case, there are some expectations that have to be fulfilled. First of all, the specialists in rheumatology need to feel confidence above the Government, if not they will oppose the new changes. Further, if these changes lead to a lot

of extra work for the specialists, if it becomes time-consuming to make allowance for the guidelines, it will probably lead to resistance among the specialists. As in this case, more than half of the respondents in the survey and most of the interviewees do not use the spreadsheet from LIS, because they find them too time-consuming without being particular useful. Thud, due to the guidelines the Government has implemented some tools, which will hopefully ensure that the specialists use these guidelines. According to the respondents in the interviews and the survey, it was important that rheumatologists participated in the preparation of these guidelines. Hence, there will probably be a better acceptance of the guidelines among the specialists when it is done this way, compared with preparation of such guidelines without the influence of someone who knows their clinical work day. Further, the respondents believe that the guidelines are well adapted to their clinical work, which also is important to avoid resistance towards implementation of these guidelines. According to one of the interviewees, it is important to have a framework for these medicaments, and if many specialists share this view that may also be a reason why the guidelines are being used.

5. Methods and data

5.1 Choice of methodological approach

In order to investigate what considerations specialists in rheumatology have on this topic, we wanted to make use of both qualitative- and quantitative methodology. This was decided in order to capture knowledge both widely and deeply. Why it is desirable to combine these two methods is because in qualitative method one uses the experiences, thoughts, expectations and beliefs as the basis for data analysis, while in quantitative method it is required a more overall view. By combining both these methods, I have tried to both get a general picture of what the rheumatologists thinks about the guidelines, and also tried to get some more detailed answers in the shape of interviews. An overarching goal for qualitative studies is to develop an understanding of a phenomenon, connected to individuals in their own social context. The aim is to get an insight into how people deal with their situation (Dalen, 2004). The qualitative research interview tries to comprehend the world from the perspective of the person being interviewed, get the understanding of people's experiences, and reveal their experience of the topic discussed (Kvale, 1997). When it comes to quantitative methodology, the result we wanted to achieve was based on a larger number of specialists in rheumatology to see whether they shared the views of the interviewees. As distinct from qualitative method where we collect much data on a few cases, the aim in the quantitative part is to collect less data from many cases (Chambliss & Schutt, 2006).

5.2 Ethical guidelines

One of the main ethical issues in research is confidentiality, and most often the primary focus of ethical concern in survey and interviewing research. Confidentiality in research means that we do not publish personal data that might reveal the interview objects identity (Chambliss and Schutt, 2006).

First of all, the principle implies that the researcher have to make the informant anonymous when the results from the research is presented. Furthermore, the principle implies that

others cannot have access to the data. It is important that the trust the informant shows the interviewer is based on the fact that the interviewer will not reveal the information (ibid).

In a research projects, it is very important to have consent by the participants before the project is commenced (NESH, 1999 in Dalen, 2004). It is important that the informants have all the information they need before the interview, both in order to avoid misunderstandings, but also to go through with the interview process in an accurate way.

In this case, my supervisor and I agreed to contact different specialists in rheumatology from different parts of the country to arrange the interviews. First of all, we sent out letters to some specialists, asking whether they wanted to participate in this project. The letter (appendix I) informed the participants about the project and gave information about the interviews with specialists within rheumatology, which hopefully would give us an insight in how the guidelines are being used, how well they function and how they possibly can be improved. In the letter we informed the specialists that both wards and individuals would be ensured fully anonymity both during the process and in the reporting of the results. Most of the specialists we contacted wanted to participate, and we set up a date. Some days before the interview took place I sent out the interview guide (appendix II), repeating some of the information from the letter concerning anonymity, and also information about use of supporting materials and the possibility to withdraw from the interview at any time during the process if that was required. The interviewees got a copy from the interview after the transcription and first analysis for acceptance and possible correction.

5.3 Validity, reliability and generalization

In both qualitative and quantitative research it is important to ensure validity, reliability and generalization. It is important that this is done through all steps in the research process; hence, one should ask whether the data collected are good enough to explain what they are intended to explain. The two main criteria's for data quality is validity and reliability.

5.3.1 Validity

According to Chambliss & Schutt (2006) validity is "the state that exists when statements or conclusions about empirical reality are correct". Do the indicators measure what it was

intended to measure? When we are trying to ensure whether the data is valid, aspects like truth and knowledge are important. A valid conclusion is based on precise terms and is connected with an assessment of the quality of the interpretations; therefore, it is important that the researcher is critical to his or her interpretations (Thagaard, 2003, Kvale, 1997). Whether we can ensure validity, depends on whether we weighed our measurement options, if we have carefully constructed our questions and observational procedures and whether we have selected sensibly from the available data indicators (Chambliss & Schutt, 2006).

In this study, I assume I have asked the right questions, without asking leading questions that distracted the respondents. The questions asked gave me the answer to what I was looking into, further, after making the questions for the interviews and survey, I had some outsiders get a look at the questions, to make sure they were not misunderstanding or leading. Along the way, I have been critical to my interpretations of the interview- and survey results, and believe that my understanding is in line with what the respondents actually said.

5.3.2 Reliability

Reliability means that our measure is affected less by error, or chance variation than in cases where we do not have reliable data or measure. Reliability has to do with the consistency of the research findings. “We cannot really measure a phenomenon if the measure we are using gives inconsistent results” (Chambliss and Schutt, 2006). Reliability is a question we ask our selves about the accuracy and the quality control of the investigation, the presentation and the interpretation of the results. When it comes to the external reliability, this is about weather others can make an analysis with the same data. To ensure reliability, the researcher has to account for how the data has been developed during the process, which means that the researcher has to differentiate between the information received during the research, and the researchers own evaluation of the information (Thagaard, 2003).

In this thesis I used a tape recorder, which is a more trustworthy source than taking notes during an interview. In cases were we take notes, the interviewer has to reconstruct statements and citations, which often might be interpreted incorrectly (Thagaard, 2003). Using a tape recorder also ensured that I did not miss out important information from any of the interviews. Though, since all my interviews were conducted in Norwegian, I had to make sure that all the translation was done carefully, to avoid misunderstandings and misinterpretations.

5.3.3 Generalization

According to Chambliss and Schutt (2006), the generalization of a study is the extent to which it can inform us about persons, places, or events that were not directly studied. As mentioned earlier, in qualitative interview studies, we most often talk about quite small, suitable selections closely attached to the focus of an actual study. By using our theoretical starting point, we should consider whether what we have seen and heard, can be generalized. To what extent can the results be transferred to other groups than those that have been examined (Dalen 2004)? A question which is often asked about interview studies is whether the findings are possible to generalize. In our everyday life we make expectations about what will happen in other, similar situations or with similar persons (Kvale, 1997). According to Thagaard (2003), generalization is especially relevant when it comes to case studies, where the possibilities to generalize are incorporated in the research design.

In this thesis, I would argue that the interviewees' experiences with the guidelines of TNF-inhibitors could be applicable in other studies of knowledge of the guidelines for TNF-inhibitors. When it comes to my assumptions in this context, this can only be investigated by further research.

5.4 Qualitative method – the interview

5.4.1 Informants

The sample was collected as follows: Together with my supervisor we decided that we would like to accomplish four interviews with specialists in rheumatology and also two interviews with private specialists in rheumatology. The informants were picked incidentally; however, we wanted to include specialists from different parts of the country. After deciding who we wanted to include, we sent out a letter asking whether they wanted to join this project. In addition to this we wanted to send out a questionnaire to other specialists in rheumatology.

I ended up having five interviews with specialists in rheumatology and one interview with a private specialist in rheumatology. My first two interviews are from the same hospital with two interviewees in each interview. The rest of the interviews are from different hospitals

and with only one interviewee. The age of the interviewees range from 39 to 66 years, and both males and females were represented; three females and six males.

Interview 1: Interview with two female specialists in rheumatology, working in a medium-sized hospital in Western Norway.

Interview 2: Interview with two male specialists in rheumatology, working in a medium-sized hospital in Western Norway.

Interview 3: Interview with one male specialist in rheumatology, working in a small hospital in Eastern Norway.

Interview 4: Interview with one male specialist in rheumatology, working in a small hospital in Eastern Norway.

Interview 5: Interview with one male specialist in rheumatology, working as a private specialist in Eastern Norway.

Interview 6: Interview with one female specialist in rheumatology, working in a large hospital in North Norway.

We hoped to accomplish focus group interviews, which is interviews with a number of specialists from the same ward at the same time. In that way we hoped to succeed in having a discussion considering the guidelines in a competent clinical environment. Unfortunately, this was difficult to arrange, therefore, most interviews were accomplished with one interviewee from each hospital/clinic.

5.4.2 Interview and interview guide

An interview is an exchange of viewpoints (Dalen, 2004). Further, it is a conversation with a structure and an aim. The goal is to capture descriptions of the informants work day to be able to interpret the meaning of the phenomenon that is described (Kvale, 1997). In this context, the researcher is an instrument who is responsible for the collection, understanding and interpretation of the answers that result from the interview (Dalland, 2000).

