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challenges in implementing a stroke care reform**

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Health reform monitor

Centralising acute stroke care and moving care to the community in a Danish health region: Challenges in implementing a stroke care reform[☆]



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ABSTRACT

In May 2012, one of Denmark's five health care regions mandated a reform of stroke care. The purpose of the reform was to save costs, while at the same time improving quality of care. It included (1) centralisation of acute stroke treatment at specialised hospitals, (2) a reduced length of hospital stay, and (3) a shift from inpatient rehabilitation programmes to community-based rehabilitation programmes. Patients would benefit from a more integrated care pathway between hospital and municipality, being supported by early discharge teams at hospitals.

A formal policy tool, consisting of a health care agreement between the region and municipalities, was used to implement the changes. The implementation was carried out in a top-down manner by a committee, in which the hospital sector – organised by regions – was better represented than the primary care sector—organised by municipalities. The idea of centralisation of acute care was supported by all stakeholders, but municipalities opposed the hospital-based early discharge teams as they perceived this to be interfering with their core tasks. Municipalities would have liked more influence on the design of the reform.

Preliminary data suggest good quality of acute care. Cost savings have been achieved in the region by means of closure of beds and a reduction of hospital length of stay. The realisation of the objective of achieving integrated rehabilitation care between hospitals and municipalities has been less successful. It is likely that greater involvement of municipalities in the design phase and better representation of health care professionals in all phases would have led to more successful implementation of the reform.

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1. Introduction

The Danish health care system can be characterised as decentralised. Planning and regulation of the health care system are organised at three administrative levels: national, regional and local. The health authorities in the five regions are responsible for hospital planning. The 98 municipalities are responsible for disease prevention,

health promotion and rehabilitation. The general practitioners are the point of entrance to the health care system and act as gatekeepers, referring patients to hospital and specialist treatment [1].

The regional level is financed through state block grants (80%) and through co-payment from the municipalities (20%). The municipal co-payment was installed as an economic incentive for municipalities to invest in prevention and health promotion, in order to prevent hospital admission [2].

At the national policy level in Denmark, there is an ongoing process of specialisation and centralisation of care in Danish hospitals; resulting in the establishment of five super hospitals by 2020. Specialisation and centralisation of hospital services, early discharge, and moving care to the community is a global trend [3], and seen by many countries as a solution to make health care systems financially sustainable. This trend also requires effective coordination of care across sectors [4].

In May 2012, Central Denmark Region executed a stroke care reform that included specialisation and centralisation of acute stroke care, and moving inpatient rehabilitation care for patients with mild to moderate stroke symptoms to the municipality. The main rationale for the reform was to cut costs.

Before the reform, stroke care consisted of acute care and inpatient rehabilitation at five regional hospitals; two of these hospitals did not have a neurology department and referral was mainly defined geographically. The quality of acute stroke care varied across the region, as some patients received care at a specialised stroke unit and others did not [5]. In 2007, an expert group of neurologists stated that patients with the same need for specialised neurorehabilitation did not receive the same quality of health care services at different hospital departments in the region [6].

The Region's need to cut costs created a window of opportunity to reform stroke care in the region, with an emphasis on centralisation of acute stroke care and moving rehabilitation care to the community. This article describes the process of policy development and implementation of this mandated change. It is a change that in the end needs to result in coordination of care across sectors if the dual promise of saving costs and improving quality of care is to be fulfilled.

2. The stroke care reform

2.1. Purpose of the reform

The main purpose of the stroke care reform was to save money (€2.7 million; DKK 20 million) [7], but not by relying on short-term solutions. Cost reductions would be obtained by gradually closing 30% of the hospital beds for acute care and rehabilitation (Table 1). Acute care would be centralised at two specialised hospitals instead of five, and length of hospital stay would be reduced by moving rehabilitation care to the municipalities. Centralisation of acute care had the dual purpose of reducing costs and improving quality with lower mortality rates and improved health status at discharge [8]. Patients would also benefit from a more integrated care pathway between hospital and

municipality. Early discharge teams at all five hospitals would support the transfer to and start of rehabilitation in the municipality [8]. Table 1 describes the changes brought on by the reform.

