

# WoundsWest education: taking the evidence on wounds to the clinician

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## Abstract

The WoundsWest (WW) education programme is an innovative and ambitious subproject of the WW project in Western Australia (WA). It involves the interdisciplinary development of online wound management education modules, which are designed to assist health professionals and health services to reduce preventable wounds and adverse wound management outcomes. The aims, objectives and processes that underpin this development are outlined in this paper, which is illustrated with examples from the WW online education programme.

## Introduction

WoundsWest (WW) is a statewide project under Ambulatory Care and Chronic Disease Management Reform, undertaken in partnership with the Western Australian Department of Health, Curtin University of Technology and the Silver Chain Nursing Association. The WW project aims to provide Western Australian healthcare practitioners, health consumers and the

community with an evidence-based system for the prediction, prevention and management of wounds<sup>1</sup>. The genesis of this project is the vision of a few and the aspiration of many within the West Australian health sector. The overall goal is to promote evidence-based wound management across the vast geographical landscape of Western Australia (WA) and overcome inequities in wound prevention and management.

Prior to the establishment of the WW project, the magnitude of wound epidemiology across WA was unknown. Without this information, health authorities and service providers are unable to determine the resources required and the true costs associated with the provision of wound care services and thus are unable to plan and budget appropriately. It was recognised that poor continuity of wound management across sectors, variation in clinical practice, lack of equity and access to services can lead to poor health outcomes for patients and their families. Furthermore, the lack of consistent, evidence-based wound management practices has preventable financial and resource implications for healthcare funders, providers and individuals.

A study conducted in the remote Kimberly region of WA demonstrated the benefits of supporting clinicians with remote expert consultation in promoting wound healing, thereby preventing lower limb amputations<sup>2</sup>. This study also highlighted the problems associated with a high turnover of staff and the lack of wound management education and clinical guidelines in rural and remote health settings. Further research in the aged care sector reinforced the effectiveness of an integrated approach to wound management that incorporated education, clinical guidelines and digital technology<sup>3,4</sup>.

A key element of the WW project is the development of an evidence-based, online education programme for health

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professionals and the provision of consumer information in wound prevention and management.

## Education working group

At a public forum held in December 2006, the WW project was launched and expressions of interest and nominations for membership for the education working group were sought. The aim of this group was to inform health consumers, health professionals and the community and to assist health services to reduce preventable wounds and adverse wound management outcomes of all wound categories by:

- Designing, developing and delivering online evidence-based wound education for WW.
- Advancing clinician knowledge levels in evidence-based wound management
- Developing recommendations for the maintenance and sustainability of the WW education programme.
- Developing information on wound prevention and management for health consumers and the community to enable informed decision-making and improved health outcomes.

Following the launch, letters of invitation to participate in the WW education project were sent to individual health professionals and interdisciplinary professional bodies. At a following seminar, these professionals reviewed the terms of reference and aims and objectives for the education working group. An *Education Development Module Framework* (the framework) and an anticipated implementation schedule were developed. The framework was later expanded and priorities for development of the various modules were adjusted to accommodate the findings of the 2007 and 2008 WW statewide prevalence surveys.

An education project team, comprising the chairperson and two education project officers, coordinates and reports on the business of the education working group as well as undertakes the day-to-day project management for the design, planning, implementation and evaluation of the online education programme. The education project team reports to and advises the WW Executive Steering Group (ESG) and Advisory Committee.

## The framework

The online education programme (Figure 1) currently comprises a core module, which provides information on the fundamentals of wound assessment and management principles and satellite modules for specific wound categories such as: pressure ulcers, burns, foot ulcer and skin tears. The

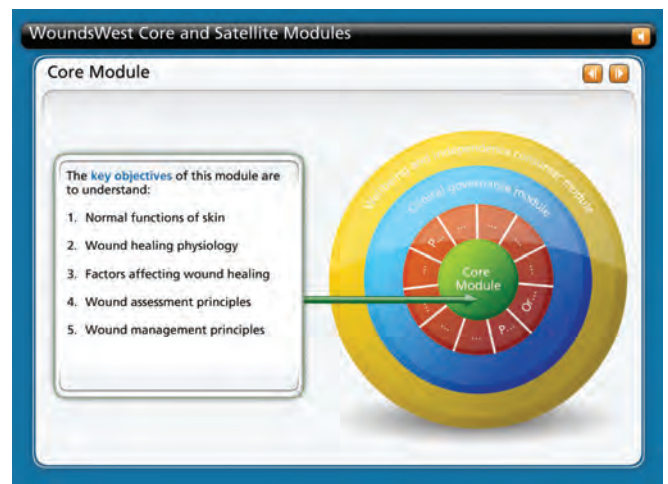


Figure 1. WoundsWest core and satellite modules

2007 WoundsWest Prevalence Survey identified a large number of wounds amongst obstetric patients (61%) and it was deemed prudent to add a specific obstetric wound module that would be designed to meet the needs of midwives, obstetricians and registered nurses.

