Acute/Chronic Spinal Cord Injury Pathway

Purpose: This document should serve as a guideline for care/management of patients who are admitted with a complete or incomplete acute or chronic spinal cord injury. These patients are at high risk for secondary complications. *This is a **guideline, NOT ORDERS**, and may be modified to meet the needs of this specific patient. These guidelines **DO NOT** replace provider orders or clinical judgement*.

Diagnosis/Level of Injury: Admit Date:

Aspects of Care	
Goals	• Adaptive call system and means to express basic needs (refer to OT/SLP for assistance). • Prevent secondary injury. • Determine pain level acceptable to patient. • Begin patient and family education. • Establish mobility plan ASAP (per PT/OT). • Begin bladder/bowel training as soon as possible; even if the patient is unable to participate in bowel training, still implement the process.
Airway/ Pulmonary	**These patients are high risk for respiratory decompensation**—close monitoring of patient's respiratory function is imperative. Meticulous oral care/pulmonary toilet: o HOB 30 degrees, frequent suction, quad cough, chest percussion as ordered o Consider/discuss need for cough assist machine with provider or respiratory therapy o RT to assess every shift and monitor of respiratory motor function (Negative Inspiratory Force) per order o Assess for cough strength • Consider use of BIPAP, continuous or cycled per provider order. • Consider need for continuous pulse ox, however consider the fact that patients can demonstrate normal pulse ox values during respiratory insufficiency or impending decompensation. • Monitor for subtle signs of respiratory insufficiency: anxiety, abdominal breathing, need for frequent suctioning, tachypnea.
Circulatory/ Cardiac	• Assess and treat as indicated for s/s neurogenic shock (bradycardia and hypotension). • OT/PT/nursing to assess/treat for orthostatic hypotension when upright (abdominal binder/lower extremity wraps). • Monitor for signs and symptoms of Autonomic Dysreflexia (severe pounding HA, sweating above level of injury, bradycardia, flushed skin)—**this is a medical emergency!** --try to sit patient upright, look for and remove noxious stimuli below level of injury. • Most commonly seen in patients with injury T6 and above and has been seen in patients w/injury as low as T10. o Aim to prevent AD through s and bowel management as well as closely monitoring skin • Consider long term meds to manage hypotension
Neuro	• Assess sensory, motor, and reflex status per orders, document and notify MD any changes

Assessment	• Communicate expectations with the patient and family
Consults	• Consult clinical psychologist for pediatric patients • Others as needed such as WOCN, Rehab Psychologist, mental health CNS, and neuropsychiatry/neuropsychology
Skin Integrity	**All SCI patients are high risk for skin breakdown!** • Turn when in bed and rotate soft and hard boots q2 hours; Assess feet and nails when boots removed • OOB per PT/OT recommendations to specialty wheelchair/cushion (unless otherwise directed by therapy) ○ Reposition every 30 min while OOB in chair. Full tilt back in wheelchair x2 minutes, allowing blood flow back to compressed area. • Allevyn to bony prominences and monitor for potential skin irritating factors (SCD's, bed rails, etc) • WakeMed Skin integrity protocols for skin tears, heel ulcers, IAD and stage 2 pressure injuries. Consult wound ostomy nursing PRN. • Complete full body skin assessment every shift, especially boney prominences for breakdown, redness, change in color, dryness, ingrown toenails, increased warmth; apply lotion q shift or prn. • Remove abdominal binder/LE wraps when back in bed • No diapers or plastic-lined incontinence pads • Ensure bed linens are free of wrinkles • Educate and encourage patient/family involvement with skin assessment and turning schedule

Nutrition	• Consult Nutrition for nutrient goals—consider need for indirect calorimetry
	• Start enteral nutrition ASAP when medically able
	• Once eating
	  ○ Assist w/ meals as needed—utilize family, volunteers, etc
	  ○ HOB up during meals to avoid aspiration
	  ○ Utilize assistive devices to maximize patient's functional independence
	  ○ Educate patient and family on allowed POs per SLP's recs

VTE prevention	• SCDs or DVT chemoprophylaxis as indicated • Monitor calf and thigh for s/s DVT (pain, redness, warmth, swelling). If suspected, notify provider

Mobility/ Positioning	• When needed, obtain spinal clearance from neurosurgery/ortho spine prior to mobility
	• Encourage family to assist with ROM
	• OOB to wheelchair w/ specialized cushion every day when appropriate
	  ○ DO NOT USE recliner chairs unless otherwise directed by therapy
	  ○ May require wraps or abdominal binder for OOB/upright sitting (per PT)
	  ○ REMOVE wraps and binder when return to bed or supine
	• Elevate hands to prevent dependent edema
	• Utilize "bed to chair" for meals, only upright x1 hour at a time

Bowel &	Bowel Management

Bladder	Goal is for daily or every other day BM to establish a schedule for patient. • If patient can take PO, provide hot food and beverage 30 minutes before bowel training to stimulate gastrocolic reflex • Implement bowel training with digital stimulation at roughly the same time each day to establish a routine • Continue to provide digital stimulation daily regardless of previous BM to establish routine, hold meds if loose stools but try to keep to scheduled BM • Notify provider and consider enema if no BM> 2 days Bladder Management Refer to bladder management orders for Foley removal and catheterization schedule ○ If voiding occurs in between scheduled catheterizations assess for overflow incontinence vs. voluntary urination ○ Avoid Purewick/condom catheter…. should not be necessary with appropriate I/O catheterization schedule and may interfere with rehabilitation process ○ Use 'crede' method (massage over bladder) during I&O catherization • Assess for returning bladder function by allowing patient the opportunity to void independently prior to catheterizing patient ○ If patient beginning to void on their own, discuss with provider, may need post void residual bladder scans • Consider 1500 mL/day intake, review fluid intake for large catheterization volumes • Consider limiting fluid in evenings
Pain/ Comfort	• Patients can experience pain below the level of the injury • Consider the type of pain to best determine optimal pain control (neurogenic, spasm, musculoskeletal, visceral etc.) and appropriate medications—consider multimodal pain interventions
Psychosocial/ Communication	• Adaptive call bell and environmental control system if needed • Establish communication method for patients to ease anxiety (SLP/OT/PT can assist) • Assess for depression and special cultural needs (consider neuropsychology or spiritual care if warranted) • Try to establish daily schedule (sleep, bowel/bladder) to limit day/night confusion • Consider: pet therapy, diversional activities (take patient out of room, books, music, movies), family bring in personal items for ADLs
D/C planning & Education	• Educate on goals and POC, involve patient and family in the process • Identify discharge destination early, if plans for rehab, can arrange rehab tour through rehab admissions • Education patient and family members about autonomic dysreflexia