

Developing a Therapy Bed Assessment Tool

BY Kathryn Kozell

Therapeutic mattresses and bed frames are designed to provide either pressure reduction or pressure relief in situations where skin integrity or other physiological systems are in jeopardy of potential or actual injury. One of the greatest challenges for the clinician is to select the most appropriate product for a patient's specific individual demands. The experience of St. Joseph's Health Care London, in identifying the multiple risk needs of patients, institutional requirements and using an interdisciplinary team approach for developing a therapy bed assessment tool may serve as a useful model for other facilities.

There is a heightened awareness among health-care professionals to seek out the best possible products that will provide the most efficient and effective therapeutic response. This has been well demonstrated with the vast selection of wound-care products available to meet the specificity of any wound. In the treatment of pressure-related skin injuries, specialty beds, perhaps surprisingly, are not a new supportive device. In *A Historical Perspective on Specialty Beds and Other Apparatus for Treatment of Invalids*¹ a medical report from way back in 1585 cites the "successful use of a down cushion in concert with a program of nutrition, hygiene, and pain relief for a pressure ulcer." In today's world of therapeutic mattresses, manufacturers have responded with many therapeutic pressure devices; however, the decision-making process leading to the appropriate selection of *the right mattress for the right patient* can be as challenging as the presentation of any wound.

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Therapy Bed Task Force

Our facility established the Therapy Bed Task Force, a nursing initiative that was composed of various clinicians representing the intensive care unit, orthopedics, family medicine and palliative care, as well as an acute care nurse practitioner/clinical nurse specialist/enterostomal therapy nurse in surgery, a purchasing representative from materials management, and a territory sales manager from the contracted company from which the therapy beds were being rented. The mandate of this team was threefold: 1. investigate and identify the pattern of therapy bed utilization within the health centre; 2. develop and implement a system that would monitor and provide consistent and effective therapy bed utilization; and 3. control the financial allowance dedicated to therapy bed rental.

Doughty, Fairchild and Stogis² referred to a three-phase decisional approach regarding the use of replacement mattresses. Using this approach in a slightly modified process, our team concluded it was important to determine the following:

1. who was using the therapy bed
2. what the selection criteria were
3. what therapy bed would then be selected for implementation

Results of the Task Force

The Task Force identified that there were high-demand therapy bed units (the intensive care unit, orthopedics and family medicine/palliative care) and low-demand therapy bed units (general medicine, general surgery—

TABLE 1

Clinical Diagnoses/Characteristics

Medical	Surgical	Critical Care
Dermatitis	Flaps, grafts	Hemodynamically unstable
Oncology	Draining wounds	Comatose
Paralysis	Sepsis	Positional intolerance
Multiple ulcers	Multiple ulcers	Sepsis
Multiple fractures secondary to pathology	Multiple bone fractures	Large abdominal wounds
	Failed grafts	

primarily the vascular population). Once the patient-care areas were recognized, it was then critical to determine and analyze the patient demand, (essentially, what diagnoses or health-care patterns were patients presenting that warranted a therapy bed?). Table 1 identifies the patient clinical characteristics for each of the high/low demand areas.

Documentation Development

During this period, the health centre's nursing documentation was undergoing redesign to reflect Marjorie Gordon's Functional Health Patterns.³ The typology of the functional health patterns provides an assessment framework for identifying a patient's health pattern profile. To be consistent with both the documentation policy of the health centre and the overall nursing documentation system, the Therapy Bed Task Force adapted five of Gordon's 11 functional health patterns as the overall framework for the assessment tool (see Table 2). The task force added a sixth and seventh health pattern, **Mobility-Exercise** and **Integumentary**. Integumentary was specifically added, rationalizing that the skin, as the largest organ—being multifunctional and subjected to varying degrees of threat and injury—was deserving of its own category.

The creative aspect of developing the therapy bed assessment tool came with identifying the range of "health responses" within each of the assessment health

patterns. This was accomplished by combining patient characteristics within each of the high- and low-demand units with the clinical descriptors as found in the Braden Scale for Predicting Pressure Sore Risk.⁴ Each functional health pattern category now had three to four descriptors, which described a range of health demands (from free of functional health demands to very complex functional health demands). A score of zero (no risk) to eight (multiple risks) was assigned to each of the health responses.

The territory sales representative

of the bed company contracted to our region was instrumental in providing the task force with information about each of the therapy mattresses available. The clinical data to support their function, anticipated outcome and specific features given the health demand of the patient were reviewed and incorporated into the tool. An assessment score was developed that further identified the type of therapy bed for the score range.

