

Perioperative management of pressure injury: a best practice implementation project

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ABSTRACT

Objectives: This project aimed to set up a control mechanism for the prevention of pressure injuries during surgery.

Introduction: Structured and comprehensive risk assessment is effective in identifying individuals at risk for pressure injuries. The subsequent use of proper positioning aids (modern gel-filled positioning aids used to position the head and limbs: floating limb concept) reduces the incidence of surgery-related pressure injuries.

Methods: The best practice implementation project used the JBI's Practical Application of Clinical Evidence System and Getting Research into Practice audit tool for promoting change in local healthcare practice. The study was carried out from January 2020 to February 2021 at the private clinic of aesthetic surgery (Brno, Czech Republic). A baseline audit involving 27 patients was undertaken and measured against six best practice recommendations. This step was followed by the implementation of targeted strategies and finally, a postimplementation follow-up audit was conducted.

Results: The baseline audit results showed significant deficits between current practice and best practice in all but two criteria. Barriers to implementation of nursing clinical handover best practice criteria were identified by the project team and an education strategy was implemented, documentation for recording possible risks of pressure injuries was created, and new positioning aids were purchased and introduced into clinical practice. There were significantly improved outcomes across all best practice criteria in the follow-up audit.

Conclusion: Clinical audits were proved to promote best practice in healthcare. Focused education, provision, and use of relevant tools and aids can have an immediate and positive impact on clinical practice. Future audits are planned to ensure the sustainability of practice changes.

Key words: clinical audit, evidence-based practice, implementation project, perioperative period, pressure injury

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What is known about the topic?

- Pressure injuries are serious and expensive complications that are easy to prevent.
- Perioperative pressure injuries are common complications, especially in lengthy surgeries.

- The most effective preventative measures include risk assessment and pressure relief.

What does this article add?

- Even a healthy patient undergoing surgery only for cosmetic reasons should be evaluated for risk of developing pressure injuries.
- Safety checklists must meet the specific needs of a particular healthcare facility.
- Even private healthcare facilities that provide healthcare must follow well tolerated procedures for the patient based on best practice recommendations.

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Introduction

Pressure injury prevention (PIP) is an important consideration for patients undergoing lengthy surgery.^{1,2} A pressure injury (PI) is an injury which causes occlusion of blood flow, and can affect the skin, soft tissue, muscle and bone. It leads to the development of localized ischemia, tissue inflammation, tissue anoxia and necrosis.³ Pressure injuries may be caused by pressure, shear or friction tissue forces, which can occur because of prolonged periods of immobility during an operation, or while the patient is being repositioned or transferred.

Perioperative prevention of pressure injuries remains problematic as according to some authors, little is published about the current prevention of perioperative pressure injuries.^{4,5} Prevention is considered to be the most effective approach, with strategies including repositioning the patient, use of support surfaces and skin-care.^{6,7} Effective prevention for pressure injuries should first and foremost be based on adequate risk assessment.⁸

The article presents the implementation project of best practice in perioperative pressure injuries prevention (PIP) in a private clinic of aesthetic surgery on patients, who have undergone an elective surgery. This topic was chosen because of a lack of a suitable checklist and positioning aids in a particular healthcare facility. The use of the evidence implementation component of the JBI implementation model for evidence-based healthcare, involving a baseline audit, design and implementation of strategies to improve practice and follow-up audit, was used in this project.^{9,10}

The project was conducted in a private healthcare facility specializing in aesthetic surgery. There are eight beds in the ward, and approximately 100 patients are admitted to the planned (elective) aesthetic surgery for 1–2 days long hospitalization each month.

Objective(s)

This implementation project aimed to conduct an audit of pressure injuries perioperative prevention, to implement evidence-based best practice recommendations and assess the impact of these changes in improving the providing care during a perioperative period. The overall purpose was to improve local practice and create a safety checklist, based on validated scales, which will help staff to assess all potential risks of development of PI in patients.

The specific objectives of the project were:

- (1) To assess the current level of care and documentation regarding PIP in patients undergoing surgery.

- (2) To improve practice, including care and documentation, by implementing evidence-based practice criteria for safe patient handling and positioning during the perioperative period so that pressure injuries do not occur.
- (3) To reduce employees' concerns about the implementation of PIP best practices and increase staff knowledge of this issue.
- (4) To reconsider local procedures for PIP in patients during the surgery (during the perioperative period).

