Experiences from an innovative public-private partnership: developing the Patient Transfer and Rehabilitation (PTR) Robot

CONFERECE ABSTRACT

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Public-private partnerships (PPPs) are increasingly used to develop, finance, and provide public health infrastructure and service delivery [1]. They combine the strengths of private actors, e.g., innovation, technical knowledge, and entrepreneurial spirit, with the knowledge and social responsibility of public actors to develop beneficial health outcomes. However, literature indicates that further research is necessary to understand the conditions and impact of such collaborations to suggest when, how and to what extent PPPs should be favored [2].

This paper presents a PPP between the Region Zealand University Hospital, Køge and Blue Ocean Robotics. The result of this innovative collaboration is the Patient Transfer and Rehabilitation (PTR) Robot that has been developed to reduce healthcare professionals' injuries and support them in their work, providing patients a higher quality of care.

Hospitals spend a lot of resources on conventional patient handling procedures and manual patient handling is not an effective way to reduce injuries to caregivers, due to high risks of musculoskeletal overexertion and acute onset. Thus, the hospital looked for more efficient and flexible alternatives that would benefit both patient and caregiver and integrate rehabilitation in the daily care routines.

The project began in 2016 and included a mix of methodologies that had patients and caregivers in focus. This paper presents the results collected in the last phase of the project during the introduction of the new technology into the hospital’s wards.

In 2021, two PTR Robots were delivered to the hospital. Two main actions were planned to onboard the users: a) introductory workshop with 211 healthcare professionals from different wards (orthopedic, surgical, and geriatric) and b) “superusers” training. Besides the need to gather qualitative feedback from real users, the workshop sessions were strategic to arouse curiosity, engagement, and motivation about the robot in their workplace.

At the end of the introductory workshop, participants filled out a usability questionnaire, which was applied to quantify their experiences:

- 93% of participants agreed that PTR Robot is easy to use.
- 94% of participants agreed they would use PTR Robot again in their workplace.
88% of participants agreed that PTR Robot is quick to learn.

In the second stage, small groups from the hospital’s staff were educated as “superusers”. Based on the ethnographic approach, the “superusers” act as the key-informants of the development team, as well as “coaches” of the rest of the hospital staff.

The paper gives insights into practices of a successful PPP. The results can guide healthcare institutions to better understand how to enable new collaborations and what activities have higher possibility for success. Limitations concern the applicability of the results as these are based on a single PPP with two partners from the same country focusing on the development of robotics technology.
