

Appendix L: Support Surface Selection Tool

Adapted from: Norton, L., Coultts, P., Sibbald, R. G. (2011). Beds: Practical Pressure Management for Surfaces/Mattresses. *Advances in Skin & Wound Care*, 24(7), 324-332.

With an evidence-based practice background (scientific evidence, expert knowledge and patient preference), clinicians still require a user-friendly guide to translate this information into practice to potentially improve patient care outcomes. The Support Surface Selection Tool was first developed in 2008 to respond to this need. This tool stratified the types of support surfaces (active support surfaces and reactive support surfaces) based on the risk of the client developing pressure ulcers or the number of ulcers the client has and their mobility status. Feedback from clinicians indicated that while the tool was helpful, further assistance was required to select the additional features. As a result, two decision trees were created to help with the selection of specific features of active and reactive support surfaces.

As illustrated in Figure 1, a validated risk assessment tool should be utilized to determine the type of support surface required for an individual client (i.e. the columns across the top of the chart in Figure 1). If the client currently has pressure ulcers, choose the description in the first row which best fits the client's clinical status. Note that the heels are excluded from this clinical description as heels are best managed independently from the bed surface (RNAO, 2007; NPUAP & EPUAP, 2009).

Next determine the client's usual degree of mobility in bed by selecting the appropriate row listed down the side of the chart. Where the column of "risk" intersects with the row of "mobility", a specific type of support surface is recommended; either a reactive support surface or an active support surface. If a reactive support surface is recommended, go to the reactive support surface decision tree (Figure 2). If an active support surface is recommended, go to the active support surface decision tree (Figure 3). Follow the decision tree to identify other specific features that may benefit the specific client. Recognize that this algorithm is not designed to replace clinical judgment, but is designed to assist the clinician to choose features for their client based on a comprehensive assessment of each individual client. Specific examples of support surfaces can be added in to the last box of the decision tree based on the surfaces available in your setting.

