

Addressing the risks: developing a new prevention guide for leakage and peristomal skin complications

ABSTRACT

Introduction The Prevention Guide for Leakage and Peristomal Skin Complications (PSCs) aims to advance holistic and structured preventive strategies in the management of leakage and PSCs. The Prevention Guide builds on the well-established Risk Factor Model for leakage and PSCs to provide a clinical tool linking systematic identification of risk factors to potential consequences and actionable mitigating interventions for the healthcare professionals (HCP) to consider.

Aim To translate the Risk Factor Model into a practical Prevention Guide for leakage and PSCs and evaluate the resulting tools, the bedside tool and the supporting learning resources, for clinical use.

Methods Through close collaboration with experienced stoma care nurses and clinical stoma care experts, the Prevention Guide was developed into an interactive PDF (iPDF) bedside tool, and supporting learning resources for e-learning, and a library of bite-sized videos. Quantitative pilot testing by stoma care nurses and qualitative reviews by clinical stoma care experts assessed the relevance and effectiveness of the Prevention Guide tools.

Results The Prevention Guide iPDF can be used as a decision-support tool in routine stoma care. The e-learning materials provide engaging structured modules that support the learner to implement a preventive approach. The video library features clear and concise bite-sized video explainers to be used for training, or for quickly brushing up on relevant knowledge regarding particular risk factors.

Conclusion All three tools have been evaluated by SCNs and were identified as useful tools for facilitating systematic patient assessment, enhancing documentation and providing an educational resource. Overall, the Prevention Guide helps to apply a systematic approach, linking problem identification for leakage and PSCs with corresponding targeted interventions.

Keywords peristomal skin complications; leakage; stoma care; preventive care

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INTRODUCTION

Leakage and peristomal skin complications (PSCs) remain common challenges for people living with a stoma. They can affect up to 85% of patients within the first year following stoma surgery and are associated with diminished quality of life and adverse impacts on mental well-being.¹ PSCs are also associated with increased use of healthcare resources.²⁻⁴ The risk of leakage alone is a significant concern, with 92% of individuals reporting worries related to potential leakage, and 65% of those who are employed indicating that their worrying negatively influences their ability to work.⁵ That is why preventive strategies are essential from the earliest stages of the patient pathway and remain relevant throughout the ongoing care of the patient's stoma. This is because risk factors can emerge or evolve over time due to changes to comorbidities, medication, daily habits or physical function. The key to reducing leakage and PSCs is continued education, guidance and assistance on prevention,⁶ both for the patient and healthcare professionals (HCPs).

A structured Risk Factor Model was developed to support this ambition.⁷ It enabled healthcare professionals (HCPs) to identify and categorise many different leakage and PSC risk factors, detailing three categories: those specific to the individual with a stoma, those related to the ostomy product solutions, and those associated with the healthcare system.⁷ The overview of the Risk Factor Model⁷ is reprinted with permission in the appendix online. While identifying the risk factors is the first key step towards targeted prevention strategies, the next step involves establishing practical recommendations that HCPs can apply during their consultations with stoma patients, to support their clinical decision-making.

Going from risk to mitigation

Already during the process of identifying the relevant risk factors for the Risk Factor Model, 1631 responses from participating HCPs were collected on strategies for maintaining optimal peristomal skin health.⁸ This was the beginning of a systematic collection of PSC prevention strategies. The Prevention Guide for Leakage and Peristomal Skin Complications (The Prevention Guide) was developed by building on a systematic literature review of risk factors, through close collaboration and continued discussions with experienced stoma care nurses (SCNs) and clinical stoma care experts. The first phase of developing the Prevention Guide was to adapt the Risk Factor Model⁷ into targeted prevention strategies for HCPs to apply during their consultations with individuals living with a stoma. This phase of the development involved compiling interventions aimed at addressing the wide range of leakage and PSC risk factors. The outcome was a comprehensive master list of potential preventive strategies, which could assist HCPs when applying a personalised approach to the prevention of leakage and PSCs by systematically identifying risk factors, outlining potential clinical consequences and suggesting relevant mitigating intervention.

However, to further support HCPs in providing the best care, it was essential to transform these preventive strategies into relevant tools that could facilitate both continuous learning and clinical decision-making during the second phase of the Prevention Guides development. These tools should be adapted to suit the workloads of modern healthcare systems, provide value for different experience levels and integrated into a holistic culture of care.^{9,10}

METHODS

Collaborating to develop a relevant and useful tool

The Prevention Guide development relied on regular discussions with clinical stoma care experts from the Coloplast Global Advisory Board, who advised on useful tool formats for efficiently communicating and applying the compiled insights to a broad target group of HCPs. The resulting tools were an actionable clinical point-of-care tool in the form of an interactive PDF (iPDF) and two supporting learning resources: an e-learning module and an educational library of bite-sized video explainers. The relation between the Risk Factor Model,⁷

the Prevention Guide iPDF, and the e-learning module and bite-sized video library is explained in Figure 1 below.

