



# Appropriate Bedding On Low Air Loss Mattresses: A Clinical Practice Change

By Paulette Dugas RN IIWCC and Nancy Kuta-George RN IIWCC

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The intent of this article is to share an academic project for the International Interdisciplinary Wound Care Course (IIWCC). The project was to develop a practice change in appropriate bedding on Low Air Loss Mattresses (LALM) in Long-Term Care (LTC) facilities within the authors' catchment areas in Nova Scotia (see Table 1).

## Background

In some LTC facilities, it was observed that a lack of consistent approaches to appropriate bedding used on LALMs exists. Linen layers have the potential to impact skin microclimate in the following ways; by reducing airflow, affecting pressure redistribution, increasing friction coefficient, drying or macerating skin and increasing skin temperature.<sup>1</sup>

When inappropriate bedding is applied to LALMs, there is a high risk of complications, such as moisture associated skin disorder (MASD) and pressure injuries (PIs).<sup>2</sup> It was identified that there was a knowledge gap among members of the multidisciplinary team regarding inappropriate bedding that was often found on the mattresses.<sup>3</sup> Recognizing this gap, from knowledge to practice, was the starting point for the project.

### Table 1 Project Catchment Areas:

**Nova Scotia Eastern Zone:** Eastern zone of Cape Breton in the Cape Breton Regional Municipality

**Western Zone:** Queens and Lunenburg Counties

### The International Interdisciplinary Wound Care Course (IIWCC)

The International Interdisciplinary Wound Care Course (IIWCC) is a comprehensive educational program designed for wound care specialists. It aims to translate new evidence-based knowledge into practice and is based on adult learning principles. The course consists of two mandatory educational sessions, self-study modules, and skills workshops. It is accredited by the University of Toronto's Continuing Professional Development (CPD) and is open to practitioners with a health professional degree or a minimum of five years of relevant experience. The course is delivered by wound care experts and is based on evidence-informed practice. For more information visit: <https://woundpedia.com/iiwcc/>

## Methodology

A meeting with the LTC management team was held and approval to support the project was agreed upon. A four-week implementation plan was established, and a polling questionnaire was developed to give further insight into the gaps that existed. The questionnaire was completed with different levels of staffing in the chosen LTC facilities.<sup>4</sup> A total of 51 surveys were distributed to staff pre- and post-education sessions on LALMs. (See Appendix A.)

A 'Staff Enabler' was developed to put at the bedside to reinforce the inappropriate application of bedding on LALMs (see Figure 1).

A post-questionnaire was distributed to staff following the education sessions. (See Appendix B.) Random monthly audits were conducted for a period of four months to capture the number of layers of bedding on the surfaces. (See Appendix C.)

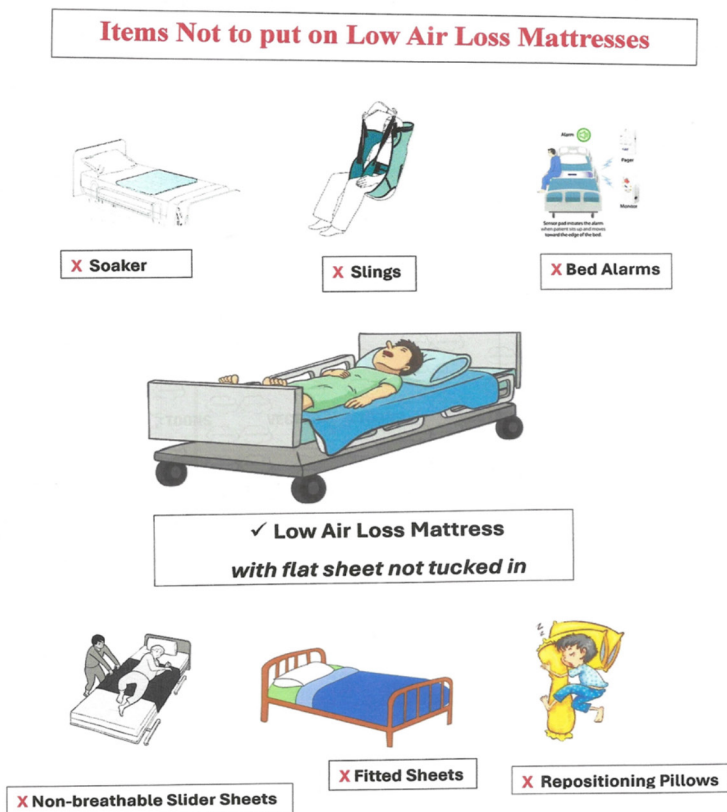
On-site training was prepared and delivered by a product specialist, and on numerous occasions hands-on participation involving staff and residents was completed.<sup>5,6</sup> Videos and online materials were provided to the sites for staff unable to attend the onsite sessions.<sup>6,7</sup>

## Results

The results of an initial audit identified that there was a 100% failure, with most of the surfaces having fitted sheets and quilted soaker pads. Feedback from staff identified that hands-on training sessions at the bedside were the most effective. Staff expressed that barriers to practice included the lack of interest in self-directed online learning and the lack of time available for online learning during the workday. The survey prior to the implementation of education sessions identified only 11 individuals answered all questions correctly and 24 responded correctly on what sheets to use on a low air loss mattress.

