Virtual wound care in Australian nursing homes: a pilot and feasibility study protocol

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Abstract

Background: Chronic wounds, those which have not healed in a timely manner, are a significant health and economic burden. Older people, especially those living in nursing homes, are disproportionately affected by chronic wounds and effective management and prevention is a persistent challenge. Specialized wound care can improve outcomes; however, access is limited by aged care workforce shortages, fragmented care and lack of local services, especially in rural and nursing home settings. Virtual wound care interventions such as WoundView, a novel computer vision based artificial intelligence (AI) wound analysis application embedded in an existing telehealth platform, Coviu, offer a potential solution to enhance engagement with specialized wound care services.

Objective: This protocol outlines a pilot and feasibility study for WoundView to assess the acceptability and feasibility of the intervention in preparation for a planned implementation study. The pilot and feasibility study will estimate recruitment and retention rates along with protocol adherence and adaptations. Qualitative exploration of the acceptability of recruitment processes, training and education, participant assessments, intervention delivery, and secondary outcome measures will inform the development of an implementation study of WoundView.

Methods: The WoundView pilot and feasibility study is a prospective, non-randomized study in two nursing homes in New South Wales, Australia. The research population will comprise of up to ten nursing home residents, ten to 30 nursing home staff, and ten wound care clinicians. All resident participants will receive the intervention, WoundView, as routine clinical care throughout the study period. Virtual care will be conducted with a specialized wound care clinic using WoundView's wound analysis and telehealth features to guide the clinical management of chronic wounds. Wound measures, health-related quality of life, virtual care activity, hospitalization rates, health resource utilization case studies and participant satisfaction will be assessed. Nursing home staff and wound care clinicians' satisfaction with WoundView will be collected through brief surveys and in-depth interviews.

Results: The WoundView pilot and feasibility study was approved by the university's ethics committee and registered on the Australian New Zealand Clinical Trial Registry. Recruitment and enrolment for the study began in May 2025. Results are expected in the second half of 2025.

Conclusions: The design and implementation of virtual care interventions in nursing homes is an underinvestigated issue. Outcomes from this study will contribute to the design of an implementation study testing WoundView in a range of nursing homes around Australia. The integration of WoundView is expected to transform the use of virtual care for wound management

and lead to earlier intervention and increased access to specialist wound advice services for nursing homes residents. Clinical Trial: Australian New Zealand Clinical Trials Registry ACTRN12625000565448

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Trial Registration: Australian New Zealand Clinical Trials Registry ACTRN12625000565448

Keywords: chronic wound; pilot and feasibility study; nursing homes; homes for the aged; telehealth; virtual care

Introduction

Background

Chronic wounds present a major public health challenge with significant health and economic costs. [1] Chronic wounds are those that have not progressed through the normal stages of healing in a timely and organized process [2] and substantially reduce quality of life of those affected. [3] The most common types are pressure injuries, and chronic lower leg wounds including diabetic, venous, and arterial ulcers. [4] The global burden of skin and subcutaneous diseases has risen rapidly over the last 15 years but lack of international prevalence data for chronic wounds limits ability to estimate true impact. [5] Based on available figures, an estimated 2.5% of Americans are affected by chronic wounds, the majority of whom are older adults. [6] In Australia, the prevalence of chronic wounds is estimated at 1.9% [7] and accounts for AUD $6.6 billion per year in costs to health and aged care budgets. [8] Between 2013 and 2017, more than two-thirds of people with chronic wounds who were admitted multiple times to public hospitals in the Australian state of New South Wales (NSW), were aged 65 or older. [9]

