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**How do incentive structures in the Scandinavian countries' primary health sector
affect the work of physicians and the treatment of patients?**

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This literature review has the aim of looking at how incentive structures in the Scandinavian countries' primary health sector affect the work of primary care physicians and the treatment of patients, focusing on the quality parameters availability, time per consultation and continuity of care. Articles were used to define the remuneration methods and public sources to describe how they are implemented in the different countries. The literature describes four methods of remuneration; salary, capitation, fee for service and fee for performance. The Danish and Norwegian systems are similar in structure with remuneration through fee for service and capitation. Sweden has a heterogeneous system as much is decided regionally; the remuneration however is mainly based on capitation. The authors conclude that fee for service has the most beneficial effect on availability, though at a possible cost of time per consultation. In Denmark and Norway the primary care physicians own their clinics and act as entrepreneurs, which contribute more to continuity of care than the method of remuneration. The Swedish primary health sector scores bad on the parameters availability and continuity of care, and the authors argue that the current reform in Sweden will not necessarily deal with the fundamental causes for these problems.

1. Introduction

The primary health sector plays the important role of giving the first authoritative assessment of a patient's symptoms and possible disease. It is from the primary care practitioner (PCP), expert in family/general medicine, that most of the everyday treatment occurs. The PCP is also the physician that should direct a patient needing specialized treatment through a correct referral to the specialized secondary sector. In order for a well developed public medical health service to function optimally, the primary sector is essential.

As many patients for most of at least the first half of their life have little, if any, contact with the secondary health sector this means that their contact with the health organization is through the primary sector. In the highly taxed Scandinavian countries where the citizens have become accustomed to well working services this means that the notion much of the general public have of the public health sector is from what they experience through the general practitioner and primary clinics. If this sector fails to impress the citizens they may start looking for alternatives, undermining the support for a general tax-paid health sector leaving vulnerable groups of small means worse off.

In this paper we will outline four models for economical remuneration and investigate how their exercise elicits activity among PCPs. A cornerstone for the discourse is for this reason the assumption that variations in organization of incentives play a role for how the doctor work. Denmark, Norway and Sweden all have different incentive systems for PCPs, but have otherwise a close sociocultural, economical and political resemblance. We want to investigate how the incentive structures in the Scandinavian countries' primary health sector affect the work of physicians and the treatment of patients by looking at the quality parameters availability, time per consultation, and continuity of care, moreover will we examine if there is room for improvement based on the literature of the subject.

2. Method

This literature review is based on a systematic Pubmed/Medline search of the terms 'remuneration' and 'Scandinavia' and 'capitation' and 'fee for service'. Out of the results we selected seven articles and one Cochrane review on the background of focusing this paper on remuneration to primary care practitioners, relevance to the Scandinavian systems, and that they compare two or more of the remuneration systems we wanted to investigate. Further articles were found through the references in these articles.

In the process of becoming acquainted with the systems in Scandinavia, several official websites, reports and correspondence with the different administrations was employed. Non-scientific search engines have also been of value to follow up on the contemporary discussion in the different countries.

3. Systems of organizing incentive and compensation in the primary health sector

3.1 Salary

The simplest model for compensating the PCP is to employ him or her at a fixed wage, where the remuneration is in form of pay per hours of work. This gives a foreseeable income for the PCP, and it comes with an easy maintainable budget with little administrative work^(1; 2; 3; 4).

3.2 Capitation

This model gives prospective remuneration according to the number of patients registered with a PCP or a clinic. It can be graded, aiming at compensating the average costs of different patient groups, or it can be ungraded and give the same amount of funding regardless of the patients. This does not directly reflect the PCP's income as the capitation is also meant to compensate for expenses related to running a clinic. However, if the PCP is the owner of the clinic, part of the surplus ends in his or hers pocket. If the capitation is graded it comes with a demand for relevant data and research with the aim of providing a proper compensation for actual expenses^(2; 3; 1; 4).

3.3 Fee for service

The fee-for-service (FFS) model provides compensation in form of predetermined fees for a set of items of service and units of care the PCP execute. This opens up for performing costly procedures not compensated in the earlier mentioned models. The retrospective remuneration is provided to the clinic continuously. However, it is practically impossible to have a system compensating all necessary measurements during a consultation, which is why this model comes with an incentive to omit non-funded measures. In the primary sector such measures can constitute a large part of the doctor-patient responsibility^(2; 3; 5; 4; 6).

