



Topic Exploration Report ¹

Female external urinary catheters for the management of urine output

What is a Topic Exploration Report?

Topic Exploration Reports are not health technology assessments. These reports provide a high-level briefing on new topics submitted to Health Technology Wales and are not based on exhaustive or systematic literature searches. Instead, they rely on a focussed scan of key resources.

What evidence is used in a Topic Exploration Report?

Priority is given to summarising the most relevant or useful evidence, rather than covering all possible evidence. Information reported is typically based on abstracts and study authors' own conclusions, rather than detailed scrutiny of full texts.

What are the aims of a Topic Exploration Report?

Topic Exploration Reports offer an overview of the available evidence on a topic and aim to highlight any uncertainties or gaps in the evidence. These reports outline the quantity and type of evidence found, but no critical appraisal or formal evidence synthesis is conducted.

How should a Topic Exploration Report be used?

Topic Exploration Reports can be used to indicate what evidence may be available for a topic, and do not provide definitive guidance on how a technology should be used. The evidence presented within the reports should be interpreted with caution.

¹ [Cyfieithu dogfennau HTW wedi'u cyhoeddi o'r Saesneg i'r Gymraeg](#)
Translation of published technical HTW documents from English into Welsh

Topic exploration report number	TER671
Topic	Female external urinary catheters for the management of urine output
Summary of findings	Female external catheters (such as PureWick) are non-invasive alternatives to urine management options in hospitals, community care and home care. They are designed for women with urinary incontinence or those who have difficulty using a toilet. Current management options include indwelling urinary catheters and incontinence pads. Indwelling catheters have an increased risk of catheter-associated urinary tract infections (CAUTIs), and incontinence pads can cause skin irritation, moisture associated skin damage and sleep disruption. One systematic review, one randomised controlled trial (RCT), one randomised before and after study, one budget impact analysis, one case study and one ongoing study was identified. When compared with indwelling urinary catheters, the systematic review found that indwelling CAUTI rates decreased when using an external catheter. One RCT found that participants reported PureWick to be more comfortable than the Hollister female urinary pouch for people at home and it achieved non-inferiority for primary efficacy and safety endpoints. The budget impact analysis predicted per-patient savings of 29 to 1,071 euros and 77 to 2,354 euros in nursing home and home care settings, respectively. One ongoing observational study is estimated for completion by November 2026. Uncertainties remain regarding the most appropriate setting and comparator for further research, and the transferability of international findings to NHS settings in Wales.

Introduction and aims

A female external catheter (such as PureWick) is a non-invasive urine management device designed for women with urinary incontinence or those who have difficulty getting to the toilet due to illness, reduced mobility, or hospitalisation. The catheter sits externally between the labia and gluteal area and uses low-pressure suction to draw urine away from the body into a collection canister. The device can be used in hospitals and in community care. Information from the topic proposer predicts that approximately 10,000 patients per year in the UK may benefit from PureWick, and the device is used across England and Wales in a number of acute NHS Trusts and Health Boards.

Other urinary management approaches include indwelling urinary catheters, incontinence pads, or commodes for people with limited mobility. However, indwelling catheters have an increased risk of catheter-associated urinary tract infections (CAUTIs), and incontinence pads can cause skin irritation, moisture associated skin damage and sleep disruption. A urinary tract infection is the most common healthcare acquired infection with between 43% and 56% of urinary tract infections associated with an indwelling urethral catheter (NICE 2018).

PureWick is certified as a class I medical device.

Health Technology Wales researchers searched for evidence on external female urinary catheters such as PureWick.

Evidence overview

Systematic reviews

Pryor et al. (2024) published a systematic review with meta-analysis of 50 studies on female external urine wicking devices such as PureWick as alternatives to indwelling catheters. It is unclear from the abstract what types of studies are included. The review found indwelling urinary catheters (IUCs) rates decreased by 14% (RR = 0.86, 95% CI 0.76 to 0.97) and indwelling CAUTIs rates did not significantly decrease (32%, IRR = 0.68, 95% CI 0.39 to 1.17). The review reported a summary of identified secondary outcomes including length of hospitalisation, antibiotic use, skin complications, mobility related complications, patient and nurse satisfaction, urine specimen collection and cost-effectiveness. The review concluded potential savings through the avoidance of toilet-related falls and reductions in the time required for incontinence care. Authors report that these outcomes were reported less routinely and, in the review, these outcome were reported in brief. Conclusions were based on peer reviewed published manuscripts and abstracts with mostly pre-post design studies.

