

Pressure Management Assessment Tool (PMAT): Development and Implementation of a Comprehensive Clinical Evaluation for Managing Pressure from a 24 Hour Perspective

**Presented by: Jennifer Birt, OT Reg(MB)
Specialized Seating and Mobility Clinical Specialist
Rehabilitation Day Program**

Learning Objectives

1. Describe a minimum of 6 factors that commonly contribute to pressure ulcer development from a 24 hour perspective
2. Identify a minimum of 6 assessment techniques that can be utilized when evaluating these pressure factors
3. List a minimum of 6 recommendations guided by best practice to resolve these pressure factors
4. Problem-solve practical strategies for implementing pressure management recommendations in various health care settings

Specialized Seating Services (SSS)

Consultative service for individuals 18 years of age and older who use wheelchairs as their primary means of mobility and are experiencing complex seating issues that cannot otherwise be addressed through their primary therapists

- Catchment: Manitoba and Nunavut
- All continuums of care
- 3 main specialty areas:
 1. Skin and Wound
 2. Posture and Positioning
 3. Assistive Technology

SSS Structure

- **Setting:** outpatient clinic
- **Service delivery model:** consultative-collaborative
- **Staffing:**
 - 1.0 EFT Clinical Specialist
 - Combined 0.6 EFT Seating Therapists (2 OT, 1 PT)
 - 1.0 EFT Rehab Assistant
- **Additional core team members:**
 - Equipment supplier
 - Assistive Technology Products and Services
- **Multidisciplinary consults (as needed):**
 - RN
 - Physiatrist (SCI)
 - Dietitian
 - Home Care

SSS Skin & Wound Clients



Ischial Tuberosity



Coccyx & Sacrum



Entire Posterior
Pelvis



4 Flap Surgeries



Greater Trochanter
& Ischial Tuberosity



Moisture and Shear

Equipment and Services in Manitoba

- **Government-funded recyclable wheelchair program (SMD)**
 - Long-term care residents excluded
 - Self or 3rd party funding required for all seating components and accessories
 - Eligibility criteria for specific wheelchairs
- **Home care program**
 - Transfer, bed, and toileting equipment
 - Therapeutic sleep surfaces (eligibility criteria)
 - Max care hours (includes RN) = 40-50 hours/week
 - Rural and long-term care residents excluded

State of SSS in 2008

- Wait list 12-18 months
- “Dump and run” referrals
- 40% pressure ulcer referrals – no prioritization system
- Themes that emerged beyond seating:
 1. Positioning and support surfaces outside the wheelchair
 2. Transfers over a 24 hour period
 3. Readiness for change
 4. Case coordination and system navigation
 5. Multidisciplinary involvement
- Awareness that **seating alone** would not solve the pressure issues

Pressure Ulcer Best Practice

- Literature Review:

1. National Pressure Ulcer Advisory Panel (NPUAP)/European Pressure Ulcer Advisory Panel (EPUAP) best practice guideline (2009)
2. New South Wales (NSW) State Spinal Cord Injury Service (SSCIS) consensus document (2008)
3. Spinal Cord Injury Rehabilitation Evidence (SCIRE) (2006) (updated 2009)
4. Winnipeg Regional Health Authority (WRHA) guideline (2003) (currently being revised)
5. Registered Nursing Association of Ontario (RNAO) best practice guidelines (2002) (revised 2007)
6. Paralyzed Veterans of America (PVA) clinical practice guideline (2000)
7. Canadian Association of Wound Care (CAWC) best practice guideline (2000)

Best Practice VS Clinical Practice

Needed a systematic way of evaluating pressure ulcer issues **SEPARATE** from the seating assessment

Best Practice

Treatment Themes

- **Eliminate causative factors**
- Offload ulcer
- Regular repositioning
- Positions to avoid
- Regular skin checks
- Support surface re-evaluation
- Wound management
- Address nutrition
- Education

Disconnect for Clinical Practice

- Specifically vague
- Sometimes contradictory
- Access to care when assistance required
- Access and timing for appropriate equipment
- Lack of role clarification
- Lack of standardization
- Provided with “what” not “how to”

24 Hour Pressure Management

BOTTOM LINE:

- **Identify and eliminate causative factors**

What is the OT role in this?

