Integrating the 2018 PADIS Clinical Practice Guidelines with the ABCDEF Bundle

Jeff Hawley, BSc, BScN, RN, CNCC(c)

Barbara Fagan, BScN, MEd, RN, CCNE, CCCI, CNCC(c)
Declarations

CONFLICT OF INTEREST
About RNPDC

NS Nurses in April 2019 have moved to one regulator for all nurses within the province – LPN, RN, NP (One regulator, one nursing body); Nova Scotia College of Nurses (NSCN); professional nursing association interest group that has formed as CRNNS used to have dual roles

RNPDC receive our funding from NS department of health and wellness to meet the needs for specialty training in the province

IEN entry – Maritime assessment center

Interprofessional faculty and offer interprofessional programming

We fall under IPPL umbrella in NSHA

REBRANDING is coming
Little bit about NS/NSHA
Adult ICUs in NSHA
Learning Outcomes

Compare and contrast ABCDEF bundle to PADIS guidelines, thus describing how implementing the ABCDEF bundle promotes integration of PADIS guidelines in practice.

Identify those at risk/discuss prevention for developing alterations in each domain from 2018 PADIS Clinical Practice Guidelines.

Select and apply two best practice management strategies for patients to optimize each domain from PADIS 2018 guidelines.
The ABCDEF Implementation Bundle

Annachiara Marra, M.D., Ph.D.1,2, Kwame Frimpong, M.D.3, and E. Wesley Ely, M.D., M.P.H.1

1Division of Allergy, Pulmonary and Critical Care Medicine, Vanderbilt University Medical Center, Nashville, TN, USA; 2The University of Naples Federico II, Naples, Italy, 3Department of Family and Community Medicine, Meharry Medical College, Nashville, TN, USA

Long-term morbidity, long-term cognitive impairment and hospitalization-associated disability are common occurrence in the survivors of critical illness, with significant consequences for patients and for the caregivers. The ABCDEF bundle represents an evidence-based guide for clinicians to approach the organizational changes needed for optimizing ICU patient recovery and outcomes. The ABCDEF bundle includes: Assess, Prevent, and Manage Pain, Both Spontaneous Awakening Trials (SAT) and Spontaneous Breathing Trials (SBT), Choice of analgesia and sedation, Delirium: Assess, Prevent, and Manage, Early mobility and Exercise, and Family engagement. The purpose of this review is to describe the core features of the ABCDEF bundle.

Key Words: delirium; family; ventilator weaning; sedation; spontaneous awakening trials (SAT); spontaneous breathing trials (SBT).
ABCDEF Bundle

**A**ssess, prevent and manage pain

**B**oth SBT and SAT

**C**hoice of analgesia and sedation

**D**elirium: assess, prevent and manage

**E**arly mobility and exercise

**F**amily engagement and empowerment
ABCDEF Bundle

Applicable to all ICU patients – ventilated and non-ventilated

Focus is on symptom assessment, prevention and management instead of disease process

GOAL: “...to produce patients who are more awake, cognitively engaged, and physically active, which ultimately serves to facilitate patient autonomy and the ability to express unmet physical, emotional and spiritual needs.” (Pun et al, 2018)
Assess, prevent and manage pain

Self-report
Validated tool
   CPOT
   BPS
Treat pain
   Pharmacological:
      IV opioids first line
      Non-opioid adjuncts
   Non-pharmacological:
      Relaxation/distraction
      Massage/touch
      Music therapy
Pre-procedural pain treatment
Both SBT and SAT

“Wake up and breath”
Complete safety screen
Most effective when interdisciplinary team
**Choice of analgesia and sedation**

Consider analgesia first approach

Assess sedation using validated tool:

- RASS
- SAS

Maintain “light” level of sedation:

- Less ventilator time
- Less incidence of delirium
- Consider non-benzodiazepines
Delirium: assess, prevent and manage

Use of validated monitoring tools:

CAM-ICU
ICDSC

Provides indication for patient centred interventions

STOP (consider choice of sedative, review meds)
THINK (toxic situations, hypoxemia, infection, immobilization, non-pharm. Interventions, K⁺ or other electrolyte disturbances)
DR DRE (Diseases, Drug Removal, Environmental)

Allows detection of hypoactive delirium
Early mobility and exercise

Spectrum of interventions:

- Passive ROM → Ambulation

Daily assessment of activity tolerance

Only intervention that has demonstrated reduction in days of delirium
Family engagement and empowerment