Older people, with increasing frailty, impaired skin integrity and comorbidities such as diabetes, obesity, and peripheral vascular disease, are disproportionately affected by chronic wounds. [10], [11] Chronic wounds are particularly common among residents of nursing homes with an estimated prevalence of pressure injuries of up to 26%. [12] Despite being common, less than one in five of those with pressure injuries had a wound management record documenting every current injury in a 2018 NSW study of 67 nursing homes. [12] Inadequate wound prevention and treatment was also emphasized by the 2021 Australian Royal Commission into Aged Care Quality and Safety as causing pain, distress and premature death. [13] Aged care staff giving evidence at the Commission reported inadequate knowledge and training in managing pressure injuries effectively. [13] Despite the Commission's recommendation that wound care training and education be improved, inadequate wound care continues to be one of the most common clinical complaints made to the Australian Aged Care Quality and Safety Commission. [14]

Evidence-based wound care can improve clinical outcomes of chronic wounds [15] however, provision of such care in nursing homes can be challenging. Wound care is a specialized field and in aged care, there is higher variance in wound management and less specialist wound oversight than in other settings. [10] Chronic workforce shortages, high staff turnover, variable wound care expertise among staff and fragmented and untimely access to expert wound care also limits the provision of consistent and high-quality wound care. [13] Along with evidence-based care, access to clinicians with expertise in wound management can ensure high quality care and improve resident outcomes, however, in Australia, specialized wound care clinics are generally confined to major centers which limits in-person attendance by rural and immobile nursing home residents. [16] This geographic centralization of wound care services creates significant barriers to timely assessment and treatment, contributing to delayed wound healing and avoidable complications. [17]
Virtual care, healthcare delivered remotely using information and communication technology services, [18] can address access barriers to ensure personalized and timely healthcare [19] for those unable to attend in-person wound clinics, such as nursing home residents. While the terms virtual care and telehealth are frequently used interchangeably, virtual care is a broader term encompassing telehealth (video or telephone consultations), remote patient monitoring, store-and-forward communications and website and mobile applications. [20] Virtual care has demonstrated safety and effectiveness in wound healing and can overcome access gaps in chronic wound care. [21, 22] Virtual wound care trials have also shown reductions in wound healing times and wound-related hospitalisations [23] however, there have been few studies undertaken in nursing homes. [24]

Furthermore, while current virtual wound care interventions offer wound analysis and measurement capabilities, they lack seamless integration with video telehealth platforms, restricting their effectiveness in remote care.

The number of Australians living in permanent aged care is growing with 178,000 people aged 65 or older residing in aged care in 2022, a 3.1% increase since 2017. [25] Australia has among the highest proportion of older people living in permanent aged care when compared with other similar countries including Netherlands, Japan and Canada. [26] Despite increasing numbers of nursing home residents, there has been a 5.2% drop in aged care providers, attributed to regulatory and financial pressures. [27] To meet the industry's growing demands and address the imminent implementation of the strengthened Aged Care Quality Standards [28], virtual care innovation such as artificial intelligence (AI) to assist with wound analysis and remote consultation, is needed to transform the aged care sector, meet the needs of consumers and improve care outcomes. [27] One such virtual care solution is WoundView, a new AI wound analysis application embedded in an existing telehealth platform, Coviu, which aims to address access barriers to evidence-based and specialized wound care.

WoundView application

A five-year, multi-partner research project funded by the Australian Government's Medical Research Future Fund (MRFF) has developed the WoundView application (here on referred to as WoundView) to improve access to specialized wound care in nursing homes and other remote settings. WoundView uses a computer vision based AI algorithm which has been developed and validated using over a thousand wound images. WoundView produces wound bed segmentation and measurements i.e., length, width and total area which can be monitored and compared over time. WoundView (Figure 1) is embedded in the existing telehealth platform, Coviu, allowing for real-time video telehealth between nursing home residents and staff and external wound clinicians. The Coviu platform enables the video call component of the Australian Government funded Healthdirect Australia, the national virtual public health information service, enabling telehealth use in Australian nursing homes at no cost.

