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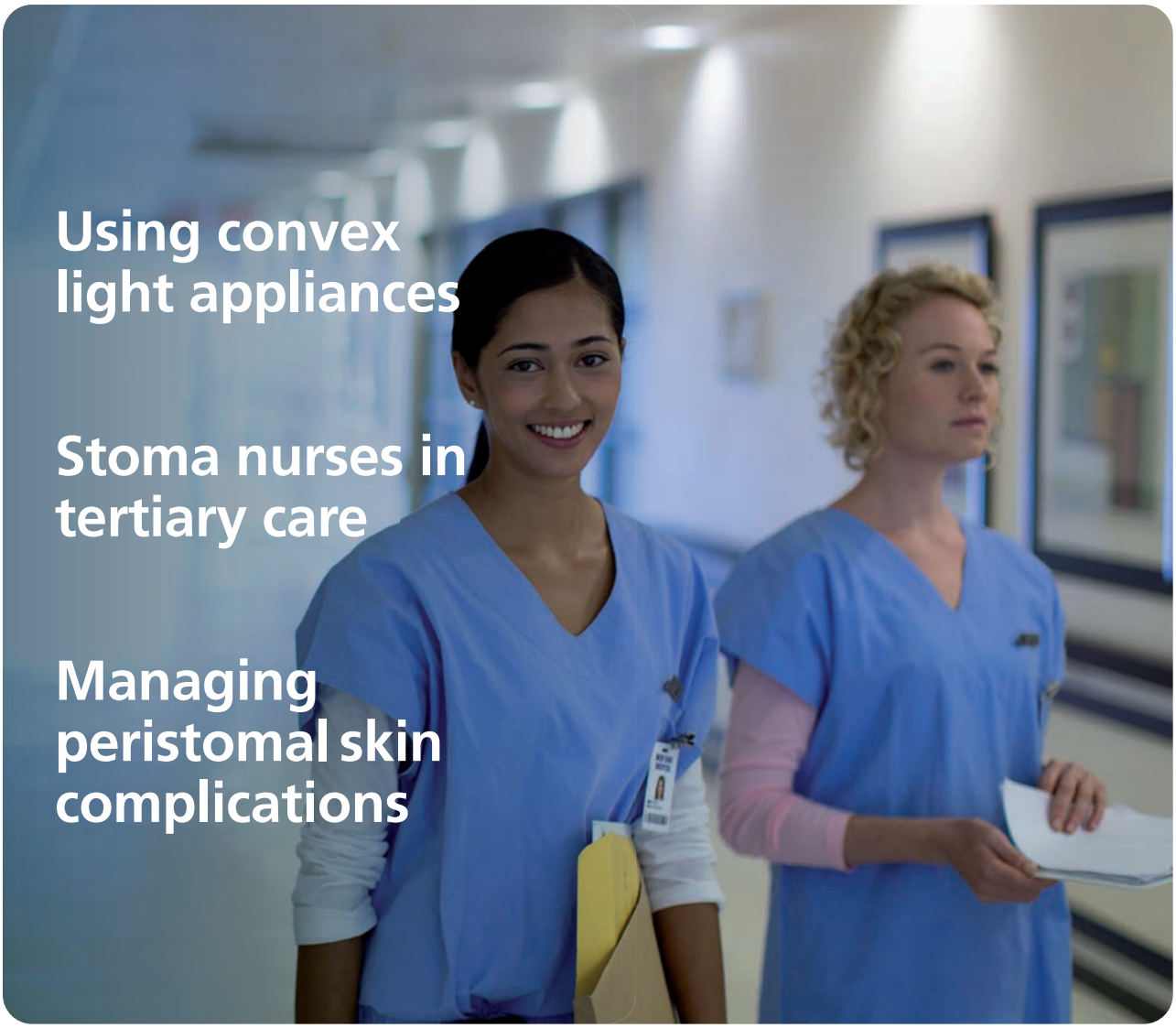

Using convex light appliances

Stoma nurses in tertiary care

Managing peristomal skin complications

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Healthy skin: living a happy life with an ostomy

Patients with intestinal and/or bladder cancer, inflammatory bowel disease or severe injuries may require surgery to create a stoma (ostomy). This lifesaving procedure can significantly improve quality of life by alleviating many disease-related symptoms. However, ostomies can also present challenges, particularly regarding peristomal skin health. Reported rates of peristomal skin complications (PSCs) vary in the literature, ranging from 25%–75% (Gray et al, 2013; Colwell et al, 2017). This variability might be due to differences in study methods, patient populations and how PSCs are defined. Steinhagen and colleagues (2017) identified several factors that contribute to the development of PSCs. One key factor is a poorly created stoma. Improper surgical technique during stoma formation can increase the risk of complications that impact the surrounding skin. Additionally, improper use of a stoma device – like leaks or inadequate adhesion leading to skin irritation – plays a significant role. Finally, underlying skin diseases can prevent a proper seal around the stoma, further increasing the likelihood of complications. Due to demographic changes and the ageing population, we can expect an increasing number of people to have problems with the skin around the stoma. With ageing, structural changes occur and the skin becomes thinner, more wrinkled and prone to damage. Many factors can increase the vulnerability of the skin to damage, such as excessive moisture on the surface of the skin and skin dryness, which are among the most common factors (Stephen-Haynes, 2014). Peristomal moisture-associated dermatitis is inflammation and denudation of the skin adjacent to a stoma, caused by exposure to effluence (such as urine or stool). Patients undergoing ileostomy and those receiving postoperative chemotherapy are more likely to experience peristomal moisture-associated skin damage (Nagano et al, 2019). Several factors can contribute to stoma skin problems, including a poorly created stoma, improper use of a stoma device (leading to leaks or poor seals), and underlying skin diseases (Steinhangen et al, 2017). For this reason, patients with a new stoma must receive specialised care.

Immediately after discharge, a patient should be supported by an enterostomal therapist or a community nurse with specialised stoma care training. In the initial weeks following surgery, the stoma will be edematous (swollen), and its shape and size will change. As the swelling subsides, the stoma will shrink in size and potentially alter in shape. Therefore, it is essential to frequently adjust the cutout aperture on the stoma's skin barrier to ensure a proper fit. Inadequate fit can lead to effluent leakage, causing skin irritation and inflammation.

Stoma patients need the help of an enterostomal therapist, some of them at home. Many of them are over 65 years old, and impairments in manual dexterity, vision and hearing can greatly affect their self-sufficiency in managing their stoma. The type of care available varies throughout Europe. Some patients must visit an enterostomal therapist in a hospital or outpatient clinic, while others have the opportunity for home visits. This depends on the healthcare system of each country. Many patients

with a stoma are involved in stoma patient associations, where they can receive advice and help from other ostomates. For optimal self-care, a patient with a stoma also needs a sufficient amount of stoma devices.

Many studies have shown that patients with a colostomy, ileostomy or urostomy have the most problems with peristomal skin. The patient and/or relatives must be educated as much as possible about stoma care even before leaving the hospital. Discharge from the hospital should be planned, as this can prevent the anxiety of the patient with stoma (Association of Stoma Care Nurses, 2019). Each stoma patient should be given information on accessible enterostomal therapists, who can be contacted in the event of a problem.

Healthy peristomal skin is one of the basic conditions for good stoma care. The patient's training on proper skin care, the use of appropriate skin cleansers and protective agents, the correct use of stoma care supplies and the appropriate choice of accessories are some of the key factors for optimal self-care without complications of peristomal skin. All of this has a great impact on the quality of life of the stoma patient. **GN**

Renata Batas, Consultant Editor

Association of Stoma Care Nurses UK. Stoma care national clinical guidelines. 2019. https://ascnuk.com/_userfiles/pages/files/resources/ascn_uk_national_guidelines_phase_1_3.pdf (accessed 9 May 2024)

Colwell JC, McNichol L, Boarini J. North America wound, ostomy, and continence and enterostomal therapy nurses current ostomy care practice related to peristomal skin issues. J Wound Ostomy Continence Nurs. 2017;44(3):257–61. https://doi.org/10.1097/WON.0000000000000324

Gray M, Colwell JC, Doughty D, Goldberg M, Hoeflok J, Manson A, McNichol L, Rao S. Peristomal moisture-associated skin damage in adults with fecal ostomies: a comprehensive review and consensus. J Wound Ostomy Continence Nurs. 2013;40(4):389-399. https://doi.org/10.1097/WON.0b013e3182944340

Nagano M, Ogata Y, Ikeda M, Tsukada K, Tokunaga K, Iida S. Peristomal moisture-associated skin damage and independence in pouching system changes in persons with New fecal ostomies. J Wound Ostomy Continence Nurs. 2019 ;46(2):137-142. https://doi.org/10.1097/won.0000000000000491

Steinhagen E, Colwell J, Cannon LM. intestinal stomas-postoperative stoma care and peristomal skin complications. Clin Colon Rectal Surg. 2017;30(3):184–192. https://doi.org/10.1055/s-0037-1598159

Stephen-Haynes J. The outcomes of barrier protection in periwound skin and stoma care. Br J Nurs. 2014;23(5):S26, S28-30. https://doi.org/10.12968/bjon.2014.23.Sup5.S26

Clinical digest

A brief overview of recently published articles on wound, ostomy and contience care

Renata Batas, Enterostomal Therapist, Community Health Centre Ljubljana, Slovenia (renata.batas@gmail.com)

Peristomal moisture-associated skin damage treatment: use of cyanoacrylate liquid skin protectant

Hill RH, Smith SL. Peristomal moisture-associated skin damage treatment: use of cyanoacrylate liquid skin protectant: a case series. J Wound Ostomy Continence Nurs. 2023;50(6):521–4. https://doi.org/10.1097/WON.0000000000001027

The skin around wounds, peristomal skin and other exposed areas to excrements, represent a major concern for patients with acute or chronic skin injuries. Cyanoacrylate adhesives were developed in 1949 for topical application to the epidermis of the skin to reduce skin damage. Cyanoacrylate adhesives trigger an exothermic polymerisation reaction on contact with the skin. When applied to the skin, a dry protective seal is formed, which acts as a barrier to microbial penetration. The cyanoacrylate adhesive is applied as a liquid so that the polymerised adhesive peels off naturally and does not need to be removed once the wound has healed. Cyanoacrylate adhesives are designed to polymerise rapidly and can remain in place for 5–10 days, depending on the application site. Cyanoacrylates are versatile and are used in skin and wound care, including skin tears, pressure injuries and lacerations.

The incidence of stoma and peristomal skin complications, including peristomal moisture-associated skin damage (MASD), remains as high as 80% of patients living with ostomies. The study evaluated a cyanoacrylate liquid skin protectant (CLSP) for treating and healing peristomal MASD in patients with an ileostomy, ileal conduit, or colostomy.

Five patients (ages 24–85) with peristomal MASD were evaluated. The stoma types were ileostomy (*n*=2), ileal conduit (*n*=2), and colostomy (*n*=1). All patients received 1–2 applications of a cyanoacrylate liquid skin protectant (CLSP) to address leakage-induced MASD, causing painful denudation of peristomal skin.

Prior to CLSP application, an assessment was performed to identify the causes of pouching system leakage. Interventions to prevent recurrence were implemented when necessary, primarily focused on modifying the pouching systems.

With CLSP treatment and addressing underlying leakages, patients required less frequent pouching changes and experienced near-complete healing of peristomal skin. Pain levels were significantly reduced, with an average score of over 7/10 before treatment decreasing to less than 4/10 post-treatment (on a 0-10 pain scale).

With the study, they found out that application of a CLSP to the peristomal skin, along with pouching system modifications, led to rapid resolution of peristomal MASD in patients living with an ileostomy, ileal conduit, or a colostomy. It was observed that time to healing varied proportionally to MASD severity. Patients with more severe peristomal MASD required two to three times longer for complete resolution than patients with less severe peristomal MASD.

A Multisite Study on the effect of a urinary incontinence self-management program on community-dwelling older women in Korea

Park S, So A. A Multisite Study on the effect of a urinary incontinence self-management program on community-dwelling older women in Korea. J Wound Ostomy Continence Nurs. 2024;51(1):61–5. https://doi.org/10.1097/WON.0000000000001036

Urinary incontinence (UI) is a common condition among older women worldwide. The global prevalence of UI is 37.1% among older women and 45.1% among older women in Asia. The nationwide cross-sectional survey (K-STORI) in Korea of 3000 women (80% living in urban areas) aged between 65-79 years revealed that the prevalence of UI among Korean older women was 52.2%. Among elderly women in rural Asia, the prevalence of UI ranged from 51.7%–56.3%. Despite such a high prevalence of UI, older Korean women demonstrate poor health-seeking behaviours. The reasons are not considering UI as a serious disease, not knowing which clinic to visit, and shame.

This one-group pretest-posttest design study aimed to evaluate the effects of a UI self-management program on UI symptoms, knowledge, and self-efficacy in community-dwelling older women. A total of 163 women participated in a five-session UI self-management program and were recruited from 14 primary healthcare posts (PHCPs) in South Chungcheong Province, rural South Korea.

The UI self-management program was sequentially conducted across 14 PHCPs between May and November 2016 and in each PHCP, 6–22 women participated in the program. The program was conducted across five weeks and consisted of weekly 90-minute sessions. Each session included a lecture on UI, reflective discussion, pelvic floor muscle training and the assignment of homework (exercises and a daily bladder diary). The main outcome variables were measured using the International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF), Urinary Incontinence Knowledge Scale (UIKS), and Geriatric Self Efficacy Index for Urinary Incontinence (GSE-UI), which were administered before and after the intervention. Descriptive statistics were computed, and Wilcoxon signed-rank tests analysed the data.

The study observed a significant decrease in ICIQ-SF scores (pretest: 6.64 [SD 6.15], posttest: 4.76 [SD 5.08], p=0.001), demonstrating an improvement in UI severity. Additionally, substantial increases were noted in UIKS scores (pretest: 15.69

[SD 6.36], posttest: 23.14 [SD 5.54], *n*= 0.001) and GSE-UI scores (pretest: 75.34 [SD 31.80], posttest: 86.20 [SD 27.06], *n*=0.001). These findings indicate that the UI self-management program successfully improved UI symptoms, knowledge and self-efficacy among community-dwelling older women.

Study findings suggest that a community-based UI self-management program is an effective primary approach to improving UI symptoms, UI knowledge and UI self-efficacy for older women in rural areas of Korea. In addition, this multisite study shows that it is feasible to implement group behavioural interventions in older women. A community-based UI self-management programme has proven to be an effective primary approach to improving UI symptoms, UI knowledge and UI self-efficacy in older women in rural areas of Korea.

Detecting early-stage pressure injury in patients with dark skin tones using an enhanced physical assessment technique and halogen lighting

Waidley M, Taylor N, Shever-Doletzky LL. Detecting early-stage pressure injury in patients with dark skin tones using an enhanced physical assessment technique and halogen lighting. J Wound Ostomy Continence Nurs. 2024;51(1):26–31. https://doi.org/10.1097/WON.0000000000001048

The study's authors highlight limitations in the traditional skin assessment method for early-stage pressure injury (PI) detection in individuals with dark skin tones. This method, which focuses on identifying non-shiny redness, may not adequately address the unique presentation of PIs in darkly pigmented skin. While Shea's initial 1975 staging system for PIs did not address this, the 1997 revision included specific guidelines for identifying stage 1 PIs in those with darkly pigmented skin. However, studies from 2008–2012, as well as Bauer et al (2016), suggest a higher likelihood of early-stage PIs progressing undetected to more severe stages in patients with darker skin tones.