Keeping patients and families informed

Actively involving patients and families in decision-making

Providing both physical comfort and emotional support to patient and families

Maintaining a clear understanding of patients’ concepts of illness and cultural beliefs

Social isolation separates patients from their families. Flexible visitation, including an open ICU, daily meetings with the family, and redesign efforts that target family comfort can all positively impact family presence.
Figure 2. Association between proportional performance of the ABCDEF bundle and symptom-related outcomes. These data represent the relationship between the proportion of eligible ABCDEF bundle elements performed on a given day and the probability of a daily clinical outcome the following day. For example, the upper left-hand panel represents the relationship between proportion of eligible elements performed on a given day and the probability that the patient would be mechanically ventilated the following day. Lines and confidence bands represent the probability of the outcomes and the 95% CI, adjusted for baseline, ICU admission characteristics, and daily covariates. Relationships between proportion of elements performed and each outcome were significant (all p < 0.0001). Patients were "eligible to receive" elements A, C, D, and E on all ICU days. Patients were eligible for element B if sedated (part 1, SAT) and/or mechanically ventilated (part 2, SBT), and were eligible for element F if family or another caregiver was present. Therefore, patients were eligible for a maximum of seven and a minimum of four elements on any given day; proportion of elements performed is the number of elements actually performed divided by the elements the patient was eligible to receive.
Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU

John W. Devlin, PharmD, FCCM (Chair)1,2; Yoanna Skrobik, MD, FRCP(c), MSc, FCCM (Vice-Chair)3,4; Céline Gélinas, RN, PhD5; Dale M. Needham, MD, PhD6; Arjen J. C. Slooter, MD, PhD7; Pratik P. Pandharipande, MD, MSC1; FCCM8; Paula L. Watson, MD9; Gerald L. Weinhouse, MD10; Mark E. Nunnally, MD, FCCM11,12,13,14; Bram Rochwerg, MD, MSc15,16; Michele C. Balas, RN, PhD, FCCM, FAAN17,18; Mark van den Boogaard, RN, PhD19; Karen J. Bosma, MD20,21; Nathaniel E. Brummel, MD, MSc12,23; Gerald Chantques, MD, PhD24,25; Linda Denehy, PT, PhD26; Xavier Drouot, MD, PhD27,28; Gilles L. Fraser, PharmD, MCCM29; Jocelyn E. Harris, OT, PhD30; Aaron M. Joffe, DO, FCCM31; Michelle E. Kho, PT, PhD32; John P. Kress, MD32; Julie A. Lanphere, DO33; Sharon McKinley, RN, PhD34; Karin J. Neufeld, MD, MPH35; Margaret A. Pisani, MD, MPH36; Jean-Francois Payen, MD, PhD37; Brenda T. Pun, RN, DNP38; Kathleen A. Puntillo, RN, PhD, FCCM39; Richard R. Riker, MD, FCCM40; Bryce R. H. Robinson, MD, MS, FACSM, FCCM41; Yahya Shehabi, MD, PhD, FICCM42; Paul M. Szumita, PharmD, FCCM43; Chris Winkelman, RN, PhD, FCCM44; John E. Centofanti, MD, MSc45; Carrie Price, MLS46; Sina Nikayin, MD47; Cheryl J. Misak, PhD48; Pamela D. Flood, MD49; Ken Kiedrowski, MA49; Waleed Alhazzani, MD, MSc (Methodology Chair)50,51.
PADIS Guidelines

Pain
Agitation/Sedation
Delirium
Immobility
Sleep
Pain

Treat pain before sedating

Use a validated tool (CPOT, BPS) if patient is unable to self-report

Adjuncts:

Non-opioid

Non-pharmalogical

  Massage
  Music
  Cold therapy
  Relaxation
Applying 2018 PADIS: Pain Prevention/Management

Which of the following PICO questions was supported with the best evidence in the guidelines update?

1. Should acetaminophen be used as an adjunct to an opioid (vs an opioid alone) for pain management in critically ill adults?

2. Should a neuropathic pain medication (e.g., gabapentin, carbamazepine, and pregabalin) be used as an adjunct to an opioid (vs an opioid alone) for pain management in critically ill adults?

