



Careturner®  
INNOVATIVE CARE TECHNOLOGY

# Case Studies

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# CASE STUDY 1

*A male patient with tetraplegia, tracheostomy and a speech disorder that renders unable to verbally communicate. Aarhus municipality, Denmark*

## CHALLENGES FACED

The patient needs to be turned every two hours. Due to his disease, the patient cannot spend more than two hours per day in a chair. This was a great workload for the personnel, both psychically and in time consumed aiding to the citizen. Turning always required that two persons were present. The patient was at great risk for developing pressure ulcers.

## RESULT

Benefits when using Careturner:

## AIMS

1. Pressure ulcer prevention
2. Reduce number of manual turnings
3. Improve the patient's quality of sleep

## SOLUTION

Careturmer was programmed 30° with 12° support to reposition every 30 min.

<b>PATIENT</b>	<b>CARE STAFF</b>	<b>ORGANIZATION</b>
<ul style="list-style-type: none"> <li>· Avoids waking up at night = better sleep</li> <li>· Avoids pressure ulcers</li> <li>· Calm turning/feels safe</li> <li>· Improved mobilizing of lung function due to more frequent turnings</li> <li>· Improved position due to the support from the bed + Careturner</li> </ul>	<ul style="list-style-type: none"> <li>· No manual turning. Earlier, turning every 2nd hour</li> <li>· Aid when helping with personal hygiene = less strain on the body</li> <li>· Aid when using a sail = less strain on the body. Easier moving of the citizen sideways in bed, since it is possible to tilt the wings manually</li> <li>· Fewer pains from back and neck/shoulder</li> <li>· Significantly less time spent with the citizen, especially in the evenings and during nighttime. The citizen only needs supervision and no turning.</li> <li>· Easy to operate.</li> <li>· Fewer personnel; from 2 1</li> </ul>	<ul style="list-style-type: none"> <li>· Economical savings due to less hours spent aiding the citizen</li> <li>· Easy to operate. Settings can easily be changed</li> <li>· Works with the bed's other functions</li> <li>· Only a regular foam mattress is needed = economical savings compared to using other types of mattresses</li> <li>· Less strain on personnel</li> <li>· Focus on fewer hospitalizations in Aarhus municipality</li> </ul>
<p><b>Risk of developing pressure ulcers now only when in wheelchair</b></p>	<p><b>Time spent before Careturner 120-140 min.</b> <b>Time spent with Careturner 20-30 min.</b></p>	<p><b>Reduced man hours with 78-83%</b></p>

## CASE STUDY 2

*Female wheelchair user, has previously had pressure sores, gets angry at the night shift workers, turned 3 times a night. Kolding municipality, Denmark.*

### CHALLENGES FACED

Patients is anxious which is linked to her dementia and causes her to become difficult and uncooperative when care staff attempt to turn her or reposition her.

### AIMS

1. Prevent further development of pressure ulcers
2. Reduce manual repositioning of patient
3. Improve patient's quality of sleep
4. Improve cooperation with care staff

### SOLUTION

Careturner was programmed to "hug" the patient – after two hours the care staff activated the automated repositioning program: changing position from left side to right side (cradling) every 30 min.

### RESULT

Patients sleeps during the night and redness in her skin has decreased. Because of better sleep she was more active during the day and had better communication with the care staff. The patient said: *"If I knew it was going to be so good, I would have purchased the bed myself long time ago".*

## CASE STUDY 3

*Male patient living at home at high risk of developing pressure ulcers who suffers with back pain and red spots on her skin. He uses an air mattress. Assens municipality, Denmark.*

### CHALLENGES FACED

Patient lives at home, he has been suffering from poor sleep for many years due to turnings during the night and reports back pain.

### AIMS

1. Improvement of the patient's quality of sleep
2. Prevent further development of pressure ulcers
3. Save nurses for night visits (transport and time)

### SOLUTION

Two individual repositioning programs for day and night, when patient is in bed. Programs are either activated by relatives or care staff.

