

# DOES UNIVERSAL DELIRIUM SCREENING IN ELDERLY INPATIENTS CHANGE OUTCOMES?

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# BACKGROUND



- Delirium is a common complication of hospital inpatients
  - Occurrence rate per admission of up to 42% in patients admitted to general medicine/ elderly care units<sup>1</sup>
- Delirium is associated with increased complications:
  - Increased length of stay<sup>2</sup>
  - Increased mortality<sup>3</sup>
  - Increased rates of new nursing home placement<sup>4</sup>
- Little data regarding whether universal delirium screening impacts these outcomes

# RESEARCH QUESTION

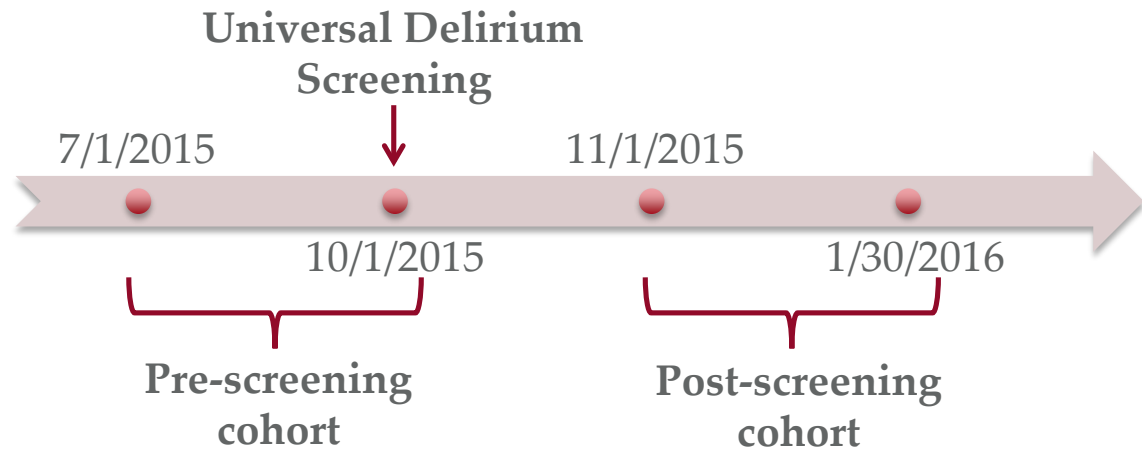


Does daily universal delirium screening in medical inpatients greater than 65 years of age affect outcomes (length of stay, inpatient mortality, falls incidence, discharge destination)?

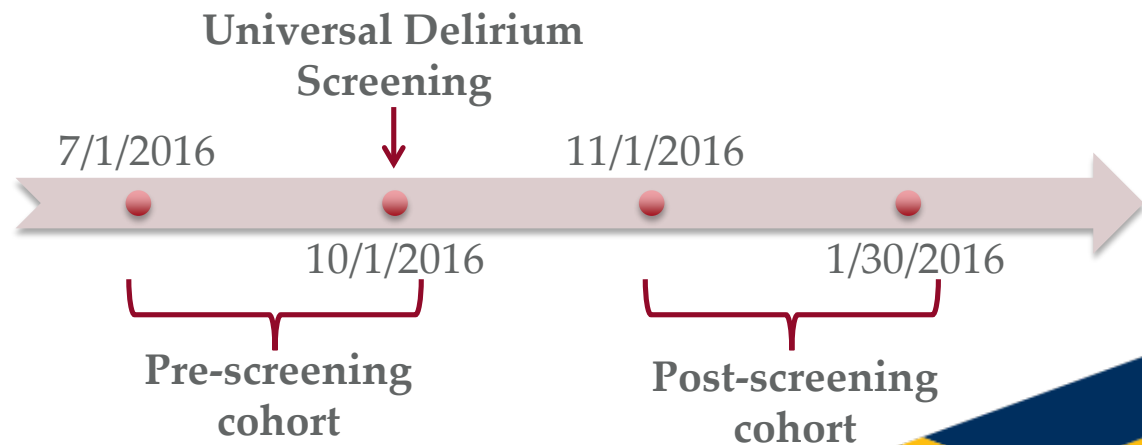
# METHODS



- Pilot ward:



- Other Medicine wards:



# METHODS



## PRIMARY OUTCOME

Inpatient length of stay (LOS)

## SECONDARY OUTCOMES

Inpatient mortality during index admission

Inpatient morbidity (falls, delirium, health care associated pneumonia, ICU admission, adverse drug reaction)

Transition to assisted living post-discharge

# RESULTS



- 981 patients
  - 502 in pre-screening cohort
  - 479 in post-screening cohort

CHARACTERISTIC	PRE-SCREENING	POST-SCREENING	P VALUE
Male sex, no. (%)	245 (48.8)	249 (52.0)	0.32
Mean age, years (95% CI)	79.2 (78.5, 79.9)	79.5 (78.7, 80.2)	0.58
Charlson Comorbidity Index (CCI), mean (95% CI)	3.77 (3.55, 3.99)	3.84 (3.62, 4.06)	0.69
Age-adjusted CCI, mean (95% CI)	7.23 (7.00, 7.66)	7.31 (7.07, 7.55)	0.64
Independent Living Situation, no (%)	396 (78.9)	377 (78.7)	0.56

