

Managing severe urinary incontinence in older women in European nursing homes: towards dignified, sustainable, and equitable care

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Executive summary

Urinary incontinence (UI) is a pervasive yet under-addressed health issue in Europe, disproportionately affecting older women, particularly those residing in nursing homes (NHs) with prevalence rates reaching up to 67%. UI significantly impacts patient dignity, independence, and quality of life (QoL). The economic burden of UI in Europe (EU+5) is nearly €70 billion annually, a figure expected to rise by 25% by 2030 due to an aging population. Its economic burden is comparable to that of major chronic diseases like diabetes and cancer.

Current UI management practices, such as the extensive use of absorbent hygiene products (AHPs), contribute to substantial healthcare waste and carbon emissions. Adult AHPs constitute 4.8% of municipal waste by weight, compared to 2.7% for infant diapers. The environmental impact of these fossil fuel-based products is significant, driving global warming and ecological deterioration. Transitioning to more sustainable UI management practices is therefore crucial.

Poorly managed UI leads to various health complications, including urinary tract infections (UTIs), catheter-associated urinary tract infections (CAUTIs), incontinence-associated dermatitis (IADs), and pressure ulcers. It is further associated with adverse mental health outcomes among NH residents, leading to isolation, depression, and reduced QoL. The management of UI is time-intensive, thereby further straining already overworked NH staff and contributing to high turnover rates.

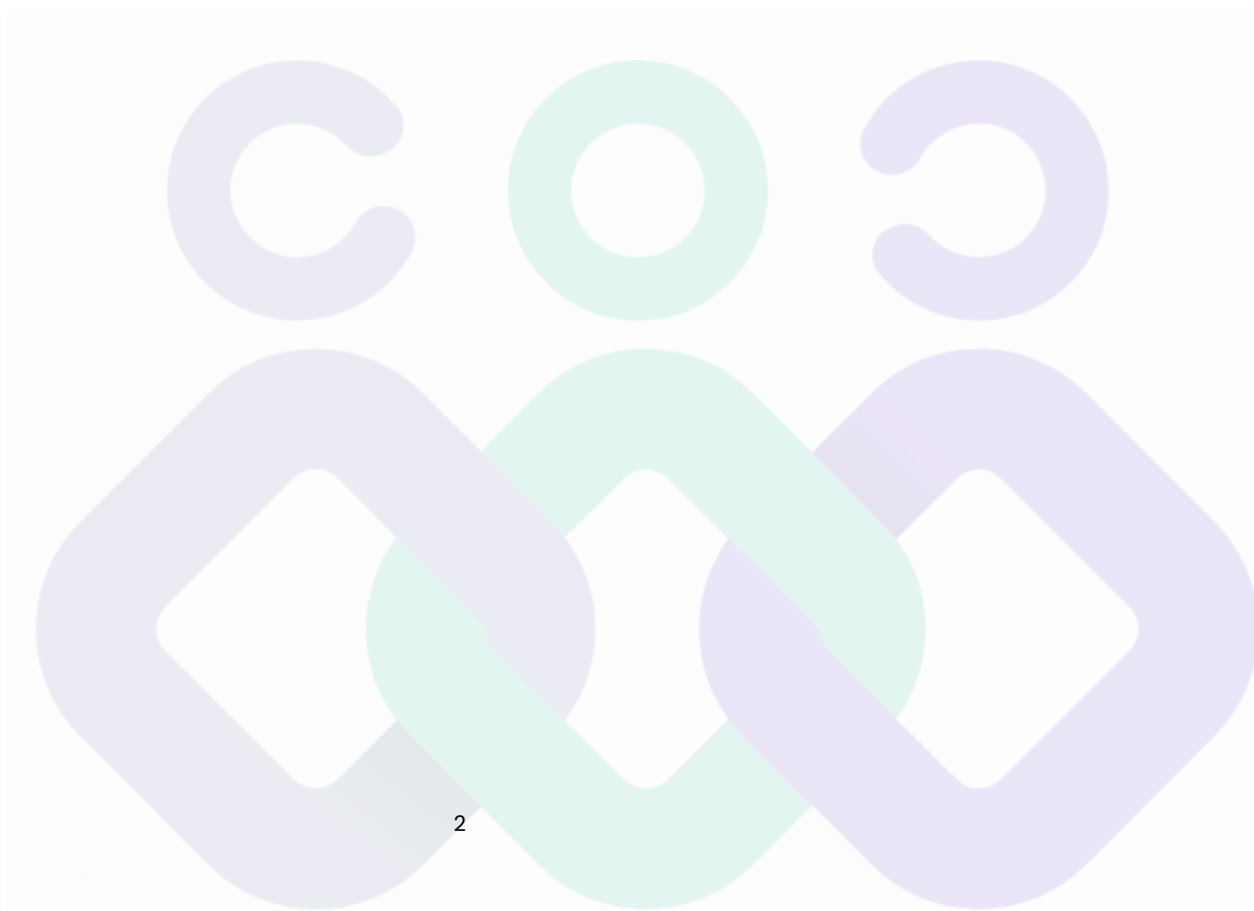
Personalised, preventative care strategies and comprehensive education for NH staff together with the adoption of patient-centred, sustainable and innovative solutions are essential for effective UI management. Novel applications such as the URinControl App support the containment of UI through patient-centred and personalised training. Additionally, innovative solutions such as Female Urine Collection Devices preserve skin health, reduce the risk for skin complications such as IADs, and prevent the development of CAUTIs.

EU and national policymakers should elevate the visibility of UI by integrating it into aging, long-term care, and broader health strategies to improve its management and reduce its burden on NHs. They should advocate for policies that reduce the environmental impact of UI management, aligning with the EU's green transition objectives. To improve the education of health and care workers, EU member states should ensure the inclusion of continence health into all relevant education and training curricula and funding should be made available under relevant EU funding streams to improve the prevention and management of UI. Additionally, a dedicated EU Strategy on Women's Health with a focus on UI should be created, ensuring a life-course approach to women's health while bridging the women's health gap. Finally, minimum quality indicators should be introduced in long-term care facilities across EU Member States and monitored to enhance transparency and quality of care.

