

ABCs of Extubation Part 2 (increasing awareness of ABCDEF bundles)

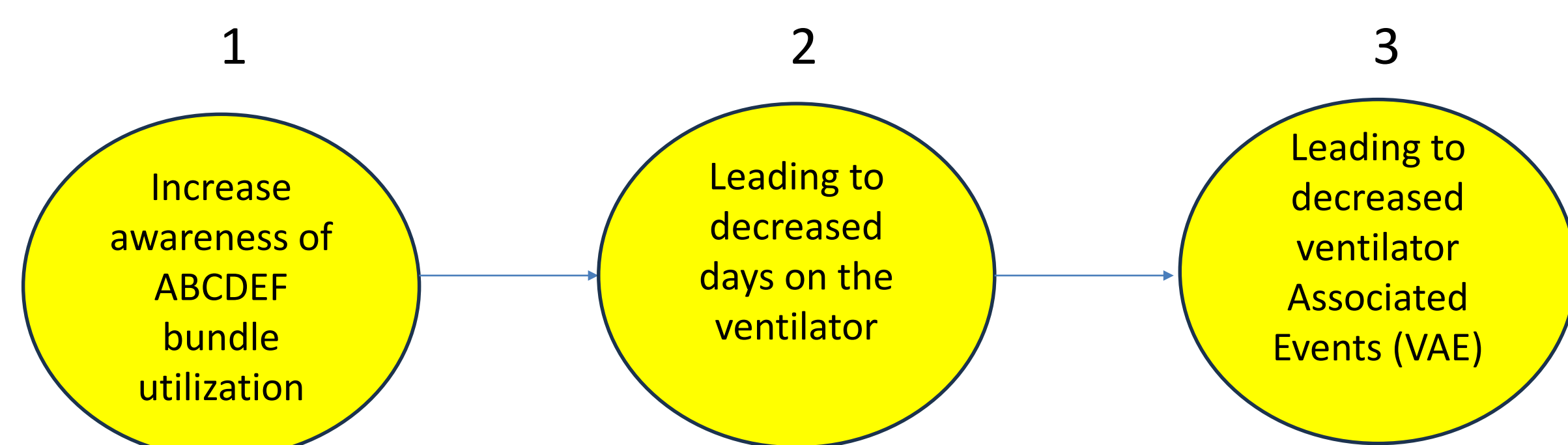
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BACKGROUND

The use of a mechanical ventilator is frequently utilized as a life-saving treatment modality in critical care; however, the therapy comes with infection risks including infection-related ventilator-associated conditions (IVAC) and possible ventilator-related pneumonia (PVAP). These complications cause worsening of the patient's respiratory status leading to longer days on the ventilator. Due to the increased IVACs/PVAPs in MICU above the predicted model, the previously introduced ABCDEF bundle will be reinforced with increased emphasis to help minimize the patient's intubation time and expedite their extubation as proficiently and safely as possible.

