

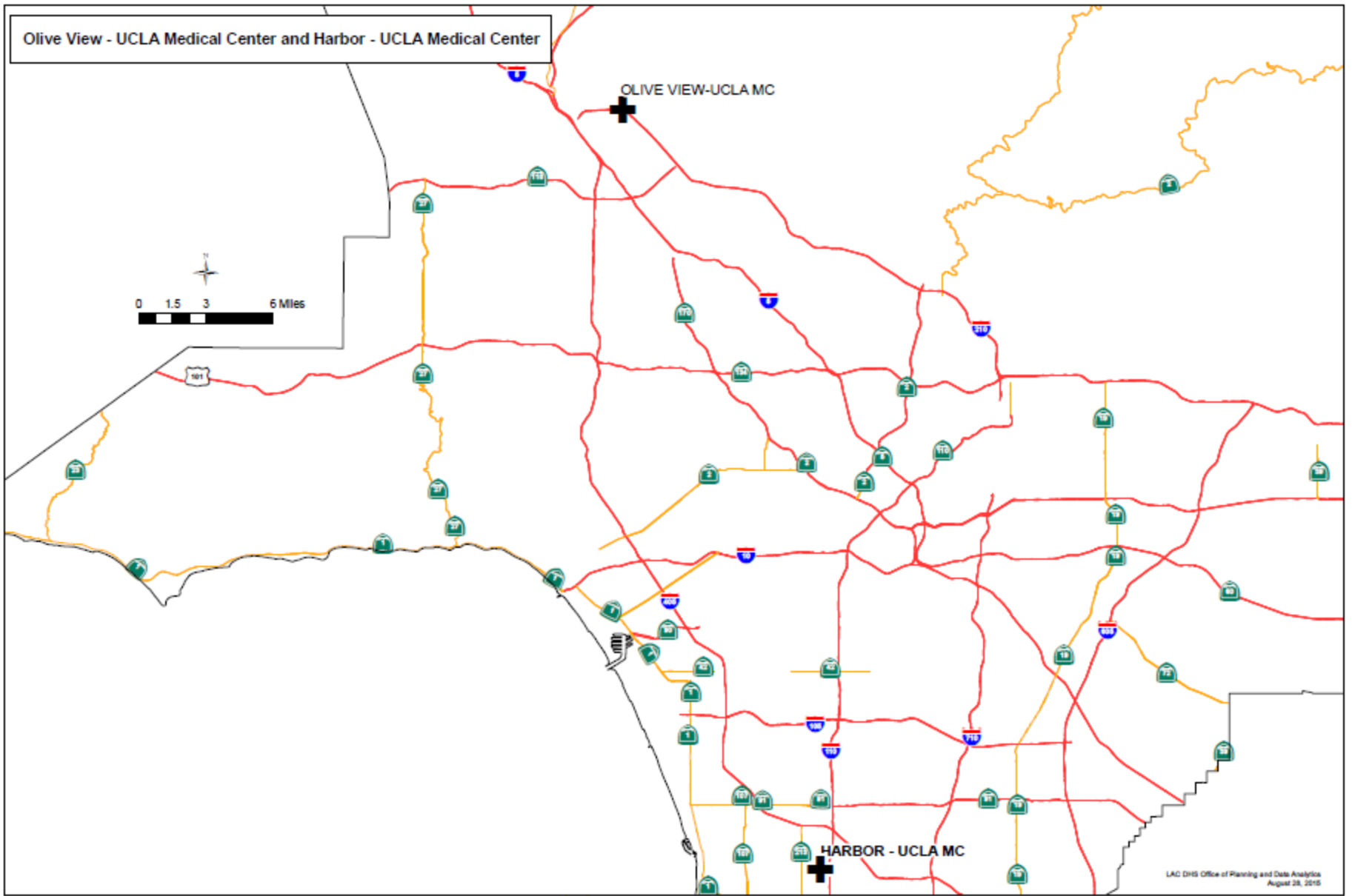
Outcomes Among Psychiatric Emergency Services Patients in a Large Urban Safety-Net Health System

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Olive View - UCLA Medical Center and Harbor - UCLA Medical Center



PES Outcomes Study

Background:

- If we can understand utilization and outcomes of PES patients, then we can...
 - Improve clinical productivity
 - Improve quality of care
 - Improve patient outcomes
- Before our study, there were limited internal data and little published data on patients who use psychiatric emergency services.