The framework is a dynamic process based on the needs of the consumer and clinicians across WA and has been expanded to include an Aboriginal health professional module and an oral health module. In addition, early feedback from the Steering Committee and various working groups highlighted the need for a clinical governance module, which will inform the broader delivery of evidence-based wound management and cost-effective care delivery. The framework also includes a wellbeing and independence module, which will be developed to provide professionals with expanded information and health consumers with relevant information on nutrition, mobility, activity and pressure off-loading interventions and equipment (Figure 2).

The development of the education modules is facilitated by the work of the education project officers who: undertake

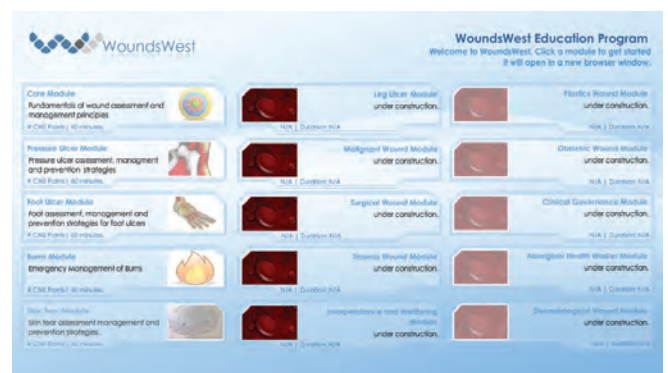


Figure 2. WoundsWest education programme

the evidence searches; write the literature reviews; consult and meet with expert working subgroups and peer bodies; prepare the modules for extensive internal and external review; and monitor module access and disseminate the module achievement certificates.

## In search of the evidence

In preparation for the development of each education module, an extensive review of the literature is undertaken in accordance with the general principles advocated by the Joanna Briggs Institute for identifying evidence-based practices. An extensive search is undertaken to identify reputable wound care literature from the following electronic medical and nursing databases:

- Cochrane database of aystematic reviews.
- Database of abstracts of reviews of effectiveness (DARE).
- Evidence-based medicine.
- PubMed.
- Medscape.
- Ovid medline.
- CINAHL.
- Google scholar.

Evidence selected for inclusion in the WW modules is sourced from:

- Guidelines, standards and consensus statements.
- Systematic literature reviews and audits.
- Full text articles published between 2002 and 2009.
- Earlier articles are included if they are well referenced or provide original or new material.
- Well referenced and relevant books.
- Product information, in particular product components, indications and contraindications for use.

Posters, conference papers, editorials, commentaries, letters to the editor and theses are excluded from the search. The evidence obtained is used by an education project officer to synthesise and compile an extensive literature review and electronic document in accordance with the module development process. This process greatly reduces the need for meetings as much of the input and review sought from the working subgroup members can be facilitated electronically. Furthermore, a consensus for subject content is more readily

obtained when reviewers have a greater insight into the scope of the module.

Each module undergoes extensive internal and external review pre- and post-online development. Once each development subgroup has approved the final online module draft, an invitation is extended to the broader education working group to undertake an internal review. Modifications, if required, are made prior to sign-off by the WW ESG before an external expert group is invited to review the specific module and provide written feedback. External reviewers' recommendations are considered and incorporated into the module if required before being finalised and made public. At any time, a user of any module may complete the feedback form, which is found on the WW education home page. All comments and suggestions received are given due consideration in the construction of module updates and the development of future modules. The overall module development time frame is flexible, but ranges from 20–30 weeks due to the voluntary involvement of the subgroup members and the reviewers.

The WW online education programme is anticipated to include 16 modules (Figure 2). The core module went 'live' in October, 2007 and was reviewed and updated in September, 2008. The pressure ulcer module originally launched in February, 2008 underwent extensive review and was relaunched in September, 2008 (Figure 3). The foot ulcer module was also released in September, 2008. The burn module went live in March, 2009 and there has been significant progress in the development and review of other modules such as skin tears and leg ulcers. Modules are reviewed on an annual basis or when relevant new information becomes available.



Figure 3. Pressure ulcer module: support surfaces

Table 1. Adaptation of the visual/auditory and kinaesthetic model <sup>5</sup>.

Learning style	Learner's preferences	Learning examples	WoundsWest solution
Visual	Learners prefer to see information	Text and diagrams suit this style of learner	Involves the use of pictures, diagrams, demonstrations, displays, video clips
Auditory	Learners prefer to hear information	Listening and speaking activities suit this style of learner (this also includes the written word)	Involves the transfer of information through listening: to the spoken word, sounds and noises (support all media with written word)
Kinaesthetic	Learners prefer to learn by doing	Tactile and doing activities suit this style of learner	Involves physical experience: doing, practical hands-on simulated activities

## Learning framework

The design of the WW online education programme needed to consider the learning styles of individuals, which takes into account their cognitive, affective or psychomotor learning skills. The visual or auditory and kinaesthetic model (VAK) <sup>5</sup> was used as the developmental framework for it takes into account the premise that most people have a preferred learning style, although some do integrate a blend of the three styles (Table 1).