This report presents the first action of ALLIAX – the European Alliance for managing severe chronic urinary incontinence in older women in nursing homes – to initiate a transformation of the management of persistent UI in older women residing in NHs across the EU. It is divided into four main sections, introducing the issue with data on the prevalence and economic impact of UI, followed by a description of the impact of current practices in the management of UI in NHs and the associated clinical, mental, and environmental complications. The following section presents patient-centred solutions and innovative alternatives to current practices, and the last section is a call to action with recommendations for policymakers and healthcare managers.

Table of contents

Executive summary	1
Acknowledgements.....	3
Endorsements.....	3
Introduction	4
Prevalence	5
Economic burden.....	6
Current UI management practices in NHS	6
Environmental impact	6
Clinical burden.....	7
Urinary tract infections (UTIs) and catheter-associated urinary tract infections (CAUTIs)	7
Incontinence-associated dermatitis (IAD) and pressure ulcers	8
Falls and dehydration.....	8
Quality of life and mental health	9
Physicians, nurses and care staff implications.....	9
Solutions and innovative practices	10
Preventative and holistic care approaches.....	10
Innovative solutions.....	11
Recommendations and policy action	12
Conclusions	13



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Endorsements

This white paper has been endorsed by the following organisations:



The EAU acknowledges the importance of addressing the needs of older adult women in managing urinary incontinence and raising awareness about these challenges. While current solutions, including female external urine wicking devices (FEUWD), are evolving, there is no single optimal approach at present. More research is needed to better understand effective strategies and to develop solutions that truly meet women's needs.

Introduction

Urinary incontinence (UI) is one of the most common geriatric syndromes in older populations¹. It is defined as the complaint of any involuntary leakage of urine by the International Continence Society² and may result from or be associated with persistent issues such as neurological disorders, diabetes, or other chronic conditions^{3,4}. Unlike transient UI, which resolves once the underlying cause is treated⁵, persistent or chronic UI requires ongoing management and treatment. UI is associated with various physical (functional decline, dermatitis, pressure ulcers, falls, infections), cognitive (dementia) and psychosocial (social isolation, depression, reduced quality of life) health conditions^{1,3}. While an estimated 55 to 60 million Europeans suffer from poor continence health (the ability to control bladder and bowel functions, thereby preventing involuntary leakage of urine or faeces), it does not receive the attention it deserves⁶.

The overall burden of UI is vast, ranging from a loss in patient comfort and dignity to the environmental burden of commonly used products for incontinence management, to its associated economic costs. According to the European Association of Urology's (EAU) flagship report on the socio-economic burden of UI, its total economic burden in Europe (EU+5) is estimated at nearly €70 billion in 2023 alone⁶. Without action the economic burden is estimated to increase by a staggering 25% by 2030, due to population aging. The total economic burden of UI thereby approximates the costs associated with major disease like diabetes and cancer. UI makes up half of diabetes related costs in Europe, and two-thirds of cancer associated economic costs⁶, outlining the magnitude of this health condition.

While UI can affect individuals across all age groups, it is notably more prevalent among women, particularly during the postpartum period and in older women^{1,3}. Studies have reported that the prevalence of postpartum UI ranges from 26% to 31%^{7,8}. Additionally, research indicates that UI incidence increases with age and that UI is especially prevalent among patients in nursing homes (NHs), affecting up to two out of three residents⁹. Additionally, the related economic burden of UI is unevenly distributed, as for women it is four-times larger than for men⁶. These findings underscore the heightened burden of UI in older women and its huge burden in NHs.

Prevention and treatment options for UI range from lifestyle modifications, and behavioural interventions such as pelvic floor exercises and bladder training to pharmacological interventions and, in severe cases, surgical procedures³. However, where prevention and treatment options are not

¹ Kim KJ, Shin J, Choi J, Park JM, Park HK, Lee J, Han SH. Association of geriatric syndromes with urinary incontinence according to sex and urinary-incontinence-related quality of life in older inpatients: a cross-sectional study of an acute care hospital. *Korean journal of family medicine*. 2019 Jul 20;40(4):235.

² Haylen BT, De Ridder D, Freeman RM, Swift SE, Berghmans B, Lee J, Monga A, Petri E, Rizk DE, Sand PK, Schaer GN. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic floor dysfunction. *Neurourology and Urodynamics: Official Journal of the International Continence Society*. 2010 Jan;29(1):4-20.

³ Vaughan CP, Markland AD. Urinary Incontinence in Women. *Ann Intern Med*. 2020 Feb 4;172(3):ITC17-ITC32. doi: 10.7326/AITC202002040. PMID: 32016335.

⁴ National Institute of Diabetes and Digestive and Kidney Diseases. (n.d.). Urinary incontinence in adults. Retrieved April 25, 2025, from <https://www.niddk.nih.gov/health-information/urologic-diseases/urinary-incontinence-in-adults>

⁵ Dowling-Castronovo A, Specht JK. How to try this: assessment of transient urinary incontinence in older adults. *Am J Nurs*. 2009;109(2): 62-71, quiz 72.

⁶ European Association of Urology (EAU). The health, socio-economic and environmental costs of continence problems in the EU. Arnhem, The Netherlands: European Association of Urology; 2023. Available from: https://d56bochluxqnz.cloudfront.net/media/Socio-economic_report_UrgetoAct.pdf#asset:4080543@1

⁷ Dai S, Chen H, Luo T. Prevalence and factors of urinary incontinence among postpartum: systematic review and meta-analysis. *BMC Pregnancy and Childbirth* [Internet]. 2023 Oct 28;23(1). Available from: <https://doi.org/10.1186/s12884-023-06059-6>

⁸ Moosdorff-Steinhauser HFA, Berghmans BCM, Spaanderman MEA, Bols EMJ. Prevalence, incidence and bothersomeness of urinary incontinence between 6 weeks and 1 year post-partum: a systematic review and meta-analysis. *International Urogynecology Journal* [Internet]. 2021 Jun 17; Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC8295150/>

⁹ Farrés-Godayol P, Jerez-Roig J, Minobes-Molina E, Yildirim M, Molas-Tuneu M, Escribà-Salvans A, et al. Urinary Incontinence and Its Association with Physical and Psycho-Cognitive Factors: A Cross-Sectional Study in Older People Living in Nursing Homes. *International Journal of Environmental Research and Public Health* [Internet]. 2022 Jan 28;19(3):1500. Available from: <https://www.mdpi.com/1660-4601/19/3/1500>

successful or desired by the patient, the standard solution for the management of UI is to use absorbent hygiene products (AHPs) or indwelling catheters. Regrettably, AHPs as well as indwelling catheters present various problems for patients and the environment, as well as multiple inefficiencies for the healthcare sector.