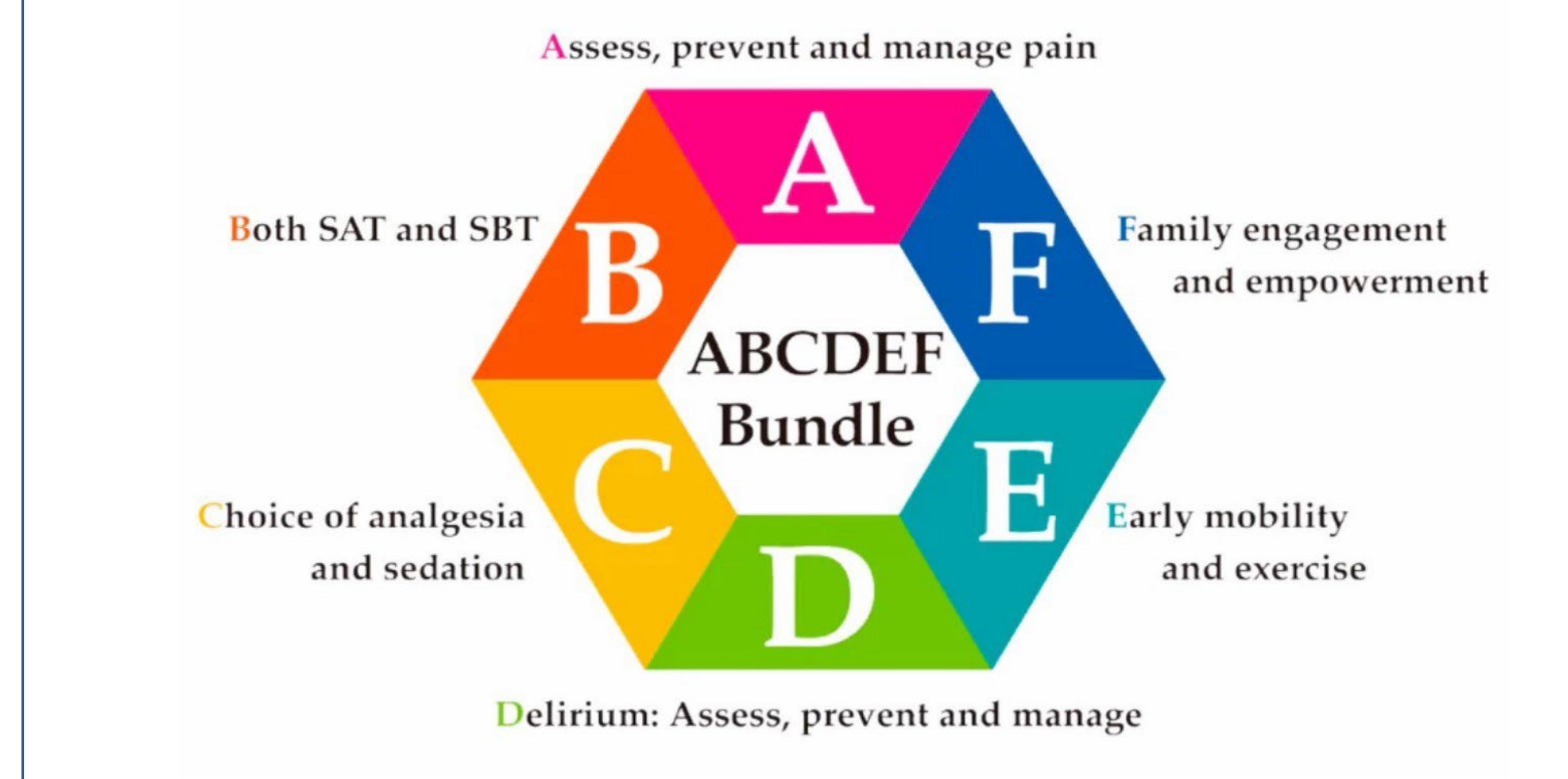
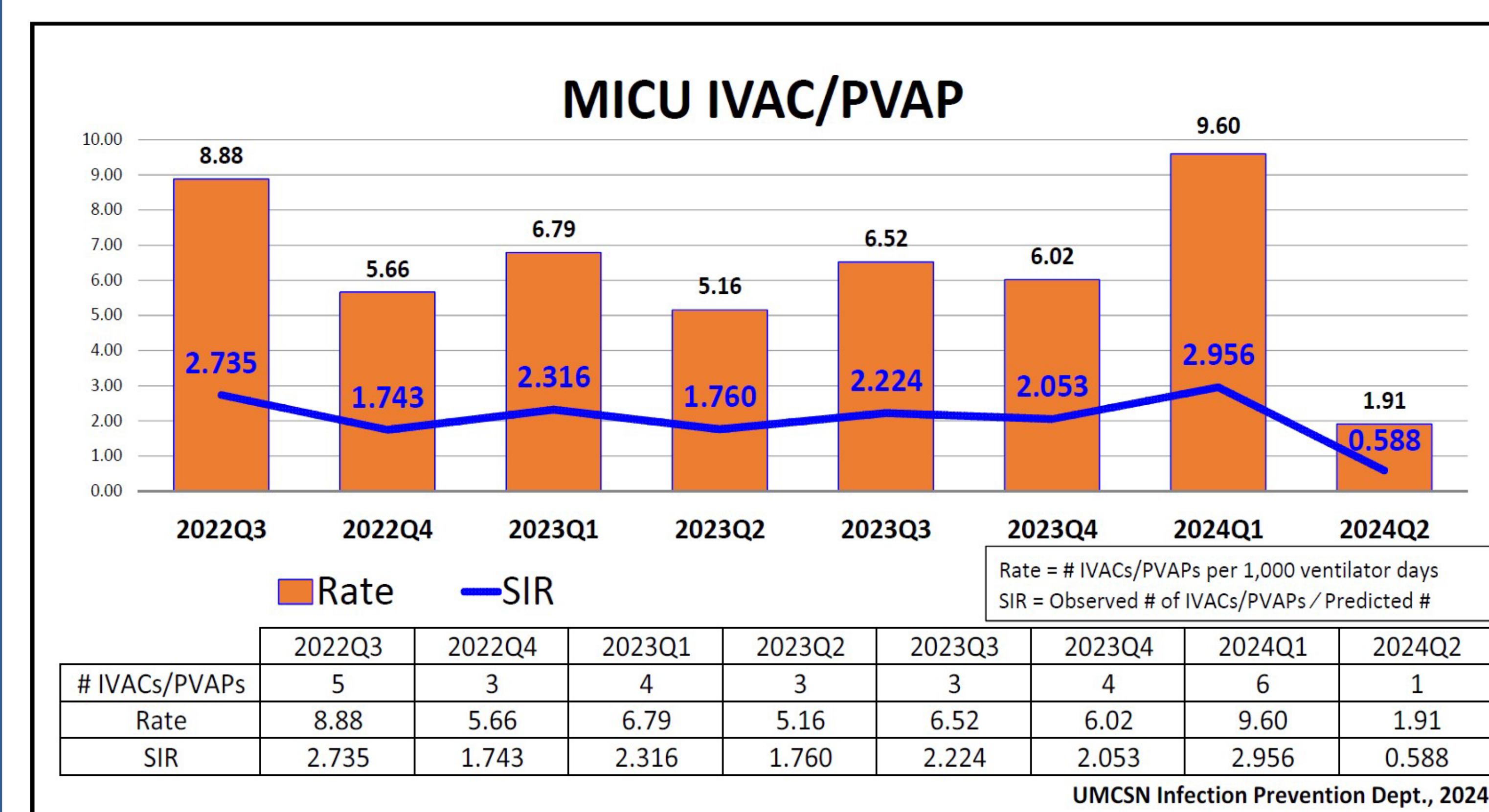
PURPOSE