3.4 Fee for performance

Fee-for-performance (FFP) is also known as target payment, which is a compensation for reaching a target level of service or executing a cluster of services related to e.g. prophylaxis of complications to a chronic disease or social imperatives. The model is an attempt of valuing the patient-physician relation as a whole as the funding is given to the standardized course of events that makes a certain type of patient case. It gives the primary health sector a tool to make the PCP provide good care^(2; 7).

3.5 Other incentives

Although focus in this paper is on economical incentives there are other factors that decide the way PCPs work. Medicine is a profession that comes with much professional pride and part of this is that every doctor wants to swiftly diagnose and begin relevant treatment. Fear of sanctions from doing mistakes and receiving complaints obviously plays a role for the work of the doctor. Finally, the characteristics of the individual PCP, and how he or she prefers to work in accordance with his or hers professional integrity makes part of career motivation^(1; 8; 9).

4. Differences in organization and remuneration in the Nordic countries' primary sector

On account of how the three Nordic countries have implemented their incentive systems it is reasonable to describe how the different countries are organized.

4.1 Denmark

Denmark changed its remuneration system for PCP services in the city of Copenhagen in 1987 from an entirely capitation based system to a national agreement of mixed FFS and capitation based system^(10; 11). Today PCPs are paid by a mix of capitation and FFS, administered by the regions. Patients choose their PCP by signing up on lists owned by one or several PCPs. There is a goal of 1600 patients per physician, but particular circumstances can allow them to close the lists at smaller numbers, with 538 patients at a minimum⁽¹²⁾. There is no upper limit. The PCP receives capitation fee for every patient on the list, currently 71,29 DKK per quarter (285,16 DKK annually). This constitutes about 35% of the clinics income from consultations and related fees⁽¹³⁾. The remaining 65% is paid through FFS, which gives compensation for consultation, home visits, para-clinical testing and curative treatments. There is no user payment for seeing a doctor in Denmark, it is all tax financed through the regions⁽¹⁴⁾. Other contributions to the doctors' income are payment from insurance companies and writing attestations or consultant orders. However, this paper focuses on consultations. In 2007 the average price for a consultation including capitation and diagnostic procedures was 238,87 DKK⁽¹³⁾. Due to the consistent billing of each consultation to the regions, Denmark disposes complete statistics over activity in the primary health sector.

An organizational trend amongst PCPs in Denmark is that the number of one-man practices decreases in favour of joint clinics of two or more PCPs with a shared list of patients⁽¹⁵⁾. This makes possible mutual agreements between the doctors of dividing working tasks and letting each individual PCP fill specific tasks within the practice. If, for example, one doctor has the call for acute consultations one day this does not affect the allocated time the other doctors have for elective consultations. The total surplus of the clinic is shared amongst the owners according to an internally agreed contract, making everyone's income dependent of a high level of production despite allowing for more time with more demanding patients without being economically punished. This model also opens up for employing other personnel at the joint practice, such as nurses and laboratory assistants. In some ways this will remind of the Swedish model of primary health clinics, but with the big difference that the PCPs as owners have interest in the clinic and that the remuneration system is the same as for a single practice in Denmark, with a big part FFS and small part capitation.

