

Review protocol

Research priorities for acute wounds in adults in Australia: a scoping review protocol

Sandy-Hodgetts K, Bui U, Coyer F, Weller C, Wood F and Finlayson K

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Abstract

Background Preservation and restoration of skin integrity following surgery is paramount for optimal patient wound healing outcomes. Acute wounds such as incisional wounds, skin tears, trauma or burn injury cause pain, reduce quality of life and are a considerable economic burden to the Australian healthcare system. Despite considerable advances in surgical technique and even with a panacea of innovative novel

wound dressings, our scientific and clinical understanding of wound healing prevention and management of acute wound complications continue to present a considerable challenge to clinicians and policy makers. Understanding the gaps in knowledge and identifying clinical practice deficits are key for prevention and management of acute wounds.

Aims This scoping review aims to (i) map current research evidence and outcomes in acute wounds management, (ii) map current research evidence and outcomes in acute wounds prevention and (iii) determine research gaps in acute wound research relevant to Australia.

Methods The framework for this scoping review will utilise the PRISMA-ScR framework developed by Tricco et al.¹. We will search the following databases – Medline, CINAHL, Embase, Joanna Briggs Institute (JBI), Cochrane Library and PubMed from January 2010 to March 2021. Trial registries (e.g. ISRCTN, ANZCTR and clinicaltrials.gov) and websites and publications of professional associations for wound care will also be searched. Two reviewers will independently screen all titles, abstracts and full text for articles to include. Conflicts will be solved by a third reviewer. This scoping review will include both qualitative and quantitative studies on acute wounds conducted in Australia. We will extract data from eligible articles and results will be grouped according to area of research and synthesised in a narrative review.

Ethics and dissemination As we will use data (i.e., journal articles) from publicly available platforms this scoping review does not require ethical approval. Findings will be disseminated through a peer-reviewed journal and conference presentation and social media platforms.

Introduction

The term acute wound refers to “a recent wound, of any aetiology” that is expected to progress “through the normal sequential to achieve healing”^{2(p2)}. Acute wound types

Kylie Sandy-Hodgetts* BSc MBA PhD^{1,2}

Email kylie.sandy-hodgetts@uwa.edu.au

Ut Bui RN PhD^{3,4}

Fiona Coyer RN PhD^{3,4,5}

Carolina Weller RN PhD⁶

Fiona Wood FRCS, FRACS, AM¹

Kathleen Finlayson RN PhD^{3,4}

¹ Skin Integrity Research Institute, School of Biomedical Sciences University of Western Australia, Perth, WA Australia

² Centre for Molecular Medicine & Innovative Therapeutics, Murdoch University, Perth WA Australia

³ School of Nursing, Centre for Healthcare Transformation, Faculty of Health, Queensland University of Technology, Brisbane, QLD Australia

⁴ Brisbane Diamantina Health Partners, Brisbane QLD Australia

⁵ Intensive Care Services, Royal Brisbane and Women’s Hospital, Brisbane, QLD Australia

⁶ Wound Research Unit, School of Nursing and Midwifery, Monash University, Melbourne, VIC Australia

* Corresponding author

include post-operative wounds (incision site), traumatic wounds, burns or skin tears that may be part of the patient experience. The most common acute wound type is an incision created in the skin to perform a surgical procedure. The global volume of surgery is considerable, with an estimated 313 million procedures performed annually³. Surgical wound complications are one of the leading causes of morbidity following surgery, with mortality affecting 1–4% patients following abdominal surgery⁴. In Australia, during 2017–18, 2.7 million hospital admissions involved a surgical procedure⁵. Despite considerable advances in surgical technique, our scientific and clinical understanding of wound healing, a panacea of wound care dressings, acute wound complications and their prevention and management continue to present a considerable challenge⁶.

The most common types of acute wound complications are surgical site infections or surgical wound dehiscence, often leading to extended hospital length of stay which increases the burden to community nursing services to manage wound complications post-discharge and subsequent reduces patient quality of life^{7–12}.

