Guide for selection of devices and equipment to reduce skin pressure

SA Health has developed a panel contract for purchase and hire of a variety of devices for pressure injury reduction.

What are these and what are they used for?

Active (or dynamic) mattresses or chair cushions assist in pressure relief.
These devices require a power source to alternately inflate and deflate series of cells. This action has the effect of changing the areas of skin that are weight (pressure) relieved with those that are under pressure from body weight. During the times of offloading, the circulation is improved. There are some devices such as memory foam and sheepskin also available. These are static, and are considered to offer inferior pressure relief.

Standard mattresses

The minimum requirement for standard mattresses in SA Health facilities is for a Pentaflex or equivalent high specification foam mattress with features as described in the Pan Pacific Clinical Practice Guideline for the Prevention and Management of Pressure Injury, page 43 (Australian Wound Management Association, AWMA 2012). Standard mattresses meeting these specifications should be provided for all patients except for babies and small children who require specialised paediatric equipment. Replacement programs should be in accord with these specifications.

This guide is designed to assist health services to make decisions regarding the most suitable mix of purchased and hired devices, and the local systems for ensuring rapid provision of devices, and staff training.

The decision-making will benefit from the combined expertise of the Pressure Injury committees, procurement officers, equipment officers and clinical experts.

Specialized mattresses and cushions

Consumers who have an existing pressure injury or have been assessed to be at high risk of pressure injury require mattresses, cushions and/or devices to reduce skin pressure and to supplement nursing care and promote skin integrity. There are clinical decision-making processes described in the SA Health Pressure Injury Prevention and Management Guideline. There will be some consumers who are assessed as medium risk who will also require these devices, and some who are at high risk, where the use of devices is deemed inappropriate, and reasons will need to be documented in medical records.

Roles for Committees and equipment managers:

a. Consider whether to hire, purchase or a mixture. Consider the range of options to be used in the health service
Take into account:

- time to provide the device to the patient
- ease of cleaning and maintenance. The cost of hiring includes cleaning and maintenance.
- flexibility – hiring may ensure that the most suitable device can be selected from a greater range of options

b. Develop easy systems for approval, ordering, tracking and reconciliation

- In general, on-line ordering is preferred and may be cheaper.
- Establish and use appropriate processes to approve expenditure, verify provision of the device(s), and authorise payment from correct cost centres.

c. Ensure skilled, knowledgeable care is provided

Training should be made available to clinical staff who use these devices

- Note that free product training and clinical training are available from some Contractors.
  - Product training includes training in selection, installation, monitoring, and trouble-shooting
  - Clinical training includes prevention, and management of pressure injuries

d. Ensure that all support surfaces and/or devices are installed and used in accord with the manufacturers instructions, and with standards for infection control.

Roles of clinicians to promote skin integrity are:

1. Act quickly

For those at high risk, including those with an existing pressure injury, steps should be taken immediately to relieve pressure. This can be done with positioning and whatever devices are available to offload the affected area. Minutes can be important.

A four hour maximum has been set for the provision of hired pressure devices.

2. Off-load where possible

Complete pressure relief is optimal. Where there is pressure injury present, complete off-loading of affected area will optimise healing.

3. Continue other nursing care once device(s) in place

To achieve best practicable pressure relief and/or healing it is important
that re-positioning, skin inspection and other nursing care and observations are continued in conjunction with use of support surfaces, equipment and/or devices

4. Select correct device(s) (Refer to Tables 1 and 2).

Full mattress replacement with alternating cells (an active or dynamic system) is considered to provide superior pressure relief to a thinner overlay. This is particularly the case for consumers who are immobile.

An overlay can be easier for bed mobility and transfers, and may be more cost effective. Use of overlays will be limited by level of risk, body size and the dimensions of the bed and mattress upon which it will be used

Consider consumer-related factors, including

- Level of risk of pressure injury – high or medium. Note that anyone with any pressure injury is at high risk.
- Body weight and skin temperature, sweating.
- Location of the most at risk area of skin, eg heels, sacrum, skin near tubing or device
- Mobility

Consider bed related factors when mattress or overlay fitted , including

- Risk of entrapment
- Reduced effectiveness of bed rails (particularly with overlays)

5. Use device correctly

- All support surfaces and/or devices should be installed and used in accord with the manufacturer's instructions.
- The functioning of all support surfaces and/or devices should be monitored and reviewed on at least a daily basis.
- Check for 'bottoming out' at least once every shift.

Table 1: Guide for selection of support surfaces or devices for bed and chair

	Bed	Chair	Heel, foot
High risk	Active (dynamic) support mattress or overlay	**Sacral / ischial pressure injury present** > Active (dynamic) cushion or static cushion that fully off loads affected part. **No pressure injury** > Active (dynamic) cushion > OR static eg memory foam	**Heel, toe, ankle pressure injury or diabetic ulcer present** > Fully offload area(s) with appropriately fitted device or pillows under leg **No heel, foot pressure injury or other** > selected mattress +/- appropriately fitted device or medical grade sheepskin
Medium risk	Active (dynamic) support mattress or overlay	> Active (dynamic) cushion > OR static eg memory foam Consider restricting sitting time to 1 hour	Consider medical grade sheepskin if no other device available.
Low risk	Pentaflex or equivalent	Not applicable	None unless completely immobile for 2 hours or more eg theatre Consider medical grade sheepskin

Table 2: Mattress overlay, or full thickness mattress replacement?

Considerations	Active (dynamic) Mattress replacement	Active (dynamic) mattress overlay
1. Risk level	High (usually – but consider other indications below)	Medium (usually – but consider other indications below)
2. Body weight of patient and skin temperature, sweating	For patients over 120kg, an overlay may provide insufficient pressure relief (check manufacturers recommendations) For patients over 150 kg consider a bariatric mattress and bed. Consumers with very high BMI may also require a device designed to keep skin temperature lower and provide air flow.	The pressure relief offered by an overlay may be sufficient for consumers with low BMI patients (check manufacturers recommendations) Consumers with very low BMI may require a device that is softer and warmer
3. Patient's level of mobility	Patient has no / minimal independent mobility. > Full mattress replacement with alternating cells (an active or dynamic system) usually provide superior pressure relief than a thinner overlay.	Consumer has some independent mobility or who transfers in and out of bed > An overlay, which is thinner and less enveloping, may allow some mobility while providing adequate pressure relief. A full mattress replacement is difficult to move around on and can therefore limit the consumers' ability to move around the bed, and get in/out of the bed. Consider a chair cushion, particularly if the sacral area is at risk.
4. Bed and bedrails dimensions	Reduce entrapment risk by ensuring that the size of mattress matches bed such that there is : > no gap that is greater that 120mm between the edge of the mattress and inside edge of bedrails. (Risk is highest if cognition or consciousness are affected)	Reduce entrapment risk by ensuring that the size of overlay matches bed such that there is : > no gap that is greater that 120mm between the edge of the overlay and inside edge of bedrails. (Risk is highest if cognition or consciousness are affected) Reduce the risk of the patient falling if bed rails are required by ensuring that there is: > at least 220 mm between the top of the inflated overlay and the top edge of the extended bed rails. (Risk is highest with restless patients with cognitive deficit, or during transport

For more information

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