

# Pressure ulcer prevention interventions for community nursing patients

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## Abstract

A community pressure ulcer prevalence study conducted in a health organisation in NSW has revealed patients living at home can experience extended waiting time for equipment to be prescribed by occupational therapists. This can result in delays in accessing pressure-relieving devices in community settings. Therefore, several strategies have been implemented in the Greater Newcastle Cluster (GNC), one of the Primary and Community Health Network in Hunter New England Local Health District (HNELHD), NSW. These various interventions include: systems to improve documentation; an alert notification which has been created in the electronic medical record database; promotion of the HNELHD pressure ulcer prevention and management online education programme; and prompt access to effective pressure redistribution equipment (Repose) in the community setting.

Repose is a compact, lightweight pressure-redistributing device that does not have manual handling limitations. This strategy has enhanced the community nurses' capacity to prescribe and provide devices immediately for those patients who are identified at risk of pressure injury whilst waiting for further assessment and delivery of further pressure redistributing equipment:

Our preliminary audit results have shown that Repose is effective in preventing wounds and facilitating healing of pressure ulcers while delivering high patient satisfaction. These strategies allow evidence-based best practice to be embedded in daily practice to improve patient safety systems that will permit future monitoring of pressure injury prevention effectiveness.

## Background

In 2009, the first reported large-scale pressure ulcer surveillance study in NSW home-based patients was conducted in Hunter New England Local Health District (HNELHD). HNELHD covers a geographical size of England and provides care for approximately 840,000 people, 54% of service population (n=57,622) over 65 years of age.

Seven hundred and ninety-six randomly selected patients cared for by community nurses participated in the study<sup>1</sup>. A pressure ulcer prevalence rate of 8.9% (n=71, 95% CI=7.1-11.1%) was recorded. Of these patients, 40.8% (n=29) with pressure ulcers developed the ulcers whilst community nurses attended home visits. Approximately 30% of patients acquired their ulcers during hospitalisation or prior to admission to the community nursing services. Issues identified from the study included delay in access to pressure relieving devices: 33% patients waited longer than a week to

receive equipment from a supplier such as Hunter Equipment Service, NSW Enable or other commercial sources. The study also identified inconsistencies in documentation of pressure ulcer risk assessment and reassessments.

Therefore, interventions have been introduced and implemented to improve prompt access to pressure redistributing devices while improving ongoing documentation of pressure ulcer risk.

## Strategies

Based on the analysis of the results from the prevalence study published, the following have been trialled since August 2010 in the Greater Newcastle Cluster (GNC). GNC has six community health centres, which receive on average 260 new nursing referrals a month, with a total case load in excess of 900 patients/month from communities located in Newcastle, Lake Macquarie and Port Stephens areas.

## Introduction of lightweight pressure redistributing devices

Access delay to appropriate pressure-relieving or redistributing surface was revealed from the study. Some patients were identified to wait for a week or more due to a combination of delays that involved availability of an occupation therapist to assess and prescribe equipment, followed by the rental requisition order being placed and waiting for arrival. In trying to find a solution to this problem, the nurse practitioner – wound management was in discussion with pressure-relieving/redistributing companies. The Australian distributor for Repose demonstrated the device with the latest design improvements. Following the Therapeutic Goods Association (TGA) application approval, a trial to evaluate timely access to appropriate equipment in the community setting was undertaken. Previous studies have already evaluated Repose devices as effective in preventing heel pressure ulcers<sup>2</sup> and the clinical effectiveness is equivalent to alternating air mattresses<sup>3</sup>. It was then

identified that the Repose device could be the interim solution between assessment and delivery of equipment.

Repose devices work by redistributing pressure across the total body contact area<sup>4</sup>. This product is available in foot protectors, cushions and mattress overlays, which are all very compact, allowing community nurses to store these lightweight cylinders in the car boot (Figure 1). Immediately following risk assessment, community nurses can now apply the Repose device without manual handling limitations to those at high risk of pressure ulcer development or with a preexisting pressure ulcer. Therefore, the introduction of Repose devices has allowed community nurses to act on their risk assessment without delay and decrease the risk of developing further a pressure injury whilst waiting for the occupational therapist's assessment, prescription, ordering and delivery of equipment.



