Spinal Cord Injury Flap Surgery Clinical Pathway plus Progressive Mobility Pathway

Site Applicability

Vancouver General Hospital

Pathway Patient Goals

The goal of the mobilization pathway is to achieve a new baseline of independence with ADLs and safe induction of equipment and support surfaces in a controlled manner. If this cannot be achieved prior to discharge, alternate supports and equipment should be put in place, or a plan to accomplish this should be established with the client and/or relevant community care providers.

Inclusion Criteria

This mobilization pathway cannot begin until the Physician has written an order clearing the client to begin transition off bedrest.The mobility pathway usually starts on POD 14 or 15

Home Discharge Criteria

Anticipated Client Function at Discharge:

To be in a wheelchair for 4 hours twice a day, with continued skin checks, and to continue time up on surfaces until a safe baseline has been reached.

Transfers	• Ceiling lift (hammock) • Low pivot	• Ceiling lift (self-sling) • Sliding board
Bowel and bladder routine	Client is able to turn self and be aware of how often they require offloading/turning to avoid skin damage	
Turn Schedule	Client is able to turn self and be aware of how often they require offloading/turning to avoid skin damage	
Dressing (clothes)	Client is at or close to baseline and has appropriate clothing that reduces shear injury	
Bathing	Client is at or close to baseline and able to use shower or bath equipment with no injury to skin	
Transportation	Client is able to transfer and clear car seat if driving self	
iADL's (e.g. cooking, shopping)	Client is at or close to baseline	

Discharge Planning: Equipment and services that are to be in place prior to discharge:

OT or PT	Wheelchair/cushion appropriate for discharge
OT or PT	Commode and/or shower bench appropriate for discharge
OT or PT	Bed and mattress at home are appropriate
OT or PT	Community OT awareness of assessment required before transfer home
CML or WCC	Community nursing aware of any wound care
CML or WCC	Wound care plans transferred to GFS

Instructions

To the occupational therapists, physiotherapists and wound clinicians following the client:

It is also important to use your clinical judgement in determining the cause of the original wound and flap location, as these factors may change the interventions provided (e.g. a client with a coccyx flap may be safer sitting up in a wheelchair, weight-bearing on their ischial tuberosities, than sitting upright in bed).

If new activities are introduced (e.g. turn downgrading, independent transfers, independent dressing, commode use), they need to be introduced one at a time, so that if new skin breakdown does occur you know which activity caused it.

OT and or PT to begin weight shift training on varying surfaces.

- Continue with turning schedule as provided each day
- On Day 1 of transition pathway OT or PT to perform a passive ROM of surgical region to assess incisional/ skin response to the flexion stress along incisional lines that will be affected under tension when in a seated position
- Check incision and flap before and after any mobility ranging and notify physician or Wound Clinician of any changes to incision line or flap
- Consider introducing new ADL's (e.g. padded commode use, independent bowel routine, independent dressing, independent transfers) during pathway
- Consider downgrading client to a baseline mattress closest to their one at home (e.g. foam) during pathway
- If there is any flap, incision or skin breakdown - hold mobilization, and contact plastics team to reassess progression.

- On initiation of pathway the OT or PT or WCC will determine the surface the client will be transferred to non-powered reactive support mattress, stay on current powered active support mattress, or other