2.2. Political and economic background

In February 2011, the Regional Council in Central Denmark Region agreed upon a region-wide cost saving plan for health care. Savings were necessary, as health care consumption was higher than estimated due to the demographic and technological development, and the block grant provided by the national government was lower than expected [7]. The plan included saving two percent of the 2011 health care budget (€ 61 million; DKK 455 million).

Although the stroke care reform was decided at the regional level, part of the implementation of the reform concerning rehabilitation had to take place at the municipal level.

Transferring health services across sectors requires joint planning [9] and coordination [4]. Since 2007, there has been a statutory cooperation between municipalities and regions with regional health agreements ensuring coherence between treatment, prevention and care [10]. The agreements are made at the start of the regional and municipal election cycle every fourth years and cover six specific areas: Hospital admission and discharge processes, rehabilitation, medical devices and -aids, prevention and health promotion, mental health, and follow-up on adverse events [9].

Changes made during the 4-year period are described in separate agreements. These agreements describe the tasks transferred from the regional to the municipal level as well as the anticipated financial consequences of these changes.

3. Health policy processes

The stroke care reform broke radically with ideas of the past. The rationale of the reform of improving quality of care for stroke patients by concentrating acute care was supported by all stakeholders. There were no incentives or sanctions connected to the implementation of the reform. Table 2 provides an overview of the stakeholders and their involvement in the development of the reform.

Central Denmark Region (CDR) established a working group (February 2011) with representatives from the five hospitals in the region to discuss ways to save costs in the area of neurology. The Danish Society for Physiotherapists requested to be involved [12], but this request was declined. Front line health professionals and patient representatives have not been involved in any stage of the process. The explanation for not involving patient representatives was that the representatives of the hospitals meant that they knew 'what was best for patients' with respect to the main aim of this reform, centralising acute care. A reason for not involving other stakeholders than hospitals in the planning phase was the tight deadline for planning the policy (see Fig. 1).

The idea of centralising acute stroke care in specialised stroke centres stroke care was suggested by the university

Table 1
Stroke care before and after the reform.

	Before 2011		After May 2012	
	Acute care	Rehabilitation	Acute care	Rehabilitation
	Provided at five hospitals. Two hospitals with a stroke unit and thrombolytic services, and three general hospitals; two of these had no neurology depts	Provided at five hospitals	Two hospitals with stroke unit and thrombolytic services	To be provided by municipality supported by early discharge stroke team at all five hospitals
Average LOS* for patients with mild to moderate stroke symptoms	2–3 weeks	2–3 days		
Number of beds at hospitals	54	84	26**	71**

* LOS = length of stay.

** This is the final number of beds. Beds were closed gradually until 2014.

Table 2
Stakeholders position and involvement.

Stakeholders	Interest in policy ^I	Impact on stakeholder	Involvement in policy decision and formulation	Involvement in implementation	Power ^{II}
CDR (hospital planning department)	High	High	High	High	High
Hospitals	High/low	High	Medium	High	Medium
Municipalities	Medium	High	Low	Medium	Low
General practitioners (GP)	Medium	Low	Medium	Medium	Low
Frontline health professionals	High	High	None	Low	Low
Patients associations	High	High	None	None	Low

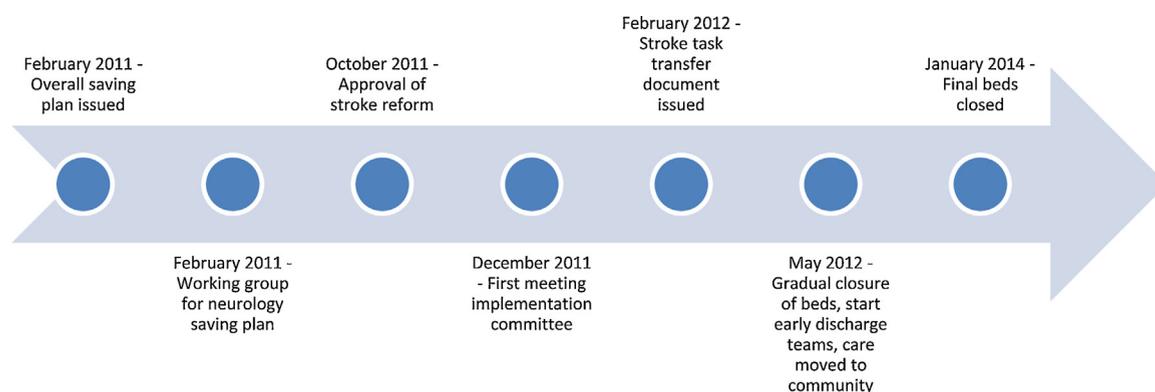
^I Interest: The stakeholder's interest in the policy, or the advantages and disadvantages that implementation of the policy may bring to the stakeholder or his or her organization [11].^{II} Power: The ability of the stakeholder to affect the implementation of the health reform policy [11].