Advisory Board

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Our main question:

Do outcomes for patients brought into Psychiatric Emergency Services (PES) on an involuntary hold **differ** between those who were admitted for inpatient psychiatric care **VERSUS** those who were discharged from the PES back to community?

Which Outcomes?

- **Receipt of outpatient mental health services**
- **Incarceration**
- **Mortality**

PES Outcomes Study - Aims

Our Research Questions:

- What are the demographics, including housing and insurance status of patients presenting to the PES?
- What are the predictors associated with patients discharged vs. admitted from PES?
- What are the longitudinal outcomes of patients discharged vs. admitted from PES?

Psychiatric Emergency Services (PES)

- PES is high volume, sometimes overcrowded, and has long wait times for inpatient psych bed
- High variation in disposition of patients brought in to PES on an involuntary hold (5150)
 - No obvious explanation for this variation

DHS Hospital PES	Percentage of 5150 Patients Admitted to Inpatient Psych Service vs. d/c*
Harbor-UCLA Medical Center	30%
Olive View-UCLA Medical Center	77%

*computed from all adult PES encounters 2008 to 2010

PES Outcomes Study - Methods

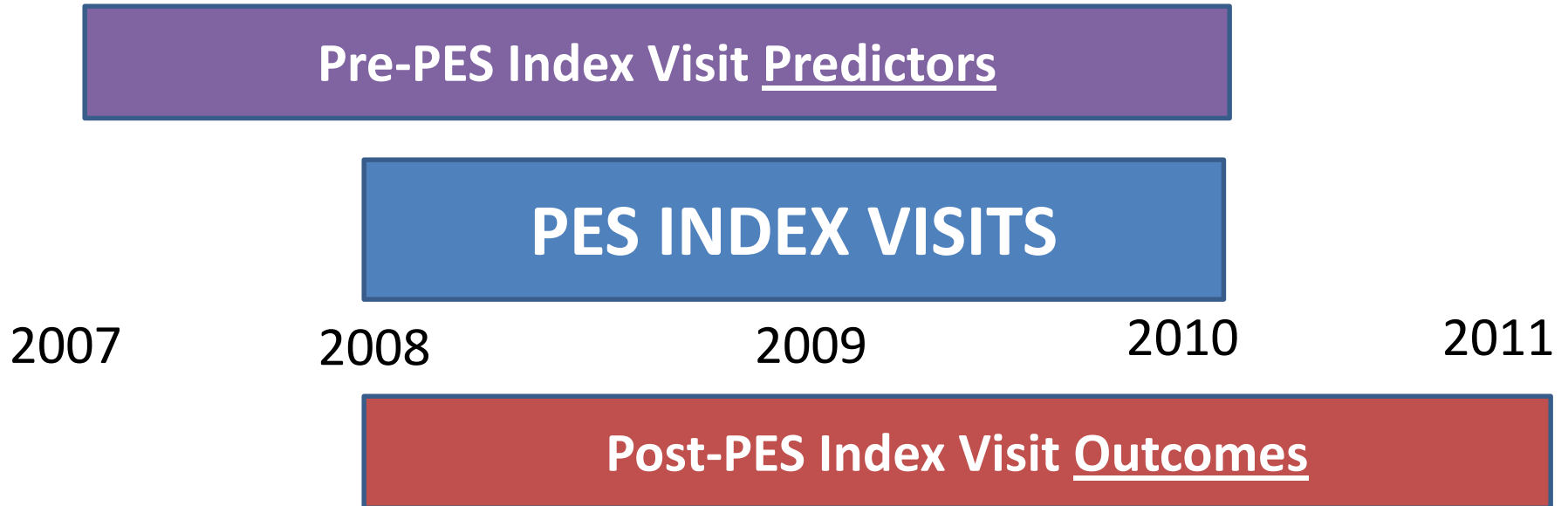
- Retrospective cohort design
 - Study population is all adult 5150 PES patients at 2 DHS hospitals from 2008 through 2010 (N=17,158)
 - By probabilistic matching algorithm, DHS PES patient-level data were linked to databases in the Dept. of Mental Health, Sheriff, and Vital Statistics