In a research interview it is desirable for the researcher to illustrate the theme and the problems that are being addressed due to the actual project (Dalen, 2004). The main

advantages doing personal interviews is that we get a lot of information from the interviewees in addition to the fact that personal interviews often have a high response rate. In this thesis I chose a semi-structured interview, which is more focused towards a special theme that was chosen on beforehand.

After sending out the letter with information about the project and an inquiry about whether they wanted to participate in this project, I contacted the requested. Most of the requested were positive to this project, and wanted to participate. I let the participants decide time and place, and in all cases except from one, I went to the hospital/clinic to accomplish the interviews in their own environment. Since I wanted to do interviews with specialists from the entire country, one of the interviews was conducted on the telephone, because of the long travel distance. However, the interview was conducted in the same way as the other interviews.

The aim in qualitative studies is to get an insight into how people deal with their situation (Dalen, 2004). Therefore, conducting the interviews and data collection in a safe environment was important, hence, it was important to let the interviewees decide time and place for the interview. All the interviews lasted between twenty and forty minutes. In most cases, the interviews were initiated with some small talk, some of the interviewees wanted to hear more about the project this thesis is a part of. I brought up the questions, and asked if I could use a tape recorder to tape the interview. All the interviewees accepted it, and I got started with the questions. Some of the interviewees were very eloquent and spoke freely about the questions as I asked them, and sometimes before I even got to address the questions. Others, however, needed to think more about the questions I asked, and I had to ask some supplementary questions in order to get an answer to the specific question. In some cases, I followed the interview guide to the letter, while in other cases; it was more like a conversation where we touched into the questions as we spoke. The interview guide had the same questions for all the interviewees, except from some changes in the interview guide sent to the private specialist (See footnotes in appendix II).

An interview guide is a plan we have made for the interview. In this case, the interview guide is quite structured; it was detailed put together with finished formulated questions. The interview guide and the situation for the interview have a lot to say for the finishing process and the analysis, according to Dalland (2000). The interview guide might be a sketch of what kind of topics that will be covered or it might be a detailed layout with the exact question

formulations (Kvale, 1997). In this case, the interview guide was fairly detailed with quite determined questions and order (ibid). The background for choosing such a detailed layout and question formulations was to make the interviews and the questions as equal as possible, to be able to compare the results from all the interviews in the analysis. Therefore we used an analysis method which categorized the answers from the interviews, rather than a narrative analysis form, where the interviewee is less determined. The interview guide was divided into seven parts, which included different questions about different aspects of TNF-inhibitors. It was divided in order to structure the questions in a good way, hopefully to get a systematic basis for the interview. The interview guide included both open ended questions where the interviewees were asked to speak more freely, while other questions were more fixed, to get more specific answers. I should probably have made a pilot interview on beforehand, however, because of the limit of time that was not done. Yet, the questions in the interview guide were examined by a contact person in the Ministry of Health and Care Services, and after some changes, the interview guide was sent out to the interviewees.

5.4.3 Transcription

By transcription it means to prepare the interview material for analysis, which often means to transcribe from oral speech to written text (Kvale, 1997). The transcription is not only a simple technical process, but also a process of interpretation. The transcription form depends on how the transcription will be used. In some cases, the general impression of the interviewees point of view is the most important, and than we might rephrase and compress the opinions. In other cases, however, the transcriptions might work as psychological analysis, and should therefore be carried out carefully and in the literal form (ibid).

The transcription was time consuming, as expected. I transcribed each interview shortly after each interview took place, to assure that I still remembered well what had been said. All the interviews were of such quality that I had no problems hearing what the interviewees said, except from the telephone interview. However, since I transcribed the interviews shortly after it took place, I remembered most of what had been said in the part of the interview that was of poor quality. In addition, I sent out the interviews to the informants within a week after the interview for comments and approval, and got some comments from the respondent from the telephone interview which helped me get the interview right. All the interviews were transcribed word by word, to make sure I did not miss any details and than loose

valuable information. This way of transcribing is very time consuming, however, I was sure I got all the details written down. The transcribing was done in Norwegian, to ensure I did not loose information due to translation and excluding dialect in this phase of the analysis.

5.5 Quantative method – the survey

According to Chambliss and Schutt (2006, p. 137), "survey research collects information from a sample of individuals through their responses to standardized questions".

In addition to the interviews we decided to do a survey. Surveys are often used, because they are versatile, possible to generalize and efficient, and can therefore be used for a variety of problems. Further, there are relatively low costs connected with a survey, and the fact that it is possible to distribute the survey out to a great number of respondents, is often important arguments for doing a survey. In this case, I used a questionnaire made in Questback, which is a web based examination program for creating surveys, and sent it out by e-mail to the respondents. By using surveys in addition to interviews, I hoped to reach out to a larger number of informants; to be able to base our analysis on several respondents' answers. We made a descriptive survey which seeks to measure certain phenomena, at one point in time (cross-sectional) (ibid).

5.5.1 Informants

The total number of specialists in rheumatology in Norway is 201; however, this includes both employed, pensioners and clinicians that are not members of the Norwegian Medical Association (NMA). Since NMA helped us sending out the questionnaire to their members, the total number of reachable specialists, were 124. The questionnaire was sent out to all these 124 respondents; however, I received e-mails from ten rheumatologists which of different reasons could not participate in the survey. There were different reasons why they could not participate; some were absent from work, some had no longer the same e-mail address (delivery status notification (failure)) and one had not been working with TNF-inhibitors in a couple of years, and therefore, did not feel that she could answer these questions. Seven of these rheumatologists were women, while three of them were men. Three of them were from hospitals in the East, two from North and one from South. When it comes to the last four, we had no information about where in the country they came from.

Further, the questionnaire was sent to all the interviewees as well, because NMA sent out this invitation to their members for us, and thus we had no opportunity to remove these respondents. However, those who had already been interviewed were told to ignore the invitation. The total number of respondents were therefore 106. The respondents had one week answering the questionnaire, than we sent out three reminders within four more days, and the total number of replies we got were 34, which is a response rate of 32 percent. Due to the time limit, we decided to include the survey despite the low response rate, to base our findings on some more data than just the interviews. In this study, the results from the survey have been used to support the findings from the interviewees, to be able to see if we could find relations in the response due to sex, age or region. However, the low response rate has been taken into account during the analysis and discussion. Why the response rate is so low, can be discussed. There might have been too little information in the invitation to the survey, which did not give enough information to catch the respondent. Further, some of the respondents expressed that they regularly received invitations to various surveys by mail and e-mail, and therefore did not take the time to answer all these enquiries. There might be several different reasons concerning the low number of respondents in this survey, however, that will not be discussed further in this study.

Navn	Prosent
20-29	0,0 %
30-39	0,0 %
40-49	38,2 %
50-59	50,0 %
60-69	11,8 %
Annet, spesifiser her	0,0 %
N*	34

*N = antall respondenter som har besvart spørsmålet

Fig. 4: Questback: age of the respondents in the survey.

The age of the respondents in the survey varied from 40 to 69 years, and there was a little predominance of men answering this survey; 55, 9 percent men.

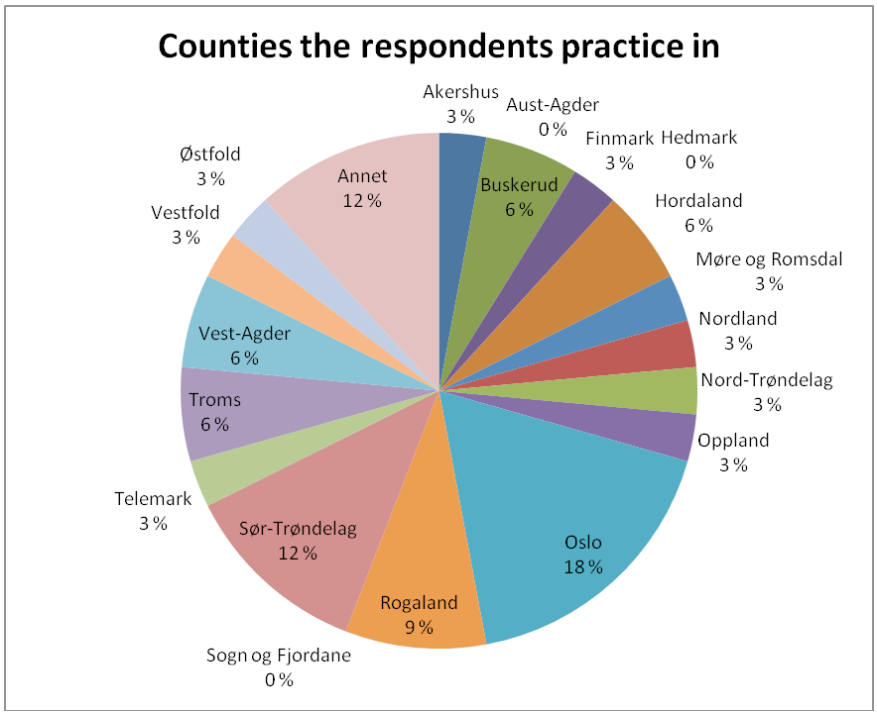


Fig. 5: Numbers from Questback: Counties the respondents practice in (due to rounding, the total percentage in this figure is 102)

As we can see from the diagram, there are no respondents from the counties Hedmark, Sogn og Fjordane or Aust-Agder, which means that most counties are represented in this survey. The part called "annet" is a group that consists of respondents that did not give up name of the county they practice in, but answered "Sør-Øst", "Oppland-Buskerud", "Agder-fylkene", while one respondent did not give an answer to this question.

