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## Recognizing the Elderly at Risk for 30-Day Emergency Department Readmission

Honor Health, John C. Lincoln Medical Center

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PODIUM PRESENTER:  
Roberta Johnson MN, RN, CCRN



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# RECOGNIZING THE ELDERLY AT RISK FOR 30-DAY EMERGENCY DEPARTMENT READMISSION

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## BACKGROUND

- Why focus on 30-day ED readmissions among the geriatric population?
- Need
- Literature review
  - Comprehensive geriatric assessments (CGA)
  - Triage risk stratification [screening] tool (TRST)

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## PURPOSE

- The purpose of this study was to identify whether the TRST assessment was able to predict 30-day ED readmission among patients 60 years of age and older discharged from the Geriatric Emergency Department (GED).



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## RESEARCH QUESTIONS

- Q1: In patients 60 years of age and older seen in the GED, how do demographic and clinical characteristics influence 30-day ED readmission?
- Q2: In patients 60 years of age and older seen in the GED, can the TRST score predict 30-day ED readmission?



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## METHODS

- **Design**
  - Retrospective review
  - Convenience sampling
- **Data Analysis**
  - Descriptive statistics
  - Inferential statistics
    - Bivariate and multivariable analysis
- **Setting**
  - Geriatric emergency department (GED)
    - 7-beds within JCL MC's ED
    - Multidisciplinary team



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## METHODS CONTINUED

### Sample

- Patients treated in the GED from January 13, 2016 - March 23, 2016.

- Inclusion**
  - ≥ 60 years
  - ESI 2, 3, 4, 5
  - Discharged from ED
- Exclusion**
  - ≤ 60 years
  - ESI 1
  - Transferred from ED to another facility
  - Expired in ED



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## METHODS CONTINUED

### Procedures

- Timeframe of study
  - January 13, 2016 - April 22, 2016
- TRST assessment form
  - Completed by nurses during assessment while seeing patients in the GED
- Clinical demographics gathered from electronic medical record (EPIC EMR)



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## TRST TOOL

Patient label:

**HONOR HEALTH**

John C. Lassala Medical Center

G-60 Emergency Department

### Triage Risk Stratification Tool

History of cognitive impairment (poor recall or not oriented)  Yes  No

Difficulty walking/transfer or recent falls  Yes  No

Five or more medications  Yes  No

ED use in previous 30 days or hospitalization in previous 90 days  Yes  No

RN clinical impression (ED nurse concerns for elder abuse/neglect, substance abuse, medication noncompliance, problem meeting instrumental ADL, or other)  Yes  No

Patient admitted

Patient discharged Home SNF/Rehab Other \_\_\_\_\_



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## VARIABLES

Independent Variables	Dependent Variables
Age	30-day ED readmission
Gender	
Emergency Severity Index score	
Length of stay	
ED discharge diagnosis	
Number of medications	
TRST items	
TRST score	



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## RESULTS

164 patients were treated during the project period. Of these, 114 were discharged and 27 returned to the ED within 30-days.

TRST4 item "ED use in previous 30 days or hospitalization in previous 90 days" was statistically significant in predicting 30-day ED return.



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Characteristics	GED Patients (N = 164)	Discharged Patients (n = 114)	30-day ED Return (n = 27)
Age, M ± SD	72.86 ± 10.40	72.79 ± 10.45	70.04 ± 8.50
Gender, n (%)			
Male	68 (41.50)	44 (38.60)	9 (33.30)
Female	96 (58.50)	70 (61.40)	18 (66.70)
ESI, n (%)			
2 = Emergent	22 (13.40)	12 (10.50)	4 (14.80)
3 = Urgent	120 (73.20)	81 (71.10)	15 (55.60)
4 = Less urgent	22 (13.40)	21 (18.40)	8 (29.60)
5 = Non urgent			
Disposition, n (%)			
Admit	50 (30.50)		
Discharge	114 (69.50)	114 (100.00)	27 (100.00)
LOS min., M ± SD	237.60 ± 93.95	239.19 ± 94.58	254.19 ± 91.68
Medication, M ± SD	6.62 ± 4.41	6.58 ± 4.42	7.11 ± 4.93
30-day ED return, n (%)			
Yes	39 (23.80)	27 (23.70)	
No	125 (76.20)	87 (76.30)	

