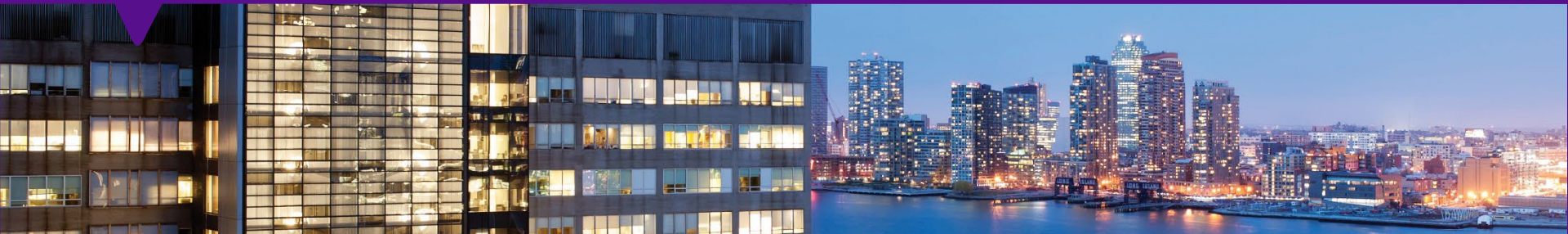


# **PRIMARY PALLIATIVE CARE FOR EMERGENCY MEDICINE: A CLUSTERED RANDOMIZED STEP WEDGE TRIAL ACROSS 29 EMERGENCY DEPARTMENTS**

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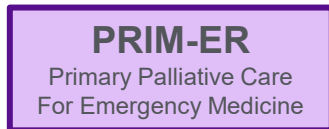
The authors declare nothing to disclose

# Background

- Older adults with serious life-limiting illnesses visit the Emergency Department (ED) at least once in the last month of life
- Most prefer to receive non-aggressive care and minimize life-sustaining procedures

# PRIM-ER Intervention: Components

1. Evidence-based primary palliative care education (EPEC-EM, ELNEC);
2. Simulation-based workshops on communication in serious illness (EM Talk);
3. Clinical decision support (CDS); and
4. Provider audit and feedback.



# Aim and Hypothesis

## Aim

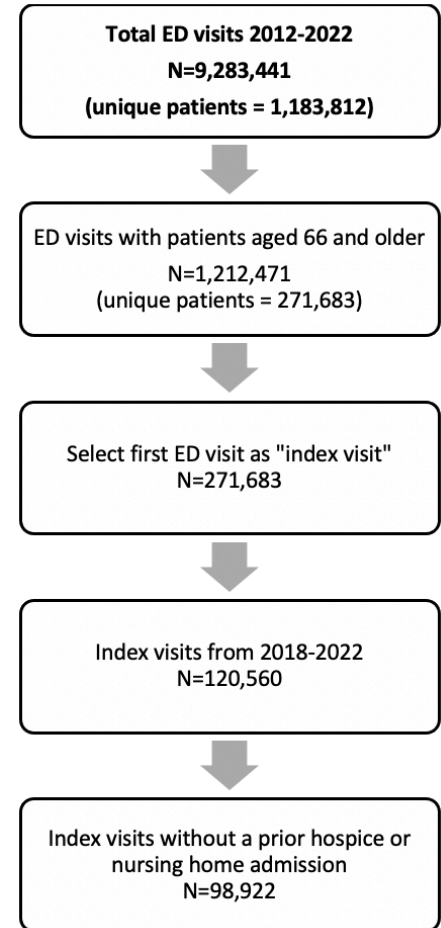
- To test the effectiveness of PRIM-ER on (1) acute care disposition and (2) healthcare use in older adults with serious, life-limiting illnesses

## Hypothesis

- PRIM-ER will reduce acute care disposition and 6-month healthcare use for older adult patients with serious, life-limiting illnesses

# Methods

- Study Design: Cluster randomized stepped wedge design
- Study Location: 29 Emergency Departments
- Data Source: Medicare Claims Data, 2018 - 2022
- Inclusion Criteria
  - 66 years or older
  - Gagne Index score of 6 or higher (i.e. >30% one year mortality risk)
  - Visited one of the 29 EDs; No prior ED visit.
- Exclusion Criteria
  - Resident in a nursing home or transferred from a nursing home to the ED
  - Received hospice care within 12 months prior to index ED visit
- Final Sample Size: 98,922



# Methods

- Main Predictor:
  - Baseline (Before PRIM-ER implementation) vs. Follow-up period (After PRIM-ER implementation)
- Outcomes
  - Acute Care Admission (Yes/No)
  - Healthcare utilization (ED Revisit – counts; Inpatient days – counts; Hospice Use – Yes/No)
- Control Variables:
  - Age, Sex, Race/Ethnicity, Gagne Score, COVID-19 period
- Analysis: Generalized additive model
  - Baseline (control), transition (3-week implementation), and follow-up (intervention) period
  - Assumed full and immediate intervention effect