Note: The MICU reports the VAEs to infection control which then reports these events to the National Health Care Safety Network (division of CDC). These VAEs are then tabulated with other similar hospital sized critical care units to come up with a Standard Infection Rate (SRI). The SRI is an expected infection rate per amount of vent utilization for a healthcare facility. The closer to an SRI of 1 the better!

METHODS

- Utilize the ABCDEF bundle awareness placard and reeducate staff on ABCDEF bundle charting
- Compare last 12 months (4 quarters) vent days, and IVACs with next 12 months IVACs plus vent days to see were improvements are needed.
- Work with shareholders from Physical Therapy, Infection Prevention and Respiratory Therapy at the start of patient intubation per physician order.
- Note: IVAC/PVAP data was collected using tiered surveillance definitions from the National Healthcare Safety Network (NHSN) for ventilator-associated events (VAE). The standardized infection ratios (SIR) is a the observed number of infections compared to the number of infections predicted, based on aggregated national-level data.



UMC Progressive Mobility Protocol

STEP 1 - Safety Screen: Evaluate Daily, Patient must meet all criteria

- M - Myocardial Stability
 - No evidence of active myocardial ischemia x 24 hrs.
 - No dysrhythmias requiring new antiarrhythmic agents x 24 hrs.
- O - Oxygenation Adequate on:
 - FiO2 ≤ 0.6
 - PEEP ≤ 10 cm H2O
- V - Vasopressor(s) Minimal
 - No increase of any vasopressor x 2 hrs.
- E - Engage to Voice
 - Patient responds to verbal stimulation (RASS greater than -3)
- R - Restrictions on Mobility
 - No order for strict bed rest

Step 2: Progressive Mobility

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
RANGE OF MOTION	SIT	EDGE OF BED	STAND	WALK
Passive ROM 3x/day	Sitting Position Minimum 20 min 3x/day	Actively Sits at Edge of Bed	Transfer to Chair Sit 20 min/3x/day	Ambulation Marching in place Walking in halls
Q2 hr turning	Active Resistance	Sitting Position 20 min 3x/day	Actively Sits at Edge of Bed	Active Resistance
Ensure PFTOT evaluation is ordered	Passive ROM 3x/day	Active Resistance	Sitting Position Minimum 20 min 3x/day	Actively Sits at Edge of Bed
	Q2 hr turning	Active/Active Assisted ROM 3x/day	Active Resistance	Sitting Position
	Can extubate now and/or 1 Move to level 3	Can move and/or assist gait? Move to level 4	Active/Active Assisted ROM 3x/day	Active Resistance
			Q2 hr turning	Active ROM

ABCDEF Bundle awareness sheet

When performing the ABCDEF bundles on our ventilated patients, it is important to know the reasons for WHY we use it in our plan of care and WHAT it entails!