4.2 Norway

In Norway the primary health sector including PCPs are subordinated municipal administration and funding. The Norwegian primary health sector went through a major reform on June 1st 2001, introducing a system with many similarities to the Danish organization, both in structure and remuneration. The reform introduced lists of patients registered with a PCP. The lists are open for people to sign up, and the practitioner decides the number of patients to attend to, ranging from 500 to 2500, averaging on circa 1200⁽⁸⁾. For each person on the list, they receive an annual capitation fee of 357 NOK⁽¹⁶⁾. The remuneration system is constructed in a way making the capitation fee constituting around 30% of the gross income. In contrast to Denmark, a consultation with the doctor is not entirely cost free for the patient. The patient have to pay the FFS until it reaches a total annual expense of 1840 NOK for visits to PCPs or psychologists, for outpatient care, medication and equipment necessary for chronic diseases and travelling to remote treatment facilities⁽¹⁷⁾. Once that roof is reached, the above mentioned instances are cost free for the patient, and are paid by the municipal government. User payment contributed in 2007 on average to 16% of a clinics income⁽⁸⁾. There are places where it is difficult to recruit and keep health professionals, and there are places where the population is too small to fill the lists sufficiently. In these cases, some local authorities have chosen to hire PCPs at fixed salaries to ensure motivation to stay and work⁽¹¹⁾. After the reform, more than 90% of the PCPs are entrepreneurs, in contrast to less than 70% prior to the reform⁽⁸⁾. 98,5% of the population are listed with a PCP, compared to 67% claiming having had a regular doctor before⁽⁸⁾.

4.3 Sweden

In the early 1970's the Swedish primary health sector went through a reform of “hospitalization”. It was an attempt of integrating the primary sector with the specialized sector. At the time there was a belief in large scale structure and planning, and rather than going to the doctor something like a “primary health hospital” seemed suitable⁽¹⁸⁾. As part of this reconstruction, payment for achievement for doctors was removed. The working hours became regulated and the PCPs received a fixed salary. Taken together the reform meant an increase in demand and a reduction of supply⁽¹⁹⁾, and as a consequence patients in Sweden are not listed at a specific PCP, but at a health centre, which means that the typical patient goes to see *a* doctor rather than to *his or her* doctor. This is a substantial difference to how it works in the

other Scandinavian countries⁽²⁾. There is an alternative to the primary health centres in Sweden, also since the 70s reform, that one of private practising doctors whom has been compensated through a fixed national tariff of prices for measures. However, when outlining the general Swedish primary health sector such examples are exceptions.

The model for compensating the primary health centres is laid by the county or regional council, which is the elected assembly of a county, or merger of former counties, financed by municipal tax. Another difference is that these regions work as autonomous bodies in a much stronger sense than in Denmark and Norway and thus comes with quite notable local variations in ways of remunerating the clinics. A consequence of the Swedish decentralization is another sharp contrast to that one in Denmark; the relative difficulty of obtaining statistics and information of the different models in the regions.

The model for compensating is for the most part these days through capitation fees to the primary health centres where patients have listed themselves. However there have been regions where the budget has been even more planned, up until a now ongoing reform. For the individual primary health centre's budget, the remuneration through capitation fees constitutes between 40% and 86%, where it for most regions lies around 80%. The compensation for appointments with primary care physicians, nurses or physiotherapists typically makes up 10% of the primary health centre's budget (in Stockholm, where the capitation fee is a national low constituting 40% of the total budget for the primary health centre, the fee-for-service is bigger)⁽²⁰⁾. In the different county or regional councils there are often decisions of “target related compensations” comprising between 2% and 5% of the health centre's budget if it achieves a certain target, frequently having to do with socio-economical factors^{(20;}²¹⁾. The graded capitation fees, decided regionally, can stratify patients after factors such as age, sex, need for care, geographical factors, need for interpreter, etcetera, with the purpose of trying to reflect the actual cost for the patients⁽²¹⁾.

There is no rule of how many patients per doctor, partly reflecting the shortage of PCPs in the primary health sector, though there has earlier been an explicit aim of 1500 listed patients per doctor⁽²⁰⁾. The patient fee for each consultation with a doctor in the primary sector is typically half the fee of that for a doctor consultation in the specialized sector. It is locally decided by each county or regional council and lies in the region of 100 to 200 SEK⁽²²⁾, which as a general rule include para-clinical testing

and x-ray. The maximum total expense for a patient during a 12-month period is 900 SEK for all outpatient care ⁽²¹⁾.

It should be noted that there is currently a major reform taking place, where the Swedish government has made the county councils of Sweden obliged to make the patients able to have freedom of choice to select between different authorized health centres, privately or publicly managed. The capitation fees are handed out to the opted health centres ⁽²¹⁾. This idea of letting different players compete against each other to stimulate innovations in the primary health sector and in order to attract patients has partly sprung out of a debate of low productivity and specifically the severe lack of availability in parts of the Swedish primary health sector. Dr. Arne Björnberg at the Health Consumer Powerhouse in Brussels claimed in autumn 2009 that it was easier obtaining a doctor in Albania than in Sweden ⁽²³⁾.

