

# STEP-uP to Excellence: A Change in Culture in Critical Care

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# Objectives

- Understand some of the detrimental effects of critical illness, prolonged bed rest and heavy narcotic sedation
- Understand the barriers and facilitators of early mobilization of critically ill patients
- Underline the importance of IP interventions and collaboration
- To showcase our journey

# Standards For Critical Care Nursing Practice (CACCN 4<sup>th</sup> edition)

- **Standard 1:** Critcare RN's use advanced skills and specialized knowledge to continuously assess, monitor, and manage pts. for the promotion of optimal physiological balance.
- **1.6** Coordinates and implements the plan of care within the individuals scope of practice.
- **1.7** Manages multiple therapies in the context of ever-changing pt. needs.
- **1.8** Monitors, evaluates the effectiveness of interventions...revising therapies as necessary.

**Nursing's 4  
Metaparadigm  
Concepts**

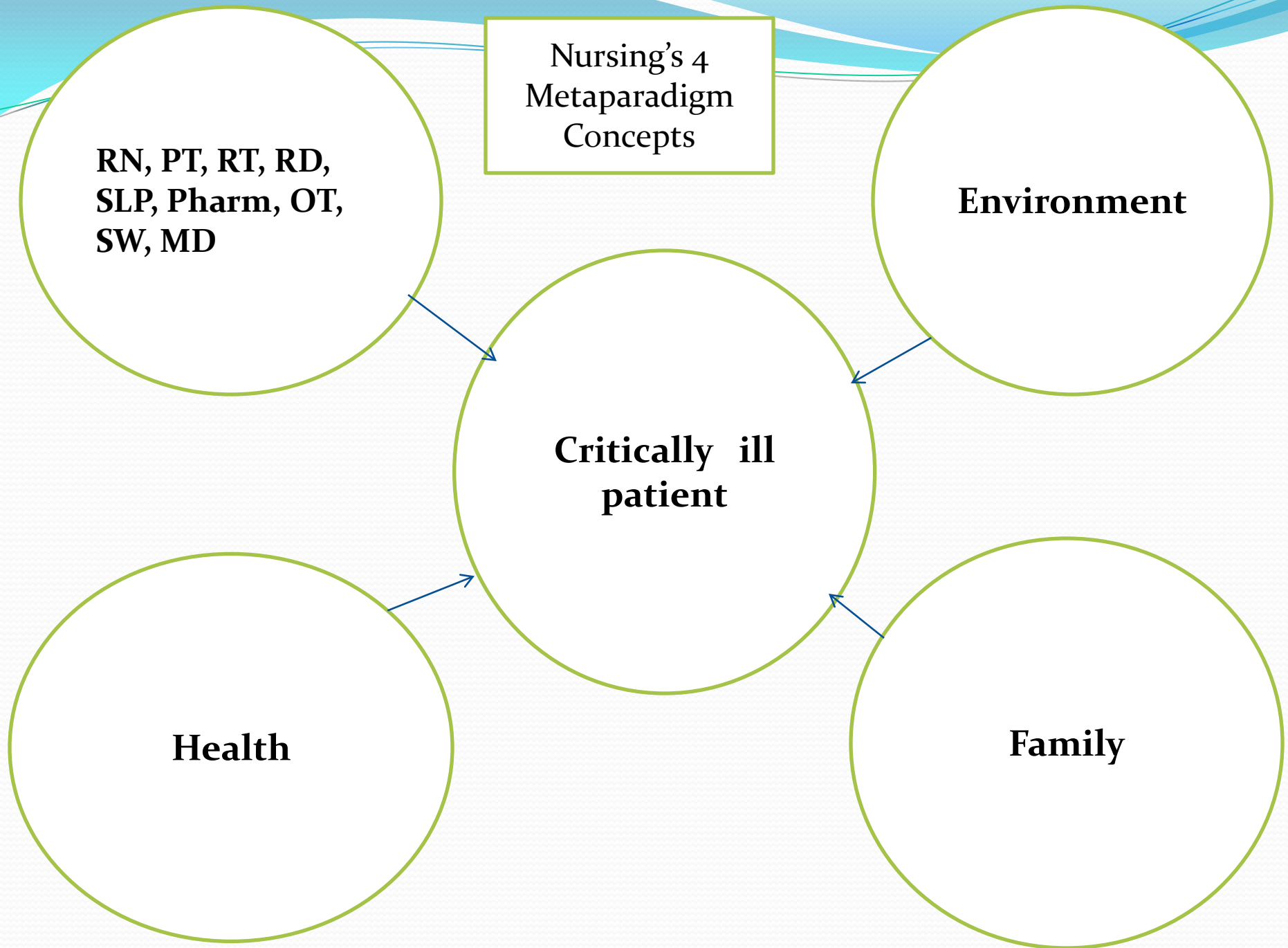
**RN, PT, RT, RD,  
SLP, Pharm, OT,  
SW, MD**