The WW education modules are targeted at licensed clinicians from all health disciplines who are novices to wound management. The modules have been designed to facilitate the user's learning journey by offering flexible pathways. Users may choose to work through a module in a linear fashion or begin by undertaking the quiz or case studies to test their knowledge gaps and inform their learning needs. A certificate of achievement is issued at the end of each month to those who gain an 85% pass rate in the quiz.

## Instructional design

WW reviewed several software tools and tested three tools for their authoring ability, ease of use, cost effectiveness, security and web compliance and accessibility. The authoring tool that met all criteria and quality controls was the Articulate Rapid E-Learning Studio '09 <sup>6</sup>, where all tools in the studio work together seamlessly. Quizzes can be inserted into slides in the programme which uses PowerPoint format. Navigation options can be set. The Articulate Video Encoder '09 imports any video and converts it to Flash format. The Studio Professional suite also includes Articulate Engage '09 to enable interactive content to be included in the modules. Once developed, the modules can be published in a range of formats (Figure 4).

## Interactive media

Direct transfer of the written word onto a web page fails to engage the learner or meet their learning needs. The goal was to develop an interactive programme, which would be engaging, meaningful and evidence-based. Relationships with a number of key organisations were established to enhance the interdisciplinary input into module development processes: namely the Western Australian General Practitioner Education and Training (WAGPET) Unit and Curtin University Multimedia Design Department.

WW approached our partner, Curtin University, with a proposal to engage the multimedia students in animation design. This proved to be advantageous to both parties as students produce better outcomes when engaged with 'real-life' projects and WW was provided with high-quality animations to engage learners. Prizes were awarded to students for the best animations, which met specific criteria



Figure 4. Skin tear module

such as: ease of use, design qualities, interface capability and functionality.

The content of each wound module is designed to be highly interactive and includes many original 2D and 3D animations, video clips and images to keep the learner engaged and informed. For example:

- Simulations that mimic practice.
- Guided animation that teach processes to be applied in practice.
- Videos portraying procedures.
- Pictures that depict concepts.
- Case studies that embed concepts, processes and principles that are able to be replicated at the bedside.

Concepts were aligned to practice. For instance, the user has an opportunity to practise their lower leg assessment skills using a hand-held Doppler ultrasound in one of the foot module activities (Figure 5). The burns module, on the other hand, provides animations that demonstrate the degree of damage to tissue and the upper respiratory system as a result of burn injury.



Figure 5. Interactive Doppler assessment

The success of the WW education, online format is that it is replicated for each module, which builds user familiarity and confidence. The programme is published into a Flash-based format and allows the user complete freedom to move through the module as their learning needs are met. This format allows the user to open various tabs, such as the glossary, frequently asked questions or other attachments, without losing their place within the module. There is opportunity for the user to pursue their own learning journey



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without time restrictions and the system allows them to resume where they last exited the programme.

The online programme requires Internet Explorer 6.0 or above (or equivalent), Flash Player 8.0 or above and works most efficiently with broadband.

## Monitoring online education programme usage

WW uses Articulate Online to monitor module usage. It is a user-friendly, hosted service that allows you to track how clinicians interact with the WW modules. Data is collected for module access, numbers of unique and repeated visits, average number of visits per day and quiz attempts (including drop-outs, success and failure rates). Monitoring allows published reports on regional and metropolitan site usage to be sent regularly to WA Department of Health administrators. Monitoring of online traffic demonstrates increasing state, national and international usage.

## Conclusion

The WW education programme is viewed by WA Health, Curtin University and Silver Chain as an innovative and successful model for online learning development. The programme has received positive interest and feedback from national and international wound and education experts. Moreover, feedback from novice and experienced health practitioners has emphasised the usefulness of the programme for advancing wound management knowledge and evidence-based practice across Western Australia and further afield. Any clinician, regardless of location, can access the site without cost any time and anywhere via the internet. Readers are invited to review the programme regularly to access latest developments on [www.health.wa.gov.au/woundswest/education](http://www.health.wa.gov.au/woundswest/education)

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## Australian Wound Management Association

### Membership information

Membership of the Australian Wound Management Association may be achieved in two ways:

- Membership of a State wound care association – the annual subscription rate varies from State to State in the range \$20 to \$80.
- Direct membership of the Australian Wound Management Association – the fee is \$110.

With either form of membership, members will automatically receive copies of *Wound Practice and Research*, the Australian journal of wound management, which is published every 3 months.

Please direct enquiries regarding membership to:

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The membership secretary will send you the membership form appropriate for your State and include details of direct membership.