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## RESULTS CONTINUED

### Diagnosis

- Musculoskeletal
  - All GED patients ( $n = 38, 23.2\%$ )
  - Discharged patients ( $n = 34, 29.8\%$ )
  - 30-day ED return patients ( $n = 9, 33.3\%$ )
- Cardiovascular
- Respiratory
- Gastrointestinal



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## RESULTS CONTINUED

### TRST score

- Positive TRST score
  - Discharged patients ( $n = 64, 62.3\%$ )
  - 30-day ED return patients ( $n = 18, 66.6\%$ )



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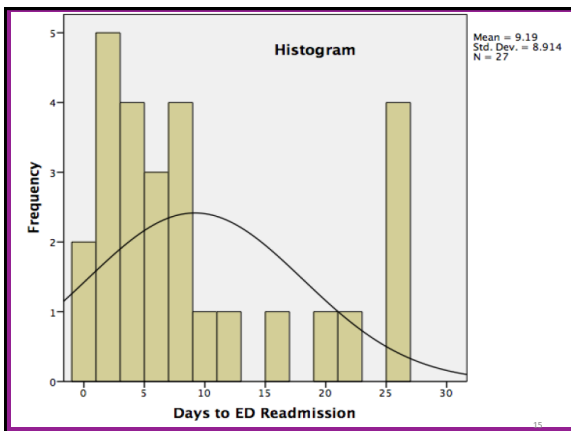
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Variable	Bivariate Model		Multivariable Model with TRST Score		Multivariable Model with TRST Items	
	OR [95% CI]	p	OR [95% CI]	p	OR [95% CI]	p
Age	.963 [.920, 1.008]	.106	.952 [.897, 1.010]	.103	.966 [.901, 1.036]	.336
Female	.743 [.285, 1.937]	.543	.896 [.287, 2.791]	.849	.947 [.293, 3.057]	.927
ESI	1.378 [.429, 4.425]	.590	1.679 [.440, 6.397]	.448	2.056 [.449, 9.409]	.353
LOS	.998 [.993, 1.002]	.327	1.003 [.996, 1.009]	.423	1.004 [.998, 1.010]	.233
Musculoskeletal	.855 [.299, 2.442]	.769	.657 [.180, 2.396]	.525	.481 [.126, 1.842]	.286
Cardiovascular	2.426 [.463, 13.076]	.290	.983 [.210, 4.601]	.983	.583 [.120, 2.893]	.504
Respiratory	1.026 [.252, 4.178]	.972	.743 [.154, 3.595]	.721	.532 [.100, 2.837]	.460
Gastrointestinal	.615 [.175, 2.170]	.450	.467 [.085, 2.555]	.380	.371 [.047, 2.941]	.348
TRST Score	.805 [.539, 1.201]	.288	1.333 [.850, 2.089]	.210	—	—
TRST1	1.558 [.429, 5.656]	.500	—	—	1.953 [.414, 9.210]	.398
TRST2	.628 [.248, 1.586]	.325	—	—	.387 [.114, 1.313]	.128
TRST3	.762 [.273, 2.125]	.603	—	—	1.146 [.357, 3.676]	.819
TRST4	3.896 [1.329, 11.419]	<b>.013</b>	—	—	4.780 [1.473, 15.513]	<b>.009</b>
TRST5	2.012 [.575, 7.048]	.274	—	—	1.154 [.264, 5.046]	.850

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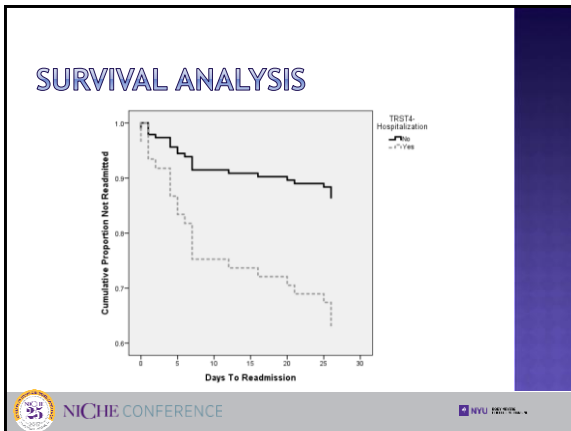
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- ### STRENGTHS AND LIMITATIONS
- **Strengths**
    - TRST tool
    - Project design
    - Included all patients possible from the GED
  - **Limitations**
    - Convenience sample
    - Retrospective review
    - Single site
    - Sample size
    - Single reviewer
    - Unable to capture if patients were readmitted to other hospitals

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## CONCLUSIONS

Regardless of all the variables, it was noted that TRST4 is robust in predicting 30-day ED readmission.