A hospitalised patient with dark skin developed an undetected, severe stage 4 PI. Subsequent case reviews revealed that the earlier stages of this PI went unnoticed and untreated. This incident prompted a quality improvement initiative.

The purpose of this quality improvement project was to design a mechanism for accurate detection of stage 1 PIs in patients with darkly pigmented skin and prevent their progression to deeper PIs. With the project, they wanted to identify stage 1 PIs in patients with darker skin tones using an enhanced skin assessment (Skin Assessment for Dark Skin (SADS)) and halogen lighting. This quality improvement project was conducted on three units at a large university teaching hospital in southeast Michigan.

Data analysis was based on patients who self-identified as African American or Black, Native Hawaiian or Pacific Islander, Asian, American Indian and Native Alaskan. Bedside nurses participating in this project were also asked to complete a questionnaire describing their knowledge and experiences with this project and assessment of early-stage PI in patients with darker skin tones.

In the study, the Iowa Model of Evidence-Based Practice was used to guide this quality improvement initiative. They reviewed pertinent literature and developed an enhanced technique for assessing patients with darker skin tones that involved the use of halogen lighting (SADS) and documentation of findings. Units from their facility were used and nurses were taught to apply the SADS approach. Data from the electronic medical record and a survey of participating nurses were used to compare findings before and after project implementation. Comparisons were based on descriptive data analysis.

The result of the following implementation of the enhanced physical assessment was a 6% decrease in the total number of PIs during the implementation period. The enhanced physical assessment, when paired with halogen lighting, enhanced the identification of stage 1 PI in persons with dark skin. The assessment method was easy to teach and learn, and can be performed at the bedside as part of a shift assessment, which routinely includes inspection of skin.

The project developed and implemented an enhanced SADS and alternative lighting source (halogen lights) to improve the detection of community- and facility-acquired PI among persons with dark skin tones. It was established that the new technique facilitated the identification of features of stage 1 PI in patients with dark skin tones documented by nurses, but it was also observed that nurses were hesitant to recognise these changes as a sign of stage 1 PI.

The limitations of the project are, unfortunately, the selection of halogen lights to long-term implementation of the SADS approach. In the US, halogen lights are being replaced by LED, as the cost-effectiveness and environmental damage potentiated by halogen have been deemed inappropriate for continued use.

Evaluation of a Skin Barrier Ring With Assisted Flow

Colwell JC, Pittman J, Rider P et al. Evaluation of a skin barrier ring with assisted flow: a prospective cohort study. J Wound Ostomy Continence Nurs. 2024;51(1):46–50. https://doi.org/10.1097/WON.0000000000001045

It is reported that approximately one million people in the US are living with an ostomy and an epidemiologic study based on a large database suggests that about 110 000 surgeries to create an ostomy are performed each year. Stoma can be a positive life-changing event, but some complications can arise. The most common are peristomal skin complications (PSCs). Up to 80 % of patients also experience ostomy complications. Peristomal skin complications also lead to higher utilization of medical resources; they result in up to 30% of postsurgical visits to a WOC nurse. The root cause of PSCs is inaccurate fit of the pouching system, size and shape of the skin barrier, wear time, the patient's application of the pouching system and the need for the use of accessories. Many accessories may be considered to provide a consistent pouch fit and seal with no undermining or leakage, but skin barrier rings are most frequently recommended.

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Skin barrier rings are made up of a hydrocolloid that can form a seal around the stoma, fill in peristomal irregularities and absorb effluent. When the saturation point of the hydrocolloid is reached, it begins to lose integrity, resulting in adhesive breakdown. A consequence of adhesive breakdown is leakage, resulting in peristomal moisture-associated skin damage and PSCs.

The purpose of this study was to assess the effect of a skin barrier ring with assisted flow in preventing PSCs in patients with an ileostomy and to evaluate the participants' perceptions of the device. This device protects the peristomal skin and a second, flexible, nonabsorptive surface that protects the integrity of the hydrocolloid. This feature is designed to decrease erosion and direct ostomy output into the pouch.

In the single-group, prospective cohort study, both inpatients and outpatients with newly created (*n*=14) or established (*n*=1) ileostomies were recruited from two clinical sites in the US: one was an academic teaching hospital system in the midwestern US and the second was a teaching hospital located in the southeastern US.

Participants used the skin barrier ring with assisted flow after receiving education on its use. The pouching system was changed on a routine basis as determined by the ostomy nurse specialist. The Ostomy Skin Tool (OST) was used to assess each participant's peristomal discolouration (D), erosion (E), and tissue overgrowth (T) on admission to the study (baseline) and at final assessment (60 ± 33 days). Secondary outcomes (device handling, comfort and discretion) were assessed through a questionnaire administered during the final data collection visit.

The findings of the study showed the mean baseline DET score among the 14 participants with a new ileostomy was two or less, indicating no PSCs. The incidence of PSCs in this study was 40% (*n*=6). The participant with an established ileostomy had a DET score that reduced from 10 at baseline to 0 on the final assessment.

A total of 60% of participants (*n*=9) using the investigational device experienced a PSC. Thirteen of 15 participants (86.7%) agreed that the skin barrier ring with assisted flow was easy to apply. More than 90% of participants agreed that the device was comfortable and easy to remove, and all participants (100%) agreed it was discreet when worn under clothing. Specifically, 86.7% of participants indicated that the skin barrier ring with assisted flow is easy to put on, and 93.3% found the skin barrier ring with assisted flow comfortable. This finding suggests that it is possible to introduce home use without the need for extensive training.

The percentage of participants in this study who developed a PSC before final assessment (40%) is somewhat lower than these incidence rates previously reported in the literature. Additional research is needed to determine whether the incidence of PSCs using the investigational device is lower than traditional ostomy pouching systems.

The ECET has reorganised!

Gabriele Kroboth discusses the recent ECET conference in London and the council's plans for the future

Gabriele Kroboth, ECET President

The ECET Conference in London, which took place on 2–3 May, under the umbrella of the European Wound Management Association (EWMA), was a great success and an excellent new start.

Due to COVID-19 disruptions, the ECET Conference 2023 was initially planned for Vienna after the 2021 conference was cancelled. However, it was ultimately cancelled because industry partners booked smaller exhibition spaces than anticipated, creating a significant financial risk.

The ECET Board was faced with the challenge of deciding on the next steps. Not only was there the question of whether ECET would still exist in the future, but the Board was also shrinking. Werner Droste stepped down from his role as he was retiring and Danila Maculotti resigned from her position in summer 2023.

ECET's successful guest session at EWMA 2023 in Milan played a pivotal role in its future. Enthusiastic participation and extensive discussions during the session affirmed the continued relevance of ECET. This led to an invitation from EWMA for ECET to organise the 2024 conference under the EWMA umbrella – an opportunity ECET enthusiastically accepted.

The existing Board members invited Margarete Wieczorek, Chair of the German Association of Stoma Care Nurses (FgSKW e.V.), to participate. This invitation complies with Danish association law, given the circumstances in which ECET found itself. Margarete agreed and actively supports the ECET Board.

ECET Board (from left to right): Gabriele Kroboth, ECET President, Renata Batas, ECET Vice President, Margarete Wieczorek, ECET Secretary

Prof. Eva Carlsson discussing stoma-related complications

The ECET Board believes that the ECET Conference 2024 was a great success. The Board members deliberately kept their opening remarks short and straightforward. Prof. Eva Carlsson from Sweden gave a keynote speech on stoma-related complications – outcome, prevention and clinical practice. The hall was filled to capacity, with around 200 people listening intently. An engaging discussion immediately followed.

Professor Igor Iesalnieks, Germany, explained how stoma-related complications can be avoided from a surgical perspective. The time seemed too short to discuss questions and suggestions sufficiently.

Caroline Bramwell, a member of the EOA Board, represented EOA President Jon Thorklesson, who was unfortunately unable to attend. She gave a vivid report on the EOA's work, highlighting their significant projects in Europe and their dedicated support for initiatives in Africa.

Renata Batas from Slovenia introduced the focus on peristomal skin disorders, providing a stimulating overview of the topic.

Prof. Ayise Karadag, accompanied by several students, attended the ECET

Caroline Bramwell from the Board of the EOA represented EOA President, Jon Thorklesson

Renata Batas presenting on peristomal skin disorders

Margarete Wieczorek and Florian Spahn presenting on practical training course for nursing staff on fistula care.

Conference and presented on stoma site marking. She emphasised the continued importance of this practice.

This was followed by an overview of modern treatment methods for peristomal skin disorders.

The use of cold plasma and photobiomodulation were presented with exceptional clarity.

A special highlight was the lecture by Prof. Dimitri Beeckman, who discussed the health economics of using prophylactic dressings to prevent pressure ulcers, as well as strategies to prevent skin injury due to incontinence. His presentation sparked a discussion that lasted well beyond the scheduled break.

Ivanca Bencic, Croatia, spoke about the treatment of fistulas and illustrated how difficult this is for those affected and their relatives. Margarete Wieczoreck and her colleague Florian Spahn presented a practical training course for nursing staff on fistula care.

Anika Fourie impressively presented her research findings on tissue damage in critically ill patients in the prone position.

Numerous research contributions on various topics were presented with impressive detail.

Case studies highlighted the development and implementation of new products.

We extend our gratitude to all speakers for their excellent presentations and to all participants for attending the ECET conference. The energy, feedback and suggestions received have invigorated the ECET Board. In the coming year, we will implement several projects and reach out to those interested in ECET with updates leading up to the next conference in Barcelona in 2025. **GN**

Anika Fourie presented on tissue damage in critically ill patients in the prone position

Prof. Dimitri Beeckman presented on the health econiomics of using prophylactic dressing to prevent ulcers

The use of a convex light appliance and mouldable rings for patients with an ostomy and effluent leakage in the early postoperative period

Abstract

Background/aims: Patients with digestive ostomies frequently experience effluent leakage in the early postoperative period, leading to complications and reduced quality of life. The convex appliance and adaptable rings in ostomy (CONAN) study investigated a new combined treatment strategy for reducing leakage and improving patient satisfaction. **Methods:** This prospective, multicenter study involved 244 patients with digestive ostomies and early effluent leakage across 54 stoma units in Spain. Patients were treated with the CONAN strategy, using a light convex ostomy appliance (Easiflex Confort Convex Light) and a flexible ring (Brava moldable). Stoma care nurses collected data on leak episodes per day and patient satisfaction (0–10 scale) at baseline and 2–3 weeks post-discharge. Multivariate analysis identified patient characteristics associated with greater treatment benefit. **Results**: Patients experienced a significant reduction in mean leak episodes per day (3.4 ± 5.2 to 1.3 ± 2.3, $p<.0001$). Mean patient satisfaction significantly increased post-treatment (5.1 ± 2 to 7.2 ± 1.7, $p<.0001$). Multivariate analysis revealed the following factors were associated with high patient satisfaction (≥ 8 over 10): shorter hospital admission, programmed surgery (vs. emergency), closed ostomy appliance (vs. open) and multi-piece appliance systems. **Conclusions:** The CONAN strategy, combining a light convex ostomy appliance and flexible rings, effectively reduces leakage and improves satisfaction in patients with digestive ostomies and early effluent leakage. Patients with longer hospital stays, emergency ostomy surgery, open ostomy systems and single-piece appliances may benefit most from early intervention with this strategy.

Patients living with an ostomy as the result of treatment of colorectal cancers face many challenges (Claessens et al, 2015). Ostomy pouch seal leakage is reported with very variable frequency and often causes severe worry and concern. The consequences of pouch seal leakage can be devastating, especially in the early postoperative period of an ostomy, and often leads to skin damage, postoperative complications and patient suffering (Voegeli et al, 2020).

Peristomal skin conditions are common in people with an ostomy. Stoma care nurses can help improve peristomal skin conditions in people with an ostomy, thus minimising the negative impact of skin disorders on quality of life (QoL) and reducing healthcare costs (Martins et al, 2011). A recent study has revealed that reduced frequency of leakages is a predictive factor for optimal skin status (Rodríguez-González et al, 2021a).

Big differences in ostomy pouch seal leakage occurrence have been reported among different regions and sanitary environments (Fellows et al, 2017). There is substantial

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Table 1. Baseline characteristics of the patients included (*n*=244)

Variable	*n* (%)
Sex, *n* (%)	
Male	124 (51)
Female	120 (49)
Age, mean ± SD	65.5 ± 13.2
BMI, mean ± SD	25.7 ± 4.1
Type of ostomy, *n* (%)	
Colostomy	143 (59)
Ileostomy	101 (41)
Duration of ostomy, *n* (%)	
Permanent	101 (41)
Temporary	143 (59)
Type of surgery, *n* (%)	
Programmed	159 (65)
Emergency	85 (45)
Preoperative stoma siting, *n* (%)	
Performed	141 (58)
Not performed	103 (42)
Type of reference appliance (*), *n* (%)	
Flat	153 (72)
Convex	59 (28)
Type of closure (*), *n* (%)	
Closed	51 (24)
Open	161 (76)
Number of pieces (*), *n* (%)	
One piece	37 (17)
Two pieces	148 (70)
Two-pieces with mechanical coupling	27 (13)

Note: (*) 32 patients had no reference appliance

variation in the use of ostomy appliances, partly determined by the financial burden associated with variability regarding the reimbursement patterns for ostomy supplies among countries. Of particular importance is the access to stoma therapist consultation and the training of informal caregivers. These could moderate the severity of the challenges, patient self-esteem, coping strategies and personal relationships (Rock et al, 2023). Structured ostomy care training has a positive impact on the QoL and the anxiety of patients with a permanent ostomy (Khalilzadeh Ganjalikhani et al, 2019).

Another strategy of interest to reduce effluent leakage is the change to a new ostomy appliance, taking into account that a convex base plate can facilitate the protrusion of the stoma. Convex products are preferred to manage flat or retracted stomas and to compensate for irregular peristomal planes such as creases or folds (Hoeflok et al, 2017a). Several studies have confirmed flexible convex appliances are beneficial to reduce leakage and provide security and comfort in ostomates with leakage (Kruse and Størling, 2015; Rat et al, 2018; Rodrígez-González et al, 2021b). More specifically the ECOS (convex in ostomy) study revealed that the efficacy and safety of using a convex light appliance are maintained in the long term (Rodríguez-González et al, 2021b).

