THE ADVOCATE!

The delirium issue.

"Keeping you in touch with our collective critical care team"

ICU SUCCESS STORY!

Charity is a patient who was with us for three months. The ICU team traveled the road to mobility and improved health with this courageous ICU survivor. As she walked out she left us a note to say:

"Thank-you for all the care you all given me these last 3 months. For not just treating me like a patient but as a young person who can sometimes show too much attitude. You have all made a lasting impression in my life and will never forget you for that. Hope to contact you all again. Can't spend 3 months together and then just forget.

Love Charity"

Congratulations to Our ICU Team:

Your Commitment to Improvement is Saving Patients from Experiencing Delirium!!

3A and 5.2 have long recognized the impact of delirium, and progressively, we have strengthened our approach. Early efforts included such initiatives as limiting the use of midazolam as a routine sedative, and an early trend to getting patients up and moving. In 2012, Dr. Green and ICU leadership started an extensive project to strengthen our approach to mobility. This lead to the implementation of a successful **early mobility program**.

In the autumn of 2014, our Critical Care Quality Team recognized delirium as a focus for our improvement efforts. However we truly had no data to help us understand the incidence of delirium in our units. The literature reports that up to 80% of mechanically ventilated adult patients experience delirium.[1] But what was the incidence of delirium in 3A and 5.2 ICUs? In August 2014, with the help of our ICU Charge Nurses, we amended a simple daily data collection tool to start collecting information about our CAM-ICU positive rate. Charge Nurse support with this data collection has been **AMAZING**; we have complete data on 95% of our patient days, from 900+ patient days per quarter. When we first started collecting this data, in mid 2014, our CAM-ICU rate was already much lower than that described in the literature – a tribute to the great work that had already been done. Since then, with more and more of our team focus on the prevention and management, we have seen our delirium rate drop even further.

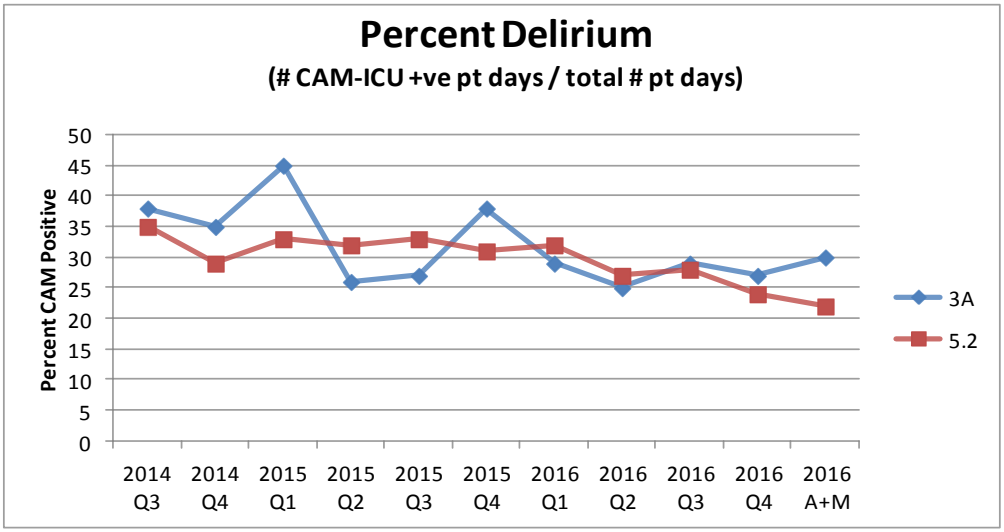
What's the BIG DEAL about ICU delirium?

Compared to hospitalized patients with no delirium:

- Higher mortality rates at one month - 14% vs. 5%
- Longer hospital lengths of stay - 21 vs. 9 days
- Discharged to a long-term care setting - 47% vs. 18%
- Probability of developing dementia at 48 months - 63% vs. 8%

(American Delirium Society, 2013)

The graph on the next page reflects CAM-ICU positive patient days divided by the total number of patient days, showing an overall drop in CAM-ICU positive patient days by approximately a quarter!!



What do We Believe are Keys to Success in Decreasing Delirium?

Multiple small **TEAM** actions contributing to success.

In our Spring edition of ***The Advocate*** we outlined the 'ABCDEF' Bundle as described by *The Society of Critical Care Medicine*[2] and *Vanderbilt University*[3]. The underpinning of this 'bundle' approach to care, is that when multiple interventions are performed together, they have a greater impact than if performed individually. We are seeing the positive impact of 'bundling'!

