

Danish Centre for Evaluation and Health Technology Assessment

Cross-sectorial cooperation between general practice and hospital
- shared care elucidated using anticoagulant therapy as an example
A health technology assessment - summary

Summary

The increasing pressure on the health service has spawned innovative thinking on many fronts. One of the resultant initiatives focuses on cooperation between general practitioners and hospitals because it seems reasonable to believe that greater cooperation on the treatment of patients will lead to better utilisation of specialist medical capacity, improved treatment quality for the involved patients and more appropriate utilisation of resources.

This type of formalised cooperation is termed “shared care”. The aim of the present report is to present the advantages entailed by shared care as well as some of the problems that can arise when such cooperation is initiated.

The health technology assessment (HTA) assesses the consequences of an earlier clinical trial in which a number of general practitioners and the Department of Medicine and Cardiology, Aarhus University Hospital cooperated on the treatment of patients undergoing anticoagulant therapy (AC therapy). The cooperation was formalised and designed as a shared care scheme. As the trial proved to be clinically successful, the question arose as to whether the cooperation model was immediately implementable and whether the results could be transferred to shared care schemes for other disorders.

The concept of shared care is difficult to define, and what exactly the term entails is unclear. To arrive at a common understanding of the problem complex would thus necessitate that the HTA extended beyond AC therapy. Shared care is therefore assessed using AC therapy as an example of a treatment where one could imagine establishing cross-sectorial cooperation within the health service.

The report is therefore subdivided into two main parts.

Part 1: A general analysis of the term “shared care”.

Part 2: A specific analysis of AC therapy and of a shared care scheme for AC therapy.

Overall conclusions and recommendations

On the basis of a broad HTA the Project Group arrived at the following conclusions and recommendations:

Conclusions regarding shared care in general

- Shared care is one means of organising treatment whereby the subelements of the treatment are performed within a relationship of mutual interdependence between various organisations (e.g. in general practice and at a hospital).
- Shared care is not a solution to all cooperation problems between the sectors of the health service. Shared care is only an appropriate means of solving problems in situations involving mutual interdependence between the sectors.
- Shared care does not in itself result in previously untreated patients being brought under medical control.
- Shared care can ensure the realignment of patient pathways that run off course as a consequence of centralisation.
- The present legislation does not comprise any legal obstacles to the introduction of a shared care scheme.
- The benefits of a shared care scheme can only be attained if a number of preconditions are fulfilled (general treatment guidelines, patient participation, direct and mutual contact between the therapists and the patient, mutual confidence and ability to cooperate among the therapists, and that the disease lends itself to shared care).

- Methods exist for performing health economic analyses of shared care schemes, but little knowledge is as yet available concerning the cost-effectiveness of shared care schemes.

Conclusions regarding AC therapy and shared care

- A general assessment of the status of AC therapy in Denmark reveals that from the medical point of view, the therapy is not performed satisfactorily.
- Shared care is therefore a possible organisational alternative to the existing organisation of AC therapy.
- Shared care schemes can necessitate major reorganisation of treatment practice, however.
- AC therapy under shared care does not have any adverse effects on self-reported state of health compared with conventional AC therapy.
- The economic analysis shows that given the current premises, shared care is not more economical than other organisational forms, rather to the contrary.

Recommendations

The Project Group has the following recommendations:

- Every decision on the introduction of shared care should be based on a thorough prior analysis of the relationships in the cooperation. If mutual interdependence between the participants cannot be identified it is appropriate to choose alternatives to shared care.
- When designing a shared care scheme it is necessary to ensure that it is built up in such a way that both the patient and the general practitioner have the possibility for personal contact with the hospital.
- When planning and implementing a shared care scheme it is important to ensure that guidelines/instructions are drawn up to support the cooperation as shared care is primarily informal and demands open and utilised communication channels between the patient, the general practitioner and the hospital physician, where guidelines and instructions can ease the communication.
- When choosing a shared care scheme one should not expect direct economic savings as the great demand for personal communication takes time and hence does not allow for the release of therapist resources in the secondary sector. To the contrary, one should expect shared care to be more expensive.
- During the establishment phase one should ensure that the current trend towards larger hospitals will tend to reduce the possibilities for direct personal contact between on one side the patient and the general practitioner and on the other side the regular shared care contact person at the hospital.
- The operation of a shared care scheme should be regularly evaluated, and greater emphasis should be placed on the indirect effects of the cooperation as this is where the greatest benefit probably lies.