Database	Predictor and Outcome variables of interest
Dept. of Health Services	Revisits to PES; Readmissions
Department of Mental Health	Non-DHS PES visits/Inpatient Psych admissions; outpatient mental health care use
Sheriff	Incarceration
Vital Statistics	Mortality

Analytic Methods

- Multivariate logistic regression used to examine the association between patient characteristics and hospital with inpatient admission
- Multivariate logistic regression used to examine association between admission versus discharge from PES, patient characteristics, and hospital with the following outcomes:
 - **Having 4 or more Outpatient Mental Health visits**
 - **Incarceration**
 - **Mortality**

Study Design



EXAMPLE: For a patient with PES Index visit on January 1, 2009:

- Predictors of admission measured during 2008 (Pre-Index is 12 month window prior to PES visit)
- Outcomes of PES index visit measured in 2009 (Post-Index is 12 month window after PES visit)

Study Population

Inclusion Criteria

- 5150 patients with index visit at PES sometime in 2008 – 2010 at Olive View and Harbor

Exclusion Criteria

- Less than 18 years of age
- Privately Insured

PES Cohort Characteristics (n=17,158)

	Harbor (n=10,794)	Olive View (n=6,364)
Male	58%	59%
Female	42%	41%
Ages 18-34	44%	44%
Ages 35-54	43%	44%
Ages 55+	12%	12%
Self-Pay /Uninsured	67%	75%
Medi-Cal	23%	21%
Medicare	10%	3%
African American	31%	13%
Hispanic	33%	38%
White	27%	42%
Other	8%	7%

PES Cohort Characteristics (n=17,158)

	Harbor	Olive View
PES length of Stay		
=< 24 hrs	95%	77%
25 - 48 hrs	4%	14%
> 48 hrs	1%	9%
Brought in by law enforcement	64%	62%
Homeless at index visit	18%	19%
Patients admitted	30%	77%
Patients discharged	70%	23%

PES Cohort Characteristics (n=17,158)

	Harbor	Olive View
Any ER revisit within 30 days of PES visit	7%	8%
Incarcerated within 1 year post-PES visit	7%	6%
Death (all cause) within 1 year post-PES visit	1%	1%

Control Variables in Multivariate Analyses

- In the following slides, admission predictors and PES outcome results were adjusted for:
 - Age, sex, race/ethnicity
 - index facility (Harbor versus Olive View)
 - health insurance status
 - homeless status
 - Having had 4 or more Outpatient Mental Health visits

Predictors of Admission from PES

- 47% of all PES patients were admitted
- Patients were **more likely** to be admitted:
 - If Index Visit site was Olive View
 - If they were African-American at Olive View
 - If they had ≥ 4 prior Outpatient Mental Health Visit
 - If they had Public Insurance (Medi-Cal or Medicare)
- Patients were **less likely** to be admitted:
 - If they were homeless at Harbor

Predictors of Admission from PES

Predictor (Reference)	Odds Ratio *
Index Visit at Olive View (Harbor)	9.1 (8.4 - 9.9)
Insurance Status (Self-pay/uninsured)	
Medi-Cal	1.6 (1.5 - 1.8)
Medicare	2.1 (1.8 - 2.4)
Homeless (Not homeless)	0.7 (0.6 - 0.8)
≥ 4 Outpatient Mental Health visits prior to PES (Not having these visits)	1.4 (1.2 - 1.5)

*Adjusted for age, gender, race, index facility, health insurance, homeless status and ≥ 4 Outpatient Mental Health visits prior to PES.

What factors were associated with having Outpatient Mental Health visits after PES?

- 16% had ≥ 4 outpatient mental visits before PES
- 27% had ≥ 4 outpatient mental visits after PES
- Patients were **more likely** to receive ≥ 4 outpatient mental visits after PES if:
 - They were admitted at index PES visit
 - They had 4 or more Mental Health visits prior to PES
 - They were African-American at Harbor
- No difference between Olive View and Harbor on the likelihood of ≥ 4 outpatient mental visits after PES

Outcome: ≥ 4 Outpatient Mental Health Visits

Predictor (Reference)	Odds Ratio *
Inpatient Admission at Index visit (d/c'd from PES)	1.6 (1.5 - 1.8)
Insurance Status (Self-pay/uninsured)	
Medi-Cal	1.0 (0.9 - 1.1)
Medicare	0.8 (0.7- 1.0)
≥ 4 Outpatient Mental Health Visits <u>prior</u> to PES (Not having these visits)	18.8 (16.9 -21.0)
Homeless (Not homeless)	0.9 (0.8 – 1.0)
Index Visit at Olive View (Harbor)	1.1 (1.0 – 1.2)

*Adjusted for Inpatient admission, age, age², race, gender, index facility, homeless status, ≥ 4 Outpatient Mental Health visits before index visit, and health insurance

What factors were associated with getting incarcerated after PES?