Frontline staff committed to best practice.

Time and time again, in some extraordinary circumstances, we have see the 3A and 5.2 Team persist to do what is best practice and what the patient needs. A perfect example of this was the commitment to mobility demonstrated when care at the VG was being provided in two temporary ICUs; despite the challenges of limited space and equipment, and staffing split between two locations, the commitment to early mobility was evident.

A	**Assess, Prevent and Manage Pain**	D	**Delirium: Assess, Prevent and Manage**
B	**Both Spontaneous Awakening Trials and Spontaneous Breathing Trials**	E	**Early Mobility and Exercise**
C	**Choice of Analgesia and Sedation**	F	**Family Engagement**

Critical Care would like to express their **sincerest thanks** to the team leaders, including physiotherapists, registered nurses, and our physician lead, who have been leading mobility in the ICU. What started out as a project has now became an expected part of routine care in our ICU environments. We've had many success stories related to early mobility in the ICU and feel that without the team's encouragement and leadership we would not be where we are today.

"I BELIEVE THE WORLD NEEDS MORE CANADA."
-Bono

Key Evidence-Based Interventions to Impact Delirium[1]

- Inter-professional **team** approach
- Use a valid and reliable assessment tool (**CAM-ICU** or ICDSC)
- Strongest recommendation to reduce the incidence and duration of ICU delirium is **Early Mobility**!
- Use **targeted sedation** with daily interruption (SAT)
- **Minimize the use of Benzodiazepines** – not a routine ICU sedative
- Treat **pain first** approach to care
- Promote **sleep** by optimizing environment

Thank you for your continued support!

Leadership Corner: Dr. Rob Green, Mobility Lead

Being the Medical Director of Trauma Nova Scotia and the Senior Medical Director of Trauma for the Nova Scotia Health Authority, I have a keen interest in our trauma patients who require admission to ICU. The evaluation of our care and patient outcomes is extremely important as we strive to provide the best environment for patient recovery.

I feel very fortunate to be the physician lead for the Department of Critical Care's Early Mobility Program. This mobility program is an excellent example of how our critical care team has worked together to improve patient care. After identifying that the strength and mobility care that patients had received while in our ICU's was variable and dependent on day of the week and care provider, we deliberately developed a multidisciplinary team to standardize and ensure that mobility care became part of our daily work. This has allowed for patient mobilization for almost all of our patients.

By interrogating Trauma Nova Scotia's robust database, we have recently been able to assess the impact of this mobility program in our trauma patient population by comparing patients before the introduction of our mobility program and after. Our results are impressive: patients that are part of our multidisciplinary mobility program have less total ICU days, require few days of ventilation (average 1 day less), have less recorded complications (reduced by 8%), and finally, have a reduction in their overall mortality (absolute reduction of 10%).

I would like to express my gratitude and respect for the mobility leaders and all of our team for embracing this practice change. Our patients truly benefit from it.

DID YOU KNOW?

Sleep deprivation is associated with delirium!

Tessa Lambourne, Pharmacy Resident on rotation with Meghan MacKenzie

Up to 38% of ICU patients have trouble falling asleep and 61% report reduced sleep times. Not surprisingly, a number of factors contribute to disruption of the normal sleep-wake cycle in the ICU. This includes medications; sedatives, analgesics, vasopressors, β-agonists, and corticosteroids contribute to disrupted rapid eye movement (REM) sleep.

The 2013 Pain, Agitation, and Delirium clinical practice guidelines suggest promoting sleep through **non-pharmacologic interventions**, but make no recommendation regarding pharmacologic agents. A 2015 Cochrane review evaluated non-pharm interventions. The quality of evidence was low, however the combined results of three trials of earplugs and eye masks demonstrated **prevention of delirium and ↑ number of hours slept**. The following non-pharmacologic interventions should be considered:

- Noise reduction strategies (i.e., earplugs, playing white noise)
- Light control (i.e., eye masks, coordinating ICU activities with daylight, opening curtains to allow natural light during the daytime; closing curtains at night)
- Adequate uninterrupted sleep times (i.e., decreasing stimuli at night, clustering patient care activities)
- Regular sleep-wake schedule (i.e., consistent daily arising time)
- Regular exercise (i.e., physio/mobility promotion)
- Complementary therapies (i.e., massage therapy, music, therapeutic touch, mental imagery)
- Social support (i.e., family support)