The prevention guide iPDF

The Prevention Guide iPDF serves as a clinical decision guide designed for easy application in daily practice within stoma care. This format was selected as the most useful in direct patient interactions, because it could consolidate a large amount of guidance within an easy-to-use format; both online and offline; and include interactive features such as links, which provide a dynamic and engaging learning experience. This digital tool can create a complete risk profile for each individual patient, guides the identification of relevant risks, and suggests mitigating actions in each case. The user can add their own notes and save, print, and share their planned interventions with colleagues and the patient.

The development process was focused on creating a tool that was relevant for both experienced and novice HCPs in stoma care. The clinical stoma care expert panel highlighted that to develop a useful guide for all stoma nursing experience levels, the Prevention Guide iPDF should have the Risk Factor Checklist at its core element. The Risk Factor Checklist serves as a valuable resource for documenting patient interactions and decisions and provides a clear guiding structure to help navigate the extensive number of risk factors (with their related explanations), helping to identify the most relevant risk factors for the specific patient. The Prevention Guide iPDF provides a concise overview of the risk factors and mitigating interventions to consider, which is useful during interactions with patients in the clinic, while both the e-learning and bite-sized video libraries support the HCP as detailed learning resources. An example of the iPDF structure is presented in Figure 2 S6.

The e-learning module

During the development of the Prevention Guide iPDF, the clinical stoma care experts also highlighted how the compiled resources would be valuable as learning resources to facilitate staff training outside of their patient interactions. The WCET™ International Ostomy Guideline 2020 recommends that knowledge, skill, and competency in stoma care should be maintained through ongoing professional development including a variety of strategies and that specialised training for effective stoma care should include a competency-based curriculum which may include simulation or situation learning.¹⁰ Keeping in mind that HCPs often have limited time to complete desk-based learning modules, the e-learning module was designed with a clear, concise structure that motivates and engages the learner.

The e-learning module includes three educational tracks corresponding to the three main risk factor categories: the individual with a stoma, the ostomy product solutions, and the healthcare system.

