DISCRETE

Incontinence management through ambient monitoring and actionable data

HEALTH

"The DISCRETE project will develop a sensor-equipped smart bed and accompanying intelligent infrastructure and software tools to optimize incontinence care management in nursing homes by turning data into knowledge and create actions for personnel, contributing to greater efficiency, lower costs and better Quality of Care for residents."

Incontinence management through ambient monitoring and actionable data

Incontinence care management in nursing homes is a key element of Quality of Care (QoC). The DISCRETE project will support this goal using the Internet of Things (IoT). Non-obtrusive sensors will be embedded in a smart, IoT-connected bed, and the data collected by these sensors using the nurse call system as connected gateway will be combined with the resident's care profile. The information will be analyzed and visualized through a dynamic platform and dashboard able to generate smart alerts and care recommendations. The aim is to improve the lives of nursing home residents, reduce the workloads of caregivers and boost efficiency of nursing homes.

Preparing to optimally care for an aging population

Urinary and fecal incontinence affect more than half of nursing home residents, monopolizing caregiving efforts. This issue will only become more prevalent as society ages. Consequently, budgets and workloads will be stretched to accommodate the check-ups, support and administrative work needed to provide quality nursing care. In addition, current care practices are often inefficient, manual and expensive, possibly resulting in accidents, unnecessary check-ups and lower well-being for residents.

Integrating current approaches with new technologies

An ideal solution to these challenges incorporates existing infrastructure and applications such as the nurse call system and resident care files. The DISCRETE consortium is made up of industrial and academic partners involved in the nursing home ecosystem, including two nursing homes. The partners will develop a multi-sensor IoT system that monitors incontinence status and integrates personalized and actionable data smoothly with current practices to improve care and efficiency in nursing facilities by means of advanced machine learning and recommender engines.

Real-time accident detection for personalized care

The DISCRETE project has outlined three primary goals:

1. To develop a secure IoT infrastructure using existing technologies to capture sensor data.
2. To create algorithms that enable the accurate, personalized, real-time detection of incontinence episodes.
3. To use data insights as the foundation for actionable recommendations on a case-by-case basis.

Improving the overall way nursing homes are managed

The sensor-equipped smart bed, intelligent infrastructure, altering system and care software platform will be validated in two collaborating nursing homes through a user-driven design process. Incontinence management and task planning will be automated. Data analytics capabilities enabled by the DISCRETE solution will contribute to efficiency, improved working conditions and better Quality of Care for residents.

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Project information

Industry

- Computer Management and Services
- Distrac
- OCMW Kortrijk
- Televic Healthcare
- WZC Sint-Bernardus

Research

- imec-DistriNet-KULeuven
- imec-STADIUS-KULeuven
- KULeuven-HCI
- KULeuven-LRD

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