Furthermore, using AHPs and indwelling catheters has multiple adverse health consequences, such as an increased risk of developing urinary tract infections (UTI) and catheter-associated urinary tract infections (CAUTIs)^{10,11}. The usage of AHPs can lead to poor skin health and result in incontinence associated dermatitis (IAD), skin irritation and pressure ulcers¹². Additionally, UI management of older patients residing in NHs can be a very time extensive effort which poses an additional strain on already overworked nurses and care professionals¹³ and is a primary cause of musculoskeletal disorder such as back pain among staff^{14,15}. Therefore, it is paramount to dedicate more efforts to better manage this health condition, promote best practices, and call for policy change.

Achieving better management of UI in older women residing in NHs aligns with and supports several of the United Nation's Sustainable Development Goals (SDGs). Improving UI care enhances health and well-being (SDG 3) by reducing infections, skin conditions, and mental distress associated with incontinence. Addressing UI also promotes gender equality (SDG 5), as women, particularly postpartum and older women, are disproportionately affected, and awareness and access to proper care can reduce stigma and improve their quality of life (QoL). Moreover, ensuring equitable access to continence care supports reduced inequalities (SDG 10) by addressing disparities in health care access for marginalised populations, including older adults and individuals with disabilities. Sustainable management of incontinence products, including waste reduction and environmentally friendly alternatives, contributes to responsible consumption and production (SDG 12). Lastly, reducing the carbon footprint of health care waste aligns with climate action (SDG 13).

To address this neglected and yet very prevalent health issue among older women, the EU Alliance for managing severe chronic urinary incontinence in older women in nursing homes, ALLIAX, was established in February 2025. The Alliance brings together 14 members and supporters, representing key stakeholders in continence health, urinary health and women's health, such as patient advocacy organisations, clinical experts, and specialist nurses.

Prevalence

UI is a very prevalent health condition, especially among frail, older people and women^{16,17,18}. Studies found that in Europe the prevalence of UI among those aged 65 and above is as high as 47%, while up to 39% within this age group use absorbent incontinence pads¹⁹. Furthermore, while prevalence rates of UI in NHs differ across studies, they are generally very high. A study that investigated the prevalence rates as well as the management of UI across four European countries (Austria, the Netherlands, England, and Turkey), reported prevalence rates ranging from 13.8% in Turkey to 35.1% in

¹⁰ Larsen EB, Fahnøe CL, Jensen PE, Gregersen M. Absorbent incontinence pad use and the association with urinary tract infection and frailty: A retrospective cohort study. *International Journal of Nursing Studies Advances*. 2023 Dec 1;5:100131.

¹¹ Werneburg GT. Catheter-associated urinary tract infections: current challenges and future prospects. *Research and reports in urology*. 2022 Apr 4;109-33.

¹² Bender JK, Faergemann J, Sköld M. Skin health connected to the use of absorbent hygiene products: a review. *Dermatology and therapy*. 2017 Sep;7:319-30.

¹³ Mandl M, Halfens RJ, Lohrmann C. Incontinence care in nursing homes: A cross-sectional study. *Journal of advanced nursing*. 2015 Sep;71(9):2142-52.

¹⁴ Schneider W, Sanaeifar N. Ergonomic comparison of different incontinence products and effects on time and physical demands on carers. *Br J Nurs*. 2023;32(19):936-42.

¹⁵ Brusini A. Low back pain among nurses in Italy: a review. *G Ital Med Lav Ergon*. 2021;43(4):369-72.

¹⁶ Wagg A, Kung Chen L, Johnson II T, Kirschner-Hermanns R, Kuchel G, Markland A, et al. Incontinence in frail older persons. Deakin University; 2017. Available from: <https://hdl.handle.net/10536/DRO/DU:30105795>

¹⁷ Ramadan F. Urinary incontinence in older adult women: fighting a rising tide. *British Journal of Community Nursing*. 2025 Jan 2;30(1):22-6.

¹⁸ Aoki Y, Brown HW, Brubaker L, Cornu JN, Daly JO, Cartwright R. Urinary incontinence in women. *Nature reviews Disease primers*. 2017 Jul 6;3(1):1-20.

¹⁹ Sørbye LW, Finne-Soveri H, Ljunggren G, Topinkova E, Garms-Homolova V, Jensdóttir AB, Bernabei R. Urinary incontinence and use of pads – clinical features and need for help in home care at 11 sites in Europe. *Scand J Caring Sci*. 2009;23(1):33-44. doi:10.1111/j.1471-6712.2007.00588.x

Austria²⁰. Other studies report a much higher prevalence of UI in NHs of 50–70%^{9,21}. Women tend to experience the condition at an earlier age compared to men. For instance, a study reported an age-standardised prevalence of 51.1% in women compared to 13.9% in men²². The high prevalence and consequent substantial burden of UI, especially among women and older adults residing in NHs, underscores the urgent need for targeted interventions, improved care strategies, and increased awareness to mitigate its tremendous health and social consequences.