Pharmacologic interventions for sleep are commonly used in hospitalized patients. A recent meta-analysis by Kanji *et al*, evaluated the efficacy and safety of benzodiazepines, non-benzodiazepine sedatives, melatonin, propofol and dexmedetomidine for sleep in 861 hospitalized patients. This review demonstrated that pharmacologic interventions might improve sleep latency; however, there is **no evidence to suggest sedatives improve sleep efficiency or quality**. In fact, benzodiazepines, opiates and barbiturates have been shown to disrupt normal sleep patterns and reduce REM sleep. **Currently there is insufficient evidence to support the use of pharmacologic agents for sleep in hospitalized patients.**

An area of current Canadian research is the use of melatonin for prevention of delirium in critically ill patients. Biological effects of melatonin include synchronization of circadian rhythms, improved sleep latency, maintenance and efficiency of sleep. In comparison to other sedatives, melatonin has an improved safety profile with no hangover effects or abuse potential. Additionally patients prescribed melatonin have decreased use of other sedatives that are deliriogenic. Melatonin may be a reasonable alternative for critically ill patients who have difficulty sleeping, despite non-pharmacologic interventions.

HAPPY RETIREMENT DR. HALL!!!

A truly exceptional physician, researcher, and educator leaves our intensivist team this year. Dr. Richard Hall retired June 30th 2017. Thank you Dr. Hall for your many years of service you will be sorely missed!

BIG CONGRATULATIONS

to our graduating critical care fellows!!! We have three graduating from the program this year who will write their sub-specialty exam this fall: Dr. Laurel Murphy, Dr. Edmund Tan, and Dr. Emily Rowsell.

"I take tips from Canada on a lot of things."~*Barak Obama*~

Upcoming Events:

- **Fire Safety Event!**

  WHAT: On-Your-Feet Fire Training; WHO: All of our ICU Team!!
  WHEN: Wed July 5th, 12th, 19th, & Thurs July 27th
  WHERE/TIMES: **3A:** *1415-1435 &1440-1500* **5.2:** *1530-1550 & 1600-1620*

- **Practice Council Event:** Wed Sept 27th, 8am-12
  WHERE: Dalhousie Student Union Bldg, Rm 307
  Open to all of our 3A and 5.2 Team
  To register email Karen @ Karen.Webb@nshealth.ca

  TOPICS: Morbidity in patients surviving ICU admission (Dr. Patrick), Race: the reality of human difference (Dr. Haroon), and Range of Motion in ICU- We Got to 'Move it, Move it'! (PTs: Giselle, Doug, & Tara)

READ MORE ABOUT DELIRIUM:

[1] Barr et al., 2013. Clinical Practice Guidelines for the Management of Pain, Agitation, and Delirium in Adult Patients in the Intensive Care Unit
[2] http://www.iculiberation.org
[3] http://www.icudelirium.org/index.html

Changes to our Critical Care Family: Welcomes & Thank You's!

We have had a few new additions to our ICU family since our last edition:

- **3A** is pleased to welcome and congratulate, Nickie Bourdage and Karolyn Holland, our new hires from the CCNP course!
- **5.2** welcomes Janine MacDonald, Amy McDonough, & Stephanie Proffit from the CCNP Program, and Brittany Belzevick and Kayla Withrow who just completed the Critical Care Transition Program!
- **RT Group** welcomes Andrea Bond (new Resource RT), Andrew Aucoin, Susan Abdo, Melissa Miller, and Rachel O'Neill.
- **Pharmacy Group** welcomes Jennifer Flemming back after maternity leave with her 2nd child, a baby girl!

With the coming of new staff we have seen some amazing members of our family leave. A BIG thank you for your dedication and hard work! You will be missed!!

- **5.2:** Congratulations to Marion Evasuk & Cindy Nowe on their retirements, and best of luck to Alain Landry with his move to PACU.
- **3A:** Congratulations to Tina Delaplante on her retirement and good luck to Diane Wilson.
- **RT:** Best of luck to both Louanna Bethune (Resource RT) and Scott Langley.
- **Pharmacy:** Congratulations to Emma Reid who leaves us the first of August to start her PharmD in Alberta!

Produced by Department of Critical Care
1276 South Park St
Rm 377 Bethune Bldg
Halifax, Nova Scotia
B3H 2Y9
Phone:
(902) 473-3486
Fax:
(902) 473-3610

Email: kristen.griffiths@nshealth.ca

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