

## Policy

# Coordination between primary and secondary healthcare in Denmark and Sweden

*Sarah Wadmann, Research Assistant, Unit of Health Services Research, Department of Public Health, Faculty of Health Sciences, University of Copenhagen, Øster Farimagsgade 5A, Building 15, Stairway B, ground floor, DK-1014 Copenhagen K, Denmark. E-mail: S.wadmann@pubhealth.ku.dk*

*Martin Strandberg-Larsen, PhD Fellow, Unit of Health Services Research, Department of Public Health, Faculty of Health Sciences, University of Copenhagen, Øster Farimagsgade 5A, Building 15, Stairway B, ground floor, DK-1014 Copenhagen K, Denmark. E-mail: M.strandberg-larsen@ifsv.ku.dk*

*Karsten Vrangbæk, Associate Professor, Department of Political Science, University of Copenhagen, Øster Farimagsgade 5, Building 9, Stairway E, DK-1353 Copenhagen K, Denmark. E-mail: KV@ifs.ku.dk*

*Correspondence to: Sarah Wadmann, Research Assistant, Unit of Health Services Research, Department of Public Health, Faculty of Health Sciences, University of Copenhagen, Denmark, Øster Farimagsgade 5A, Building 15, Stairway B, ground floor, DK-1014 Copenhagen K, Denmark, Telephone: +45 26822705, Fax: +45 35327629. E-mail: S.wadmann@pubhealth.ku.dk*

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## Abstract

**Introduction:** Insights into effective policy strategies for improved coordination of care is needed. In this study we describe and compare the policy strategies chosen in Denmark and Sweden, and discuss them in relation to interorganisational network theory.

**Policy practice:** The policy initiatives to improve collaboration between primary and secondary healthcare in Denmark and Sweden include legislation and agreements aiming at clarifying areas of responsibility and defining requirements, creation of links across organisational borders. In Denmark many initiatives have been centrally induced, while development of local solutions is more prominent in Sweden. Many Danish initiatives target the administrative level, while in Sweden initiatives are also directed at the operational level. In both countries economic incentives for collaboration are weak or lacking, and use of sanctions as a regulatory mean is limited.

**Discussion and conclusion:** Despite a variety of policy initiatives, lacking or poorly developed structures to support implementation function as barriers for coordination. The two cases illustrate that even in two relatively coherent health systems, with regional management of both the hospital and general practice sector, there are issues to resolve in regard to administrative and operational coordination. The interorganisational network literature can provide useful tools and concepts for interpreting such issues.

## Keywords

coordination, primary healthcare sector, secondary healthcare sector, Denmark, Sweden, policy initiatives, barriers

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## Introduction

In line with the increasing specialisation in European healthcare, more attention has been focused on the policy field of coordination of care. When referring to coordination, we perceive it as the deliberate integration of patient care activities between two or more participants involved in a patient's care to facilitate the appropriate delivery of healthcare services [1].

In a recent study by Mur-Veeman et al., it is evident that coordination problems exist in many European countries representing different types of healthcare systems [2]. Changes in the populations' age distribution and in the disease patterns towards a greater share of chronic diseases urge the need for better coordination as more people experience long-term treatment and multiple needs to be met at the same time [2–4].

In the European literature both structural and cultural dimensions of coordination weaknesses have been investigated. Various authors claim that decentralisation and differentiation introduce a risk for fragmentation as the healthcare providers belong to different sectors, are subject to different legislative frameworks, and refer to different political and administrative units with separate budgets [4–8]. In addition to this, cultural factors such as differences in working cultures, professionals' protection of their professional domains and limited understanding for other actors' needs (e.g. with regard to information) has been linked to lacking coordination [4, 6–12]. Reflections on such issues are relevant in relation to all actors involved in patient care including primary healthcare, secondary healthcare and social services. In this paper we largely narrow our focus to structural issues in relation to coordination between the primary and secondary healthcare sectors.

Basically coordination concerns how relevant actors in primary and secondary healthcare and in social care (rehabilitation etc.) interact and communicate in regards to delivery of services. In this paper we will focus on various forms of regulation aimed at facilitating structural coordination in Denmark and Sweden. We will distinguish between formal legislation, agreements and guidelines. We will then use theoretical concepts from the inter-organisational network theory [13] as a starting point for identifying, describing and characterising possible coordination weaknesses and the policy strategies applied in the two healthcare systems. The empirical contribution of the paper is thus the systematic<sup>1</sup> presentation of policies aimed at facilitating coordination in Denmark and Sweden, while the assessment of these policy measures will be based on theoretically informed application of existing material. We hope that this systematic presentation of recent policy initiatives for coordination and the theoretically informed assessment of their merits can facilitate cross-country learning also outside the Nordic region.

As Beveridge-type systems both the Danish and the Swedish healthcare systems are mainly public systems based on general taxation, and characterised by universal access and rather strong state regulatory influence [2, 14–15]. They differ however in the organisation of primary healthcare services. In Denmark primary healthcare services are mainly provided by

general practitioners, who are self-employed [15], while in Sweden the delivery of primary healthcare is mainly centred around public health centres, although some counties also rely on private general practitioners. The centres are part of the regional structure, and healthcare professionals working within the centres are salaried employees [16].

In previous studies the contact between actors in primary and secondary healthcare has been described as weak in both Denmark and Sweden [8, 17]. Further it has been revealed that especially doctors rarely engage in formalised coordination activities [6, 8, 17], and that important information (e.g. about changes in medication) is delayed or not communicated at all [5–6, 8]. This may result in patients being sent back and forth in the health care system while nobody takes responsibility for their overall situation [17, 18]. This is inappropriate both from a patient and a societal view as the disease may progress during the process and resources may be wasted due to repeated examinations/tests or avoidable complications [8]. Therefore the aim of this paper is to examine and compare coordination issues for delivery of health services in Denmark and Sweden as defined above. We describe and compare the applied policy strategies for overcoming problems of coordination.

## Methodology

The analysis was based on review of literature obtained by searching the Medline Database for the following combination of keywords: 'Coordination of care' AND 'Denmark', 'Coordination of care' AND 'Sweden', and the International Journal of Integrated Care Database using the following keywords: 'Denmark' and 'Sweden'. As the policy field has been characterised by a rapid development in both Denmark and Sweden, we only searched for articles published *after* 1999 to ensure their relevance. Articles were considered relevant if they a) described policy initiatives related to coordination of care between the primary care and hospital sectors in Denmark or Sweden, b) reflected upon coordination problems between the primary care and hospital sectors in Denmark or Sweden, c) described analytical approaches for investigating coordination of care. In addition to the database searches, we searched for publications on policy initiatives at websites for the Danish and Swedish National Boards of Health, the Danish Ministry of Health and Prevention and the Swedish Ministry of Health and Social Affairs. In addition to this we searched the publication database of the Danish Institute for Health Services Research as we knew they had undertaken a comparative analysis of primary healthcare in Denmark and Sweden.

<sup>1</sup>As described in the methodology section the description of policy initiatives is based on documents found by means of a classical, systematic literature search as well as searches for policy documents at the websites for the Danish and Swedish National Boards of Health, the Danish Ministry of Health and Prevention and the Swedish Ministry of Health and Social Affairs. It is possible that an extended search for policy documents would reveal additional policy initiatives.