Figure 1

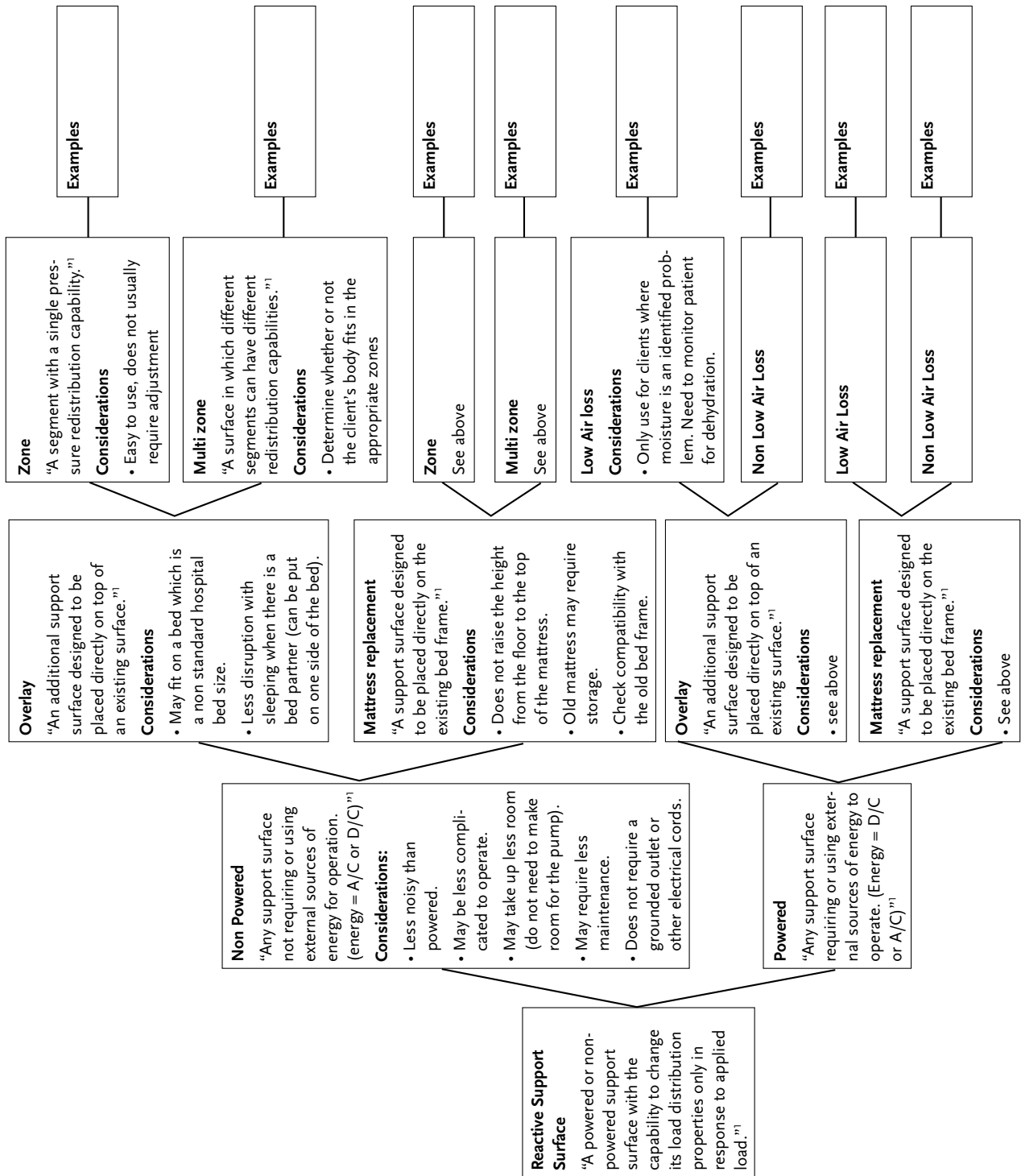
© Norton, Coultts, Sibbald		Validated Risk Assessment Score or Pressure Ulcer Description			
		At risk Or Redness present which fades quickly when pressure removed	Moderate risk Or Pressure ulcer (excluding the heels) where the client can be positioned off the ulcer	High Risk Or Pressure ulcer (excluding the heels) and redness over another area	Very High Risk Or Multiple pressure ulcers (excluding the heels) or the client can not be positioned off of an ulcerated area
Ability to change position in bed (i.e. bed mobility)	Total assist to change position in bed	Reactive Support Surface (non powered) (e.g. air/gel/foam overlay)	Reactive Support Surface (e.g. air/gel/foam overlay)	Active Support Surface Multi-Zoned Surface (e.g. alternating pressure mattress, rotational surface) or a powered reactive support surface (e.g. low air loss)	Active Support Surface Multi-Zoned Surface (e.g. alternating pressure mattress, rotational surface)
	Moderate assistance with bed mobility required.	Reactive Support Surface (non powered e.g. air/gel/foam overlay or high density foam mattress)	Reactive Support Surface (e.g. foam overlay with air section insert in the area of the wound)	Reactive Support Surface (non powered e.g. foam overlay with air section insert in the area of the wound)	Active Support Surface Multi-Zoned Surface (e.g. alternating pressure mattress, rotational surface)
	Client independent with or without a device with bed positioning (light assist may be required)	Reactive Support Surface (eg High density foam mattress)	Reactive Support Surface (e.g. foam overlay with air section insert)	Reactive Support Surface (non powered) (e.g. air/gel/foam overlay)	Active Support Surface (if the controls can be placed within the client's reach)

Users guide:

1. With a validated risk assessment tool, determine the patient level of risk OR grade the patients with ulcers based on the clinical descriptors
2. Assess the level of mobility in bed and follow the column and row intersection to determine the appropriate reactive or active support system
3. For more information on reactive surfaces see figure 2 and for more information on active surfaces see figure 3

