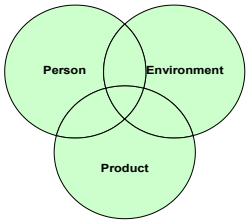
Person
Product
Environment



Why are Pressure Injuries still occurring ?

Size and Shape Matter
Measure it
Fit Product to Person

AWSA Summer School Feb 2024

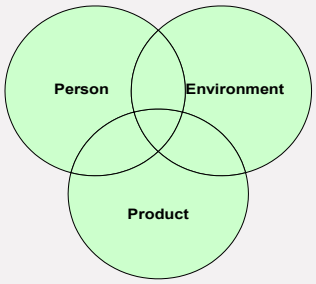
Catherine Young Occupational Therapist Odyssey Consulting

1

Why is this so hard ?

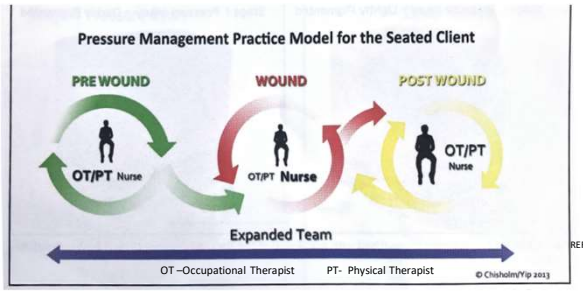
Pressure Injury Management and Prevention is a complex process dealing with THREE related, changing variables:

- The Person – wounds, history , intrinsic and extrinsic risk factors
- The Product –design, specifications, industry , Rehab Engineers , condition, use by date
- The Environment / Activity - in which the product is to be used



Best outcomes when supported by an Interdisciplinary team !

Pressure Management Practice Model for the seated Client



REF : Lange and Minke 2017

- Changing size of the players in the model reflects the shifting role emphasis
- Direction of arrows illustrates that it is possible to stay in green (pre wound) potential to stay forever
- Once a wound develops – client moves into wound phase.
- Can leave wound phase for post wound (lifetime management)
- But can never return to the pre wound phase
- The area remains vulnerable forever .

3

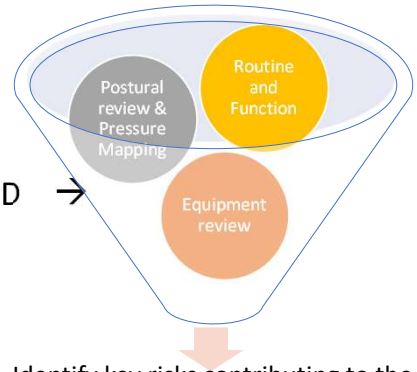
Systematic approach – Clinical Reasoning

LOOK AT THE WOUND →

Location, Size, How long?

Medical History

Sensation

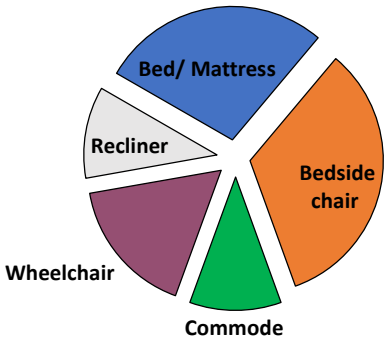


Identify key risks contributing to the wound of that person in that environment.

This will help you determine the goals of your intervention.

24 Hrs - Activity and Equipment Review

How many hours on the bed? In the chair? Commode?
Which piece of equipment has the greatest potential to cause a pressure injury ?
Look at the whole 24hrs to help determine the highest equipment risk factor .



Bed
Recliner
Commode
Wheelchair
recliner

5

5

Clinical Decision Making for Pressure Injury Management and Support Surface Selection- 1

- Prevention of Treatment ?
- Level of Skin Protection needed ? Previous history, scar tissue, wound, site, stage/ severity, healing, will it need to be loaded? For how long?
- PI Risk :Can you feel? Can you move? Report discomfort? Nutrition ? Shear &Friction (High risk, Braden Scale- Domains score - 2 or less)
- Microclimate – humidity / temperature – intrinsic factors eg: SCI temp regulation
- Comfort/Pain levels /management ? Impact on positioning
- Weight / Shape
- How much positioning is needed?
  - Asymmetry – fixed or flexible
  - Accommodation or correction
- Function : Mobility How much help is needed for stability ? (trunk & lower limbs)