Methods

This evidence implementation project used the JBI Practical Application of Clinical Evidence System (JBI PACES),¹⁰ an online tool for health professionals and/or researchers to use to collect and compare data. This tool includes the Getting Research into Practice (GRiP) framework, which may help overcome gaps between practice and evidence-based best practice.

The JBI PACES and GRiP framework involved three phases as follows:

- (1) Firstly, a project team was established, and a baseline audit based on criteria informed from the evidence was undertaken.⁹ The project team was multidisciplinary and consisted of project leader, head nurse, ward nurses, perioperative nurses, anesthesiologists and surgery physicians. A project leader was responsible for the promotion of the project and process control. The project team members were responsible for collecting data, providing feedback and helping to implement strategies to improve the perioperative management of pressure injuries.
- (2) Secondly, reflecting on the results of the baseline audit, the project team designed and decided on which strategies to implement to address non-compliance found in the baseline audit, informed by the GRiP framework.
- (3) The last phase was conducting a follow-up audit to assess the outcomes of the interventions implemented to improve practice and identify future practice issues to be addressed in the subsequent audits.

Ethics

The project was registered as a quality improvement activity within the participating hospital, and therefore, did not require ethical approval.

Phase 1: stakeholder engagement (or team establishment) and baseline audit

A baseline audit was performed in a private healthcare facility. The sample included patients who were undergoing surgery. There were 27 patients involved in the baseline audit, with the same number involved in the follow-up audit. The inclusion criterion was any procedure performed under general anaesthesia. Exclusion criteria were procedures performed under local anaesthesia only.

An initial project team meeting was held to discuss the audit criteria and data collection methods before the baseline audit. In January 2020, the audit topic was identified, the project team established, audit criteria set, patients enrolled and the baseline audit conducted. The baseline audit was conducted by the project leader and project team members using JBI PACES program. To collect the baseline data, we used the 32-item checklist. This checklist was based on the commonly worldwide used Surgical Safety Checklist (SSCH). Time taken by the project team to complete the checklist was approximately 5–10 min. In this phase, no standardized questionnaire was used in the current SSCH; we only worked with the existing document, commonly used in our healthcare facility. After the auditing process was completed, the project team discussed the results of the data obtained using the JBI PACES program and the compliance rate for each criterion was documented. The project leader and project team members reviewed the project background and determined an implementation plan for PIP in patients who had undergone surgery.

Audit criteria

Six evidence-based audit criteria for PIP in surgical procedures were based on JBI evidence summary¹⁰:

- (1) An initial risk assessment for pressure injury with a validated tool was performed on admission prior to surgery.
- (2) An initial risk assessment for pressure injury was documented prior to surgery.
- (3) Bony prominences are protected from pressure and shearing.
- (4) Patients are repositioned at regular intervals during the surgical procedure whenever appropriate.
- (5) The position the patient was placed in during the surgical procedure was documented.
- (6) Staff were educated regarding techniques for preventing pressure ulcers during surgical procedures.

Table 1 below summarizes the evidence-informed audit criteria used in the project (baseline and follow-up audit), together with a description of the sample and the

approach to measuring compliance with the best practice for each audit criterion.

The audit occurred from 13 to 24 January 2020 and included 27 patients undergoing 29 surgeries (2 patients had 2 procedures simultaneously during one anaesthetic). One auditor was nominated to undertake all 27 episodes of data collection. The auditor simply marked a 'yes', 'no' or 'N/A' box on a data collection form. Baseline data were collected and entered into the JBI PACES program.

Phase 2: design and implementation of strategies to improve practice (Getting Research into Practice)

Phase 2, because of the Covid-19 pandemic situation, lasted over 1 year (from January 2020 to February 2021). The project team reviewed and compared the findings of the baseline audit against the best practice standards for the prevention of pressure injuries, identified and discussed barriers to compliance with best practice recommendations and developed and implemented strategies to address the barriers. During this phase, we identified three barriers to best practice and determined strategies designed to overcome them. The evidence-practice gaps were identified for all criteria but criterion 3. The strategies primarily involved education sessions and the purchase of suitable positioning equipment. The project team members and stakeholders had two sessions of discussion. The consultations aimed to garner support for the project.

Phase 3: follow-up audit post-implementation of change strategy

The follow-up audit used the same evidence-based audit criteria as in the baseline audit. There were no variations to the topic, sample size, characteristics or location of the project during the follow-up cycle. The post-implementation audit was carried out from 8 to 19 February 2021. The project leader was responsible for conducting the audit using JBI PACES software. The findings of the audit were shared with all stakeholders and team members.