Contemporary clinical practice is based on the principles of evidence-based healthcare¹³ which provides clinicians with the knowledge and opportunity to optimise patient-related outcomes and improve healthcare services¹⁴. However, translation of research findings into clinical practice is often delayed and continues to present numerous challenges¹⁵. The objective of this proposed scoping review is to identify current knowledge, map research activity and identify gaps in knowledge to inform contemporary research priorities for Australian acute wound care.

Rationale

The health and economic burden of acute wound care is a considerable public health issue in Australia, affecting more than 11 million hospital and residential aged care recipients^{16–18}. In addition to those receiving care in the primary and community sectors, living with wounds in the community reduces quality of life and work capacity and incurs an estimated \$3 billion in healthcare costs annually¹⁹.

The Australian Minister for Health in May 2018 announced wound management would be “the first priority of the new health system’s translation program under the Medical Research Future Fund (MRFF)”. The Australian Health Research Alliance (AHRA) conducted a high-level review of the current wound practice environment and met with key stakeholders in 2019 where AHRA identified urgent action is needed to address current wound care challenges.

Aims and objectives

The aim of this scoping review is to undertake a review of the literature and research registries to:

- Map current research evidence and outcomes in acute wounds management.

- Map current research evidence in acute wounds management prevention.
- Determine gaps in acute wound research relevant to Australia.

The objectives are to:

- Identify the characteristics of Australian research on acute wound healing and prevention through a systematic approach using a scoping review methodology.
- Identify and describe current research gaps specific to acute wound management in Australia.

The study will use the PEO framework (Table 1) to align the study selection and the research question.

Table 1. A PEO framework for eligibility of studies

Criteria	Determinants
P – Population	Australian adults 18+
E – Exposure	Surgery, burns, trauma, skin tear
O – Outcome	Wound incidence or prevalence (Australia) Time to heal/healing rates Scarring Surgical site infection Surgical wound complications Haematoma Seroma Surgical wound dehiscence

Outcome definitions

For the purposes of this scoping review, the following definitions will be used to classify outcomes. Surgical wound complications are defined as “a disruption to normal incisional wound healing following surgery”^{6(p4)}. Complications include the following:

- Surgical site infection (SSI): there are three types of SSI – superficial incisional, deep incisional and organ space as per the Centres for Disease Control (CDC) definition²⁰. Please refer to CDC criteria for further information.
- Surgical wound dehiscence: this is defined as “the separation of the margins of a closed surgical incision that has been made in skin, with or without exposure or protrusion of underlying tissue, organs or implants. Separation may occur at single or multiple regions, or involve the full length of the incision and may affect some or all tissue layers. A dehisced incision may, or may not, display clinical signs and symptoms of infection”^{12(p8),21}.
- Haematoma: this is defined as “a mass of usually clotted blood that forms in a tissue, organ, or body space as a result of a broken blood vessel”²².
- Seroma: this is defined as “a localised accumulation of clear fluid that sometimes occurs in a part of the body (such as the abdomen or breast) where tissue has been incised, disturbed, or removed during surgery and that may cause swelling and discomfort”²³.

- Scar: this is defined as the formation of fibrous tissue replacing normal tissue following trauma, surgery or disease. According to Bayat et al.^{24(p88)}, “scarring covers a wide spectrum of clinical phenotypes from normal fine lines to abnormal widespread, atrophic, hypertrophic and keloid scars and scar contractures”.
- Skin tear: this is defined as “a wound caused by shear, friction and/ or blunt force resulting in separation of skin layers. A skin tear can be partial-thickness (separation of the epidermis from the dermis) or full-thickness (separation of both the epidermis and dermis from underlying structures)”^{25(p3)}.

Methods

This scoping review protocol will be reported in accordance with the reporting guidance provided by the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist¹ and will be conducted using the Joanna Briggs Institute (JBI) scoping review methodology²⁸ and the PEO framework²⁶.