5. Comparison of the countries

As noted above, Denmark and Norway are very similar in regard to how they remunerate their PCPs. For this reason much of their discussion will be common. These two countries have a structure where the PCP is the owner of his clinic, and its profit constitutes his or her income. The payment is mainly based on capitation fees and FFS, where the capitation constitutes about 30-35 % of the payment, the rest mostly FFS ^(13; 8). The capitation is ungraded, though the FFS payment can compensate for more care demanding patients. With a majority of the remuneration given as FFS and with the relatively low capitation fee follows an incentive to keep lists of registered patients at manageable levels. For this reason there is little incentive for keeping lists too long or too short, thus optimizing availability ^(9; 11). There is today a single trial of FFP in Denmark, regarding follow up on diabetes patients ⁽¹²⁾. A specific sum is given for a set of services and consultations aiming at ensuring quality and prophylaxis of diabetes complications ⁽⁷⁾.

When comparing Sweden to Denmark and Norway there are some rather important differences. In Sweden the PCP is usually employed on a fixed wage at a primary health centre, making patient satisfaction or turnover much less of an economical incentive for the doctor ⁽¹⁾. As a large part of the

remuneration to the primary health clinic is constituted by capitation fees for listed patients, for the most part around 80%, there is an incentive for the clinic to keep lists at a maximum and costs to a minimum^(3;1;2). This form of planned budget model, with a small part of FFS and FFP, creates little incentive for patient turnover⁽¹¹⁾. Part of the aim of the recent reform in Sweden, where the patients shall be able to opt in between different primary health clinics, must be to raise the patient satisfaction of which availability is an important part. However, one must keep in mind that this aim does not, as a general rule, affect the PCPs in Sweden directly, as their income is agreed upon on beforehand.

5.1 Availability

Availability is a quality parameter both in the sense of patient satisfaction and when it comes to fulfilling the function of the primary health sector. It may be argued that the longer time spent waiting with a painful problem, the more the patient satisfaction decreases. If disabling diseases goes untreated it will mean a higher cost for other parts of the welfare system. A low availability means a high threshold for the patient, possibly with a serious affliction, to enter the primary sector and hence possibly also the specialized secondary sector⁽¹⁾.

Availability is comprised of mainly supply and demand. It can be argued that demand can be reduced through introducing or increasing the patient fee for consultation. However, if a patient is unwell such a fee is of lesser importance as the patient will have to seek medical expertise. A patient fee may help lower the amount of non relevant cases for the primary sector though, such as ear rinsing. The supply side is almost entirely made up of patient turnover, and thus implicitly the number of PCPs and how effective they work. In this paper we define availability as the time waiting for the patient for a consultation with a PCP.

Any doctor will do good to finish off the work on a busy day, but there is evidence suggesting that differences in remuneration plays a role for the rate and effectivity of work. A fixed salary is the big loser. It does not come with any economical incentives for keeping a high pace, but rather for taking all the time that is needed⁽¹⁾. Capitation has in surveys shown similar trends in the rate of work, though not as pronounced⁽¹⁾. It can be argued that part of the difference between the ways of working under a fixed income, in contrast to income from capitation, stems from that capitation requires keeping long enough lists which presupposes satisfied patients not leaving for another clinic or PCP. In other words, both patient satisfaction and patient turnover is important to ensure list length, providing

income. However, capitation does not compensate for curative measures, like for example small surgical procedures, which leads to more referrals to the specialized sector⁽¹⁰⁾. The winner is FFS, which several surveys has shown being by far the most effective, giving economical incentives to a high production rate and longer working hours^(10; 8; 6). This is made clear by the example of the reform in 1987 when Copenhagen changed its remuneration system for primary physician services, from a capitation based system to a FFS and capitation based system. The number of patient consultations per physician rose, and the number of treatments per consultation per physician increased significantly after the introduction of the new financing system^(10; 11).