WoundView uses consumer-grade, hand-held devices including mobile phones, laptops and tablet devices to assess chronic wounds. The Coviu platform delivers secure, web-based video telehealth. It does not require download of an application and all transmitted call data (including images and documents) are transmitted peer-to-peer (i.e., between call participants) and protected with end-to-end encryption. [29] The current protocol describes a pilot and feasibility study to assess the acceptability and feasibility of WoundView for residents and staff working in nursing homes and external wound care clinicians in New South Wales, Australia.

Objectives

The primary objective of the pilot study is to assess the feasibility and acceptability of the proposed approach in preparation for an implementation study on WoundView. Study recruitment and retention, and protocol adherence and adaptations will be used to evaluate the primary objective. The secondary objectives are to assess acceptability of data collection tools for possible inclusion in the implementation study and evaluate collected wound images to verify and update the WoundView AI wound analysis algorithms for future use in nursing homes.

Methods

Study design

The WoundView pilot and feasibility study is a prospective, non-randomized trial in which all residents with a chronic wound will be eligible to receive the intervention, WoundView. Use of WoundView will be facilitated by staff working at pilot site nursing homes and wound care will be provided by the Wound Care Command Centre™ (WCCC) or usual wound care providers. Nursing home staff, WCCC clinicians and usual wound care providers who use the intervention will also be invited to participate in the study.

The study will determine the acceptability of WoundView, and assess feasibility of selected outcome measures in preparation for an implementation study. [30] The pilot and feasibility study will be reported using the CONSORT extension to pilot and feasibility trials [31] and additional guidance on reporting of non-randomized pilot and feasibility studies by Lancaster and Thabane. [32] A mixed methods approach will be used to assess acceptability and feasibility.

The study will involve two phases (Figure 2). During Phase 1, staff working in the pilot site nursing homes will be upskilled in general telehealth and trained to use WoundView. Phase 2 will pilot WoundView and assess the feasibility of the trial design for the planned implementation study.

Setting

The study will be conducted in two private, not-for-profit nursing homes in NSW, Australia. One site is an 80-bed facility in outer regional NSW, as defined by Australian Statistical Geographical Standard Edition 3. [33] The second site is a 140-bed facility in Sydney, NSW, a major city. [33] The pilot study nursing home sites will be supported by either the WCCC, a team of specialized nurses at the Royal Prince Alfred (RPA) Virtual Hospital in based in Sydney, Australia, or their usual wound care provider.

Participants

The study will recruit three participant groups: (1) nursing home residents living with chronic wounds, (2) nursing home clinical staff involved in wound care (e.g., registered nurses, enrolled nurses, and wound care coordinators and (3) WCCC clinicians and usual wound care providers e.g., wound care nurses and general practitioners (GPs) providing specialized wound care using WoundView.

Residents

All residents living in the nursing home pilot sites who have or develop a chronic wound during the study period will be eligible to participate. It is estimated that the number of participants across both sites will be six to ten residents.

Recruitment will be undertaken using purposive sampling where participants who meet the eligibility criteria will be consecutively enrolled into the study. Once enrolled, WoundView will be used to collect and analyze wound images and connect residents to specialized wound management. Resident eligibility criteria are described in Table 1.

Table 1: Nursing home resident eligibility criteria

Inclusion criteria	Exclusion criteria

• Adults aged 18 years or older • Willing and able to give informed consent for participation in the study • Have a chronic wound at the start or develop a chronic wound* during the study period • Wound must be considered suitable for active treatment as per advice of nursing home staff	• Cognitive impairment that affects ability to provide informed consent as determined by the nursing home staff or managers and research team at the point of enrolment • Sensory, physical, or other health impairment† that would preclude data collection participation, as determined by the nursing home staff or managers and research team at the point of enrolment • Have superficial, rapidly healing wounds such as abrasions, blisters, or lacerations • Chronic wound located on the genital area • Not fluent in spoken or written English

* A chronic wound is defined as a wound that has been present for three or more weeks OR is likely to take three or more weeks to heal. [34]

† Other health impairment includes residents who are reliant on medications e.g. participants receiving medication to support end-of-life care or participants with severe mental health conditions where the condition is not adequately controlled by medication at the time of recruitment.