Another study has proved that in patients experiencing effluent leakage in the early postoperative period of an ostomy change of the ostomy appliance to a light convex one combined with the use of a mouldable ring is an effective strategy, thus improving peristomal skin condition and nursing assessment (NANDA-I) on specific

Key words
- Ostomy appliance
- Effluent leakage
- Patient-reported outcome measurement

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Table 2. Variables associated to high self-reported satisfaction (from 0 to 10) at the end of study (V2), with *P* values

	Self-reported satisfaction (0 to 10 scale)		
Variable	**≤ 7**	**≥ 8**	***p* value**
Sex, male/female ratio	1	1	0.96
Age, years (mean±SD)	66.1±12.7	65±13.8	0.55
BMI at V1, Kg/m^2 (mean±SD)	26.2±4.7	25±3.3	0.04
Hospital stay, days (mean±SD)	13.8±8.9	10.5± 28.3	0.003
Type of ostomy (%)			
Colostomy	56	61	0.55
Ileostomy	44	39	
Duration of ostomy (%)			
Permanent	40	41	0.94
Temporary	60	59	
Type of surgery (%)			
Programmed	60	70	0.08
Emergency	40	30	
Preoperative stoma siting (%)			
Yes	55	60	0.47
No	50	39	
Type of appliance * (%)			
Flat	75	69	0.29
Convex	25	31	
Type of closure * (%)			
Closed	18	29	0.06
Open	82	71	
Number of pieces * (%)			
One-piece	25	9.8	0.005
Two-pieces	67	73	
Two-pieces with mechanical coupling	8.2	18	
Number of leakages at V2 (mean±SD)	4.1±6.3	2.6±3.5	0.04
Able to self-change appliance (%)			
Yes	56	70	
No	44	30	0.03

Note: * Reference appliance system; statistically significant *P* value in bold; BMI, body mass index; V1, visit 1; V2, visit 2

domains (Lado Teso et al, 2022). A combination of these two strategies was designed to avoid the use of a hard convexity in the early postoperative period of patients with an ostomy as that could potentially produce some stoma complications in the very early postoperative period. However, the combined strategy of using a soft convexity, together with a seal as an adjuvant measure, may not be needed in every patient. For that reason, the authors have conducted this post-hoc analysis of the CONAN study to identify the patient profile that benefits more from this combined strategy using a simple patient-reported outcome measurement.

Material and methods

The convex light appliance and adaptable rings in ostomy (CONAN) study is a prospective observational multicentre study performed between January 2020 and July 2021 on patients suffering effluent leakage in the early postoperative period of a digestive ostomy. The study aimed to evaluate a nationwide representative sample from 54 participant institutions in Spain. Inclusion criteria were patients in the early postoperative period of an ostomy who suffered or were at risk of effluent leakage, adult patients with the capacity to perform a self-assessed evaluation of global wellbeing and patients who gave signed informed consent to participate. Exclusion criteria were pregnancy or lactation and simultaneous participation in other studies. Previous or concomitant radiotherapy or chemotherapy were not exclusion criteria. Treatment included the change of reference appliance to Easiflex Confort Convex Light (Coloplast A/S, Humlebæk, Denmark) combined with Brava (Coloplast A/S, Humlebæk, Denmark) moldable rings during the hospital admission. There were no exclusion criteria regarding the type and commercial design of the reference appliance system but no patient included in the study used a seal previously. Inclusion in the study of patients without a reference appliance but considered by the investigator as patients at high risk of leakage, was allowed. The main reasons for this were:

- Ostomy performed at emergency surgery without preoperative stoma siting
- Obesity and other morphological circumstances such as flat or retracted stomas
- Irregular peristomal planes with folds.

A total of 257 patients were screened, 244 fulfilled the inclusion criteria and completed the evaluation. Treatment outcomes were evaluated during hospital admission at the time of inclusion (V1) and 2–3 weeks after discharge (V2). Patient-reported outcomes regarding satisfaction both concerning appliance baseline and with the CONAN treatment at the end of the study were evaluated using a 0–10 Likert scale. A number of effluent leakages per day was assessed numerically. Signed-rank t-test was used to compare the

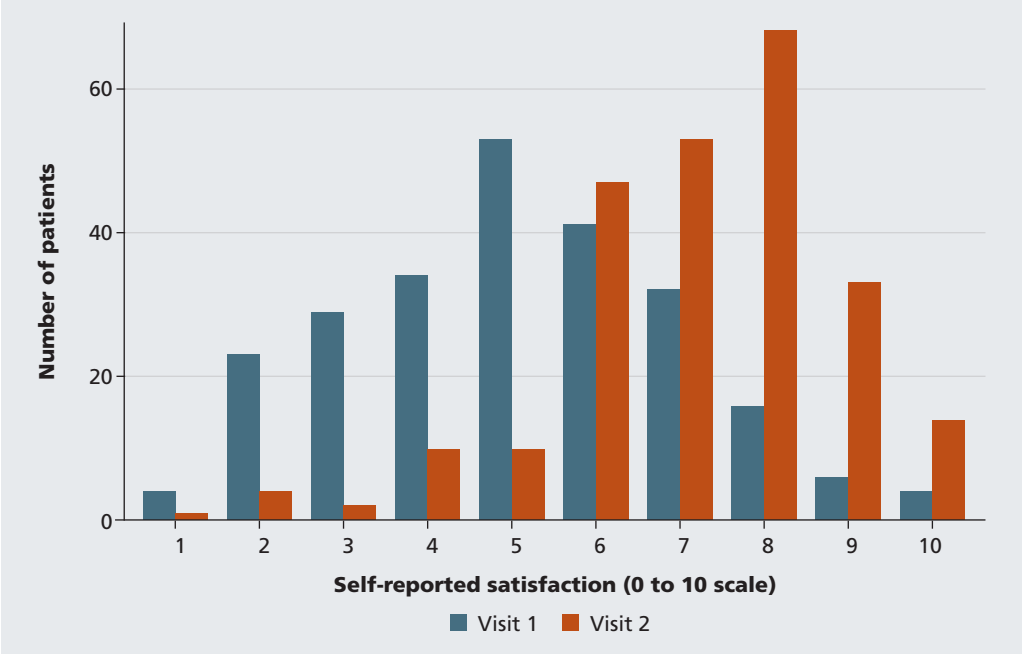

Figure 1. The distribution of self-reported satisfaction during the study, both baseline (visit 1) and end of study (visit 2).

change in the number of leakage episodes per day and self-reported satisfaction between initial (V1) and final (V2) visits, and also to compare quantitative variables. The chi-square test was used for comparison between categorical variables. The significance level considered was $p<0.05$.

Logistic regression analysis was used to identify the variables predictive of self-reported satisfaction ≥8. A multivariate analysis was performed using a stepwise model with a threshold entry of $P=0.15$ and stay criterium of $P=0.1$ to evaluate variables that were determinants of best self-reported satisfaction with the light convex appliance and moldable ring. Odds ratio (OR) with a 95% confidence interval (CI) were defined for each independent predictor and the area under the curve for the model was calculated. The statistical analysis was developed using SAS 9.4 (2002–2010, SAS Institute Inc, Cary, NC, US).

The research obtained ethical approval from the Ethics Committee of Clinical Investigation in Burgos and Soria (Burgos, Spain) (Ref CEIC 2237).

Results

Table 1 presents the demographic and baseline clinical characteristics of the 244 patients included in the study. All participants were patients in the early postoperative period of an ostomy. A total of 32 (13%) had no previous appliance and directly received a light convex one with a mouldable ring because they were considered at high risk of leakage immediately following surgery, but 212 (87%) suffered from effluent leakage with their previous reference appliance that was used for a mean 6.5 ± 6.2 (range 1–60) days. Regarding the reference appliance, it was convex in 59 (28%) and flat in 153 (72%); the system was closed in 51 (24%) and open in 161 (76%), and the number of pieces were one in 37 (17%) and two in 175 (83%). In 27 patients, the two-piece ostomy pouch system also had mechanical coupling.

Mean self-reported satisfaction changed from 5.1 ± 2 in V1 to 7.2 ± 1.7 in V2 with the light convex appliance plus mouldable ring (t-test, $p<.0001$). The mean number of leakage episodes evolved from 3.4 ± 5.2 to 1.3 ± 2.3 (t-test, $p<.0001$). A correlation between self-reported satisfaction and number of leakages, both baseline (Spearman coefficient -0.35; $p<0.0001$) and at end of study (Spearman coefficient -0.38; $p<0.0001$), was confirmed.

The distribution of self-reported satisfaction during the study is represented in *Figure 1*. A total of 26 (11%) scored satisfaction ≥8

Table 3. Multivariate model for optimal self-reported satisfaction (≥8 on 0–10 scale) with the intervention*

Variables	Point Estimate	95% Wald Confidence Limits	p value
Hospital admission, as per day	0.96	0.92–0.99	0.03
Programmed vs urgent surgery	2.04	1.03–4.03	0.04
Open vs closed system appliance	0.36	0.17–0.75	0.006
Single piece vs 2-pieces system	0.11	0.03–0.39	0.002
Single piece vs 2-pieces with mechanical coupling	0.27	0.11–0.69	

Note: * Reference appliance system; statistically significant *P* value in bold; BMI, body mass index; V1, visit 1; V2, visit 2

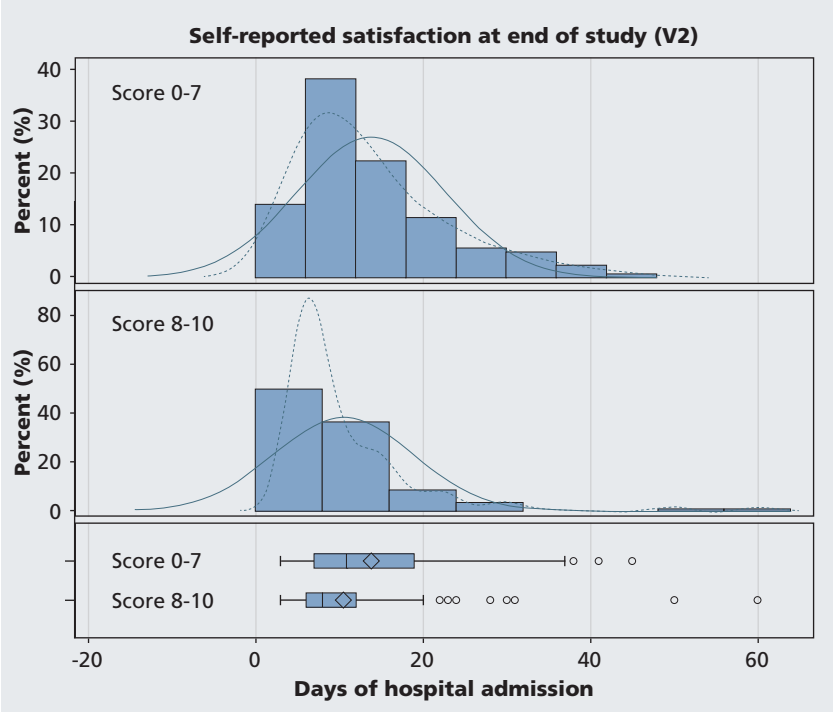

Figure 2. Distribution of hospital stay (days of admission) according to self-reported satisfaction at end of study (V2). Longer admission associated to higher satisfaction with the treatment (*P*=0.003)

baseline, and 114 (47%) did so at end of study. High self-reported satisfaction (≥ 8 over 10) at the end of the study is associated with shorter hospital admission (*P*=0.003) (*Figure 2*), lower body mass index (BMI) evaluated at V1 (*P*=0.04), lower number of leakages at V1 (*P*=0.04), the ability to change the appliance without the need of a caregiver (*P*=0.03) and sealing system (*P*=0.005); but not to the patient (age (*P*=0.55), sex (*P*=0.96), type of ostomy (*P*=0.56), duration of ostomy (*P*=0.94), preoperative stoma siting (*P*=0.47) and type of reference appliance (*P*=0.29). The association between self-reported satisfaction with type of surgery (*P*=0.08) and type of closure (*P*=0.06) approached statistical significance (*Table 2*).

A multivariate analysis to evaluate the profile of the patient that benefits more from the use of this strategy revealed high self-reported satisfaction (≥ 8 over 10), which was determined by the length of admission at the time of inclusion (OR=0.96, as per day; 95% CI 0.92-0.99), programmed surgery compared to emergency surgery (OR=2.04; 95% CI 1.03-4.04), closed type ostomy appliance compared to an open one (OR=0.36; 95% CI 0.17-0.75) and number of pieces of the ostomy appliance system (OR=0.11; 95% CI 0.03-0.39) for 2-pieces with mechanical coupling compared to a single one, and for two-pieces (OR=0.27; 95% CI 0.11-0.69) compared to a single one (*Table 3*, *Figure 3*). The area under the curve for this predictive model was 0.74. This is a visual representation of an integral and can be interpreted as the accumulated amount of what the function is modelling; ie, the probability that this model correctly predicts future results.

Discussion

More often than desirable, ostomates experience problems with the stoma, mainly determined by leakage of effluent leading to irritation to the peristomal skin and pain (Lado Teso et al, 2019). The early postoperative period after an ostomy is a very fragile situation. After leaving the hospital, discharge concerns severely affect the adaptation to the stoma, thus leading to a reduction in social and recreational activities (Pieper and Mikols, 1996). Many factors appear related to pouch leakage, including pouching skills, body habitus, risk of creases and irregular folds, preoperative stoma siting, inappropriate selection of products and incomplete patient or caregiver training. In many aspects, early access to consultation with a stoma therapist may facilitate the adaptation process as early recognition and prompt intervention in the case of a complication is desirable (Richbourg et al, 2007; Butler, 2009).

More technically sophisticated stoma products have become widely available. Among them, the use of ostomy appliances with a convex baseplate is increasingly used for all stoma types to facilitate the maintenance of an active lifestyle in ostomates (McPhail et al, 2014). There is also consensus that convex ostomy appliances help to prevent leakage and skin irritation as they create a secure seal for a stoma not protruding above the peristomal skin plane or when the peristomal skin has creases and folds (Hoeflok et al, 2017b; McNichol et al,

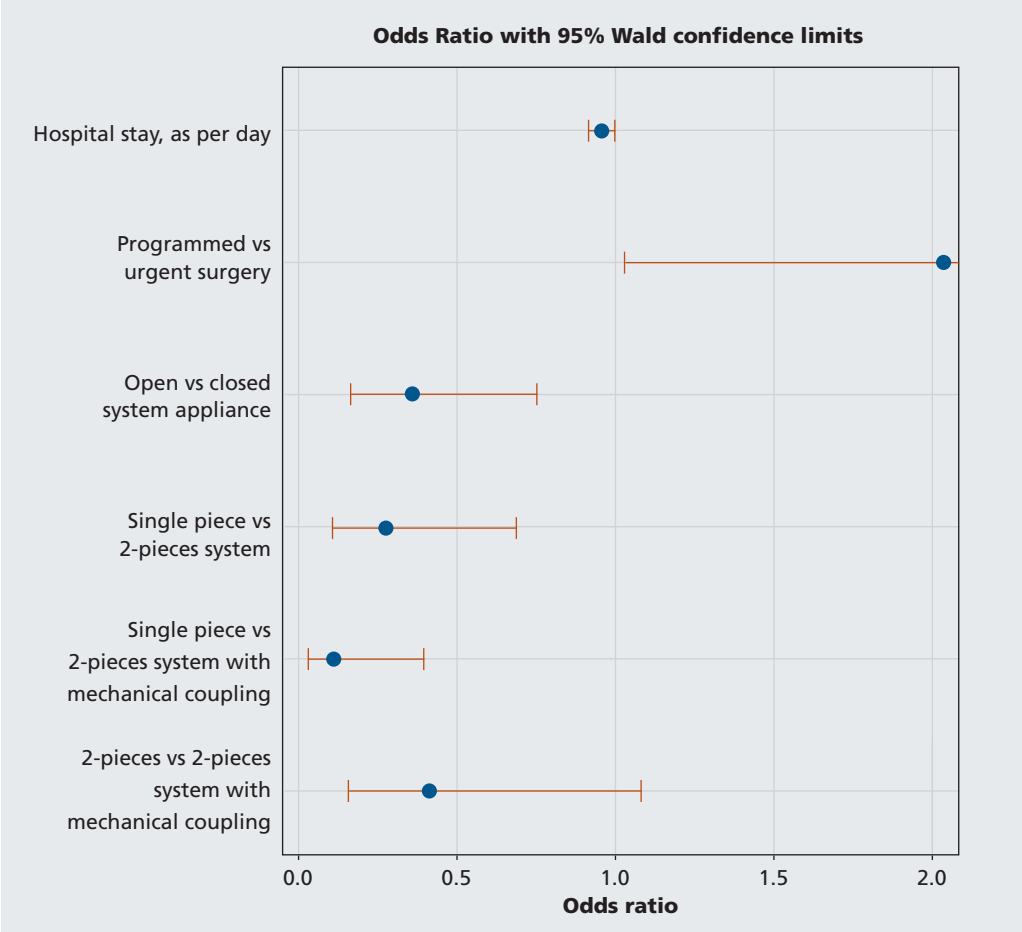

Figure 3. Multivariate analysis of factors predictive of self-reported satisfaction score ≥8. Odds ratios with 95% confidence intervals are represented for the independent predictive variables

2021; Perrin et al, 2021), and also that the effect of the use of convexity can be durable and secure in the long-term, with a very manageable stoma-related complication rate (Rodríguez-González et al, 2021b). Mouldable skin barriers also appear effective in preventing and healing peristomal skin complications (Hoeflok et al, 2009; Szewczyk et al, 2014; Liu et al, 2017).