To provide an overview of the regulatory approaches applied in the two countries we first describe the identified policy initiatives, and hereafter discuss them in relation to a general, theoretical framework, namely the inter-organisational network theory as formulated by Alter and Hage (1993). Hereby we aim at characterising the regulatory approaches and relate them to some of the structural coordination problems in the Danish and Swedish healthcare systems.

Alter and Hage distinguish between coordination processes at administrative and operational level [13]. The processes will influence each other as the administrative framework is likely to affect the activities at the operational level, just as the effect of rules, agreements etc. depends on the actors' interpretation of them. Still we find an analytical distinction useful.

## **Description of policy initiatives**

In the following we consider the policy initiatives within a regulatory framework, and take as a starting point the following definition: regulation is 'a sustained and focused control exercised by a public agency over activities which are valued by a community' [19]. Accordingly regulation is understood broader than just legislation, and implies a relation between a designated regulator and a number of actors, whose behaviour is to be regulated. Based on the overview in Walshe (2003) [19], we propose a more simple typology of 'legislation', 'agreements' and 'guidelines' indicating a graduation from relatively 'hard' to rather 'soft' regulation. 'Hard' regulation refers to a situation where regulator regards the actors as basically self-interested and likely non-compliant. Regulation therefore mainly consists of surveillance, control and interventions (sanctions) in case of non-compliance or poor performance. Contrary 'soft' regulation implies a perception of relatively collaborative and compliant actors. Regulatory means will thus aim to support the actors' own development and pursuit of performance improvement e.g. by offering consultant assistance [13]. The differentiation between 'hard' and 'soft' regulation thus also corresponds to a distinction between 'external regulation' and 'self-regulation' based on general guidelines.

The formal instrument for securing coordination is written documents in terms of referrals and discharge letters between hospitals and general practitioners. More informal and personal contacts also play a role. Several studies have indicated that this type of coordination is insufficient in light of the epidemiological transition (more chronic conditions) and rising expectations among patients [e.g. 2, 3, 7, 8, 20]. In this paper we will look at policy measures aimed to further enhance

and broaden the coordination between health actors to meet these new challenges.

## **Policy initiatives in Denmark**

During the last decade several political initiatives have been implemented to strengthen coordination and centralised control of the Danish healthcare system. The development culminated with the structural reform of January 2007 [15].

### **Legislation**

As a consequence of the reform, the Health Act was revised. Health agreements between regional and municipal authorities became mandatory. The agreements must be based on a general framework for content developed by the Ministry of Health and Prevention, and must inter alia contain plans for rehabilitation and procedures when frail elderly are discharged from hospital. The National Board of Health must approve the agreements [21]. Institutionally the agreements are to be elaborated in so-called regional consultative committees [15]. General practitioners are supposed to be included in the development of the agreements, yet the exact process for securing their participation is not specified [15]. The Health Act further specifies that the regional authorities are responsible for assessing patient needs at discharge and developing a rehabilitation plan [20].

### **Agreements**

Since the mid-1990s several hospitals and regional authorities have initiated the appointment of so-called 'general practitioner consultants', and today such arrangements have been implemented nationwide. The principle behind the arrangement is to link a general practitioner to one or more hospital departments with the aim to improve the communication and coordination between the primary and secondary health care sector. It differs whether the consultant is employed by the regional authorities or by the single hospital(-department), just as the scope of the job varies (1–25 hours/month) [22]. An evaluation of the arrangement reveals that a typical consultant is a general practitioner with more than 15 years of experience. Among others the consultants provide information about innovations and work practices in hospitals and general practice to actors in the primary and secondary healthcare sectors, respectively, assist in solving specific collaboration difficulties, develop guidelines for referral procedures and discharge letters and assist in coordination of care for individual patients. Most general practitioner consultants participate in regular meetings with heads of the hospital departments and/or in the daily medical conference held at the department,

and in addition to this many participate in ad hoc based meetings with healthcare professionals, hospital managers, municipal authorities or others. They refer to designated 'general practitioner coordinators', who are employed by the regional authorities, and are responsible for management and administration of the general practitioner consultant arrangements [22].

Following the financial agreements between the government and the regional authorities in 2001 the development of a comprehensive Danish Quality Assessment Scheme was decided. The first audit of public hospitals is planned for 2010. The ambition is to extend the system to include private hospitals, general practitioners, medical specialists, psychologists, therapists, municipal health care institutions and private enterprises related to public health care institutions [23]. The principle is internal evaluation followed by an external assessment every third year. The audits are mandatory and the data must be disclosed to the public. One of the audit themes is coordination including a standard reflecting the designation of a contact-person for each patient during admission and multiple ambulatory visits. The contact-person has a special responsibility for ensuring coherence in the single patient path [23]. The audit institution (IKAS) is remarkable in the sense users and health professionals are not represented in the executive committee. Due to the committee's composition the linkage to central health authorities is fairly strong despite formal independence [23]. Formally the contact-person arrangement was included in the financial agreements between the government and the regional authorities in 2004. It was however re-introduced in 2007 in a new agreement concerning cancer patients [21] (see below).

Recently, the general practitioners' organisation and the regional authorities negotiated a fee for disease specific services involving cross-sectoral work. Since May 2007 the general practitioners has received a one-off fee of around 1000 € (2007 prices) if they decide to participate and report patient data to a shared database [24] giving the general practitioners an opportunity to follow the development of their patient population and compare with other populations. This may constitute an incentive for referring patients to preventive treatment offers and ensure better follow-up after hospitalisation—both because of the payment and the comparative element. At the moment the arrangement is only for diabetic patients, but the scheme is supposed to be extended to include other chronic diseases [24].

In collaboration between national, regional and municipal authorities a national strategy for digitalisation of the Danish healthcare service was launched in December 2007. The cross-governmental organisation, Connected

Digital Health in Denmark (SDSD), is establishing an overall framework for the process, and will facilitate the implementation of specific action plans involving common ICT-solutions for all actors in national healthcare including a system for exchange of messages such as recipes, test-results and referrals (Med.com), development of an e-safety standard (DS 484), an e-journal system making information from certain hospital IT-systems accessible for general practitioners and a patient medical card revealing the patient's actual medical status for relevant providers. SDSD makes specific requirements of individual players in each segment of the healthcare service (e.g. in relation to the interfaces and functionalities of local solutions), but each actor remains responsible for the development, implementation and operation of its own IT solutions and for ensuring that digitalisation is in accordance with the national plan and the joint initiatives [25]. Thus, the project will promote further national coordination in a field where regions and general practitioners previously have largely developed their own solutions. So far this has facilitated use of E-referrals and discharge letters, and has enabled patient records to be exchanged between practices while there have been legal and technical barriers to full sharing of electronic medical records [25].

### **Guidelines**

Following an agreement between the government and the regional authorities in 2007 a plan for increased, central regulation of cancer treatment was developed by the National Board of Health in collaboration with stakeholders from the clinical environment. The 'cancer packages' include evidence-based standards for clinical treatment processes, defined time-limits, agreements of standardised monitoring of patient courses and a designated contact-person for every single cancer patient. Due to the complexity of cancer diseases, far from every patient is expected to follow such 'standard paths'. The 'packages' are characterised as guidelines by the National Board of Health, and expected to become part of a national disease programme for cancer [21] (see below).