Primary studies

Two primary studies conducted in the US (Baxter et al. 2025, Medina et al. 2025) were identified since the publication of Pryor et al. (2024).

Medina et al. (2025) published the results of a randomised controlled trial on the safety and efficacy of PureWick when compared to the Hollister female urinary pouch for nocturnal urinary incontinence for people at home. In total, 165 women (with a mean age of 71.1 years) requiring urine output management at night were randomised to use either PureWick (n = 107) or Hollister (n = 58) each night for four weeks. Primary outcomes included urine capture rate and skin irritation (Draize scale). Secondary outcomes included assessed tolerability, comfort, and ease of use. Patient reported outcomes included quality of life (QoL) (Nocturia-QoL questionnaire) and sleep quality (PROMIS Sleep Disturbance). The average urine capture rates were similar

Evidence overview

between PureWick and Hollister (mean values were 90.9% versus 87.9%), and mean Draize Scale scores were low for both devices (0.02 versus 0.16). Participants tolerated PureWick for the same duration as Hollister and rated it more comfortable and easier to use. Both devices improved QoL and sleep quality. Authors concluded PureWick offered a safe and effective option for the management of nocturnal urinary incontinence in the home, and it achieve non-inferiority for primary efficacy and safety endpoints.

Baxter et al. (2025) published a prospective, randomised, multi-centre quality improvement study with a before and after study design across 57 inpatient care units across 40 hospitals (n = 281). The study reports on the incidence of skin related complications associated dermatitis using two different external female urinary catheter devices for urinary incontinence in hospitals. Both catheter devices were associated with an overall low risk (5%) of new or worsening skin breakdown when compared to the use of briefs and pads. Other outcomes included device usability, frequency of new or worsening skin breakdown, and adverse events.

Cost effectiveness

One budget impact analysis about introducing PureWick in nursing home and home care settings in Belgium, France, Germany, Italy, The Netherlands, Spain and the UK was identified (Rognoni et al. 2026). A 1-year decision model compared PureWick and pads with pads alone from a NHS/Personal Social Services payer perspective. A dynamic budget impact model projected per-patient costs over three years considering an increasing uptake (from 5 to 15%) of PureWick over pads. Budget-impact modelling predicted per-patient savings of 29 to 1,071 euros and 77 to 2,354 euros in nursing home and home care settings, respectively.

Pryor et al. (2024) identified six studies reporting on the cost-effectiveness of external female urinary catheters. Studies show potential savings through the avoidance of toilet-related falls and reductions in the time required for incontinence care.

Additional studies

The topic proposer identified a case report describing a nurse-led, multidisciplinary quality improvement programme to reduce CAUTI rates in a transplant ICU through optimisation of catheter use and the introduction of non-invasive urinary management alternatives (AbuLehya & Mirbaha 2026). Interventions included standardisation of catheter indication criteria, implementation of insertion, maintenance and early removal protocols, introduction of external urinary management devices (such as PureWick) and a structured staff education and audit programme. The study found that the adoption of external urinary catheter management devices contributed to reduced indwelling catheter use. Patients reported improved comfort and did not report any device-related pressure injuries.

Ongoing studies

One ongoing UK pilot observational study was identified which aims to evaluate the clinical benefits of PureWick when compared to indwelling urinary catheters in female patients receiving home-based care. The study has an estimated enrolment of 95 participants and is estimated to complete in November 2026. The primary outcome is a retrospective assessment of indwelling urinary catheters versus PureWick, documented during a four-week study period. The secondary outcome measure is to compare the pain intensity between participants treated with the PureWick System and those with indwelling urinary catheters.

Areas of uncertainty

Across the evidence base, the setting and comparator varies. If this topic were to proceed to a fuller appraisal, consideration could be given to which comparator to use, and which is most reflective of standard practice in hospitals and/or community care.

The most recent systematic review included mostly before and after studies.