About shared care

The present report does not make any new proposals for a definition of shared care. Instead it is primarily based on the English language scientific literature. In addition, the authors considered it important to base the assessment on literature in which models for cooperation was assessed by means of a randomised design.

It is already clear that all the forms of cooperation that go under the designation “shared care” concern coordination between various parts of the health service. Shared care is thus primarily a form of organisation rather than an actual health technology.

In performing the systematic literature search the Project Group considered both a neutral and a positive assessment of a shared care scheme as indicating a successful scheme.

The overall assessment is that the advantages of a shared care scheme are only achieved if certain preconditions are met. These preconditions are reviewed in several of the scientific parts of the report and are in accordance with both the Danish and the international literature. They are summarised below.

Forudsætninger for shared care	
■	Generelle behandlingsvejledninger
■	Patientinvolvering
■	Direkte og gensidig kontakt mellem behandlingsparter og patient
■	Gensidig tillid og samarbejdsevne hos behandlerne
■	Sygdommen skal egne sig

The present summary briefly outlines the assessment results. Wherever possible it is clearly indicated whether the results in question pertain to shared care in general or specifically to the selected example (AC therapy).

Technology

The assessment of the technological aspects is subdivided into three analyses:

Part 1: A general analysis of shared care.

Part 2: A specific analysis of the status of routine AC therapy in Denmark and a specific analysis of a shared care scheme for AC therapy.

Part 1. The general analysis of shared care revealed the following

- Shared care stems from a paradox between shortage of resources and increased demands for effectiveness and a coherent treatment pathway.
- No unambiguous definition of shared care exists, and there are no clear guidelines as to how shared care should be organised.
- It is difficult to follow recommendations on the establishment of such cooperation. There is no consensus on the framework for such cooperation, and the term is in danger of being used as a label for almost anything.
- The establishment and implementation of shared care schemes can be a long-lasting and demanding process where barriers to its establishment might be due to imbalance of power, cultural conflicts and disagreement about the organisation.
- It is important that all the parties involved meet to discuss any problems in order to ensure joint ownership and hence the success of the cooperation. This prevents the risk of “top-down” decisions.
- The way shared care is organised will often depend on the nature of the problems that have to be solved and the local conditions under which they arise.
- It is possible to set up minimum requirements for shared care so as to ensure that treatment quality is not detrimentally affected and that treatment quality can be improved by further expanding the shared care.

Part 2. The specific analysis of the status of routine AC therapy in Denmark revealed the following

- Overall the number of patients has increased by 10-15% annually.
- There is considerable regional variation in treatment frequency with an inter-county variation of up to 30%.
- At least 33% of the patients with chronic atrial fibrillation who could benefit from AC therapy do not receive it.
- There seems to be some inconsistency between the complication frequency reported in clinical trials and in routine AC therapy.
- Methods exist for the regular assessment of treatment quality, including under shared care.

The specific analysis of a shared care scheme for AC therapy revealed the following

- A shared care scheme for AC therapy seems to be an alternative to the existing organisation in that treatment quality (treatment time within the therapeutic interval) for patients on long-term therapy improves.
- For all patients, including those on short-term therapy, treatment quality in shared care schemes was no poorer than that with the existing organisation of monitoring.

The possible consequences for the participating groups and decision makers as regards the technological aspects are summarised in Table 1. The table is based on both the present assessment and literature studies.

TABLE 1

Possible consequences for the participating groups and decision makers as regards the technological aspects

The patient	Improved treatment quality. Greater requirement for commitment and joint responsibility.
General practice	Greater expertise. Formalised education. Stronger association with hospital physicians. Feedback. Risk of greater work load and reassignment of tasks. Being "subordinate" to the hospital specialist.
Outpatient clinic	Reduced workload. Stronger association with general practitioners. Extended responsibility. Time-consuming feedback. At the disposal of general practitioners.
The decision maker	Improved quality. Better communication. Sensitive cooperation that depends on the "spirit" between participants. Risk of fiasco associated with top-down decisions.

Organisation

The summary of the organisational aspects presented below is based on both the general analysis of shared care and the specific analysis of shared care in AC therapy.