### RESULT

The patient doesn't wake up with the automatic repositioning. *He sleeps better and sleeps "right through" and improvement in redness following the replacement of the air mattress with Careturner.* The patient is no longer disturbed by care staff during the night and the municipality has reduced personnel hours – **annual saving of 6700 EUR.**



# HEALTH TECHNOLOGY ASSESSMENT OF CARETUNER 1. ELDER CENTER BROPARKEN, RØDOVRE DENMARK.



*Can the citizen have a calmer night without disturbances and thus more profit for everyday life?  
Can Careturner be a help to the nursing staff in the personal care and in transfers?*

## CHALLENGES FACED

The purpose of the project was to demonstrate whether using a Careturner could provide the resident with a calmer night without disturbances, resulting in more energy and greater quality of life in their day-to-day lives. Furthermore, the purpose was to show whether a Careturner could assist the care staff in connection with personal care and transfers.

## AIMS

1. Quieter nights and fewer disturbances of the patients
2. More surplus of the patient and greater quality of life
3. Assistance with personal care and assistance with patient transfer

## RESULT

**Operation:** *Careturmer means that we can provide better care with fewer resources, as we can avoid pressure ulcers which are very expensive to treat, and the night staff can avoid spending time on turns.*

**Patient:** Careturner gives the patients a quieter night's sleep without interruption. Three out of four patients experienced that the Careturner has resulted in fewer back problems.

**Staff:** The staff is motivated to use the Careturner, as they experience that it relieves heavy lifting and supports personal care in bed.

## CONCLUSION

Based on the test, we can conclude that ***Careturmer gives patients an undisturbed sleep, as they are not disturbed by the night shift by repositioning and pressure ulcers are prevented.*** Careturner is very quiet, which is an advantage over other mattresses for pressure ulcer prevention, which are generally very noisy.

Careturmer is easy and safe to use, the staff is happy with this aid which supports and helps in the care, so that the staff can avoid twists in the back and heavy transfers.



# HEALTH TECHNOLOGY ASSESSMENT OF CARETUNER 2. SENIOR CENTER EGEGÅRDEN, GLADSAXE DENMARK.



*How do the staff experience the quality of the care, the working environment, and the operation of the senior centers? How does the staff experience the effect on the citizens?*

## CHALLENGES FACED

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

## AIMS

1. The effect of the Caretuner on the residents (as experienced by the care staff)
2. The effect of the Caretuner on the work environment
3. Evaluation of functionality and user-friendliness
4. Evaluation of the effect of the Caretuner on the operation of the senior centers

## RESULT

### **Patient:**

- More security for the patient.

*The staff experience those patients who are in risk of pressure ulcers and outward reacting are safer and calmer when Caretuner is used, compared to an alternating pressure mattress. This is because the staff, in certain care situations, can avoid physical contact with the citizen, who i.a. dementia can react negatively to.*

- Gentle on the dying and citizens with tactile issues.

*Staff also use Caretuner for dying citizens. Without the system, staff have to make the transfers manually, but during use of Caretuner they avoid inappropriate lifting. In this way, the system is assessed gently towards dying citizens.*

- Less noise.

*Compared to e.g. the alternating pressure mattress emits Caretuner significantly less noise / noise impact. It is considered beneficial especially for citizens with cognitive issues that may make them particularly sensitive to sound.*

- Pain relieving.

*At Seniorcenter Egegården, a citizen has experienced that pain and tension in the back became significantly less during testing of Caretuner.*

### **Staff**

- Less strenuous work positions with Caretuner

*In the experience of the care staff, many work situations are much improved with the Caretuner, as the Caretuner 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 patient and care staff

*The staff also reports that externalizing residents can make it challenging to maintain positive contact. Here, the Caretuner 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.*

## CONCLUSION

The care staff generally experience that the Caretuner has a positive effect on the quality of care for immobile citizens, e.g. in the form of fewer nightly disturbances of the patients. The staff's working environment is also assessed to be significantly improved because of the automatic turning system's setting options, which make the work less physically exhausting. The staff is also to a lesser extent exposed to blows etc. from extroverted citizens.