WHY:

- The purpose of the ABCDEF bundle is to minimize ventilator-associated events (VAEs) such as Pneumonia, atelectasis, Adult Respiratory Distress Syndrome and pulmonary edema which contributes to a shortened duration of mechanical vent days and length of stay in the ICU.

WHAT:

- A: assess prevent and manage pain**
 - assessing and treating pain could be important in preventing and/or managing delirium.
 - behavioral pain scale (BPS) >5 reflects unacceptable pain
 - critical care pain observation tool (CPOT) > or = 3 reflects unacceptable pain
- B: both spontaneous awakening (SAT) and spontaneous breathing trials (SBT)**
 - SATs should be done with the stopping of narcotics and restarting either narcotics or sedatives at half previous dose and titrating as needed
 - Daily SATs should be paired with SBTs as part of usual care. Studies show that the combining of the two trials decreases the length of stay on a ventilator by 3.1 days (Gerard, Kress, 2008)
- C: choice of analgesia and sedation**
 - Primary goal is the delivery of psychoactive medications and to avoid oversedation and promote early extubation
 - 2013 ICU PAD guidelines suggest the use of non-benzodiazepine sedatives (propofol) options may be preferred over benzodiazepine based sedative regimens (Lorazepam)
- D: Delirium: Assessment Prevent and management**
 - Utilize the confusion assessment method for the intensive care unit (CAM-ICU) and monitor RASS. CAM-ICU clinical delirium, CAM-1-3 is subyndromal delirium
 - To help reduce the incidence and duration of ICU delirium, the promotion of sleep hygiene and the prevention of sleep disruption and progressive mobilization are strongly recommended (ICU PAD guidelines)
- E: early mobility**
 - a daily spontaneous awakening trial combined with physical and occupational therapy can improve the individual's functioning status at hospital discharge and shorten the duration of ICU delirium as well as decrease their mortality rate.
 - Physical therapy (early mobilization) is shown to be feasible and safe even in the most complicated patients.
- F: family engagement**
 - Family presence on the ICU rounds is beneficial and gives them feelings of inclusion respect and having a better understanding of their loved ones needs and care

The ABCDEF tab can be accessed in the flowsheet section of your EPIC charting

RESULTS

We will continue to follow the data for rates and SIRs of IVACs/PVAPs and compare the pre-intervention period to the post-intervention period, assessing for trends and limitations. Evidence suggests that with the proper resources, including education and workflow adjustment, increased utilization of the ABCDEF bundle will contribute to a quicker path to extubation, ergo lowered risk for ventilator-related infections.

CONCLUSIONS

The utilization of the ABCDEF placard combined with the ABCDEF bundle tab over the next four quarters will have the desired effect of increased awareness in which patients will be extubated in less time than the previous four quarters. Quicker extubation, in-turn, should lower the risk for IVAC/PVAP infections by creating a safer critical care environment with decreased use of ventilators.

REFERENCES

Centers for Disease Control and Prevention (CDC). (2024). *Ventilator-Associated event (VAE)*. Retrieved September 17, 2024, from https://www.cdc.gov/nhsn/pdfs/pscmanual/10-vae_final.pdf

Green, M., Marzano, V., Leditschke, I. A., Mitchell, I., & Bissett, B. (2016). Mobilization of intensive care patients: A multidisciplinary practical guide for clinicians. *Journal of Multidisciplinary Healthcare*, 9, 247–256. <https://doi.org/10.2147/jmdh.s99811>

National Healthcare Safety Network (NHSN). (2021). *The NHSN standardized infection ratio (SIR): A guide to the SIR* (based on the 2015 national baseline) updated March 2024. Retrieved September 17, 2024, from <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf>

SlideShare. 2020. October 31. ABCDEF bundle: *ICU Liberation Bundle*. SlideShare. <http://www.slideshare.net/slideshow/abcdef-bundle-icu-liberation-bundle/239029630>

UMCSN Infection Prevention Dept. (2024). *MICU IVAC/PVAP*. Modified from University Medical Center of Southern Nevada Infection Prevention Department. <https://www.sccm.org/getmedia/fdb48864-5670-462c-a650-70ca9dc38a73/ICULIB-Infographic-Final?width=386&height=500>