Protocol and registration

This scoping review protocol has been prospectively registered in the Open Science Framework (<https://osf.io/bzs38>) on 30 March 2021.

Eligibility criteria

As this project aims to scope acute wound care research needs relevant to Australia, the decision was made to review all acute wound research conducted in Australia. The scope of this review is therefore restricted to the Australian context with search limits restricted to Australian-based research. To extend the search to include international research is beyond the scope of this review.

Inclusion criteria:

- Published in English and conducted in Australia.
- Document types including original qualitative and quantitative studies on diagnosis, assessment, management or prevention of acute wounds that were conducted in Australia.
- National and international evidence-based guidelines, consensus statements, position statements and systematic reviews.
- Focused on Australian adults aged 18 years and older.

Exclusion criteria:

- Case series, case study or studies and case reports.
- Conference abstracts and conference proceedings.

Information sources

Information sources will include:

- Academic databases – CINAHL, Medline, Embase, JBI Library, Cochrane Library and APA PsycInfo.
- Websites and publications of professional wound care

associations – Wounds Australia, Wounds UK, Wounds International, Wounds Canada, European Wound Management Association, International Wound Infection Institute, International Surgical Wound Complications Advisory Panel, Wound Healing Society, World Union of Wound Healing Societies, New Zealand Wound Care Society.

- Trials registries – ANZCTR, ISRCTN, clinicaltrials.gov

Search

A three step search approach will be engaged for this review²⁶. Electronic databases will be searched for published literature (January 2010 to March 2021) and will include CINAHL, Medline, JBI, Cochrane library and Embase. Grey literature will include the use of Google Scholar. It is acknowledged that the above period is a limitation in this scoping review. In addition, the inclusion of systematic reviews, consensus and guideline documents from various international authors ensures this review covers contemporary findings in the areas of interest. The search strategies will be developed and performed in consultation with an information scientist (a research and teaching librarian).

In step one the search will be limited to OVID Medline, CINAHL and Embase database search with keywords (i.e., Australia, acute wound, traumatic wound, skin tear, burn, surgical wounds, surgical site infection, surgical wound dehiscence). Step two will be conducting the screening of abstracts against the selection criteria and step three will involve the critical analysis, data synthesis and reporting of findings in a narrative context.

Key search terms include:

1. (Wound* OR incision* OR laceration* OR site OR (skin tear*)) AND
2. (surgical* OR postoperative* OR post-operative* OR operation* OR trauma* OR burn* OR (skin tear*)) AND
3. (Australia OR Australian OR Australians)
4. NOT (respiratory OR pulmonary OR renal OR kidney OR hepatic* OR lung OR pancreas* OR liver OR spinal OR bone OR brain OR muscle OR eye OR tract OR dental OR fracture OR vertebral OR urethral OR bladder OR esophageal OR aesophageal OR appendix* OR gastric OR gastrointestinal OR cancer OR Tumor* OR colorectal OR Cataract OR corneal OR gastrectomy)

Limiters: published date 20100101 – 20210331, human, research articles, evidence-based practice, English.

Selection of sources

Eligible sources will be reviewed by two independent researchers (EH, EO) and in any disagreement a moderation process will be conducted by a third reviewer (KSH). Results from searches will be imported into EndNote X9. After excluding duplicates, two levels of screening will be used to identify articles to be included – title and abstract screening

and full text screening. Conflicts will be reviewed by a third researcher (KSH). Full texts from the included articles will be used for data extraction (Figure 1).