A generic model for chronic disease pathway programmes was launched by the National Board of Health April 2008. It is inspired by the Chronic Care Model [26] and constitutes a framework for disease specific programmes. Diabetes has been selected as the pilot disease for the development of pathway descriptions by the National Board of Health. The disease pathways descriptions must include a description of the entire treatment process, evidence-based recommendations, a precise description of task responsibility and coordination as well as communication among all involved actors. The National Board of Health expects to take responsibility for the development of national disease programmes in col-



laboration with regional and municipal authorities. In the implementation process the programmes are expected to be further specified at the local level [27, 28].

## Policy initiatives in Sweden

Integrated care has been high on the Swedish national agenda for healthcare since the 1990s, inter-organisational coordination is generally regulated by statutory means [2], and many local initiatives for improving coordination have been launched [10].

### Legislation

With the 1992 Care of Elderly Reform in Sweden (Ädel Reform) the formal responsibility for non-specialised care for citizens above 65 years was moved from the regional to the municipal authorities. The reform has led to a reduction of the time spent in hospital and to changes in the organisation of primary care (responsibilities transferred from regionally employed general practitioners to nurses employed by the community)<sup>2</sup> [5, 16]. Also direct collaboration requirements at the operational level were introduced with the reform. The hospital doctor in charge of treatment thus has a statutory responsibility to inform municipal authorities and the general practitioner in charge of follow-up about hospitalisation, assess if the patient needs additional care after discharge, and eventually call in the representatives to a discharge meeting where a specified plan for the rehabilitation process and follow-up activities is made [17].

### Agreements

In 2003, the Swedish Government appointed a national coordinator for psychiatry, hereby aiming at improving the quality of care for people with mental illnesses or psychiatric disabilities [16].

Following the 2004 Dagmar-reform, collaboration between the Swedish government, municipal and regional authorities about ICT in Healthcare was established. A cross-governmental steering committee consisting of representatives from the national, regional and municipal health authorities and private healthcare actors were set down in 2005, and their work resulted in 2006 in a national strategy for eHealth [29]. Even before the strategy was launched an ehealth network (Sjunet) allowing information exchange (e.g. of patient data, pictures and medical applications) was developed as a regional project (started 1998). In 2006, all hospitals and primary healthcare centres were connected via Sjunet.

<sup>2</sup>Much can be learned about organisation of primary care for elderly persons from the Swedish Ädel Reform, as it has had implications especially for the coordination between hospital care and home (health) care.

Since 2001 the cross-governmental member organisation, Carelink, has been responsible for the system, and has developed it to contain many more small healthcare providers and enable new services such as video-conferences and a web-based, national telephone directory. Carelink member healthcare organisations, including county councils, regional and local authorities, and private care companies, all have access to the organisation's national broadband communications network and a range of related services [29]. Since 1 January 2008 Carelink is no longer a member organisation but has become part of the regionally owned Sjukvårdsrådgivningen AB (Healthcare Counseling PLC). Today Carelink is commissioned to implement the eHealth strategy by a recently established, separate, public demand-function at the national level [30].

Within the framework of the eHealth strategy a number of county councils have developed e catalogues containing contact information to healthcare employees and institutions, and electronic id-cards (SITHS) and e-identification have been developed as part of a national eHealth security solution. Further, a national system for patient overview is being tested. By means of the system health professionals can locate and reach information in patient journals and other documentation from all caregivers when the patient has approved it. It is planned that patients should get access to their own health data through the system [29].

### Guidelines

Since the early 1990s extensive work has been conducted on developing so-called chains of care in the main part of the Swedish counties (patient pathway descriptions). It is up to the counties to decide if and how to implement the concept; still a survey made in 2003 by the National Board of health revealed that more than 2/3 of the county councils claimed to have clearly formulated goals, activity plans or other policy documents supporting the development of chains of care [31]. Chains of care are understood as coordinated activities within healthcare involving several responsible authorities and medical providers [31]. Developing chains of care thus imply the creation of organisational links crossing existing organisational boundaries. The chains of care are developed for separate diagnosis and link all the elements a patient may go through in the treatment and rehabilitation process [32]. Specialist nurses often function as key figures in coordinating activities as they have their own areas of responsibility in relation to specific diseases such as asthma and diabetes, are in frequent patient contact and often participate in hospital meetings [17].

Recently 'Local Care' has become a popular concept for improving organisational integration with 2/3 of the

county councils implementing or planning to implement the concept [33]. Basically ‘Local Care’ refers to an upgraded family- and community-oriented primary care supported by a flexible hospital system [34]. The concept was launched in a national action plan for the development of the social and healthcare services in 2000, which rested upon agreements between the government, municipal and regional authorities. ‘Local Care’ can be characterised as a conceptual framework for problem solving rather than an actual model for organising social and healthcare initiatives, as no clear definition of the concept exists. This leaves wide possibilities for local authorities to form the content with regard to local needs. Accordingly, the initiatives named ‘Local Care’ vary a great deal between the counties [35].

The initiatives do have in common an aim to improve collaboration between municipal social- and healthcare services and regional primary and specialised healthcare. In many places forums for discussion,

learning and even joint decision-making have been established and in some places mandatory, cross-governmental visits have been planned for administrative representatives. Agreements between municipalities and county councils have also been developed and in some places joint activity and shared use of resources such as buildings has been tried out along with assignment of patient contact-persons in primary healthcare (resembling the general practitioner arrangements in the Danish setting). In addition to this, development and implementation of shared, electronic, medical record systems is going on to facilitate the exchange of information [35]. In many cases the ‘Local Care’ solutions are expected to be built on existing chains of care, as no coherent platform for implementation of the concept exists [34].

All in all we see a number of similarities in regulation across the two countries, but also some important differences. The policy initiatives are summarised in Table 1.

**Table 1.** Overview of policy initiatives for improving coordination between primary and secondary care.

Regulatory approach	Policy initiatives—Denmark	Policy initiatives—Sweden
<i>Formal legislation</i>	Mandatory health agreements between municipal and regional authorities	Legislation requires hospital doctors in charge of treatment to inform municipal authorities and general practitioner about hospitalisation and develop rehabilitation plans at discharge
	Regional authorities responsible for development of patient rehabilitation plans	
<i>Agreements</i>	General practitioner consultants arrangements implemented nationwide to facilitate communication between general practitioners and hospital departments	National coordinator for psychiatry appointed by the Swedish government
	Danish Quality Assessment Scheme including a standard for designation of contact-persons for individual patients	National strategy for eHealth developed by a cross-governmental organisation representing national, regional and municipal healthcare authorities and private healthcare actors
	Contact-person agreement between government and regional authorities	
	Fee for disease specific services involving cross-sectoral work negotiated between general practitioners organisation and regional authorities	
	National strategy for digitalisation of the Danish healthcare service developed by a cross-governmental organisation representing national, regional and municipal healthcare authorities	
<i>Guidelines</i>	‘Cancer packages’ launched by the National Board of Health	Chains of care (patient pathway descriptions) developed in most counties
	Chronic Disease Path Programmes launched by the National Board of Health	Specialist nurses employed in many health centres coordinate activities in relation to disease specific patient groups
		Concept of ‘Local Care’ developed in national action plan for development of health and social services. Various initiatives relating to the overall concept implemented in the main part of the counties