The analysis of the organisational aspects was initiated after completion of the AC therapy project (the clinical project). As the latter was successful, the organisational analysis aimed to elucidate:

- Whether there were special features of the clinical project that were particularly important or whether the results could be considered to be generally applicable.
- To what extent the special features of the clinical project matched other successful shared care trials (a comparison with published findings).
- In what respects the successful trials differed from the unsuccessful trials.

First and foremost it is apparent that all the schemes that use the designation "shared care" concern coordination between various sectors of the health service. Next it is apparent that the various schemes are organised very differently. In some cases they only involve very loose coupling between the different sectors, whereas in other cases the outpatient clinics "take over" and thereby bring themselves in conflict with the general practitioners and other sectors with whom they cooperate.

Summarising the main features of the (including international) successful shared care schemes reveals that they are based on:

- Diseases in which treatment and control in one part of the health service (e.g. at the general practitioner) is of vital significance for that which takes place in other sectors of the health service (e.g. the outpatient clinic), and where the influence also goes in the other direction. Organisational experts refer to this as "mutual interdependence".
- An organisation where there is direct and personal contact between patient, general practitioner and outpatient physician. This is time-consuming and hence expensive.
- Voluntary participation, i.e. only those patients and general practitioners who are motivated by the schemes participate.

Of greatest interest perhaps is that:

- Comprehensive, database-based common patient record systems do not seem to contribute to the quality of the treatment. This is in line with common organisational knowledge that it is very difficult to manage mutual interdependence through formalised systems.

The consequence is that treatments that do not involve strong mutual interdependence between the various subtrements can be coordinated by far easier and cheaper methods. This particularly applies if (some of) the participating health care workers lack motivation, are not professionally competent and/or are lacking the ability to cooperate.

The organisational parts of the report contain a detailed account that concludes with a number of guidelines on how to proceed when:

- A decision has to be made as to whether there is a need for fully implemented shared care or whether ordinary coordination methods would suffice.
- Consideration has to be given to how the organisational framework of a shared care scheme should be constructed once the decision to implement shared care has been made.

The possible consequences for the participating groups and decision makers as regards the organisational aspects are summarised in Table 2. The table is based on both the present assessment and literature studies.

TABLE 2

Possible consequences for the participating groups and decision makers as regards the organisational aspects

The patient	Treatment quality can only be expected to improve if there is direct, mutual and personal contact between the patient, the general practitioner and the outpatient clinic.
General practice	Engaged and clever general practitioners risk becoming less motivated because the coherence of patient treatment reduces when the outpatient clinic takes over prestigious treatment tasks.
Outpatient clinic	Efforts should be made to ensure that the patient and the general practitioner are associated with the same outpatient clinic physician and that the relationship is stable over a prolonged period of time.
The decision maker	Comprehensive joint patient record systems do not seem to influence treatment quality. Physicians/health care workers lacking in professional qualifications or the ability to cooperate should not participate in shared care. Major reorganisation of the outpatient clinics will be needed if shared care is to be successful.

The patient

The assessment of the patient-related aspects is subdivided into two analyses:

Part 1: A general analysis of the patient-related aspects of shared care.

Part 2: A specific analysis of the patient-related aspects of AC therapy and shared care.

Part 1. The general analysis of the patient-related aspects of shared care

From a number of randomised trials in which the patient perspective (patient satisfaction and psychosocial conditions during participation in shared care schemes) has been elucidated it is possible to identify a number of common characteristics of shared care schemes. However, comparison of the trials is rendered difficult by the fact that they involve seven different categories of disease, were conducted over a period of 20 years in small study populations in six different countries using different outcome measures. The trials were also subject to different degrees of bias. The conclusions given below should thus be interpreted with caution.

The following conclusions could be drawn:

- Participation in shared care is generally associated with patient satisfaction and a desire to continue.

- Shared care results in a positive attitude to the general practitioner's role and meets expectations about treatment continuity.
- Shared care does not have any negative effects on quality of life or psychosocial status.
- In a single study in which the control group was subsequently informed about shared care the patients tended not to want to choose shared care when it was offered to them.

