GLADSAXE

GLADSAXE MUNICIPALITY
Social Services & Health Department – Welfare Technology

# MEMORANDUM

Evaluation of the Careturner from GDV Technology

Date: 14 July 2017
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## Introduction

The following is an overview of employee evaluations of 5 turning beds[1] in Gladsaxe Municipality at Senior Center Egegården and Senior Center Møllegården. The evaluation is based on interviews with select employees in the care facilities, i.e. social services assistants, health care workers, physiotherapists, and occupational therapists[2], whose daily tasks include the training and personal care of immobile residents. The approach to and method for evaluation is described in the attached appendix[3]. The target users for the bed are immobile residents and those at risk for decubitus ulcers[4].

## Purpose

The purpose of the evaluation is to explore how, in the experience of the staff, the Careturner affects the quality of care, the work environment, and the operation of the senior centers. Furthermore, the functionality, user-friendliness, and operation of the Careturner are examined in detail. The four categories of this report are:

- The effect of the Careturner on the residents (as experienced by the care staff)
- The effect of the Careturner on the work environment
- Evaluation of functionality and user-friendliness
- Evaluation of the effect of the Careturner on the operation of the senior centers[5]

## Summary/conclusion

In the experience of the employees, the Careturner had a positive influence on care of immobile residents, e.g. in form of fewer incidents of disturbing the residents at night. The work environment of the staff was also rated as significantly improved as a result of the Careturner settings making the work less physically strenuous. The staff was also less exposed to punches etc. from externalizing residents. The control panel for the bed, however, should be easier to understand, and the automatic function should be fitted with a mechanism, so the bed doesn't need to be turned on and off every day.
To a limited extent, the bed frees up resources in situations where the bed enables a single staff to provide the needed care and/or transfer.

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[1] The Careturner has been used in Gladsaxe Municipality since September 2016. A top module is installed on top of Gladsaxe Municipality's regular hospital beds. This enables staff to wrap the mattress, both lengthwise and widthwise. An electronic control panel makes it possible to turn the resident automatically during the night. It should be noted that this evaluation covers the earliest version of the Careturner from GDV Technology, which has since been developed further.

[2] The interviewed therapists are key persons in regard to the use and operation of the Careturner.

[3] For insight into the experiences and evaluations of other municipalities, we refer you to GDV Technology's summary

[4] The Careturner was developed for individuals in the health care sector who are at risk for decubitus ulcers and serves a wide target group consisting of immobile residents with e.g. apoplexy, osteoporosis, dementia, etc. Furthermore, Gladsaxe Municipality uses the turning bed for terminally ill residents.

[5] The evaluation does not calculate the financial effect of the five turning beds, but rather explores whether Careturner may free up resources in concrete work situations.

## The effect of the Careturner on the residents from the perspective of the care staff

*The resident is disturbed less during the night and sleeps better*
In the experience of the staff, there is less need for staff to move the residents manually at night, as the Careturner can turn the resident automatically. This means that the resident is disturbed less frequently and sleeps better.

*Greater safety for the resident*
Furthermore, in the experience of the staff, residents at risk for decubitus ulcers who are also externalizing, are safer and calmer in a turning bed compared to an alternating pressure air mattress. This is due to the fact that staff in certain care situations can avoid physical contact with the resident, which can be difficult for e.g. those with dementia, and which can therefore cause them to react negatively.

*Gentle for the dying and for residents with tactile issues*
The staff also uses the Careturner for dying residents. Without the Careturner, the staff has to move the residents manually, but with the Careturner the staff avoids excess lifting. In this regard, the Careturner is evaluated as gentle on dying residents.

In combination with the Careturner, the senior centers use a mattress that is relatively hard, which enables the person lying in bed to feel his or her own body. The staff considers this an advantage for residents with tactile issues. For them, an alternating pressure air mattress (with air) feels airy and uncomfortable.

*Less noise*
Compared to the alternating pressure air mattress, for instance, the Careturner emits considerably less environmental sound/noise. This is considered an advantage, particularly for residents with cognitive issues that make them especially sensitive to sound.

*Pain relieving*
At Senior Center Egegården, one resident experienced significantly reduced pain and tightness in his back in connection with trying out the Careturner. After the testing, the resident was therefore given one of the municipality's five turning beds.