When looking at the Scandinavian countries it is Sweden that is the underachiever of availability in the primary sector, and this is not apparent only in the Nordic countries but in Europe as a whole^(23; 24). Denmark and Norway reaches better numbers when comparing the three countries⁽²⁴⁾, which begs the question of whether the Swedish lack of availability partly can be blamed on lack of incentive for a high rate of work because of fixed salaries. In regions of Norway where the PCPs can choose form of remuneration, it is evident that the doctor opts for the payment that is most profitable in relation to his or hers way of working, rather than adjusting his work after the type of remuneration⁽⁵⁾. The differences between Norway and Denmark could be explained by the factors that it is quite recent since Norway introduced the mixed capitation and fee-for-service model, and there are still 89 lists of patients that lack a PCP. Another important factor that could explain the lead Denmark has over its former colony in regard to availability is that Norway, just like Sweden, comes with large distances and vast scarcely populated areas.

There are measurable improvements of availability in Norway since after the reform, but qualitative surveys of patients showed a subjective deterioration in quality⁽⁸⁾. Part of this could perhaps be explained by that the reform meant patients became listed with a permanent doctor, and such a “personal bond” increased patient demand for availability⁽⁸⁾. Nevertheless, the decrease of subjectively experienced availability could be that the PCP is under more pressure under the fee-for-service model. This leads to the another important part of patient satisfaction, that one of a stressed doctor and the time per consultation.

5.2 Time per consultation

The risk of an increased patient turnover for the individual PCP is too much of a decrease in time per consultation. The length of a consultation depends on three factors; the amount of work piled up, political decided incentive structures and the work morale of the PCP. The work pressure is self-explanatory; if there are 20 patients in the waiting room it is obvious that there is a certain pressure on the doctor to hurry the rate of work. When it comes to political regulation it is the incentive structures that follow the different ways of remunerating coming to play.

With a fixed salary there is no economical incentive for short consultations. It is up to the PCP how long an uptake of medical history and examination should take to collect enough relevant information in order to bring about a thorough and valid decision complying with his or hers professional integrity. The same is shown under capitation to a lesser degree⁽¹⁾. FFS gives a direct incentive for a high turnover, and surveys have shown that PCPs remunerated with a big part FFS often run their clinics according to a target income, and for this reason have a defined number of consultations needed in order to reach that income^(8; 1; 10; 25). The problem is that the patient can have a feeling of the pace being too high and that there is not enough time to have all questions sorted out⁽⁸⁾. Working under an incentive of keeping consultations short could mean the PCP can lack the flexibility needed to evaluate several concerns, which in turn could mean part of the same problem. A consequence of this could be that the doctor refers the patient to another consultation, hence handling only one patient worry per consultation⁽²⁶⁾. This could give the patient a sense of not being finished or not even taken seriously. A fixed salary gives the PCP an opportunity to take time in order to evaluate the problem from several angles which in turn could give a more thorough assessment of what the patient brings up^(8; 1). The opposite is FFS which can lead to diagnosing on too limited information, identifying the patient case as one of the «popular standard diseases» early on in the consultation. In Norway there is compensation for longer consultations, with a fixed sum for each quarter of an hour after the first 20 minutes⁽¹⁶⁾. This shows a political will to have a normed consultation time of up to 20 minutes, which probably is a rather high number compared to reality.

With the fixed salaries within the Swedish primary sector, there is potential to make room for activities which fall out of finance defined by FFS funding. This can explain why there is much clinical research emanating from the Swedish PCPs⁽²⁷⁾.

A recent Norwegian study which related patient satisfaction within the primary sector with availability, time per consultation and to what extent the patients perceived the PCP took their medical problems seriously showed that the patients assigned lesser value to the latter two. The association between level of service production by the PCP and patient satisfaction with waiting for a consultation was on the other hand both positive and relatively strong ⁽²⁵⁾. It seems like the availability to a doctor when having a medical concern is what is of importance for the patient, other factors are subordinate.