Analysis

Results data on changes in compliance were measured and summarized in JBI-PACES in the form of percentage changes from baseline.

Results

Phase 1: baseline audit

The baseline audit was conducted from 13 to 24 January 2020. Table 2 displays the demographic data of patients

Table 1. Audit criteria, sample and method employed to measure compliance

Audit criterion	Sample	Method used to measure compliance with best practice
1. An initial risk assessment for pressure injury with a validated tool was performed on admission prior to surgery.	Baseline audit: 27 patients Follow-up audit: 27 patients	The project team member checked the risk assessment for pressure injuries using the Norton scale ^a for pressure ulcer risk assessment. If the team member completed the Norton scale assessment form, the auditor would mark a 'yes', if not, the auditor would mark a 'no'.
2. An initial risk assessment for pressure injury was documented prior to surgery.		The project team member checked the Norton scale assessment form and made a note in the medical records. If the team member checked the Norton scale assessment form and made a note in the medical records, the auditor would mark a 'yes', if not, the auditor would mark a 'no'.
3. Bony prominences were protected from pressure and shearing.		The project team member used suitable positioning aids to avoid pressure and shearing of the bony prominences. If the team member used suitable positioning aids, the auditor would mark a 'yes', if not, the auditor would mark a 'no'.
4. Patients were repositioned at regular intervals during the surgical procedure whenever appropriate.		Patients are repositioned during the surgery according to the type of surgical procedure. If the operation team repositioned the patient during the surgery, the auditor would mark a 'yes', if not, the auditor would mark a 'no'.
5. The position the patient was placed in during the surgical procedure was documented.		The project team member has documented the position of the patient during the surgery. If the team member documented the position of the patient during the surgery, the auditor would mark a 'yes', if not, the auditor would mark a 'no'.
6. Staff were educated regarding techniques for preventing pressure ulcers during surgical procedures.	Baseline audit: staff in the operating theatre, staff in the ward Follow-up audit: staff in the operating theatre, staff in the ward	Nursing staff would mark: 'YES' if he/she had received this training. Nursing staff would mark: 'NO' if he/she had not received this training. Nursing staff would mark: 'N/A' if he/she was not sure whether he/she had received this training.

^aThe Norton Scale is widely used to assess the risk for pressure injuries in adult patients in the Czech Republic. The five subscale scores of the Norton Scale are added together for a total score that ranges from 5 to 20. A lower Norton score indicates higher levels of risk for pressure injury development.

(sex, average age, average BMI value). There was no compliance with the evidence-based audit criterion 1 and criterion 2. At the setting where the audit was performed, no validated scale was used to assess the initial risk of pressure injuries perioperatively. Therefore, no evaluation was documented in the patient record prior to surgery. Criterion 3 displayed full compliance (100%) with protection bony prominences from pressure and shearing. Repositioning patients at regular intervals during the surgical procedure (criterion 4) scored 44% ($n = 12$) compliance. Documentation of the position the patient was placed in during the surgery achieved full compliance (criterion 5) and staff education about PIP during the surgical procedure (criterion 6) scored extremely poor at 0%.

Phase 2: strategies for Getting Research into Practice

During phase 2, we identified three barriers to best practice and determined strategies designed to overcome them (see Table 3 for the GRIP matrix).

Phase 3: follow-up audit

The follow-up audit was conducted from 8 to 19 February 2021 at the same place with the same sample size as the baseline audit (see Table 2). The percentage of compliance with best practice for the audit criteria in the baseline and follow-up audits is shown in Fig. 1.

Criteria 1 – 2: there was a significant improvement in both criteria (from 0 to 100%). An initial risk assessment

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Table 2. Demographic data

Characteristic	Baseline audit	Follow-up audit
Sex (male/female)	1/26	0/27
Age	ø38.32	ø36.71
BMI	ø21.18	ø19.95

for pressure injuries with the Norton scale risk assessment tool was performed prior to surgery (27 of 27 samples taken) and this was documented in the medical record. Moreover, the Safety Surgical Checklist was updated and included evidence-based criteria concerning PIP in this document.

Criterion 3: although the compliance rate remained the same for both audits (100%), new positioning aids (gel-filled instead of foam) began to be used to protect the bony prominence.