3. Should local analgesia (vs an opioid) be used for critically ill adults undergoing a procedure?

4. Should an NSAID topical gel (vs no use of NSAID gel) be used for critically ill adults undergoing a procedure?
Applying 2018 PADIS: Pain

True or False:

A patient's self-report of pain is the reference standard for those who can communicate reliably in an intensive care unit.
Agitation/Sedation

Causes of agitation:
  Uncontrolled pain

Light sedation:
  Shorter time to extubation

Medication:
  Propofol or dexmedetomidine over benzodiazepines
Applying 2018 PADIS: Agitation/Sedation

True or False:

Light versus deep sedation is recommended despite no consensus on definitions of light, moderate or deep sedation
Applying 2018 PADIS: Agitation/Sedation

True or False:

Daily sedation interruptions (DSI) are superior to nurse-protocolized targeted sedation when looking to achieve and maintain light sedation.
**Delirium**

Routinely assess adult ICU patients for delirium:

- CAM-ICU
- ICDSC

No evidence to support use of pharmacological interventions to prevent delirium

No evidence to support the use of haloperidol or atypical antipsychotics to treat delirium

Use of dexmedetomidine is recommended for mechanically ventilated patients when agitation is preventing weaning/extubation
Delirium

Recommend use of a multicomponent, non-pharmacological intervention strategy which is focused on reducing the modifiable risk factors for delirium.
Applying 2018 PADIS: Which of the following is a modifiable risk factor for delirium?

a) Age
b) Dementia
c) Blood transfusion
d) Prior coma
Applying 2018 PADIS: Which of the following treatments is best recommended to prevent delirium?

a) Haldol  
b) Respiridone  
c) ABCDEF bundle  
d) Dexmetodimidine
Immobility

New topic added in 2018

ICU acquired weakness (25-50%)

Immobility/bedrest is a risk factor

Suggest performing rehabilitation or mobilization in critically ill adults
  
  Improves muscle strength at discharge
  Decreases length of mechanical ventilation
  Serious safety events not common
Applying 2018 PADIS: Which of the following would be considered a barrier to initiating mobilization in a mechanically ventilated patient?

a) New chest pain with concerns regarding ischemia.
b) Family concerns that the patient may fall during mobilization.
c) Continuous Renal Replacement Therapy.
d) Vasoactive medication infusion.
Applying 2018 PADIS: When should mobilization of a mechanically ventilated patient be discontinued?

a) When HR ↑ to 125 from 100
b) When BP ↓ to 92/60 from 110/70
c) When central line is pulled out
d) When MAP ↑ from 65 to 85
**Sleep**

New topic added in 2018

Sleep fragmentation

Delirium impacts sleep:

- Less REM
- Disruption of circadian rhythm and increased daytime sleeping

Sleep quality in ICU impacted by many factors:

- Pain
- Environmental stimuli
- Respiratory interventions
- Medications
- Health-care interruptions
Sleep

Interventions to improve sleep:

- Noise and light reduction
- Sleep-promoting, multicomponent protocol
Applying 2018 PADIS: Which of the following is true regarding sleep in ICU patients?

a) Sleep is considered a non-modifiable risk factor which may or may not influence recovery.

b) Dissociative sleep patterns are predictable when health care professionals examine patient characteristics.

c) Pain, health-care related interventions and medications can affect sleep quality.

d) There is a direct association between sleep quality and duration of mechanical ventilation.
Applying 2018 PADIS: Which of the following strategies has been suggested to improve sleep in ICU patients?

a) Melatonin.

b) Neurally Adjusted Ventilator Assist (NAVA) at night versus Pressure Support in mechanically ventilated patients.

c) Assist-Control (AC) at night versus Pressure Support (PS) ventilation in mechanically ventilated patients.

d) Dexmedetomidine.
How the Bundle and CPG work together

ABCDEF Bundle – evidence based set of interventions and processes which when implemented can aid in achieving the PADIS Guidelines.
How it all fits together

Pain

A

B

C
Agitation / Sedation
Delirium
Immobility
Sleep
Now that you know…

Take about 5 minutes and with the people around you discuss any real or potential barriers to implementing the ABCDEF Bundle
References


References


Pun, B.T., Balas, M.C. Barnes-Daly, M.A., Thompson, J.L,... & Ely, E.W. (2019). Caring of critically ill patients with the ABCDEF bundle: Results of the ICU liberation collaborative in over 15,000 patients. *Critical Care Medicine, 47*(1), 3-14. DOI: 10.1097/CCM.0000000000003342
