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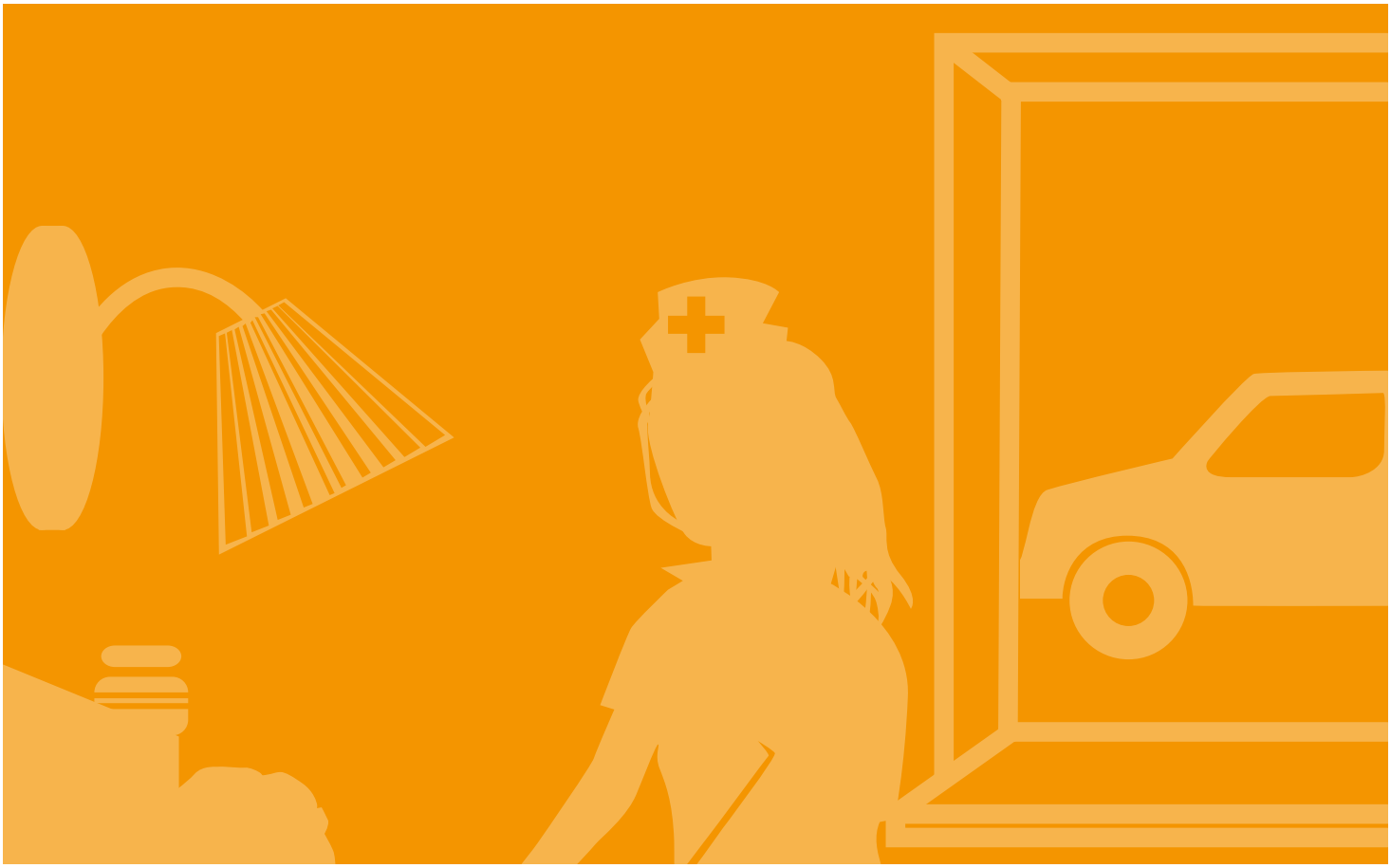
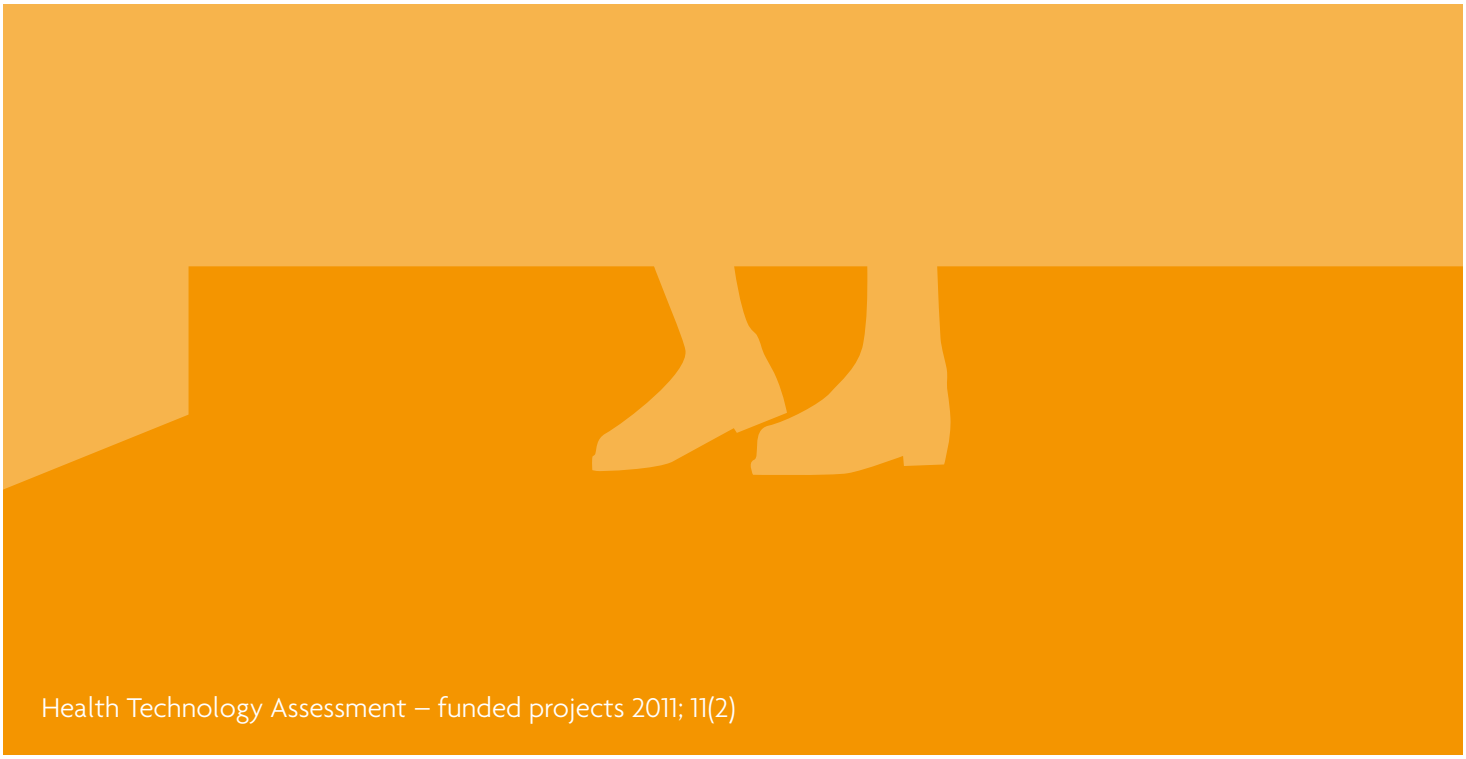