Nursing home staff and managers will be asked to identify residents who meet the study eligibility criteria (Table 1). Following the identification of potential participants, the research team will approach the resident to explain the study's nature, purpose and procedures along with expected duration and potential risks and benefits. Potential participants will be provided with a research information sheet and consent form. Residents will be invited to discuss their potential participation with support people such as next of kin, family, friends, or their Enduring Guardian. Following a three-day cooling off period, the research team will contact the resident to ascertain their preference to be involved in the study. To avoid perceived or actual coercion, recruitment and consent will be undertaken by the research team who are independent of the nursing home.

Nursing home residents who verbally consent to participate will be invited to provide written consent at the beginning of the study. Throughout the study, WoundView will be used as routine clinical care and further consent will not be sought for each episode of use of WoundView in wound management. At the conclusion of the study, residents will be invited to re-confirm their consent verbally, prior to the final data collection. Participants will not receive any payment or reimbursement for their participation.

Nursing home and WCCC clinicians

All clinical staff employed by the participating nursing homes, WCCC clinicians and usual wound care providers are eligible are to participate if they are aged 18 years or over and can undertake data collection in English.

During Phase 1, telehealth and WoundView education and training will be conducted with nursing home staff nominated by their organization to participate. Nursing home staff will be provided with access to a curated package of self-directed online telehealth videos [35] which will take approximately 20 to 30 minutes to complete. Following telehealth training, face-to-face WoundView training will be conducted by the research team, lasting 30 to 45 minutes. Training in booking and conducting a WoundView call and optimal wound image capture will be provided along with a recording of the training session. Nursing home sites will also receive quick reference documents and a site-specific flowchart to integrate WoundView into usual care. A brief training session, including a practice call, will be undertaken with the WCCC staff prior to commencement of the

study.

Nursing home staff who participate in training will be invited to undertake a brief anonymous online evaluation prior to and after the training sessions. The trainer will describe the survey, display a quick-response (QR) code for the survey, and leave the room to allow participants to decide whether to complete the survey. The number of nursing home staff participants is expected to be ten to 30.

In Phase 2, nursing home staff, WCCC clinicians and usual wound care providers will be invited to participate in a brief online survey and an in-depth, semi-structured interview with a member of the research team lasting approximately 20 to 30 minutes. Nursing home management will be asked to assist by making staff aware of the study through email correspondence or posting advertisements in appropriate locations such as staffrooms. WCCC clinicians and usual wound care providers will be invited to participate through email correspondence. The survey will be accessible online along with the Participant Information Statement (PIS) and consent form. Those interested in being interviewed will be able to self-identify at the end of the survey or initiate contact with the research team to arrange an interview. The number of survey participants is expected to be five to ten and interview participants is estimated to be five.

Participants will not receive any payment or reimbursement for their participation. Participants may withdraw from the research study at any time with assurance that their withdrawal will not affect their relationship with their employer or the university. To avoid perceived or actual coercion, written consent of nursing home staff, WCCC clinicians and usual wound care providers will be undertaken by the research team who are independent of the nursing home.

Intervention

The intervention, WoundView, is a novel computer vision based AI wound analysis application integrated into the Coviu telehealth platform. WoundView is a software component that extends the functionality of the Coviu platform, without requiring changes to its core code. WoundView will link residents with chronic wounds and their clinical care team to specialized wound care clinicians at the WCCC in Sydney, Australia or their usual wound care providers, who will deliver expert wound care based on clinical data gathered during video telehealth, AI wound analysis including wound measurements and segmentation, and resident and family preferences.

At each use of WoundView, wound image and video data will be gathered by nursing home staff who will take a series of wound photographs prior to or during the WoundView call and submit these for AI wound analysis. Live video stream of the wound will also be available during the call, providing treating clinicians with detailed, close-up vision of the wound, an innovative feature of WoundView.