Figure 1. Repose in car boot.

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## Pressure Ulcer Risk Alert System

A new Pressure Ulcer Risk Alert System has been developed in the community client database – CHIME (Community Health Information Management Enterprise). This alert can be initiated by the GNC Referral Intake Unit or community nurses if a patient is discharged with a hospital-acquired pressure ulcer or is referred with a pre-existing pressure ulcer. Once a patient has been assessed by either the hospital nurses or community nurse using the Waterlow<sup>5</sup> pressure ulcer risk assessment tool and if the risk classification is identified as very high risk of pressure ulcer development, the alert can be raised. This provides awareness to all community nurses that pressure ulcer prevention and management is needed for the individual patient. This system alerts community nurses to plan to have a Repose device with them when

admitting a new, high-risk client, which also allows an efficient allocation of Repose devices. In addition, this alert can remind community nurses to reassess the risks for those patients by performing skin inspection at least weekly to evaluate the effectiveness of this preventive intervention.

## Ongoing actions

All community nurses are required to complete the HNELHD Pressure Ulcer Online Education Program and to provide pressure ulcer prevention and management education to all patients (and their carers) who are at risk of developing pressure ulcers on admission to community nursing care. Ninety per cent of the community nurses to date have completed the pressure ulcer prevention and management training online. Currently, the pressure ulcer prevention team and occupational therapists are planning to work closely to redesign the pathway of referral and preventive interventions as well as developing an online education module specifically for occupational therapists.

An introduction of a flow chart (Figure 2) provides community nurses with a clear direction to the care for high-risk patients and the standards of nursing documentation required in CHIME. Nursing unit managers at each community centre are required to conduct nursing documentation audits quarterly through a purpose-built CHIME management report to ensure the standards of nursing documentation are monitored and improved as required. Education material specifically for community patients and their carers has also been developed and can be disseminated to patients on entry to community care.

## Results

A retrospective audit was conducted to evaluate the effectiveness of the Repose devices in preventing pressure ulcers. Twenty-six randomly selected community nursing high-risk patients, who had trialled the Repose, were asked to complete the survey with the assistance from community nurses. Twenty-one patients had pressure ulcers before the use of Repose devices. Seventy-one per cent of the patients (n=15) had their pressure ulcers healed after Repose devices were introduced. The severity of those pressure ulcers healed ranged from Stage I to Stage IV. Six patients with pressure ulcers have not completely healed, although four of these patients show signs of improvement in wound healing. The remaining two patients' pressure ulcers did not deteriorate

further while on Repose. Therefore, this audit has shown Repose devices to have had a positive effective in preventing high-risk patients from developing a pressure ulcer and pressure ulcers from further deterioration. In addition, 73.1% (n=19) of the audited patients rated good to excellent for the level of comfort when using the Repose devices.

Twenty-one new cases of pressure ulcers were admitted to the GNC service in July 2011. Seventy-one per cent (n=15) of these cases had a Pressure Ulcer Risk Alert recorded in the electronic medical record by community nurses. The uptake of the ulcer risk alert by community nurses has been enhanced with ongoing monitoring through automotive reports by nurse managers.

## Conclusion

Interventions to prevent pressure ulcer occurrence or improving care for clients with a pressure ulcer are multifaceted<sup>6</sup>. No single intervention in isolation can have an optimal effect alone. Early and regular assessment, quality documentation, alert systems, prompt access to appropriate equipment, staff training and patient education together can reduce the incidences of avoidable pressure ulcers.

The preliminary results of our audit have shown the Repose devices to be effective in preventing and assisting the healing of the pressure ulcers, while providing high satisfaction for our patients in the community setting. The above interventions contribute to better patient safety and outcomes. Further evaluation studies such as client and staff surveys and pressure ulcer prevalence studies will be conducted to monitor the ongoing effectiveness of the above interventions.