- **Function over the entire day within environmental context**
- **Positioning, repositioning, functional mobility and support surfaces**
- **Make recommendations practical for everyday living**

Pressure Management Assessment Tool (PMAT) Development

PURPOSE:

To provide a structural framework for investigating and evaluating causative factors involved with the functional aspects of pressure ulcer development from a 24 hour perspective

To generate a list of “red flags” as well as recommendations for systematically eliminating these contributing pressure ulcer factors

PMAT Structure

Part 1: Interview

- Questionnaire format
- Generate list of red flags for causative factors
- Client insight and lifestyle choices

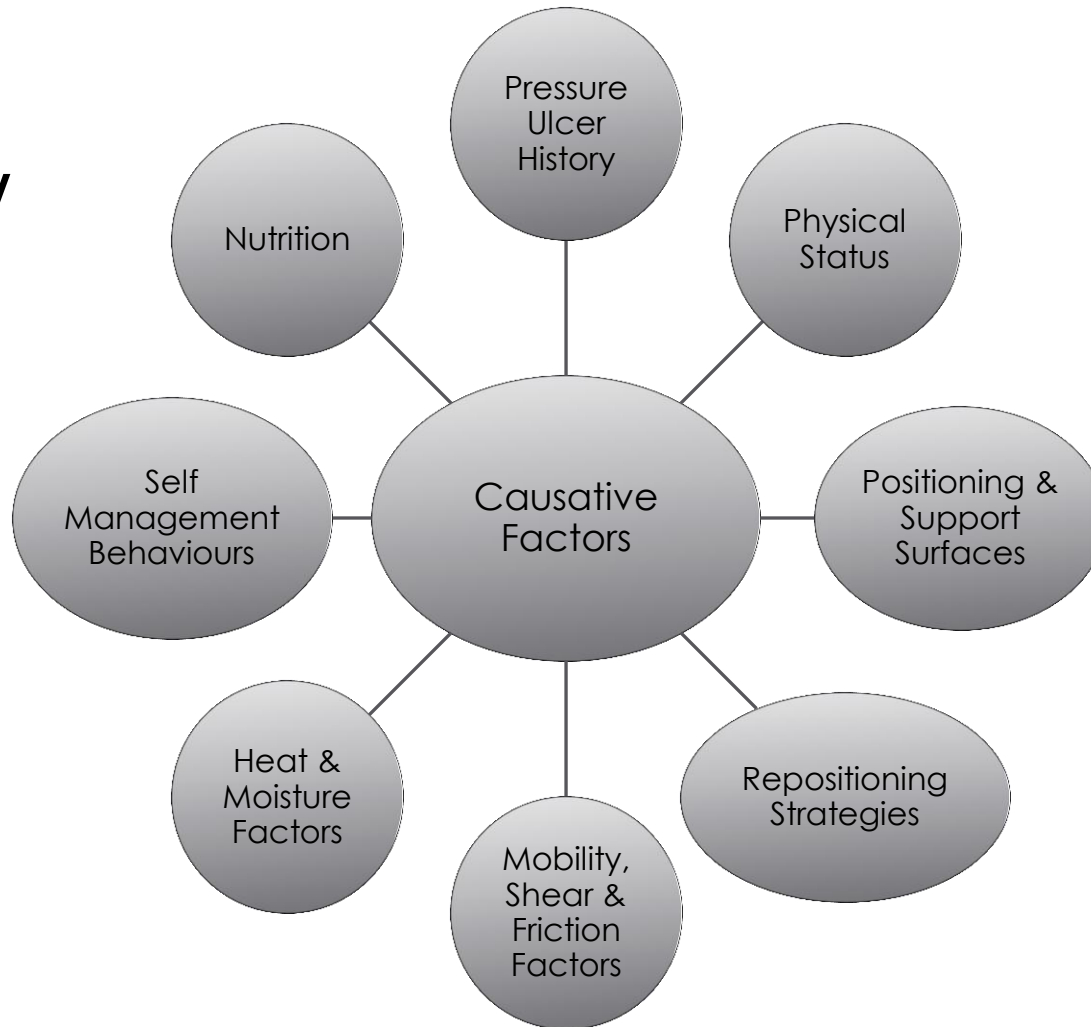
Part 2: Assessment

- Clinician evaluation of causative factors
- Cross reference to part 1 (report vs performance)

Part 3: Findings

- Identify and prioritize intervention strategies
- Behavioural contract
- Medical record

