

# UC Davis

## Emergency Medicine

### Title

Delirium from the Emergency Department: How Does Waiting, Boarding and Multiple Bed Movements of Older Patients in the ED Contribute to the Development Of Delirium?

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### Data Availability

The data associated with this publication are not available for this reason: N/A



## INTRODUCTION

Delirium is an acute, fluctuating condition with an alteration in level of consciousness associated with inattention and disorganized thinking, significantly impacting mortality, morbidity and hospital length of stay. Delirium is the most common complication afflicting hospitalized patients ages 65 years and older, affecting more than 2.6 million older adults each year in the United States. <sup>1</sup>

This study will evaluate the effects of the total time spent in the emergency department (ED), the number of times a patient is moved from one bed space to another during their ED stay, the number of hours a patient spends boarding after admission orders have been placed, on the development of delirium as an inpatient.

## OBJECTIVES

Does total time in the ED and the number of bed space movements in the ED contribute to the development of delirium in patients over 65 years of age with medical admissions to the hospital?

## METHODS AND MATERIALS

Retrospective study from UCD EHR January 1, 2018 to December 31, 2019.

**Inclusion Criteria:** ≥ 65 years of age admitted to the hospital through the ED to internal medicine or family and community medicine (IM/FCM). Patients admitted to the ED Observation Unit (EDOU) prior to hospital admission and patients admitted to observation status under the IM/FCM service or comfort care during the admission were included.

**Exclusion criteria:** Interfacility transfers (IFT), prisoners, patients admitted to any service other than IM/FCM, patients discharged directly from the ED or from the EDOU were excluded.

Delirium was defined as a positive Confusion Assessment Method (CAM-ICU) score at any time during the stay. The use of sedation and restraints was considered to be a partial proxy for acute confusion.

All data were extracted from the EHR by data analysts, with rules for inclusion validated by authors. No individual charts were evaluated for the final data set.

## RESULTS

Table 1. Demographic data

Characteristics	N (%)
Total participants	5952
Age*	75 (69-83)
Sex (male)	2887 (49%)
Race	
African American	851 (14%)
Asian	652 (11%)
Hispanic	682 (11%)
White	3268 (55%)
English speaking	4,851 (82%)
Internal medicine service	5502 (92.44%)
Comfort care	266 (4.5%)
History of dementia	1,388 (23%)
Bed moves in the ED*	1(0-2)
ED length of stay (hours)*	12 (8-21)
Waiting time (hours)*	0.35 (0.12-1.6)
Hospital length of stay (days)*	4 (2.2-6.8)
Hallway time (hours)*	1.77 (0.6-4.7)
*Data presented as median (25th, 75th percentile)	

Table 2. Primary Outcome Logistic Regression Results

Positive CAM-ICU score		
Characteristic	OR (95% CI)	p-value
Age	1.04 (1.02-1.05)	0.000
Sex (male)	1.00 (0.74-1.35)	0.996
English speaking	1.37 (0.90-2.08)	0.138
History of dementia	3.16 (2.33-4.29)	0.000
Bed moves in the ED	1.08 (0.92-1.30)	0.328
<b>ED length of stay (hours)</b>	<b>1.02 (1.01-1.02)</b>	<b>0.001</b>
<b>Hospital length of stay (days)</b>	<b>1.03 (1.01-1.04)</b>	<b>0.001</b>
Hallway time (hours)	0.98 (0.96-1.00)	0.094
Other variables including comorbidity score and sedative use were included in the logistic regression		

## CONCLUSIONS

Total time in the Emergency Department was associated with a positive CAM-ICU Score.

Total number of bed space movements in the Emergency Department was not associated with a positive CAM-ICU Score.

## REFERENCES

1. Hshieh TT, Inouye SK, Oh ES. Delirium in the Elderly. Psychiatr Clin North Am. 2018 Mar;41(1):1-17. doi: 10.1016/j.psc.2017.10.001. Epub 2017 Dec 22. PMID: 29412839.

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