**Environment**

**Critically ill  
patient**

**Health**

**Family**



# SIGNIFICANCE AND JUSTIFICATION

According to Adler *et al.*, 2012, patients who *survive* a critical illness may experience:

- Impaired exercise capacity
- Severe muscle weakness, neuropsychological impairments
- Electrolyte imbalances, pain, polyneuropathies
- Poor quality of life
- Hospital readmission and death up to 5 years after d/c

# NEUROMUSCULAR DYSFUNCTION IN THE CRITICALLY ILL

- **Polyneuropathy** (CIP)- nerve dysfunction
    - \*sensory and motor involvement (EMG)
    - \*microcirculation damage, peripheral tissue injury to nerve, cellular energy crisis!
  - **Myopathy** (CIM)- contractile dysfunction
    - \*mitochondrial dysfunction, ATP depletion
- Predictors- female, CRRT, SIRS, MV, hyperglycemia, sepsis, multiple organ failure, TPN, malnutrition, immobility Stevens, R. et al, (2007). \* Intensive Care Medicine;33:1876-1891

# WEAKNESS IN ICU

- Pharmacological exposure- corticosteroids, neuromuscular blockades, midazolam, furosemide
- Systematic Review of 1421 subjects in Critical Care...46% had a Dx of CIP/CIM
- Functional Impairment
- Stevens, R. et al, (2007). \* Intensive Care Medicine;33:1876-1891

# Delirium

- **Host Factors**- age, ETOH, dementia, visual and hearing impairment
- **Critical Illness**- severity of illness, anemia, metabolic disturbances
- **Iatrogenic**- meds (midazolam), immobilization, restraints, pain, sleep disturbances
- Results in Cognitive Impairment



# Shift of Focus

- Survivors of critical illness are realizing greater morbidity
- Requires a shift of focus to prevention of
  - \*Loss of physical function
  - \*Neuromuscular weakness
  - \*Cognitive decline/QOL

# Research

## **Early PT/OT in mechanically ventilated, critically ill patients: a randomised controlled trial**

- 104 pts randomised to early exercise and mobilization or mobility as ordered by the care team
- intervention group showed significant improvement in independent function at hospital discharge: 59% vs 35 %
- improvement in ICU delirium: 2 days vs 4 days
- length of duration of mechanical vent: 3.4 days vs 6.1 days

*William Schweickert et al. Lancet 2009; 373:1874-1882*

# Research-cont'd

## **Functional Disability 5 Years after ARDS**

### **Outcome Measures following 1-5 years post ICU stay:**

109 survivors of ARDS, median age 44

- 6 min walk- 66% age matched 1 yr, 76% 5 yrs
- Pulmonary recovery Forced Vital Capacity 85% 1-5 yrs
- Weight Loss- 20% lean muscle mass at d/c, recovery in 1 yr adipose tissue, with type II fibre atrophy
- QOL measures: Return to Work- 49 % at 1 yr mark, PTSD, memory and sleep deficits, family mental health issues including anxiety, depression, sexual dysfunction, job loss, disability claim disputes, social isolation