Forty-two surveys were completed post-educational sessions, with 27 individuals answering all questions correctly. Seventy-four per cent of participants answered correctly on what sheets to use on a low air loss mattress. This showed an increase of 50% in correct answers for the appropriate bedding, indicating our education program had achieved a measurable level of success. Staff reported that their overall knowledge had increased due, in part, to the continued support and guidance which we provided as reinforcement of the best practice at the bedside.

**Figure 1 Staff Enabler:** Items Not To Put On Low Air Loss Mattresses



Created by Nancy Kuta-George, RN and Paulette Dugas, RN (February 2024)

## Implications For Practice

The staff identified their knowledge, and confidence had increased through continued support and guidance. Clinical practice change can be a challenge, and it was our experience that these challenges were experienced due to inconsistencies with staffing and a lack of communication and transfer of knowledge. This project reinforced the need for ongoing monitoring and support to staff if practice change is to be sustained. The next phase of implementation will be conducting future surveys,

using resources such as Survey Monkey™, to capture more stakeholders, such as shift workers, casual staff, and travel nurses. Overall, this project required a great deal of work and effort to implement but was rewarding, with a positive result.

**Paulette Dugas RN IIWCC** is an Advanced Wound Care Consultant, Provincial Wound Care Program, Western Zone, Health Association Nova Scotia.

**Nancy Kuta-George RN IIWCC** is an Advanced Wound Care Consultant, Provincial Wound Care Program, Eastern Zone, Health Association Nova Scotia.

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## Appendix A

### Pre-Education Survey Data Sheet

#### (pre-education survey)

#### Low Air Loss Mattress Polling Questions

#### (51 surveys completed)

Please choose the appropriate answer for each of the following questions.

#### 11 surveys answered all questions correctly

1. What is a low-air loss mattress used for?
  - a. To allow for easy transfers while in bed
  - b. Used to prevent and treat pressure injuries (49)
  - c. When a resident does not want a firm mattress
  - d. All of the above (2)

Number of correct answers = 49/51 (96%)

2. True or False?

All residents should be on a low-air-loss mattress.

Number of correct answers = 46/51 (90%)

3. Which of the following sheets are appropriate to use on low air loss mattresses?
  - a. Fitted sheets (11)
  - b. Quilted reusable soaker pads (0)
  - c. Flat sheet not tucked in (12)
  - d. All of the above (28)

Number of correct answers = 12/51 (24%)

4. The tiny holes found in the low air loss mattress serve what purpose?
  - a. To provide the client with a fan effect (1)
  - b. To adjust the mattress to accommodate the residents over 250 pounds
  - c. To keep the skin dry and wick away moisture (46)
  - d. All of the above (4)

Number of correct answers = 46/51 (90%)

## Appendix B

### Post-Education Survey Data Sheet

(post-education survey)

#### Low Air Loss Mattress Polling Questions

(42 surveys completed)

Please choose the appropriate answer for each of the following questions.

27 surveys answered all questions correctly

1. What is a low-air loss mattress used for?
  - a. To allow for easy transfers while in bed
  - b. Used to prevent and treat pressure injuries (40)
  - c. When a resident does not want a firm mattress
  - d. All of the above (2)

Number of correct answers = 40/42 (95%)

2. True or False?  
All residents should be on a low-air-loss mattress.

Number of correct answers = 39/42 (93%)

3. Which of the following sheets are appropriate to use on low air loss mattresses?
  - a. Fitted sheets (5)
  - b. Quilted reusable soaker pads (0)
  - c. Flat sheet not tucked in (31)
  - d. All of the above (6)

Number of correct answers = 31/42 (74%)

4. The tiny holes found in the low air loss mattress serve what purpose?
  - a. To provide the client with a fan effect (0)
  - b. To adjust the mattress to accommodate the residents over 250 pounds
  - c. To keep the skin dry and wick away moisture (40)
  - d. All of the above (2)

Number of correct answers = 40/42 (95%)

## Appendix C

### Random Monthly Audits

**Random Monthly Audits counting the number of layers of bedding on surfaces**

- February – 2 facilities with total of 18 low air loss mattresses = 100% failure

(mostly had quilted soaker pads and fitted sheets)

- March – 2 facilities with total of 18 low air loss mattresses = 44% failure

(this was done after the staff education, beds still had quilted soaker pads, fitted sheets, and a sling used for mechanical lift transfers)

- April – 2 facilities with total of 16 low air loss mattresses = 38% failure

(beds continued to have quilted soaker pads, some fitted sheets and blankets provided by family members)

- May – 2 facilities with total of 19 low air loss mattresses = 53% failure

(higher number of travel nurses noted this month at one facility, as well as beds continued to have quilted soaker pads and fitted sheets.)