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References

1. Levine JM. A historical perspective on specialty beds and other apparatus for treatment of invalids. *Advances in Wound Care*. 1994;7(5):51-54.
2. Doughty D, et al. Your patient: Which therapy? *Journal of Enterostomal Therapy*. 1990;17(4):154-159.
3. Gordon M. *Nursing Diagnosis: A Process and Application*. McGraw-Hill. 1982.
4. Bergstrom N, et al. The Braden scale for predicting pressure score risk. *Nursing Research*. 1987;36(4):205-210.

TABLE 2

Modified Gordon's Functional Health Patterns (with sixth and seventh categories added)

- Health–perception–health management patterns
- Nutritional–metabolic pattern
- Elimination pattern
- Activity–exercise pattern
 - Sleep–rest pattern
 - Self perception–self-concept pattern
 - Role–relationship pattern
 - Sexuality–reproductive pattern
 - Coping–stress-tolerance pattern
 - Value–belief pattern
- Cognitive–perceptual pattern
- Mobility–exercise
- Integumentary

TABLE 3

Therapy Bed Assessment Tool (TBAT)

PO #	Room #	
Date Bed Received:	Ht.:	Wt.:

Assessment	Recommended Bed Type	
0–5	Not Recommended – Conservative	
6–10	First Step Select	
11–15	Therakair	Max. 200 lbs. ambulatory, pressure relief, edema, pulsation mattress
	Kinair	Max. 300 lbs., non-ambulatory, advanced pressure relief, no pulsation
16–20	Therapulse	Max. 300 lbs., non-ambulatory, advanced pressure relief, edema, pulsation
ICU only	Biodyne	Max. 300 lbs., rotation, wider bed, deeper cushion, advanced therapy relief
	Triadyne	Kinetic rotation, percussion, vibration, pulsation, pressure relief
Safety/Management	Barikair	Wt: 350–850 lbs.

Risk Factor Assessment	Date			
	Score	Wk. 1	Wk. 2	Wk. 3
Health Management Pattern				
Free of major non-active health problems	0			
Intractable pain, grafts, myocutaneous flaps	1			
PVD, failed grafts/flaps, edematous, septic, fractures	2			
Hemodynamically unstable, chest trauma, CVA, neurological conditions, ventilatory instability	3			
Activity-Exercise Pattern				
Ambulatory without assistance	0			
Up in a chair, confined to chair/wheelchair	1			
Bed rest	2			
Mobility-Exercise Pattern				
Independently moves extremities	0			
Two turning surfaces available	1			
One turning surface available	2			
Immobile	3			
Elimination Pattern				
Full bowel/bladder control, no diaphoresis	0			
Either bowel/bladder incontinence, or diaphoresis	1			
Bowel and bladder incontinence, no diaphoresis	2			
Bowel and bladder incontinence and diaphoresis	3			
Integumentary				
No skin breakdown	0			
Stage I–Epidermis intact, reddened	2			
Stage II–Blistered, epidermis break, more than two ulcers, moderate to large draining wounds	4			
Stage III and IV–Ulceration to tendon, bone, muscle	8			
Nutritional-Metabolic Pattern				
Nourished–adequate food/fluid intake, weight stable	0			
Malnourished–limited oral intake, dehydrated, obese, cachectic, IV therapy, enteral supplements	1			
Supplemented–no oral intake, TPN	2			
Cognitive Pattern				
Alert, oriented x 3	0			
Confused, disoriented, responds to visual, verbal, pain stimuli	2			
Comatose (no visual, verbal, pain response)	3			
Total Score				
Nurse's Initials				

Upon completion of the assessment tool, the clinician calculates a total score, which provides a recommendation for the type of therapy bed appropriate for the patient being assessed (see Table 3).

Therapy Bed Assessment Tool Development

The outcome was a Therapy Bed Assessment Tool, which is designed to guide the clinician through a systematic process of assessing the patient through each of the seven functional health patterns. The operational word here is “recommended.” The clinician must still use his or her judgment to match the needs of the patient with the recommendation, always leaning toward maximizing the patient’s potential with the therapy bed and supporting those areas the patient and staff cannot meet together.

There are certainly limitations to this tool, as it was designed with the acute-care perspective only and it has never been put through the rigours of being tested for reliability or validity. However, it has reinforced that the prescriptive nature of a therapy bed shows that it is not “a luxury item” but is an important and necessary variable in the overall treatment plan, which is grounded in science and research. ☺

Note to readers: The printing of brand names in the assessment tool does not in any way indicate an endorsement by the Canadian Association of Wound Care or *Wound Care Canada* for any of the products listed. Brand name inclusion was permitted to preserve the original intent of the tool.