



Spreading Knowledge – Improving Outcomes

Sleep Promotion





Inevitable Conflict

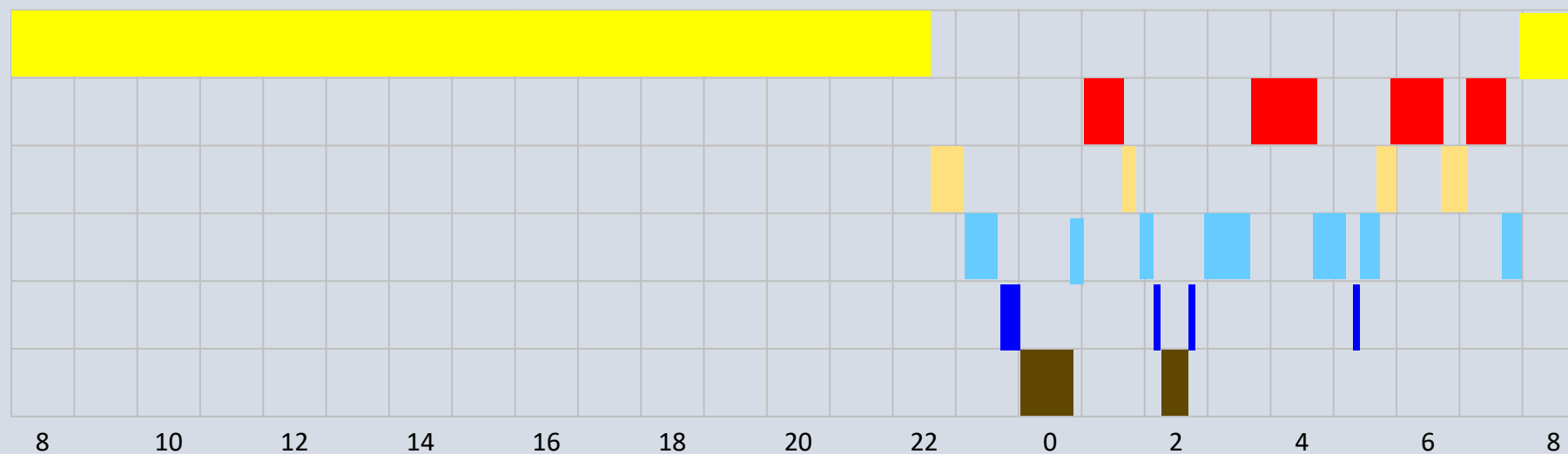


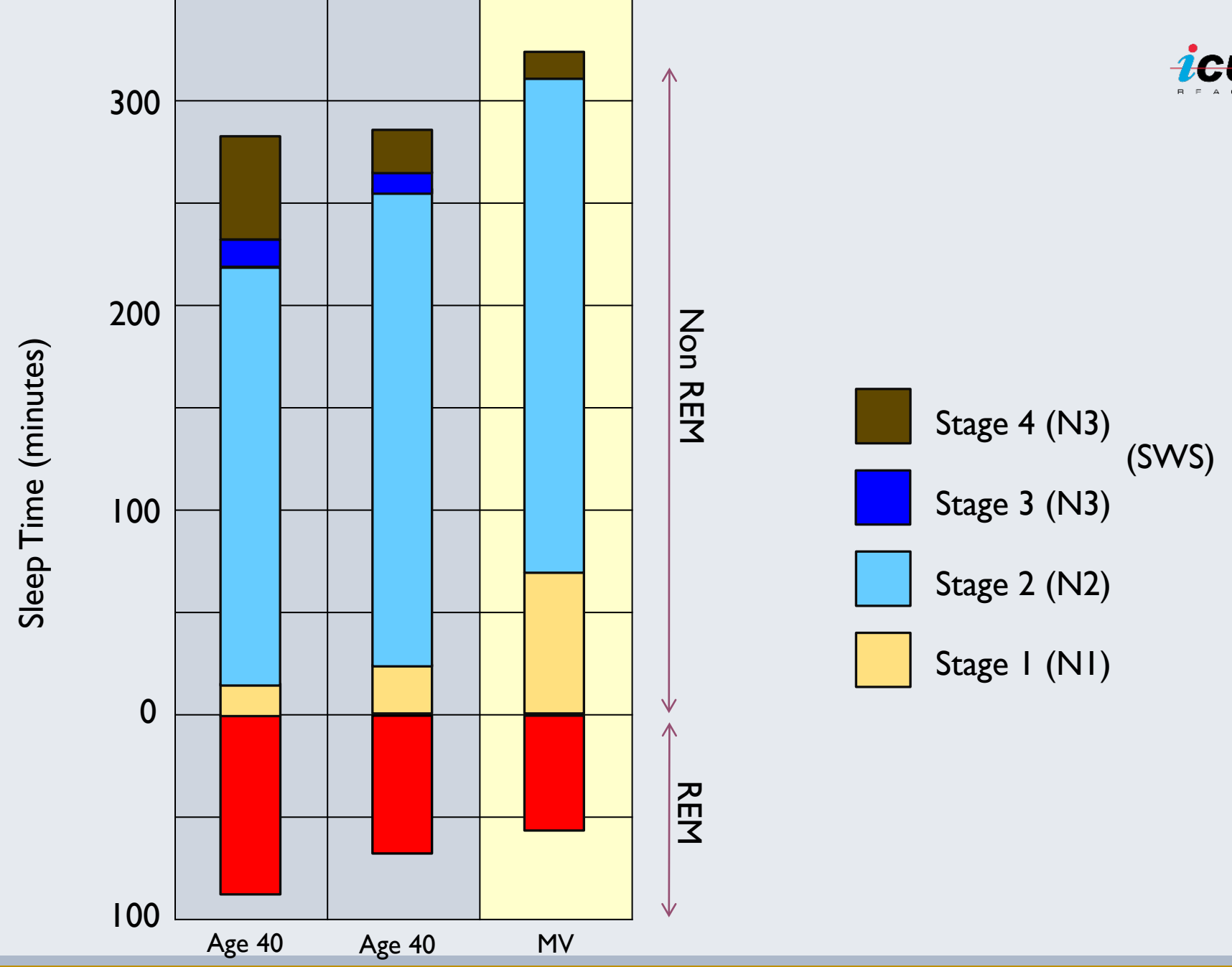
Sleep serves a purpose



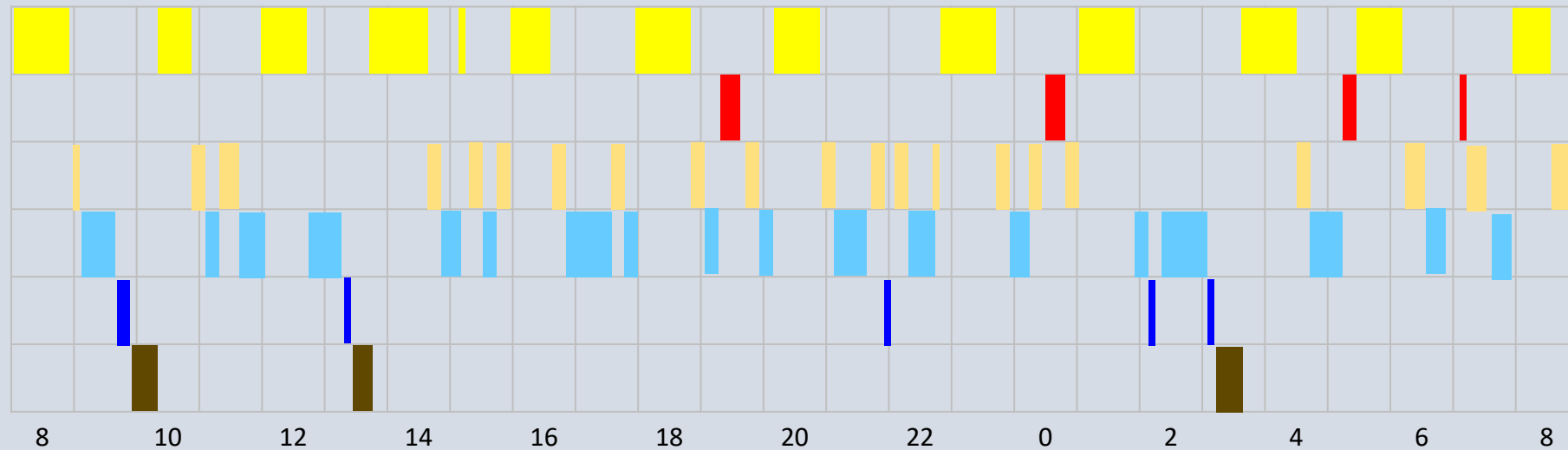
ICU care requires frequent monitoring

Normal Sleep Pattern





Hyponogram for a Patient on Mechanical Ventilation



Stage 1 (N1) Stage 3 (N3) REM
Stage 2 (N2) Stage 4 (N3)

Factors Disrupting Sleep on Mechanical Ventilation

Noise disruption

- Ventilator alarm:
 - Inappropriate threshold
 - Delayed alarm inactivation
- Humidifier alarms

Disruption by nursing interventions

- Airway suction
- Nebulizer delivery
- Blood draws

Ventilation-related pharmacological disruption

- Benzodiazepines (↓REM, ↓deep NREM)
- Opioids (↓REM, ↓deep NREM)
- Neuromuscular blocking drugs

Ventilator mode

- Pressure support ventilation



Sleep Promotion

Nonpharmacologic therapy

	Description
Noise	Close all door Reduction of call and machine alarm sounds (24:00–06:00) Medical staff talk quietly Use of earplugs
Light	Turn off central lighting in the intensive care unit (24:00–06:00) Application of eyeshades Use of dim bedside lighting for patient care
Patient care	Prohibition of unnecessary tests and blood collection (24:00–06:00) Maintaining adequate sedation Assessment of pain and use of appropriate analgesics Use of the assist-control ventilation mode during the night (24:00–06:00)



Sleep Promotion

Pharmacologic treatment

Dexmedetomidine*

Melatonin*

Propofol*

Olanzapine and
quetiapine*

Haloperidol*

Trazadone*

*Requires further investigations



Sleep Promotion



**MOBILITY AND CIRCADIAN
RHYTHM MAINTENANCE**



**PHARMACOLOGICAL SUPPORT
– LIMITED SCIENCE**



**NONPHARMACOLOGICAL -
LOTS OF TOOLS IN THE
TOOLBOX!**



Thank you

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Thank You