## Discussion of coordination weaknesses and policy strategies

### Theoretical framework

The inter-organisational network theory developed by Alter and Hage basically predicts that external pressures including resource dependency and external regulation, affect the network structure (e.g. degree of differentiation and complexity) and the choice of coordination mechanisms, which again affect the network coordination. An imbalance, reflected by the occurrence of conflict and lack of coordination, can occur if the coordination methods do not match the complexity of the network structure [13]. Using the inter-organisational network theory we are forced to think of hospitals and general practitioners/health centres as part of one healthcare structure rather than as two different sectors. Further, the theory points at structural factors affecting the network coordination; thus it may help us to identify organisational factors possibly affecting the coordination between hospitals and general practice/health centres. Finally the network complexity is pointed out as an important element to consider while assessing the suitability of coordination mechanisms in a network. Hereby the theory provides us with another structural aspect to consider. The network consisting of hospitals and general practices/health centres can be viewed as a complex network consisting of many organisations with separate management structures contributing complementary competences to the network. Thus the organisations are highly dependent

on each other to create coherent patient pathways. According to the theory this means that broad collaboration involving a high degree of feedback and task integration is needed to ensure coordination [13]. We do not attempt to test the theory in this paper. Rather, we use the theory as a platform for interpreting and discussing the coordination weaknesses mentioned in the literature and the policy strategies applied. The discussion below is structured in accordance to headlines derived from the theory. Table 2 provides an overview, while details are discussed in the following text along with potential consequences for coordination.

### External control

Regional authorities play a crucial role with respect to external control in both Denmark and Sweden, as they are the main financial source for both hospitals and general practitioners/health centres. This means that the regional authorities have a strong influence on the network and potential power to direct the general practitioners/health centres and the hospitals towards further collaboration, e.g. by means of economic incentives and regulatory initiatives.

### Economic incentives for collaboration

In both countries the hospital sector is mainly public, and the hospitals are part of the regional health care structure. The regional authorities typically manage via contracts with the hospitals in the region, and hospitals are paid by a combination of block grants and activity-based financing based on the DRG-system [15–16]. During the last decades many reforms have influenced the hospital sector. As a result the hospital departments

**Table 2.** Overview of organisational factors possibly affecting co-ordination of care.

Organisational factors		Denmark	Sweden
External control	<i>Economic incentives</i>	No incentives for hospitals. Some incentives for general practitioners	No incentives for hospitals or health centres
	<i>External regulation</i>	Indirect, targeted at administrative level	Direct, targeted at operational level
Network structure	<i>Primary healthcare structure</i>	Small, privately owned practices with few other personnel than doctors	Health centres with professionals from multiple disciplines, mainly publicly owned
	<i>Designated primary entry point</i>	Yes, general practitioners have gate-keeper role	Partly, patients can seek care directly at hospital outpatient wards, at extra cost
	<i>Secondary healthcare structure</i>	Much specialised hospital structure	Much specialised hospital structure
	<i>Differentiation</i>	Hospital structure is much differentiated. Primary care sector is not very differentiated	Hospital structure is much differentiated. Primary care sector is rather differentiated
	<i>Decentralisation</i>	Quite decentralised health care structure	Very decentralised health care structure
Co-ordination mechanisms	<i>Administrative level</i>	Rather formal mechanisms with limited degree of feedback such as agreements and guidelines	Rather formal mechanisms with limited degree of feedback, such as guidelines and patient pathway descriptions
	<i>Operational level</i>	General practice consultant arrangements. Generally low degree of integration	Specialist nurses and general practice consultant arrangements. Generally low degree of integration

have become responsible for their own budgetary control, and patient choice has been extended in both countries, while maintaining the decentralised structure [16, 36]. It seems that economic incentives for hospital departments to collaborate with other departments or general practitioners/health centres are lacking as the current payment system does not reward cross-sectoral activities. Delegation of budget responsibility to department level and implementation of the DRG-system may reinforce tendencies to focus narrowly at activities within the departments [32, 37].

In Denmark the general practitioners are self-employed, but their activities are highly regulated through agreements between their professional organisations and the regional authorities. They are reimbursed for their services by the regional authorities through a combination of capitation and fee-for-service [36]. A recent qualitative study reveals that many general practitioners experience that the fee structure leads to a high work load with a continuous patient flow leaving little time for engaging in formalised coordination activities [18]. The recently negotiated fee for cross-sectoral work may introduce some incentives for general practitioners to increase collaboration with hospitals. Evaluations a year after the implementation reveals however that only a very limited share of the general practitioners have registered for the fee and among these the actual use of the possibilities inherent in the system is sparse [38–39].

In Sweden the distribution of medical resources between the primary and secondary healthcare sectors has been described as rather skewed, resulting in a sparse capacity of doctors in Swedish primary healthcare [16, 40]. In the literature the lack of general practitioners is mentioned as a serious problem for ensuring coordinated patient courses. Long waiting time means that many patients contact the hospitals' emergency wards directly as no referral is needed for seeking this specialised service [5, 16–17]. This may cause the patient not to see the most relevant contact first or commute between vacant wards while the condition worsens. High workload due to lack of resources may also mean that general practitioners rarely participate in discharge meetings [17]. It has been suggested that these problems may relate to regional authorities' varying agreements with doctors in primary and secondary healthcare [17], but they may also be connected to the financing of healthcare in Sweden. Payments to health centres are based on global budgets in about half of the counties while the rest are developing various forms of activity based financing and capitation [16]. Each health centre is responsible for its own budget, but no sanctions are made if a centre experiences budget deficit, while surplus is at the centre's disposal for structural improvements [17]. This may create limited incentives for increased activity in the

health centres [41]. User-fees have been introduced in the Swedish healthcare system. Visiting a general practitioner in a public health centre costs around 15 € (2005 prices), while it is free to see a nurse. Direct contact to a hospital's outpatient department costs double [16]. The payment structure reflects an attempt to maximise the use of other healthcare personnel than doctors in primary healthcare as well as an attempt to limit the use of specialised healthcare to ensure cost containment, but it seems the waiting times may have stronger impact on patient behaviour than the financial incentives.

### **External regulation**

Regarding collaboration requirements most regulatory initiatives in Denmark are targeted the administrative level, while in Sweden regulatory initiatives are both directed at the administrative and the operational level. The Danish regulatory approach can be said to be more indirect than the Swedish as no collaboration requirements are set out for general practitioners or hospitals at the operational level, while in Sweden legislation places responsibility for rehabilitation assessment and planning at the health professionals. The lack of direct regulation in Denmark means that the actors can give higher priority to their own objectives than the mutual network goals, while this is not the case in Sweden. In none of the countries the regulatory approach is characterised by strong, third part sanctions.

At the administrative level the regulation tends to be 'softer' in Sweden than in Denmark where among others the health agreements have become mandatory and requires approval from the National Board of Health. The Danish national health authorities' fields of responsibility and regulatory mandate has increased since the 2007 Structural Reform, and the central regulations have become more detailed than earlier [15]. Contrary to the Danish approach the Swedish regulation is to a wider extent based on general action plans set out by national health authorities leaving wide possibilities for interpretation and implementation to the decentralised levels [16]. Thus the regulatory approach can generally be said to be more decentralised in Sweden than in Denmark. This may leave room for local innovations but at the same time increases the risk for fragmentation of the healthcare service. This may not correspond well with increased possibilities for a patient to seeking care across geographical borders as the obtained solutions may not be comparable.