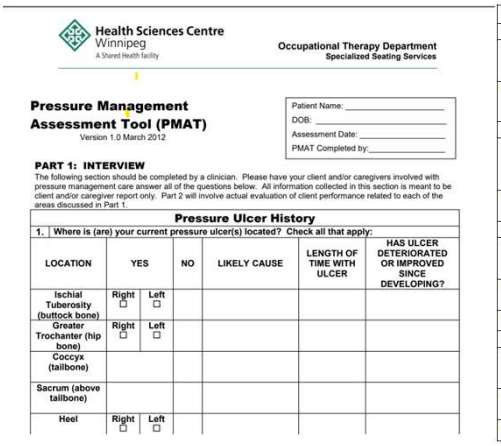
Clinical Decision Making for Pressure Injury Management and Support Surface Selection- 2

- Participation - What do they need to do? In the chair / bed ?
- Lifestyle considerations
  - Transfer method /Time in bed /chair
  - Microclimate - Temperature /Moisture
    - continence, sweating, wound exudate , outdoors . Indoors
  - Transporting (Shear, Friction ,Vibration)
  - Access to environment
- Future changes predicted to occur? Acute / chronic progressive condition ?
- Capability of client / carer for undertaking maintenance ?

7

Assessment Tool - PMAT

- Pressure Management Assessment Tool (J Bird 2008)
- https://hsc.mb.ca/wp-content/uploads/SSS-Pressure-Management-Assessment-Tool-Version-1.0.pdf



Health Sciences Centre Winnipeg
A Shared Health facility

Occupational Therapy Department
Specialized Seating Services

Pressure Management Assessment Tool (PMAT)
Version 1.0 March 2012

Patient Name: _____
DOB: _____
Assessment Date: _____
PMAT Completed by: _____

PART 1: INTERVIEW

The following section should be completed by a clinician. Please have your client and/or caregivers involved with pressure management care answer all of the questions below. All information collected in this section is meant to be client and/or caregiver report only. Part 2 will involve actual evaluation of client performance related to each of the areas discussed in Part 1.

Pressure Ulcer History

1. Where is (are) your current pressure ulcer(s) located? Check all that apply:

LOCATION	YES		NO	LIKELY CAUSE	LENGTH OF TIME WITH ULCER	HAS ULCER DETERIORATED OR IMPROVED SINCE DEVELOPING?
Ischial Tuberosity (buttock bone)	Right ☐	Left ☐				
Greater Trochanter (hip bone)	Right ☐	Left ☐				
Coccyx (tailbone)						
Sacrum (above tailbone)						
Heel	Right ☐	Left ☐				

Support Surfaces

BED AND MATTRESS

1.	What type of bed and mattress do you use?	BED: MATTRESS:
2.	Do you use any other equipment to assist with positioning or repositioning while in bed?	YES ____ NO ____ If yes, list equipment used:

WHEELCHAIR AND SEATING COMPONENTS

1.	What type of wheelchair, cushion and back support do you use?	WHEELCHAIR: CUSHION: BACK SUPPORT:
2.	Do you use any other equipment to assist with positioning or repositioning while in your wheelchair?	YES ____ NO ____ If yes, list equipment used:

TOILETING EQUIPMENT

1.	What type of equipment do you use for toileting?	☐ toilet ☐ commode ☐ other (describe):
2.	Do you use any other equipment to assist with positioning or repositioning while toileting?	YES ____ NO ____ If yes, list equipment used:
3.	Is there padding on the surface of your toileting equipment?	YES ____ NO ____

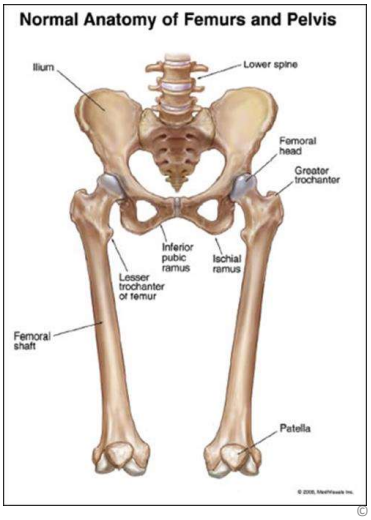
BATHING EQUIPMENT

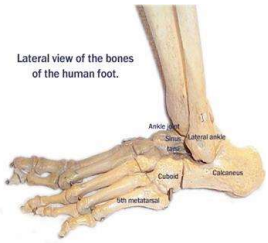
1.	What type of equipment do you use for bathing?	☐ bathtub ☐ bath seat or bench ☐ other (describe):
2.	Do you use any other equipment to assist with positioning or repositioning while bathing?	YES ____ NO ____ If yes, list equipment used:
3.	Is there padding on the surface of your bathing equipment?	YES ____ NO ____

