

PREVENTING PRESSURE ULCERS 2010

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ABSTRACT

Pressure ulcers, considered a preventable adverse event, continue to be a problem around the world, despite a plethora of instructive literature on prevention. In nearly every wound care journal I read, or at any conference I attend, pressure ulcers are still discussed as a major concern, by clinicians.

Yet preventing pressure ulcers is basic nursing care and it has been since I started my nursing career in 1970, so what are we doing wrong? The risk of pressure ulcer development hasn't changed over the years so when will we get this right?

Could it be that nursing is now harder and heavier than it ever has been; an occupational health and safety concern when it comes to repositioning patients? Increased longevity, a positive factor in many ways, means that there are many more bedridden frail aged for whom pressure ulcers can be a common, serious and deadly condition. This along with the huge amount of paperwork and computer data entry nurses have to fit into their day means staff are struggling to meet the basic care needs of the patients.

It is clear that we are missing something so we need to get back to basics and rethink risk assessment and protocols for intervention to relegate pressure ulcers to history books.

INTRODUCTION

Pressure ulcers (PU) are a significant burden to all health care systems. Once a deep Stage 4 PU exposing muscle and bone develops, the cost associated with treatment of just one such PU has been estimated at \$61,230.00 [1] and legal action as much as \$632,500. [2] Patients may be admitted to, or discharged from, any healthcare facility, with one or more PU [3,4,5,6]. Pressure ulcers result in an increased length of stay [7] increase morbidity and mortality [8] and are very painful, causing suffering for the poor patient.

There have been so many advancements in the prevention of PU so I question why they still occur, especially in this day and age. Should we be seeing any PU at all?

Most hospitals and facilities would have a protocol in place to prevent PU from occurring, along with a risk assessment tool to predict which patients are 'at risk' of developing a PU.

The aim of the risk assessment tool is to distinguish risk factors considered associated with the cause and to identify patients 'at risk' of a PU [9] then **intervene immediately** with appropriate equipment to reduce the incidence of these nasty ulcers.

Many numerical assessment tools have been used to assess the patient to determine whether they are 'at risk;' the Norton 1962, Waterlow 1962, Braden 1984 just to mention a few, but are they truly evidence-based? [9]

In 1992, Brenda Ramstadius, a clinical nurse consultant in wound care in Australia noticed that nurses were not using the available PU risk assessment tool (Norton) in her hospital, to identify "at risk" patients. Nurses said they found it time consuming evaluating the numerous variables. Ramstadius then designed an assessment tool that reflected pressure ulcer aetiology, which has more clinical relevance and was able to determine "not at risk" status earlier in the assessment process.

In 1996 this brought about a collaborative clinical research study between University academics and nurse clinicians in Australia, comparing the "Ramstadius Tool with the "Waterlow scale" in four nursing homes. [10] The Waterlow scale was chosen as the comparison tool as nurses said they thought it the most suitable for all patients.

In 1999 Annette Hoskins, a senior lecturer at Wollongong University, Australia, decided to conduct further study to assess the validity and reliability of the

Ramstadius Pressure Ulcer Risk Assessment Tool, as well as to explore if mobility is the primary factor for PU formation.

This is when I first became excited by the idea that PU could be prevented. I came across an article in the Nursing Times that was asking for hospitals to participate in research comparing tools that predict who was 'at risk' of PU. I applied and my hospital Port Macquarie Private, in Port Macquarie, New South Wales, was accepted along with three other hospitals in Australia; Townsville Hospital in Queensland, Queen Elizabeth Hospital in South Australia and Dubbo Base Hospital in New South Wales..

The purpose of the descriptive study was to validate by comparison the recently developed "Ramstadius" PU risk assessment tool with an already existing tool, the "Waterlow" scale and explore the most significant factors in PU formation.

Each hospital was asked to assess 100 patients to see if they were 'at risk' of a PU comparing the "Ramstadius Tool" with the "Waterlow" scale. At that time the hospital was not interested in making any changes so they offered no assistance. I did the assessments in my own time mostly at the end of my shifts. I can remember wondering why I had bothered to take the project on, *BUT* it has actually been one of best projects that I have ever done as it is embedded in my head that if a patient cannot move then it is my job as a nurse to do something about it.