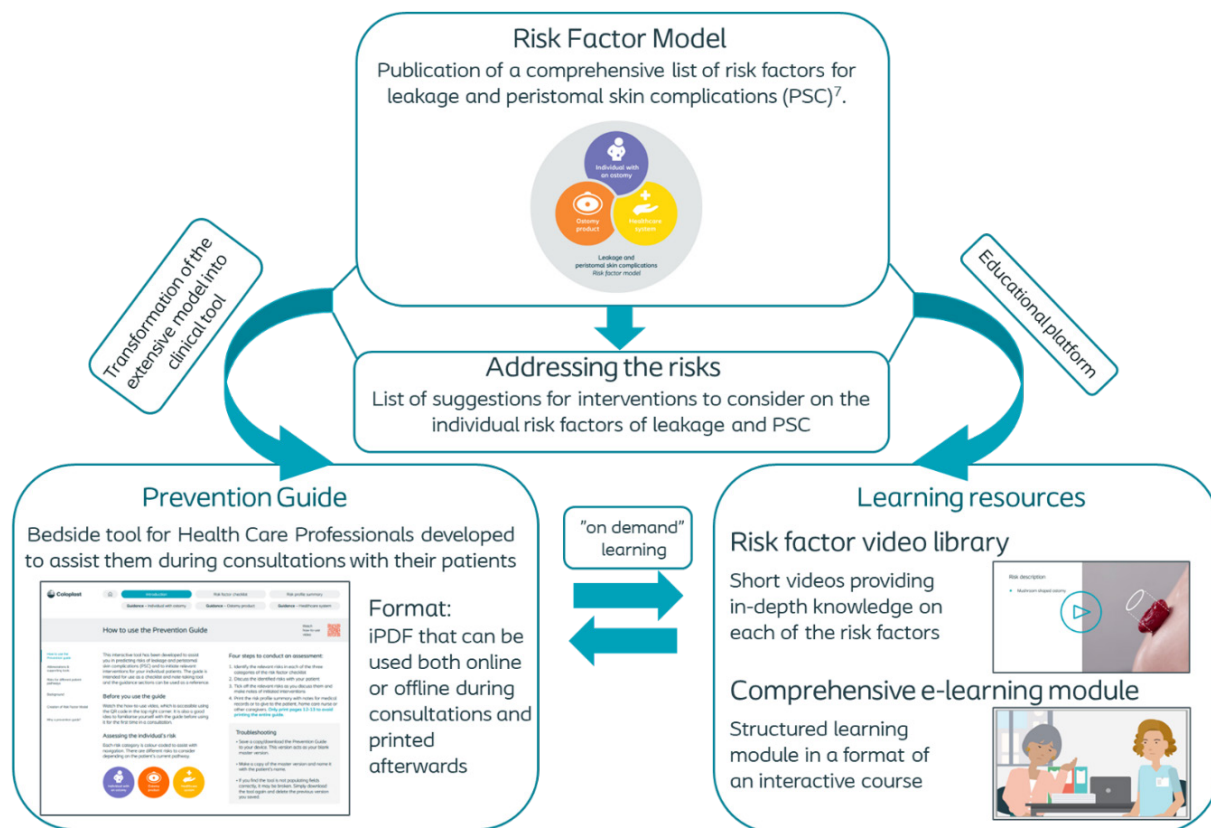


Figure 1. The development of the Risk Factor Model into the Prevention Guide iPDF and the supporting learning resources, the bite-sized video library and the e-learning.

All three tracks have identical flows:

- The track begins with an engaging story showcasing the importance of performing a risk assessment in real life. The learner must reflect on the story to proceed.
- The learner then needs to answer several quiz questions. Each question includes links to relevant video learning resources that typically last 1–2 minutes. This approach motivates the HCP to actively seek detailed information about risks, relevant mitigating actions and available tools when needed. More experienced nurses can skip any unneeded video resources, thus shortening the time it takes to finish the course.
- To pass the track, the learner must answer at least 80% of the quiz questions correctly.

The average completion time of all three tracks is 60 minutes. However, they can also be completed in customised chunks if needed. Depending on local regulations, e-learning completion might also serve as HCP revalidation.

The prevention guide bite-sized video library

A bite-sized video library is also available as an independent learning resource and clinical support tool, featuring a comprehensive catalogue of concise, short-form videos, which quickly summarise and explain each individual risk factor and possible mitigating interventions to consider. HCPs can easily

access these bite-sized videos for guidance or to refresh their knowledge of specific risk factors or preventive strategies. By collaborating with experienced SCNs and clinical stoma care experts during the development process, it was ensured that, the Prevention Guide is applicable, both as a hands-on tool in daily clinical practice and as a comprehensive reference tool for new and experienced HCPs.

RESULTS

Gathering front-line feedback

To verify that the Prevention Guide could support the intended preventive approach and be integrated into many different clinical settings, several SCNs and clinical stoma care expert panels, who had not been involved in the development process, were consulted. The main findings from the clinicians' evaluations are summarised in Table 1 on page S7.

In evaluating the applicability of the Prevention Guide for varying levels of clinical experience, the clinical stoma care expert panel identified distinct benefits for both new and experienced practitioners. For HCPs new to stoma care, the panel viewed the iPDF as a user-friendly and comprehensive resource that facilitates personalised patient assessment. For experienced SCNs, the panel recognised the iPDF for its value in enhancing documentation practices and providing a consistent framework to assist complex clinical decision-making.

The Prevention Guide addresses multiple risk factors that may arise at various stages along the entire patient care pathway. The expert panel highlighted the benefits of applying the knowledge during:

- the preoperative phase, when selecting the most appropriate stoma product;
- the later stages, such as the postoperative recovery period in the hospital;
- the care provided in the home setting; or
- the care provided within rehabilitation settings.

One expert emphasised how complications could occur at any point during the patient’s trajectory, underscoring the importance of supporting holistic early identification and mitigation. In this context, the members of the expert panel acknowledged the distinct value of each tool for applying the knowledge compiled in the Prevention Guide. This included:

- how the iPDF can support clinical interactions with individuals living with a stoma and facilitate personalised care;
- how the bite-sized videos can help less experienced HCPs better understand the iPDF and apply it; and
- how the e-learning can provide structured training in preventive strategy to a wide range of HCPs.

Collectively, the Prevention Guide was recognised for its

utility as an educational resource, particularly for training purposes, with the expert panel noting the systematic approach to linking problem identification with corresponding interventions. The evaluations indicated that integrating the Prevention Guide iPDF, e-learning and bite-sized video library into daily clinical practice can support HCPs in applying targeted prevention strategies to manage PSCs that benefits HCPs, health services, and individuals living with a stoma. The Prevention Guide iPDF, the e-learning modules, and the bite-sized video library have been made available for clinical application and the initial reception of the e-learning among nurses after its launch in the UK has been highly favourable with 44 of the 49 ratings being 5 out of 5 stars, 4 rating it with 4 stars and 1 with 3 stars.