*Herridge, M. et al; N Engl J Med 2011; 364: 1293-304*

# The Journey begins...

- Education night with IP team & Dr. E. Fan (2011),
- Early Mobility staff in-services to raise awareness (2011-12) –insert pics
- Research study Dr. K. Koo (2012)
- Canadian Respiratory Conference-Quebec City (2013)
- Master's project-summer 2013
- Clinical Practice guidelines (2013)
- Education Night with Dr. Margaret Herridge (2014)  
IP

# Clinical Practice Guidelines

## Hemodynamic instability

- 1) 2 or more inotropes or if titrating up
- 2) Acute MI within past 24-48 hours
- 3) HR <40 or > 130
- 4) SBP<90 or > 200mmHg at rest; DBP > 110 at rest

## Respiratory instability

- 1) Vent settings: FiO<sub>2</sub> >.6, PEEP >10cm H<sub>2</sub>O
- 2) O<sub>2</sub> Sats <88%
- 3) Tachypnea RR->45 bpm
- 4) Acidosis on recent ABG arterial pH < 7.25
- 5) Acute DVT, PE, anticoagulation therapy initiation

# Clinical Practice Guidelines

## Neurological & Mental status

- 1) Acute neuro deterioration
- 2) Unstable SCI or vertebral fracture
- 3) Acute traumatic brain injury
- 4) VAMAAS < 1A (Ventilator associated Motor and Agitation)
- 5) ICDC  $\geq 4$  (Intensive Care Delirium checklist)
- 6) CPOT score 4 or higher ( Critical Care Pain Observation Tool)

Other considerations-informed consent

# Early Mobility Initiative

After 24 hours from admission to unit:

Begin

- Step 1-**
- \* PROM twice daily;
  - \* 5 reps bilateral upper/lower extremities
  - \* proper joint support turns positioning Q2h-