Part 1: Interview



Part 2: Assessment

ASSESSMENT	SUBCOMPONENTS
Support Surface & Positioning Evaluation	<ul style="list-style-type: none">• All support surfaces• Positioning on each surface• Palpation and visual inspection of ulcer
Equipment Evaluation	<ul style="list-style-type: none">• Proper set-up• Working condition
Skin Evaluation	<ul style="list-style-type: none">• Client directed skin check• Wound evaluation
Transfer & Mobility Evaluation	<ul style="list-style-type: none">• Transfer assessment• Wheelchair propulsion• Dynamic wheelchair features• Bed mobility

Part 2: Assessment

ASSESSMENT	SUBCOMPONENTS
Pressure Redistribution Movements in Sitting	<ul style="list-style-type: none">• Capable of movement• Movement effective
Postural Screen in Sitting	<ul style="list-style-type: none">• Pelvis and hips• Lower extremities• Trunk• Upper extremities• Head and neck
Cognitive Screen	<ul style="list-style-type: none">• Insight, awareness, comprehension• Problem solving• Memory• Lifestyle choices & attitude

Part 3: Findings

Assessment Summary

- Overall impression of pressure ulcer factors
- Main areas of concerns
- Changes required to eliminate factors
- Consequences if changes are not implemented
- Necessary buy-in

Recommendations

- Itemized list of recommendations to address all contributing factors
- Prioritized list
- Accountability delegated
- Detail oriented - practical

Positioning & Support Surfaces

INTERVIEW:

How many hours do you spend in bed on an average day?

How many times do you change between different positions while in bed?

How long do you typically stay in each position?

What type of bed and mattress do you use?

Positioning & Support Surfaces

ASSESSMENT:

Support Surface	Positions to be Evaluated	Palpation & Visual Inspection of Pressure Ulcer(s)	
		Pressure Ulcer is Weight bearing	Pressure Ulcer is Offloaded
BED	Supine (flat)		
	Supine (head of bed raised ___°)		
	Right side lying		
	Left side lying		
	Prone		
	Sitting up		

Positioning & Support Surfaces

FINDINGS:

Recommendations for Bed Positioning:

1. Client should reposition overnight every 2 hours until pressure ulcer heals
2. Recommend using an alarm clock to implement repositioning schedule
3. Client can alternate between the following positions which were evaluated to be effective in offloading pressure ulcer:
 - 30 degree right side lying
 - 30 degree left side lying
4. Client should place a pillow between legs and a wedge behind back to support and maintain positioning
5. Client should avoid lying on his back at all times in bed

Repositioning Strategies

INTERVIEW:

Do you reposition yourself or have others reposition you for the purpose of pressure redistribution (i.e. shifting or relieving pressure away from specific parts of your body) when sitting up in your wheelchair?

If yes, how many times do you reposition each hour for the purpose of pressure redistribution?

*What type of movements do you perform for this repositioning?
(Describe each movement)*

Repositioning Strategies

ASSESSMENT:

Movement Demonstrated	Capable of Movement?		Movement is Effective?*	
	YES	NO	YES	NO
Forward lean				
Upper body push-up				
Right side lean				
Left side lean				
Manual tilt-in-space (tilted to ___°)				
Power tilt-in-space (tilted to ___°)				
Other (describe):				

Repositioning Strategies

FINDINGS:

Recommendations for Sitting:

1. Client should perform a pressure redistribution movement every 15 minutes (4x/hour) whenever he is in a sitting position
2. Recommend use of a repeating timer through the computer, cell phone, or watch to cue when redistribution movements should occur to help make them habitual
3. Client can alternate between the following movements that were evaluated to effectively offload his pressure ulcer:
 - Forward lean
 - Right side lean
 - Modified upper body push-up
4. Each redistribution movement should be held for a minimum of 1-2 minutes to allow circulation at the pressure ulcer location
5. Recommend resting onto a table top surface when performing forward and side leaning movements to minimize the effort required

Self Management Behaviours

INTERVIEW:

Do you perform skin checks?

How frequently do these skin checks occur?

What do you look for when performing a skin check?

What do you do if you come across something that concerns you during a skin check?