Despite the strong consensus that patients with a flush retracted stoma benefit from convex appliances to facilitate a leak-free status, there is some concern that in the early postoperative period, continuous unmonitored strong convexity adds to accumulated peristomal pressure that could cause a double-depth skin trauma and prolapsed stoma (Hanley, 2013). The CONAN (CONVEX appliance and adaptable rings) study analyses the effectiveness and safety of using both tools (ie, an appliance system with smooth convexity additionally cushioned with a mouldable ring) combined in the early postoperative period of a patient with an ostomy suffering leakage or at high risk of an effluent leak. At a short follow-up of 2–3 weeks, this strategy not only diminished the number of leakages, but also improved the peristomal skin status and the stoma morphology. QoL in these patients is also improved, as evidenced in self-reported satisfaction (Lado Teso et al, 2022).

However, the combined use of mild convexity and a seal right from the start of the postoperative period of a patient with an ostomy and effluent leakage may not benefit all patients. In some patients, it can change their routine to increase the time of care as well as costs. For this reason, the authors understand it is of primary importance to identify the population of patients that may benefit more from the CONAN strategy in the early postoperative period, even before hospital discharge.

Based on the aforementioned need, the authors present a post-hoc evaluation of the CONAN study to describe the patient profile that benefits most from this therapeutic

CPD reflective questions

- When consulting with a patient suffering frequent effluent leakage in the early postoperative period of an ostomy what are the treatment options?
- In this situation do you consider the simultaneous use of a light convex appliance and moldable ring?
- Is it possible to define a patient profile that benefits more of this combined strategy?

strategy, based on patient-reported outcome measurements. Multivariate analysis revealed that high self-reported satisfaction (≥ 8 over 10) was determined by the length of hospital admission at the time of inclusion in the study, the elective character of surgery (programmed vs emergency) and by the reference appliance (closure and pieces) before study initiation. In other words, patients with worse reported outcome measures using the CONAN strategy are those with longer hospital stays, emergency surgery, open system and single-piece appliances. Therefore, this combined approach appears especially indicated in the early postoperative period of patients at higher risk of leakage and postoperative problems. According to results of this study, the stoma nurse should especially consider the use of mild convexity and a seal in patients with longer hospital admission and effluent leakage, and also in those with an ostomy performed in emergency surgery without previous stoma siting, especially when an irregular peristomal plane with creases and folds or retracted stomas are identified early after ostomy.

Emergency surgery is more often associated with an inability to site the stoma preoperatively, thus leading to increased peristomal skin complications (Cruz et al, 2021) Shifting from a flat to a convex stoma appliance reduces effluent leakage Rodríguez-Gonzálezz et al, 2021a) and frequency of leakage determines peristomal skin status Rodríguez-González et al, 2021b). The regression analysis conducted also confirmed that two-piece ostomy appliances (either with or without mechanical coupling) perform better than the single-piece reference one. Baseline patients with two-piece systems and closed appliances reached higher satisfaction with the change to soft convexity and seal.

In summary, the circumstances creating a risk of effluent are improved in terms of self-reported satisfaction by the combined use of convex light appliance and adaptable ring. This study also confirmed that this therapeutic strategy reduces the number of days of hospital admission and, at least in part, counteracts the negative factors that increase the risk of effluent leakage (obesity, stoma morphology and emergency surgery). Of course, the experience of the stoma care nurse should also be important to determine who should be the optimal patient to choose this combined strategy.

The main limitations of the present study are the absence of a control group and the short follow-up evaluation. Another evident limitation of this work is the absence of single-treatment arms. The authors have confirmed that the combination of a mild-convexity with a seal is efficacious, but further studies should be developed to confirm that the combination is better than one or the other measure alone. Future large-scale multicentre studies are needed to solve this question. On the other hand, the strengths of this study reside in its multicentre nature, the uniformity of the intervention investigated and the simplicity of the patient-reported outcome measurement used (self-reported satisfaction in a 0 to 10 Visual Analogue Scale). The use of patient-reported outcome measures as endpoint is also another strength of this study.

In Spain, the number of hospitals with specialised ostomy consultations have increased, offering early specialised attention and health education, thus providing psychological support from the first moment of an ostomy (Lado Teso et al, 2019). One of the educational activities enhanced is to generalise stoma site marking; however, as still more than 40% of the patients remain non-sited, personalised treatment and structured ostomy care training remain the main cornerstones of practice.

Conclusions

Patients with an ostomy and effluent leakage in the early postoperative period clearly benefit from the use of a light convex ostomy appliance and flexible rings. Individual predictors of best patient-reported outcomes with the CONAN strategy are the length of hospital admission, emergency surgery and type of previous appliance used. This could help us identify patients in which the therapeutic strategy in the early postoperative period should be improved to avoid the anxiety and fear that occur in the first weeks after

hospital discharge. Further studies with longer follow-ups regarding continued use of soft convexity from the early postoperative period are needed to better understand how patient satisfaction is adapted with time after surgery. Care for patients with an ostomy should be undertaken by expert stoma therapy nurses working in conjunction with surgeons, psychologists, nutrition experts and other specialists. **GN**

Declaration of interest *The authors declare no conflict of interest associated to the publication of this manuscript. The study has been performed on Coloplast's request, who have assumed the total cost of the study.*

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Cruz BB, López IJ, Soto AM et al. The effect of pre-operative stoma-site marking on peristomal skin health and quality of life. Gastrointestinal Nursing. 2021;19(Sup4a):S34–41. https://doi.org/10.12968/gasn.2021.19.Sup4a.S34

Butler DL. Early postoperative complications following ostomy surgery: a review. J Wound Ostomy Continence Nurs. 2009;36(5):513–519; quiz 520–521. https://doi.org/10.1097/WON.0b013e3181b35eaa

Claessens I, Probert R, Tielemans C, Steen A, Nilsson C, Dissing Andersen B, Størling ZM. The ostomy life study: the everyday challenges faced by people living with a stoma in a snapshot. Gastrointest Nurs. 2015;13(5):18–25. https://doi.org/10.12968/gasn.2015.13.5.18

Fellows J, Forest Lalande L, Martins L et al. differences in ostomy pouch seal leakage occurrences between North American and European residents. J Wound Ostomy Continence Nurs. 2017;44(2):155–159. https://doi.org/10.1097/WON.0000000000000312

Khalilzadeh Ganjalikhani M, Tirgari B, Roudi Rashtabadi O, Shahesmaeili A. Studying the effect of structured ostomy care training on quality of life and anxiety of patients with permanent ostomy. Int Wound J. 2019;16(6):1383–1390. https://doi.org/10.1111/iwj.13201

Hanley J. Convex stoma appliances: are we getting it right? Br J Nurs. 2013;22(16):S3

Hoeflok J, Guy D, Allen S, St-Cyr D. A prospective multicenter evaluation of a moldable stoma skin barrier. Ostomy Wound Manage. 2009;55(5):62–69

Hoeflok J, Purnell P. Understanding the role of convex skin barriers in ostomy care. Nursing. 2017a;47(9):51–56. https://doi.org/10.1097/01.NURSE.0000516224.24273.88

Hoeflok J, Salvadalena G, Pridham S et al. Use of convexity in ostomy care: results of an international consensus meeting. J Wound Ostomy Continence Nurs. 2017b;44(1):55–62. https://doi.org/10.1097/WON.0000000000000291

Kruse TM, Størling ZM. Considering the benefits of a new stoma appliance: a clinical trial. Br J Nurs. 2015;24(22):S12, S14–18. https://doi.org/10.12968/bjon.2015.24.Sup22.S12

Lado Teso A, Fabeiro Mouriño MJ, Bueno Cruz B et al. Usos y actitudes de los pacientes ostomizados en España (Estudio U&A en Ostomía). Metas Enferm. 2019; 22(4):19-27. https://doi.org/10.35667/MetasEnf.2019.22.1003081409

Lado del Teso, del Pino C, Jiménez I et al. Efficacy of a light convex appliance and mouldable ring in an early postoperative stoma with effluent leakage. Gastrointestinal Nursing. 2022;20(7):42–49. https://doi.org/10.12968/gasn.2022.20.7.42

Liu G, Chen Y, Luo J et al. The application of a moldable skin barrier in the self-care of elderly ostomy patients. Gastroenterol Nurs. 2017;40(2):117–120. https://doi.org/10.1097/SGA.0000000000000143

Martins L, Samai O, Fernández A, Urquhart M, Hansen AS. Maintaining healthy skin around an ostomy: peristomal skin disorders and self-assessment. Gastrointestinal Nurs. 2011; 9(Sup2):9-13. https://doi.org/10.12968/gasn.2011.9.Sup2.9

McNichol L, Cobb T, Depaifve Y et al. Characteristics of convex skin barriers and clinical application: results of an international consensus panel. J Wound Ostomy Continence Nurs. 2021;48(6):524–532. https://doi.org/10.1097/WON.0000000000000831

McPhail J, Nichols T, Menier M. A convex urostomy pouch with adhesive border: a patient survey. Br J Nurs. 2014;23(22):1182–1186. https://doi.org/10.12968/bjon.2014.23.22.1182

Perrin A, White M, Burch J. Convexity in stoma care: developing a new ASCN UK guideline on the appropriate use of convex products. Br J Nurs. 2021;30(16):S12–20. https://doi.org/10.12968/bjon.2021.30.16.S12

Pieper B, Mikols C. Predischarge and postdischarge concerns of persons with an ostomy. J Wound Ostomy Continence Nurs. 1996;23(2):105–109. https://doi.org/10.1016/s1071-5754(96)90070-4

Rat P, Robert N, Fernandes I et al. Evaluation of a one-piece soft convex ostomy appliance: a prospective, multicentre, open-label pilot study. Br J Nurs. 2018;27(16):S20–28. https://doi.org/10.12968/bjon.2018.27.16.S20

Richbourg L, Thorpe JM, Rapp CG. Difficulties experienced by the ostomate after hospital discharge. J Wound Ostomy Continence Nurs. 2007;34(1):70-79. https://pubmed.ncbi.nlm.nih.gov/17228210/

Rodríguez-González E, Zurita CDP, Caballero GA et al. Factors predictive of optimal peristomal skin status in patients with an ostomy: a secondary analysis. Br J Community Nurs. 2021a;26(Sup12):S24–34. https://doi.org/10.12968/bjcn.2021.26.Sup12.S24

Rodríguez-González E, Zurita C del P, Caballero GA et al. Impact of convex ostomy appliances on leakage frequency, peristomal skin health and stomal protrusion. Gastrointestinal Nursing. 2021b;19(Sup9):S30–7. https://doi.org/10.12968/gasn.2021.19.Sup9.S30

Rock M, Kieserman JM, Sun V et al. Clinical and demographic differences among cancer survivors with ostomies with and without informal caregivers. J Cancer Educ. 2023;38(2):455–61. https://doi.org/10.1007/s13187-022-02139-x

Szewczyk MT, Majewska G, Cabral MV, Hölzel-Piontek K. The effects of using a moldable skin barrier on peristomal skin condition in persons with an ostomy: results of a prospective, observational, multinational study. Ostomy Wound Manage. 2014;60(12):16–26

Voegeli D, Karlsmark T, Eddes EH et al. Factors influencing the incidence of peristomal skin complications: evidence from a multinational survey on living with a stoma. Gastrointestinal Nursing. 2020;18(Sup4):S31–8. https://doi.org/10.12968/gasn.2020.18.Sup4.S31

The role of the stoma nurse in a tertiary centre

Abstract

Stoma formation is a life-changing procedure and a patients' journey adjusting back to life may be very overwhelming, both physically and psychosocially. This is why it is of paramount importance that a dedicated stoma nursing team can provide life-long support for these patients. Stoma nurses are fundamental to the provision of care for these patients. They ensure that with their clinical expertise and skills, patients are well-supported to ensure their quality of life is maintained to the highest standards and hospital admissions and unnecessary appointments with other healthcare professionals are avoided. However, the role of the stoma nurse as a clinical nurse specialist is not well-defined and the lack of understanding often leads to unrealistic expectations from the multidisciplinary teams. This is why it is fundamental to define the role of the stoma nurse, to ensure that both patients and healthcare professionals have realistic expectations and understand what a unique role this is.

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Key words

- Stoma
- Nurse role
- Stoma care
- Stoma nurse specialist

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A stoma is a surgically created opening into the abdomen that is used to divert the flow of faeces or urine outside the body (Marinova, et al, 2021). There are three main types of stomas – ileostomy, colostomy and urostomy – these can be temporary or permanent. Therefore, for many patients, having a stoma means that life-long support from nurse specialists is needed.

Stoma nurse specialists provide specialist nursing care for patients with stomas, and while there are around 600 stoma nurse specialists in the UK, it is estimated that over 205 000 ostomates are living in the UK (Marinova et al, 2021), which statistically averages the nurse-to-patient ratio to around one stoma nurse specialist to 342 patients, though these numbers can vary greatly from one area to another, and there are no national guidelines for safe ratio in specialist nursing services.

However, as with many other nursing specialities, the stoma nurse specialist's role can often be perceived only in its clinical role – providing direct patient care. This perception frequently originates within the nursing profession itself, where practitioners tend to focus largely on the actions taken on behalf of patients and the support provided throughout their entire journey with a stoma. Additionally, the mission and vision statements of stoma care departments often emphasises direct patient care activities. While other fundamental elements of a nurse specialist's role (leadership, management, advocacy, education, service development, audit, research and innovation) hold equal importance for the provision of the highest standard of evidence-based care, they often receive less emphasis. This occurs despite the expectation that all aspects of the specialist role should be integrated into the daily practice of stoma nurse specialists.