# RESULTS



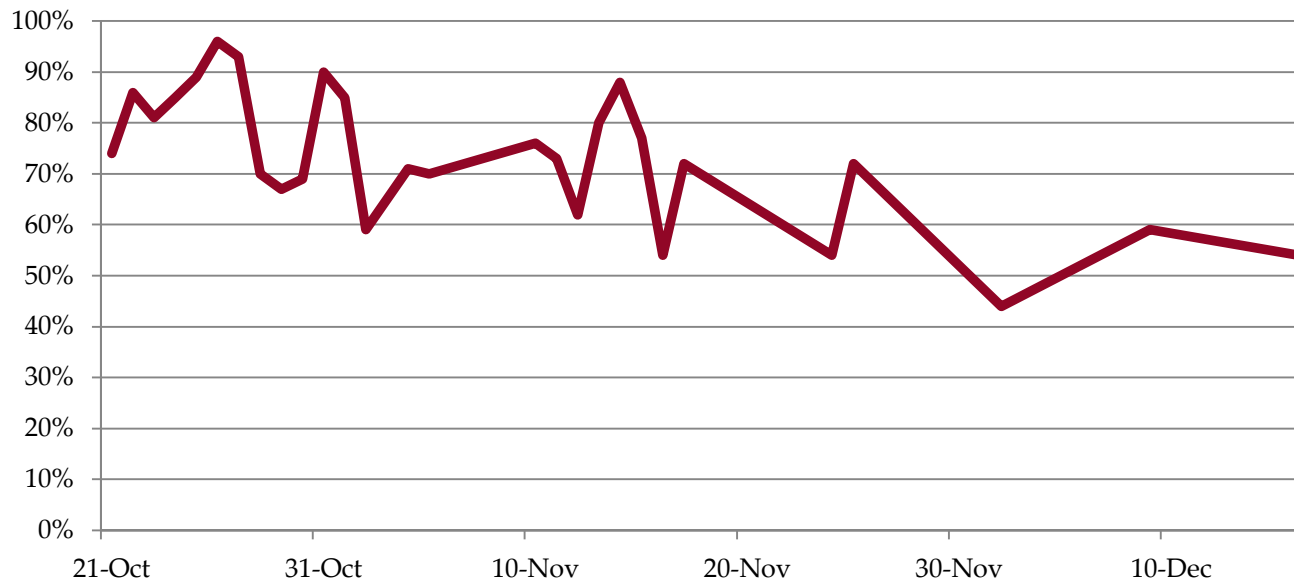
CHARACTERISTIC	PRE-SCREENING	POST-SCREENING	P VALUE
Median LOS, days (range)	5.0 (1 – 340)	5.0 (1 – 372)	0.55
Inpatient mortality, no. (%)	40 (8.0)	42 (8.8)	0.65
<b>Falls, no. (%)</b>	<b>29 (5.8)</b>	<b>14 (2.9)</b>	<b>0.03</b>
Hospital-Associated pneumonia, no. (%)	9 (1.8)	4 (0.8)	0.19
Adverse Drug Reaction, no. (%)	57 (11.4)	49 (10.2)	0.57
Delirium occurrence, no. (%)	92 (18.3)	76 (15.9)	0.31
ICU Admission, no. (%)	20 (4.0)	17 (3.6)	0.72
Requirement for increased living support, no (%)	48 (9.6)	33 (6.9)	0.13

# RESULTS



- Sensitivity Analysis:
  - Performed random chart audit during delirium screening period
  - Mean compliance rate with daily CAM screening: 73% (Range 44-96%)

**Delirium Screening Compliance Rate (2015)**





# RESULTS



- Univariate Analysis:
  - Patients who developed delirium were older
    - Mean age 82.21 vs. 78.74 years old ( $p < 0.001$ )
  - Patients requiring ICU admission had higher mean CCI
    - Mean CCI 4.86 vs. 3.76 ( $p=0.009$ )
  - Patients who were older were more likely to develop any adverse outcome (excluding mortality)
    - Mean age 79.97 vs. 78.82 ( $p = 0.033$ )
  - Patients who had higher CCI were more likely to develop any adverse outcome (excluding mortality)
    - Mean CCI 4.02 vs. 3.62 ( $p=0.013$ )
  - Patients requiring assisted living at baseline were more likely to develop any adverse outcome (excluding mortality)
    - 52.2% vs. 41.9% ( $p=0.002$ )

# RESULTS



- Univariate Analysis:
  - Patients in the pre-screening cohort were more likely to develop any adverse outcome (excluding mortality)
    - 55.0% vs. 45.0% ( $p=0.03$ )

# CONCLUSION



- Delirium screening was associated with decreased incidence of falls, and decreased incidence of any adverse secondary outcome (excluding mortality)
- Delirium screening did not affect the primary outcome, mean inpatient LOS
- Delirium screening did not affect any of the following secondary outcomes
  - Inpatient mortality
  - Hospital associated pneumonia
  - ICU admission
  - Adverse drug reaction
  - Delirium occurrence
  - Requirement for increased living support post-discharge

# DISCUSSION



- No prior studies have examined delirium screening itself (without targeted intervention)
- Rates of delirium no different between pre-screening and post-screening cohorts (18.3% vs. 15.8%)
  - Occurrence rates lower than in similar study populations, although within range (11-42%)<sup>1</sup>
  - Incidence rate of delirium on sensitivity analysis: 14% (range 4-21%)

# REFERENCES



1. Siddiqi N, House AO, Holmes JD. Occurrence and outcome of delirium in medical inpatients: a systematic literature review. *Age Ageing*. 2006;35(4):350-364.
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