Self Management Behaviours

ASSESSMENT:

Observe client performing (or providing direction to complete) a skin check. Answer the following:

<i>Client is capable of performing skin check?</i>	<i>Y</i>	<i>N</i>
<i>Client knows what they should be looking for?</i>	<i>Y</i>	<i>N</i>
<i>Client knows what they should be feeling for?</i>	<i>Y</i>	<i>N</i>
<i>Client can accurately indicate areas of concern?</i>	<i>Y</i>	<i>N</i>

Complete a visual skin inspection and record relevant information below:

Location*	Stage	Size	Description

Self Management Behaviours

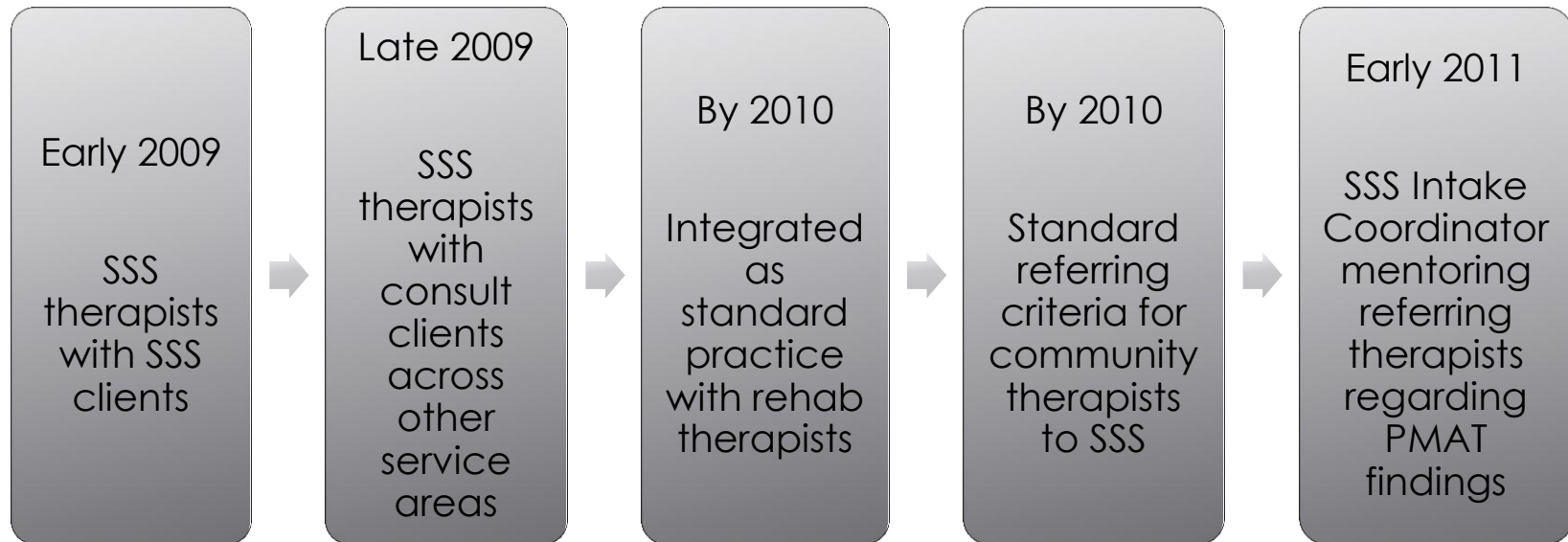
FINDINGS:

Recommendations for Skin Checks:

1. Recommend for client to perform a skin check immediately after transferring out of wheelchair
2. Client can utilize a hand held mirror while side lying in bed to be able to fully check all parts of pelvis
3. Client should inspect both ischial tuberosities, coccyx and sacrum, and both greater trochanters
4. Client should look and feel for any of the following issues:
 - Redness (check for blanching as demonstrated)
 - Bruising, scrapes, blisters
 - Swelling, heat, firmness, wetness
5. If issues are found, client should offload the area and monitor how long it takes for skin to return to normal