hospital in Central Denmark Region. The university hospital's stroke centre was (and still is) leading in Denmark with regard to stroke treatment. Since 2006, it has recommended that specialisation and concentration of acute stroke care should be part of a national policy in Denmark [13,14]. The department's lower 30-day and overall mortality rate [15], convinced all hospitals in the region of the plan to concentrate acute stroke care.

The initial proposal included to concentrate acute stroke care at two stroke centres. This was based on advice of a regional planning board for neurology based on patient

volumes [16]. However, a hospital aspiring to become a third specialised centre opposed. The final plan for decision-making included the possibility of three stroke centres, but in the end the politicians followed the expert advice and decided on two centres. The hospital was promised sustainability of their neurology department by becoming the Region's referral centre for Transient Ischemic Attacks, and as a specialist centre for treatment of patients with Multiple Sclerosis.

The university hospital's stroke centre had long-term experience with supported early discharge and a good

**Fig. 1.** Timeline of the stroke care reform in Central Denmark Region.

collaboration with the municipality concerning rehabilitation of stroke patients. This stroke rehabilitation care pathway became a model for the Central Denmark Region's reform of moving rehabilitation care to the community and was referred to as "the Aarhus model".

In December 2011, Central Denmark Region established an implementation committee to supervise and implement the reform, which mainly consisted of hospital representatives. In February 2012, also representatives of general practitioners and municipalities were added to the committee. All representatives in the committee worked at the administrative-, management- or coordinating level.

At this stage, the municipalities were presented to "the Aarhus model" for the first time. The model was planned to be rolled out in May 2012. The representatives of the municipalities opposed to the idea of one model of supporting municipality-based rehabilitation, and would have liked to be involved earlier in the process. In principle, municipalities are in favour of early discharge, because of the financial contribution they have to make for each of their citizens that receives hospital care. The representatives from the administrative level of the municipalities opposed to the early discharge team, because they considered this a task that municipalities could carry out themselves. Some of the municipalities suspected that the region's model would cost the municipalities money, with them having to pay for the services of the early discharge team. However, as the plan already had been politically approved the municipalities had no choice but to accept the reform without exactly knowing the consequences.

The implementation committee used the tool of health care agreements to implement the reform. As the reform was planned during the 4-year period, a separate agreement was drafted including the specific transfer of tasks and published in February 2012. The municipalities thus only had a short period to prepare for the changes, because the reform would be implemented from May 2012. The separate agreement did not include information on financial consequences for the municipalities of the reform.

4. Preliminary outcomes

Central Denmark Region did not plan a formal evaluation of the reform, but the implementation was monitored by the implementation committee until 2014 to be able to intervene in case of any unwanted consequences. In the first year more patients (around 900) had been referred to the two stroke care centres than initially estimated. The reason for the increased number of referrals was not clear, but may be caused by too low estimates of patient flows. Another explanation might be that the information given to GPs and patients about how patients should be referred in case of symptoms had increased the attention to diagnosing stroke. During a period of two years, a buffer of DKK 10 million (€ 1.3 million) was used to compensate the hospitals for the increased number of patients. Furthermore, a separate regional working group consisting of hospital as well as municipal representatives monitored:

- Quality of hospital stroke care based on data from the Danish Stroke Database [17].
- Patient safety based on the Danish Patient Safety Database [18].
- Patient-reported outcome based on questionnaires.
- Waiting time until start of rehabilitation in municipalities.
- Cross-sector audit of patient pathways.