CONCLUSION

The Prevention Guide for Leakage and PSCs was developed by transforming the Risk Factor Model into an actionable clinical tool that supports the implementation of targeted prevention strategies. This article presented how the Prevention Guide was developed through collaboration, discussion and evaluation with a range of experienced HCPs working in stoma care. This collaborative effort aimed at developing a clinical tool for bedside use, the Prevention Guide iPDF, alongside supporting learning resources, including an e-learning module and a bite-size video library. These tools can empower confidence and decision-making for less experienced SCNs by facilitating comprehensive and systematic assessment, while also being

The screenshot shows the Coloplast Prevention Guide interface. At the top, there is a navigation bar with the Coloplast logo and several menu items: 'Introduction', 'Risk factor checklist', 'Risk profile summary', 'Guidance – Individual with ostomy' (highlighted), 'Guidance – Ostomy product', and 'Guidance – Healthcare system'. Below the navigation bar, the main heading is 'Guidance – Individual with an ostomy'. On the right side, there is a circular icon with a person and the text 'Individual with an ostomy'. The main content area features a table with the following structure:

Physical characteristics: Peristomal body profile	
Risks	Interventions to consider
Ostomy construction	<ul style="list-style-type: none"> • Regular assessment of the peristomal body profile using the BodyCheck tool. Scan the QR code in the "Abbreviations & supporting tools" section of the introduction to identify the most appropriate ostomy product for the right fit. • Refer to ostomy care nurse when needed.
Ostomy output types	
Skin properties/conditions	
Underlying diseases	
Medication/treatment	<ul style="list-style-type: none"> • Use validated tools in daily practice to assess the peristomal body profile to find an ostomy product that offers the best fit. E.g. Peristomal Body Profile Assessment Tool. Scan the QR code in the "Abbreviations & supporting tools" section of the introduction.
Disabilities	
Self consciousness/self-care	
Ostomy management	<ul style="list-style-type: none"> • Regularly evaluate if the ostomy product fits the peristomal body profile, and the size and shape of the ostomy. Adapt the ostomy product accordingly, also in more challenging situations such as doing sports. • Supporting products may help to secure skin contact and increase absorption capacity.

Figure 2. An example from the Prevention Guide detailing the different risks of a specific risk factor, the Peristomal Body Profile, and linking them with the corresponding mitigating interventions to consider. As seen in the example, the interventions to consider are then linked further to relevant validated tools that the HCP may choose to explore, for example, by assessing the peristomal body profile using the **BodyCheck** tool via the QR code that is included.

Table 1. Main findings of the Prevention Guide evaluations.

Prevention guide tools	Evaluation method*	Main findings	Qualitative testimonials
The iPDF	Quantitative pilot test with six SCNs assessing usability.	The iPDF was easy and quick to use. It covers the relevant clinical risks and supports preventive approaches in daily practice.	<i>"The risk factor model is well constructed and the iPDF is a tool for operationalising its use. Its content is important for both the professional and the user."</i>
	Qualitative review by four clinical stoma care experts.	A valuable tool for both new and experienced HCPs across the healthcare system and care pathway.	<i>"An excellent ally for nurses, helping to avoid trial-and-error approaches that may be harmful to the patient."</i>
The bite-sized videos	Evaluated through expert HCP review.	The videos provide an accessible general learning resource and support knowledge reinforcement of key prevention concepts.	<i>"The videos will increase HCPs confidence, knowledge and experience in helping/supporting stoma patients."</i>
The e-learning modules		The story-driven format motivated learners and provided valuable learning for less experienced HCPs.	<i>"It is very useful for onboarding new staff in the ward." "This training is definitely of high value as will benefit a large amount of people."</i>

*Further details of the evaluation methods are available as supplemental materials B, C, and D within the Appendix.

useful to more experienced nurses by providing a consistent framework for documentation practices. The Prevention Guide was also found to be useful as an educational tool for training nursing staff in applying a structured approach to linking problem identification for leakage and PSCs with corresponding interventions and additionally for those who are living with a stoma and seeking to actively engage in their stoma management.

CONFLICT OF INTEREST

LM and FS are members of Coloplast global ostomy advisory board, however, they did not receive remuneration for contributions to this manuscript. CLB, JB and ASH are employed by Coloplast A/S.

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