### **Network structure**

#### **Primary healthcare structure**

The Danish general practice structure with many small and privately owned practices (64% solo practices



[42]) may influence the general practitioners' willingness to participate in team-work. It is thus indicated in the literature that the general practitioners are influenced by a 'culture of individualism' [8, 18], which may work as a barrier for collaboration. Organising primary healthcare delivery in health centres as in Sweden may on the other hand facilitate collaboration as several professions are co-located in their daily work and therefore easily get in contact. Thus a literature review exploring integrated care for older people reveals that co-location in the form of multidisciplinary health centres seem to facilitate collaboration and ensure more efficient use of resources and competences [43]. Together with educational opportunities, this type of organisation also enables nurses to have a much more prominent role in the Swedish primary healthcare. The nurses often function as communicators between the sectors and take care of many activities in relation to patient transfers and discharge even though it is formally the doctors' responsibility [17]. The fact that the Danish general practitioners are self-employed also means that initiatives such as employment of other personnel than doctors in general practices and adoption of new ICT-systems require the practitioners' decision to do so. This may delay or hinder implementation of initiatives in Danish primary healthcare, while the implementation may be easier in Sweden as the health centres are part of the regional healthcare structure.

### Secondary healthcare structure

A hospital structure with various regional configurations of specialised and general hospitals in both Denmark and Sweden may contribute to coordination problems. In combination with the decentralised budget responsibility it may lead to fragmentation of responsibility and a narrow focus at department specific activities while nobody takes responsibility for over viewing the entire patient course, as each unit protects its own interests [18, 32]. Health professionals in primary healthcare thus face a very fragmented hospital system, which makes it difficult to know who to communicate/collaborate with. In a study of chains of care this is mentioned as an explanation for lacking implementation of coordination initiatives crossing organisational boundaries, as the new organisational structures were perceived as challenges to existing power structures [31]. And in a recent, qualitative study of general practitioners coordinating role it is revealed that in the diagnostic investigation process Danish general practitioners experience that patients are sent back to the general practitioner with no further examination if tests turn out negative, requiring a new diagnosis and a new referral from the general practitioner. This potentially makes the process very long and makes it hard for the general practitioner to keep an overview over the patient course [18].

### Differentiation

In both countries the hospital structure is much differentiated as the degree of specialisation varies and both public and private providers exists. The Danish primary healthcare structure is not very differentiated as it consists only of private providers at the same level of specialisation, while the Swedish primary care structure can be said to be fairly differentiated due to previous partly implemented reforms in the primary healthcare sector leading to a mix of public and private providers and various organisational forms (though public health centres is the most common organisational form) [16].

According to inter-organisational network theory a highly differentiated network structure means that network management functions must be developed in order to facilitate coordination of activities [13]. Due to the Danish general practitioners' gate-keeping function, general practice constitutes the primary entry point to the Danish healthcare system [15]. Despite the central placement, the general practitioners do however not have the dominating competences needed to ensure overall coordination in the network. In Sweden it differs between counties if general practitioners have a gate-keeping role, but in most counties individuals can seek care directly from hospital outpatient wards thereby bypassing primary care [16]. In a recent study it is estimated that close to 50% of all patients choose the hospitals' emergency wards as first contact to the healthcare system, and it is explained that long waiting times in the primary care sector is an important reason for this [17]. It may lead to lack of continuity of care when patients do not have a central entry point to the healthcare system assuring that patients are led to the right place for treatment. As a result, general practitioners have limited possibilities for following the patient course as they may not be involved until late in the process or not at all. Further, the established chains of care may be of limited use if patients do not 'enter' them at the right time and place.

### Decentralisation

Traditionally the Danish and especially the Swedish healthcare service have been characterised by a high degree of decentralisation which means that local authorities have had relatively wide degrees of freedom to develop local solutions with regard to working procedures, collaboration, communication processes etc. In the literature, differing norms and ways of working has been pointed out as possible barriers for collaboration across sectors [8], just as variations in terminology and ICT solutions may constitute barriers for coordination. In general information- and quality assurance systems have been developed in consideration of existing organisational boundaries, allowing each unit to study 'their own' patients, and offering limited

opportunities to study patient courses or transferring information [5, 20, 32]. The recent, national eHealth initiatives launched in both Denmark and Sweden may rectify some of the problems of communication and information transfer, but taking a centralised approach to system development certainly creates great challenges of taking into account the needs of both hospitals and general practitioners, their working practices and ethics [44]. A recent Danish study thus indicates that ICT solutions predominantly take into account the hospitals' needs [45].

## Suitability of coordination methods

According to Alter and Hage the methods for administrative coordination can be divided into a continuum ranging from methods based primarily on planning to methods based primarily on feed-back. The less standardisation possible, the more feed-back is needed to ensure coordination. For a network to solve complex problems, such as meeting individual patients' multiple needs, standardisation will often be insufficient to ensure a well coordinated process [13]. Alter and Hage distinguish between three different kinds of methods implying an increasing degree of feed-back: 1) impersonal methods implying standardised arrangements such as plans, contracts and agreements, 2) personal methods implying personal contact between individual collaborators or assignment of a coordinator, and 3) group methods implying joint planning and decision making. At the operational level they distinguish between three patterns of client flow with increasing degree of task integration: 1) sequential flow which implies finished treatment in one place before referral to the next, 2) reciprocal flow implying simultaneous treatment by different actors, and 3) collective flow implying treatment by a multiprofessional team [13]. Both the Danish and the Swedish healthcare system must be said to be highly complex and thus according to the theory requiring coordination methods with high degree of feedback and task integration. Considering feedback it is not quite clear in the theory whether it refers to the responsiveness of the coordination methods to single cases, or to the possibilities for involved actors to interact. Often responsiveness in the handling of single cases will require human interaction, so the two interpretations of feedback will probably be interrelated. However we have chosen the broadest interpretation, so in this paper we consider feedback in relation to the coordination methods' responsiveness.

In the two countries, efforts have to a wide extent been concentrated on developing coordination methods of a rather formal character, including agreements between political authorities and standardisation of

disease courses [2, 8, 10, 20]. According to the inter-organisational network theory, impersonal methods are not optimal for coordination in complex network as they cannot handle exceptions and tend to extend the distance between the actors, possibly reducing the willingness to collaborate [13]. Standardisation may however make good sense considering that recent health care reforms in both Denmark and Sweden have implied extensions of patient choice, while at the same time maintaining the decentralised structure [15–16]. Increased patient mobility may thus necessitate increased standardisation of procedures and contact patterns in order to ensure a fairly coherent system. It implies however great dependence of local implementation of initiatives, and the regulatory requirements for implementation are rather weak—in Denmark they consist only of formalised health agreements between municipal and regional authorities, while Sweden also relies on some direct regulation of the health professionals. Based on the chosen theoretical framework it appears that the possibilities for building in feedback mechanisms into formalised coordination methods may be a policy area of great importance to investigate further as it may ensure responsiveness while taking account of patient choice. Yet, it is probably important to maintain a formal standardisation structure as an underlying structure for the more informal and personal communication.