WOUND TREATMENT IN THE PATIENT'S OWN HOME BY COLLABORATION BETWEEN HOSPITAL AND HOME CARE

– a health technology assessment

Summary

2011



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What is Health Technology Assessment?

Health technology assessment contributes to decision making in the health care sector. A HTA collects and assess existing knowledge about a given health technology. A health technology is defined broadly as procedures and methods for prevention, diagnostics, treatment, care and rehabilitation including devices and medicine. An example could be a new method to treat patients. Focus is on healthcare, patient, organisational and economical aspects. New research can be conducted if the number of sufficient studies is limited to elucidate one or more of these aspects.

The HTA results in a report that can contribute to better planning, quality enhancement and prioritizing in the health care sector. The target group is decision-makers in the health political field. The primary users are therefore administrations and politicians and other decision-makers in the health political field. The HTA contributes to decisions within administration as well as political management as to which services should be offered in the health care sector and how they should be organized.

Health technology assessment is defined as:

- HTA is a comprehensive systematic assessment of the prerequisites and consequences of applying a health technology

- HTA is a research-based, application-oriented assessment of relevant existing knowledge about problem areas applying a technology within the field of health and illness.

The project is funded by a HTA-fund that was terminated in 2007. The purpose of the fund was to spread out knowledge and use of HTA locally. The funded HTA-reports are prepared in collaboration with an external interdisciplinary project group. The project group systematically reviews the existing literature, contributes with data collection and produces the chapters and conclusions of the report. The project management is placed at the National Board of Health who is also responsible for the editing of the final report. The report has been submitted to an external reference group and is also externally peer-reviewed.