5.6 Sources of error

5.6.1 Linguistics

In this study, all the respondents spoke Norwegian; hence, the interviews were conducted and transcribed in Norwegian. In my analysis, statements from the interviews and survey is an important part, therefore, I have translated all the quotations into English. I have tried to translate it as carefully and correct as possible, however, I might have lost some details because of the translation.

5.6.2 Sources of error in qualitative data analysis

In qualitative data analysis, text is the raw data to be analyzed, and transform analysis into findings; however, no formula exists for the transformation (Chambliss & Schutt, 2006). Some ethical issues may arise in quality data analysis, and therefore, there are some aspects to be aware of. First of all, it is important to make sure the research integrity and research have been though of. I believe my study has been conducted carefully, thoughtfully and correctly based on the data used in this analysis. I believe I have used the data in a way that will produce authentic and valid conclusions which is in line with the data material from the interviews and the survey. Further, according to Chambliss & Schutt (2006), there is an issue about the use and misuse of results. In my interview guide, the interviewees got information about the interview process, and were told they would receive a copy from the interview and the analysis that was made, for acceptance and possible correction. That way, the interviewees could comment on the first outline of the interviews, and control for possible errors in the transcription and. The interviewees were also told what the purpose of this interview was, in order to specify what I would use the results for.

5.6.3 Sources of error in quantitative data analysis

Using simple statistics, it is possible for the researcher to say something about social phenomenon, identify relationships among them and explore the reasons for these relationships, among others. By using a carefully constructed sample from the entire population, this might help us get a simple summation of different situations (Chambliss & Schutt, 2006).

As in the case for qualitative analysis, here there is also important to be aware of the issue concerning use and misuse of the results. Before answering the questionnaire, the respondents got information about the purpose of this survey, in order to specify what I would use the results for. The respondents also got information about the survey being anonymous. Further, I have been cautious about using survey data to say anything about causal hypothesis. According to Chambliss & Schutt (2006), there is always a possibility that variables we did not control for, or was not even measured in the survey, may produce spurious results, and are therefore important to be aware of. In this case, I have thought about such possibilities, and been cautious about it in my discussion and conclusion.

6. Analysis and discussion

The interviews with my interviewees will be the basis for my analysis and discussion in addition to the 32 respondents on the questionnaire we sent out. There are many different ways of interpret the data, and it is important to mention that this is solely my interpretation. In the analysis and the discussion I will use statements from the interviews and the questionnaires, hopefully to give the reader an impression of the interaction during the interview, and exemplify the material which forms the basis for the analysis (Kvale, 1997). The analysis is divided into subchapters, in order to follow the chapters of my interview guide. Hopefully, this will structure the questions in a way that makes it more orderly to the reader.

6.1 Knowledge of the national guidelines

The basis for this part of the project concerning evaluation of the changed funding for TNF-inhibitors is how the national guidelines for TNF-inhibitors are implemented at department levels in hospitals. To be able to investigate this problem we asked the interviewees and respondents in the survey whether they knew about the national guidelines for TNF-inhibitors. Both the interviewees and all the respondents of the questionnaire knew about these guidelines, however, there were some uncertainties due to which authority that have prepared these guidelines. Some knew that it was the Directorate of Health; however, all knew that it was worked out on commission by the Ministry of Health and Care Services. Among the survey respondents there were many different answers to this question, however, most of the respondents knew about some of the involved in the preparation of these guidelines, like the Norwegian association in rheumatology and Norwegian Knowledge Centre for Health Services.

When it comes to who should work out such guidelines, all the interviewees agreed that the guidelines ought to be worked out at such level, as long as the professional environment in rheumatology has been involved in the preparation of these guidelines. According to several interviewees, these medicaments` nature and price make this a special task that requires a certain administrative level. Among the respondents of the survey, on the other hand, most of them agreed with the interviewees, 79, 4 percent thought it should be as it is today.

However, a little more than 20 percent thought the guidelines should be worked out at a lower administrative level, or by others.

> *As I have understood it gradually, the specialists in rheumatology have (...) been very involved in the preparation of the guidelines. The Norwegian rheumatic association (...) has been very active in this work. Before the guidelines came, there was a meeting where rheumatologists in Norway were invited. This was an opportunity to express ourselves if we wanted to! It seemed that the one representing the Government was responsive and listened to what was said. (...) (Interview 1)*

Further, the interviewees were asked to give a short description of the national guidelines for TNF- inhibitors. All the interviewees agreed that it is important to have clinical guidelines, because of the fact that these medicaments are both expensive and of a special kind as well as it is important to have a tool that gives information about the use of these medicaments. In addition, these guidelines are based on international recognized principles, which make these policies strong academically based.

> *It is an overall guide for specialists who tells about (...) international knowledge and how it is most favorable to use these medicaments. (Interview 5)*

When it comes to whether the guidelines have influence in practice, the interviewees seem to agree on this, however, some believe that they are not followed rigid by all specialists. The majority of he respondents agreed that the guidelines have influence, however, 8, 8 percent are more uncertain. According to Carlsen (2008), clinicians` attitudes towards guidelines differ, depending on whether the purpose is to limit the clinicians` activity or to encourage use of new or more treatment. The researcher found, in several cases, that the fear of destroying the relationship to a patient is an obstacle, in addition to the fear of not fulfilling their professional relationship. Some of the interviewees agreed that this might be the case; however, they think it is difficult to speak on a general basis. The guidelines are supposed to function as a criterion set that provide for equal treatment in the country, to ensure that it is not developed some practices where the clinicians prescribes these medications more often or more rarely than the guidelines recommend.

> *Yes, they have great influence in practice; however, I do not believe that they are followed completely. (...) all treatment with TNF- inhibitors should start here (at the hospital), but that is not done. There are also other clinicians in the county that start treatment on rheumatic patients, and that is not right. We had wanted that the guidelines were followed, such that we had control over it, as rheumatologists. In our department, however, we*

follow the guidelines, not completely rigid of course, but we follow them. (Interview 1)

In the guidelines, there are made several demands that have to be fulfilled before TNF-inhibitors can be prescribed, among others demand for earlier treatment (Retningslinjer for TNF- hemmere, 2007). This is first of all because of the fact that these medicaments are very costly, and also because there is uncertainty associated with the use of these medicaments. Since there are some uncertainties related to side-effects using TNF-inhibitors, the guidelines requires that one is careful, and tries other kinds of treatment before TNF- inhibitors are made use of. The interviewees were asked whether they think these demands are attended to, generally. In most cases, the interviewees agreed that this is important to keep in mind. It is important to try one or more of the more common medicaments first, and once they see that this does not work or does not work well enough, they should start treatment with the biological medicaments.

Yes, at our hospital we follow the rules, at least in 80-90 % (of the cases). The patients are different, and there are other considerations that have to be made; there are long travel distances and so, but I believe that in 90% we follow the guidelines. It has been a bit difficult, we know this is an expensive medication, however, we does not know whether we are on the right level, if our threshold for starting point is correct, and if we are lying where we are supposed to. We believe that we lie a bit under the average in Norway, but we have no numbers saying that. (Interview 4)

I believe that is well ensured! There are not many requirements made, there are only a few. This work is probably done under great influence by the participating rheumatologists. They have, most probable, made account for our clinical work day, so that is not a problem. (Interview 3)

6.2 Contents of the guidelines

Further questions dealt with the contents of the guidelines. Here, the length of the guidelines, whether the layout were orderly, updated and well informed, in terms of what patient groups they included, were discussed. According to Carlsen (2008), guidelines are practical when they are long enough, transparent, orderly, readily available (electronic), updated and finally, have patient information. First of all, the length of the guideline was discussed. All interviewees shared the same opinion about the guidelines being long enough, and the survey respondents also agreed on this. Further, the interviewees were asked a question about whether the guidelines are orderly. By that it means whether the guidelines are structured in

a well arranged way, which makes it easy-to-read. As in the previous question, all the interviewees agreed that the guidelines are orderly, and most of the respondents agreed on this.

