

ABCDEF Bundle Implementation:

*The influence of access to
bundle-enhancing supplies and
equipment*

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Objectives

1. Describe benefits of implementing a multicomponent, interprofessional bundle to standardize critical care processes.
2. List at least one area in which future research is needed to improve implementation of the ABCDEF bundle.

Funding: Sigma Theta Tau International and American Association of Critical Care Nurses

Employers: Vanderbilt University School of Nursing & Veterans Affairs Tennessee Valley Healthcare System in Nashville, TN, USA

No other conflicts of interest.

Significance – ICU Delirium & Weakness

Scope

- Common and costly
- Mortality, cognitive impairment, functional disability, PTSD, depression

Interprofessional approaches to care are recommended

- Align processes, people, technology
- Improve quality and safety

A

Assess, prevent and manage pain

B

Both SATs and SBTs - coordinate Wake up and Breathe approach

C

Choice of analgesia and sedation - thoughtful sedative/analgesic administration & meds to avoid

D

Delirium: Assess, prevent and manage

E

Early mobility - optimize mobility and advance as clinically able

F

Family engagement and empowerment



Delirium Days
Ventilator Days
Hospital Days



Early Mobility
Survival
Return to Physical & Cognitive Baseline



Aim: Describe availability and accessibility of ABCDEF-enhancing items in units implementing the bundle.

EXPLORING THE ROLE OF THE PHYSICAL ENVIRONMENT ON ABCDEF
BUNDLE ADHERENCE

Study Design

- **Exploratory multicenter cross-sectional**
- **Eligibility:** Site participation in RCT utilizing ABCDEF bundle
- **Sample:** 10 medical and surgical ICUs in 6 academic medical centers
- **Measures:**
 - **Geospatial:** min and max distance from head of bed to 24 ABCDEF-enhancing items
 - **Adherence:** bedside ABCDEF bundle checklist
- **Used measuring wheel to capture exact distances in feet and inches**

Analysis

- Comparison of ABCDEF-enhancing item quantity across units
- Hierarchical agglomerative cluster analysis
- Regression analysis for selected items on early mobility adherence

Unit Supply Comparison in Order of ABCDEF Adherence*

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10	Total
‡ABCDEF Adherence (%)	85	84	83	80	79	73	64	53	49	38	
Overhead lift	X	X	X	X			X	X	X		7
Passive sling lift				X			X			X	3
Standing aid lift				X			X			X	3
Sit to stand aid				X			X				2
Recliner chair	X	X	X	X			X	X		X	7
Bariatric chair		X	X								2
Stretcher chair				X	X	X	X			X	5
Standard walker		X	X	X	X	X	X	X	X	X	9
Specialty walker		X	X		X	X		X		X	6
Portable ventilator								X	X		2
Portable monitor		X	X								2
Slide sheets				X	X	X	X				4
Hover mats				X	X	X	X				4
Turning straps		X	X								2
Gait belts								X	X	X	3
Strength bands								X	X		2
Nonpharmacologic tools								X	X		2
Radio								X			1
TOTAL	2	7	7	9	5	5	9	9	6	7	

