Connected wound care: partnerships informing wound management

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ABSTRACT

It has been acknowledged that regional and rural areas may have limited access to expert wound management education and expertise. Historically in community nursing across Victoria no formal pathways existed for regional and metropolitan services to collaborate. Efforts to develop wound education were occurring in isolation and potentially being duplicated.

The Connected Wound Care project, an initiative funded by the Department of Health, Victoria, initiated meaningful collaboration between Regional Wounds Victoria and the Royal District Nursing Service. This enabled gaps in wound management practice in the community setting to be identified and addressed.

Initially a suite of health care guides and a diabetes foot kit, addressing aspects of wound prevention and management, was developed. More recently, focus on interpreting aspects of the *Australian and New Zealand Clinical Practice Guideline for the Prevention and Management of Venous Leg Ulcers* into practice, led to the development of an e-learning package. All of these resources were distributed to over 270 agencies across Victoria.

This paper will show that effective, collaborative relationships can be established between traditional 'silo' agencies. Shared insight into wound management across a state environment can occur and outcomes which positively impact the individuals we care for are achievable together.

Keywords: collaboration, wound resources, standardisation, e-learning, clinical governance.

INTRODUCTION

In 2009, the Department of Health (DH), Victoria, implemented the *Strengthening Wound Management Practice in Victoria* initiative. The aim of this initiative was to improve the wound care outcomes for individuals in regional Victoria, by building wound management capacity in District Nursing Services (DNS), Bush Nursing Services and public sector residential aged care services (PSRACS). It has been estimated that at least 25% of residents of aged care facilities have a wound, and that wound care itself accounts for more than 50% of community nursing[1]. It was acknowledged at this time that individuals with chronic wounds were not only a considerable burden on the Victorian health system, but complications from this chronicity and the wounds had detrimental effects on the quality of life for many older and disabled people living in regional Victoria[2].

The *Strengthening Wound Management Practice in Victoria* initiative sought to address the inequity of access to wound experts comparative to metropolitan areas, by providing a full-time equivalent wound management clinical nurse consultant (CNC) position within each of the five regional health regions (Barwon, Gippsland, Grampians, Hume and Loddon Mallee). Seven regional CNCs were initially appointed and collectively known as Regional Wounds Victoria (RWV). These positions were responsible for 96% of the land mass of Victoria that serviced 30% of Victoria's Home and Community Care (HACC) clients[3].

The capacity-building role of RWV was (amongst other things) to:

- provide input, at a service, regional and systemic level, into improved wound management practice
- provide wound management consultancy and training, mentorship and support in the management of complex and chronic wounds.

Working separately to RWV but also closely with the DH Victoria was the Royal District Nursing Service (RDNS) which had a similar CNC model. The RDNS delivers home nursing and home care across Australasia and New Zealand but predominantly in metropolitan Victoria. The CNCs provide wound management expertise and education, focusing on translating clinical research into best practice. Consequently, efforts to develop clinical wound resources by the two entities were occurring in isolation and were potentially duplicated.

In July 2010 DH obtained the services of RDNS to coordinate the Connected Wound Care (CWC) project. The focus of the CWC project was to formalise the collaboration between RWV, the RDNS and the DH in order to promote a statewide clinical leadership approach in wound management and to address practice gaps across Victoria. This collaboration aimed to target strategies that support

the development of consistent wound management practices, and the implementation of quality evidence-based resources. An abundance of literature exists on the benefits of collaborative communities of practice, allowing for knowledge exchange and superior problem solving of a common contextual problem[4-10].

The CWC target group included RDNS, HACC-funded regional and bush DNS and high-care regional PSRACS. The initial funding was for 12 months, from July 2010 to 2011 (phase 1) but collaboration proved to be so productive that CWC continued until July 2013 (phases 2 and 3).

While the focus of this paper is the collaborative resource development as a primary modality, a range of concurrent approaches were utilised toward the overall aim. These included (but were not limited to):

- identification, support and mentorship of key nursing staff working in CWC target groups
- an onsite wound management consultancy service, primarily focused on building the capacity of clinicians, by role modelling and equipping (including offsite support via email, telephone, remote consultations)
- availability of funds for specialist wound management education, consumables and equipment (diagnostic, assessment, therapeutic)
- facilitating access to training across regions, including classroom-based learning, workshops and web-based modalities
- engaging services at an individual level to identify needs, and to develop capacity-building infrastructure
- developing links and networking forums with key stakeholders, intra- and inter-regionally
- statewide, focused website development for easily accessible sharing and promotion of evidence-based practice
- basing activities on the ability of services to take ownership for improved, sustainable practices as opposed to outcomes reliant on continual input[3].