Economic burden

The economic burden of UI is far-reaching, estimated at nearly €70 billion in 2023, with a lower bound of €26.1 billion and an upper bound of €133.4 billion⁶. Included in this estimation are all UI related costs, such as health care use inputs, indirect health care use input, and environmental impact inputs. This represents approximately half the cost of diabetes (€149 billion in 2019) and two-thirds of the economic burden of cancer (€100 billion in 2020). The costs for women were four times higher than for men, and the burden increased by 16% when accounting for informal caregiver support, often provided by family members. Without improved awareness, prevention, treatment, and efficient use of continence technologies, the economic impact of UI is expected to rise. Projections indicate a potential increase of 25% by 2030, reaching €86.7 billion (€32.8 billion – €167.2 billion) excluding caregiver costs and €100.2 billion (€40.8 billion – €188.6 billion) when caregiver contributions are included⁶. These staggering numbers should be a wake-up call for policy makers to ensure that through better management and heightened attention on the topic the costs shall decrease instead of increase, particularly given the rapid ageing of societies across the EU. While the burden of UI needs to be assessed holistically, understanding the economic burden of the condition in the EU alone provides a better understanding of the magnitude of this health condition.

Current UI management practices in NHs

Environmental impact

Another important area relating to UI management is its environmental impact, particularly regarding the common and predominant use of absorbent hygiene products (AHP). Comparing adult AHPs' waste generation to that of disposable infant diapers in OECD countries reveals a much higher share for adult AHPs. On average, 2.7% of country waste constitutes infant diapers, while 4.8% constitutes adult AHPs (by weight)²³. The estimated percentages (by weight) of disposable adult AHPs in municipal waste in Europe range from 2.95% in Ireland to 7.4% in Germany. Other countries' percentages include Belgium (5.8%), France (4.9%), Italy (5.9%), the Netherlands (4.6%), Spain (5.4%),

²⁰ Hoedl M, Bauer S, Eglseer D, Everink I, Gordon AL, Lohrmann C, Saka B, Schols JM, Osmaneovic S. Urinary incontinence prevalence and management in nursing homes in Austria, the Netherlands, Turkey and the United Kingdom: A multi-site, cross-sectional study. *Archives of Gerontology and Geriatrics*. 2022 Nov 1;103:104779.

²¹ Jachan DE, Müller-Werdan U, Lahmann NA. Impaired mobility and urinary incontinence in nursing home residents: a multicenter study. *Journal of Wound Ostomy & Continence Nursing*. 2019 Nov 1;46(6):524–9.

²² Markland AD, Richter HE, Fwu CW, Eggers P, Kusek JW. Prevalence and trends of urinary incontinence in adults in the United States, 2001 to 2008. *The Journal of urology*. 2011 Aug;186(2):589–93.

²³ Velasco Perez M, Sotelo Navarro PX, Vazquez Morillas A, Espinosa Valdemar RM, Hermoso Lopez Araiza JP. Waste management and environmental impact of absorbent hygiene products: A review. *Waste Management & Research*. 2021 Jun;39(6):767–83.

Sweden (5.5%), Switzerland (3.3%), and the UK (5.0%)²⁴. From production to disposal, these fossil fuel-based products exert a substantial but largely neglected environmental impact, driving global warming and ecological deterioration²⁵. From 2010 to 2021, the sale of AHPs increased by a staggering 57% and is estimated to continue growing in the upcoming years²⁶. In 2021, an estimated 39 billion units of incontinence products were sold globally, representing a significant contribution to environmental waste²⁷. Therefore, it is crucial to invest in the transition to more sustainable UI management practices.

While disposal options for incontinence pads include incineration, landfill, or recycling, there are legal restrictions on landfills in the EU. Discarded absorbent hygiene products are managed differently in Europe according to customs, economic restrictions, and available technology²⁶. In Germany, for instance, AHPs are classified as non-recyclable products, and the waste is converted into energy. In Spain, the waste undergoes mechanical-biological treatment, with other disposal options including incineration and landfill²⁶.

The environmental impact of more novel management options, such as Female Urine Collection Devices may have a comparably lower environmental footprint. Far less research has been published on the environmental impact of non-AHP solutions which limits the conclusions that can be drawn. However, an Environmental Life Cycle Assessment (LCA) conducted in 2024 on PureWick™ finds nighttime use of one disposable external collection device, compared to two adult absorbent products used per night (given their variation in capacity of fluid uptake), to emit and use roughly half of important environmental indicators such as environmental and human toxicity, fossil fuel resources, and water consumption²⁸. While the results of this LCA provide much-needed evidence, further research is required to confidently compare the environmental impact with more traditional solutions such as AHPs.

Clinical burden

Currently dominant practices of the management of UI in older women in NHs, namely indwelling urinary catheters and APHs have multiple adverse clinical and social consequences that exacerbate both the physical and mental health of NH residents.

Urinary tract infections (UTIs) and catheter-associated urinary tract infections (CAUTIs)

Indwelling urinary catheters are commonly used in NHs to manage UI. A systematic literature review found that the prevalence of indwelling urinary catheters among male and female NH residents in Europe ranged from 11.4% in Germany to 31.5% in Italy²⁹. While catheters can play an important role in UI management, their use is associated with significant clinical risks, particularly among certain patient populations. According to official guidelines indwelling catheters should only be used as a last resort in the absence of other options³⁰, however, in practice they are chronically overused, often to ease the work burden of health care workers³¹. Notably, catheterised NH residents face a substantially higher risk of developing urinary tract infections (UTIs) and catheter-associated urinary tract

²⁴ Ibidem,

²⁵ Vaittinen T, Koljonen K, Tella S, Asikainen E, Laatikainen K. Holistically sustainable continence care: A working definition, the case of single-used absorbent hygiene products (AHPs) and the need for ecosystems thinking. Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine. 2024 Jun;238(6):667–81.

²⁶ SkyQuest Technology Consulting. Adult diapers market to hit sales of \$52.53 billion by 2028. GlobeNewswire Newsroom [Internet]. 2022. Available from: <https://www.globenewswire.com/en/news-release/2022/08/24/2503986/0/en/Adult-Diapers-Market-to-Hit-Sales-of-52-53-Billion-By-2028-38-97-billion-Adult-Diapers-Were-Sold-in-2021-SkyQuest.html>

²⁷ European Association of Urology. The health, socio-economic and environmental costs of continence problems in the EU. Report. 2023 [Available from: <https://uroweb.org/an-urge-to-act>].