Outcomes

The primary outcome will be a narrative description of study feasibility, including participant recruitment and retention, protocol adherence and adaptations and stakeholder acceptability. Acceptability will be assessed by measuring participants' satisfaction with study assessment instruments, and the use, delivery, barriers and enablers to the intervention, WoundView. Data collection instruments are described in the section below. Secondary outcomes, including wound measurements, virtual care activity, health-related quality of life, hospitalization rates, health resource utilization case studies and patient and staff satisfaction, will be assessed for feasibility of inclusion in a planned implementation study.

Data collection and analysis

Phase 1: Pre- and post-training evaluation

Nursing home staff participating in telehealth and WoundView education and training will be invited to rate their pre- and post-training confidence and skills along with their satisfaction with the training in a brief anonymous online survey. Descriptive statistics will be used to summarize survey results. Comparative statistics will compare survey results between pre- and post-training cohorts.

Phase 2: Pilot and feasibility study

Phase 2 of the pilot and feasibility study will comprise of several components with data collection timepoints at baseline, during the intervention, and at the end of the study. Table 2 outlines the data and respective collection points.

Table 2: Overview of data collection and time points

Phase 2 study components	Data Collection time points		
	Baseline	During	End
Wound measurements e.g. width, length and area	ü	ü	ü
Virtual care activity		ü	ü
Health-related quality of life	ü		ü
Hospitalization rates			ü
Health resource utilization case studies		ü	
Participant satisfaction			ü

Wound measurements

At baseline, the research team will record a measurement of the widest dimension of the wound or wounds (length) and the second widest dimension perpendicular to the first widest dimension (width) using a single use paper tape measure. The wound type, duration and location will be recorded on the data collection form. For each wound, a series of still photos will be captured using WoundView. The wound images will be assessed using WoundView's AI analysis to determine wound width, length and total wound area.

At subsequent WoundView use, AI wound data will be used to calculate time to 35% reduction in wound area and time to complete healing, defined as full (re)epithelialization or closure. [36] Percentage area reduction (PAR) and gross area reduction (GAR) will be calculated from raw data at various intervals e.g., one week. Descriptive and comparative statistics will compare results across the study period for each participant specifically looking at change in wound area.

Virtual care activity data

During the study period, data on all episodes of WoundView use will be extracted from the Coviu platform. Virtual care activity data generated will include call participants (e.g. guest or host), length of call, call time/date, and AI wound measurements (length, width, and calculated wound area).

Health-related quality of life (HRQoL)

Health related quality of life (HRQoL) will be collected using a wound specific (Wound-Qol-14) and general measure (EQ-5D-5L) at baseline and at conclusion of the pilot study.

Wound-QoL-14

Wound-QoL-14, a shortened version of the Wound-QoL-17, is a disease-specific, health-related quality of life measure for patients with chronic wounds. [37] The Wound-QoL-14 asks respondents to rate impairment over the last seven days in the subscales body (pain, odor, discharge and sleep), psyche (unhappy, frustrated, worried and fear of worsening) and everyday life (moving about, everyday activities, leisure activities, activities with others and depending on help). [38] A global Wound-QoL-14 score can be calculated if at least 75% of the 14-items have been answered. [39] Wound-QoL-14 has demonstrated high internal consistency (Cronbach's α: 0.779-0.925), moderate to good test-retest reliability (intraclass correlation coefficient: 0.618-0.808), and convergent validity showing highest correlations with global HRQoL rating (r=0.751) and Dermatology Life Quality Index (DLQI) rating (r=0.681). [40] Wound-QoL-14 has been shown to be valid to assess HRQoL of patients with chronic wounds, acceptable for use in cross-cultural settings [38] and a practical option in time poor settings. [40]

EuroQoL-5 Dimensions-5 Levels (EQ-5D-5L)