# Results

## Table 1. Baseline characteristics

	Overall (N=98922)
<b>Age</b>	
Mean (SD)	78.0 (8.42)
<b>Age in Categories</b>	
66-69	19178 (19.4%)
70-74	20722 (20.9%)
75-79	19011 (19.2%)
80-84	16063 (16.2%)
85+	23948 (24.2%)
<b>Sex</b>	
Female	49041 (49.6%)
Male	49881 (50.4%)
<b>Race/ethnicity</b>	
White	76950 (77.8%)
Black	13347 (13.5%)
Hispanic	1462 (1.5%)
Asian	2788 (2.8%)
Other	4375 (4.4%)
<b>Gagne score</b>	
Mean (SD)	8.98 (2.19)
<b>COVID period</b>	
Pre-COVID	43716 (44.2%)
COVID	55206 (55.8%)

# Patient Characteristics at Baseline and Follow-up Periods

	Overall (N=98922)	Baseline (N=51611)	Follow-up (N=47311)	SMD
<b>Age</b>				0.063
Mean (SD)	78.0 (8.42)	78.2 (8.49)	77.7 (8.34)	
<b>Age in Categories</b>				0.075
66-69	19178 (19.4%)	9639 (18.7%)	9539 (20.2%)	
70-74	20722 (20.9%)	10526 (20.4%)	10196 (21.6%)	
75-79	19011 (19.2%)	9720 (18.8%)	9291 (19.6%)	
80-84	16063 (16.2%)	8531 (16.5%)	7532 (15.9%)	
85+	23948 (24.2%)	13195 (25.6%)	10753 (22.7%)	
<b>Sex</b>				0.013
Female	49041 (49.6%)	25741 (49.9%)	23300 (49.2%)	
Male	49881 (50.4%)	25870 (50.1%)	24011 (50.8%)	
<b>Race/ethnicity</b>				0.035
White	76950 (77.8%)	39983 (77.5%)	36967 (78.1%)	
Black	13347 (13.5%)	7100 (13.8%)	6247 (13.2%)	
Hispanic	1462 (1.5%)	744 (1.4%)	718 (1.5%)	
Asian	2788 (2.8%)	1567 (3.0%)	1221 (2.6%)	
Other	4375 (4.4%)	2217 (4.3%)	2158 (4.6%)	
<b>Gagne score</b>				0.072
Mean (SD)	8.98 (2.19)	8.90 (2.14)	9.06 (2.25)	
<b>COVID period</b>				1.873
Pre-COVID	43716 (44.2%)	39499 (76.5%)	4217 (8.9%)	
COVID	55206 (55.8%)	12112 (23.5%)	43094 (91.1%)	

'Other' race includes North American Native, Other, and Unknown

# Disposition to Acute Care, model results

	Model 1			Model 2		
	Est.	S.E	95% CI	Est.	S.E	95% CI
Intercept	1.30	0.11	[1.11, 1.53]	0.42	0.05	[0.34, 0.53]
COVID period	1.36	0.09	[1.19, 1.55]	1.37	0.09	[1.20, 1.56]
Transition period	0.88	0.07	[0.76, 1.03]	0.90	0.07	[0.77, 1.05]
FU period	1.04	0.06	[0.93, 1.15]	1.04	0.06	[0.94, 1.16]
COVID * Transition period	1.17	0.12	[0.95, 1.44]	1.16	0.12	[0.94, 1.43]
COVID * FU period	0.94	0.05	[0.84, 1.05]	0.94	0.05	[0.84, 1.06]
Age (10-year increments)				1.07	0.01	[1.06, 1.09]
Black				0.82	0.02	[0.79, 0.86]
Hispanic				0.79	0.04	[0.71, 0.88]
Asian				1.09	0.05	[1.01, 1.19]
Other race				0.93	0.03	[0.87, 0.99]
Male				1.09	0.01	[1.06, 1.12]
Prognosis				1.06	0.00	[1.06, 1.07]

'FU' = Follow-Up

# Secondary outcomes, unadjusted and adjusted

	Unadjusted Statistics			Model Summary		
	Overall (N=98,922)	Baseline (N=51,611)	Follow-up (N=47,311)	Est.	S.E.	95% CI
<b>ED re-visits (Count)</b>	0.62 (1.64)	0.66 (1.8)	0.57 (1.43)	<b>0.84</b>	0.04	<b>[0.77, 0.93]</b>
<b>IP admissions (Count)</b>	0.63 (1.02)	0.68 (1.06)	0.57 (0.96)	0.94	0.03	[0.87, 1.00]
<b>Hospice (Yes/No)</b>	17,299 (17.5%)	9,049 (17.5%)	8,250 (17.4%)	1.04	0.06	[0.93, 1.16]

# Implications

- A multi-level, complex primary palliative care intervention in 29 EDs reduced ED revisits at 6 months
- No difference in acute care disposition in older adults with serious life-limiting illnesses

# Limitations

- Staff turnover: Resource limited to train and re-train on EM Talk and ELNEC after 3-week intervention
- Covid-19 pandemic: A probable increased tendency to admit older adults with serious life-limiting illnesses

# Conclusion

- Providing palliative care for older adults with serious life-limiting illnesses can reduce ED revisits but does not influence the care they receive during that index visit

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A nighttime photograph of a city skyline across a body of water. In the foreground, a large building with a glass facade is illuminated from within, showing many lit windows. The background features a dense cluster of skyscrapers, some of which are brightly lit. The water in the foreground is dark blue, reflecting some of the city lights. The sky is a deep twilight blue.

Questions?

**THANK YOU**

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