†n=561 ventilator days and 101 patients

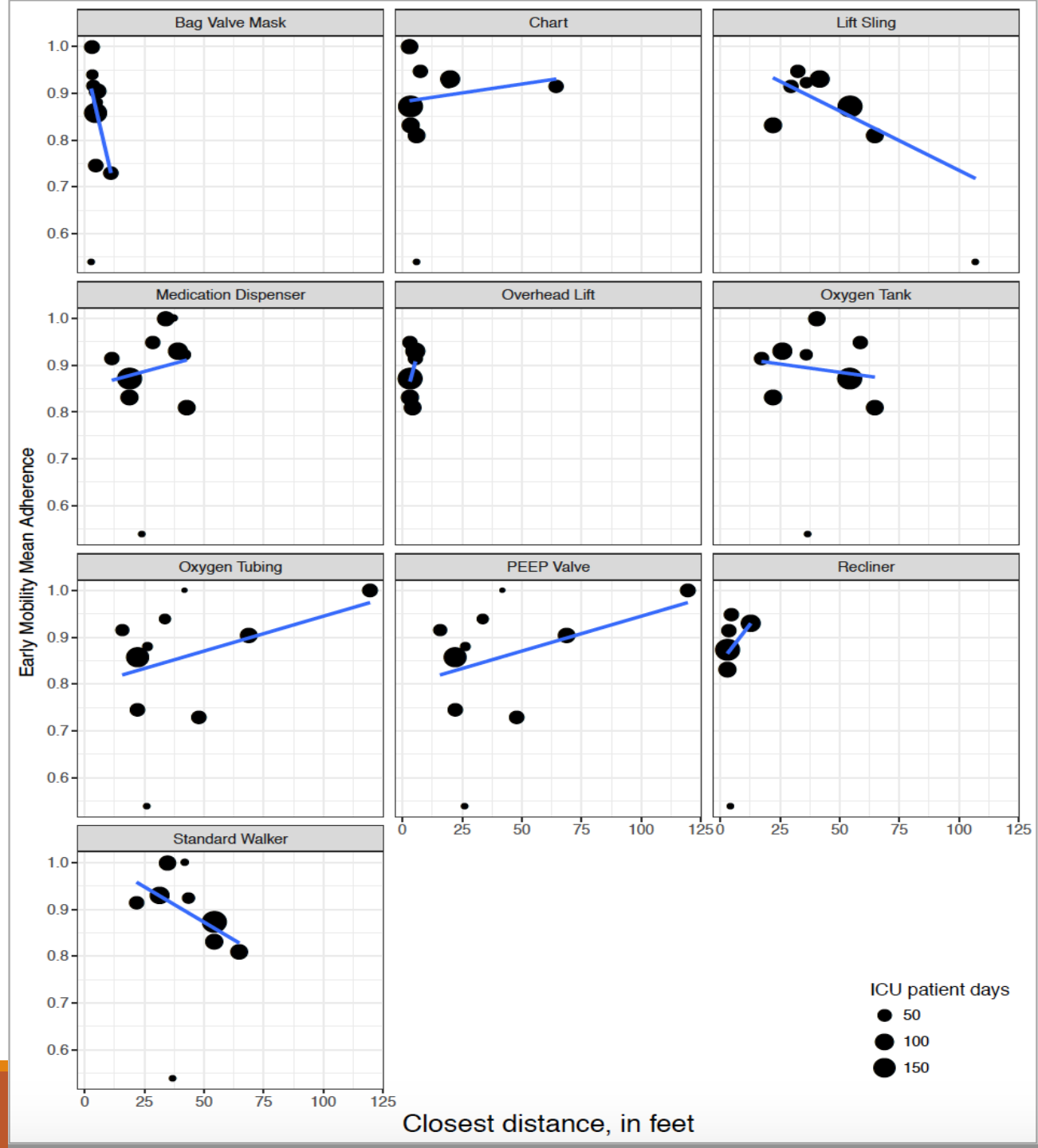
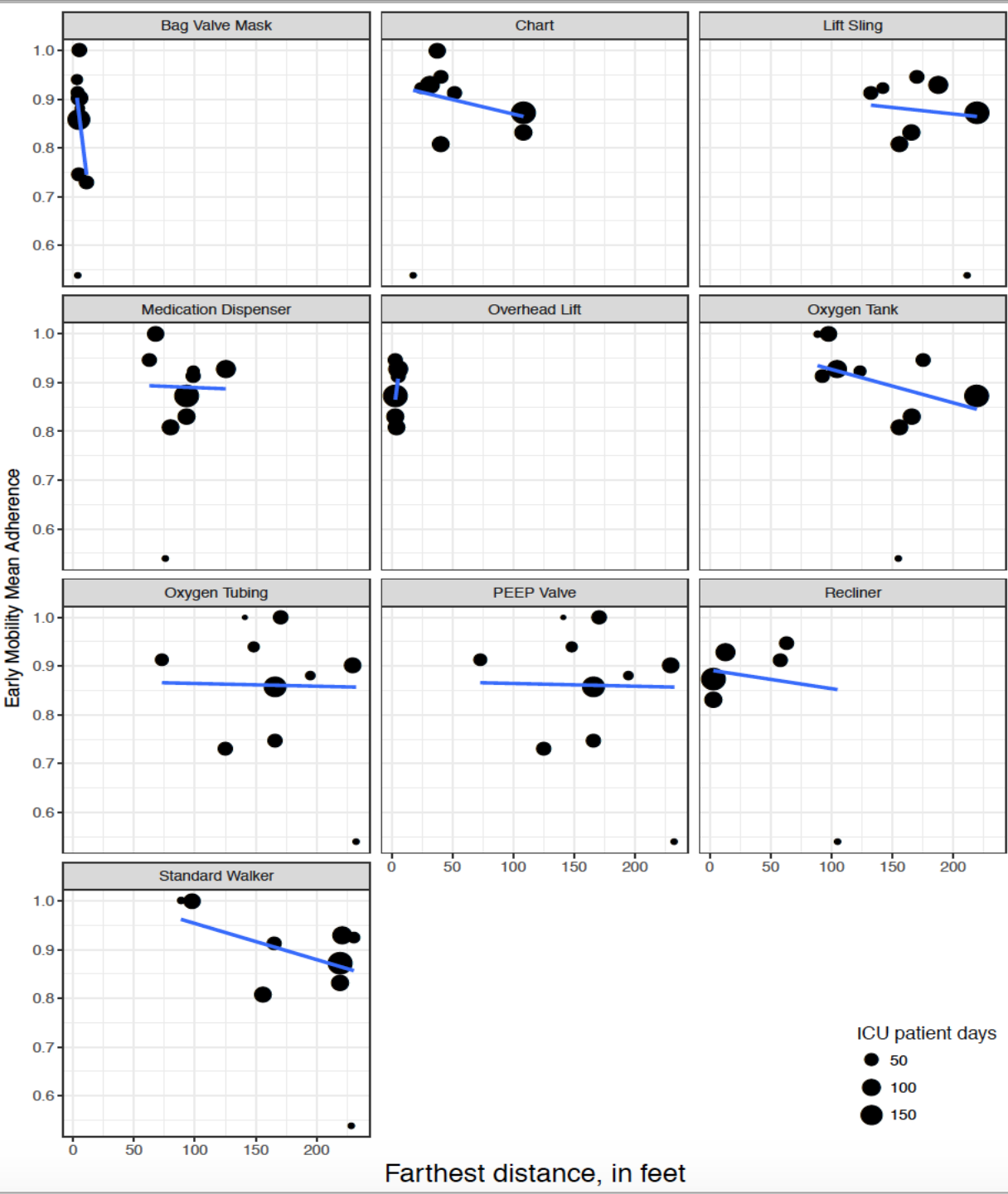
*All units have electronic documentation, bag valve masks, oxygen tubing, positive end expiratory pressure valves, and automated medication dispensing systems; all units with passive sling lifts and overhead lifts have lift slings.