Figure 2 Reactive Support Surface

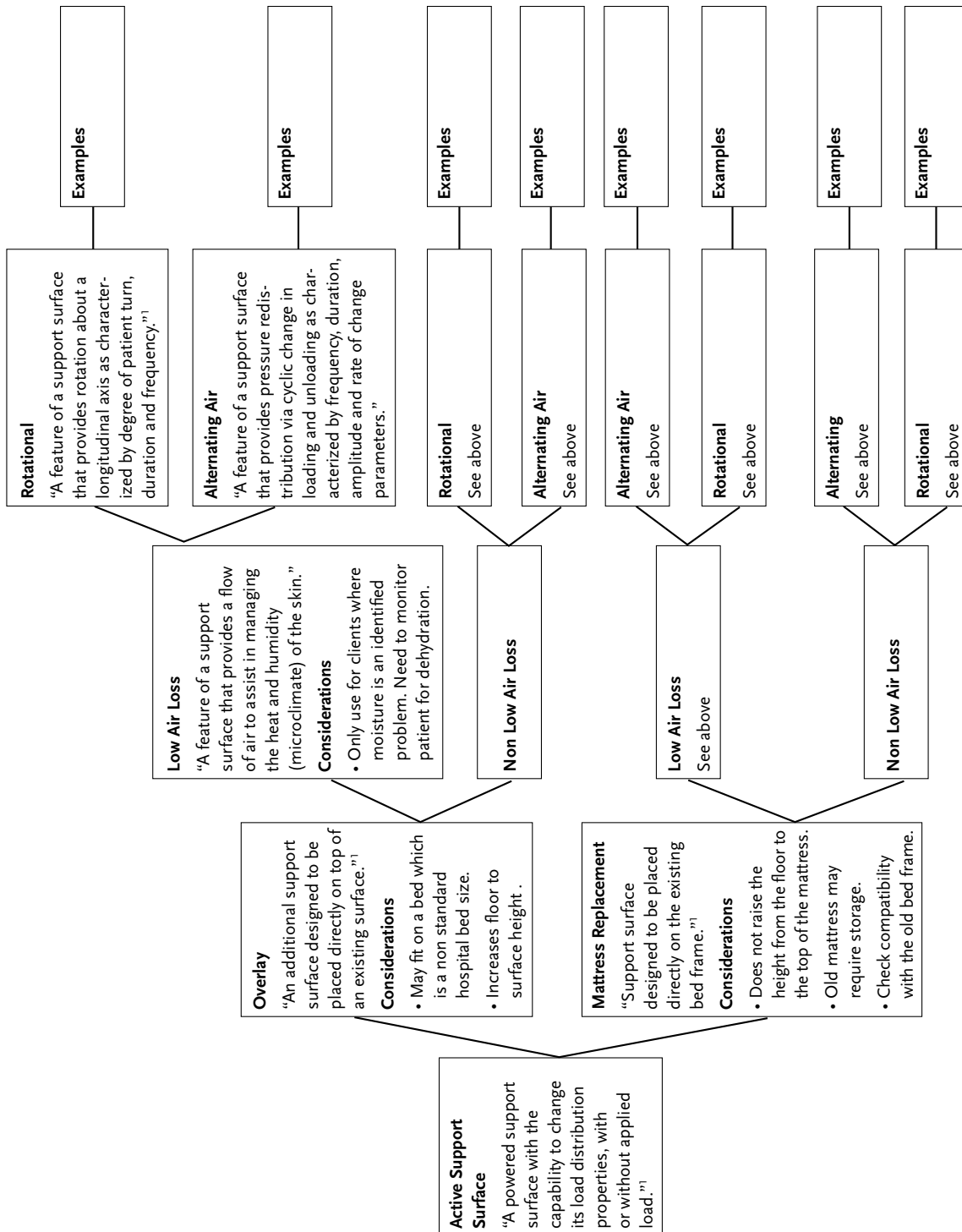
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¹National Pressure Ulcer Advisory Panel, Support Surface Standards Initiative: Terms and Definitions version 01/29/2007 http://www.npuap.org/NPUAP_S3I_TD.pdf. Accessed 03/21/ 2007.