There are also a lot of disparities in the role of a stoma nurse specialist, not only because the definitions may vary, but also because nurses engaged in stoma specialist services may be of different banding – going from a Band 2 to a Band 8, all of which have different roles, skill set and competencies. This is also evident upon reviewing the Association of Stoma Care Nurses UK Stoma Care Competency Framework for stoma nurse specialists, which defines different roles in accordance with their banding (ASCN, 2018a; ASCN, 2018b; ASCN, 2019a; ASCN, 2019b). This tertiary care service offers complex stoma, fistula and ileoanal pouch care. Additionally, it operates national advice lines,

nurse-led surveillance, national and international audits and initiatives in research, innovation and education. While the service has nurses at Band 4 and Band 6, who also have an important role and contribute, the majority of nurse specialists in the highly specialised service are at Band 7 and Band 8 level.

On the other hand, the Royal College of Nursing further differentiates nurse specialists into clinical nurse specialists (CNS) and advanced nurse practitioners (ANP). While both have roles expanding across the four pillars of specialist nursing – clinical/direct care; leadership and collaborative practice; improving quality and developing practice and developing self and others, the ANP is defined as an expert working autonomously and in possession of nurse-prescriber skills (RCN, 2018).

When it comes to stoma care, the situation is not that different, and though efforts are being made to develop frameworks and national guidelines (RCN, 2009; Rolls et al, 2019a; Rolls et al, 2019b; Carter, 2022; Bird et al, 2023), there is still a lot of work to be done when defining the role of stoma nurse specialists.

Similar challenges were also well known to the author's service, where efforts to define the role of stoma nurse specialists and raise the profile of the profession have been made for the last few decades. However, the need to do more arose during the COVID-19 pandemic. The author's hospital was a major receiving centre for COVID-19 patients, and like several other tertiary centres around the UK, soon our specialist nurses had to relocate to different locations, learn new skills and work differently but also had to often justify what our role as stoma nurse specialist was. This was further exacerbated by healthcare workers burnout, high turnover, increased pressures on staff, budget cuts and the introduction of Integrated Care Boards, with many new persons in positions of leadership, who did not necessarily have an insight into what a specialist nurse does. All of this has slowly turned into different misconceptions of the role of a specialist nurse, not only among patients and members of the multidisciplinary team, but also among senior management. As a tertiary centre, the authors felt a responsibility to ensure they were doing as much as possible to raise the profile of stoma nurse specialists and ensure the role and its pillars are well known and recognised.

To better understand common misconceptions about the stoma nurse specialist role, discussions with senior management began approximately 3 years ago. It became apparent that even at this level, unrealistic expectations existed, primarily related to the misconception that the role was solely clinical. These expectations included the belief that highly trained nurse specialists should attend to basic stoma care instead of ward nursing staff.

Similar expectations were observed among ward staff. They would often refer stoma patients to the specialist service for basic care, as new ward nurses began to believe that any stoma-related care fell solely under the responsibility of stoma nurse specialists.

To address these issues, an audit was conducted with hospital staff to gain a better understanding of their perceptions of the stoma nurse specialist role. The goal was to identify which aspects of the role required greater awareness to ensure realistic expectations of specialist nurse capabilities and ward nursing staff responsibilities. An extensive literature review was also performed, leading to the identification of six key domains that define the stoma nurse specialist role within this tertiary care hospital (*Figure 1*).

As the findings of the team's audit and feedback showed that there was a lack of

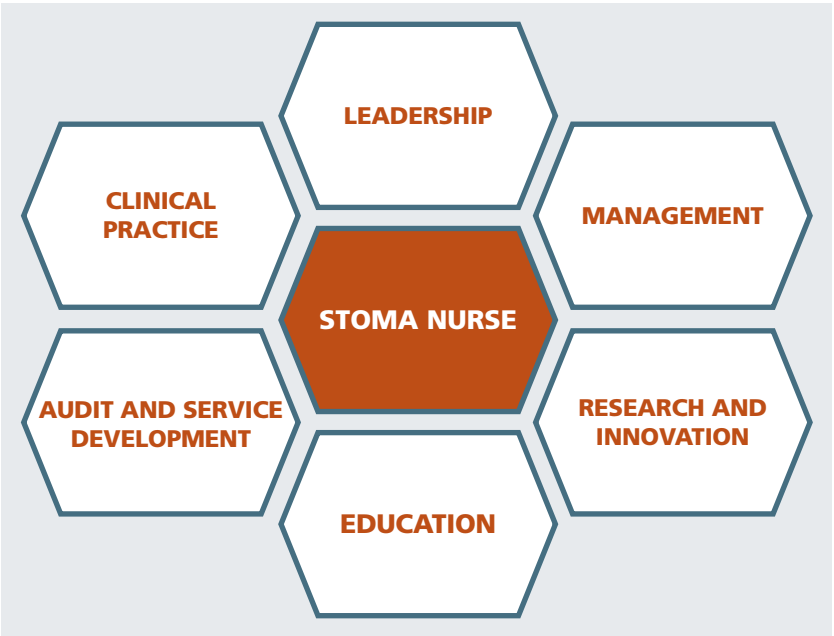

Figure 1. The role of a stoma nurse specialist within tertiary hospital care

Box 1: Role of stoma nurse specialist – clinical practice pillar

- Innovative early pre-op training
- Clinical expertise in stoma and fistula care
- Basic pouch care support
- Specialist nursing care during hospital stay
- Safe discharge and structured follow-up
- Ongoing support for patients and family
- Stoma and fistula complication management
- Annual follow-up review
- Nurse-led and joint consultant clinics
- Nurse-led telephone/email advice line
- Preventing A&E/hospital admissions, GP and consultant visits
- Independent nurse prescribing

understanding of the stoma nurse specialist role, which led to unrealistic expectations from the multidisciplinary teams (MDT), it was fundamental to embark on a journey defining the role of the stoma nurse specialist, to ensure that both patients and hospital staff had realistic expectations and understood what a unique role this is, as well as what the role of the stoma nurse specialist entails.

Efforts to redefine the stoma nurse specialist role began at the corporate level, including presentations and invitations for leaders to observe the team's work. This educational approach was then extended to patient groups and ward staff. The team summarised their efforts to raise the profile of stoma nurse specialists and presented those findings to MDT forums. They also submitted abstracts, presenting and producing posters that showcased their work to other stoma nurse specialists at the ASCN UK Conference in 2023 (ASCN UK, 2023). This work will also be presented in poster format at the WOCNext Conference in the US in June 2024.

While acknowledging that this role may not be unique to their hospital and that stoma nurse specialists worldwide likely engage in similar work, the team recognises that other services may be facing similar challenges. They hope their work can assist others seeking to raise awareness and elevate the profile of their stoma nurse specialist roles within their own healthcare settings.

Clinical practice

As part of the team's clinical practice, there was the need to raise awareness around everything done clinically (*Box 1*), as a common misconception seen from the audit was that stoma nurse specialists were perceived as nurses who only visit wards and attend to inpatients basic stoma care routine - changing stoma bags.

Working as a stoma nurse specialist in the author's tertiary centre often means managing patients with both complex surgical/medical history, as well as complex psychosocial needs. Therefore, the nurses in the tertiary centre in stoma care are highly trained in stoma and enteric fistula care, as well as basic pouch care and advanced communication, to ensure they can support these patients and their families during their pre-, peri- and post-operative period. All this is achieved through early pre-operative interventions, including pre-operative counselling, practical pre-operative stoma training, stoma siting, introduction to stoma support groups, providing a stoma care training kit to take home and a patient-centred stoma handbook (Marinova et al, 2021), published by members of the team, and specifically designed and tailored to incorporate all relevant information on life with a stoma, eliminating the need for copious amounts of leaflets and other information. All this aims to prepare patients for their surgery and provide them with all the information they need, as well as ensure they are given enough support pre-operatively. A service provision audit of around 500–600 pre-operative sessions a year has shown that it takes a stoma nurse specialist an average of 3 hours to prepare each patient for their stoma-forming surgery. As the majority of patients are tertiary, and come from around the UK, as well as abroad, patients are provided with preferably a virtual/video consultation, when appropriate, and face-to-face appointment for stoma siting and pre-operative stoma care training shortly prior to their surgery. This also helps the team reduce delays in consultations, as remote/virtual consultations are often carried out at members of the team's homes, using secure VPN-equipped remote laptops and telephone bundles, providing additional clinical space and therefore, contributing to a reduction in waiting times.

The specialist nursing team then provides expert support during the patient's hospital stay, ensuring a smooth and safe transition

from hospital to community settings, following an established structured follow-up pathway aimed at providing support for patients' post-discharge, through regular reviews, as well as annual prescription and appliance reviews for established patients (Marinova and Marinova, 2023). The pathway has been adapted from the one described by Davenport (2014) and has been in use for patients since 2015.

The team also provides both nurse-led and joint consultant clinics for local, but mostly tertiary patients, as oftentimes patients are referred from other services across the UK for management of unresolved complications and/or due to the complexity of their needs. The care provided by the team is for both complex stoma care and enteric fistula care, including producing photographic or video care plans, as well as ensuring patients are provided with follow-ups and smooth transfer of care to local teams is achieved ensuring that patients are well-supported locally, avoiding unnecessary travelling and/or hospital readmissions.

To guarantee uninterrupted and autonomous service delivery, the author's department has invested in the training and development of several independent nurse prescribers. Nurse prescribers play a crucial role in prescription management, preventing delays in treatment and allowing patients to collect necessary medications from the hospital's outpatient pharmacy before discharge. Furthermore, the presence of nurse prescribers reduces the need for unnecessary GP and consultant appointments. Patients receive treatment from nurse specialists, and prescriptions are issued immediately during the same consultation.

Lastly, the team manages nurse-led telephone and email advice lines, which often are accessed by tertiary patients, including self-referrals of patients whose clinicians struggle to manage locally. To manage such advice lines, the team relies on a department triage guide, which both the administrative/support team and nursing team are trained to use, ensuring that patients' queries are promptly managed and delays are avoided.

The processes implemented ensure that patients throughout the UK receive comprehensive support from highly trained nurses. These processes contribute to the prevention of A&E/hospital admissions and GP/consultant visits, resulting in significant cost savings for the NHS while enhancing patient care and outcomes. On average, approximately 1300–1500 GP appointments, A&E/hospital admissions and MDT/consultant appointments are prevented annually. This improves patient care, reduces pressure on other services and busy A&Es, and lessens the financial burden on the NHS. These outcomes are meticulously tracked and recorded using advanced databases.

Box 2. Role of stoma nurse specialist – leadership pillar

- Empower and support patients and MDT to reach their potential
- Excellent communication skills, emotional intelligence, and conflict resolution abilities
- Critical thinking and ability to work autonomously
- Communicate effectively with national/ international MDT
- Implementing and sharing the vision and mission of the department
- Commitment to clinical excellence and future-proofing services
- Inspire, drive change and innovations in nursing
- Leading with care and being patients' advocate

Leadership

Leadership plays a vital role in the stoma nurse specialist's function (*Box 2*). Despite its significance, discussions surrounding leadership in nursing often attribute it primarily to managers (Major, 2019). This perception was also observed within the author's tertiary centre. However, leadership holds equal importance alongside other pillars of the specialist role. It empowers nurses to support and guide both patients and the MDT throughout the stoma journey—from pre-surgery to post-discharge.

Patient advocacy remains a fundamental aspect of nursing, and nurse specialists are integral to this process (Smith and Mee, 2017; Nsiah et al, 2019). A key element in achieving this advocacy involves experienced nurses sharing leadership skills with novice nurses within the department. This facilitates the implementation of the department's shared vision and mission: *to make certain every patient undergoing stoma or internal pouch surgery is well supported, understood and empowered to ensure optimal quality of life is restored*. Effective teamwork is fostered, supporting staff in embracing change and innovation as vital components of clinical excellence and ensuring the future sustainability

Box 3. Role of stoma nurse specialist – management pillar

- Service development
- Staff management, recruitment and retention
- Implementation of evidence-based practice
- Improving patient care
- Managing patients' complaints
- NHS cost reduction
- Ensure effective and safe shared care between primary and secondary care
- Sponsorship and partnership commitments
- Independent prescription management
- Drug tariff and procurement reviews

Box 4: Role of stoma nurse specialist – research and innovation pillar

- Publication of patients and healthcare professionals books
- Publications in national and international journals
- Conducting own nurse-led research
- Participating in joint research with MDT
- Conducting product trials
- Introduction of innovative methods of patient care
- Digitalisation of services and use of virtual technologies
- Award-winning service

of nursing services (NASEM, 2021).

The department utilises training needs analyses within intradepartmental assessments to achieve these goals. Identified training needs are met with appropriate support. This approach recognises that inadequate training and support can lead to resistance to change (Cheraghi et al, 2023). The author's hospital employs a training needs analysis checklist to ensure that, alongside clinical skills, staff are equipped with advanced clinical documentation, communication, MDT education, presentation, auditing, IT skills, research, innovation, leadership and management.

Excellent communication skills are paramount for stoma nurse specialists, allowing them to collaborate effectively with national and international MDTs (Stein et al, 2022). This fosters strong patient support, inspires clinicians to champion change and ultimately improves patient care and outcomes.

The autonomous nature of nursing practice in the author's tertiary centre necessitates exceptional critical thinking skills. Emotional intelligence and conflict resolution abilities are crucial when managing patients with complex medical and psychosocial needs, as well as when liaising with members of the MDT.

Management

Management responsibilities are inherent to the role of every nurse (ORN, 2022), and stoma nurse specialists in tertiary centres are no exception. These responsibilities scale from novice nurses with limited managerial involvement to expert nurses who actively participate in service management. This includes staff management, recruitment and retention, and addressing patient complaints (*Box 3*). This ongoing exposure to management principles ensures familiarity with service leadership and provides adequate coverage when working cross-site or when direct management may be unavailable. Furthermore, it facilitates effective and safe shared care between primary and secondary settings by allowing nurses to manage the entirety of a stoma patient's journey.

The team is also committed to constantly improving patient care through service development and implementation of evidence-based practice. This is especially important in a tertiary centre where patients with complex needs are often referred for further stoma and enteric fistula management, and constant service development and implementation of evidence-based practice, including innovative and novel ways of care are a vital part of improving patients' outcomes (CQC, 2022).

As cost reduction is always on the NHS agenda, the team thrives to provide excellent care while using stoma and fistula appliances and accessories efficiently, ensuring that waste of products and unnecessary overprescribing is avoided. Expert members of the team are also involved in drug tariff and procurement reviews, which further contributes to the team's awareness of cost. This is especially important considering that the author's team has independent nurse prescribers, and as such, these clinicians should be ever more aware of waste and cost, while ensuring safe practice is maintained.

Lastly, as with most stoma teams in the UK, and particularly England, the authors' stoma services are partially sponsored, ensuring that enough resources are provided for staffing, training and provision of day-to-day services, this is why sponsorship and partnership

commitments are important elements of the stoma nurse specialists role. Therefore, the team has an in-depth knowledge of sponsorship, while remaining committed to being patient advocates and ensuring that patients receive the best care.

Research and innovation

Research and innovation set the foundations of the evidence-based provision of healthcare (CQC, 2022). These are profoundly integrated into the service delivery of the author's tertiary centre stoma care department (*Box 4*). The team ensures that patient care is provided according to best practice and evidence-based nursing and this is achieved by conducting its nurse-led research, participating in joint research with MDT, conducting product trials and introducing innovative methods of patient care, such as the digitalisation of services and use of virtual technologies, trialling new devices and appliances aimed at improving patient care and outcomes.

