GEDRAG

Seba

Design: ArjoHuntleigh

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Generally, 'Toegepast' (Applied) starts with a design agency, that has a question for the development of a new product. The emphasis is then on the design of the product with ergonomics in mind. In this article the project begins at the fuzzy front end of the design process.

The R&D department of ArjoHuntleigh, a company in care products, started with a general research without any specific product groups in mind. They invited 30 healthcare providers for a workshop. The assignment was to find out what kind of product is needed to get people out of bed an hour earlier. During this workshop, different areas were found that were interesting for further exploration. This was done by observations and interviews with caregivers on the specific subject, for instance on beds, iv poles, lifting aids, et cetera.

The results of the workshops consisted of several solutions and design directions in the different areas. This was input for brainstorm sessions with the designers. These brainstorm sessions were actually 'build sessions' with the designers, which ArjoHuntleigh calls 'pretotyping'. During these sessions, ideas of products are illustrated by building simple prototypes using cardboard, tape, et cetera, to find out quickly what could work. The designers recorded short scenarios of the identified problems and found solutions (bodystorming). In these videos of around 10-15 seconds designers simulate what the product would do, as there is not a finished product yet. In this way the interaction of specific jobs is made visible to caregivers. Although this is low-cost and could look quite funny, it's a serious communication tool. Caregivers can reflect on the presented problems and solutions and are asked for feedback.

In this early phase in product development, the designers must be ready to 'kill their darlings'. They first estimate the feasibility of ideas themselves and then use the feedback of caregivers on the videos. The ArjoHuntleigh board also has to decide whether the idea is sufficiently marketable to invest in. Less than 5% of the ideas survive this phase.

Development of Seba

One of the areas that came from the general research was an aid to support caregivers with patients and residents with mobility problems in acute or long term care. It was interesting to find out what the daily challenges are and what the similarity or differences are in caring for these two groups. They found out that for acute care, the focus is on treatment that needs to be fast and efficient, and avoiding 'never events'. For long term care, it is about a place to stay for the residents, where happiness is the success factor.

From the perspective of mobility in acute and long term care, the Alberts, Carls and Emmas are treated the same in their mobility group (ArjoHuntleigh has named the patients in the categories for easy communication in the Mobility Gallery™, see figure 1). However, the flow differs; in acute care the patient is mostly an Emma (in bed) and has to become an Albert (mobile) as quick as possible. In long term care the flow is for an Albert to become an Emma as slow as possible.

ArjoHuntleigh looked at the challenges. The safety and health of the patient is important, as is the prevention of 'never events' like pressure ulcers, thrombosis or falls. Health and safety is also

important for the nurse and health care provider. The research gave different areas for new product development. One of the possible areas was to focus on how to help the patients get out of bed. How could these patients become or stay more mobile and how could this be supported?

They found out that around 40% of the patients need help getting out of bed 6-8 times a day for e.g. visiting the toilet or going to eat. Helping the patients out of bed is not perceived as a problem by caregivers, as they see it as a prerequisite, as a normal daily event. However, when asked, 50% finds it more difficult to get a patient in bed and 50% thinks getting out of bed is harder to do. It depends on their own physical abilities and the type of patients.

To get a patient out of bed, the nurse can roll the body of the patient on its side (using the log roll technique as advised by physiotherapists) before helping the patient up with his legs over the side of the bed. However, nurses still like to use a scooping technique to get a patient upright. Getting in bed, the patient sits on the edge of the bed. The caregiver will lift the legs in bed, with the patient lying down on the side. Then the patient will lie on his back. Helping the body upright or lie down and lifting legs are heavy tasks for a caregiver.

One of the solutions is to use the headrest to get the patient in an upright sitting position. In theory, this is an interesting solution. In practice the patient slides down when using a headrest in normal lying position. So to use the headrest for getting up, the patient has to be pulled up first, which again is a heavy task and should be avoided.

Another solution was to integrate it as a function in the bed. However, this would make the bed more expensive. Therefore, it would only be integrated in beds for acute care and not in beds for long term care, which are cheaper. This solution would not only reduce the market for the product, but also limit the access for caregivers to a beneficial aid.

Another solution that the engineers thought of was a motorized or a robotic aid. However, this would be too costly and, on further thought, would not be necessary.

The final solution (resulting in the Seba), makes use of the weight of the different body segments to get the patient to an upright position, like a lever. As the

majority of the weight is in the upper body, the hip is used as a pivot point. The weight of the upper body thus helps with lifting the legs.

The 'pretotype' was made of dark wood. Because of its color, there were negative reactions that it looked like a coal shovel. After caregivers could see through the appearance, feedback could be asked to optimize the solution. The focus was to continue communicating with caregivers to finish with a product that would fulfill their needs.

The end product is symmetrical (see figure 3), to be used on the left and right side of the bed. The patient will be lifted in a straight, not bend, position, which is also better for the patient. The handles for the caregiver are for controlling the movement and will make sure that it stands in the right position. The handle for the patient will give him a safe feeling and ensure that the patient won't take hold of the caregiver during the transfer.

The solution with these kind of products is not only creating the aids, but also creating awareness with the caregivers of the risks of lifting. A product can only support a caregiver when being used.

Reference

Never Events are serious, largely preventable patient safety incidents that should not occur if the available preventative measures have been implemented. (National Health Service (NHS) UK.)