Criterion 4 improved from 44% (*n* = 12) to 70% (*n* = 19), criterion 5 remained at a compliance rate of 100%, criterion 6 showed a sizable improvement from 0 to 100%.

Discussion

The aim of this implementation protocol was to improve local practice in a particular healthcare facility. Our effort was to assess the current level of care and documentation regarding PIP in patients undergoing surgery; to improve practice, including care and documentation, by implementing evidence-based practice criteria for safe patient handling and positioning during the perioperative period so that pressure injuries do not occur; to reduce employees' concerns about the implementation of PIP best practices and increase staff knowledge of this issue and to reconsider local procedures for the PIP in patients during the surgery (during the perioperative period).

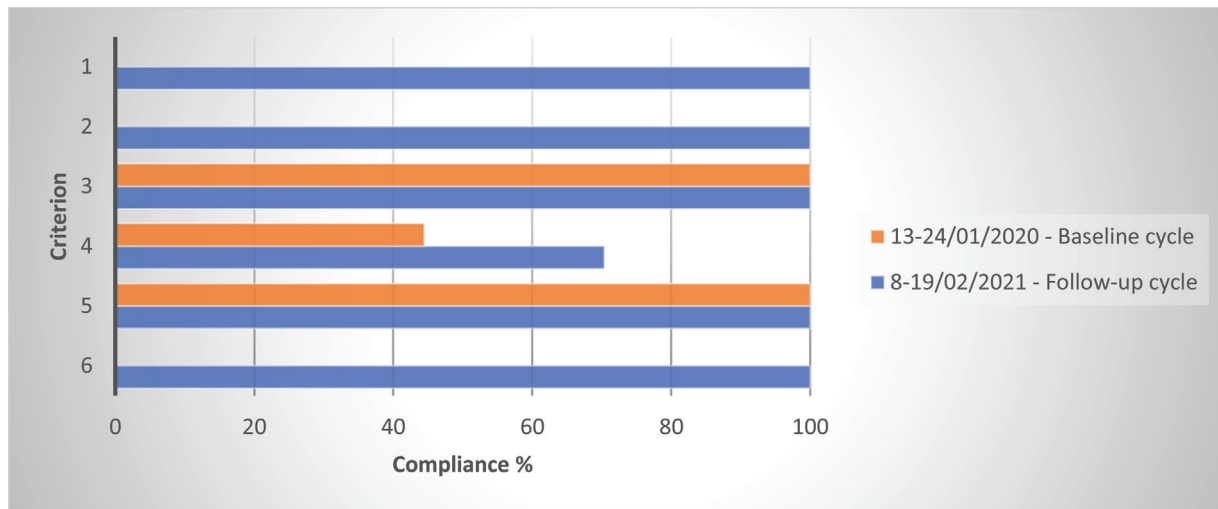
We hypothesize that the evaluation of the risk of pressure injuries is not adequately performed within the perioperative screening. In accordance with other studies,¹¹⁻¹³ medical staff's insufficient initial knowledge and subsequent education may be the biggest issue. Although perioperative nurses believe that pressure ulcer prevention is important, a knowledge deficit exists, and there is a need for pressure ulcer prevention education. This was the first step in responding to the results of the

Table 3. Getting Research into Practice matrix: barriers and strategies

Barrier	Strategy	Resources	Outcomes
Nursing staff lacked knowledge regarding pressure injury prevention in the perioperative period.	Conduct an education meeting to enlarge knowledge related to PIP. Clarify PIP in the perioperative period. Demonstration of the use of the positioning aids by the sales representative. Monitoring and evaluation.	Evidence-based research PIP guidelines Educational materials	Staff understood the need for change. Stakeholders received education and training on knowledge of PIP. Nurses and other professionals improved their level of health education. Staff articulated that they felt confident in utilizing positioning aids. Audit Criterion 6 increased from 0 to 100%.
Absence of appropriate scales and tools for assessing the risk of PIs.	Search for an evidence-based template. Implement the most suitable scale for assessing the risk of PIs. Update SSCH with items concerning PIP. Monitoring and evaluation.	Evaluated scales and tools (i.e. Norton, Braden) PIP guidelines Project team members discussion	Staff received education and training on how to work with the Norton Scale risk assessment as well as the updated SSCH. This strategy improved best practice PIP both for healthcare professionals and patients. Audit criteria 1 and 2 increased from 0 to 100%.
Higher financial costs of purchasing PIP equipment ^a	Seek approval from Body Clinic financial resources. Purchase of new positioning/pressure relieving equipment.	Body Clinic of Plastic Surgery financial resources	Modern gel-filled positioning equipment for PIP is available. The use of appropriate aids reduces the risk of PIs during surgery. Audit criterion 3 increased from 44 to 100%.