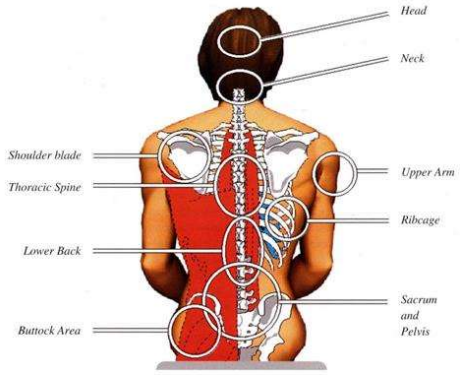
The Person

Start with the Basics:

Identify the bony prominences correctly







9

Terminology ? Body parts
Location - Location?
Implications for Assessment – accurate reporting / sharing with the MDT .

- IT's
- GT's
- Hip joint
- Gluteal cleft, natal cleft,
  - intergluteal cleft ?
- Gluteal fold
- Iliac Crest
- ASIS
- PSIS
- Buttock region ??

  Hard to target the problem !

DEMO

PI Cause ? Skin checks – identify bony prominences in all functional positions – for shearing forces & peak pressures

Review location of skin in relation to the bony prominence . How far does skin move during transfers , sitting , showering / toileting-?

11

11

Physical assessment – MAT evaluation – Posture Pressure , Skin Check , Equipment interaction , Pressure Mapping

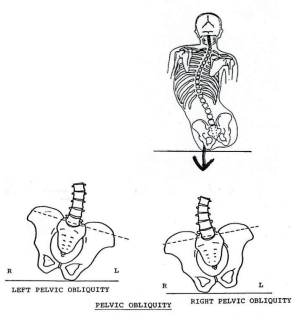
12Oct 2019

Impact of abdominal baclofen pump on seated posture- available ROM at hip ?

13

Postural Asymmetry – loading over left Ischial Tuberosity

- Pelvic obliquity/ Scoliosis
- Unrelieved sitting – no offloading
- Nonconforming seating - not spreading load
- Footplate plate height – too high
- Seat length – too short
- Cushion "bottomed out"
- Anti thrust or wedge seating
- Unstable sitting position - hemiplegia
- No lateral support
- Slung seating
- Chair/seat too wide
- Adductor spasm – LL's (asymmetrical loading)



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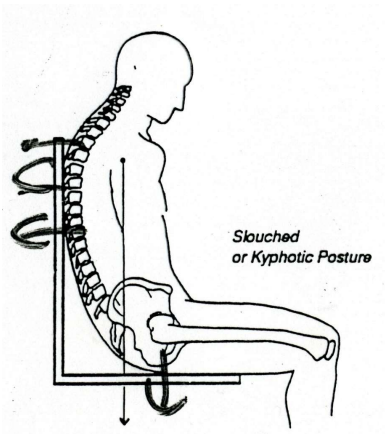
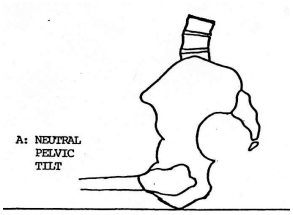
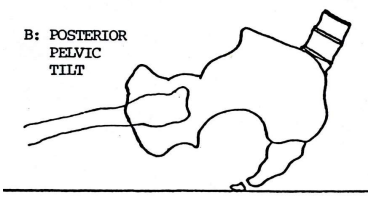
Thoracic Vertebrae pressure injury : Identify the cause

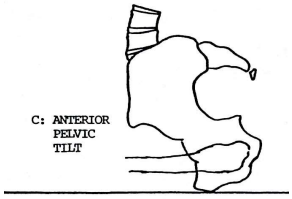


Dean & Young ©2011 15

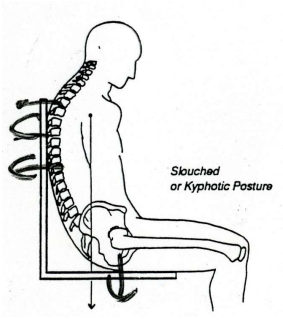
15

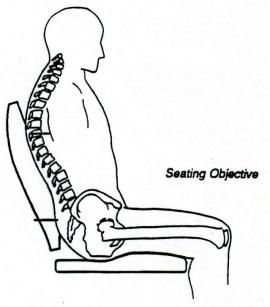






Biomechanics - Bony Landmarks? ROM?