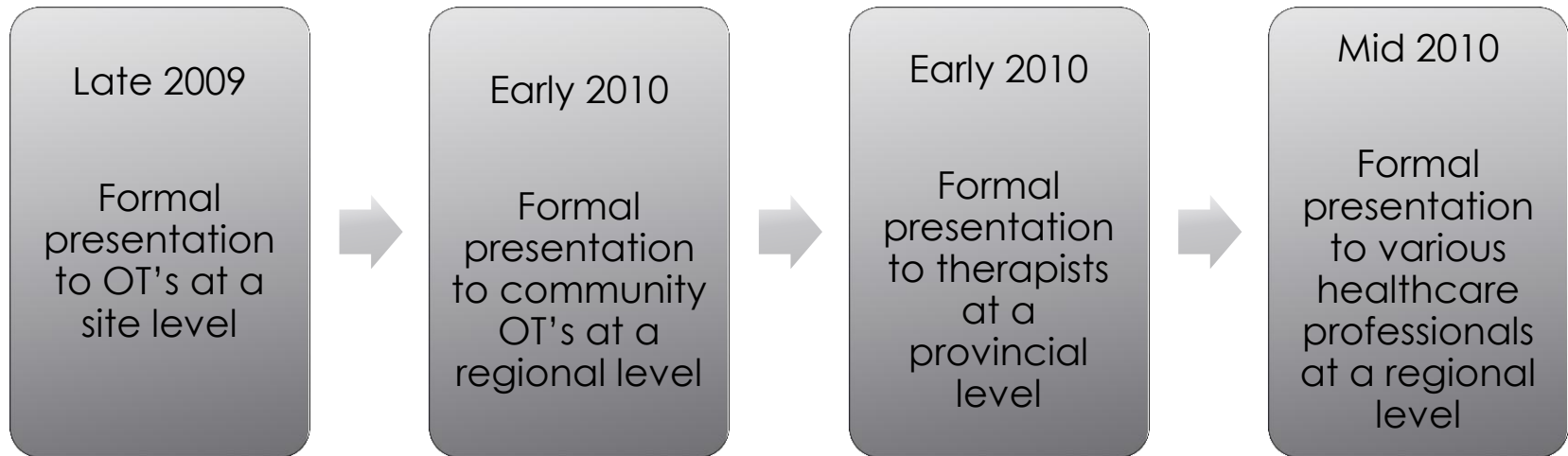
PMAT Implementation

Clinical Implementation:



PMAT Implementation

Educational Implementation:



PMAT Implementation

Practice and Professional Implementation:



Lesson #1

Structure Open Ended Questions

Physical Status Early Version

What is your medical diagnosis?

Do you have any other medical conditions?

Physical Status Current Version

What is your medical diagnosis?

Do you have any of the following medical conditions:

- Altered sensation
- Altered circulation
- Altered muscle strength
- Spasticity

Lesson #2

Always Assess, Never Guess

Wound Evaluation



Not all commodes are created equal



Lesson #3: People Don't Know What They Don't Know

Causative Factors



Part 3: Findings Reported

- Adequate seat to floor height to allow foot propelling
- Address ankle contractures
- Pressure relieving cushion
- Accommodate for pelvic obliquity and rotation