PIP, pressure injury prevention; PIs, pressure injuries; SSCH, Surgical Safety Checklist.
^aThe price of gel-filled and fully formable positioning aids is approximately 200% higher than the price of traditionally used foam aids.

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Criteria legend:

1. An initial risk assessment for pressure injury with a validated tool was performed on admission prior to surgery.
2. An initial risk assessment for pressure injury was documented prior to surgery.
3. Bony prominences are protected from pressure and shearing.
4. Patients are repositioned at regular intervals during the surgical procedure when appropriate.
5. The position the patient was placed in during the surgical procedure was documented.
6. Staff were educated regarding techniques for preventing pressure ulcers during surgical procedures.

Figure 1. Follow-up audit compliance rates (%).

baseline audit (compliance related to preventing pressure injury education and prophylaxis achieved 100% in the follow-up audit – criterion 6).

Scott¹⁴ argues that in order to assess the risk of pressure injuries properly, factors, such as age, BMI or serum albumin, ASA physical status classification score and the estimated time of surgery should be assessed preoperatively. The use of checklists may improve patient outcomes in surgery. Concerning the specific clientele of our healthcare facility, we focused only on the initial risk assessment for PI according to the Norton Scale and this record sheet became part of the documentation (criteria 1 and 2 increased from 0 to 100%). Part of the strategy for assessing the risk of developing pressure injuries in our patients was also the introduction of new items into the SSCH. Specifically, it was a check of the patient's skin condition preoperatively, whether the risk of pressure injuries was evaluated according to

Norton Scale (both items relate to audit criterion 1); whether the result of the initial assessment was recorded in the documentation (audit criterion 2).

Before the implementation project, we took care of sufficient bony prominence protection from pressure and shearing during surgery, as well as the position in which the patient was operated was recorded in the documentation (audit criteria 3 and 5, therefore, did not notice a difference between baseline and follow-up audits), but we started to use new positioning aids. In accordance with the recommendations of many international organizations (EPUAP, NPUAP),^{15,16} we have replaced obsolete foam positioning aids with new modern gel-filled and fully formable aids (see Appendix 1, Figures S1 and S2, <http://links.lww.com/IJEBH/A87>). Repositioning the patient during the operation is recommended especially for long-term procedures (procedures over 3 h).¹⁷ At the healthcare facility, where the change was implemented, the

average standard length of the procedure is about 2 h, so we do not relocate patients unless the type of operation requires it. If the repositioning has been performed, a note was made in the documentation (and also to SSCH). During the implementation, this situation occurred exceptionally (in seven patients) and this is the reason for the different results of the audit of criterion 4 (an increase from 44 to 70%). There is no standardized procedure for repositioning patients during surgery at our department. It all depends on the specific type of surgery. In all seven cases mentioned above in the text, it was repositioning for extensive liposuction and the specific position and the time of the patient staying in this position was recorded in the SSCH. As part of our implementation project, we cannot express an opinion on whether there has been an increase or decrease in the prevalence of pressure injuries as this has not previously been monitored. Criteria for preventing pressure injuries in patients undergoing surgery were put into clinical practice and will be observed as a standard from now. With regard to specific clientele – young women without comorbidities, usually normotensive, undergoing surgery exclusively from an aesthetic point of view and small private healthcare facility of aesthetic surgery, the project team felt that the implementation project was successful and improved the quality of care about patients during the perioperative period. We agreed that the next follow-up audits should be continued in the future to sustain the impact of this project. Education in pressure injury prevention will continue with the sharing of experiences within the entire healthcare team. In agreement with Hommel,¹⁸ nurses' level of knowledge on this issue is vital in the prevention of pressure injuries in the patients during the perioperative period, based on evidence-based practice.