The impersonal methods are to some extent combined with personal methods such as the general practitioner consultant arrangements in Denmark and the specialist nurses in Sweden. According to the theory such methods may ensure more feedback. The general practitioner consultant arrangements have been evaluated very positively both by the health professionals [18] and the national health authorities [22]. Yet, the general practitioner consultant arrangements seem to be insufficient for ensuring integration in the working processes. Patients are still treated either by the general practitioner or in the hospital departments, thus indicating a sequential patient flow. The specialist nurses are also valued positively in a recent comparative study [17], and they may have the opportunity to facilitate greater task integration through their collaboration with the hospitals. Greater integration between the primary and secondary healthcare sectors could be considered for example by budgetary means or via physical integration (e.g. hospital doctors with an outgoing function to assist in primary healthcare). Swedish experiments thus show that co-location and co-financing has facilitated collaboration between healthcare, social services and social insurance [46], and in Denmark part of primary healthcare is already integrated with the municipal social services [6]. Further, the development of telemedical solutions may introduce new possibilities for integration.

## Summing up

Regarding external control the financing is characterised by separation of budgets and decentralised financial responsibility in both countries. This may indicate that the regional authorities consider general practice/health centres and the hospitals as disassembled parts and not as a single healthcare system. In combination with the payment mechanisms applied, this result in lack of economic incentives for collaboration for the hospitals and the Swedish health centres. The negotiated fee for cross-sectoral work may introduce some collaboration incentives for the Danish general practitioners, but the overall impact of the initiative may be weak considering its current use. At the operational level direct collaboration requirements exists for the Swedish healthcare professionals with regard to assessment and planning of rehabilitation, while in Denmark no direct collaboration requirements exist. Regulatory initiatives targeting the administrative level tend to be 'softer' and more decentralised in Sweden than in Denmark, and in none of the countries the regulation is characterised by strong third part sanctions. In both countries it seems that the external control/financing mainly affects the network structure by supporting differentiation and thereby the complexity of the system rather than uniting the network.

Both countries thus experience a high degree of specialisation, differentiation and decentralisation of healthcare services, and in both settings it can be argued, that this creates a diffusion of responsibility, which may result in uncertainty about collaborators and a risk that patients get 'lost' in the organisational interfaces. The differentiation is somewhat more pronounced in Sweden than in Denmark because of the mix of private and public providers in primary healthcare. In Denmark general practice constitutes a designated primary entry point to the healthcare system, while in Sweden patients can seek care directly at hospitals at extra costs. The primary care structure in Denmark with small, private practices may impede implementation of coordination initiatives and lead to a 'culture of individualism', while co-location in the Swedish, public health centres may facilitate a collaborative culture and ease implementation of regulatory initiatives. This complex network structure thus makes coordination a challenge requiring coordination methods which ensure a high degree of feedback in the system. Whether such methods are applied also depends on external pressures, e.g. political concerns about cost containment, output control or free patient choice could possibly lead to use of standardised coordination methods.

In both countries the coordination mechanisms are generally of rather formal character consisting primarily of impersonal methods in combination with personal

methods offering limited possibilities for feedback and introducing great reliance on local implementation of initiatives. The degree of task integration is rather low in both countries, but the Swedish specialist nurses may provide possibilities for establishing sequential patient flows. The applied regulatory strategies may therefore not be sufficient to ensure well coordinated patient transfers between primary and secondary care although several of the coordination initiatives may have potential if they are well implemented at the operational level. The above-mentioned points are summarised below in [Table 2](#).

## Assessment of the theory's possibilities and limitations for reflecting upon coordination of care

Taken together Alter and Hage's interorganisational network theory allows us to point at several structural elements which can explain coordination problems between the primary and secondary health care sectors. The present paper has identified a number of regulatory measures aimed at overcoming such problems, yet technical solutions and reorganisations may be of limited use if the actors in the healthcare system have limited understanding of each others needs and goals [12, 43, 44], an evaluation of a Swedish cardiac rehabilitation programme involving multiple healthcare professionals thus revealed that an important barrier for implementation was a limited knowledge among the professionals about the structures of the health care organisation in which they worked [47]. The theory developed by Alter and Hage provides little insight in, for example, cultural factors which may constitute coordination barriers (or facilitating coordination in spite of structural barriers) or the (lacking) implementation of initiatives. In the literature cultural differences are frequently mentioned in relation to problems of coordination; among others it is described how differences in work practice and work ethics in the primary and secondary health care sectors create differing expectations to collaborative work, differing needs for e.g. information and differing understandings of central concepts such as 'autonomy' and 'shared care' [7, 8, 45]. Not giving much attention to the operational level and concern about implementation of coordination mechanisms can be seen as weaknesses of the theory.

Another problematic issue is the alleged relation between network complexity and feedback in coordination mechanisms being too simple as they do not take the increasing rights for patients to choose hospitals both nationally [16, 37] and between EU member countries into account [48]. Using a network



perspective allows us on the other hand to perceive coordinated care delivery as a common product for the primary and secondary health care sectors and as such a network goal. Thinking this way about coherent patient pathways may help us understand the tensions between common and separate production, and may help us questioning e.g. the separate regulation and resource allocation to the sectors. Building on this it seems that interorganisational network theory can provide useful tools for interpreting structural coordination weaknesses in healthcare systems and considering the adequacy of applied policy initiatives to achieve coordination. Choosing two relatively similar systems made it possible to study more closely the implications of organising primary healthcare in different ways.

## Conclusion

A variety of coordination initiatives have been launched in Denmark and Sweden to improve coordination of care. Yet, based on our theoretical perspective it appears that lacking or poorly developed structures to support implementation may establish barriers for coordination. Some regulatory approaches have not been explored sufficiently. An example is the use of economic incentives. Other examples include the promotion of other integration forms in combination with more direct collaboration requirements. Reliance on

informal coordination procedures and decentralised, regional management does not fully match the complexity of the healthcare systems. Better knowledge about implementation processes also seem to be required, yet, the interorganisational network theory provides limited possibilities for investigating this. The interorganisational network literature can however provide useful tools for considering structural elements of coordination. It seems likely that the organisational factors mentioned may be important to coordination in other healthcare systems than beveridge-type systems. The more specific conditions may however differ, regarding e.g. external control, health insurance companies may constitute an important regulatory actor, and the healthcare structures may also vary.