Data charting process

Data charting forms will be created in Microsoft Excel™ and will be piloted initially by one researcher (UB) on a small number of included studies. Data will be independently extracted by one researcher (UB) and cross checked against original articles by a second researcher (EH and EO) to ensure the validity of extracted information. Data extracted from the studies will be relevant to the research questions. This includes:

- Study characteristics, country of the first author of the published paper OR country where the study was conducted.
- Type of article based on type of research design of the paper – systematic review with/without meta-analysis, systematic review of qualitative studies, cross-sectional study.
- Type of acute wounds based on the nature of the cause of the wound – burns, surgical wounds, traumatic wounds.
- Type of participants based on whether the participants in the paper/study were patients, relatives, healthcare professionals, other groups or mixed participants.
- Type of patients based on the age of patients who participated / were included in the paper – adults.

Data extraction items

The data extracted include two main aspects – descriptive

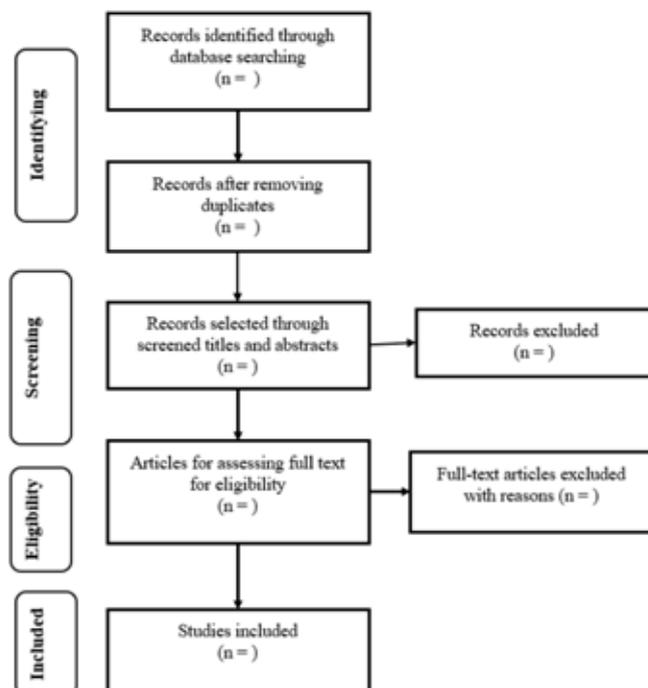


Figure 1. Flow diagram of the data selection process

data and focused area data. The database will record the title and year of publication, authors, study location, intervention type, overview of methods, outcomes measures and results. Duplicates will be removed via EndNote's duplicate deleting function.

Collating, summarising and reporting results

A narrative report will be produced from a synthesis of the extracted data around the following outcomes – wound care research in the Australian context, types of and outcomes from research. Study characteristics will be recorded and qualitative data will be extracted and evaluated; quantitative data will be extracted and summarised. These results will be described in relation to the research questions and in the context of overall study objectives. It is anticipated the findings will inform whether a paucity of data on significant acute wound conditions currently exists.

Ethics and dissemination

This scoping review aims to identify and describe current activity in wound care research in the Australian context with a specific focus on acute wounds. It will also attempt to highlight gaps in knowledge regarding current research in relation to acute wounds in a geographical context.

This review is part of a national research agenda priorities setting exercise with the Australian Health Research Alliance, key stakeholders and academic institutions. The results will inform the development of a Delphi survey to identify current research priorities for acute wounds in the Australian context.

A limitation of this review is that it may omit studies that include participants under 18 years of age. A further limitation to this review includes the impact of the COVID-19 pandemic on surgery rates, reduction in research and published studies in relation to this topic during 2020–2021. Other limitations include the inclusion of English language only documents, the lack of formal quality appraisal due to the varied nature of the retrieved documents and the search being limited to the past 10 years.

All articles will be sourced from publicly available platforms. As such this ScR does not require ethical approval. In terms of dissemination activities, an article reporting the results of the scoping review will be submitted for publication to a scientific journal and presented at relevant scientific and academic meetings. We anticipate the results of the scoping review to provide a comprehensive overview of the current evidence on research activity and identify gaps in knowledge of acute wound management in Australian context. This will inform contemporary research priorities for Australian acute wound care.

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Conflict of interest

The authors declare no conflicts of interest.

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