Find more information about HTA at www.sst.dk/mtv under HTA toolbox:
“Handbook of Methods for Health Technology Assessment”
“Health Technology Assessment – Why? What? When? How?”

Summary

Introduction

The Danish Ministry of Health and the Danish National Board of Health's national strategy for quality in health services focuses on the development of continuity of care, including continuity of care across health and social care services. This involves amongst other things an increased focus on the collaboration between hospitals, municipalities and general practitioners.

Odense University Hospital (OUH) in the Region of Southern Denmark has organised a multiprofessional wound centre, Universitetscenter for Sårheling (UfS). The UfS treats problematic wounds, such as diabetic wounds on the feet, pressure wounds and vascular wounds.

Patients with problematic wounds are typically treated in collaboration between the hospital and home care and to some extend general practitioners. Diagnosing and development of a treatment plan takes place during ambulant visits in the UfS, while the daily treatment generally is handled by the home care nurses in the home of the patients.

However, for part of the patients the ambulant treatment in the UfS is not optimal. First of all, there is a lack of continuity in treatment and respite care which amongst other things is caused by a diverse knowledge in primary and secondary care. Moreover, it is the experience of the nursing staff at UfS, that weak and immobile patients are exposed to an uncomfortable and prolonged transport to the out-patient clinic. In a societal perspective, this involves large costs for transportation.

Purpose

The purpose of this HTA is to document and evaluate the clinical, patient related, economic and organisational consequences of wound treatment by an outgoing specialised nurse from the UfS in the home of the patients – in comparison with traditional, ambulant visits at the hospital.

The HTA shall clarify the following research questions:

1) Which of the two options of treatment offers the best clinical outcome?
2) Is there a difference in patients' satisfaction depending on the option of treatment?
3) In what way do ambulant visits in the patient's home influence cross-sector collaboration as well as the quality of treatment?
4) Which one of the options of treatment is the most cost-effective; that is, how are the resources in health services best used?

Target audience

The project forms the basis of an assessment of maintenance and possible expansion of home visits by UfS nurses. Moreover, the project results will be of interest to other Danish regions, hospital and department management as well as relevant municipal administrations such as home care and nursing homes.

Delimitation

The project was limited to frail patients for whom transport to the out-patient clinic is uncomfortable and troublesome. The primary focus was on the collaboration between nurses at the hospital and nurses in home care and the nursing homes. This focus was chosen due to the fact that a previous pilot project was unsuccessful in strengthening the dialogue between hospital and general practitioners. Finally, the results in the technology and economic chapters were limited to pressure wounds, as there were very few observations of other types of wounds.

Method

Besides a systematic literature review, this HTA was based on a randomised controlled trial in which data are analysed and described in a HTA framework comprising clinical, patient related, organisational as well as economic aspects of the technology.

The chapter on the *technology* describes the randomised controlled trial. By means of statistical methods including regression analysis, this chapter illustrates differences in primary clinical parameters between the intervention group and the control group.

In the chapter on *patient related aspects*, the patients' satisfaction with the wound treatment is identified by means of a questionnaire survey, while the patient's experiences with an outgoing wound nurse is described by interviews with patients and relatives.

The chapter on *organizational aspects* describes the cross-sector collaboration and its impact on quality of wound treatment by findings in the literature and interviews with primary care nurses as well as outgoing UfS nurses.

Finally, the economic chapter estimates the socio-economic and operational economic consequences of relocating part of the UfS treatment from the out-patient clinic to the home of the patient.

The study period for the individual patient was maximally 6 months or until wound healing. Clinical and economic data was collected at baseline and monthly until wound healing or maximally 6 months. Patient related data was collected at the end of the treatment or after maximally 6 months, while organizational data was collected at the end of the project.

Technology

The study was implemented as a randomised controlled trial of patients referred to the UfS with pressure wounds, where treatment in the home of the patient by a specialised wound nurse was compared to traditional treatment in the out-patient clinic. A total of 76 patients were included in the study over a period of six months. The mean age of the patients was 70 years in the intervention group and 72 years in the control group. At baseline, there was no significant difference in age, gender distribution, wound area and pain.

The primary clinical outcome was wound healing, wound development and pain. The study showed that 39 % of the wounds in the intervention-group were healed within the 6 months follow-up. In the control group, 31 % of the wounds were healed in the same period. The extent of wound healing was most significant in the first three months, where the wounds in both groups were reduced to 30% of their size at base-

line. In the intervention-group, the level of pain at 6 months follow-up was reduced to 1/3 of the level at baseline. This result was better than in the control group, where patients experienced only a halving of their pain at 6 month follow-up.