PROGRESSIVE MOBILIY PATHWAY

Mobility Day 1	• **Head of bed (HOB) at 45° for meals – maximum 30 minutes** • **Turn Q2-3H**
Mobility Day 2	• **Head of bed (HOB) at 90° for meals – maximum 30 minutes** • **Turn Q2-3H**
Mobility Day 3 • Turn Q2-3H • Consider need for Pressure Mapping	• **Transfer client to wheelchair for 15 minutes x 2** • BP to be taken before and after transfer to note any orthostatic hypotension issues. If BP drops: ○ If in bed – lie client back down in bed ○ If in wheelchair – recline or tilt client back and raise legs ○ Once dizziness subsides, slowly sit client up again ○ This may need to be done a few times until the body can self-regulate • **Turn Q2-3H** PT or OT to communicate which style of transfer is appropriate for this client, e.g. ceiling lift (hammock style), ceiling lift (self-sling), low pivot, sliding board. *Ensure that the borders of the sling are away from the flap site. Consider alternate sling styles(e.g. hygiene slings, Easy Access slings) if necessary, with consideration also given to the client's hip angle when mobilized in the sling*
Mobility Day 4	• **Transfer client to wheelchair for 30 minutes x 2** • BP monitoring for orthostatic hypotension (see day 17) • **Turn Q2-3H**
Mobility Day 5	• **Transfer client to wheelchair for 45 minutes x 2** • BP monitoring for orthostatic hypotension (see day 17) • **Turn Q2-3H**
Mobility Day 6	• **Transfer client to wheelchair for 1 hour x 2** • BP monitoring for orthostatic hypotension (see day 17) • **Turn Q2-3H**
Mobility Day 7	• **Transfer client to wheelchair for 1 hour and 15 minutes x 2** • If no occurrence of orthostatic hypotension on Day 16 to Day 19, can stop BP monitoring with transfers • **Turn Q2-3H**
Mobility Day 8	• **Transfer client to wheelchair for 1 hour and 30 minutes x 2** • Consider decreasing the night time turn schedule in an attempt to meet the client's baseline status by discharge (e.g. decreasing 1 turn per night each week), or introduce independent turns if client able to do so safety • **Turn Q3-4H**
Mobility Day 9	• **Transfer client to wheelchair for 1 hour and 45minutes x 2** • **Turn Q3-4H**
Mobility Day 10	• **Transfer client to wheelchair for 2 hours x 2** • **Turn Q3-4H**
Mobility Day 11	• **Transfer client to wheelchair for 2 hours and 30 minutes x 2** • **Turn Q3-4H**
Mobility Day 12	• **Transfer client to wheelchair for 3 hours x 2** • **Turn Q3-4H**

Mobility Day 13	• **Transfer client to wheelchair for 3 hours and 30 minutes x 2** • **Turn Q3-4H**
Mobility Day 14	• **Transfer client to wheelchair for 4 hours x 2** • **Client should be at baseline function. If not, alternative equipment and support plans should be made** • **Turn Q3-4H**

Spinal Cord Injury Flap Surgery Clinical Pathway

Post-Op Day 0	
Care Category	**Expected Outcomes**
Safety/Risk Assessment	• Bedside safety check completed
Physical Assessment	• Vital Signs & Temp within patient's normal limits • Head to toe assessment (within patient's normal limits) • Lab Values within normal limits
LOC/Cognition	• Patient orientated x 3 (person, place, time)
Pain/Spasms	• Pain controlled • Spasms controlled
Autonomic Dysreflexia (AD) For patients T6 and above SCI	• Determine: o History of episodes of autonomic dysreflexia o Triggers o Patient's normal blood pressure o Patient's' common AD symptoms
Elimination	• Abdomen soft, not distended • Flatus passed • Bowel sounds present • Assess bowel routine (daily, every other day) • Perform and document interventions (digital stimulation, disimpaction, colostomy care) • Date of last BM noted • Urinary Management System effective, including but not limited to indwelling catheter, in/out catheter, condom catheter drainage, urostomy and/or suprapubic catheter; independent or with assistance • Urinary output ≥ 30 cc per hour
Nutrition	• Diet as ordered (NPO, Sips to DAT, high protein, diabetic diet, other)
Flap Site	• Flap check Q shift (turgor, temp, cap refill, color) • Flap Incision o Assess dressing or incision if visible o No signs of infection o Well approximated o Sutures intact • Flap dressing check Q4H o Dressing dry and intact; changed/discontinued as needed/ordered o Note type of dressing (PICO, VAC, Mepore, other)
Drain(s)	• Empty drains Q6H & PRN • Drain dressing: change daily • Note when drain(s) discontinued
Skin	• Off load heels with pillows

	• Skin integrity intact (bony prominences checked for redness Q shift)
Mobility	• HOB flat at all times (bedrest, no sitting, no hip flexion on flap side) • Assess positioning and avoid lying in a way that may compromise flap • Note if pressure relief mattress or other special mattress in use • Check for bottoming out Q shift • Turning Q2H to unaffected sides • Turning schedule posted at HOB • Physiotherapy to provide upper body exercises
Other Conditions/Concerns	• If Yes, document the issues/concerns