²⁸ Becton, Dickinson and Company. BD PureWick™ Environmental Life Cycle Analysis (LCA). Switzerland: BD Switzerland Sarl; 2024.

²⁹ Czwikla J, Wandscher K, Helbach J, Fassmer AM, Schmiemann G, Hoffmann F. Prevalence of indwelling urinary catheters in nursing home residents: Systematic review. Int J Nurs Stud. 2023;145:104555.

³⁰ Geng V, Lurvink H, Pearce I, Vahr Lauridsen S. Indwelling catheterisation in adults – urethral and suprapubic. Arnhem: European Association of Urology Nurses (EAUN); 2024. ISBN 978-94-92671-24-0. Available from: <https://nurses.uroweb.org/guideline/indwelling-catheterisation-in-adults-urethral-and-suprapubic/>.

³¹ Inelmen EM, Sergi G, Enzi G. When are indwelling urinary catheters appropriate in elderly patients?. Geriatrics. 2007 Oct 1;62(10):18–22.

infections (CAUTIs) compared to those without catheters. Symptomatic UTIs are more prevalent among catheterised residents, with rates ranging from 3.6% to 35.7%²⁹. Additionally, the use of indwelling urinary catheters can lead to serious damage and urethral trauma, particularly among older patients or patients with cognitive impairment, when trying to remove the indwelling catheter by pulling it while the balloon is still inflated³².

Even more widely used products for the management of chronic UI are AHPs. AHPs present a cheap, practical, and common option to manage chronic UI; however, they are associated with potentially severe complications such as UTIs, IADs, moisture lesions and skin breakdown¹². While AHPs do help improve residents' independence in their daily activities, there is a strong association between the use of absorbent incontinence pads and the development of UTIs in older hospitalised patients, both in full-time users and those who were frail and became pad users during hospitalisation³³. One study found that 41% of users develop at least one UTI during a 12-month evaluation period³⁴. Another study found that NH residents using absorbent pads were at an increased risk of developing UTIs compared to residents who did not use pads (41% vs 11%)³⁵. Regarding this specific condition, older women bear a higher burden, as women generally have a higher risk of developing UTIs than men, with a ratio of 2:1³⁶.

Incontinence-associated dermatitis (IAD) and pressure ulcers

Incontinence-associated dermatitis (IAD) is another side effect connected to current management practices of UI in NHs. It refers to skin damage caused by prolonged exposure to moisture, typically from urine, which can lead to inflammation, irritation and infection. This condition, affecting 5,6% to 50% of residents, is common among individuals who use AHPs, especially when not changed frequently^{37,38}. IAD presents additional cost of care for residents with typical expenses such as antiseptic liquid, soap, gauze and moisture barriers. Based on a systematic literature review, these expenses range from €2,49 in Italy to €5,40 per day in the Netherlands³⁹.

IAD itself present a major risk factor for developing pressure ulcers, another serious condition that needs to be considered in the management of UI in NHs⁴⁰. These injuries to the skin and underlying tissue caused by prolonged pressure on the skin are highly prevalent in NHs in the EU, with 18.1% prevalence overall⁴¹. UI exacerbates the risk of pressure ulcers as urine can cause the skin to become wet and macerated, weakening the skin and making it more prone to breakdown and infections⁴². IAD and pressure ulcers further demonstrate the complexity of the management of chronic UI in NHs residents. Current solutions often cause wounds, further deteriorating the QoL of older individuals.

Falls and dehydration

In some cases, nursing home residents are left without AHPs or catheters during the night to provide more comfort and to decrease the workload of caregivers. However, prevalence of falls in older adults

³² Feneley RC, Hopley IB, Wells PN. Urinary catheters: history, current status, adverse events and research agenda. *Journal of medical engineering & technology*. 2015 Nov 17;39(8):459–70.

³³ Larsen, Emma Bendix, et al. "Absorbent Incontinence Pad Use and the Association with Urinary Tract Infection and Frailty: A Retrospective Cohort Study." *International Journal of Nursing Studies Advances*, vol. 5, 2023, p. 100131, <https://doi.org/10.1016/j.ijnsa.2023.100131>. Accessed 16 May 2023.

³⁴ G. Miget, M. Moutounaick, F. Kervinio, M. Teng, C. Chesnel, A. Charlanes, F. Le Breton, G. Amarenco - Absorbent products for the management of urinary incontinence - 31/08/2018 REF-50119.

³⁵ Omli R, Skotnes LH, Romild U, Bakke A, Mykletun A, Kuhry E. Pad per day usage, urinary incontinence and urinary tract infections in nursing home residents. *Age Ageing*. 2010;39(5):549–54.

³⁶ Dexter, J., Mortimore, G., 2021. The management of urinary tract infections in older patients within an urgent care out-of-hours setting. *Br. J. Nurs.* 30, 334–342. <https://doi.org/10.12968/bjon.2021.30>

³⁷ Beeckman D, Van Damme N, Schoonhoven L, Van Lancker A, Kottner J, Beele H, et al. Interventions for preventing and treating incontinence associated dermatitis in adults. *Cochrane Database Syst Rev*. 2016;11(11):Cd011627.

³⁸ Banharak S, Panpanit L, Subindee S, Narongsanoi P, Sanun-Aur P, Kulwong W, et al. Prevention and Care for Incontinence-Associated Dermatitis Among Older Adults: A Systematic Review. *J Multidiscip Healthc*. 2021;14:2983–3004.

³⁹ Cunich M, Barakat-Johnson M, Lai M, Arora S, Church J, Basjarahil S, et al. The costs, health outcomes and cost-effectiveness of interventions for the prevention and treatment of incontinence-associated dermatitis: A systematic review. *Int J Nurs Stud*. 2022;129:104216.

⁴⁰ Nix D, Ermer-Seltun J. A review of perineal skin care protocols and skin barrier product use. *Ostomy Wound Manage*. 2004;50(12):59–67.