> *They are orderly! They are as orderly as they can be. Clinicians always have a primary need for a certain amount of freedom, and there might be times were we are on the boundaries in relation to the criteria's… (Interview 2)*

The next question was about whether the guidelines are updated. In the national guidelines for TNF-inhibitors it is stated that there will be an annual audit of the recommendations; hence, we questioned whether this has been taken into consideration. The interviewees seem to think that there is no need to update these guidelines yearly; however, the respondents of the questionnaire were more divided in their opinions.

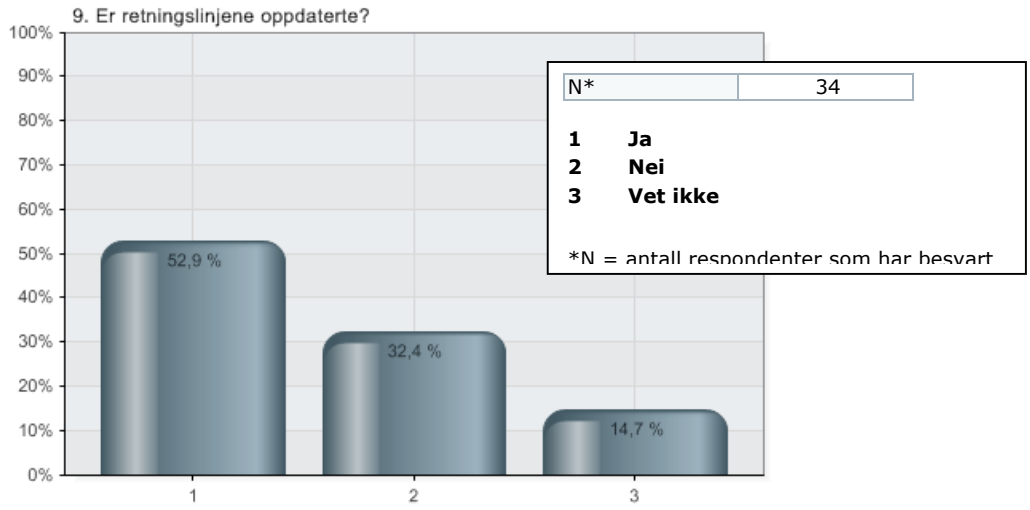


Fig. 6: Questback: are the guidelines updated?

As we can see from the graph, most of the respondents think the guidelines are updated, though, one third of the respondents do not think they are, due to the recommendation in the guideline.

> *No! It was published in June 2007, and it is said that they should be updated annually, but as far as I know that has not been done. However, I do not believe that there have been any great changes in the international view on the use of it, (…). (Interview 5)*

> *Yes! There is no rapid development in rheumatology; therefore, these guidelines will probably last for many years. (Interview 3)*

The final question concerning the contents of the guidelines, looked at whether the guidelines in their opinion inform well about the patient group they include. The majority of the interviewees agreed that the guidelines have enough information about this; however, some believed it was slightly deficient.

The results from the survey show that 89 percent think the guidelines inform well about the patient groups, however, 11 percent disagree with this.

> *Yes! At least when it comes to arthritis and Psoriasis arthritis, I think they do. There may be difficulties in cases with Bechterew's-disease, where we in an early stage do not manage to place diagnostic criteria's, which might be quite out-of-date. We meet patients were we with 95% certainty can see that this is going to be a serious Bechterew's-disease, and can see that they have symptomatology even if it has not been any alterations yet.(...) If we do not take this seriously, we are doing a bad job! Here, I think the guidelines are not totally waterproof, but I expect that there will be updates on this. (Interview 2)*
>
> *Yes, clearly! (Interview 5)*

6.3 Use of the guidelines

When it comes to the questions about the use of the guidelines, there are more uncertainties. The first question is about the accessibility of the guidelines. Majority of the respondents believe that the guidelines are accessible; however, there is great uncertainty when it come to where they got the guidelines from the first time.

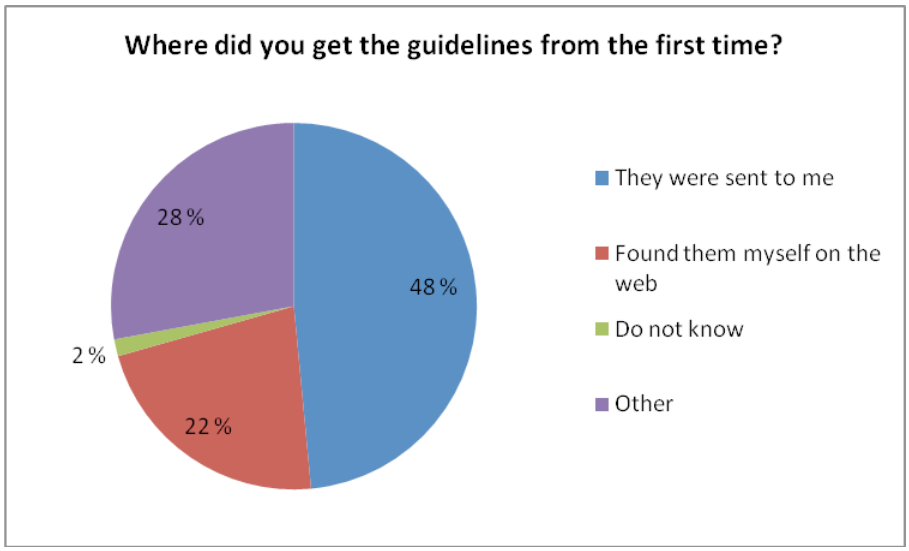


Fig. 7: Numbers from Questback: Where did you get the guidelines from the first time?

Those who answered "other" specified that they either got them from the Norwegian association in rheumatology, from their employer, a colleague or after participating in the preparation of the guidelines.

> *Where did we get it? I have read it, but were did we get it? I should be able to find them within a few minutes on the internet, but actually, I have not tried. On the associations` web page most probably… I guess we can find it there, although I have not tried! (Interview 2)*

> *It is on the Directorate of Health's web pages, and is easy to find! (Interview 5)*

When asking the question about practical importance, all the clinicians asked seemed to agree that it is important to have such guidelines as a reference work and something to relate to in their daily work. Some said that they are of great importance, while others think they are of moderate importance.

Navn	Prosent
Liten	0,0 %
Middels	38,2 %
Stor	61,8 %
Vet ikke	0,0 %
N*	34

*N = antall respondenter som har besvart spørsmålet

Fig. 8: Questback: practical importance of the guidelines

As we can see from the figure on the question about the guidelines` practical importance, 61, 8 percent said the guidelines are of great importance in their daily work.

> *It is good to have a framework for the practice of these medicaments, because it is an enormous expectation in the society. Many patients believe that this is a miracle medicine, and we live under a pressure of letting patients try it, which earlier was difficult. (…) I believe that it is important for us clinicians to have such a restriction, telling us what we can do and what we can not do. I am breaking the law if I go beyond what is given in the guidelines. It is very good to have a framework like this; it is necessary, completely necessary! (…) (Interview 2)*

> *These are medications which have side effects, might have side effects, and which takes a good share of the healthcare budget, so the use should be fairly well regulated. It is very good that we have such a framework to act in accordance with. (Interview 4)*

In the national guidelines for TNF-inhibitors, it is stated that every hospital department is recommended to establish their own arrangements for treatment with TNF-inhibitors, in addition to the guidelines. The reason for this is because the guidelines are neither detailed nor complete, and therefore it will obtain a greater degree of quality assurance for the use of these medicaments. According to some of the interviewees, their departments have not established own arrangements, hence, the rheumatologists in the department often discuss in plenary whether a patient should receive such treatment or not, which in their opinion, functions as an arrangement in addition to the guidelines. In the case of the respondents of the survey, 50 percent said they have own arrangements in their hospital department, while 50 percent does not have that kind of arrangement. Most of the rheumatologists that have other arrangements established in the hospital/clinic, stated that by having such arrangements in order to have best possible control over the patients, and by discussing their patients in plenary, the decisions are never based on only one specialist's opinion.

> *We have a procedure, and in that procedure it says that there should be a consensus with at least two chief physicians. Usually, we take it up on the morning meeting if there is a patient who should start with such treatment. Than we discuss it in plenary and it is written in the patient's journal. The group of clinicians is the committee. (Interview 4)*

6.4 Prescription culture

Under the topic prescription culture, the first question is about who can prescribe TNF-inhibitors in their department. According to the guidelines, biological medicaments have to be prescribed by specialists in rheumatology, and the prescription has to be approved by the professional environment at a public or non-commercial private hospital by at least two specialists in rheumatology. Decisions about the prescription should be based on written documentation of the patients case history, previously undergone treatment and current health state. In the survey, 38, 2 percent answered that there are only specialists in rheumatology that can prescribe it, while 45, 2 percent answered that all doctors (included assistant residents) can prescribe it in their department. 16, 6 percent answered others; in one department a dermatologists can also prescribe TNF-inhibitors, while in another department both dermatologists and gastroenterologists can prescribe it.