The team also ensures that innovative and novel devices are shared with patients and their feedback is then used to better understand the efficacy of these products and help the team decide whether these items are helpful.

Implementing novel ways of service delivery, including the use of digital services, has helped the team see patients more promptly, ensuring that the hospital clinical space is reserved for face-to-face clinics only and everything else is shifted to remote clinics. Being able to provide such service requires remote-work bundles as well as digital literacy training for nursing staff, which the author's department provides continuously, ensuring patients and nursing team are supported and clinical space is used appropriately.

In order to ensure that outcomes of their research and innovation are shared and implemented elsewhere, the team ensures that they produce patients and healthcare professionals' books, of which the author's tertiary centre has produced several books in the past years and continues to work on producing either next editions of existing books, or new books, ensuring that both patients and other healthcare professionals have access to this information (*Figure 2*). Additionally, the team ensures that their findings and innovative methods of providing patient care are shared through publications in national and international journals, which helps disseminate the information and ensure that these practices can be implemented elsewhere, so patients are well-supported.

A testament to the author's success in research, innovation and implementation of novel ways of providing patient care is their award-winning service, being shortlisted and/or winning over a dozen prestigious nursing and healthcare excellence awards since 2022.

Box 5. Role of stoma nurse specialist – education pillar

- In-house training for hospital MDT
- GPs and community staff training
- Consultancy for MDT and community services
- Presenting on national and international level
- Involvement with patient support groups and information days
- Education for patients, family and carers
- Promote self-care and early prevention of complications
- Raise awareness and combat misinformation
- Develop national and international education programmes

Figure 2. Published book - Stoma care - a guide for patients

Education

Education is part of the roles of all nurses, and a fundamental part of the role of stoma nurse specialists who provide specialist-level education to patients and other healthcare professionals (Bird et al, 2023).

This is especially important in a tertiary centre of stoma care as the author's institution stoma nurse specialists often manage stoma and enteric fistula patients with complex medical and psychosocial needs, as well as being the point of

Figure 3. Patient stoma bag change education video

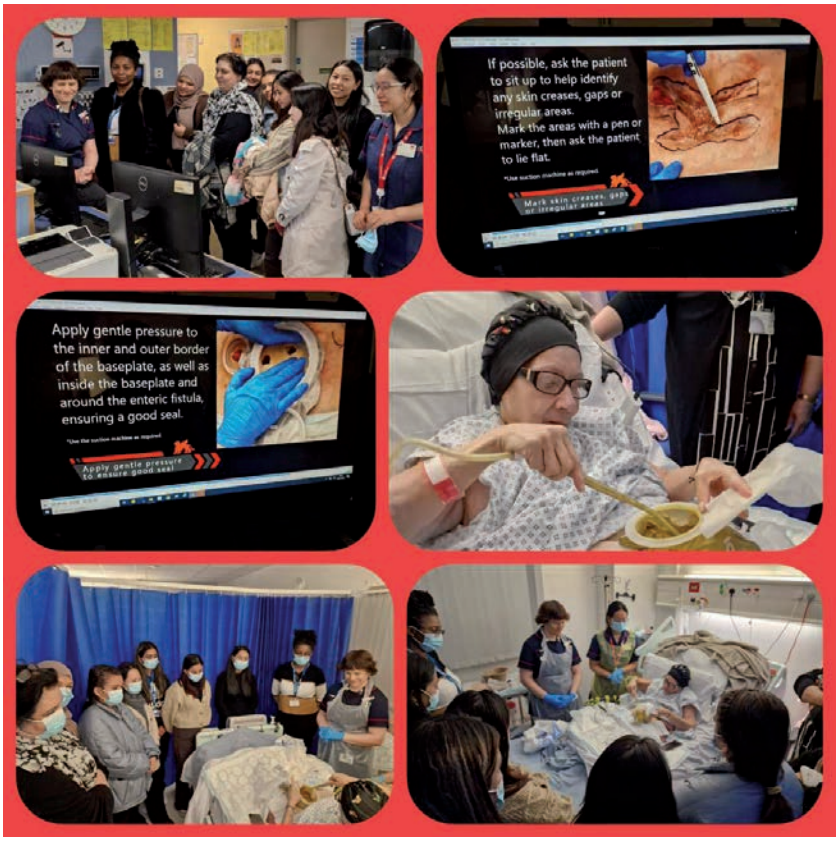

Figure 4. Enteric fistula training

contact for other services across the UK (*Box 5*).

In order to achieve this, the author's tertiary centre service ensures that their own novice stoma nurse specialists are well supported in developing their own skills and competencies, using an intradepartmental designed competency book/passport for both stoma nurse specialists and healthcare assistants. The departmental competency passport is unique as it assesses clinical skills, as well as communication, leadership, management, research, education, innovation and audit skills and helps identify any gaps requiring further support and education. Novice stoma nurse specialists are also given a 12-month preceptorship period and allocated expert stoma nurse specialists as mentors to complete these on a daily basis, ensuring that novice nurses are well-supported in their personal development, so they can continue to provide excellent care to stoma, enteric fistulae, as well as basic support for internal (ileoanal) pouch patients.

The author's experience is that ward nursing staff and other healthcare professionals often do not consider stoma care as part of essential skills, and therefore, great efforts were made to implement in-house mandatory virtual training modules in stoma care for all nursing staff in the Trust, as well as selected other allied healthcare professionals (*Figure 3*). Furthermore, practical training was also implemented as mandatory for selected gastrointestinal and colorectal areas, ensuring that patients are well-supported when stoma nurse specialists are not around.

The role of the stoma nurse specialists in the author's tertiary centre also includes continuous training and education of GPs, community services and MDT, as well as developing national and international education programmes aimed at improving healthcare professionals' knowledge and skills, as well as supporting patients across the country. This is done by presenting on a national and international level, as well as developing modules and courses such as the author's team NHS England Learning Hub – stoma, internal pouch and enteric fistula care, which provides education for healthcare professionals, ensuring they are given resources so they can support these patients (*Figure 4*).

The team is also committed to raising awareness and combating misinformation for stoma patients and this is achieved through involvement with patient support groups and information days, as well as education and training of other members of the MDT.

Lastly, as part of the role of a stoma nurse specialist and the author's department vision, patients are empowered to self-care and recognise and/or prevent early complications through pre-and post-operative education, as well as the use of patient-centred stoma book (*Figure 2*), designed to provide lifestyle

advice, as well as complication prevention and management advice. Patient family and carers are also involved in their care when appropriate.

Audit and service development

Audit and service development are another very important part of successfully running of healthcare services, as they allow monitoring of service delivery and measuring quality outcomes, and therefore, plan service development accordingly (Jamtvedt et al, 2019; Hut-Mossel et al, 2021). The author's tertiary service ensures that audits are part of everyday activities and performance is monitored, allowing for any gaps in service delivery to be identified and better processes implemented, ensuring quality and safety improvement (*Box 6*).

The tertiary centre in stoma care also possesses over 25 patient-centred databases, which allow for monitoring complications, monitoring of trends and tendencies, cost improvement, assessing workforce needs and staffing requirements, which helps the team to improve their patients' care ensuring that they can provide care based on any new trends and tendencies. The databases are designed in such a way that different members of staff, both clinical and administrative, are responsible for selected databases, ensuring they are incorporated into daily workload and documentation, without adding additional pressure on the service provision.

The continuous audit of the services is then followed by outcome analyses aimed at service development and improvement of patient care and staff wellbeing. This is achieved through the development of protocols, pathways and guidelines, helping to produce structured methods of patient care, ensuring that best practice and evidence-based nursing are integral parts of any project.

In order to support patients across the country and abroad, the tertiary centre ensures that patient information flashcards are constantly produced in both digital and print format, allowing easy and rapid sharing of information with patients and other healthcare professionals. These flashcards are also important tools when empowering patients to self-care by troubleshooting complications and providing essential lifestyle advice, patients are often provided with information that keeps them away from A&E/hospital admissions, GP and consultant visits, as well as other healthcare professionals visits.

The team works closely with patient support groups and often asks their patients for feedback on different topics, ensuring that patients are listened to, and any suggestions considered, and practice changed, where appropriate.

Box 6. Role of stoma nurse specialist – audit & service development pillar

- Monitor service delivery and measure quality outcomes
- Quality and safety improvement
- Keep patient databases
- Collect and analyse patient feedback
- Complications monitoring
- Monitoring of trends and tendencies
- Development of patient information leaflets/flashcards
- Development of protocols, pathways and guidelines

Important considerations

It is fundamental to underline that though nurse specialists are essential for the uninterrupted long-term care of patients with life-changing surgeries, such as stoma patients, there is still a need for a nationwide definition of their role, in order to ensure that expectations are realistic, but also that nurse specialists feel appreciated, valued and continue to provide best practice care. A nurse-to-patient ratio should also be defined, as well as incorporating all pillars into the day-to-day provision of care, as none of the pillars can function independently and all non-clinical ones are fundamental for the smooth running of clinical roles, and therefore, should not be left out and considered as something nurses should do out of working hours.

There is also a need for the development of appropriate national guidelines and frameworks to support ward nurses transitioning into specialist roles with the right support, through intensive preceptorship, mentorship, and clinical supervision.

Conclusion

Stoma nurse specialists' contribution to the profession is invaluable, as they are highly educated, vastly skilled, and capable of performing complex procedures, diagnosing intricate conditions, formulating treatment plans, possessing exceptional leadership and

management skills, dedicating significant time to educating others, developing future-proof services, implementing changes and enhancing patient care.

Working towards defining the role of stoma nurse specialists and enhancing the understanding of nurse specialists' roles is crucial for patients, nurse specialists and other healthcare professionals, as it allows for realistic expectations and a true appreciation of its value. By doing so, nurse specialists not only raise the profession's profile but also increase awareness, combat misinformation, and have the potential to inspire other nurses to consider stoma care as a career advancement opportunity, which is essential for succession planning.

It is essential that the value of stoma nursing services is better understood, as part of a national strategy, to ensure these vital services receive adequate support and are used appropriately. Most importantly, there should be a full appreciation of the potential for improved patient care, provided that nurses are supported to dedicate their work on all pillars of their role. This includes providing protected time for these activities, rather than solely prioritising clinical workload and neglecting the other pillars of specialist nursing roles. **GN**

Declaration of interest *None*

Association of Stoma Care Nurses UK. Competency Framework Band 6 Stoma Care Nurse. 2018a. https://ascnuk.com/_userfiles/pages/files/ascnukcompetencyband6livecompressed.pdf (accessed 18 April 2024)

Association of Stoma Care Nurses UK. Competency Framework Band 7 Stoma Care Nurse. 2018b. https://ascnuk.com/_userfiles/pages/files/ascnukcompetencyband7livecompressed2.pdf (accessed 9 May 2024)

Association of Stoma Care Nurses UK. Competency Framework Band 2 Stoma Care Nurse. 2019a. https://ascnuk.com/_userfiles/pages/files/ascncompetencyband2.pdf (accessed 18 April 2024)

Association of Stoma Care Nurses UK. Competency Framework Band 4 Stoma Care Nurse. 2019b. https://ascnuk.com/_userfiles/pages/files/ascncompetencyband4.pdf (accessed 18 April 2024)

Bird A, Burch J, Thorpe G. The role of the clinical nurse specialist in stoma care: a scoping review. Br J Nurs. 2023;32(16):S6–16. https://doi.org/10.12968/bjon.2023.32.16.S6

Care Quality Commission. Innovation and why it is important. https://www.cqc.org.uk/publications/themes-care/innovation-why-it-important (accessed 18 April 2024)

Carter P. Recognising the importance of stoma care nurse specialists. Br J Nurs. 2020;29(6):S4. https://doi.org/10.12968/bjon.2020.29.6.S4

Cheraghi R, Ebrahimi H, Kheibar N, Sahebihagh MH. Reasons for resistance to change in nursing: an integrative review. BMC Nurs. 2023;22(1):310. https://doi.org/10.1186/s12912-023-01460-0

Major D. Developing effective nurse leadership skills. Nurs Stand. 2019;34(6):61–6. https://doi.org/10.7748/ns.2019.e11247

Marinova R, Marinova P, Perry-Woodford Z. Stoma care: a guide for patients: St. Mark's; 2021

Marinova P, Marinova R. Providing structured stoma care through established patient pathways. British Journal of Healthcare Management. 2023;29(1):38–41. https://doi.org/10.12968/bjhc.2022.0104

Davenport R. A proven pathway for stoma care: the value of stoma care services. Br J Nurs. 2014;23(22):1174–80. https://doi.org/10.12968/bjon.2014.23.22.1174

Jamtvedt G, Flottorp S, Ivers N. Audit and feedback as a quality strategy. in: improving healthcare quality in europe: characteristics, effectiveness and implementation of different strategies [Internet]. : European Observatory on Health Systems and Policies; 2019

Hut-Mossel L, Ahaus K, Welker G, Gans R. Understanding how and why audits work in improving the quality of hospital care: A systematic realist review. PLoS One. 2021;16(3):e0248677. https://doi.org/10.1371/journal.pone.0248677

National Academies of Sciences E, Medicine NA of, Nursing 2020–2030 C on the F of et al. Nurses Leading Change. In: The Future of Nursing 2020-2030: Charting a Path to Achieve Health Equity. : National Academies Press (US); 2021

Nsiah C, Siakwa M, Ninnoni JPK. Registered Nurses' description of patient advocacy in the clinical setting. Nurs Open. 2019;6(3):1124–32. https://doi.org/10.1002/nop2.307

Open Resources for Nursing (Open RN), Ernstmeyer K, Christman E. Chapter 4 - Leadership and management. in: nursing management and professional concepts [Internet]. : Chippewa Valley Technical College; 2022

Royal College of Nursing. Clinical nurse specialists: Stoma Care. London: RCN; 2009

Royal College of Nursing. Advanced level nursing practice. Section 2: advanced level nursing practice competencies. London: RCN; 2018

Rolls N, Virgin Elliston T, Reid SJ. Excellence in stoma care: the value of stoma care nurse specialists. 2019a. https://www.coloplast.co.uk/Global/UK/Stoma/HCP/Excellence_in_Stoma_Care_Final.pdf (accessed 18 April 2024)

Rolls N, Virgin Elliston T, Reid SJ. Stoma care nurse specialist: the hidden value of this expert nursing role and service. 2019b. https://www.coloplast.co.uk/Global/UK/Stoma/HCP/SCNS_The_hidden_value_of_this_expert_nursing_role.pdf (accessed 18 April 2024)

Contributor NT. Patient advocacy: breaking down barriers and challenging decisions. Nursing Times. 2017. https://www.nursingtimes.net/clinical-archive/holistic-care/patient-advocacy-breaking-down-barriers-and-challenging-decisions-03-01-2017/ (accessed 18 April 2024)

Stein D, Cannity K, Weiner R et al. General and Unique Communication Skills Challenges for Advanced Practice Providers: A Mixed-Methods Study. J Adv Pract Oncol. 2022;13(1):32–43. https://doi.org/10.6004/jadpro.2022.13.1.3

Using a convex ostomy appliance to manage peristomal skin complications: introducing Aura Plus Soft Convex

Abstract

This article explores convex stoma appliances, introduces Aura Plus Soft Convex (CliniMed) and presents three case studies of its use. Convexity applies pressure to flatten uneven peristomal skin and form an effective adhesive seal, as well as increase protrusion of a poorly spouted stoma. This reduces the risk of leaks and peristomal skin damage, as well as minimising accessory use. Excess pressure can damage the skin, so convexity should be used with caution at the appropriate depth and firmness for the ostomate's body profile and stomal complications. Aura Plus Soft Convex has a soft and flexible baseplate for easy application and adherence, as well as a unique shape, comfort curves and a large adhesive area to reduce creases and leaks. The hydrocolloid contains Manuka honey to promote skin health, and integral belt loops offer additional security. The case studies show how this appliance can restore peristomal skin integrity and relieve stoma-related anxiety; provide gentle support for a flush stoma and a rounded abdomen; and prevent leaks and improve quality of life after years of stoma-related complications.