EQ-5D-5L is a general HRQoL measure which consists of the EQ-5D descriptive system and the EQ visual analogue scale (EQ VAS). [41] The EQ-5D descriptive system comprises five dimensions (mobility, self-care, usual activities, pain/discomfort and anxiety/depression) each measured at five levels (no problems, slight problems, moderate problems, severe problems and extreme problems) describing the respondent's health state. [42] The EQ VAS records the patient's self-rated health on a vertical visual analogue scale where the endpoints are labelled 'the best health you can imagine' and 'the worst health you can imagine' and can be used as a quantitative measure of health outcome that reflects the patient's own judgement. [42] The EQ-5D-5L shows excellent psychometric properties across a range of populations, health conditions and settings. [43]

Hospitalization rates

At the conclusion of the intervention period, an audit of the electronic medical records (EMRs) of participating residents will be undertaken to capture the frequency and details of transfers to emergency departments (EDs) and hospital admissions for wound-related care. The timeframe of interest will be 12 months prior to the chart audit. The EMR will be audited to capture relevant text entries and discharge summaries associated with wound-related ED visits and hospital admissions. ED visits and hospital admission data, including length of stay, reason for admission, diagnosis on discharge, and discharge location, will be recorded and analyzed using descriptive statistics.

Health resource utilization case studies

Health resource utilization associated with the management of chronic wounds in nursing homes will be estimated through a series of wound care episode case studies. An EMR audit and observation of usual wound care will be undertaken with a sample of three to four consenting residents. The research team will observe the wound dressing change, document the labor and consumables required for wound management, and undertake a chart audit to estimate the number of wound management episodes during the study period. Where possible, more than one dressing change for the same resident will be observed and the total labor and consumables will be averaged.

An estimate of costs will be derived from the total number of dressing changes and extrapolated as per Wilson et al. [44] Selection of participants for this component will include a variety of wounds e.g. pressure injuries, arterial, venous, and diabetic ulcers. The actual and projected treatment cost will be calculated and extrapolated to estimate the overall cost of wound care in the pilot nursing home sites. Estimated costs will be compared with other Australian estimates in nursing home settings. [45]

Participant satisfaction

Nursing Home Residents

Nursing home resident satisfaction will be assessed using a validated instrument, the Short Assessment Patient Satisfaction (SAPS) and through in-depth semi-structured interviews with the research team.

Short Assessment of Patient Satisfaction (SAPS)

The SAPS is a brief, validated questionnaire used to assess patient satisfaction across seven domains including treatment satisfaction, explanation of treatment results, clinician care, participation in medical decision-making, respect by clinician, time with clinician, and satisfaction with hospital/clinic care. [46] The SAPS' internal psychometric properties exceed standard psychometric standards (Cronbach's α: 0.86) and it discriminates at least as well as other longer patient satisfaction measures. [47] SAPS will be administered at the conclusion of the pilot to measure participant

satisfaction of their experience of care in the study. Descriptive statistics will be used to summarize patient satisfaction.

In-depth semi-structured interviews

Nursing home residents will also be invited to participate in an in-depth, semi-structured interview conducted by the research team. Interviews will be undertaken in person in a private room or via Microsoft (MS) Teams (Redmond, Washington, USA) and last for approximately 20 to 30 minutes. The interviews will explore the acceptability of the recruitment processes, assessments and intervention delivery. Virtual interviews will be digitally recorded in MS Teams and transcribed using MS Teams or Word. In-person interviews will be recorded using a hand-held digital recorder and transcribed in MS Word by the first author. Participants will be provided with the choice to review a transcribed copy of the interview by checking the appropriate box on the consent form.

Thematic inductive analysis will be undertaken using NVIVO software. The total expected sample size will be five participants and data collection will continue as required until saturation is reached.

Nursing home and Wound Care Command Centre clinicians

All nursing home staff, WCCC clinicians and usual wound care providers who use WoundView during the study period at pilot sites will be invited to rate their satisfaction in a brief anonymous online survey adapted from Barakat-Johnson et al. [48] Descriptive statistics will be used to summarize survey results.