## Reviewers

**Peter Kragh Jespersen**, Professor of Health Management and Organization, Department of Economics, Politics and Public Administration Aalborg University, Aalborg, Denmark

**Habibollah Pirnejad**, MD, MS, PhD, Senior Research fellow, Healthcare Governance, Erasmus University Medical Center, Rotterdam, The Netherlands

**Peter Allebeck**, Professor in Social Medicine, especially Health Policy, Department of Public Health Sciences, Karolinska Institute, Stockholm, Sweden

## References

1. Bodenheimer T. Coordinating care—a perilous journey through the health care system. *The New England Journal of Medicine* 2008 Mar 6;358(10):1064–71.
2. Mur-Veeman I, Raak A van, Paulus A. Comparing integrated care policy in Europe: does policy matter? *Health Policy* 2008 Feb;85(2):172–83.
3. Grone O, Garcia-Barbero M. Integrated care: a position paper of the WHO European Office for Integrated Health Care Services. *International Journal of Integrated Care* [serial online] 2001 Jun 1; 1. Available from: <http://www.ijic.org>
4. Kodner DL, Spreeuwenberg C. Integrated care: meaning, logic, applications, and implications—a discussion paper. *International Journal of Integrated Care* [serial online] 2002 Nov 14; 2. Available from: <http://www.ijic.org>
5. Andersson G, Karlberg I. Integrated care for the elderly: the background and effects of the reform of Swedish care of the elderly. *International Journal of Integrated Care* [serial online] 2000 Nov 11; 1. Available from: <http://www.ijic.org>
6. Colmorton E, Clausen T, Bengtsson S. Providing integrated health and social care for older persons in Denmark. In: Leichsenring K, Alaszewski AM, editors. *Providing integrated health and social care for older persons—A European review of issues at stake*. Vienna: European Centre and Aldershot: Ashgate Publishing; 2004. p. 139–80.
7. Leichsenring K. Developing integrated health and social care services for older persons in Europe. *International Journal of Integrated Care* [serial online] 2004 Sep 3; 4. Available from: <http://www.ijic.org>
8. Seemann J. Samspel och konflikt i organisatoriska gränssnitt—analys av ett demensnätverk. [Interaction and conflict in organisational interfaces—an analysis of a network for dementia]. In: Axelsson R, Axelsson SB, editors. *Folkhälsa i samverkan—mellan professioner, organisationer och samhällssektorer* [Public health in cooperation—between professions, organisations and sectors in society]. Lund: Studentlitteratur; 2007. p. 285–302. [in Swedish].
9. Alaszewski A, Billings J, Coxon K. Integrated health and social care for older persons: theoretical and conceptual issues. In: Leichsenring K, Alaszewski AM, editors. *Providing integrated health and social care for older persons—A European review of issues at stake*. Aldershot: Ashgate Publishing; 2004. p. 53–91.



10. Axelsson R, Axelsson SB. Samverkan och folkhälsa—begrebb, teorier och praktisk tillämpning. [Cooperation and public health—concepts, theories and practical adjustment]. In: Axelsson R, Axelsson SB, editors. *Folkhälsa i samverkan—mellan professioner, organisationer och samhällssektorer* [Public health in cooperation—between professions, organisations and sectors in society]. Lund: Studentlitteratur; 2007. p. 11–27. [in Swedish].
11. Löfström C. Samverkan kring äldres vård och omsorg—två försöksverksamheter [Two trials on cooperation in elderly care]. In: Axelsson R, Axelsson SB, editors. *Folkhälsa i samverkan—mellan professioner, organisationer och samhällssektorer* [Public health in cooperation—between professions, organisations and sectors in society]. Lund: Studentlitteratur; 2007. p. 245–61. [in Swedish].
12. Sandström U, Axelsson R, Stalsby C. Inter-organisational integration for rehabilitation in Sweden—variation in views on long-term goals. *International Journal of Integrated Care* [serial online] 2004 Dec 15; 4. Available from: <http://www.ijic.org>
13. Alter C, Hage J. *Organisations working together*. Newbury Park: SAGE; 1993.
14. Van der Zee J, Kroneman MW. Bismarck or Beveridge: a beauty contest between dinosaurs. *BMC Health Services Research* 2007;7:94.
15. Strandberg-Larsen M, Nielsen MB, Vallgård S, Krasnik A, Vrangbæk K, Mossialos E. Denmark: Health system review. Copenhagen: WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies; 2007. (Health systems in transition vol.9, no. 6). Available from: <http://www.euro.who.int/Document/E91190.pdf>
16. Glenngård AH, Hjalte F, Svensson M, Anell A, Bankauskaite V. Health systems in transition: Sweden. Copenhagen: WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies; 2005. (Health systems in transition vol.7, no. 4). Available from: <http://www.euro.who.int/Document/E88669.pdf>
17. Kjellberg J, Sørensen J, Hansen J, Andersen S, Avnstrøm L, Borgstrøm L. Almen praksis som koordinator—en international belysning [General practice as coordinator—an international review]. Copenhagen: Danish Institute for Health Services Research (DSI); 2007. (Report No. 02). [in Danish]. Available from: [http://www.dsi.dk/frz\\_publicationer.htm](http://www.dsi.dk/frz_publicationer.htm)
18. Grøn L, Obel J, Bræmer MH. Tovholder i praksis—en antropologisk undersøgelse af alment praktiserende lægers opfattelser af rollen som tovholder [Coordination in practice—an anthropological investigation of general practitioners' perception of their coordinating role]. Danish Institute for Health Services Research (DSI); 2007. (Report No. 04). [in Danish]. Available from: [http://www.dsi.dk/Publikationer/DSI-rapporter/2007.04/frz\\_200704.htm](http://www.dsi.dk/Publikationer/DSI-rapporter/2007.04/frz_200704.htm)
19. Walshe K. *Regulating healthcare. A Prescription for improvement*. State of health Series. Philadelphia: Open University Press; 2003.
20. Gunnensen M. Samverkan kring rehabilitering och den danska strukturreform [Cooperation in rehabilitation and the Danish structural reform]. In: Axelsson R, Axelsson SB, editors. *Folkhälsa i samverkan—mellan professioner, organisationer och samhällssektorer* [Public health in cooperation—between professions, organisations and sectors in society]. Lund: Studentlitteratur; 2007. p. 361–78. [in Swedish].
21. Laursen SW, Jørgensen SJ, Knudsen JL. Regulering i relation til kronisk sygdom og kræft som akut sygdom [Regulation in relation to chronic disease and cancer as acute disease]. In: Knudsen JL, Christensen ME, Hansen B, editors. *Regulering af kvalitet i det danske Sundhedsvæsen* [Regulation of quality in the Danish healthcare service]. Copenhagen: Nyt Nordisk Forlag Arnold Busck; 2008. p. 147–70. [in Danish].
22. Sundhedsstyrelsen [Danish National Board of Health]. *Evaluering af praksiskonsulentordningerne i Danmark* [Evaluation of the general practice consultant arrangements in Denmark]. Copenhagen: Sundhedsstyrelsen [Danish National Board of Health]; 2003. [in Danish]. Available from: <http://www.sst.dk/publ/Publ2003/Praksisrapport.pdf>
23. Knudsen JL. Akkreditering og Den Danske Kvalitetsmodel [Audit and The Danish Healthcare Quality Programme]. In: Knudsen JL, Christensen ME, Hansen B, editors. *Regulering af kvalitet i det danske Sundhedsvæsen* [Regulation of quality in the Danish healthcare service]. Copenhagen: Nyt Nordisk Forlag Arnold Busck; 2008. p. 93–111. [in Danish].
24. Dansk Almenmedicinsk Kvalitetsenhed [Quality Unit for Danish General Practice]. *De praktiserende lægers og regionernes fælles enhed for kvalitetsudvikling* [Danish General Practitioners' and Regional Authorities' shared unit for quality development]. [webpage on the internet]. [cited 2007 Dec 10]. Available from: <http://www.dak-e.dk/flx/forloebssydelsen/>. [in Danish].
25. Digital Health. *National strategy for Digitalisation of the Danish Healthcare Service 2008–2012: To promote public health as well as prevention and treatment*. Connected digital health in Denmark, December 2007. Available from: [http://www.sdsd.dk/~media/Files/Strategi/Strategy\\_english.ashx](http://www.sdsd.dk/~media/Files/Strategi/Strategy_english.ashx)
26. Wagner EH. Chronic disease management: what will it take to improve care for chronic illness? *Effective Clinical Practice* 1998; August;1(1):2–4.
27. Frølich A, Strandberg-Larsen M, Schiøtz ML. The Chronic Care Model—A new approach in Denmark. *Health Policy Monitor* 2008 April. (Survey no. 11, 2008). Available from: [http://www.hpm.org/de/Surveys/University\\_of\\_Southern\\_Denmark/11/The\\_Chronic\\_Care\\_Model\\_-\\_A\\_new\\_approach\\_in\\_DK.html](http://www.hpm.org/de/Surveys/University_of_Southern_Denmark/11/The_Chronic_Care_Model_-_A_new_approach_in_DK.html)
28. Sundhedsstyrelsen [Danish National Board of Health]. *Forløbsprogrammer for Kronisk Sygdom—Generisk model og Forløbsprogram for diabetes* [Chronic disease programs—generic model and the diabetes program]. Copenhagen: Sundhedsstyrelsen [Danish National Board of Health]; 2008. [in Danish]. Available from: [http://www.sst.dk/publ/publ2008/Plan/Kronisk/kronisk\\_forloebssprogrammer2008.pdf](http://www.sst.dk/publ/publ2008/Plan/Kronisk/kronisk_forloebssprogrammer2008.pdf)
29. Swedish Ministry of Health and Social Affairs, Swedish Association of Local Authorities and Regions, National Board of Health and Welfare, Medical Products Agency, National Corporation of Swedish Pharmacies, Carelink. *National Strategy for eHealth—Sweden*. Stockholm: Socialdepartementet [Swedish Ministry of Health and Social Affairs]; 2006. Available from: <http://www.sweden.gov.se/content/1/c6/06/43/24/f6405a1c.pdf>