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In regional Victoria there are over 90 HACC funded DNS providers, 91 PSRACS and 15 metropolitan sites within RDNS. The CWC collaboration identified themes consistent within all services and these formed the basis for the development and standardisation of the suite of CWC resources. Similar gaps have been identified by Dowsett (2002) and included[11]:

- a lack of available standards for wound management in place
- large variations in practice within services and between services
- a lack of consistency in wound care
- large variety of dressing products
- a need to demonstrate quality measures in clinical care
- risk or harm minimisation for clients and organisations.

METHOD

Project governance

An RDNS project board provided approval and guidance to ensure a quality implementation of the CWC project. A project officer from RDNS was appointed to ensure the collaboration had direction and outcomes. A small project reference group consisting of RDNS and DH was responsible for overseeing CWC.

An overarching steering committee was formed to guide and provide overall direction to CWC. This consisted of representatives from the DH and the CWC target group.

To demonstrate a recognisable symbol of the partnerships formed within CWC, and to further raise the profile of the collaborative effort between multiple auspice agencies, a CWC logo was developed and trademarked.

A working party consisting of RWV and the project officer operationalised the objectives of CWC.

Development

In phase 1 of CWC, the initial workshop meetings brainstormed evidence-based options for resource development based on practice gaps in the various regions. A 'potential resource' list was drafted

for working party review. Responses were collated and a tentative plan of tools to be implemented was formulated before obtaining steering committee sign-off. It became evident to all parties that there was a lack of simple educative tools on prevention and management of common wounds that targeted a community nursing and client audience. The decision was made to develop a suite of nine health care guides to address this deficit (Table 1).

Table 1: CWC resources developed for individuals in the community and nurses

Resources for individuals	Resources for nurses
Activity and healing for venous leg wounds	Nutrition for people with wounds
Care of your high-risk feet	Skin tears assessment and management
Footwear for high-risk feet	Care of wound equipment and dressing field
Healthy eating for healing	
Skin care and you	
Care of your compression garments	

As part of this suite, and building on work already completed by RDNS, the working party developed a diabetes foot resource kit. This kit was designed to educate and enable individuals in the care of their feet and to assist nursing assessment and management of individuals with high-risk feet (Table 2).

Table 2: Diabetes foot resource kit contents

Resources for individuals and nurses	Contents
Diabetes foot resource kit	Preventing diabetic foot ulcers: The 3-step program DVD[12]
	Basic foot assessment checklist and action plan
	10 g monofilament
	Your guide to the diabetes foot resource kit

The working party trawled through the internet for options of educational DVDs to place in the kit, focusing on an Australian context. No Australian resource was identified that met the criteria for a simple and informative guide for assessing and caring for high-risk feet and the DVD was, therefore, sourced from the USA[12]. The project officer worked with the producers of the DVD to change terms within the audio to reflect Australian practice; for example, "chiropodist" to "podiatrist", realising that other aspects were unable to be altered.

Extensive literature searches were undertaken on information currently available in the targeted areas. Due to the paucity of quality, randomised controlled trials to definitively guide practice, the working party also relied heavily on evidence-based guidelines and position documents[13-24], expert opinion and basic science to inform the resources. Podiatrist, infection control and dietitian expert opinion was sought on the areas relevant to their expertise.

The process of draft review occurred via online shared spreadsheets which summarised disputed points and enabled interactive responses from all. The project officer collated these responses, enabling final debate and consensus to be achieved during face-to-face workshops. A technical writer edited the suite of tools and grade level and reading ease tests were applied to the text. Graphic design standards were provided externally.

Feedback was sought on the resource content and design of the health care guides from a small sample of individuals (n=10) and nurses (n=12) in the community. Changes were made to the resources accordingly, ensuring that the language and format suited the respective target groups prior to printing.

Phases 2 and 3 of CWC coincided with the launch of the *Australian and New Zealand Clinical Practice Guideline for the Prevention and Management of Venous Leg Ulcers*[14]. The primary resource developed was a 90-minute e-learning package to facilitate implementation of best practice in compression bandaging skills, *Compression therapy in the management of venous leg ulcers*. The package includes theory, animation and video demonstrations to assist understanding of venous disease and treatment, and the practical skills required to apply compression bandaging. The learner is assessed on theoretical knowledge and can print off a bandaging skills checklist to be assessed on compression bandaging application.