⁴¹ Vanderwee, Katrien. "Pressure Ulcer Prevalence in Europe: a Pilot Study." *Journal of Evaluation in Clinical Practice*, Wiley, 2007.

⁴² Lachenbruch, Charlie, et al. "Microclimate Management: So Much More Than Just Airflow." Hill-Rom Inc., 2023, https://www.hillrom.com/content/dam/hillrom-aem/us/en/marketing/knowledge/content-marketing/articles/198018-EN-r1_Lachenbruch-et-al_8x4-WOCN-Incontinence-Poster_Reference-Claim.pdf.

living in NHs in Europe is high, ranging from 12,3 % in The Netherlands to 49,3 % in France^{43,44}. A substantial number of these falls are attributed to incontinence-related trips to the bathroom particularly at nighttime. Frequently, such falls result in more complex injuries including hip bone fractures among old frail subjects that require additional treatment and even hospitalisation⁴⁵.

Older people in hospitals and long-term care are at risk of dehydration, which is associated with a high risk of adverse health outcomes. Long-term care residents are particularly vulnerable to developing dehydration, with patients reporting conscious reductions in fluid intake due to anxiety about incontinence and toileting assistance. The prevalence of dehydration among nursing home residents in Europe ranges from 10.6 % to 38.5%, and the prevalence of low-intake dehydration in long-term care residents in Europe ranges from 25% to 89%⁴⁶. Among older adults with intellectual disability in care organisations, dehydration or malnutrition is associated with increased mortality⁴⁷.

Quality of life and mental health

UI in women is commonly associated with poorer quality of life (QoL). The associated burdens to the QoL and mental health of older people suffering from persistent UI are multiple, ranging from physical health issues, sedentary behaviour and decreased physical performance, to psycho-cognitive issues, including a patient's cognitive state, anxiety, and depression. A cross-sectional study that assessed UIs' association with physical and psycho-cognitive factors of older people living in NHs found that incontinent residents have significantly worse self-reported QoL than continent residents⁴⁸. Lower reported QoL among people suffering from UI can be due to many reasons, such as the impacts UI can have on the social functioning of patients, as well as its association with sexual dysfunction in women⁴⁹. UI patients are at an increased risk of social isolation and have lower functional independence and often suffer from a perceived loss of personal dignity when feeling embarrassed about leaking urine or being wet³. The use of AHPs in older people is also associated with adverse mental health outcomes, such as an increased risk of having depressive symptoms⁵⁰. Furthermore, systematic reviews found that drug therapies for the management of UI in NHs can result in unpleasant experiences such as constipation and dry mouth⁵⁴. Although UI significantly affects many aspects of older women's QoL and thereby well-being, it is currently not adequately addressed and often inadequately managed in NH settings, pointing to a clear need for increased investment of resources in this area.

Physicians, nurses and care staff implications

In the context of the tasks conducted by health and care professionals in NHs, the substantial personnel demand for the appropriate care of UI stands out¹³. Such tasks, including cleaning the patient, changing AHPs or bed sheets, account for a large proportion of their total working day. However, further research is needed on this matter to more precisely gauge the exact extent of its impact. This includes the night care of patients with UI which presents several challenges to NH staff, such as preventing residents from waking up if AHPs are saturated and allowing residents to sleep

⁴³ Hoedl M, Eglseer D, Bernet N, Everink I, Gordon AL, Lohrmann C, et al. Which factors influence the prevalence of institution-acquired falls? Results from an international, multi-center, cross-sectional survey. *J Nurs Scholarsh.* 2022;54(4):462-9.

⁴⁴ Ianes AB RG. The Se.Ko.Ph. study: a European multicentre study on falls in elderly subjects living in residential homes. *Geriatric Care.* 2017;3(1).

⁴⁵ Moon S, Chung HS, Kim YJ, Kim SJ, Kwon O, Lee YG, Yu JM, Cho ST. The impact of urinary incontinence on falls: A systematic review and meta-analysis. *PLoS one.* 2021 May 19;16(5):e0251711.

⁴⁶ Paulis SJC, Everink IHJ, Halfens RJG, Lohrmann C, Schols J. Prevalence and Risk Factors of Dehydration Among Nursing Home Residents: A Systematic Review. *J Am Med Dir Assoc.* 2018;19(8):646-57.

⁴⁷ Oppewal A, Schoufour JD, van der Maarl HJK, Evenhuis HM, Hilgenkamp TIM, Festen DA. Causes of Mortality in Older People With Intellectual Disability: Results From the HA-ID Study. *Am J Intellect Dev Disabil.* 2018;123(1):61-71.

⁴⁸ Farrés-Godayol P, Jerez-Roig J, Minobes-Molina E, Yildirim M, Molas-Tuneu M, Escribà-Salvans A, et al. Urinary Incontinence and Its Association with Physical and Psycho-Cognitive Factors: A Cross-Sectional Study in Older People Living in Nursing Homes. *International Journal of Environmental Research and Public Health* [Internet]. 2022 Jan 28;19(3):1500. Available from: <https://www.mdpi.com/1660-4601/19/3/15>

⁴⁹ Duralde ER, Rowen TS. Urinary incontinence and associated female sexual dysfunction. *Sexual medicine reviews.* 2017 Oct;5(4):470-85.

⁵⁰ Güner M, Özcan M, Ceylan S, Okyar Baş A, Balci C, Halil M, Cankurtaran M, Doğu B. Use of absorbent products in older men and women are associated with depressive symptoms: a retrospective study from a university hospital. *European journal of geriatrics and gerontology (Online).* 2023;5(1).

dry. The time spent on cleaning patients and changing saturated AHPs could be reduced by implementing more efficient solutions that allow for the redistribution of staff time to other activities of greater value for patients and would also contribute to the prevention of injuries to health professionals associated with the performance of this type of task, such as back injuries or tendonitis. The primary causes of low back pain in hospital nurses, nursing home care workers, and family caregivers include changing AHPs, cleaning patients, frequent patient handling, changing posture and helping with bathing by lifting and transferring patients who require long-term care^{14,15}. The integration of EU-OSHA guidelines on musculoskeletal disorder prevention could support the adoption of safer and more ergonomic work practices in such care settings⁵¹.