# Next Steps

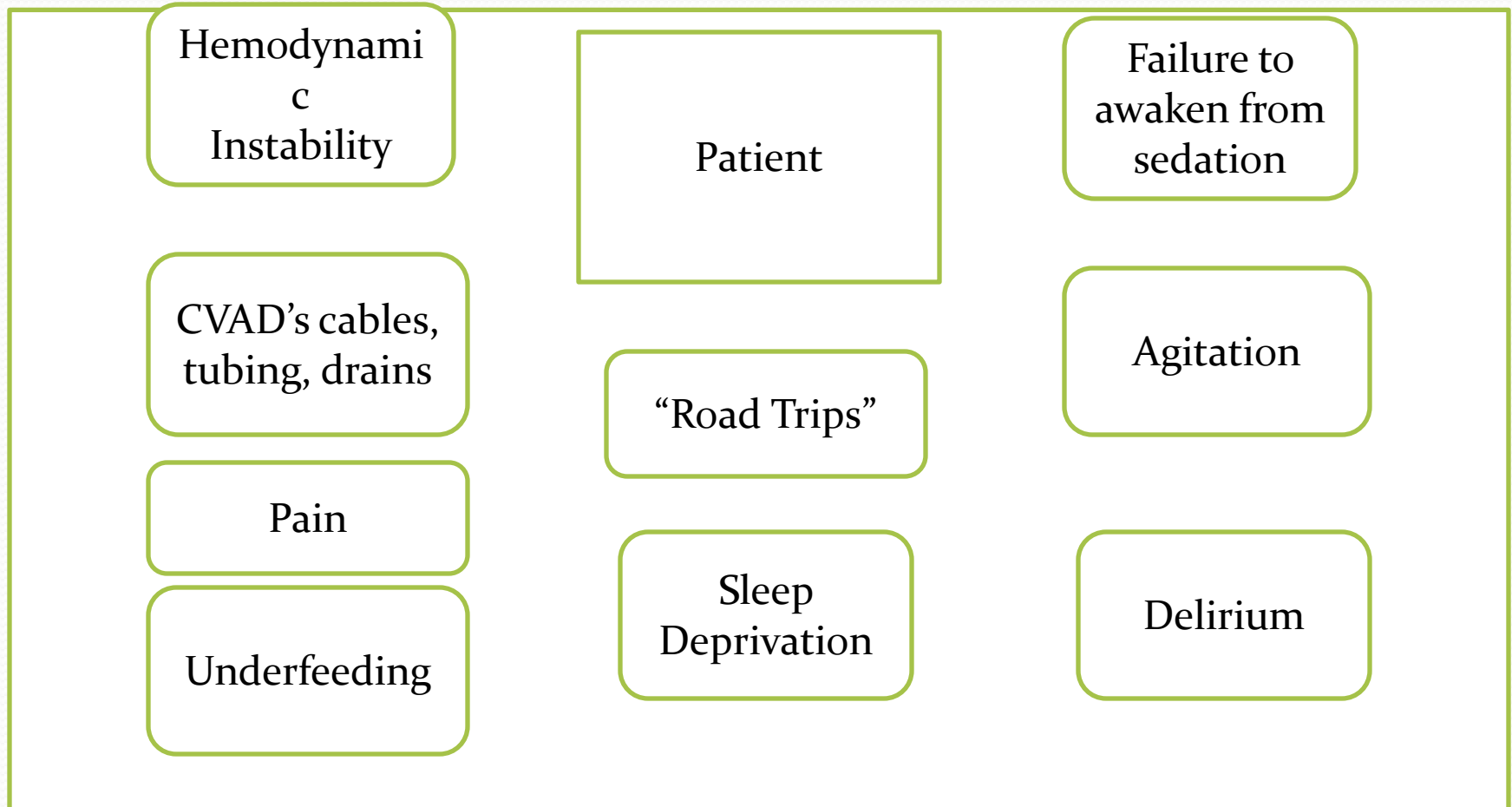
- If criteria met:

**ROM will progress from AAROM to AROM**

- Step 2- dangling at the bedside (ventilated or non-ventilated)  
**This will require coordinating care with P.T.**
- Step 3- standing to sitting in chair ( ventilated or non-ventilated )  
**Once per shift**
- Step 4- \* assisted ambulation with RT, PT, RN.  
**\*Requires collaboration of the interprofessional team**



# Barriers –Patient level



# Barriers - unit level

Lack of  
Human  
Resources

Time

Lack of  
Physician's  
orders-  
"bedrest"

19 Bed Critical  
Care  
Unit

Staff  
perception of  
danger

Equipment

Acuity/Workload

Clinical Inertia

# Facilitators




Advanced  
Practice RN



Senior  
Leadership



Intensivist



Interprofessional  
Collaboration

Engage Educate Execute Evaluate  
There is no “NO” here!

# Culture Change

- Changes to RN flowsheet
- Clinical Practice Guideline
- “Did you know....” email blurbs
- Quality Board indicators
- Huddles
- Chart Audits
- STEP-uP cards for bedside
- Communication in daily rounds with team

# Lessons Learned

- Signage Cards-daily checks, can be a challenge to keep up with patient moves and discharges
- Housekeeping staff are needed on our team!
- Changes in sedation practices and delivery is huge!
- Despite the benefit of standardized outcome measures, it can be difficult to identify measures that are useful and relevant to the therapist/IP team in AC and ICU
- There can be less therapy on busy medical wards than in an ICU focused on early mobility

# Moving Forward: Integrating Change within Critical Care and Beyond

- Continue IP, collaborative approach to care, communicate vision to all staff
- Educate all new unit staff ( orientation program)
- Advocate for more OT, PT, RT, resources
- Increase awareness of “Post Intensive Care Syndrome” and need for ongoing patient and family support..specific ICU “graduate” programs?
- Future RCTs