Post-Op Day 1	
Care Category	**Expected Outcomes**
Safety/Risk Assessment	• Bedside safety check completed
Physical Assessment	• Vital Signs & Temp within patient's normal limits • Head to toe assessment (within patient's normal limits) • Lab Values within normal limits
LOC/Cognition	• Patient orientated x 3 (person, place, time)
Pain/Spasms	• Pain controlled • Spasms controlled
Autonomic Dysreflexia (AD) For patients T6 and above SCI	• Determine: ○ History of episodes of autonomic dysreflexia ○ Triggers ○ Patient's normal blood pressure ○ Patient's' common AD symptoms
Elimination	• Abdomen soft, not distended • Flatus passed • Bowel sounds present • Assess bowel routine (daily, every other day) • Perform and document interventions (digital stimulation, disimpaction, colostomy care) • Date of last BM noted • Urinary Management System effective, including but not limited to indwelling catheter, in/out catheter, condom catheter drainage, urostomy and/or suprapubic catheter; independent or with assistance • Urinary output ≥ 30 cc per hour
Nutrition	• Diet as ordered (NPO, Sips to DAT, high protein, diabetic diet, other)
Flap Site	• Flap check Q shift (turgor, temp, cap refill, color) • Flap Incision ○ Assess dressing or incision if visible ○ No signs of infection ○ Well approximated ○ Sutures intact • Flap dressing check Q4H ○ Dressing dry and intact; changed/discontinued as needed/ordered ○ Note type of dressing (PICO, VAC, Mepore, other)
Drain(s)	• Empty drains Q6H & PRN • Drain dressing: change daily • Note when drain(s) discontinued
Skin	• Off load heels with pillows

	• Skin integrity intact (bony prominences checked for redness Q shift)
Mobility	• HOB flat at all times (bedrest, no sitting, no hip flexion on flap side) • Assess positioning and avoid lying in a way that may compromise flap • Note if pressure relief mattress or other special mattress in use • Check for bottoming out Q shift • Turning Q2H to unaffected sides • Turning schedule posted at HOB • Physiotherapy to provide upper body exercises
Other Conditions/Concerns	• If Yes, document the issues/concerns

Post-Op Day 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	
Care Category	**Expected Outcomes**
Safety/Risk Assessment	• Bedside safety check completed
Physical Assessment	• Vital Signs & Temp within patient's normal limits • Head to toe assessment (within patient's normal limits) • Lab Values within normal limits
LOC/Cognition	• Patient orientated x 3 (person, place, time)
Pain/Spasms	• Pain controlled • Spasms controlled
Autonomic Dysreflexia (AD) For patients T6 and above SCI	• Determine: ○ History of episodes of autonomic dysreflexia ○ Triggers ○ Patient's normal blood pressure ○ Patient's' common AD symptoms
Elimination	• Abdomen soft, not distended • Flatus passed • Bowel sounds present • Assess bowel routine (daily, every other day) • Perform and document interventions (digital stimulation, disimpaction, colostomy care) • Date of last BM noted • Urinary Management System effective, including but not limited to indwelling catheter, in/out catheter, condom catheter drainage, urostomy and/or suprapubic catheter; independent or with assistance • Urinary output ≥ 30 cc per hour
Nutrition	• Diet as ordered (NPO, Sips to DAT, high protein, diabetic diet, other)
Flap Site	• Flap check Q shift (turgor, temp, cap refill, color) • Flap Incision ○ Assess dressing or incision if visible ○ No signs of infection ○ Well approximated ○ Sutures intact • Flap dressing check Q4H ○ Dressing dry and intact; changed/discontinued as needed/ordered ○ Note type of dressing (PICO, VAC, Mepore, other)
Drain(s)	• Empty drains Q6H & PRN • Drain dressing: change daily • Note when drain(s) discontinued
Skin	• Off load heels with pillows

	• Skin integrity intact (bony prominences checked for redness Q shift)
Mobility	• HOB flat at all times (bedrest, no sitting, no hip flexion on flap side) • Assess positioning and avoid lying in a way that may compromise flap • Note if pressure relief mattress or other special mattress in use • Check for bottoming out Q shift • Turning Q2H to unaffected sides • Turning schedule posted at HOB • Physiotherapy to provide upper body exercises
Other Conditions/Concerns	• If Yes, document the issues/concerns

Pathway identical for POD 2 to 13.