Combined with the persistent understaffing of the health care sector, long recognised as a systemic issue, it has culminated in what is now referred to as the ongoing 'healthcare crisis'. Health and care staff are heavily overworked, often leading to burnout⁵². Especially NHs have been experiencing high turnover rates for decades⁵³, a trend that points towards poor working conditions and a need to address them. As NH staff are already overworked, UI treatment should be as time efficient as possible. Furthermore, it is of utmost importance that nurses, physicians, and other NH care staff are adequately trained in UI management, as they are responsible for the assessment, promotion of continence, lifestyle advice, prevention of skin breakdown, the use of appropriate products and devices, as well as the prevention of complications. Currently, physicians, NH care staff, and nurses in long-term care facilities in general are often poorly educated on, as well as trained in UI management and not sufficiently aware of the various methods that can be used⁵⁴. UI should be included in all relevant education as this topic is currently not addressed in most medical curricula. Additionally, it is important to implement training on this topic in continuous medical education.

Solutions and innovative practices

Preventative and holistic care approaches

Effective and holistic UI management requires personalised and preventive approaches. Tailoring interventions to individual needs enhances care effectiveness and improves patients' QoL. Behavioural and lifestyle interventions, such as voiding strategies, physical activity, pelvic floor muscle training, fluid management, and multicomponent approaches are considered first line treatment and have proven short-term effectiveness in older people in care homes^{3,55}. These strategies involve individualised schedules that consider the resident's physical and cognitive abilities. A comprehensive approach, including personalised toileting strategies, prompted voiding, dietary

⁵¹ European Agency for Safety and Health at Work (EU-OSHA). *Work-related musculoskeletal disorders: prevalence, costs and demographics in the EU*. Luxembourg: Publications Office of the European Union; 2019. Available from: <https://osha.europa.eu/en/publications/msds-facts-and-figures-overview-prevalence-costs-and-demographics-msds-europe>

⁵² European Commission. Supporting mental health of the health workforce and other essential workers [Internet]. Brussels: European Commission; 2023. Available from: https://health.ec.europa.eu/publications/supporting-mental-health-health-workforce-and-other-essential-workers-0_en

⁵³ Gandhi A, Yu H, Grabowski DC. High nursing staff turnover in nursing homes offers important quality information: study examines high turnover of nursing staff at US nursing homes. *Health Affairs*. 2021 Mar 1;40(3):384-91.

⁵⁴ Ostaszkievicz J, Kosowicz L, Cecil J, Somanader D, Dow B. The management of urinary incontinence in nursing homes: a scoping review. *Australian and New Zealand Continence Journal*. 2025;29(4):80-100.

⁵⁵ Roe B, Flanagan L, Maden M. Systematic review of systematic reviews for the management of urinary incontinence and promotion of continence using conservative behavioural approaches in older people in care homes. *Journal of Advanced Nursing*. 2015 Jul;71(7):1464-83.

considerations, and bowel management, is vital for managing UI in older women in NHs, ensuring holistic, person-centred care.

Moreover, proper education and training for physicians, nurses, and NH care staff are essential for adequate UI treatment and care. Despite the high prevalence of UI, especially among older women residing in NHs, current training for health care professions does not adequately address continence health. Staff education programs that incorporate on-site support and competency-based training by specialist healthcare professionals enhance staff knowledge, foster positive attitudes, and improve adherence to assessment procedures, toileting protocols, and documentation practices. A comprehensive, multifaceted approach coordinated by a specialist nurse with advanced clinical competencies and strong leadership skills yields the greatest benefits in managing UI in NHs⁵⁴. Other best practices, such as trained reference caregivers supporting teams, improving communication with families, and proposing concrete actions, should be established in NH settings. Additionally, novel training courses available in online formats with a focus on continence care in NHs developed under the EU-project PROCON⁵⁶, will be another great resource for health care professionals.

Innovative solutions

Where traditional behavioural and lifestyle interventions are fully or partly unsuccessful, innovative solutions, devices and applications pave the way for improved UI care. One example is Female Urine Collection Devices which can provide an effective and efficient alternative to adult AHPs and indwelling urinary catheters, minimising UTIs, CAUTIs, and protecting the skin by wicking away urine. The introduction of Female Urine Collection Devices is associated with a statistically significant reduction in indwelling catheter use as well as a stark, though not statistically significant, reduction in CAUTIs and IAD^{57,58}. Using Female Urine Collection Devices supports the preservation of skin health and reduces the risk of IAD-related skin complications through a reduction in the exposure of skin to urine contamination⁵⁹. Such devices can be used while the patient is either asleep or awake, in a seated or vertical position in bed, thereby increasing patient comfort in NH settings. Female Urine Collection Devices are particularly beneficial for women who are bedridden, recovering from surgery, or unable to toilet independently⁵⁷, and can help save nursing time in long-term care facilities and NHs as current UI management procedures are time intensive, such as changing adult AHPs, bed sheets or internal catheters.

Other innovative solutions like the URinControl App contribute to the transformation of the management of UI in women. Developed by general practitioners and researchers at the University Medical Centre Groningen, this evidence-based digital health tool supports women with stress, urge, or mixed urinary incontinence through personalised bladder and pelvic floor muscle training⁶⁰. By combining guided exercises, educational content, motivational features, and accessible design elements, the app ensures ease of use. Available free of charge, URinControl empowers women to manage incontinence privately and safely, exemplifying digital innovation in continence care.

⁵⁶ ProCon Project. Boosting innovation, entrepreneurship and training for PROMoting CONTinence in nursing homes [Internet]. [cited 2025 Jul 30]. Available from: <https://www.proconproject.eu/>

⁵⁷ Beeson T, Pittman J, Davis CR. Effectiveness of an External Urinary Device for Female Anatomy and Trends in Catheter-Associated Urinary Tract Infections. *J Wound Ostomy Continence Nurs.* 2023 Mar-Apr 01;50(2):137-141. doi: 10.1097/WON.0000000000000951. PMID: 36867037; PMCID: PMC9990593.