*Skepticism as far as relieving effect on decubitus ulcers*
Care staff and therapists are skeptical as far as the relieving effect of Careturner on decubitus ulcers. For this, there is still a lack of evidence on the level of what is available for alternating pressure air mattresses. This means that, all other things being equal, therapists assign residents with decubitus ulcers or at high risk for decubitus ulcers to an alternating pressure air mattress.

## The effect of the Careturner on the care staff's work environment

*Less strenuous work positions when using the turning bed*
In the experience of the care staff, many work situations are much improved with the Careturner, as the bed enables care to be provided in less strenuous work positions. This is the case for personal care, as well as wound care and transitions.

*Positive contact between resident and care staff*
The staff also reports that externalizing residents can make it challenging to maintain positive contact. Here, the Careturner contributes constructively because the staff gets hit and scratched less by externalizing residents. This is mainly due to the automatic function taking over the turning of residents at night, so they don't need waking.

*Need for management to prioritize and maintain focus on new workflow*
The interviewees express that it is a challenge to get all shifts and all professional groups involved. Nonetheless, it is necessary that everyone using the bed is knowledgeable about the settings, operation, etc. of the bed. The cooperation between transitioning counselors, therapists, and care staff is emphasized as having contributed positively to familiarizing everyone with the turning bed. There is, however, relatively large turnover in personnel at both senior centers. This fact is seen by the interviewees as creating an even greater need for management to focus on correct operation and focus on the new workflow that supports correct operation.

## Evaluation of the user-friendliness and functionality of the Careturner

*Need for a control panel that is easier to read and use*
It is the experience of one of the interviewees that the control panel is difficult to read and understand. She explains that it was necessary for her to consult the manual to understand and refresh her memory about the meaning of the bed's standard programs, P01 and P02. Since three shifts and many colleagues use the bed and the panel, they request a more intuitive control panel that is easier to understand and use.

*Need for confirmation when new settings are entered*
It is also a challenge for the staff to ensure that the Careturner moves precisely as intended. It takes too long from the time of setting until the bed moves, and by then the therapist has moved on to the next resident. Therefore, they want immediate confirmation that the bed is performing the desired function. This mechanism will make it easier for therapists to ensure that the bed is moving as desired.

*Risk of the automatic turning function not being activated*
Since activation of the bed's automatic function requires a power supply, there is a risk of staff forgetting or accidentally failing to connect the Careturner to the power supply.
Thus, this creates the need for a completely new work process, which is to ensure connection to power before bedtime, when the bed is supposed to turn the resident automatically.

In that context, the interviewees suggest that the supplier come up with a preset or timer solution. The solution should enable the therapists to preprogram periods of manual and automatic turnings, respectively. It is assessed that such as solution would make checking the power connections unnecessary and reduce the risk of errors.

*Mattress quality and mattress alternatives should be considered*
One employee points out that the particular mattress used in combination with the turning bed at Egegården was assessed to be of poor quality. There are better alternatives, which the employee suggests Gladsaxe Municipality and/or the supplier look into further.

One employee also suggests that Gladsaxe Municipality evaluate whether Careturner could be supplemented by other bed technologies, such as water mattresses and waterbeds. Among others, she is thinking of residents with dementia who are not necessarily suffering from or at risk for decubitus ulcers, but who may benefit from lying on other types of sensory stimulating surfaces.

## Evaluation of the effect on the Careturner on the operation of the senior centers

*Capacity utilization of the five turning beds*
The three turning beds at Senior Center Egegården were assessed to be utilized somewhere between 80 to 100 percent throughout the period, while Møllegården assessed that theirs was utilized ca. 70 percent of the time.

Both senior centers indicate that they could use more turning beds, i.e. the need is assessed to exceed what five beds are able to meet. This evaluation, however, did not explore the need for more turning beds at the two senior centers.

*Less demanding care tasks can be performed by one rather than 2 employees*
The staff explains that in certain care situations, the Careturner eases the workload on the care staff to an extent that enables them to go from 2 employees to 1. Among other things, this applies to situations where staff performs light personal care. In case of more extensive care tasks, e.g. when a resident also had a bowel movement, two employees are still required. The resource-freeing potential of the Careturner is therefore considered limited.