Post-Op Day 14	
Care Category	**Expected Outcomes**
Safety/Risk Assessment	• Bedside safety check completed
Physical Assessment	• Vital Signs & Temp within patient's normal limits • Head to toe assessment (within patient's normal limits) • Lab Values within normal limits
LOC/Cognition	• Patient orientated x 3 (person, place, time)
Pain/Spasms	• Pain controlled • Spasms controlled
Autonomic Dysreflexia (AD)	• Determine: ○ History of episodes of autonomic dysreflexia ○ Triggers ○ Patient's normal blood pressure ○ Patient's' common AD symptoms
Elimination	• Abdomen soft, not distended • Flatus passed • Bowel sounds present • Assess bowel routine (daily, every other day) • Perform and document interventions (digital stimulation, disimpaction, colostomy care) • Date of last BM noted • Urinary Management System effective, including but not limited to indwelling catheter, in/out catheter, condom catheter drainage, urostomy and/or suprapubic catheter; independent or with assistance • Urinary output ≥ 30 cc per hour
Nutrition	• Diet as ordered (NPO, Sips to DAT, high protein, diabetic diet, other)
Flap Site	• Flap check Q shift (turgor, temp, cap refill, color) • Flap Incision ○ Assess dressing or incision if visible ○ No signs of infection ○ Well approximated ○ Sutures intact • Flap dressing check Q4H ○ Dressing dry and intact; changed/discontinued as needed/ordered ○ Note type of dressing (PICO, VAC, Mepore, other)
Drain(s)	• Empty drains Q6H & PRN • Drain dressing: change daily • Note when drain(s) discontinued
Skin	• Off load heels with pillows

	• Skin integrity intact (bony prominences checked for redness Q shift)
Mobility	• Mobilize per SCI protocol, must have surgeon's order in chart to start mobility pathway, or may continue to follow orders for mobility. This may include bed rest, no sitting, no hip flexion. • Assess positioning and avoid lying in a way that may compromise flap • Note if pressure relief mattress in use • Check for bottoming out Q shift • Turn Q2H to unaffected sides • Turning schedule posted at HOB • Physiotherapy to provide upper body exercises
Other Conditions/Concerns	• If Yes, document the issues/concerns

Post-Op Day 15, 16, 17, 18, 19, 20, 21 and supplemental	
Care Category	**Expected Outcomes**
Safety/Risk Assessment	• Bedside safety check completed
Physical Assessment	• Vital Signs & Temp within patient's normal limits • Head to toe assessment (within patient's normal limits) • Lab Values within normal limits
LOC/Cognition	• Patient orientated x 3 (person, place, time)
Pain/Spasms	• Pain controlled • Spasms controlled
Autonomic Dysreflexia (AD)	• Determine: ○ History of episodes of autonomic dysreflexia ○ Triggers ○ Patient's normal blood pressure ○ Patient's' common AD symptoms
Elimination	• Abdomen soft, not distended • Flatus passed • Bowel sounds present • Assess bowel routine (daily, every other day) • Perform and document interventions (digital stimulation, disimpaction, colostomy care) • Date of last BM noted • Urinary Management System effective, including but not limited to indwelling catheter, in/out catheter, condom catheter drainage, urostomy and/or suprapubic catheter; independent or with assistance • Urinary output ≥ 30 cc per hour
Nutrition	• Diet as ordered (NPO, Sips to DAT, high protein, diabetic diet, other)
Flap Site	• Flap check Q shift (turgor, temp, cap refill, color) • Flap Incision ○ Assess dressing or incision if visible ○ No signs of infection ○ Well approximated ○ Sutures intact • Flap dressing check Q4H ○ Dressing dry and intact; changed/discontinued as needed/ordered ○ Note type of dressing (PICO, VAC, Mepore, other)
Drain(s)	• Empty drains Q6H & PRN • Drain dressing: change daily • Note when drain(s) discontinued
Skin	• Off load heels with pillows

	• Skin integrity intact (bony prominences checked for redness Q shift)
Mobility	• Mobilize per SCI protocol, must have surgeon's order in chart to start mobility pathway, or may continue to follow orders for mobility. This may include bed rest, no sitting, no hip flexion. • Assess positioning and avoid lying in a way that may compromise flap • Note if pressure relief mattress in use • Check for bottoming out Q shift • Turn Q2H to unaffected sides • Turning schedule posted at HOB • Physiotherapy to provide upper body exercises
Other Conditions/Concerns	• If Yes, document the issues/concerns
Patient Education	• Pressure ulcer prevention teaching

Developed By

Effective Date:	
Posted Date:	
Last Revised:	
Last Reviewed:	
Approved By:	
	Endorsed By: **Final Sign Off:**
Owners:	VCH
	Developer Lead(s): • Clinical Nurse Educator, Transplant, Urology, Gynecology, Plastics, VGH