⁵⁸ Pryor N, Wang J, Young J, Townsend W, Ameling J, Henderson J, Meddings J. Clinical outcomes of female external urine wicking devices as alternatives to indwelling catheters: a systematic review and meta-analysis. *Infection Control & Hospital Epidemiology.* 2024 May 6:1-9.

⁵⁹ Baxter CM, Matthews CL, Zamarripa C, Johnston JR, Lane R, Chung A, Palladino K, Kip PL, Zapf RL, Wagester S, Snyder GM. Implementation of an external female urinary catheter strategy on prevention of skin breakdown in acute care: A quality improvement study. *Journal of Clinical Nursing.* 2025 Jan;34(1):299-307.

⁶⁰ Loohuis AM, Van Der Worp H, Wessels NJ, Dekker JH, Sliker-Ten Hove MC, Berger MY, Vermeulen KM, Blanker MH. One year effectiveness of an app-based treatment for urinary incontinence in comparison to care as usual in Dutch general practice: a pragmatic randomised controlled trial over 12 months. *BJOG: An International Journal of Obstetrics & Gynaecology.* 2022 Aug;129(9):1474-80.

Recommendations and policy action

Considering the evidence outlined above, we call on the European Commission, the European Parliament as well as national policymakers to:

- **Elevate the visibility of urinary incontinence.** European and national policymakers should integrate Urinary Incontinence into EU and national-level ageing, long-term care, and broader health strategies to improve the management of chronic Urinary Incontinence in older women residing in nursing homes and long-term care facilities.
- **Reduce the environmental burden of urinary incontinence management practices.** European policymakers should advocate for policies and regulations that aim to reduce the environmental impact of Urinary Incontinence management practices, which are associated with high levels of waste and resource consumption, and promote more sustainable options to align with the European Union's green transition objectives under the Green Deal.
- **Improve the education of health and care professionals on urinary incontinence management.** EU Member States and Ministries of Health should ensure that the education and training of health and care professionals fully address continence health and include best practices in Urinary Incontinence management. Good practices concern holistic Urinary Incontinence prevention, behavioural change and management plans, which should be taught in all medical universities and health training schools and institutions, for physicians, nurses, and care staff. Additionally, training and courses on Urinary Incontinence should be integrated into continuing medical education.
- **Support health and care professionals in nursing homes through patient-centred, innovative, and sustainable Urinary Incontinence management solutions.** The European Commission and EU Member States should allocate targeted funding to improve the prevention and management of Urinary Incontinence in older women residing in nursing homes and long-term care facilities under relevant EU instruments such as EU4Health and Horizon Europe. Such investments would improve the effectiveness of Urinary Incontinence management, reduce the burden on overworked health and care staff, enhance the quality of care in ageing societies, and promote more sustainable healthcare systems.
- **Call for a strategy on women's health with a focus on urinary incontinence as a prominent health issue among women.** In line with the new EU Roadmap for Women's Rights: a renewed push for gender equality⁶¹, we urge the European Commission to take concrete actions, including investment in improved Urinary Incontinence management for older women residing in nursing homes, to ensure a life-course approach to women's health. Additionally, the European Parliament should initiate a report (INI-Own Initiative Report) requesting the European Commission to propose legislation addressing the management of Urinary Incontinence in older women residing in nursing homes and long-term care facilities.
- **Introduce minimum quality indicators in long-term care to strengthen equity and monitoring across EU Member States.** The European Commission, in collaboration with Member States, should support the development and implementation of a core set of indicators in long-term care facilities to improve the quality and equity of care for older people. These indicators should include the prevalence and incidence of Urinary Incontinence, the rate of related complications

⁶¹ European Commission. EU roadmap for women's rights: a renewed push for gender equality [Internet]. Brussels: European Commission; 2025 Mar 7. Available from: https://commission.europa.eu/news/eu-roadmap-womens-rights-renewed-push-gender-equality-2025-03-07_en

(e.g., falls or urinary tract infections), and the type of interventions and management options used. Integrating such indicators into EU-wide monitoring frameworks, including the State of Health in the EU cycle reports, would enhance transparency and comparability of elder care across countries. This approach supports the Polish EU Presidency 2025 Conclusions calling for stronger monitoring and transparency in long-term care⁶², and aligns with the Danish Presidency's focus on ageing, data-driven governance, and digitally enabled care systems⁶³.

Conclusions

Urinary incontinence is a significant yet overlooked public health issue in Europe, especially among older women in nursing homes, where prevalence rates can reach up to 67%. The economic burden of UI is nearly €70 billion annually and expected to rise by a staggering 25% until 2030. Many traditional management options of persistent UI in NH settings such as the use of AHPs or indwelling catheters, contribute to substantial healthcare waste and can have serious health consequences for patients. Poorly managed UI can for instance lead to complications like UTIs, IADs, and pressure ulcers and further strains already overworked NH staff. Next to proper training of all relevant health and care staff including doctors, nurses, and care home staff, patient-centred, wholistic and innovative solutions are needed to transform the status quo. Novel devices and applications offer more patient-centric alternatives, reducing health risks and environmental impact, while increasing patient comfort. EU policymakers must integrate UI into broader health strategies, promote sustainable technologies, and invest in training to improve care quality and efficiency for older women in nursing homes across Europe.

⁶² Council of the European Union. Programme of the Polish Presidency of the Council of the European Union. Luxembourg: Council of the European Union; 2025. Available from: <https://polish-presidency.consilium.europa.eu/media/zkcn0325/programme-of-the-polish-presidency-of-the-council-of-the-european-union.pdf>

⁶³ Council of the European Union. Programme of the Danish Presidency of the Council of the European Union. Luxembourg: Council of the European Union; 2025. Available from: <https://danish-presidency.consilium.europa.eu/media/xv5jn5nx/programme-of-the-danish-eu-presidency-2025.pdf>