(Sunrise Medical Jay Seating manual 1990)

Dean & Young © Feb 2009 16

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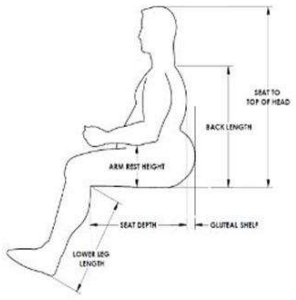
Foot positioning- where is the load ?

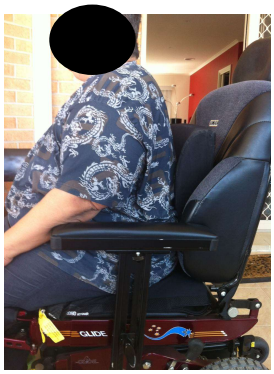
Review seated posture / pelvic , hip & thigh position

17

Impacts of body shape – Gluteal shelf

- Posterior protruding shelf alters seating and supine posture
- Poor seating - Increases PPT & back pain
- Bariatric used measurements for seating





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Regular Reassessment for equipment

Weight gain and loss, changed function, ROM , sizing for new body dimensions.
(PI risk : asymmetrical loading)

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19

Load is not just about weight !

Check impact of body shape on all surfaces .

Is the Safe Working Load (SWL) still relevant ? SWL is usually determined in supine only .

20

Reduced Range Of Movement - where is the load ?

Assessment of hip , knee , ankle ROM – helps to determine – positioning aids and support surface .

21

21

Seating and Managing Shear

Clinical Practice implications - Using Tilt before and Recline

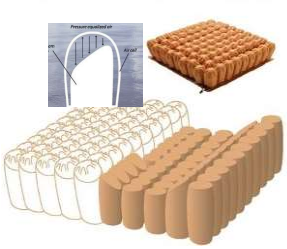
"Shear force diminished to zero in patients in a wheelchair TILTED to 25 degrees"

IN CONTRAST

A backrest only recline of 20 degrees causes a 25% increase in the surface shear force

(Hobson. DA, 1992)

Air Floatation : Check cell size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How is Equipment Classified ?

Risk level - person or equipment

- What does low, med, high risk mean to you ?
- Is equipment allocated on a risk assessment score?
  - e.g. Braden , waterlow
- Classified as treatment, prevention or both?
- No standardised equipment classifications?
  - What is it based on? Who decides ?
- Consistency of terminology? Local understanding
- Need to clarify goals of the equipment

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Terminology ? Are we all on the same page ?

Designed to replicate the body's natural spontaneous movement the NoDec 3 Airstream is clinically demonstrated to provide complete pressure elimination at regular intervals, thus ensuring that it is perfect for the **prevention and accelerated healing of all grades of pressure injuries** irrespective of mobility.

CuroCell Cirrus® 2.0 is used as an aid in the prevention and treatment of pressure ulcers up to category 4 (0-230 kg)(1), and for pain therapy

VERY HIGH RISK
HIGH RISK
AT RISK

Repose® is suitable for patients **AT RISK** to **VERY HIGH RISK**

Repose products can also be used for patients with existing pressure damage and providing treatment of grade 1 and 2 pressure ulcers.

The Ruby King Alternating Pressure Care Mattress Pump System combines micro low air loss for skin ventilation and 3-1 alternation therapies for **high risk patients** in a King Single Mattress.

The *Auto Logic* range is recommended for round-the-clock pressure injury prevention and management of **all stages** in combination with a resident/patient specific monitoring, repositioning and wound care programme

25

25

Product Evaluation :
The Profiling Bed Frame : always assess with the mattress

Functions:

- Hi – low- transfer(
- Head elevation (↑F & S)
- Knee break (↓Heels)
- Trendelenberg (↓ F & S)
- Base – solid, mesh (Bottoming out)
- Interface with other equipment
- Are all these functions available?
- Do all staff carers know how to use them, when to use and why ?
- Have you done an entrapment risk assessment ?