> *That is just me! That is, I can prescribe it as follow-up. Until the amendment of the rules I could initiate it too, but now the initiation has to take place in*

> *a rheumatic department at a hospital, because it have to be at least two specialists that agrees on the correct indication. Than I have to refer the patient (to the hospital) with the forms I have filled out and the information I have on the patient. (Interview 5)*

> *All clinicians can prescribe it! I am aware that the guidelines says specialist; however, a specialist is always involved in the ordinance. We have therefore allowed for assistant residents, a clinician in education/specialization, to renew a prescription. (Interview 4)*

The guidelines require two specialists when deciding whether a patient should be put on these medicaments. All the clinicians that have been interviewed agree that this is important, because of the fact that clinicians might have a different view in which patients should have TNF-inhibitors. Some clinicians might be less restrictive in the prescription, while others might be too restrictive. Therefore, it is important that the clinicians agree in every case, and that each initiation is discussed.

Fig. 9: Questback: Prescription of TNF-inhibitors

As we can see, in most cases, this is fixed procedure, however, nearly 12 percent of the respondents answer that this is not a fixed procedure in their hospital department or clinic.

> *Yes, we do… This is because we think it is important to do it this way. Often, two physicians have a different view, so it should be discussed. Most often, we are at least three, often four or five… To get a more nuanced view on the matter of every single patient and treatment, it should be done this way. It was probably a bit different in the beginning when we started to use this kind of medication. It was probably so-so, but gradually we got accustomed*

to the rules and the regulations. Even if it sometimes becomes a bit messy, we do it! (Interview 3)

Several of the clinicians argue that there are variations in the prescription culture between the regions. This might be based on the fact that the clinicians are different individuals, who have different views when it comes to what is the right starting point for each patient. However, some believe that the guidelines might have lead to less variation, but they still believe that there will be a difference in the prescription culture based on individual differences.

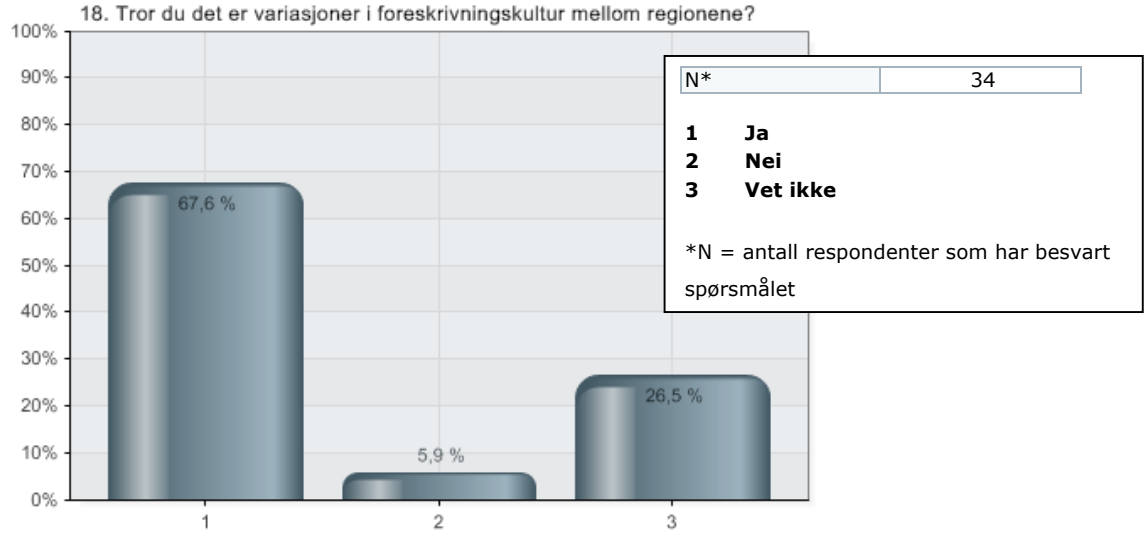


Fig. 10: Questback: Variation in prescription culture between the regions?

Yes! There are some regions that express that they have a lower threshold for giving TNF- inhibitors. Maybe there are individuals… Some rheumatologists! There might be patients they give TNF- inhibitors to, patients I had thought we should not give it to. That it is too early, or here we should try something else. Whether there are any regional differences or not, I do not know. I have the impression that there are regional differences… If one of the leading rheumatologists at the hospital believes in starting the treatment early, the assistant residents in this department will pick it up… That is my impression! I do not know if that is correct, but I (…) have that impression. (Interview 1)

As a follow-up question, I asked the interviewees whether they thought this would affect the patient treatment.

Yes, it does! In relation to that I regard that as different professional point of views. I am more conservative than the eldest rheumatologist here. (…). And such differences there both are and should be… It is important to have different professional views! (Interview 1)

In accordance with the guidelines, other treatment should be tested before TNF-inhibitors are prescribed. In cases of Rheumatoid arthritis and Psoriasis arthritis, the patient should have tried at least one disease modifying medicament (DMARD), preferably Methotrexate. In the case of Bechterew's-disease, the patients should try at least two different NSAIDs before trying TNF-inhibitors. The interviewees stated that they all try Methotrexate first, but there are differences concerning how many DMARDs they try before initiating TNF-inhibitors. All respondents of the survey answered that they all try other treatment before TNF-inhibitors are prescribed.

> *Yes… Most patients have used or are using Methotrexate, at least in cases of Rheumatoid arthritis or Psoriasis arthritis. There, close to 100 % have tried Methotrexate. And there are also some (patients) that are using a combination, Methotrexate and another medicament. For some, there are side-effects using Methotrexate, they will then have Salazopyrin or Arava. All (the patients) have tried at least one, and some have been through two, three, up to five DMARDs. (Interview 4)*

> *Yes, we are always using Methotrexate before we start biological treatment, but we are not using anything else than Methotrexate alone. We are not trying triple treatment or something like that, because new studies from international rheumatology show that the results from such treatment versus using only one (DMARD), are poor. We are going from non-responding or poor responding of Methotrexate to biological treatment. A combination! (Interview 3)*

6.5 Progress in prescription

Most likely, the prescription culture was somewhat different before 2006. Several of the interviewees claimed that more patients get this treatment now, though, they assume that this is not because of the financing arrangement. A couple of the interviewees, on the other hand, believe that there are fewer patients receiving these drugs now than before the financing arrangement. However, they state that this is just an impression they have, and not something they know. They believe that especially after the guidelines came, more clinicians have tightening in the usage of these medicaments in relation to the indication position. Others believe that the increase in usage primarily have to do with the fact that there are no longer just the sickest patients that get this treatment.

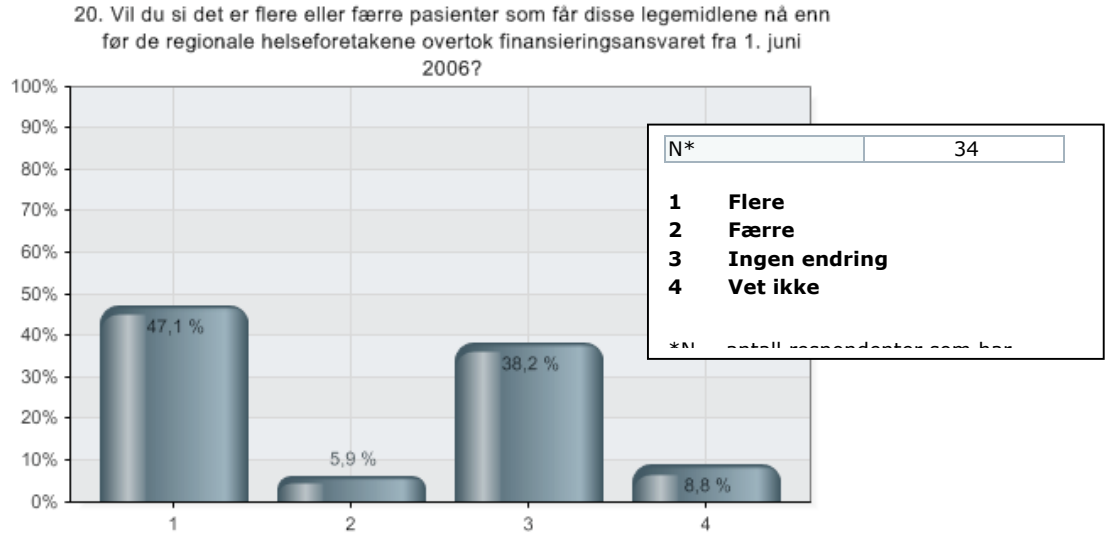


Fig. 11: Questback: Changed prescription practice after June 2006?