E-learning was chosen as an appropriate medium to transfer knowledge, due to the large remote and rural nursing focus of CWC. E-learning standardised the educational approach whilst negating the need for nurses to travel long distances to access education. Literature supports this mode of delivering education, the advantages of which include the convenience of learning at any time and in any place; reduced costs; course materials that can be edited instantly; fast and reliable data acquisition; and standardised information provision[25].

The following phases of CWC also built on the achievements of phase 1 and allowed the opportunity to distribute the resources to an extended CWC target group to incorporate remaining Melbourne metropolitan DNS and Subacute Care Services (SACS)-funded wound clinics. Included in this extra distribution were those services that for reasons discussed later in the paper, did not receive the resources in the first mail-out.

Implementation

A distribution strategy was developed for all phases of CWC involving:

- formulation of a database to identify all targeted agencies, names, addresses, staff and client numbers
- a communication plan (CWC introductory letter from the DH to all CEOs and managers)

- timed delivery for resources to arrive concurrently to over 275 agencies across Victoria
- generic guidelines ensuring the standardised use of all resources
- e-learning made compliant to be loaded onto six learning management systems across the state.

Evaluation

Independent consultants were sourced to evaluate the outcomes of phase 1 of CWC on the project steering and working group consultations, as well as the value of the suite of tools developed. Two semi-structured interviews were conducted with a total of 19 participants: the project steering committee (n=12) and the project working group (n=7).

An online survey on the CWC resources was also conducted. The target audience consisted of clinical district nurses whose services had been sent the resources three months prior. The survey aims were: 1) to explore nurses' knowledge of the resources; 2) to determine if they had used the resources; and 3) to find out how useful they were in improving their wound management practice. Invitations to complete the online survey (n=240) were sent to a range of DH metropolitan and regional agencies with a 52% response rate (n=126) of respondents.

RESULTS

Consultation findings

Opportunities and challenges

There was general consensus from all participants in the consultations that CWC had been an overwhelming success with: 1) successful partnerships developed; 2) development of best practice resources; 3) opportunity for collaboration between the target audience; 4) advantages of collegial debate; and 5) current and future impact of the resources.

Key enablers to the success of CWC were reported as the: 1) project officer's leadership role being critical through issue resolution, effective communication skills and workload distribution; 2) the support and initial sponsorship from the DH; and 3) the structure and composition of the steering committee and working group.

Linking people across geographical distances was an expected and realised challenge. One of the unanticipated challenges reported was the lack of a comprehensive database on service sites, resulting in service mapping difficulties, at both an RDNS and regional level.

Partnerships between key stakeholders

The partnerships established and maintained were reported as a key outcome. There was agreement that CWC challenged and shifted the

perspective that regional clinicians were not seen as "leaders" or as "highly regarded" as their metropolitan colleagues.

The value of the working group having face-to-face sessions to discuss issues and the strengthened relationships resulted in opportunities for shared learning and a greater understanding of each other's discretely funded sectors. This translated to improved clinical practice across a number and variety of settings.

Processes for developing and incorporating resources into practice

The processes and logistics involved in collaborative development of the tools were considerably more resource-intensive than anticipated. Key strategies to overcome these barriers included: 1) focusing on the project officer role as an enabler of the resource distribution; 2) the convening of a meeting between the RWV and the RDNS to determine the extent of collaboration; 3) sustaining focus on best practice; 4) agreement on resource review processes, including video linking, web-based spreadsheets to facilitate document review; and 5) allocation of a one-day working group session to reach final consensus on resource content. Underpinning these strategies was the mutual aim of standardising resources and clinical practice, across the range of health services.

Some of the reported key challenges in the process of resource development and integration into practice included: 1) the disparate access and understanding of information technology systems across regional Victoria; 2) the tyranny of distance; 3) the development of communication strategies; 4) workforce issues impacting on the translation of best practice into the clinical setting, including a dearth of allied health professionals and general practitioners; 5) the complexity of integration with PSRACS as wound management was not understood to be core business; 6) access to wound management nurses; 7) the distribution of information and resources dependent on managers' knowledge and active promotion of them; and 8) no processes established to analyse the extent of distribution and access to the tools by the target audience.

Survey findings

Survey sample

The majority of respondents were from regional Victoria, consistent with the targeting of distribution of the CWC resources in these areas. Of the total number of respondents approximately half (n=64, 52%) worked in a DNS whilst 14% (n=18) reported working in "other" agencies such as hospitals, community health and multipurpose agencies. A majority (n=109, 87%) reported having over 10 years' clinical experience and were currently working as a registered nurse (n=103, 82%). Of the 126 respondents, 17% (n=22) were managers and not employed in direct clinical practice.