Part 2. A specific analysis of the patient-related aspects of AC therapy and shared care

A decisive precondition for successful AC therapy is that the patient is adequately informed. Traditionally this is ensured through written patient information. Knowledge of the effect of this is sparse, however. Knowledge of the effect of the organisation of the therapy on quality of life is also sparse. These aspects were investigated in the present study, and the following conclusions arrived at:

- Patient education and the provision of patient information significantly increased specific knowledge of AC therapy in the shared care group compared with the control group.
- Shared care did not adversely affect self-reported state of health compared with self-reported state of health attained during conventional therapy.
- No studies were identified that describe the patient-related aspects of shared care schemes for AC therapy.

The possible consequences for the participating groups and decision makers as regards the patient-related aspects are summarised in Table 3. The table is based on both the present assessment and literature studies.

TABLE 3

Possible consequences for the participating groups and decision makers as regards the patient-related aspects

The patient	Improvement in treatment quality and in patient satisfaction and knowledge. Unchanged quality of life and psychosocial status. Continuity and improved access to his/her general practitioner. Enhanced requirements for commitment, participation and joint responsibility.
General practice	Positive attitude to the general practitioner's role. Stronger association with the patients. Organised patient education.
Outpatient clinic	Continuity. Fixed doctor-patient relationship collides with the outpatient clinic's educational training plans for young physicians.
The decision maker	Satisfied and well-treated patients. Risk of social inequality and a credibility gap.

Legal aspects

Any assessment of the consequences of introducing a shared care model for cooperation between the primary and secondary sectors must also include the legal aspects.

The assessment of the legal aspects has primarily focussed on shared care in general, AC therapy thus not having been analysed specifically.

The assessment of the legal aspects is based on:

- A cross-sectorial agreement on shared care between a general practitioner, a hospital specialist physician and a patient.

The main aim of the legal assessment was to determine:

- Who the therapists are
- Their roles, expertise and responsibilities, and in particular
- The significance of the shared care agreement for the individual participants' tasks and responsibilities.

The primary interest in including the legal aspects in this HTA is to clarify who holds *responsibility* for what, i.e. who holds responsibility for the patient's therapy when several therapists are involved, and in particular, whether the shared care structure entails changes in distribution of responsibility. The degree to which the division of tasks and responsibilities between the various participants are described in the agreement varies. That the agreement is cross-sectorial is of minor relevance in a legal context.

The possible consequences for the participating groups and decision makers as regards the legal aspects are summarised in Table 4.

TABLE 4

Possible consequences for the participating groups and decision makers as regards the legal aspects

The patient	
Advantages	Clearer division of tasks. Greater requirements as to the keeping of patient records.
Disadvantages	If the participating groups do not comply with the agreements the risk of omission is increased.
General Practice	
Advantages	Clear division of responsibility and tasks. Firmer guidelines.
Disadvantages	Greater dependence. Greater requirements as to the keeping of patient records.
Outpatient clinic	
Advantages	Clear division of responsibility and tasks. Firmer guidelines.
Disadvantages	Greater dependence. Greater responsibility.
The decision maker	Can function with the existing legislation

An agreement on shared care provides the general practitioner and outpatient physician with a clear division of tasks and responsibilities. The agreement thus entails that clear general guidelines for the course of therapy are set in advance. For the patient too, this clarifies who is going to deal with what and provides greater assurance that he/she will not be “forgotten” in a prolonged cross-sectorial course of therapy.

An agreement on shared care can move the traditional boundaries of responsibility. If the specialist physician provides general advice this does not normally entail any responsibility in relation to the treatment of a specific patient. However, if the specialist's task in a shared care scheme is to draw up general guidelines for the cooperation, this is likely to entail a legal responsibility in relation to the treatment of a specific patient.

Such agreements also entail greater mutual interdependence between the participants. If an agreement on shared care has been entered into it is reasonable to expect that the agreed division of tasks and responsibilities be followed, i.e. that the tasks are carried out in accordance herewith. The same applies with respect to quality. If the standard of treatment provided by either the specialist or the general practitioner is too low – either due to omissions/oversights or qualitative deficiencies – this might rub off on any assessment of the care provided by the other participants. As it is expected that the agreement will be complied with, the risk is enhanced that omissions are not detected in time.

The shared care design necessitates continuous detailed descriptions of the patient's course of treatment. As a consequence, the structure must be assumed to entail requirements for the (very) careful keeping of patient records. In the case of the general practitioner, in particular, this must be assumed to place greater demands than normal. As far as concerns the patient, this enhances the information resource.