> *I believe there are more (patients) that get it now, but I believe that is independent of the financing arrangement. There are not more of the new patients that get it (biological treatment), but because we have built up the number of patients that get TNF- inhibitors over time. They came in `99; that was when we started to use it. Then, it was used on the very stringent indications, on the most damaged patients, but now we also start on new patients. However, we have not come up on the level where we perhaps should be yet. (…) when it comes to general biological treatment, there is development all the time. That affects it, that to, I believe. When it came, we were very skeptical in relation to side-effects and complications, and the medicaments were reserved the sickest patients, but we are not that skeptical anymore, we start earlier now. (Interview 1)*

The ministry thought it was important to establish a financing arrangement as neutral as possible for the TNF-inhibitors. Before, the hospital had partly financed Remicade, while the other TNF-inhibitors were financed through the arrangement of blue prescription. The fact that this treatment is very expensive requires right prioritizing. The financing arrangement that was established had weak incentives in relation to right prioritizing because parts of the costs were covered by a third party (St.prp nr. 1, 2005-2006). We therefore wanted to ask our interviewees if there had been a change in the prescription practice today. This question was not asked in the survey.

> *(…) we were even more careful then, I think we were. Had consensus then, we were out quite early discussing who should get this (treatment). In the beginning I believe the individual physician started without discussing who should get it, but well before July 1 2007 we started discussing it. (Interview 4)*

6.6 Economic considerations

Further, we asked whether the hospitals` budgets are affecting the assignments of TNF-inhibitors; if they make economic considerations before prescribing TNF- inhibitors. Most of the interviewees answer that the hospitals` budgets does not have an influence on the prescription of these medicaments, the focus is on the patient. Some are not quite sure who is paying for it, but since they do not hear anything about it, that is not important. They say they are in no doubt when they decide initiating these medicaments, and thus the economic considerations are unimportant. However, several state that they think about the economy, at least in cases where different medical alternatives are evaluated equally. This question was neither asked in the survey.

> *Yes, we think economic if different medical alternatives are evaluated equally, which also is prepared for in the LIS-agreement. We have no order of using less TNF, even if the budget is to low compared to the prognosis for use. (Interview 6)*

6.7 Spreadsheet from "Legemiddelinnkjøpssamarbeidet" (LIS)

According to NOU 2003:1, comprehensive purchase cooperation between most hospitals in the country has developed. The central actor is "Legemiddelinnkjøpssamarbeidet" (LIS), which is in charge of competitive bidding of selected medications. The interviewees were asked whether they know about LIS and the spreadsheet they have made for prescription of TNF- inhibitors. Most of the interviewees were familiar with it, however, in most cases, the spreadsheet was not used in their daily work. Most of the respondents in the survey also answered that they know about this spreadsheet, however, 11, 8 percent reported that they do not know about it. The majority of the clinicians argue that they do not need the spreadsheet in their daily work, because they know about it, and keeps that in mind when they decide what medicament each patient should have. They state that the spreadsheet is there, it is available, if they in need it. Further, one clinician mentioned that the choice of medicament is given, whether or not they have to calculate the number of kilos to find out which medicament is the cheapest in every case. Several of the interviewees state that there are other considerations that have to be made, considerations that may be more important in their opinion, like cases where the patients have long travel distances. Further, travel costs,

absence from work, lost performance at work, transport and nursing are not included either, and that is perceived as a weakness in the LIS- recommendations.

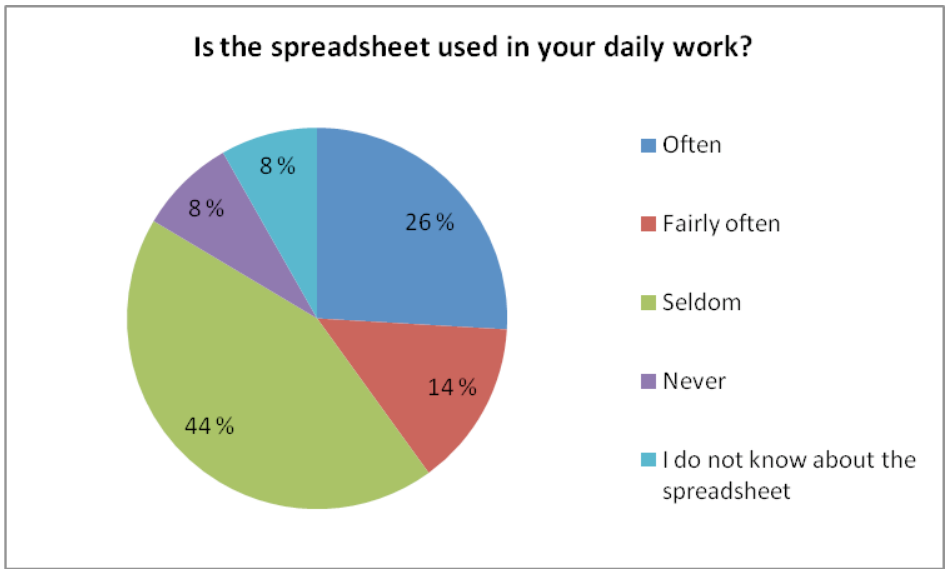


Fig. 12: Numbers from Questback: How often is the spreadsheet used in your daily work?

As we can see from the figure, 26 percent use the spreadsheet often, however, as much as 44 percent use it seldom. There is also a small group of the respondents, 8 percent, which does not know about this spreadsheet.

> *We know they are there, we kind of keep it in the back of our heads, however, there are often many considerations to make in relation to other factors. (…) we do not use the spreadsheet, we do not enter the numbers, but we think about weight and travel distance, the things that are written there. We are using it in the practical work, but we do not bother to compute it. (Interview 1)*

As a follow-up question, I asked those who answered that they did not use the spreadsheet, whether this had to do with the spreadsheet being to time consuming. The answer to that was in most cases that it had to do with clinical experience and not bothering to do it. In most cases it was used, however, it was not used actively. These last questions were not asked in the survey.

> *We use our clinical experience… That is within the LIS- recommendations, and then it must be okay! (Interview 3)*

Further, the interviewees were asked whether they would have used the spreadsheet if it was less time-consuming or easier to use. The answer to this was that they would not, simply

because they felt they did not need a spreadsheet to calculate the numerical values, they could just make mental calculation when needed.

> *Travel expenses, absence from work one day, (…) loss of performance at work, transport and nursing, that is not included, and that is a weakness in these LIS-recommendations. (Interview 4)*

Finally, the interviewees were asked whether they had any comments on how the spreadsheet could have been simplified.

> *No, not really! I know where I have saved them on my e- mail, so I know where to find them within a few seconds. (Interview 2)*

On the question that was about comments to any changes in the guidelines, some of the interviewees had some commentaries. First of all, this was about Bechterew's-disease, and whether the diagnosis criteria's may be changed. Some clinicians feel that in cases where all common sense dictates you should start treatment, but where they can not make a diagnosis, this should have been ensured formally. Further, some think that the guidelines should be updated yearly and in addition sent out again, since some assistant residents only have a copy of the guidelines. They believe that it would also be a reminder to use the guidelines actively in their clinical work day. Nevertheless, all things considered, the clinicians are satisfied with the guidelines the way they are. Furthermore, the respondents were asked whether the interviewees perceive the attitudes towards the guidelines in their hospital department. Generally, the specialists perceive the guidelines as well received, it is good to have a most similar practice as possible in the entire country.

Finally, I asked whether the respondents had any comments concerning what was discussed above. Some of the answers to that was that it is very important to keep in mind that these medicaments are available for those who need it the most. Some are afraid that they might end up in a situation where they, because of economic considerations or other reasons, have to reduce the number of patients using these medicaments. However, it is also important that the patients do not get to much influence, and therefore, the use of these medicaments has to be followed closely by the control authority. In addition, we do not know whether there might be long-run side-effects, and therefore we have to pay attention to what is being done in this field.

7. Concluding remarks

In this study, the main problem to be addressed has been whether the national guidelines for TNF-inhibitors have been implemented at department level in hospitals. Due to this problem, we have based our questions in the interview guide and the questionnaire on the respondent's knowledge of the national guidelines, use of the guidelines, prescription culture, economic considerations and their knowledge of the spreadsheet from "Legemiddelinnkjøpssamarbeidet" (LIS). In addition to get an overview of today's situation, we also wanted to find out whether there has been changes in the treatment regime the last couple of years, due to the transfer of the financing responsibility in June 2006. According to Conroy & Shannon (1995), clinical guidelines are made to facilitate better practice; however, many practitioners are sceptical as to whether the clinical guidelines can improve their clinical work day, hence, uncertainty persists concerning whether guidelines are effective or not (Grimshaw & Russell, 1993). With a view to the clinical guidelines for TNF-inhibitors, one might therefore question whether these guidelines are being followed and whether the principal-agent problems exist here.