- 6% of PES patients were incarcerated after PES
 - No difference between Olive View and Harbor on being incarcerated
- Patients were **less likely** to get incarcerated after PES if:
 - They were admitted at index PES visit
- Patients were **more likely** to get incarcerated after PES if:
 - They had ≥ 4 outpatient Mental Health visits after PES
 - They were homeless

Outcome: Incarceration

Predictor (Reference)	Odds Ratio *
Inpatient Admission at Index visit (d/c'd from PES)	0.7 (0.6 – 0.8)
≥ 4 Outpatient Mental Health visits post PES visit (Not having these visits)	1.3 (1.1 – 1.5)
Homeless (Not homeless)	1.7 (1.5 - 2.0)
Index Visit at Olive View (Harbor)	1.0 (0.8 - 1.1)

* Adjusted for Inpatient Hospitalization, age, age², race, gender, index facility, homeless status, and ≥ 4 Outpatient Mental Health visits after index visit.

What factors were associated with death after PES?

- 1% of PES patients died after PES
- **No difference** in likelihood of dying:
 - Admission versus discharge from PES visit
 - Between Olive View and Harbor
- Patients were **less likely** to die after PES if:
 - They had ≥ 4 outpatient Mental Health visits after PES
 - They were of Hispanic origin

Death 1-year after PES Visit (n=173)

Manner of Death	n
Suicide	22
Homicide	3
Accident	43
Natural Causes	61
Not Specified/ Undetermined	44

Outcome: Death

Predictor (Reference)	Odds Ratio *
Inpatient Admission at Index visit (d/c'd from PES)	1.3 (0.9 - 1.8)
Insurance Status (Self-pay/uninsured)	
Medi-Cal	2.1 (1.5 - 2.9)
Medicare	1.4 (0.8 - 2.3)
≥ 4 Outpatient Mental Health visits post PES visit (Not having these visits)	0.7 (0.4 - 0.9)
Homeless (Not homeless)	0.8 (0.5 - 1.2)
Index Visit at Olive View (Harbor)	1.0 (0.7 - 1.4)

* Adjusted for age, gender, race, index facility, homeless status, health insurance, inpatient admission and ≥ 4 Outpatient Mental Health visits.

Outcomes for Homeless Patients

- Homeless Patients at Harbor were *less likely* to:
 - be admitted
 - receive ≥ 4 Outpatient Mental Health visits
- Homeless patients were *more likely* to be incarcerated within 1 year after the PES visit
- There was *no difference* in death between homeless patients and non-homeless patients

Outcomes for Race/Ethnicity

- African-American Patients were more likely to:
 - be admitted at Olive View
 - be incarcerated within 1 year after PES
 - receive ≥ 4 Outpatient Mental Health visits after PES
- Hispanic patients were less likely to die within 1 year after the PES visit compared to Whites

Were there different outcomes due to PES Visit Site (Olive View vs. Harbor)?

Despite the large difference in admission rate between Olive View and Harbor:


- There was *no significant difference* in patient mortality
- There was *no significant difference* in patients being incarcerated
- There was *no significant difference* in patients receiving ≥ 4 Outpatient Mental Health visits after PES

Limitations

- Lack of unique identifier across DHS, DMH, and Sheriff
 - Probabilistic match algorithm may have excluded true record linkages
- LAC-USC PES data was not available
- Unable to adjust for co-morbidities due to limited diagnoses codes
- Unable to include privately insured PES patients due to inability to track hospitalization outcomes
- Homeless status likely an undercount

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- David Geffen School of Medicine at UCLA
- Advisory Board
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A long, brightly lit hospital hallway with a sign for the Psychiatric Emergency department. The hallway has a polished floor that reflects the overhead lights. The walls are light blue with a white handrail. A yellow stripe runs along the top of the wall. The ceiling is white with recessed lighting. The sign is black with white text.

Psychiatric Emergency/
Emergencia Psiquiatrica

Thank You