5.3 Continuity and to be or not to be an entrepreneur

In this paper we define continuity as the possibility to consult the same PCP every time the patient comes with a medical concern. This is an important quality for all involved parts in the primary health sector as a fixed patient-doctor relation means security, predictability and detailed knowledge and familiarity between the two parts ⁽²⁸⁾. Continuity in this sense also gives the opportunity for the doctor to have a coordinating function, being a solid anchor between the patient and other health services. It also gives an overview over the patient consumption of medicines and the PCP may easier discover an abuse or overconsumption ⁽²⁹⁾. This gives the appointed PCP a clearly defined relation and responsibility towards the patient, and if the work is not carried out properly the first time the patient returns with a bigger need the next time ⁽⁸⁾.

In situations where the patient meets a new doctor every time he or she visits the primary health services many of these advantages disappear. The PCP shall with every new patient use time to familiarize with the medical journal and more detailed questions needs to be asked in the consultation. In conclusion lack of continuity makes the consultations less effective, the silent agreements less solid and it can lead to less satisfied patients. Again the Danish and Norwegian systems benefit vastly when compared to the Swedish model. Much of the reason for this difference, we argue, is due to the fact that the primary health doctors in Denmark and Norway act and work as entrepreneurs with patients registered with them personally.

Entrepreneurship comes with shouldering responsibility for the organization in much a stronger sense than if the position is allotted. It means building a reputation year after year in order to be able to harvest profit in the long run, something which contributes to stability as the doctor wants to leave the clinic with great unease. It gives incentives to keep the patients satisfied in order to keep the enterprise running ⁽⁸⁾.

In Denmark and Norway the primary care physicians own their clinics and have for this reason invested large amounts of personal resources in them⁽⁸⁾; the cost for just the lists of patients can in Denmark reach several million DKK⁽¹⁵⁾. This can be contrasted to the Swedish model where the doctors are hired personnel with no personal bonds, and no bonds of loyalty beyond the normal public employee-employer relationship. A result of the lack of alliance between the primary care clinic and the PCP is exemplified by the continuous Swedish debate of doctors signing contracts for a limited amount of time with a clinic, leaving the patients with a new doctor every time they contact the primary sector and thus a perception of unreliability towards the health sector^(30; 31). The system of exchangeable doctors does not seem to make the profession popular either. The authors' experience is when comparing Denmark, where it is well-liked becoming a PCP amongst medical students, is it the opposite in Sweden.

6. Conclusion

It is noticeable from the literature we have studied that FFS gives incentives for a high patient turnover with many short consultations, while capitation fees gives incentives for long lists, low availability and minimal costs. Not much literature mention FFP, but there is currently a trial in Denmark and inspiring reviews of this will certainly follow. It is also apparent from our investigation of the Scandinavian countries' primary health services that a prerequisite for incentive structures to play a significant role for how the PCP work is that the earnings somehow reach the doctor. In Denmark and Norway this is achieved through that the PCPs function as entrepreneurs, with interest in their clinics.

Introduction of a large portion FFS in Denmark and Norway has increased production and availability on expense of time per consultation. In Sweden the capitation based remuneration gives little incentive for a high production, thus lowering availability, but makes room for longer and more investigating consultations possibly improving medical outcome for those inside the door.

When it comes to continuity of care it is argued by the authors that an important factor to keep the PCP on the same place for a longer period of time is entrepreneurship. This is a condition for doctors in the primary sector in Denmark and it also gains ground in Norway, apart from in the provinces where doctors on fixed salaries are necessary in order to offer primary medical services to all

its inhabitants. The Swedish primary health clinics lacks bonds to their PCPs which results in shortage of permanent doctors and patient coordination within the primary sector.

6.1 Perspectives

The present trial in Denmark on FFP for follow up of diabetes patients could, if successful, open up for similar projects on other patients with chronic disease.

The current reform in Sweden comes with a possibility of clinics owned by the doctors, which could lead to a system similar to the ongoing trend in Denmark. It is however the authors' opinion that most Swedish regions offer too little FFS and too much of capitation, encouraging long lists and low availability. Furthermore the reform does not approach the problem of incentives not reaching the PCPs as these are employed on fixed salaries rather than being entrepreneurs. For this reason political attempts of boosting activity within the Swedish primary health sector risks leading to an increase of bureaucracy rather than an increase in production. On account of these factors we find it reasonable to conclude that the reform will not necessarily deal with the fundamental causes for the lack of availability within the primary health sector in Sweden.

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