Based on the results of both the interviews and the survey, roughly speaking, we can see that the respondents in most questions share the same impressions; however, there are some exceptions. In the questions concerning the national guidelines for TNF-inhibitors, the respondents seem to agree that it is important to have such guidelines, both due to the importance of having a tool in practice, but also in order to provide for equal treatment in the entire country. The aim of the guidelines is also to secure high quality and right prioritizing, which, according to the respondents, is important for these kinds of medicaments. Most of the respondents, both in the survey and in the interviews, agree that the guidelines for TNF-inhibitors seem to have influence among the rheumatologists, and all the respondents answer that the guidelines have medium or great importance in their daily work. As far as prescription culture variations are concerned, the respondents seem to believe that there are differences between the regions in this matter; however, some respondents seem to question whether this is because of actual differences between the regions, or if it is due to the fact that the rheumatologists are different. When it comes to the spreadsheet from LIS, on the other hand, the respondents seem to agree that the spreadsheet is less useful than the guidelines. According to the response rate from Questback, roughly 40 percent use the

spreadsheet often or fairly often, roughly 44 percent use it seldom, and roughly 16 percent does not use it or does not know about it. The interviewees agreed that this spreadsheet was too time-consuming, however, they pointed out that they know about it, and that they use their clinical experience which is within the LIS-recommendations. Others mention that they do not use the spreadsheet accurate; hence, they know what factors to take into consideration, like weight and travel distance. However, some specialists believe that other considerations are important as well, though, they are not included in the spreadsheet from LIS. Here are travel costs, absence from work, lost performance at work, transport and nursing mentioned.

Due to the spreadsheet from LIS, I have tried to systematize the respondents from the survey and the interviewees, to see if there is a pattern in the use of the spreadsheet due to age, sex and county/region. First of all, it is important to mention that these patterns only are based on the answers from 34 respondents in the survey and eight interviewees. It is therefore difficult to draw any conclusions in this matter; however, it might give us an idea if it turns out to be differences due to age, sex or county/region. According to the survey, there seem to be a tendency that more women never or seldom use the spreadsheet from LIS, and more men than women use the spreadsheet fairly often or often. Further, there are only men that do not know about the spreadsheet from LIS. The interviewees seem to follow nearly the same pattern. In other words, there seem to be a great number of specialists in rheumatology which does not use this spreadsheet from LIS, even if the majority of the respondents know about it, hence, age does not seem to be of importance; neither does county.

There is disagreement in whether there has been an alteration as a result of the changed financing responsibility for TNF-inhibitors after June 2006, with a view to the number of patients receiving these medicaments. The respondents in the survey seem to disagree concerning whether there has been an increase or no change in the number of patients receiving TNF-inhibitors after 2006. Several of the interviewees claim that more patients get this treatment now, though, they assume that this is not because of the financing arrangement. However, some of the interviewees believe that there are fewer patients receiving these drugs now. After the implementation of the guidelines, some of the respondents believe that the clinicians might have limited the usage of these medicaments due to the indication position. Others believe that the increase in usage primarily have to do with the fact that there are no longer just the sickest patients that get this treatment.

With a view to the principal-agent theory, there has been little resistance due to implementation of clinical guidelines for TNF-inhibitors. The specialists seem to accept these guidelines as a framework in their clinical working-day. One reason why they seem to have been accepted might be because the rheumatic special field participated in the preparation of these guidelines. Among others, the Norwegian association in rheumatology participated in the preparation of these guidelines. The greatest benefit for patients and almost anyone in the health care, with a view to the clinical guidelines, is that it can improve health outcomes, and in addition it can make sure that the patient treatment for identical medical treatment is the same, independent of their hospital or location. By using clinical guidelines, it is more likely that the patients will be treated in the same manner regardless of where they live in the country or by whom they are treated (Woolf et al., 1999). Further, clinical guidelines offer potential benefits for healthcare professionals as well, among others, they can improve the quality of clinical decisions. In some cases clinicians might be uncertain about how to proceed; hence the guidelines can offer explicit recommendations. Guidelines might improve the consistency of care when clinicians are accustomed to outdated practices, and they can provide recommendations in which assure the practitioners about the appropriateness of such guidelines. To clinicians in hospitals, guidelines can work as a point of reference in practice. To achieve better healthcare services, the guidelines recommendations about tests, treatments and treatment goals contribute to comply with the best care practice (ibid). Finally, for healthcare systems that provide services, like the Government in this case, clinical guidelines may be effective in order to improve efficiency and optimizing value for money (ibid). Given the data we have, we conclude that the clinicians are positive due to the clinical guidelines for TNF-inhibitors. According to the respondents in the survey and the interviewees, these guidelines are well suited due to their working-day, and since rheumatologists have participated in the preparation of these guidelines, they are perceived legitimate. Several specialists state that they appreciate having guidelines, due to the increasing demand for these medicaments. By having the guidelines as a reference level, they believe it is easier to act in accordance to what is required.

According to the data in this study, there are some weaknesses. First of all, the response rate in the survey was only 32 percent. The survey was sent out to 106 respondents, however, after three reminders; there were still only 34 respondents. Due to time limit, we therefore had to continue with fewer respondents than expected, hence, we got respondents from different counties in the entire country, and therefore, this will not make any weaknesses in

the data. Thus, these results might help us point out some important factors due to the problems addressed in this study, and than make it possible to draw some conclusions based on these data.

As said by Woolf et al. (1999), clinical guidelines are an increasingly familiar part of clinical practice, and by creating guidelines one creates instructions in detailed clinical treatment. In England for instance, guidelines have existed for decades and in Finland, more than 700 guidelines have been published by national and local bodies since 1989. Thus, guidelines seem to become more important in health care, and Norwegian clinicians will probably be obliged to follow a number of guidelines in the future. However, one might discuss whether it is good to have guidelines or not. If the guideline is considered as a tool which can improve health care, it is good to have guidelines, however, if one is not accustomed to dealing with guidelines, it is not necessarily a help in the clinical work day. Hence, this might therefore be a problem of current interest which might be interesting to investigate further.

In that case, it might be interesting to take a closer look at implementation of guidelines among Norwegian clinicians, perhaps also within other special fields. Further, due to the patient perspective, there is uncertainty in whether the health enterprises provides for all the patients that need TNF-inhibitors. This question was only asked the interviewees, hence, it might be difficult to draw any conclusions based on these statements, but might work as a basis for further discussion. Further, most of the clinicians I interviewed do not think that the hospitals` budgets are affecting the assignment of TNF-inhibitors; hence, approximately all patients in need of TNF-inhibitors will get it. The interviewees stated that the focus is on the patient, and that they are quite certain when starting this treatment. However, a number of the interviewees fear that the Government will reduce the use of these medicaments, which will lead to a prioritizing between different patients. This might be interesting to take a further look at in a few years, to see if there has been a tightening-up due to these medicaments, or if the use of these medicaments has continued to increase.

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(1) Figure 1: Joint affected by rheumatoid arthritis. URL: http://my.clevelandclinic.org/PublishingImages/rheumatology_immunology/rheum2.jpg [Cited 16.03.09]

(2) Figure 2: a) The normal component mechanism and b) the biological medicaments way to neutralize the inflammatory mechanism. URL: http://www.gigtforeningen.dk/viden+om+gigt/medicin/biologiske+l%c3%a6gemidler [Cited 02.04.09]

(3) Figure 3: The basic idea of agency theory. URL: http://en.wikipedia.org/wiki/Principal-agent_problem [Cited 24.02.09]

9. Appendices

Appendix I: Letter of information to informants (translated)

Evaluation of new finance system for TNF- inhibitors

The financing of TNF- inhibitors and some other medicaments that is being used in the treatment of rheumatologic diseases, was transferred from the National Insurance Scheme to the health enterprises` budget from June 1 2006. The transfer of the financing liability occurred at the same time as the introduction of national guidelines for consumption of TNF-inhibitors.

It was early prepared for that the alteration in the financing liability should be evaluated. Springtime 2008 the Institute of Health Management and Health Economics at the University of Oslo was assigned the responsibility for the evaluation. The evaluation is about to be finished by July 31 2009. The project is accomplished by a group existing of Irina Bjarkum, Silje Hobbel and Karianne Orderdalen, all master students at the study program Health Economics, Policy and Management, and Terje P. Hagen, professor at the Institute of Health Management and Health Economics.

The main problems to be addressed in the project are:

1) How are the national guidelines implemented at ward levels in the hospitals?
2) How has the transfer of the financing liability affected the price competition in this field?
3) How has the changes in the financing liability affected the distribution and use of the TNF- inhibitors?

As part of the evaluation linked to the problems 1 and 3, the project group would like to accomplish interviews with specialists within rheumatology to get an insight in how the guidelines are being used, how well the function and how they possibly could be improved. It is desirable to go through with focus group interviews, i.e. interviews with a number of specialists from the same ward at the same time. In that way we hope to succeed in having a discussion considering the guidelines in a competent clinical environment. Wards and individuals will be ensured fully anonymity both during the process and in the reporting of the results.