After a few assessments comparing the two tools, it became very clear that the 'Waterlow' scale was over predicting as there were too many variables to take into account and it was very time consuming to use. But what I found was that the "Ramstadius" tool was simple and easy to use. It had more clinical relevance and was able to determine "not at risk" status earlier in the assessment process.

Even though that research by Annette Hoskins was never published it changed my life as a nurse. It taught me about 'best practice;' improving

patient outcomes and since participating in the study I have made a commitment to fight to prevent PU from ever occurring again in my hospital.

WATERLOW RISK ASSESSMENT SCALE

The Waterlow tool was designed for both medical and surgical patients. Risk factors for *build/weight for height, continence, skin types, visual risk areas and appetite* are categorised and scored from 0-3, sex and age from 1-5. *Mobility* is categorised into fully mobile, restless/fidgety; apathetic; restricted; inert/traction and chair bound each of which is scored from 1 -5. Special risk medication, can be scored 1 – 8 with more than one risk factor being scored in each subsection. A Score > 10 = the patient is at risk, > 15 = high risk and > 20 = very high risk.

Ramstadius Pressure Ulcer Risk Assessment

This is a non-numerical tool and begins with the assessment of mobility as yes/no. If the patients can reposition themselves independently, such as rolling over in bed and/or are fully mobile, the assessment is complete with the patient classified as not being at-risk of PU. If patients cannot reposition themselves without assistance they are at risk of a PU and guidance is provided for suitable preventative equipment, such as an alternating pressure air mattress (APAM). The Ramstadius tool has the advantage of requiring one factor only to be assessed – mobility and until other risk factors have been tested for positive predictive value, Sharp and McLaws [9] suggest the Ramstadius approach is evidence-based and may be very cost-effective.

If a patient walks into hospital for elective surgery they are not at risk at that moment but as soon as they are anaesthetized they are immediately at risk, because of their immobility, and the intervention should focus on a support surface that will prevent the development of a PU.

Patients that cannot roll from side to side or lift their limbs and pelvis off the bed unassisted are at risk, [11] irrespective of age, of developing a PU. [9]

This risk applies to patients who are bed- or chair-bound, on operating theatre tables, on trolleys in the emergency department, radiology, or whilst being transported in an ambulance, or in a ward or community setting.

Patients who have a disease or disorder which interferes with their ability to reposition or leads to failure of sensation (feeling) or of appreciation of pressure, places them at risk of PU, as they may not reposition in a timely or effective manner. For example: patients with fractured hips peripheral neuropathy, (diabetes), Parkinson's disease, Multiple sclerosis, Cerebrovascular accident (CVA), loss of sensation (spinal injury/spinal anaesthesia) may be at risk if immobile or if their mobility is decreased.

To address these issues and assist members of The Wound Care Association of New South Wales (WCANSW) Inc. a small passionate group got together to write the first State Pressure Ulcer Prevention Guidelines released in 2000; [12]. These Guidelines, revised in 2007 [13] are based on the 'Ramstadius tool' along with clinical judgement so that it is easy and simple for clinicians to follow. The WCANSW Inc. Guidelines also advise that the prevention of pressure injury is best achieved by prioritizing management in the following order:

1. Identifying and documenting patients 'at risk' of pressure injury immediately on admission to all wards, units, facilities and services.
2. Selecting pressure relieving equipment.
3. Implementing regular repositioning regimes, consistent with the efficacy of the equipment.
4. Assessing 'risk' status following any change in the clinical condition of the patient.

The main message is that any patient that cannot change their position, or chooses not to, either knowingly or not, irrespective of age, is 'at risk' of developing a PU.

They need to be placed on an APAM immediately unless contraindicated i.e. unstable spinal fractures. When this is the case the medical officer in charge must be consulted.

In 2004 at the Port Macquarie Base Hospital, where I work, we were also seeing too many PU. The “Ramstadius Tool” was implemented to see if it would make a difference. The hospital has been fantastic making sure that APAMs are always available for the patients deemed ‘at risk’ of PU development.

The hospital mattresses were all very basic, a standard single piece of foam covered with a hard plastic which then felt like a hard board or rock. Patients lying on the mattresses for long periods nearly always sustained a PU. Management agreed to replace all the sub standard mattresses. This action has greatly reduced the incidence of PU and thankfully with ongoing education we intend to continue working to improve patient outcomes.