Knowledge of the CWC resources

The survey questions exploring knowledge of, access to, and comments on the CWC resources were directed at nurses currently employed in direct clinical practice. Of the 104 nurses employed in clinical practice, 83% (n= 86) knew of the resources and 14% (n=15) did not. The survey asked respondents to indicate their knowledge of each of the resources in the CWC suite. More than 50% of nurses reported knowledge of each component of the suite.

Current and sustainable access to the resources

Of the 86 respondents who were aware of the resources, 93% (n=80) reported that they had received them. Some respondents identified difficulties with locating the resources within their organisation and/or the resources not arriving together, compounding difficulties in access. The majority 71.8% (n=61,) of the respondents who were aware of the resources reported that they would prefer to receive professionally printed copies and 28.2% (n=24,) stated that they would prefer to download and print them.

Comments on the health care guides for individuals (clients/carers)

Of the 58 respondents who reported having knowledge of the health care guides for individuals, just over half of these respondents had already distributed these resources.

Respondents detailed the feedback they received — positive or negative. Comments reported included:

"Feedback received from clients with healed venous ulcers and from clients with ongoing leg ulcers issues all stated that the information was very good and informative, enabling them to self-care"

"The guides were easy to read, clients were able to do the suggested exercises. It was also positive reinforcement of the things that they were already doing."

"Staff and patients are glad that the information is standardised. It will prevent confusion and prevent reoccurrence of diabetic and venous ulcers."

"No high-care residents at present are able to follow the recommendations in the brochures."

Comments on the health care guides for nurses

Of the 58 respondents who reported having knowledge of the health care guides for nurses, the majority of these respondents had read the guides, found the information accessible and useful, and reported that the guides had provided them with better knowledge of the topic.

The survey explored the impact of the health care guides for nurses on practice. A number of nurses reported that the guides had improved their practice; however, a significant number were yet to apply the information into practice. A sample of comments included:

"I have had some difficulty in gaining other staff support to read and utilise the guide because of lack of time."

"The 'assess and dress' section has given us a standard procedure to be used across our facility."

"Made me think about what I do in homes."

Comments on the diabetes foot resource kit

Of the fifty-seven survey respondents who had sighted the Diabetes Foot Resource Kit, 70% (n=40) reported that they had read the kit

and that it had improved their practice, or they anticipated that the kit would improve their practice when implemented. The most commonly reported benefits of the kit for clinical practice were educating clients, increasing awareness and enhancing nurses capacity to assess diabetic foot problems.

Manager responses

Managers were asked to complete a separate section of the survey seeking their input on their overall awareness, understanding and outcomes for the sector from the CWC resources. The majority of managers were aware of and had received the CWC resources. The majority of managers also reported that *Your guide to Connected Wound Care* helped them understand CWC. Twelve of the managers reported no barriers to implementing the resources, a further six reported they had experienced some barriers and four did not answer this question. Comments included:

"They enable the opportunity to update policies and procedures to reflect best practice."

"The resources provide a continuity of treatment to develop best practice and less experimenting."

"Barriers included getting the staff to use the resources particularly the diabetic foot resource. There is a lack of available portable IT/DVD to take into the home."

"All nurses are mindful of the best practice techniques so the barriers would not be from them. I see some clients perhaps not embracing the information/strategies in some circumstances. It is the nature of our work."

The majority of managers (n=17) agreed that the resources will support a standardised approach across the community sector. One manager did not agree and four did not respond. Comments included:

"Victoria has the opportunity to be leaders in Australia, starting at state level."

"A standardised approach will be achieved — only if areas are aware of them and it is supported across all levels of care —for example, GPs, RDNS, etc."

Ongoing evaluation of phase 3 of the CWC

By July 2013, phase 3 of the CWC was launched. At the time of writing, most regions have loaded the e-learning package on to a variety of learning management systems across Victoria, but formal evaluation has not yet occurred.

One region has facilitated workshops on compression bandaging with the e-learning a prerequisite to attend. Eighty nurses attended the workshops in 2013 with 90% completing the e-learning. Preliminary data from pre- and post-e-learning surveys shows that participants

had increased: 1) knowledge; 2) skills; and 3) confidence in selecting and applying different bandaging systems than before attending the e-learning.

DISCUSSION

Wound management practice and education in Victorian DNS and PSRACS has a history of occurring across different service settings by a range of nursing professionals without consultation across these services. CWC was developed in response to this inconsistency with the aim of establishing a common approach for nurse clinicians across the state.

A key outcome of CWC has been the successful development of key relationships between services often working in isolation, and the development and distribution of wound resources across the state. Partnerships were also developed or strengthened on a number of levels. Relationships were formed to a lesser extent with PSRACS, and this reduced engagement may have occurred as wound care is not considered to be their core business.