Findings – Cluster Analysis (Full bundle)

- ↓ adherent clusters generally characterized by ↓ distance traveled
- ↑ adherent clusters generally characterized by ↑ distance traveled and ↑ room sizes
- Conversely, most adherent cluster had ↓ distance to:
 - Oxygen tanks
 - Specialty walkers
 - Lift slings
 - Respiratory supplies
 - Passive lifts
 - Chairs

Findings – Regression (Early mobility)

- No statistically significant associations at the 5% level.
- Trends for declining early mobility adherence for ↑ max distance traveled for:
 - Bag valve mask
 - Chart
 - Lift sling
 - Oxygen tank
 - Standard walker
- Trends for declining early mobility adherence for ↑ min distance traveled for:
 - Bag valve mask
 - Lift sling
 - Oxygen tank
 - Standard walker



Findings – Regression (Early mobility)

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 - **Bag valve mask**
 - Chart
 - **Lift sling**
 - **Oxygen tank**
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 - **Bag valve mask**
 - **Lift sling**
 - **Oxygen tank**
 - **Standard walker**

Conclusions

- Available and accessible equipment is not enough to explain variation in ABCDEF bundle adherence in this sample.
- Trends for distance traveled and early mobility adherence were noted but requires further study with larger sample sizes.

Implications

- Focus future investigation on environmental factors using larger sample.
 - Unit configuration
 - # corners
 - Free room space
 - In-room supplies
 - Distance traveled
- Explore role of other organizational factors.
 - Teamwork
 - Staffing
 - Coordination across disciplines
 - Protocol complexity
 - Role clarity

Thank you!

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