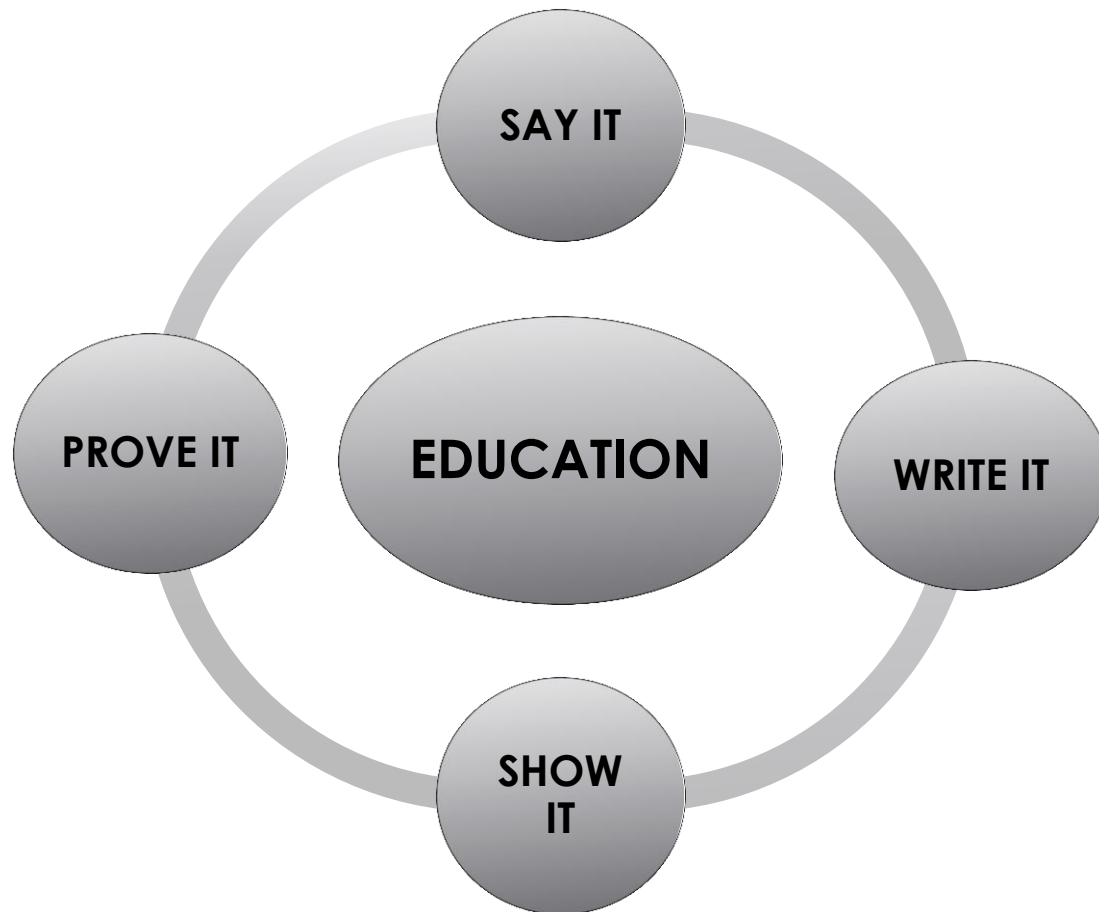
Lesson #4

You're Only As Strong As Your Weakest Link

Best Practice	Best Excuse	Practical Solution
Do not place soaker pad underneath client when positioned in bed	Necessary for repositioning	Use slider sheet and remove once repositioned
Remove sling once client transferred into wheelchair	Too hard to get sling back in place once client's in the wheelchair	Move wheelchair into full tilt to place sling under lower extremities

Lesson #5

Be a Broken Record





Lesson #6

If You Build It, They Will Come

Clinical practice standards as of 2012:

1. Palpation techniques
2. Visual inspection and wound evaluation
3. Graduated sitting protocols
4. Fitting & sitting guidelines for custom seating
5. Guidelines for upgrading and downgrading sleep support surfaces
6. Guidelines for upgrading or downgrading repositioning intervals on sleep surfaces

PMAT Results

High Data Trends	Sample
Current pressure ulcer at ischial tuberosity	13/20
Previous pressure ulcer	16/20
Previous ulcer in same location as current ulcer	13/20
Neurological diagnosis	20/20
Altered sensation	15/20
Spasticity	16/20
Bladder or bowel incontinence	14/20

PMAT Results

High Data Trends	Sample
Defer to a professional if skin check raises a concern	15/20
Minimum of 10 hours in bed	16/20
No regular turns while in bed	10/20
Weight bear on ulcer in bed	17/20
Minimum of 10 hours in wheelchair	14/20
No regular pressure redistribution movements in wheelchair	11/20
Weight bear on ulcer in wheelchair	20/20

PMAT Results

High Data Trends	Sample
Completed treatment	16/20
Prescribed new seating equipment	12/16
Prescribed new sleep surface	11/16
Received education on >1 topic	16/16
Chose to follow recommendations	12/16
Referred to >1 other healthcare professional	12/12
Pressure ulcer healed	9/12

PMAT Impact

- Wait list for skin and wound referrals 1 month
- High percentage of wound healing
- Allows screening for appropriateness of referral
- Upfront buy-in for interventions
- Knowledge translation
- Upfront time & resources have been worthwhile investments
- Therapist response validates purpose of tool

Future Directions

Revisions

- Structure to part 3
- Standardize question format

Clinical Use Guideline

- Practice enabler
- Explanatory manual

Data Collection

- Formal data collection tool
- Research initiatives

Collaboration

- Partnerships
- Innovative applications

Prevention

- Trends when no ulcers present
- Teaching tool

Learning Objectives

1. Describe a minimum of 6 factors that commonly contribute to pressure ulcer development from a 24 hour perspective
2. Identify a minimum of 6 assessment techniques that can be utilized when evaluating these pressure factors
3. List a minimum of 6 recommendations guided by best practice to resolve these pressure factors
4. Problem-solve practical strategies for implementing pressure management recommendations in various health care settings

Resources

1. NPUAP/EPUAP (www.npuap.org)
2. NSW SSCIS
(www.health.nsw.gov.au/gmct/spinal/)
3. SCIRE
(www.scireproject.com/rehabilitation-evidence)
4. WRHA (www.wrha.mb.ca)
5. RNAO (www.rnao.org)
6. PVA (www.pva.org)
7. CAWC (www.cawc.net)



THANK-YOU!

Jennifer Birt

Specialized Seating and Mobility Clinical Specialist

204-787-4266

jlbirt@hsc.mb.ca