Nursing home staff, WCCC clinicians and usual wound care providers involved in the study will also be invited to participate in 20 to 30 minute, in-depth, semi-structured interviews conducted by the research team. Interviews will be undertaken in person in a private room or via MS Teams as for the resident interviews and will explore recruitment, training and education, assessment tools and the delivery of the intervention delivery.

Trial registration and ethics

The trial has been registered with the Australian and New Zealand Clinical Trials Registry (ACTRN12625000565448). Ethical approval was received from The University of Sydney Human Research Ethics Committee (HREC 2024/HE001356).

Protocol Amendments

Any required changes to the protocol will be submitted as amendments to The University of Sydney's HREC for approval before implementation. In an emergency, deviations from the protocol may be made to protect human subjects' rights, safety, or well-being without the HREC's prior approval. Such deviations will be promptly documented and reported to the HREC.

Confidentiality

The pilot and feasibility study will collect personal information which will be re-identifiable and securely stored in Health Insurance Portability and Accountability Act (HIPAA) compliant REDCap, a secure web application for managing online surveys and databases hosted by the University of Sydney in NSW, Australia. Only approved members of the research team will have access to personal information. All information will be subject to the University's HREC confidentiality policies.

Dissemination

Results of the study will be included in reports to stakeholders, journal publications and conference

presentations as part of the dissemination of the broader study’s outcomes. Findings will be provided in such a way that participants cannot be identified.

Results

Approval for the pilot and feasibility study was granted by The University of Sydney Human Research Ethics Committee in October 2024 (2024/HREC1356) and the study has been registered with the Australian and New Zealand Clinical Trials Registry (ANZCTR). Preliminary work with the two pilot nursing homes commenced in January 2025 and telehealth and WoundView training began in March 2025. The first study participants were recruited in May 2025. A timeline of proposed research activities is outlined in Figure 3. Results from the study will be analyzed and presented in tabular, graphical and narrative formats.

Discussion

Chronic wounds are common among nursing home residents, detrimentally affecting their quality of life and contributing to increased risk of premature death. When compared with other populations, nursing home residents experience significant barriers accessing timely and high-quality wound care. While research in virtual wound care interventions is rapidly expanding, little is known about its use in nursing homes despite the high burden of disease and substantial impact on health outcomes.

The development of a novel computer vision based AI wound analysis application embedded in an existing telehealth platform is warranted in offering clinicians and residents a “one stop shop”. It is expected that the findings of this study will provide sufficient methodological evidence regarding the design and planning of the intervention to warrant an implementation study. The methodological evidence will include an approach to participant recruitment, retention and adherence to the intervention. Although this pilot and feasibility study is not powered to detect statistically significant effects, the findings will provide insights to optimize design of a larger-scale implementation study and strengthen the research approach. Results will also inform the implementation and evaluation of new virtual wound care interventions in nursing homes.

Acknowledgments

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Funding statement

This study is being undertaken as part of a five-year project funded by a Commonwealth grant, the Medical Research Future Fund (MRFF) Rapid Applied Research Translation grant (RARUR000158), Department of Health 2022: *Transforming Wound Care through Telehealth in Aged Care*.

Conflicts of Interest

The broader study, *Transforming Wound Care through Telehealth in Aged Care,* has been undertaken in partnership with Coviu Global Pty Ltd who may commercialize WoundView, a novel wound analysis tool embedded in the Coviu telehealth platform.

Author contributions

HR designed the protocol as part their PhD project under the supervision of GL, MBJ, and MM. AB provided industry and telehealth expertise in the development of the protocol. KS provided ethics and governance support and assisted in the preparation and revision of the protocol. MBJ provided wound care and trial design expertise in the design of the protocol and is a co-supervisor of HR. MM provided primary care and virtual care expertise in the development of the protocol and is a co-supervisor of HR. GL designed and developed the protocol and is the primary supervisor of HR.