26

The Support Surface : What to ask suppliers ?

- Australian Therapeutic Goods Register
  - Product specifications
  - TGA registration- class 1 Medical Device
  - Global Medical Device Nomenclature (GMDN) code – defines how the product has been registered eg " therapeutic claims" ?
  - Declaration of conformity certificate (will include standards tested to / GMDN code). Technical files addressing therapeutic claims
  - Supporting independent studies/ in house studies
- Standards ISO/ RESNA / ANSI- product has been tested against
- List Goals eg: Offloading wound site, accommodate post pelvic tilt , pain management -3/ 10 , maintain mobility, microclimate impact, continence management .
  - Product features eg: Immersion, Envelopment /Stability / waterproof / longevity
    Establish products/specify features to help in goal achievement for individual trials :

27

27

Who should be assessing and prescribing support surfaces and how do we do it ? *Who is guiding purchase of equipment?*

- Standards – who sets them ?
- What information do Facilities / Procurement ask before purchase?
- Would you use a support surface algorithm ?
- How are support surfaces classified / rated ?
- What is the minimum standard equipment in ?
  - Aged care ? Hospitals ? Community ?

Where is the Nursing scope of practice in assessing and prescribing support surfaces ?

Would you be happy to sit on this for 30- 60 mins ?

What about this seat?

An algorithm for Support Surface Selection

To our knowledge, this is the first evidence and consensus-based algorithm for support surface selection that has undergone content validation."

Uses Braden mobility and moisture subscales.

J Wound Ostomy Continence Nurs. 2015;42(1):19-37.
Published by Lippincott Williams & Wilkins

WOUND CARE

Identifying the Right Surface for the Right Patient at the Right Time: Generation and Content Validation of an Algorithm for Support Surface Selection

Laurie McNichol ■ Carolyn Watts ■ Dianne Mackey ■ Janice M. Beitz ■ Mikel Gray

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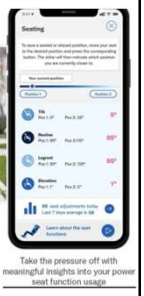
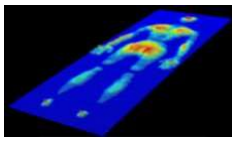
Models of care that can help improve Pressure Injury management and prevention

- Access specialist providers – MS / MND / Polio / CP alliance / SCI / SB Transition clinics/ AT specialist
- Identifying experienced providers – build capacity in the person to request level experience ?
- Ask OT / PT for postural assessment MAT / request to be included during the assessment
- Working with funding bodies -NDIS –advocating for care-coordination interdisciplinary working model
- What to ask suppliers – Checklist – specifictions equipment classifications
- Use clinical reasoning pathway (eg: ACI , SWEP, PMAT)– assessment tools and measure the outcome eg: COPM , WHOM

A few quick body positioning and product safety Take home messages

- Use the bed base functions to manage shear forces
- Shear deformation management : Tilt and recline function on chairs – use tilt **before** recline .
- Mobile shower chairs : Ask about Weight shifting tilt – more stable body position, reduces pelvic load , fits into smaller spaces
- Phone Apps to monitor positioning in wheelchair :
  - "You averaged 26 daily backrest reclines! That's a of lot shearing !"
- Check your facility - Class 1 medical devices TGA requirements ? Are they compliant ?
- Remember Pressure mapping Does NOT measure Shear and Friction





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Working in Silos Individual assessment and planning

Nursing/Podiatry/P&O
Intrinsic Focus

OT/ PT/ SW
Extrinsic Focus

Hole

Whole

The Gap !!!!!

Knowledge Gap prevents full consideration of all factors impacting the person .

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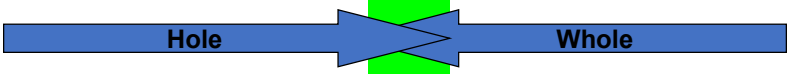
Let's work together !
Shared Interdisciplinary case assessment and management improves outcomes for the person

Nursing/Podiatry/P&O
Intrinsic Focus

OT/ PT :
Extrinsic Focus



Overlap
!!!!!