Establishing a standardised, consistent approach for community health services that have varied perspectives and funding sources was the biggest challenge for CWC. Evaluation found that CWC processes allowed for intensive review of literature and discussion, resulting in a high-quality understanding of the needs of various service types, resources required and the application to evidence-based practice.

As CWC resources are consistent with multiple performance criteria in the Australian Wound Management Association *Standards for Wound Management*, they assist in helping clinicians meet the recommended evidence-based standards[26]. The literature also advocates health care guides being used as a means to facilitate individual client education, wellness and concordance[27].

In the main, survey responses relating to the suite of resources were positive. Eighty-six per cent of the survey respondents were aware of the CWC and resources developed. Feedback on the overall language, content and relevance to practice was positive. For those nurses who had applied the resources in their work, most reported a corresponding improvement to their practice and/or a confirmation of what they had already been doing in their practice.

Acknowledgement is made that it is still too early to gauge whether in the longer term these resources will alter the practice of community nurses. The application of these resources and practices is currently voluntary and consideration needs to be given to embedding them into quality programs and systems to ensure nursing staff build them into practice. What is evident and is reflected in the literature is that increased demands on community nurses undertaking wound care requires the efficient use of available resources and nursing time, and these standardised tools certainly contribute to achieving this[28].

Comments surrounding the difficulties in receiving resources were primarily related to the extensive database that was developed within CWC. In order to identify the multiple health agencies to receive the resources, the working party had to create a new database of over 275 services. This information was accessed from a variety of sources and inevitably missed some services. Services that missed their allocation of resources received them in the next phase of CWC.

Feedback from nurses and managers indicated that in order to sustain the practice of using the resources, there was a need to be able to obtain them electronically rather than just in hard copy. In phases 2 and 3 the resources were loaded onto a website for all, (including those outside CWC target group) which can be accessed at http://www.grhc.org.au/vic-wound-man-cnc-project/connected-wound-care-project. By May 2014, 19,580 downloads of the health care guide suite have occurred since being uploaded 18 months prior.

The venous leg ulcer package has been designed to be loaded on to a learning management system. It was identified in phase 3 that all learning management systems were not the same across the regions or within RDNS. This disparity resulted in certain regions receiving the e-learning package as soon as it was completed whilst other regions are only now launching the package. Substantial work was undertaken by CWC to provide four versions of the e-learning course to be compliant with the various learning management systems. In one region it was too difficult to achieve this. Consequently, provision was made to utilise another region's learning management system to provide equitable access to approximately 250 nurses.

At the time of writing, most regions have loaded the e-learning package. This move is supported by a commitment at a regional level to standardise the learning management software utilised by services. This collaboration in the health sector has resulted in opportunities for the sharing of hundreds of clinical and non-clinical e-learning modules across the state. This has widened access to the e-learning package to clinicians working across the broader community sector, aged care and the hospital sector. Some private hospitals have also joined this collaborative, ensuring that the e-learning package may be accessed even further in the future.

RWV is currently working to translate the focus on the practical skill development of the e-learning. In each of the DH regions a series of skills-based workshops are being repeated across regional Victoria. These workshops are part of a broader collaborative once again. In some regions, partnerships have been established with the broader community and hospital sector, realising the initial dreams and aspirations of the CWC collaborative to share resources. In these regions the skills-based workshops are organised, facilitated and attended by clinicians across the health sector.

The RDNS has made the e-learning package a mandatory requirement in the orientation of new staff, with practical application consolidated once working from sites. These commitments to promoting best practice in the management of venous leg ulcers in DNS across the state, goes a little way to ensuring that the call towards a 50% reduction of venous leg ulcers in 10 years, has moved one step closer in Victoria.

LIMITATIONS

There were some recognised limitations in the results obtained from the evaluation process in phase 1. The difficulties encountered in the distribution of the CWC resources resulted in some survey respondents not receiving the tools; therefore they were unable to comment on the effectiveness of them. Similarly, a number had received the suite of tools but had yet to apply the information gained into their practice and were, therefore, unable to comment on the impact of the resources in their setting.

CONCLUSIONS

CWC has enabled the DH to develop and distribute standardised wound prevention and management resources to a statewide audience for the first time. It has also provided an educative course, immediately responsive to the launch of the venous leg ulcer guideline and reflective of best practice. The outcomes of CWC show that relationships can be established between traditional 'silo' agencies, shared insight into wound management across a state environment can occur, and outcomes which positively impact on the individuals we care for, are achievable together.

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