None of the above results were significant. As a consequence, the cost-effectiveness analysis in the chapter on economics assumed that clinical outcome of the two options of treatment was identical.

The study had a number of methodological challenges. An essential challenge was the lack of blinding and, hence, an increased risk of overestimating the outcome of the treatment. Another significant element was the small sample of 76 patients which may be a hindrance for identifying an eventual effect of the intervention.

Patient

As the literature search did not identify previous studies on patients' perspectives on outgoing wound treatment, this perspective was identified by means of a questionnaire survey as well as individual interviews with patients and relatives.

The patients were very satisfied with the professional competences of the staff in home care and the nursing homes. Moreover, respondents were in general very satisfied with the professional competences of the UfS staff as well as with the transport. They were less satisfied with the waiting time in the out-patient clinic and waiting time for transport. While it was the experience of most respondents that they had gained more knowledge about the treatment of their wounds, only half of them were of the impression that they had an influence on their treatment. There was no significant difference between the intervention group and the control group.

Only the patients in the intervention group had experience with the outgoing UfS nurse. While 93 % of the respondents were very satisfied and 7 % to some extend were satisfied with the out-going UfS nurse, 94 % of the respondents would recommend UfS home visits. Also, 77 % of the respondents were very satisfied and 23 % satisfied with the collaboration between home care and the outgoing UfS nurse.

The interview study showed that both patients and relatives in the intervention group profited from the avoidance of transport to the out-patient clinic as well as from the treatment at home. Transport to the out-patient clinic was often lengthy, exhausting and for a single patient even painful. Treatment at home implied calmness and a god working relationship between the UfS nurse and staff in home care and the nursing homes. It was the experience that this collaboration had and influence on the quality and continuity of the treatment. Finally, the patients experienced that treatment at home by the UfS nurse facilitated involvement of themselves and their relatives.

Organisation

The basis of the organisational analysis was shared care in the form of collaboration on problematic wound between nurses in an out-patient wound clinic and primary care nurses in home care and nursing homes. The focus of the analysis was on the impact of this collaboration on the quality of treatment.

The UfS nurses were of the impression that the quality of the treatment depended on whether the recommended treatment was followed in everyday life. In order for the

UfS nurses to be able to contribute with their specialist knowledge, they needed knowledge about the patient and his living conditions as well as a well functioning working relationship with the primary care nurses.

Interviews with the nurses in the UfS, in home care and the nursing homes revealed a mutual wish for an equal working relationship. It was the experience that the home of the patient represented a good setting for such a relationship where involved partners were able to find sustainable solutions concerning treatment, choice of products and prevention.

The out-going UfS nurse benefited from the visits in the patient's home as she was able not only to improve the quality of her work regarding specific recommendations for prevention and treatment, but also to increase her knowledge about wound treatment in primary care in general. This knowledge was applicable in both the treatment in the UfS as well as in the collaboration with primary care nurses.

The UfS nurse anticipated that the collaboration regarding the single patients would come to pass by a consistent group of persons being present during her visits, as this would ensure continuity in the treatment as well as mutual learning. While this was possible in the nursing homes, it turned out to be less simple in home care due to the organisation of working hours. A prerequisite for the home care nurse to be present at UfS home visits was that that visits were scheduled in good time as well as there was a mutual understanding of the purpose of the home visits.

The supervision by the UfS nurse given under assessment and treatment of wounds was seen as important for the quality of the caring. Primary care nurses as well as out-going UfS nurses experienced a considerable amount of knowledge about the individual patient. The UfS nurses considered to some extent this knowledge as useful when treating other patients.

Several of the participating municipalities had primary nurses working as UfS nurses because they had acquired a considerable amount of knowledge about wound care. By giving these nurses education, supervision and opportunities to communicate this knowledge in their own organisation, there is an opportunity for further quality in prevention and treatment of wounds.

Economics

The main purpose of the cost survey was to estimate which of the two options, from a socio-economic perspective, was the most cost-effective. The cost-effectiveness analysis was supplemented by a budget impact analysis of the operating economy from the perspectives the hospital and the municipalities respectively.

By means of a statement of the cost components, the average costs of wound treatment per patient was calculated to DKK 15.250 in the intervention group and DKK 16.000 in the control group (the difference was not significant). Comparing the two groups, it became obvious that what was saved in costs on out-patient clinic visits by and large counterbalanced the extra costs spent in home care and on UfS wound nurses.

As established in the chapter on technology, there was no significant difference between the two options of treatment after 6 months regarding central clinical outcomes which is why only a cost analysis was undertaken. The economic analysis did

not show a significant difference in the costs of the two options of treatment. However, the analysis did show that the treatment in the intervention group presumably is beneficial in a socio-economic perspective in the form of reduced use of resources. Thus, the intervention offered the same treatment outcome, but at reduced use of resources, equaling DKK 750 per patient.