30. Carelink—connecting health care. [webpage on the internet]. [cited 2008 Oct 10]. Available from: <http://www.carelink.se/en/>
31. Åhgren B. Chain of care development in Sweden: results of a national study. *International Journal of Integrated Care* [serial online] 2003 Oct 7; 3. Available from: <http://www.ijic.org>
32. Åhgren B. *The Chain of Care*. Lund: Studentlitteratur; 1999.
33. Åhgren B. Utvärdering av integration inom närsjukvård [Evaluation of integration in Local Care]. In: Axelsson R, Axelsson SB, editors. *Folkhälsa i samverkan—mellan professioner, organisationer och samhällssektorer* [Public health in cooperation—between professions, organisations and sectors in society]. Lund: Studentlitteratur; 2007. p. 305–20. [in Swedish].
34. Åhgren B. The mutualism between chains of care and local care. *International Journal of Integrated Care* [serial online] 2008 Annual Conference Supplement; 8. Available from: <http://www.ijic.org>
35. Socialstyrelsen [Swedish National Board of Health and Welfare]. Kartläggning av närsjukvård—en underlagsrapport inom uppföljningen av den nationella handlingsplanen för utveckling av hälso- och sjukvården [Overviewing Local Care—a follow up report from the national action plan for development of health and social services]. Stockholm: Socialstyrelsen [Swedish National Board of Health and Welfare]; 2003. [in Swedish]. Available from: <http://www.socialstyrelsen.se>
36. Vrangbaek K, Christiansen T. Health policy in Denmark: leaving the decentralised welfare path? *Journal Health Politics, Policy and Law* 2005;30(1-2):29–52.
37. Strandberg-Larsen M, Krasnik A. Does a public single payer system deliver integrated care? A national survey study among professional stakeholders in Denmark. *International Journal of Integrated Care* [serial online] 2008 July 14;8. Available from: <http://www.ijic.org>
38. Christensen ME. Økonomiske incitamenter som reguleringsværktøj. [Economic incentives as regulatory means]. In: Knudsen JL, Christensen ME, Hansen B, editors. *Regulering af kvalitet i det danske Sundhedsvæsen* [Regulation of quality in the Danish healthcare service]. København: Nyt Nordisk Forlag Arnold Busck; 2008. p. 113–31. [in Danish].
39. Thorsen T. Almen praksis' modtagelse af forløbsydelsen for diabetespatienter. En kvalitativ evaluering efter det første år [General practice's perception of the fee for cross-sectoral work involving diabetes patients. A qualitative assessment after the first year]. Synthese; 2008. [in Danish].
40. Socialstyrelsen [Swedish National Board of Health and Welfare]. Årsrapport NPS—En analys av barnmorskors, sjuksköterskors, läkares, tandhygienisters och tandläkares arbetsmarknad [Annual report NPS—an analysis of midwives', nurses', doctors', dental hygienists' and dentists' labor market]. Stockholm: Socialstyrelsen [Swedish National Board of Health and Welfare]. 2003. [in Swedish]. Available from: <http://www.socialstyrelsen.se>
41. Gosden T, Forland F, Kristiansen IS, Sutton M, Leese B, Giuffrida A, et al. Impact of payment method on behaviour of primary care physicians: a systematic review. *Journal of Health Services Research* 2001;6(1):44–55.
42. Vedsted P, Olesen F, Hollnagel H, Bro F, Kamper-Jørgensen F. *Almen Lægepraksis i Danmark—håndbog og opslagsværk* [General practice in Denmark—handbook and encyclopedia]. Copenhagen: Månedsskrift for Praktisk Lægegerning [Periodical for practical medicine]; 2005. [In Danish].
43. Reed J, Cook G, Childs S, McCormack B. A literature review to explore integrated care for older people. *International Journal of Integrated Care* [serial online] 2005 Jan 14; 5. Available from: <http://www.ijic.org>
44. Pirnejad H, Bal R, Stoop AP, Berg M. Inter-organisational communication networks in healthcare: centralised versus decentralised approaches. *International Journal of Integrated Care* [serial online] 2007 May 16;7. Available from: <http://www.ijic.org>
45. Granlien MF, Simonsen J. Challenges for IT-supported shared care: a qualitative analyses of two shared care initiatives for diabetes treatment in Denmark. *International Journal of Integrated Care* [serial online] 2007 May 30;7. Available from: <http://www.ijic.org>
46. Hultberg EL, Lonnroth K, Allebeck P. Evaluation of the effect of co-financing on collaboration between health care, social services and social insurance in Sweden. *International Journal of Integrated Care* [serial online] 2002 Oct 24;2. Available from: <http://www.ijic.org>
47. Henriksen E, Rosenqvist U. Understanding and Practice: A 7-Year Follow-Up Study on Implementation of a Cardiac Rehabilitation Program. *Qualitative Health Research* 2002;12(5):671–84.
48. Commission of the European Communities. Proposal for a Directive of the European Parliament and of the Council on the application of patients' rights in cross-border healthcare. Brussels: CEC; 2008. Available from: [http://ec.europa.eu/health/ph\\_overview/co\\_operation/healthcare/docs/COM\\_en.pdf](http://ec.europa.eu/health/ph_overview/co_operation/healthcare/docs/COM_en.pdf)