There are more than 175 000 ostomates in the UK, with an estimated 20 000 people having stoma surgery each year (Kettle, 2019). The skin around the stoma (peristomal skin) is vulnerable to irritation, damage and breakdown. Consequently, it is common for people with a stoma (ostomates) to experience a peristomal skin complication (PSC), with prevalence variously reported at 77% (Malik et al, 2018) and 74–83% (Richbourg et al, 2007).

PSCs most often result from contact with faecal or urinary effluent, which macerates the skin and causes chemical irritation from its high alkalinity (ileostomy) and/or bacterial content (colostomy) (Rolstad er al, 2012). This is known as peristomal irritant dermatitis or moisture-associated skin damage (MASD). Stomal effluent usually only comes into prolonged contact with the peristomal skin when there is a leak in the seal with the adhesive baseplate of the stoma appliance. This adhesive seal is harder to form both in uneven skin, marked by creases, bumps or folds, and in stomal complications, such as a flush stoma, retraction, stenosis, herniation or mucocutaneous separation—with these managerial issues thought to affect 70% of all ostomates (Ambe et al, 2018). PSCs can also develop due to skin stripping from frequent and traumatic removal of the appliance baseplate, known as medical adhesive-related skin injury (MARSI).

Damaged skin makes it more difficult to form an adhesive seal, further compounding the problem and making PSCs difficult to treat once they occur (Le Ber, 2021). Therefore, one of the main aims of good stoma care is to maintain good peristomal skin health, which is best defined as there being no difference between the peristomal skin and the surrounding skin (Boyles, 2010). Maintaining peristomal skin health involves reducing the risk of PSCs occurring and helping to treat them if they do occur. Preventing and healing PSCs is more difficult in patients with a high body mass

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Key words

- Adhesive baseplate
- Convex stoma appliance
- Convexity
- Peristomal skin complications
- Manuka honey

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Box 1. Advantages of convexity

- Flattens uneven peristomal skin to form an effective adhesive seal
- Increases protrusion of a poorly spouted stoma
- Minimises leaks and skin damage
- Protects damaged skin
- Reduces accessory use

index (BMI), poor nutritional health leading to severe weight loss or poor wound healing due to immunosuppressant agents, such as steroids (Cronin, 2005). The most effective treatment for a PSC is typically an appliance that forms an effective adhesive seal with the peristomal skin. This will avoid contact with stomal effluent and minimise the frequency of potentially traumatic product changes, thus allowing the skin to rest and repair itself.

Convex stoma appliances

How convexity works

One of the tools available to maintain good peristomal skin health is convexity (*Box 1*). In contrast to the flat baseplate of a typical stoma appliance, convex appliances have a dome-shaped (bevelled) baseplate that protrudes into the abdominal wall. While flat baseplates are suitable for ostomates with a relatively flat abdominal wall and a well-spouted stoma, other ostomates may require a convex baseplate to form an effective adhesive seal (Burch, 2019).

Convex baseplates are designed to hold their shape and apply gentle circumferential pressure directly onto the skin around the base of the stoma. In ostomates with uneven peristomal skin, this pressure fills in any creases, indents and gaps, including puckering from peristomal sutures, and thus provides a smooth, flat, stable surface (peristomal plane) for the baseplate to securely adhere to (Hoeflok et al, 2017). In ostomates with a poorly spouted or off-centre stoma, the same pressure encourages the stoma to spout further out from the abdominal wall. Even a couple of millimetres can be advantageous for directing the stomal effluent into the main chamber (pouch) of the appliance instead of onto the skin (Cronin, 2005; Hanley, 2013; Perrin, 2016; Kelly-O'Flynn, 2019).

A flat peristomal plane and a well-spouted stoma should reduce the chance of stomal effluent coming into contact with skin, where it could undermine the adhesive seal and thus cause leaks and PSCs (Cronin, 2008; Burch, 2019). In ostomates who have developed peristomal MASD, use of convexity has been associated with healing of the affected areas (White and Evans, 2019). Thus, in the right patients, convexity can obtain a leak-free, waterproof and securely fitting appliance that maximises skin protection and thus improves the ostomate's quality of life.

Appropriate use of convexity can also reduce the need for supportive accessory products to form an effective seal, as well as minimise appliance changes due to leaks. This can simplify the ostomate's routine, making management easier, as well as reduce the risk of MARSI and the overall cost of care (Hopkins, 2015).

Risks associated with convexity

Excessive pressure from a convex stoma appliance presents the risk of erythema (redness), bruising and ulceration (Boyles et al, 2004). Likewise, rubbing of the convex plastic ring against the stoma can lead to friction ulcers, mucosal bleeding and growth of overgranulation tissue, which can continue to grow and bleed if not treated (Cronin, 2008).

Therefore, convex stoma appliances should only be used where indicated, for example when being considered for flush or retracted stomas or for areas with creases and skin folds (Association of Stoma Care Nurses UK, 2016). Caution is advised when using any convex product, and regular reviews are essential (Cronin, 2008; Perrin, 2016; Burch, 2019). The degree of pressure should be kept to the minimum required to achieve the desired effect. Stoma care nurses should look out for a depth of pressure denoting the outline of the baseplate. Soft convex products can be effective in increasing the protrusion of the stoma, while minimising the risks associated with convexity. Care should be taken about further compounding the degree of pressure with the addition of an ostomy seal—known as double-depth skin trauma (Cronin, 2008).

Likewise, ostomates using an elasticated belt with a convex appliance should be taught to be mindful of increasing the level of pressure beyond what is intended, as this can traumatise

the skin. Ostomates should be able to slip their hand inside the belt and move it freely from side to side, and they should know that removal of the belt should not leave deep penetrating lines or the imprint of the fabric on their skin, as this would indicate that the belt is too tight (Cronin, 2008).

Types of convexity

To make a good seal with the peristomal skin, a convex stoma appliance system needs to apply pressure around the stoma with sufficient force to effectively flatten uneven skin and increase stomal protrusion, without causing trauma to the skin and stoma. The optimal amount of pressure required varies depending on the shape and softness of the individual ostomate's abdomen (body profile), as well as the protrusion of their stoma and presence of stomal complications (Hoeflok, 2017; Perrin et al, 2023). A convex baseplate also needs to be flexible enough to conform to varying tissue profiles during changes in posture (Rolstad and Boarini, 1996; Turnbull, 2003; Perrin, 2016).

Consequently, convex appliances vary in both depth (shallow or deep) and firmness (soft or firm) (Burch, 2019; Evans and White, 2020). Shallower convexity limits the amount of pressure applied but reduces the risk of damage to the skin, while deeper convexity provides more pressure but at a greater risk of skin trauma. Soft convex baseplates are relatively malleable, being easy to shape, bend or contort, while firm convex baseplates are rigid and inflexible; there are also moderate convex baseplates that are somewhat rigid but can still be manipulated. A baseplate's rigidity is often determined by the presence and hardness of an integral inner central plastic ring. The harder the plastic ring, the more pressure exerted onto the peristomal skin and the greater the pressure applied to the peristomal area. Stoma care nurses need to find an appliance that provides enough pressure to effectively ensure good adhesion and security without causing harm. Consequently, the convexity pathway typically begins by trying an appliance with shallow, soft convexity. Only if this gentle pressure proves to be insufficient, such as in some very deeply recessed stomas or very rounded and soft abdomens, will deeper, firmer alternatives be tried.

Box 2. Attributes of Aura Plus Soft Convex

- Applies gentle pressure to flatten creases and increase stomal protrusion
- Light, soft and flexible material allows for easy application and adherence
- Unique shape and comfort curves reduce creases and leaks
- Large adhesive area minimises need for accessories
- Integral belt loops offer additional security
- Manuka honey promotes skin health

Stoma care appliances, including convex appliances, can be difficult to adhere to damaged skin or complex body profiles. If the adhesive seal is insufficient, a convex baseplate tends to repel (push away) from the abdominal surface. In these cases, it may be necessary to increase the contact area and provide more grip by using an appliance with a larger baseplate (as not all baseplates extend much beyond the weld of the bag). A similar effect can be achieved with flange extenders, supportive accessories used to increase the adhesive area either circumferentially or in an arc between the points of 3 o'clock and 9 o'clock, where there is often greater baseplate resistance (Cronin, 2005).

Convexity is available in both one-piece and two-piece appliances, which are suitable for different types of stomal output and user priorities. The diameter of the convex area of the flange (plateau) can vary from 25 mm to 60 mm.

Aura Plus Soft Convex

Overview

Convex stoma appliances have evolved since they were first introduced in the mid-1980s, initially as a simple plastic ring inserted into the inner plastic coupling on a two-piece baseplate to create a slight indent in the inner section of the baseplate (Cronin, 2008). Convexity now tends to be integral to the baseplate, and it is available as part of both one-piece and two-piece appliances.

One example of an innovative contemporary convex appliance is Aura Plus Soft Convex (CliniMed) (*Box 2*). Aura Plus Soft Convex has a hydrocolloid adhesive baseplate that is light, soft and flexible, allowing it to be bent prior to application for ease of use and visual acuity. This softness helps the baseplate conform and adhere effectively to the abdominal wall, making it easy to apply (Bedford, 2022). However, the baseplate regains its form within seconds of application, thus maintaining its essential properties of depth.

The gentle pressure applied by Aura Plus Soft

Figure 1. Aura Plus Soft Convex stoma appliance

Convex is sufficient to flatten creases and folds in the peristomal skin, as well as push up flush, retracted or recessed stomas so they protrude inside the pouch, both processes reducing the risk of leakage and skin damage.

The baseplate of Aura Plus Soft Convex is uniquely shaped like a plus sign (*Figure 1*), which can benefit patients who may struggle to obtain sufficient adhesion with a circular or oval-shaped baseplate. The baseplate comprises four comfort curves, positioned evenly around the perimeter at 2, 4, 8 and 10 o'clock. These comfort curves reduce the potential for crease development while maximising flexibility, thus reducing the risk of leakage (Bedford, 2022). The baseplate is also wide, reducing the need for flange extenders and other accessories. Aura Plus Soft Convex is available in three sizes, with differing capacities: Mini, Midi and Maxi. It is available in four plateau sizes, 25 mm, 35 mm, 48 mm and 60 mm, the latter being the largest plateau size available and produced by only two stoma companies (Bedford, 2022).

Aura Plus Soft Convex is available in two colours – black and sand – allowing ostomates to choose the colour that best suits their style of dress and/or activities which may help them feel more confident wearing their appliance, helping them with their adjustment to life with a stoma (Bedford, 2022). Ostomates who were asked to evaluate Aura Plus have reported confidence and comfort while wearing it, and it was also found to adhere and contour well (Bedford, 2022). Aura Plus Soft Convex is also available in a clear option.

Belt

Aura Plus Soft Convex is one of many convex ostomy appliances that can be worn with an elasticated belt designed to pull the baseplate closer to the abdominal wall. Wearing a belt for 2–3 hours following initial application can help the baseplate conform to the abdominal wall to improve adhesion. The belt also supports the pouch as it fills and becomes heavy, providing the wearer with additional security and peace of mind. Some patients may remove the belt after the initial 2–3-hour period and leave it un-attached until the next appliance change, while others may wear the belt continually from one change to another – both approaches can be appropriate.

Aura Plus Soft Convex possesses two thin, soft, low-profile and highly flexible integral belt loops, one positioned at 3 o'clock and the other at 9 o'clock. A thin elasticated belt can be threaded through these loops and secured in place by way of hook-and-loop fastening, which can be adjusted to achieve an adequate and comfortable level of pressure.

Manuka honey

The hydrocolloid baseplate of Aura Plus Soft Convex contains medical-grade Manuka Honey. Manuka honey is one of several ingredients that are included in different stoma appliances, including ceramide, aloe vera and vitamin E (Sica, 2018).

The antibacterial, antimicrobial and skin-friendly properties of honey give it the potential to protect healthy peristomal skin and help treat skin conditions such as MASD (Belcher, 2013; Woodward and Belcher, 2013; Sica, 2018; Woodward, 2019; Le Ber, 2021). Moreover, medical-grade honey is known to be safe and easy to use (Belcher, 2013). In a study undertaken by White and Evans (2019), 94% of patients reported improved peristomal skin health within 7 days of applying a baseplate that includes Manuka honey. In another paper, the same authors (Evans and White, 2020) identified that a convex baseplate containing Manuka honey could increase appliance security and wear time, as well as reduce leakages and the need for stoma accessories.

The Aura Plus Soft Convex baseplate only contains naturally derived food-grade ingredients and is without additives or preservatives (Bedford, 2022).

Case studies

Case study 1. Improving peristomal skin integrity and relieving stoma-related anxiety

Winnie (not her real name) was a 65-year-old woman with an end ileostomy stoma that was formed in February 2022 as part of a panproctocolectomy for ascending colon cancer. Her stoma was flush to the skin, and she had a rounded abdominal body profile. She had gained weight since her surgery, which she attributed to previous knee surgery that had impacted on her ability to go to exercise classes.

After stoma formation, Winnie was commenced on a flat stoma appliance and a convex washer, which she used for 1 week in hospital and was discharged with. However, while using these she experienced frequent leaks, and on the first day of her referral to the community team she presented as having leaks, so she was changed to a soft convex appliance. From that point, she adjusted well to life with a stoma, returning to her normal daily activities, including travelling abroad. However, she did experience occasional leaks and sore skin, which she managed with stoma powder and skin barrier wipes. There were two leaks reported in the first 2 weeks on commencing convexity and no further leaks were reported until review 10 months after stoma formation.

At a routine appointment 12 months after stoma formation, swelling to Winnie's abdomen in the region of her stoma and a ring of erythema around her stoma were noted (*Figure 2a*). She reported these changes in her abdominal appearance following a prolonged cough. It was agreed that she would continue to use this soft convex appliance, with additional accessories to help manage these leaks, and her skin integrity would be closely monitored.

The swelling settled, and there was no evidence or diagnosis of parastomal hernia. However, despite use of a barrier film, the sore skin persisted. It was noted that the circle of blushed skin corresponded to the convex plateau of her appliance, suggesting that it had been applying excessive pressure, which had been damaging her skin. Therefore, she was recommended to try a softer convex appliance that offered more gentle support.

Winnie was identified as a suitable user for Aura Plus Soft Convex, with the plus-shaped baseplate having the benefit of conforming and moulding around the abdomen to help maintain a secure seal throughout the day. Likewise, it was suggested that her persistent sore skin could potentially benefit from the healing properties of the Manuka honey in Aura Plus Soft Convex. The appliances were demonstrated to Winnie, and she agreed to try them for 2 weeks until her next follow-up appointment with her stoma care nurse, when she would evaluate them by filling out a questionnaire to record her experience. Winnie provided written consent for this and for clinical photography to be captured and shared.