Conclusion

The perioperative management of pressure injuries is a crucial issue in the clinical surgical setting. Staff education sessions and results of the audits highlighted and reinforced the need for proper pressure injury prevention during the surgery. This project achieved a distinct improvement of pressure injury prevention strategies during elective surgery. Ongoing audits will be undertaken to ensure compliance with evidence-based recommendations. The following facts have been unequivocally confirmed and proved: risk assessment scale usage is an effective tool for the objective evaluation and proper documentation; traditional positioning foam aids are less effective than

advanced gel-filled aids for pressure relief, the Surgical Safety Checklist should include information about the skin condition.

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Conflicts of interest

There is no direct conflict of interest to declare for this project. An indirect conflict of interest might be seen the fact that M.K. is the director of the Czech Republic Centre for Evidence-Based Healthcare: a JBI Centre of Excellence, and J.K. is deputy director of this centre.

References

- Hy H, HI C, Xj X. Pressure-redistribution surfaces for prevention of surgery-related pressure ulcers: a meta-analysis. *Ostomy Wound Manage* 2013; 59: 36–8.
- Bateman S. Preventing pressure ulceration in surgical patients. *Wounds UK* 2012; 8: 65–73.
- Kottner J, Cuddigan J, Carville K, et al. Prevention and treatment of pressure ulcers/injuries: the protocol for the second update of the international Clinical Practice Guideline. *J Tissue Viability* 2019; 28: 51–8.
- Martinez-Garduno CM, Rodgers J, Phillips R, Gunaratne AW, Drury P, McInnes E. The Surgical Patients' Pressure Injury Incidence (SPPII) study: a cohort study of surgical patients and processes of care. *Wound Pract Res* 2019; 27: 120–8.
- Wang I, Walker R, Gillespie BM. How well do perioperative practitioners implement pressure injury prevention guidelines? An observational study. *Wound Pract Res* 2018; 28: 24–33.
- Pressure injury prevention for surgery: results from a prospective, observational study in a tertiary hospital. implementing pressure injury prevention in a perioperative setting: the official voice of perioperative nursing. *AORN J* 2019; 109: 392–7.
- Shi C, Dumville JC, Cullum N. Support surfaces for pressure ulcer prevention: a network meta-analysis. *PLoS One* 2018; 13: e0192707.

8. Taradaj J. Prevention and treatment of pressure ulcers by newest recommendations from European Pressure Ulcer Advisory Panel (EPUAP): a practical reference guide for GPs. *Fam Med Prim Care Rev* 2017; 19: 81–3.
9. Wise, V. Evidence summary. Pressure injury prevention strategies: surgical procedures. The Joanna Briggs Institute EBP Database, JBI@Ovid. 2019; JBI 13516.
10. Porritt K, McArthur A, Lockwood C, Munn Z, editors. JBI handbook for evidence implementation. JBI, 2020. Available at: <https://jbi-global-wiki.refined.site/space/JHEI>.
11. Tallier PC, Reineke PR, Asadoorian K, Choonoo JG, Campo M, Malmgreen-Wallen C. Perioperative registered nurses knowledge, attitudes, behaviours, and barriers regarding pressure ulcer prevention in perioperative patients. *Appl Nurs Res* 2017; 36: 106–10.
12. Sutherland-Fraser S, McInnes E, Maher E, Middleton M. Peri-operative nurses' knowledge and reported practice of pressure injury risk assessment and prevention: a before-after intervention study. *BMC Nurs* 2012; 11: 25–34.
13. Lupear SK, Overstreet M, Krau SD. Perioperative nurses' knowledge of indicators for pressure ulcer development in the surgical patient population. *Nurs Clin North Am* 2015; 50: 411–35.
14. Perioperative pressure injuries: protocols and evidence-based programs for reducing risk. Patient Safety & Quality Healthcare. [cited 23 March 2021]. Available at: <https://www.psqh.com/analysis/perioperative-pressure-injuries-protocols-and-evidence-based-programs-for-reducing-risk/>.
15. PU Guidelines. EPUAP. [cited 21 August 2021]. Available at: <http://www.epuap.org/pu-guidelines/>.
16. Prevention Points | National Pressure Ulcer Advisory Panel. [cited 21 August 2021]. Available at: <https://npiap.com/page/PreventionPoints>.
17. Gillespie BM, Walker RM, Latimer SL, Kent B, Whitty JA, Thalib L. Repositioning for pressure injury prevention in adults. *Cochrane Database Syst Rev* 2020; 6: CD009958.
18. Hommel A, Gunningberg L, Idvall E, Bååth C. Successful factors to prevent pressure ulcers – an interview study. *J Clin Nurs* 2017; 26: 182–9.