## Conclusion
Cf. page 1.

## Method

### Purpose

The Department of Welfare Technology's evaluation of the Careturner is intended to create a basis for deciding whether use of the Careturner should be implemented to a greater extent in Gladsaxe Municipality.

Therefore, the evaluation explores whether, in the experience of the staff, the Careturner affects the quality of care, the work environment, and the operation of the senior centers. Furthermore, the functionality, user-friendliness, and operation of the Careturner are examined in detail. The evaluation is divided into four categories:

- The effect of the Careturner on the residents (as experienced by the care staff)
- The effect of the Careturner on the work environment
- Evaluation of functionality and user-friendliness
- Evaluation of the effect of the Careturner on the operation of the senior centers[6]

The above categories are inspired by the approach of the Technological Institute in evaluating welfare technology, the VTV model[7]. The VTV model offers a structure for evaluating welfare technology. The model is primarily used as an aid in structuring and dividing employee statements into meaningful categories. Therefore, the evaluation does not follow the evaluation method of VTV, nor does it cover every aspect of VTV.

### Process evaluation

The evaluation is developed with a focus on processes that impact use of the technology and opportunities to further develop the technology. This should be viewed in the context of the Careturner having potential, both in terms of improving quality of care for the resident (e.g. fewer disturbances at night), of the work environment for the staff (e.g. in form of less strenuous working positions), and operational and resource potential (e.g. in form of less resources to do various care tasks).

### Evaluation criteria

The evaluation criteria are the topics guiding and structuring the evaluation, including whether the Careturners have really been used as intended, and if they have had the intended effect in terms of creating:

1) Better quality of care for the resident
2) Better working environment for the staff
3) Better utilization of resources (operations) at the senior centers

### Assumptions

Among the hypotheses of the evaluators, on which the questions are based, are:

- The turning bed improves the chance of providing the resident with better quality of life

[6] The evaluation does not calculate the financial effect of the five turning beds, but rather explores whether the Careturner may free up resources in concrete work situations.

[7] Read more about the VTV model here: https://www.teknologisk.dk/ydelser/vtv-velfaerdsteknologivurde- ring/32944

    - This is indicated by things like the users of the Careturners experiencing better sleep and/or better well-being.
- The turning bed eases the workload on the employees
    - Manual and strenuous working positions that used to be required are no longer necessary to the same extent or at all.
- The turning bed enables better use of the senior centers' resources, as resources are freed up for other tasks.
    - It means, for instance, that during the night the resources at Senior Center Egegården and Senior Center Møllegården can be utilized more effectively, because the resident is turned automatically.

Selection of interview participants
The evaluation was developed in collaboration with select employees in the departments that actually use the turning bed, including therapists, assistants, and aids.

The evaluation explores whether any positive or negative effects of the Careturner are attributable to the technology or to other circumstances during the period. E.g. training employees in the use of the technology is an important prerequisite for the employees understanding the possibilities and limitations of the technology, and it is necessary for correct operation.

Semi-structured qualitative interview
The topics and questions of the evaluation are not 100 percent determined ahead of time, but a question framework is established based on the evaluator's assumptions about the potential of the technology within certain categories. In that way, the evaluation is kept open to including employee input and experiences in terms of the possibilities and limitations of the technology.

The question framework was sent by e-mail ahead of the interview, so the interviewee would be able to prepare.

The evaluator sent a summary of the main interview points to the interviewee for comments and approval, or to a representative in case of a group interview.

Scope
The data collection consisted solely of qualitative interviews and product information from GDV Technology. As an example, the evaluation does not include data from the municipality's care system, which may yield more precise information about users of the Careturner, and the organization's capacity utilization and capacity needs, etc. Because of the chosen method, the evaluation does not thoroughly/precisely answer questions related to the health challenges of the target group, or how intensively, the five turning beds were utilized during the period, etc.[8] The Department of Welfare Technology will, in the future, explore the possibility of getting consent from the residents for the purpose of examining the target group and capacity utilization more closely.

[8] E.g. calculated as annual bed occupancy rate or a similar parameter to express capacity utilization intensity.