A sensitivity analysis showed that the cost reduction due to the intervention was underestimated with regard to the costs for the patients' transport to ambulant control (DKK 200 per patient in the intervention group and DKK 500 per patient in the control group). Additionally, the price of the intervention was almost DKK 2.000 lower in the anticipated operating scenario. In conclusion, the sensitivity analysis showed that the cost reduction due to the intervention probably was considerably underestimated.

The budget impact analysis demonstrated that the municipalities had additional expenses of DKK 2.597 per patient due to the reorganisation from control to intervention treatment. This was primarily due to more home visits in the intervention group as well as the change in the municipal co-financing caused by a larger number of ambulant visits. It was, however, the expectation that the number of visits from home care would normalise in a situation where the intervention would become permanent, meaning that the costs for an intervention patient would be approx. DKK 850 more expensive than for the control group. For the hospital, there was a reduction in costs of DKK 2.509 per patient due to the reorganizing from control to intervention treatment as well as a difference in DRG-settlement of almost DKK 8.600 per patient. For the hospital sector, there was a profit on both costs and settlements as a result of a reorganisation from visits at the out-patient clinic to out-going wound teams.

Overall assessment

The purpose of this HTA is to evaluate the consequences of wound treatment for frail patients in the patient's own home where the collaboration between hospital and home care is strengthened through direct teaching and supervision in the patient's home.

The overall conclusion is that treatment of pressure wounds in the patient's own home by a wound nurse from the hospital wound centre has same clinical impact on wound healing as treatment in the out-patient clinic. The economic analysis did not show a significant difference in costs between the two groups, but concludes that the intervention from a socio-economic point of view probably is beneficial in the form of reduced use of resources. Moreover, interview studies indicates that patients and relatives profit from the intervention due to less transport of these frail patients as well as strengthened cross-sector collaboration. These circumstances could lead to improved quality of wound treatment as a whole. It has, however, not been possible in this study to document the impact of these factors.

Due to the demographic development as well as the growth in the number of people with i.e. diabetes, it is likely that the number of citizens with problematic wounds will grow over the coming years. This is why it is important to reconsider the organisation of wound treatment; not least because of the possibility of patient-related and socio-economic gains from an optimisation of the treatment.

With an eye to patient and professional perspectives, this HTA considers that it is advisable:

- To establish an option of out-going treatment of problematic wounds at larger hospitals having staff with extensive cross-professional competences in the field of wound treatment at their disposal.

- The target group of this option of treatment should be patients:
  - Not wanting or not being capable of transporting themselves to the out-patient clinic. WHO/ECOG performance status group 3 or 4 could be used in the selection of patients
  - Where treatment and prevention does not function in everyday life and where it is desirable to establish a working relationship in the patient's home between the involved partners
  - Where primary care nurse have doubts about treatment and prevention and where it is advisable with direct supervision by the out-going wound nurse having comprehensive competences within treatment of wounds.

There is a need for additional Danish studies within wound treatment and with a broader purpose. Likewise there is a need for continuous monitoring of new initiatives related to treatment of wounds, including treatment via tele-medicine which might be an interesting initiative in combination with the out-going wound treatment.

The UfS has put the intervention in to service, and an UfS wound nurse is visiting patients in the municipalities of Funen twice a week. The option of treatment is used for patients with pressure wounds as in this study, but also for patients with other chronic wounds.

There are limitations and challenges in relation to this HTA as well as to the overall assessment. The limitations concern the location of the study, its target group and the size of the sample. The treatment took place at a university hospital with a specialised wound department which makes it difficult to apply the results to an ordinary hospital where the competences generally seen are different. Moreover, did the study not deal with the average pressure wound patient, but a smaller group of frail patients which must be considered if the results are applied in another scenario.

The budget impact analysis showed that certain circumstances may harm the incentive to reorganise the intervention treatment, as it may imply additional expenditures for municipalities. However, it is the conclusion of this HTA that additional, municipal expenditures are limited, if only in an operating situation it is ensured that direct supervision by the wound nurse is scheduled in agreement with the working hours of primary care staff.

Other conditions substantial for the maximisation of the profit of wound treatment in the patients' homes is the willingness to collaborate as well as mutual learning in both secondary and primary care with a view to increasing the quality of wound treatment. Moreover, it is essential that organisational conditions for continuity and learning are ensured and that a mutual collaboration between patients, outgoing wound nurses and primary care nurses is established.

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