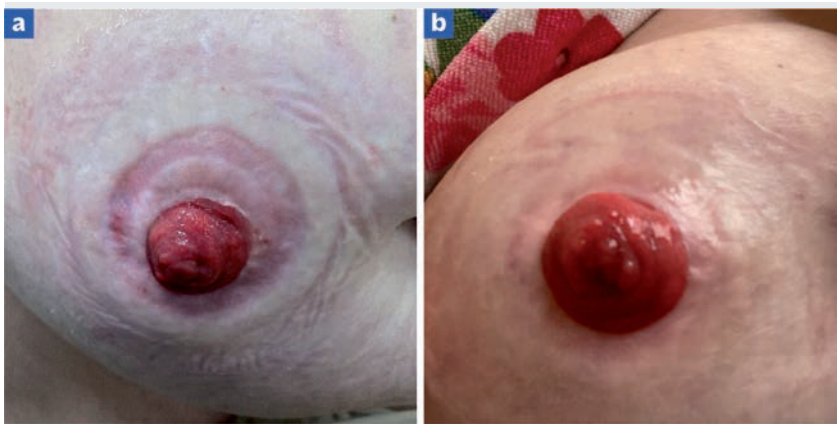

Figure 2. Case study 1: before (a) and after 2 weeks of (b) using Aura Plus Soft Convex

After 2 weeks of using Aura Plus Soft Convex, Winnie reported an improvement in her skin condition. This improvement in peristomal skin integrity was visible in the post-evaluation photograph, with the ring of erythema having disappeared and the peristomal skin looking like the skin on the rest of her abdomen (*Figure 2b*). Winnie said that her stoma care routine and appliance experience had improved, as she no longer worried about her appliance becoming insecure and leaking as it filled.

Winnie's reduction in erythema and improvement in skin health are likely to have resulted from Aura Plus Soft Convex's gentle degree of convexity, with potential additional benefits from the Manuka honey in the hydrocolloid. The reduction in leaks was down to a durable adhesive seal, which was likely achieved through Aura Plus Soft Convex's flexibility, conformability and plus-shaped baseplate, with sufficient pressure to provide security and reduce the risk of leaks.

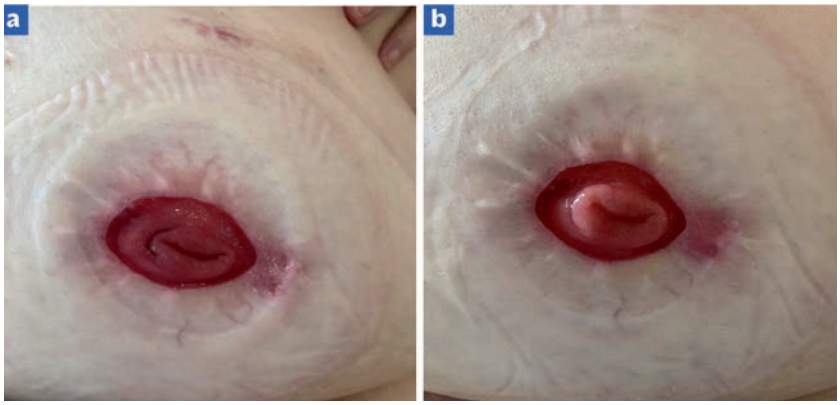

Figure 3. Case study 2: before (a) and after 1 week of (b) using Aura Plus Soft Convex

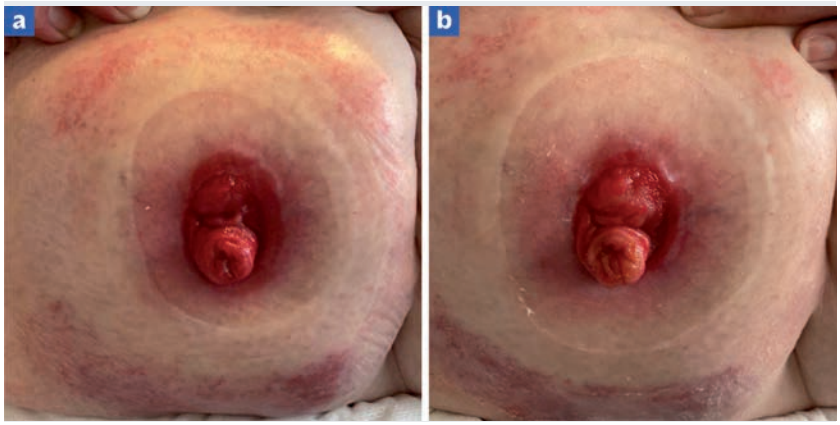

Figure 2. Case study 1: before (a) and after 2 weeks of (b) using Aura Plus Soft Convex

Case study 2. Providing gentle support for a flush stoma and a rounded abdomen

Odette (not her real name) was a 78-year-old woman with an end colostomy that was formed in October 2020 related to a total abdominal hysterectomy. She had a poorly spouted stoma that was flush to the skin, as well as a large rounded abdominal body profile that meant that, when she sat upright, the stoma would sit within a recessed area, which would be exaggerated on movement. She had a history of macular degeneration, cerebrovascular accident and fibromyalgia. These conditions had left her with reduced mobility and unable to care for herself. Her main carer was her husband, who carried out all personal care, including stoma care. Her appliance was normally changed daily, but this could alter depending on bowel movements.

For the years following stoma-forming surgery, Odette had used the same soft convex stoma appliance. While using this appliance, she was experiencing ulcerated peristomal skin, breakdown of the stoma's mucosal edge and discomfort from where the appliance dug into her leg and groin. These complications were initially managed with stoma washers and a protective skin barrier, which led to improvements, although these accessories added to the complexity of her stoma care routine.

At a review by her stoma care nurse, there was visible irritation on the left side of Odette's stoma, where the skin appeared dry and fragile *(Figure 3a*). This irritation was thought to be pressure-related, as there had been no previous reports of leaks. Odette was recommended to try Aura Plus Soft Convex, as it was hoped that the soft convexity would minimise the risk of any pressure-related skin injury, while providing enough pressure for an effective seal. Meanwhile, the flexible, conformable, plus-shaped baseplate would enable an optimal fit for her body profile, and the Manuka honey in the hydrocolloid would promote healthy skin and so reduce the need for further skin barriers. These potential benefits were explained, and she consented to try the appliance for 7 days. Odette was advised to stop using the stoma washer, as it should no longer be necessary due to the support offered by Aura Plus Soft Convex. She was reluctant to stop using these accessories, which had provided earlier improvements, but was reassured that Aura Plus Soft Convex could reduce the risk of leaks, while making her stoma care routine more simple. Odette agreed to try changing her appliance without using the additional accessories.

At her 1-week review, there was a noticeable improvement in the condition of Odette's peristomal skin, which was less irritated and no longer dry in the affected areas, while the redness around the mucosal edge had reduced greatly (*Figure 3b*). Odette reported that Aura Plus Soft Convex offered superior levels of comfort compared to her previous appliance, saying it was a better shape for her body and did not dig into her skin, while the drainable outlet was more robust and discreet.

Aura Plus Soft Convex appeared to be a suitable choice for Odette. It provided the right level of convexity, preventing leaks without causing any trauma or damage to the surrounding skin. The plus-shaped baseplate had moulded well to the contours of her rounded abdomen and remained secure regardless of

the flush and recessed nature of the stoma. The security and skin health offered by Aura Plus Soft Convex meant the use of additional washers and protective skin barriers was no longer needed.

Case study 3. Preventing leaks and improving quality of life after years of stoma-related complications

Betsy (not her real name) was a 73-year-old woman who had a loop ileostomy formed in 2014 as part of a subtotal colectomy for Crohn's disease. Her stoma had an erratic output, and her abdominal body profile involved uneven skin contours and a parastomal hernia, while her stoma sat in a slight dip, which affected its spouting.

Betsy had been using the same stoma appliance for several years. Over that time, she experienced frequent leaks, and she would sometimes change her appliance up to four times a day. She was having several ongoing issues with skin health, including MASD caused by stomal effluent contacting the skin and skin stripping caused by traumatic adhesive removal (*Figure 4a*). She also had difficulties with her parastomal hernia, the stretching of which was causing broken areas of skin around the stoma. She had been self-treating the damaged skin with calamine lotion at home. However, she was struggling to cope and lead a normal life, and she did not have the confidence to leave the house because of the fear of leaks.

Betsy was booked for a review with the stoma care team, where these issues were all apparent. She was recommended to try Aura Plus Soft Convex as a more appropriate fit for her stoma and abdominal body profile. This change to soft convexity was aimed at providing enough gentle pressure to help protrude her stoma out into pouch and so reduce the risk of leaks, while having enough flexibility to maintain a secure seal around her parastomal hernia. She consented and began to use the appliance, with a follow-up appointment booked in 1 week.

At her 1-week follow-up, the condition of Betsy's skin had visibly improved (*Figure 4b*). The skin was no longer wet and sore, and the area of skin discolouration had reduced. Betsy reported an extremely positive experience using Aura Plus Soft Convex. Unlike her previous appliance, she found it to be kind to her peristomal skin, which she felt benefited from the Manuka honey in the hydrocolloid. She felt the adhesion of the appliance was excellent and provided security, and she had not experienced any leaks. This meant that she was having to change her appliance less frequently and thus ordering fewer appliances. Consequently, she did not have to worry about carrying excess appliances in case of emergencies, and it resulted in a cost saving for the health service.

Betsy also benefitted from the release tab on the drainable outlet, which she found easier to open and direct into the toilet, as well as much less messy overall than her previous appliance, which she had found difficult to clean and would often soil her hands. She also found Aura Plus Soft Convex more discreet than her usual appliance, helping her to feel more confident leaving the house. All of this contributed to improved wellbeing.

Conclusion

Convexity is an essential part of the stoma care nurse's tool kit. These three case studies demonstrate that Aura Plus Soft Convex offers a solution for people with different stoma needs. In each case, using a soft convex appliance reduced leaks, skin damage and appliance renewal, and it improved the comfort, security and the condition of the skin. These impacts, alongside other positive features, improved each ostomate's self-confidence, body image and overall wellbeing. They reported that they felt able to leave their house again and engage in their usual day-to-day activities without the constant worry of leakage – anxiety about leaks being known to have a significant impact on a person's ability to adapt to life with a stoma (Bedford, 2022). After the case study, all three ostomates wished to continue using Aura Plus Soft Convex, feeling that it performed well and offered them multiple benefits that added up to a greater quality of life. **GN**

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Ambe E, Kurz N, Nitschke C, Odeh S, Moslein G, Zirngibl H. Intestinal ostomy: classification, indication, ostomy care and complication management. Dtsch Arztebl Int. 2018;115:182–187. https://doi.org/10.3238/arztebl.2018.0182

Association of Stoma Care Nurses UK. National clinical guidelines. 2016. https://ascnuk.com/_userfiles/pages/files/

national_guidelines.pdf

Bedford F. Evolving stoma appliances to improve outcomes and increase stoma acceptance. Br J Nurs. 2022;31(16):S1. https://doi.org/10.12968/bjon.2022.31.16.S18

Belcher J. Does honey have a place in stoma care? Br J Nurs. 2013;22(12):684. https://doi.org/10.12968/bjon.2013.22.12.684

Boyles A. Keeping up to date with stoma care accessories: enabling informed choice. Gastrointestinal Nursing. 2010;8(6):24–38. https://doi.org/10.12968/gasn.2010.8.6.49020

Burch J. Using convex stoma appliances. Gastrointestinal Nursing. 2019;17(7):20–22. https://doi.org/10.12968/gasn.2019.17.7.20 Cronin E. Problem stomas and the use of convexity. Gastrointestinal Nursing. 2005;3(10):33–40

Cronin E. A guide to the appropriate use of convex stoma care products. Gastrointestinal Nursing. 2008;16(2):12–16. https://doi.org/10.12968/gasn.2008.6.2.28803

Evans M, White P. Selecting convexity to improve and maintain peristomal skin integrity. Br J Nurs. 2020;29(16):S8–S14. https://doi.org/10.12968/bjon.2020.29.16.S8

Hanley J. Convex stoma appliances: are we getting it right? Br J Nurs. 2013;22(16):53. https://doi.org/10.12968/bjon.2013.22.Sup11.S3

Hoeflok J, Salvadalena G, Pridham S, Droste W, McNichol I, Gray M. Use of convexity in ostomy care. J Wound Ostomy Continence Nurs. 2017;44(1):55–62. https://doi.org/10.1097/WON.0000000000000291

Hopkins G. Stoma care: changing and removing ostomy pouches. Gastrointestinal Nursing. 2015;13(7):20–22. https://doi.org/10.12968/gasn.2015.13.7.20

Kelly-O'Flynn S. Peristomal skin damage: assessment, prevention and treatment. Br J Nurs. 2019;28(5):S6–S12. https://doi.org/10.12968/bjon.2019.28.5.S6

Kettle J. StoMap programme baseline report. East of England NHS Collaborative Procurement Hub. 2019. www.eoecph.nhs.uk/Files/Integrated%20Care/StoMap%20Baseline%20Report%20FINAL.pdf (accessed 21 August 2023)

Le Ber F. Novel stoma appliances to minimise complications and improve patient outcomes. Br J Nurs. 2021;30(16):S1. https://doi.org/10.12968/bjon.2021.30.16.S4

Malik T, Lee M, Harikrishnan AB. The incidence of stoma related morbidity: a systematic review of randomised controlled trials. Ann R Coll Surg Engl. 2018;100(7):501–508. https://doi.org/10.1308/rcsann.2018.0126

Perrin A. Convex stoma appliances: an audit of stoma care nurses. Br J Nurs. 2016;25(22):S10–S15. https://doi.org/10.12968/bjon.2016.25.22.S10

Perrin A, White M, McPhail J, Baker M. Managing difficult stomas. In: Stoma care specialist nursing: a guide for clinical practice. Switzerland: Springer Nature; 2023

Richbourg L, Thorpe JM, Rapp CG. Difficulties experienced by the ostomate after hospital discharge. J Wound Ostomy Continence Nurs. 2007;34(1):70–79. https://doi.org/10.1097/00152192-200701000-00011

Rolstad BS, Boarini J. Principles and technique in the use of convexity. Ostomy Wound Manage. 1996;42(1):24–34

Rolstad BS, Ermer-Seltun J, Bryant RA. Relating anatomy and physiology of the skin to peristomal skin care. WCET J. 2012;32(1):4–10. https://doi.org/10.12968/gasn.2011.9.Sup3.3

Sica J. Helping ostomates choose the right appliance for their stoma. Gastrointestinal Nursing. 2018;16(7):20–22. https://doi.org/10.12968/gasn.2018.16.7.20

Turnbull GB. The convexity controversy. Ostomy Wound Manage. 2003;49(1):16–17 White P, Evans M. Clinical governance for ostomates at risk of peristomal skin complications. Br J Nurs. 2019;28(16):2–10. https://doi.org/10.12968/bjon.2019.28.16.S24

Woodward S. Moisture associated skin damage: use of a skin protectant containing Manuka honey. Br J Nurs. 2019;28(6):329–335. https://doi.org/10.12968/bjon.2019.28.6.329

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