The final report from the working group described the overall quality of care after the reform as highly satisfactory [19]. Points that were less satisfactory were considered not specifically related to the reform, but related to general problems regarding the transfer of patients between sectors. These problems were also highlighted in an audit of patient pathways at one hospital in 2013 to evaluate the part of the reform concerning moving care to the community and the early discharge stroke teams [20]. The audit made clear that there was lack of clarity concerning new roles and responsibilities in the pathway from hospital care to municipality-based care, and that there was a tendency that both sectors acted as before the reform. Moreover, the audit concluded that after one year, early discharge teams were neither known nor visible to the municipalities.

5. Discussion

5.1. Saving money and improving acute stroke care

Morris et al. [21] concluded that centralisation of acute stroke services in English metropolitan areas in which hyper-acute care was provided to all patients with stroke across an entire metropolitan area reduced mortality and length of hospital stay. The outcome of the Central Denmark Region reform points in this same direction. More patients with stroke are treated, more receive thrombolysis when needed, and the percentage of 30-day mortality is reduced. Patients also report doing well, according to their self-reported outcome data. With better outcomes, and with fewer beds, the policy aims are likely to be met in the hospital sector in Central Denmark Region.

5.2. Did patients' functional ability improve?

When stroke patients are in a better condition at discharge, the expectation is that they will do better at home as well. Municipality-based rehabilitation is, however, still necessary for a subgroup of stroke patients. The quality of this care is however more difficult to monitor, as there is not the same data quantity and quality in the municipal sector and primary care as in the hospital sector [4]. The OECD states in its review of Danish health care quality that a relative lack of data makes it difficult to know how effectively GPs and other health care professionals are meeting community health care needs, and recommends to develop an adequate data infrastructure underpinning this care [4].

5.3. A more integrated care pathway between hospital and municipality

The approach to implementation of this reform can be described as top-down, i.e. one in which the perspective of the central decision-makers dominates. In this case, the hospital perspective dominated. In a top-down implementation approach, policy formulation and policy execution are seen as distinct activities. Policies are set at higher levels in a political process, and are then communicated to subordinate levels which are then charged with the technical, managerial, and administrative tasks of putting policy into practice [22]. Strandberg-Larsen et al. [10] stated in 2007 that 'it is important that the requirements as defined by the (regional) government are suited to a decentralized planning process where different municipalities on the local level are allowed to use different approaches to suit the needs of their population. If this is not taken into account in the implementation phase, there is a risk of further detachment between the administrative settings and the practice of the decentralized levels'.

In this reform the top-down approach to implementation merely arranges the transfer of tasks at the administrative level, but not what happens at the 'street-level'. Lipsky describes that 'street level bureaucrats' (such as nurses, social workers) will experience a gap between the demands made on them by legislative mandates (the Region's transfer of tasks) and their high workload on the other, and will apply coping mechanisms that systematically distort their work in relation to the intentions of the legislation [23]. This has not happened in this case, but the objective of a more integrated pathway has not been achieved. A qualitative study of the implementation of the reform [24] revealed that health professionals from the stroke teams and the municipalities were either not aware of the existence of the reform documents, or they did not feel any ownership. In the documents a division of tasks was described that could have been taken as a starting point for discussion at the 'street level', and as a starting point for development of shared values in coordinating work and securing collaboration. Developing shared values is what Baeza et al. [25] define as normative integration, and a crucial factor in determining successful integration. Instead, we found in a previous study that the necessary coordination in the stroke patient pathway does not take place [24]. Each actor carries out his/her tasks, but not in a shared way. According to Baeza et al. [25] this normative integration is often lacking in the post-hospital phase of treatment. As a consequence, integration between hospital and community care is often less successful.

6. Conclusion

The Danish case of implementing centralisation of acute stroke care and moving care to the community has been successful when concerning the reorganisation of acute stroke care, but less successful with regard to establishing a more integrated stroke pathway between hospital and municipality. In line with Strandberg-Larsen et al.'s recommendation, municipalities should be involved earlier in the

process to be able to influence the design of the reform of rehabilitation care. Additionally, the consequences of the reform should be made clear for all stakeholders to improve acceptance. Consistent with Lipsky's theory, the implementation process as a whole would benefit from inclusion of front line health professionals in all stages of the reform.

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