

# OPP: OTHERS

## Washable, absorbent underwear with low environmental impact for long-term care

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**Purpose** In the Netherlands, approximately one million people (around 750,000 women and 250,000 men) have some form of incontinence (Ooms et al. 2023). Fifty percent among the elderly residents in nursing homes and 90% in care facilities suffer from incontinence (Largo & Theunissen 2009). In long-term care, more than half of the waste consists of incontinence materials. It is important for our climate and therefore for everyone's health to reduce this enormous mountain of disposable incontinence materials. As a result, there is a significant CO2 emission. Reducing CO2 emission is one of the five pillars of the Green Deal Sustainable Care 3.0. The Green Deal Sustainable Healthcare is an initiative of the Dutch government to make the healthcare sector more sustainable. The aim is to reduce CO2 emissions in the healthcare sector while simultaneously improving the quality of care. The use of reusable incontinence materials is a good example in this regard. Priovention is committed to ending CO2 emissions from disposable diapers. To address this, they have developed the INDI (Intelligent Diaper), a sustainable, washable absorbent underwear, and the Ecosystem, a local collection, washing, and delivery service tailored for care facilities. This initiative not only reduces CO2 emissions but also enhances the quality of life for care recipients by prioritizing comfort. Priovention also aims to support healthcare personnel through future technological innovations. Success hinges on the support of all staff in long-term care facilities, considering factors like costs, product usage, logistics, and alignment with initiatives like the Green Deal Sustainable Care. **Method** A mixed-method approach was used to investigate the impact of INDI and its ecosystem on cost savings and waste reduction in healthcare institutions. Qualitative methods included a literature review and analysis of secondary data. Quantitative analysis, such as break-even analysis, was conducted to determine the number of residents needed to cover INDI costs. Interviews with stakeholders supplemented data collection. Additionally, a tour of Priovention provided insights into product and company objectives. **Results and Discussion** Our results indicate that the use of INDI and its associated ecosystem can have an impact on cost reduction and waste reduction in long-term care. Priovention's optimization strategies for the logistical process, such as adaptation to various care facilities, implementation of advanced route planning systems, batch processing of INDI units, collaboration between care facilities, flexible pickup and delivery schedules, advanced RFID technology, technological innovations, and continuous performance evaluation, could contribute to a more flexible and efficient use of INDI in diverse care environments. Compared to disposable incontinence materials, INDI has several positive features such as environmental friendliness, comfort, hygiene, improved traceability, customized product options, and durability. These benefits contribute to reducing CO2 emissions and waste, aligning with sustainable practices. Despite these advantages, there are also challenges and obstacles, such as initial costs for care facilities, logistical challenges, the need for acceptance and collaboration and volume differences. Striking a balance between ecological benefits and feasibility in diverse care facilities remains crucial. The literature review supports Priovention's innovative approach, emphasizing sustainability in long-term care. INDI and the ecosystem play an essential role in reducing CO2 emissions, minimizing waste, and contributing to broader sustainability initiatives in healthcare.

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