ATS Highlights 2022:
Critical Care Assembly Early Career Professionals

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Tell us about your yourself.
I have always been drawn to the complexity of critical care nursing. I began my nursing career in the ICU and practiced for over a decade as an ICU-based Clinical Nurse Specialist. My experiences helping to drive practice change at the local level motivated me to obtain a PhD in nursing, with focus on human factors and decision-making, and post-doctoral training in health services research. I'm currently an Assistant Professor of Nursing at the University of Iowa.

Tell us about your research.
My research applies human factors, informatics and implementation science approaches with the overall goal of improving care delivery and outcomes of critically ill patients. My current projects focus on improving functional outcomes by: understanding nurse decision-making within the context of early mobility interventions, identifying patient risk for functional decline using predictive modeling, and describing symptom and physical function trajectories during sepsis hospitalization.

Where do you see yourself in 5 years?
I aim to continue building my team and program of research focused on developing and sustaining systems-based interventions to improve long-term outcomes for patients that require ICU care.

How has the Critical Care Assembly contributed to your career?
The Critical Care Assembly has supported me in building my research network by offering opportunities for mentoring and training.

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Activity Level	EHR Safety Screen Prototype n=1,657		RN Readiness Assessment n=1,657	
	Safe for OOB n (%)	Unsafe for OOB n (%)	Safe for OOB n (%)	Unsafe for OOB n (%)
Out of bed				
Stand	1 (0)	11 (1)	3 (0)	9 (1)
Chair	68 (4)	235 (4)	113 (7)	190 (11)
Walk	57 (3)	137 (3)	126 (8)	68 (4)
Bed				
Bed	152 (9)	966 (58)	46 (3)	1072 (65)
Passive chair	4 (0)	0 (0)	0 (0)	4 (0)
Dangle	11 (1)	15 (1)	0 (0)	26 (2)
Total	293 (18)	1364 (82)	288 (17)	1369 (83)

EHR Safety Screen Prototype
- 38 measures grouped into 4 domains (cardiovascular, respiratory, neurologic, other)
- Each domain categorized as safe/unsafe
- Unsafe score in 1+ domains = overall unsafe score

RN Readiness Assessment
- First day shift RN assessment of mobility level on ICU day 3
- 11 documented levels categorized as: in-bed, OOB.
- Any in-bed assessment = unsafe score

Activity Level
- RN and PT flowsheet documentation of activity done
- Highest level documented during ICU Day 3

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Comparing a Novel EHR Safety Screen Prototype and the Nurse Readiness Assessment to Activity Levels in ICU Patients Requiring Mechanical Ventilation

Rationale: Early mobility guidelines and protocols have increased the frequency of patients who walk during ICU admission, however widespread implementation remains a challenge. Physiologic status is one key element in determining safety for out-of-bed (OOB) mobility interventions and the electronic health record (EHR) provides a data-driven opportunity to screen for safety concerns. This study describes characteristics of an initial EHR mobility safety screen (EHR-SS) prototype and compares the EHR-SS and institutional nurse readiness mobility assessment (RN-MA) against patient activities documented within the calendar day.

Methods: Secondary review of EHR data from a single Midwest academic health center. Patients who required least 24-hours of mechanical ventilation, 72-hours of ICU care, were ambulatory prior to admission, and survived hospitalization between 2016-2019 were included. Using EHR data from day 3 of ICU admission, we measured the association between the EHR-SS or RN-MA and highest activity level documented using Spearman's correlation.

Results: Of 1,657 patients, 293 (18%) had an EHR-SS = safe for OOB activity, 288 (17%) had an RN-MA = safe for OOB activity, and 509 (30.7%) had OOB activity documented in the subsequent calendar day. No correlation was observed between the EHR-SS and RN-MA (r_s = 0.03, P = 0.23). Activity level by EHR-SS and RN-MA score is reported in Table 1.

Conclusions: We observed similar proportions of patients assessed as safe for OOB activity by the EHR-SS and RN-MA, however there was wide variability in the activity level that occurred in the ensuing day. The prototype EHR-SS and institutional RN-MA require re-examination for sensitivity and specificity as more patients achieved OOB activity than screened as safe by the EHR-SS and RN-MA.