Figure 3 Active Support Surface

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¹National Pressure Ulcer Advisory Panel, Support Surface Standards Initiative: Terms and Definitions version 01/29/2007 http://www.npuap.org/NPUAP_S3I_TD.pdf. Accessed 03/21/ 2007.

Notes for both Active and Reactive Surfaces:

- Support surfaces do not substitute for turning schedules.
- Check weight limits of the surfaces prior to use.
- Follow the manufacturer's directions regarding cleaning and infection control.
- Manage heels independently from the surface (i.e. suspend the heels above the surface or use heel booties).

Summary

The selection of a therapeutic support surface is an integral part of the pressure prevention and management plan of clients, but does not replace good client care. Turning and repositioning are still required despite having a therapeutic support surface. Support surfaces can help to reduce the forces of pressure, friction and shear against the client. With the multitude of surfaces available, all with different costs, it is important to choose the support surface with the features which best match the client's individual needs, that does not restrict their mobility and is easy for caregivers to use. The support surface selection tool presented in here facilitates the linkage of client and clinician needs with specific therapeutic support surface features.

Appendix M: Seating Assessment

A seating and mobility assessment requires a specialized expertise. As a result, all clients at risk of developing pressure ulcers, or who have pressure ulcers and sit in a wheelchair or other chairs should be referred to an occupational or physical therapist with an expertise in seating and mobility. These individuals are often familiar with various funding sources both governmental and non-governmental which may be able to assist the client with the purchase of any needed equipment. A seating assessment should occur every two to three years, whenever the client has status changes, or where there is a risk of pressure ulcer development.

There are other activities that members of the health-care team can do to maximize the reduction in pressure, friction and shear when sitting. These include:

- **If the client uses a wheelchair, ensure that the wheelchair and seat cushion have been prescribed for that client and it is the latest prescription.** Clients may have been given a wheelchair that was prescribed for another relative, or purchased without a therapist's involvement. In these situations, the fit of the chair may not be ideal. In other cases, the client may have a newer piece of equipment that they are not using. Encouraging the use of the most recently prescribed equipment may help to minimize friction and shearing forces.
- **Check that there are no foreign objects in the wheelchair.**
- **Encourage clients to engage in weight shifting behavior.** Depending on the abilities of the client this may include shifting from side to side, leaning forward or using the tilt feature on their chair.
- **Assist clients to reposition themselves in the wheelchair at least every 2 hours.**
- **Always use a specialty wheelchair cushion, which has been prescribed by an occupational or physical therapist. Ensure this cushion is correctly placed in the wheelchair.** Many cushions have contours on the top of the cushion. The contour in the middle on one side of the cushion is called a pommel. The pommel should be positioned on the top at the front of the wheelchair, as it is designed to help align the legs. Provide education for the client and/or family on cushion use.
- **Check to ensure that the wheelchair is properly maintained and is not worn or bottoming out.** As foam cushions near the end of their life span, they may not return to their original shape when the client's weight is removed; alternatively they may collapse under the client and not distribute the pressure under the client. Some gel cushions may leak. Bottoming out or leaking are indicators that the client requires a new pressure management cushion. Air cushions should be checked to ensure they are properly inflated weekly. The only way to check the inflation of an air cushion is to put your hand between the client and cushion when the client is sitting normally on the chair (Note: wear gloves during this procedure. A low friction sleeve or sheet over the glove will make this process easier). There should be approximately one inch of air between the client's lowest bony prominence, and the bottom of the cushion (see diagram below).