Understanding the pathophysiology of PU development [14] will make the clinician aware of the damage to tissue if a patient has been lying on the floor at home for hours then brought into hospital. The frequent repositioning required to prevent a PU [14] is simply impractical and near impossible to do. Unless carried out every few minutes throughout the 24 hours Sharp and McLaws hypothesise that repositioning can cause ischaemia-reperfusion injury resulting in more damage to tissue and contribute to PU. [14] Clinicians know patients need pressure relief to prevent tissue injury as well as avoiding pulmonary complications. By placing the ‘at risk’ patient on an APAM the pressure is off the clinician as well as the patient.

CONCLUSION

Pressure ulcers are a problem for all health care workers. We know that immobility resulting in unrelieved pressure is the cause of PU development and judicious screening to identify those at risk of developing a PU is the cornerstone of PU prevention.]

So knowing that immobility and unrelieved pressure can cause PU it is clear that policies need to change immediately to reflect this. Patients need to be

assessed as soon as they arrive at a hospital or facility and if the patient is found to be 'at risk' appropriate equipment supplied immediately. We may still see the odd PU but until we change our practice things will continue to remain the same.

Research is a fundamental part of our nursing practice and is necessary to improve best practice. Wound clinicians may be happy to read and implement guidelines relevant to their practice, but the cold hard facts are that other clinicians not as interested in wound care will not spend time reading long screeds of information they feel is not relevant to their practice.

With nursing workloads increasing assessment tools should be kept easy and simple for compliance to occur. Assessing risk and supplying APAM must be mandatory so that everyone knows their part

Finally as registered nurses we are personally accountable for our practice and actions. We are taught to promote health and healing, and prevent harm and complications so for our patients' sake we have to keep fighting for best practice to improve patient outcomes; no pressure ulcers!

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REFERENCES

1. Young C. What cost a pressure ulcer? Primary Intention 1997; 5(4): 24-25.
2. Dean A. Patient's hospital care 'inferior.' 1994 Sydney Morning Herald; Thursday August 25th
3. Cullum N. & Clark M. Intrinsic factors associated with pressure sores in elderly people. Journal of Advance Nursing 1992; 17: 427-431

4. Taler G. What do prevalence studies of pressure ulcers in nursing homes really tell us? *Journal of the American Geriatrics Society* 2002; 50: 773-774
5. Bliss M. & Simini B. When are the seeds of postoperative pressure sores sown? Often during surgery. *British Medical Journal* 1999; 319(7214): 863-4.
6. Van Marum RJ, Ooms ME, Ribbe MW. & Van Eijk JT. The Dutch pressure sore assessment score or the Norton scale for identifying at-risk nursing home patients? *Age and Ageing* 2000; 29: 63-68
7. Graves N, Birrell F. & Whitby M. Effect of pressure ulcers on length of hospital stay. *Infection Control and Hospital Epidemiology* 2005; 26: 293-297
8. Redelings MD, Lee NE and Sorvillo F. Pressure Ulcers: More Lethal Than We Thought? *Advances in Skin & Wound Care*: September 2005 Volume 18 Issue 7 pp 367-372
9. Sharp CA and McLaws M-L. Estimating the risk of pressure ulcer development: is it truly evidence-based? *International Wound Journal* December 2006 Volume 3 Issue 4 Page 344 – 353
10. Hoskins A, Ramstadius B, Risk assessment for pressure sores: A Comparison of two tools *Primary Intention (Journal of the Australian Wound Management Association)* December 1998. 6 (4) pg 161.
11. Mino, Y, Morimoto S, Okaishi K, Sakurai S, Onishi M, Okuro M, Matsuo A. & Ogihara T. Risk factors for pressure ulcers in bedridden elderly subjects: Importance of turning over in bed and serum albumin level. *Geriatrics Gerontology International* 2001; 1(1-2): 38–44
12. Ramstadius B, Sharp CA, Carter R & Cavanagh J. Wound Care Association of NSW Inc. 2000 Pressure Ulcer Prevention Guidelines An Expert Consensus Statement www.wcansw.com.au
13. Ramstadius B, Sharp CA, Blanchfield D, Wilkins E, 2007 Pressure Ulcer Prevention Guidelines (Revised Edition) An Expert Consensus Statement WCANSW.
- 14 Sharp CA & McLaws M-L. A discourse on pressure ulcer physiology: the implications of repositioning and staging. *World Wide Wounds*

<http://www.worldwidewounds.com/2005/october/Sharp/Discourse-On-Pressure-Ulcer-Physiology.html>