We hope you and a selection of specialists at the ward are positive concerning such an interview. The master student Karianne Orderdalen will contact you in the next few days to arrange time for the interview. An interview guide will be send before the interview takes place.

Attachment:

1. Information letter from the Ministry of Health and Care Services
2. Project description

Appendix II: Interview guide (translated)

Interview guide

The intention with this interview is to have various specialists view point concerning the national guidelines for TNF- inhibitors, which was published in 2007. On the instructions the Ministry of Health and Care Services the undersigned wants to accomplish interviews with specialists in rheumatology from different hospitals in Norway and among private specialists, to bring out different opinions and viewpoints according to use of these guidelines.

The interview is expected to take about half an hour, and will take place at the hospitals and the clinics.

When it comes to use of supporting materials there will be made use of tape recorder in such a way that the interviewer afterwards can go through the interviews for transcription and analysis. The interviewee will receive a copy from the interview and the analysis that has been made, for acceptance and possible correction.

Furthermore, it is emphasized that the interview will be confidential, neither name of the interviewee nor name of the hospital will be mentioned. There will be possible to withdraw from the interview at any time during the process, in case that by various reasons is desirable.

Finally, there should be mentioned that it will only be the undersigned that has access to the data that exists after ended interview. These data will only be used for this purpose, and will be deleted after the work with the analysis is ended.

Yours sincerely,

Karianne Orderdalen

Background information

Age:

Education:

Position:

Knowledge of the national guidelines

Do you know about the national guidelines for use of TNF- inhibitors?

Do you know what authority that has worked out the guidelines?

- In your opinion, who should work out such guidelines?
  - As it is today?
  - At a lower administrative level?

How would you shortly describe the national guidelines?

Do you think the guidelines are applied (does they have influence in practice)?

- Why/why not?
- If not, might that be justified in:
  - Allowance for the doctor-patient relationship (being afraid of not fulfill the professional responsibility)?
  - That the guidelines do not fit into the treatment of the individual patient?
  - Other reasons?

In the guidelines there are made several demands that has to be fulfilled before TNF-inhibitors can be prescribed, among others demand for earlier treatment. How do you apprehend that these demands are attended to (generally)?

Contents of the guidelines

How do you comprehend the scope of the guidelines (long/short)?

Are they orderly?

Are they updated?

Does they in your opinion inform well about what patient groups they include?

Use of the guidelines

How accessible are the guidelines?

What practical importance do you attach in your daily work these guidelines (great/little)?

Are there established other arrangements for treatment of TNF- inhibitors in stead of/ in addition to (e.g. committees at the hospital or something similar)?

- In case other arrangements are established, what is the cause of that?
- Do you think it for instance lack incentives for use of the guidelines?

Prescription culture

How are the procedures for the prescription of TNF inhibitors in your clinic[3]?

Who can prescribe TNF- inhibitors in your department/clinic?

In the guidelines it is stated that at least two specialists in rheumatology should sign when prescribing TNF- inhibitors. Is this fixed procedure[4]?

- Why/ why not (e.g. extra work)[5]?

Do you think there are variations in the prescription culture between the regions?

- Why/ why not?
- In that case, do you mean that this affects the patient treatment?

Are other treatment tested before TNF- inhibitors are prescribed in your ward?

- In that case, what kind?

---

[3] Question in the interview guide for private specialists

[4] [5]Not included in the interview guide for private specialists

Progress in prescription

Would you say that there are more or fewer patients that get these medicaments now than before the regional health authorities took over the financing responsibility from June 1 2006?

Could you say something about how the prescription practice for TNF- inhibitors was in your department/clinic before June 1 2006?

Can you say something about how the prescription practice for TNF- inhibitors is in your department/clinic today?

Economic considerations

Do you think that the hospitals[6] budgets are affecting the assignment of TNF- inhibitors (economic considerations)?

- Ex.: Will limited polyclinic capacity lead to changed prescription practice?

Do you think the changes in the financing system have had anything to say for the prescription practice in your department/clinic?

Spreadsheet from "Legemiddelinnkjøpssamarbeidet" (LIS)

Do you know about the spreadsheet LIS has made for prescribing TNF- inhibitors?

- In that case, is the spreadsheet used in your daily work?
- Why/ why not?
    - If not, does that have anything to do with the spreadsheet being to time-consuming?
    - Would you use it if it was less time-consuming/simpler to use?
    - Do you have any comments to how this spreadsheet could have been simplified?

Remaining questions

[6] Health enterprises' budgets in the interview guide for private specialists

Do you have any comments to changes in the guidelines?

How do you apprehend the attitude towards the guidelines?

- At the department?
- In general?

Do you have any comments to what have been discussed above or anything you would like to add?

Appendix III: Invitation to survey (translated)

Knowledge of the national guidelines for TNF-inhibitors

The purpose of this survey is to get different specialists views on the national professional guidelines for TNF-inhibitors, which was published in 2007. On commission by the Health and Care Ministry this survey is sent to specialists in rheumatology, where we hope to bring up the different opinions and viewpoints related to the application of these guidelines. The survey is expected to take approximately ten minutes. The results from this survey will be used in efforts to investigate whether the guidelines for TNF-inhibitors work, and what could or should be changed. In addition, it is desirable to find out whether the spreadsheet from the "Legemiddelinnkjøpssamarbeidet" (LIS) is used in the initiation of TNF-inhibitors. The survey is anonymous.

Thank you! Any comments or questions can be sent to me at:
karianne.orderdalen @ studmed.uio.no

Reminder: National guidelines for TNF-inhibitors

Faculty of Medicine at the University of Oslo is conducting an evaluation of the national guidelines for the use of TNF-inhibitors. The evaluation is carried out on behalf of Health and Care Ministry. The attached questionnaire takes between 5 and 10 minutes to complete. We request an answer within 30. April.

Sincerely,

Terje P. Hagen

Professor

Appendix IV: Survey (translated)

Knowledge of the national guidelines for TNF-inhibitors

The purpose of this survey is to get different specialists views on the national curricular guidelines for TNF-inhibitors, which was released in 2007. On assignment from the Health and Care Ministry sent this survey to specialists in rheumatology, where we hope to bring up the different opinions and viewpoints related to the application of these guidelines. The survey is expected to take approx. ten minutes. The results from this survey will be used in efforts to investigate whether the guidelines for TNF-inhibitors work, and what could or should be changed. In addition, it is desirable to find out whether the sheet from "Legemiddelinnkjøpssamarbeidet" (LIS) is used in connection with the initiation of TNF-inhibitors. The survey is anonymous.

1) Do you have knowledge of the national curricular guidelines for TNF-inhibitors?

Yes
No

2) Do you have knowledge of the agency that has prepared the guidelines? Mention the name of the agency.

3) Who should develop such guidelines?

As today
A lower administrative level
Other

4) How would you briefly describe the national guidelines for TNF-inhibitors?

5) Do you think the guidelines are followed (they have influence in practice)?

Yes
No

Do not know

6) If no, what is not followed up?

7) How do you comprehend scope of the guidelines?

To short
To long
Long enough

8) Are they orderly?

Yes
No
Do not know

9) Are they updated?

Yes
No
Do not know

10) Does they in your opinion inform well about what patient groups they include?

Yes
No
Do not know

11) Are the guidelines accessible?

Yes
No
12) Where did you get the guidelines from the first time?

They were sent to me
Found them myself on the web
Do not know
Other, please specify here

13) What practical importance do you attach in your daily work these guidelines?

Little
Medium
Great
Do not know

14) Are there other arrangements established for treatment with TNF-inhibitors instead/in addition? (An example of this can be their own committees, or in the hospital/clinic)

Yes
No

15) If other arrangements are established, what is the cause of that?

16) Who can prescribe TNF-inhibitors with you?

None
Only the specialists in rheumatology
All doctors
Other, please specify here

17) In the guidelines it is indicated that at least two specialists in rheumatology should sign when prescribing TNF inhibitors. Is this fixed procedure?

Yes
No
Do not know

18) Do you think there are variations in prescription cultural between the regions?

Yes
No
Do not know

19) Are other treatment tested before TNF-inhibitors can be prescribed in your ward?

Yes
No
Do not know

20) Would you say there are more or fewer patients receiving these drugs now than before the regional health enterprises took over financing responsibility from June 1 2006?

Several
Fewer
No change
Do not know

21) Do you know about the spreadsheet Legemiddelinnkjøpssamarbeidet (LIS) has made for prescribing TNF inhibitors?

Yes
No
Do not know

22) Is the spreadsheet used in your daily work?

Often
Fairly often
Seldom
Never
I do not know about the spreadsheet

23) Do you have suggestions for changes that should have been made in the guidelines?

24) Age?

20-29
30-39
40-49
50-59
60-69
Other, please specify here

25) Gender?

Man
Female

26) County you practice in?