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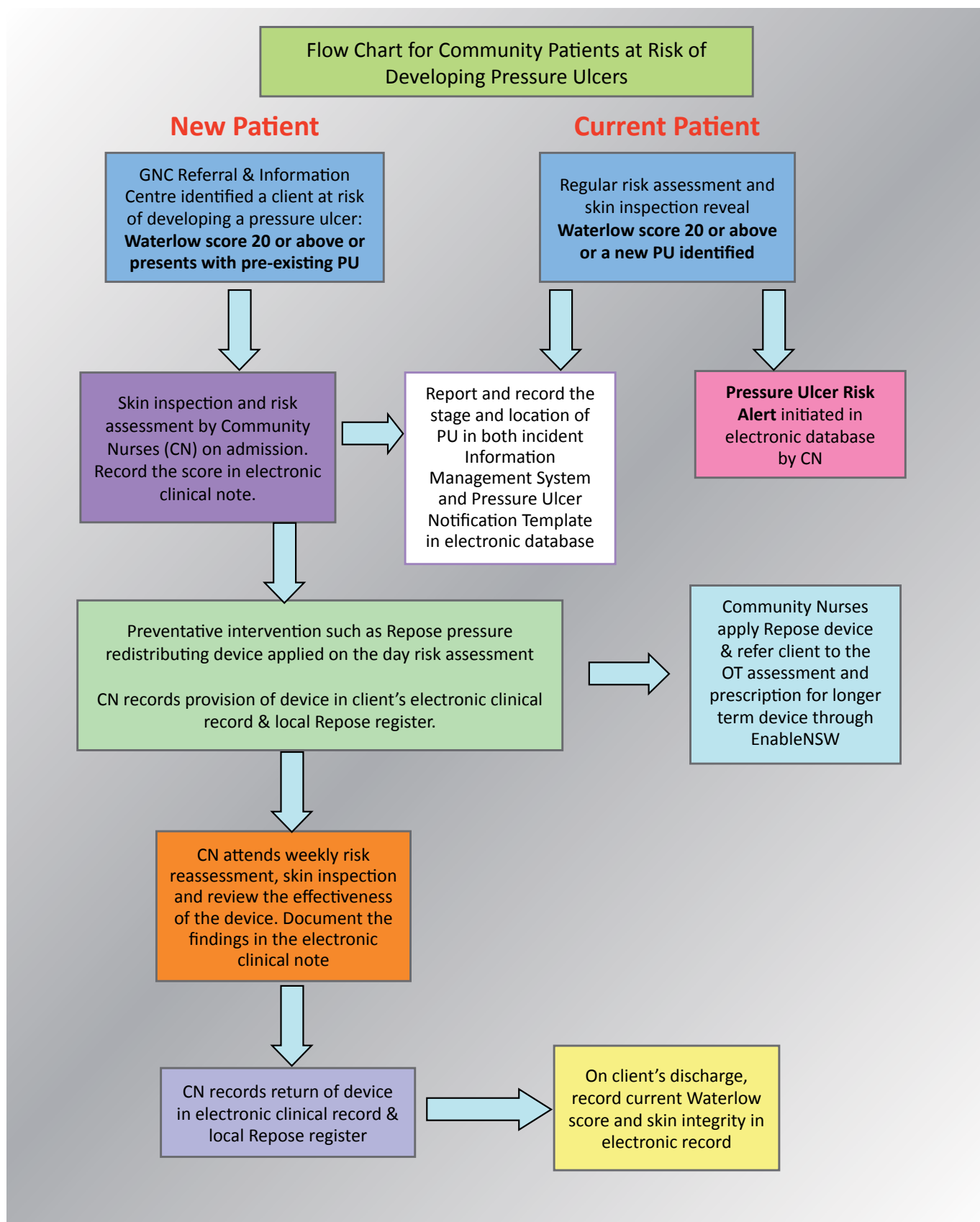


Figure 2. Flow chart for community patients at risk of developing pressure ulcers.