Overlap of focus would enable holistic PI management & prevention

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Resources

Assessment and management of pressure injury for people with SCI

Checklist to support the multidisciplinary approach

This checklist is intended for use with the SCI PI Toolkit found on the Agency for Clinical Innovation website [https://www.aci.health.nsw.gov.au/networks/spinal-cord-injury/resources].

It provides a summary of actions based on best practice guidelines that should be considered in the assessment and management of pressure injuries for people with SCI. Additional information and resources can be found in the toolkit. Not all actions will be applicable to all clients and situations.

Spinal Seating Professional Development Program

http://www.aci.health.gov.au/networks/spinal-cord-injury/spinal-seating

Stephens M, Bartley CA, Understanding the association between pressure ulcers and sitting in adults what does it mean for me and my carers? Seating guidelines for people, carers and health & social care professionals, Journal of Tissue Viability (2018), http://dx.doi.org/10.1016/j.jtv.2017.09.004

Lange. M & Minkel.J 2017, Seating and Wheeled Mobility: A Clinical Resource, Slack Incorporated, New Jersey

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Kottner, J, Black, J, Call et al . Microclimate : A critical review in the context of pressure ulcer prevention. Clinical Biomechanics 59(2018) 62-70 2018 .

•Lange. M & Minkel.J 2017, Seating and Wheeled Mobility: A Clinical Resource, Slack Incorporated, New Jersey

•Romanelli, Clark, Gefen , Ciprandi- Science and Practice of pressure Ulcer

•Management – second edition . Springer- Verlag London 2018 .

Sonenblum, S.E., J. Ma, S.H. Sprigle, T.R. Hetzel, and J. McKay Cathcart, Measuring the impact of cushion design on buttocks tissue deformation: An MRI approach. J Tissue Viability, 2018. 27(3): p. 162-172. 2.

•Stephens, M., and Bartley, C. (2017) Understanding the risk of pressure ulcers and sitting in adults: What does it mean to me and my carers? At a glance document to help you decide. Tissue Viability Society: Leeds.

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Resources NPIAP : S 31 - Support Surface Initiative updates & Wheelchair Pocket Guide

Mobile Shower Commode (MSC) Assessment and Prescription Tool

©https://www.health.qld.gov.au/__data/assets/pdf_file/0024/423951/msc-assess.pdf

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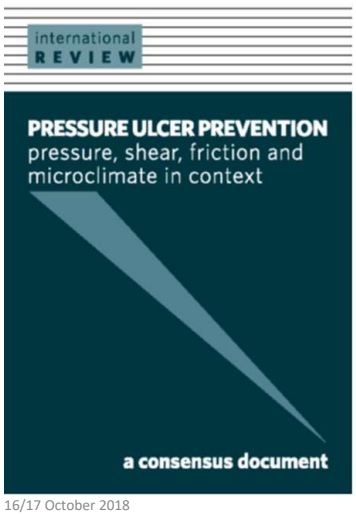
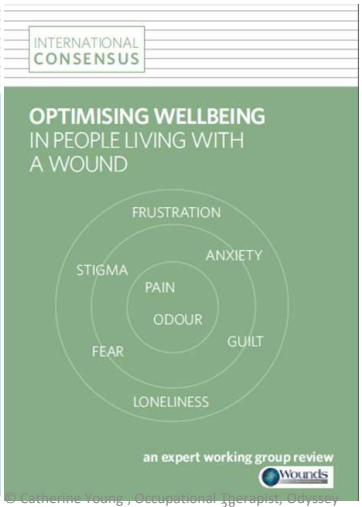
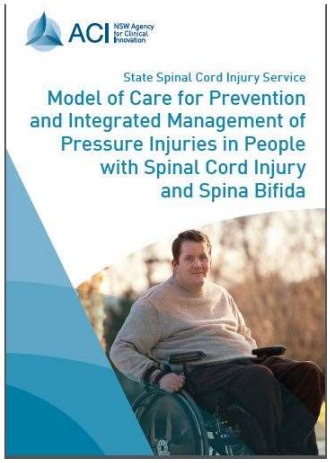
http://www.woundsinternational.com/pdf/content_8925.pdf



http://www.woundsinternational.com/pdf/content_10309.pdf



http://www.aci.health.nsw.gov.au/



16/17 October 2018

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