The transferability of findings to NHS settings is uncertain due to differences in healthcare systems and clinical pathways reported in the evidence base.

Literature search results

Health technology assessments and guidance

NICE. (2018). Urinary tract infection (catheter-associated): antimicrobial prescribing. NICE guideline [NG113]. National Institute for Health and Care Excellence. Available at: <https://www.nice.org.uk/guidance/ng113/evidence/evidence-review-pdf-6599496349> [Accessed 23 July 2026].

Evidence reviews and economic evaluations

Pryor N, Wang J, Young J, et al. (2024). Clinical outcomes of female external urine wicking devices as alternatives to indwelling catheters: a systematic review and meta-analysis. *Infect Control Hosp Epidemiol.* 45(9): 1121-9. doi: 10.1017/ice.2024.73
Available at: <https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/clinical-outcomes-of-female-external-urine-wicking-devices-as-alternatives-to-indwelling-catheters-a-systematic-review-and-metaanalysis/45BA5509ED2169D69AA5049062EC34BB>

Rognoni C, Ardito V, Yates A, et al. (2026). Assessing the Value of PureWick™ for Female Urinary Incontinence in Non-Acute Settings: Multi-Country Cost-Effectiveness and Budget Impact Analyses. *Advances in Therapy.* 43(6): 2686-703. doi: 10.1007/s12325-026-03586-4
Available at: <https://link.springer.com/article/10.1007/s12325-026-03586-4>

Individual studies

AbuLehya A, Mirbaha T. (2026). Reducing CAUTI Rates in a Transplant ICU: A Quality Improvement Initiative Using Female External Catheters. *Saudi Journal of Nursing and Health Care (SJNHC)* 9(6): 142-53. doi: <https://doi.org/10.36348/sjnhc.2026.v09i06.004>

Baxter CM, Matthews CL, Zamarripa C, et al. (2025). Implementation of an external female urinary catheter strategy on prevention of skin breakdown in acute care: A quality improvement study. *J Clin Nurs.* 34(1): 299-307. doi: 10.1111/jocn.17356
Available at: <https://onlinelibrary.wiley.com/doi/10.1111/jocn.17356?msocid=3e0ecb7bad4166b5184ddce3acd767fe>

Medina JC, Fakh M, Khalsa S, et al. (2025). Safety, Efficacy, and Patient-Reported Outcomes of the PureWick™ System Versus Comparator for Nocturnal Urinary Incontinence in the Home Setting: Results of a Randomized Trial. *Journal of Clinical Medicine.* 14(24): 8699.
Available at: <https://www.mdpi.com/2077-0383/14/24/8699>

Ongoing research

UK PureWick at-home pilot study. Status: recruiting. Title: An open-label pilot study conducted in the UK to evaluate the clinical benefits of the PureWick FEC System compared to indwelling urinary catheters in female patients receiving home-based care.
Available at: <https://clinicaltrials.gov/study/NCT07555548>

Date of search	29 June 2026
Concepts used	External female urinary catheter; wicking devices; Purewick

Proposed research question and evidence selection criteria (if selected)

Proposed Research question	What is the clinical effectiveness and cost effectiveness of female external urinary catheters when compared to standard care?
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	Inclusion criteria	Exclusion criteria
Population	Adult female patients in hospital or care settings who are: Urinary incontinent and/or Unable to mobilise independently and/or requiring urine output monitoring. Can include ICU patients, frail older adults, or those with limited mobility.	Women with urinary tract, vaginal or other chronic infections or active genital herpes. Pregnant women.
Intervention	External female urinary collection systems that use suction-assisted wicking technology to collect and divert urine non-invasively.	
Comparison/Comparators	Indwelling urinary catheter (IUC) or pad.	
Outcome measures	• Catheter-associated urinary tract infection (CAUTI) rates • Indwelling catheter utilisation (e.g. catheter days) • Incontinence-associated dermatitis (IAD) • Skin breakdown • Patient comfort and acceptability • Nursing workload / care burden • Urine capture effectiveness / leakage • Adverse events • Health related QoL • Resource use • Economic outcomes	

Proposed specialities	Genitourinary system; Caring for older people; Palliative care
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