If the establishment of shared care schemes is desired it is naturally important that the legal rights of the patient are the same irrespective of which sector provides the treatment. An important step in that direction that entered into force on 1 January 2004 is the amendment of the Patient Insurance Act to also encompass the primary sector.

Economic aspects

The assessment of the economic aspects is subdivided into two analyses:

Part 1. A general analysis of the health economics of shared care.

Part 2. A specific analysis of the health economics of AC therapy, shared care and alternative organisational forms.

Part 1. The general analysis of the health economics of shared care

The analysis presents the economic issues and relates them to shared care schemes. In addition, it presents the results of a systematic literature search encompassing economic assessments of shared care schemes.

The impression gained from the literature search was that the economic aspects of shared care schemes have only been analysed to a limited extent and that in general only short-term economic projections have been employed. Methodologically the majority of the analyses performed have been relatively simple.

The overall conclusion is that little knowledge is available concerning the cost-effectiveness of shared care schemes and that very little has been published concerning the operational and budget-related consequences.

Part 2. The specific analysis of the health economics of AC therapy, shared care and alternative organisational forms

The aim of this analysis was to assess the health economics of various organisational schemes for monitoring of AC therapy.

This was achieved by searching the literature for existing knowledge about the effect of various organisational forms on the health economics of AC therapy, i.e. studies in which the health-related consequences have been determined in the final outcome measures.

The literature search revealed that no suitable data material exists for performing actual cost-effectiveness analyses under Danish conditions.

The present analysis thus describes a number of important factors that influence the organisation of monitoring of AC therapy, and six principally different organisational models are developed and subjected to cost analysis.

The models in question are theoretical models as it has not been possible to collect valid empirical cost data. The analysis is therefore based on "expert judgements", which have been used to set resource consumption in the various models. The modelled cost analyses are based on a hypothetical cohort of patients undergoing AC therapy and calculate differences in resource consumption and costs with the various organisational models. The resource consumption is valued using two different principles – nominal costs and DRG tariffs/fees. In order to reveal any uncertainty in the calculations the main assumptions and variation in the expert judgement data material have been subjected to a sensitivity analysis.

The analysis of the marginal operating costs entailed by the six models yielded the following results:

- Overall, shared care schemes are more expensive than if the general practitioner performs the whole therapy.
- AC therapy performed exclusively at an outpatient clinic is more expensive than therapy in shared care if DRG tariffs are used, but cheaper if nominal costs are used.

As the health-related consequences have not been assessed, it is not possible to draw any conclusions about the cost-effectiveness of shared care. It is nevertheless estimated that even if very modest health benefits are attained, shared care can be cost-effective. No assessment has been made of whether shared care can lead to an alternative distribution of health services, but this would be the case if the shared care scheme was better than the alternatives (outpatient clinic or general practice) at initiating therapy of untreated patients.

To what extent society can afford shared care is a political decision that is difficult to judge without solid knowledge about its cost-effectiveness. If shared care schemes are introduced the increased costs will predominantly have to be financed via hospital and health service budgets. For the patients, in addition, it may entail increased costs for medicine and increased time and transport costs. Finally, shared care can entail the transfer of costs between the hospital and health service budgets.

The possible resource-related consequences of the introduction of shared care are summarised in Table 5 for two scenarios where shared care replaces one of two alternatives, either 1) the whole treatment is performed by the general practitioner or 2) the whole treatment is performed by a hospital outpatient clinic.

TABLE 5
The resource-related consequences of the introduction of shared care

	The introduction of shared care entails	
	Scenario 1: Shared care replaces the situation where the whole treatment is performed by the general practitioner	Scenario 2: Shared care replaces the situation where the whole treatment is performed by the outpatient clinic
The patient	Increased time consumption	Slightly reduced time consumption
General practice	Reduced activity, lower income	Increased activity Risk of "crowding out"*
Outpatient clinic	Increased activity	Reduced activity
The decision maker	Increased nominal costs (approx. 30%). Increased costs for activity-based activities (approx. 100%). Shifts in hospital and national health service budgets.	Increased nominal costs (approx. 30%). Reduced costs for activity-based activities (approx. 350%). Shifts in hospital and national health service budgets.

* Inability to treat other patients or that the threshold for a "necessary" consultation raises.