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## FUTURE IMPLICATIONS

- Future studies
- Practice
- Other considerations



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## REFERENCES

- American College of Emergency Physicians [ACEP]. (2014). Geriatric emergency department guidelines. Retrieved from <http://www.acep.org/ger/EDguidelines/>
- Bissett, M., Cusick, A., & Lannin, N. A. (2013). Functional assessments utilised in emergency departments: a systematic review. *Age and Ageing*, 42, 163-172. <http://dx.doi.org/10.1093/ageing/afk187>
- Carpenter, C. R., Shelton, E., Fowler, S., Suffoletto, B., Flatts Mills, T. F., Rothman, R. E., & Hegan, T. M. (2014). Risk factors and screening instruments to predict adverse outcomes for undifferentiated older emergency department patients: A systematic review and meta-analysis. *Academic Emergency Medicine*, 22(1), 1-21. <http://dx.doi.org/10.1111/acem.12469>
- Cousins, G., Bennett, Z., Dillon, G., Smith, S. M., & Galvin, R. (2013). Adverse outcomes in older adults attending emergency department: Systematic review and meta-analysis of the Triage Risk Stratification Tool. *European Journal of Emergency Medicine*, 29(4), 230-239. <http://dx.doi.org/10.1097/MEJ.0b013e318283608a>
- Greenwald, P. W., Stern, M. E., Rosen, T., Clark, S., & Flomenbaum, N. (2014). Trends in short-stay hospitalizations for older adults from 1990 to 2010: Implications for geriatric emergency care. *American Journal of Emergency Medicine*, 32, 311-314. <http://dx.doi.org/10.1016/j.ajem.2013.12.011>
- Foo, C. L., Yin Siu, Y. W., Tai, T. L., Ding, Y. Y., & Seow, E. (2012). Geriatric assessment and intervention in an emergency department observation unit reduced re-attendance and hospitalization rates. *Australian Journal on Ageing*, 31(1), 40-46. <http://dx.doi.org/10.1111/j.1741-6612.2010.00495.x>
- Hegan, T. M., Osado, T. D., & Carpenter, C. R. (2014). A profile of acute care in an aging America: Snowball sample identification and characterization of United States geriatric emergency departments in 2013. *Academic Emergency Medicine*, 21(13), 337-346. <http://dx.doi.org/10.1111/acem.12312>
- Hwang, U., Shah, M. N., Han, J. H., Carpenter, C. R., Su, A. L., & Adams, J. G. (2013). Transforming emergency care for older adults. *Health Affairs*, 32(12), 2116-2121. <http://dx.doi.org/10.1377/hlthaff.2013.0670>
- Lee, J. S., Schwabdt, G., Langone, M., Maghazeh, R., Alibai, S. M., Kuo, A., & Nagle, G. (2008). Validation of the triage risk stratification tool to identify older persons at risk for the hospital admission and returning to the emergency department. *The American Geriatrics Society*, 56(11), 2110-2115. <http://dx.doi.org/10.1111/j.1532-5415.2008.01959.x>
- Weldon, S. W., Wilson, L. C., Palmer, R. M., Drew, B. L., Connor, J. T., Lewicki, L. J., ... Emerman, C. L. (2003). A brief risk-stratification tool to predict repeat emergency department visits and hospitalizations in older patients discharged from the emergency department. *Academic Emergency Medicine*, 10(3), 224-232. <http://dx.doi.org/10.1197/ajem.10.3.224>
- Sahli, F., Morich, V., Lorenzetti, B., Rossi, L., Spazzafumo, L., Ludi, R., ... Lattanzio, F. (2012). Risk stratification of older patients in the emergency department: Comparison between the Identification of Seniors At Risk and Triage Risk Screening Tool. *Rejuvenation Research*, 15(3), 288-294. <http://dx.doi.org/10.1089/rej.2011.1242>



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