Abbreviations

AI: artificial intelligence
ANZCTR: Australian New Zealand Clinical Trial Registry
ED: Emergency department
EMR: electronic medical record
EQ-5D-5L: Euro-QoL-5 Dimensions-5 Levels
HREC: Human research ethics committee
HRQoL: Health-related quality of life
MS: Microsoft
NSW: New South Wales
PCF: participant consent form
PIS: participant information statement
SAPS: Short Assessment of Patient Satisfaction
Wound-QoL-14: Wound quality of life-14

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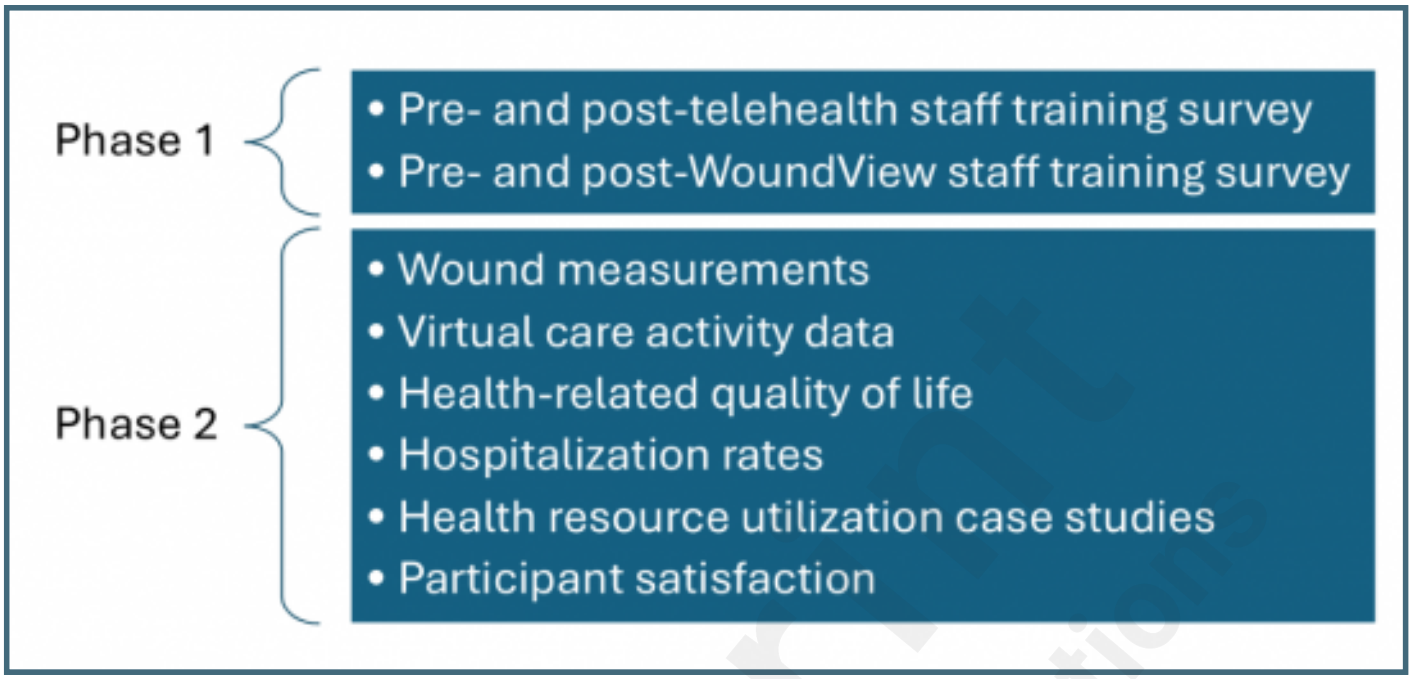
Supplementary Files

Figures

Visualization of WoundView use.

Proposed research plan in two phases.



WoundView pilot and feasibility study timeline.