RACIAL INEQUITIES IN PHYSICAL AND CHEMICAL RESTRAINT USE IN EMERGENCY PSYCHIATRY

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ANNUAL MEETING
OCTOBER 2, 2022

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FUNDING DISCLOSURE

REACH EQUITY
DUKE CENTER FOR RESEARCH TO ADVANCE HEALTHCARE EQUITY

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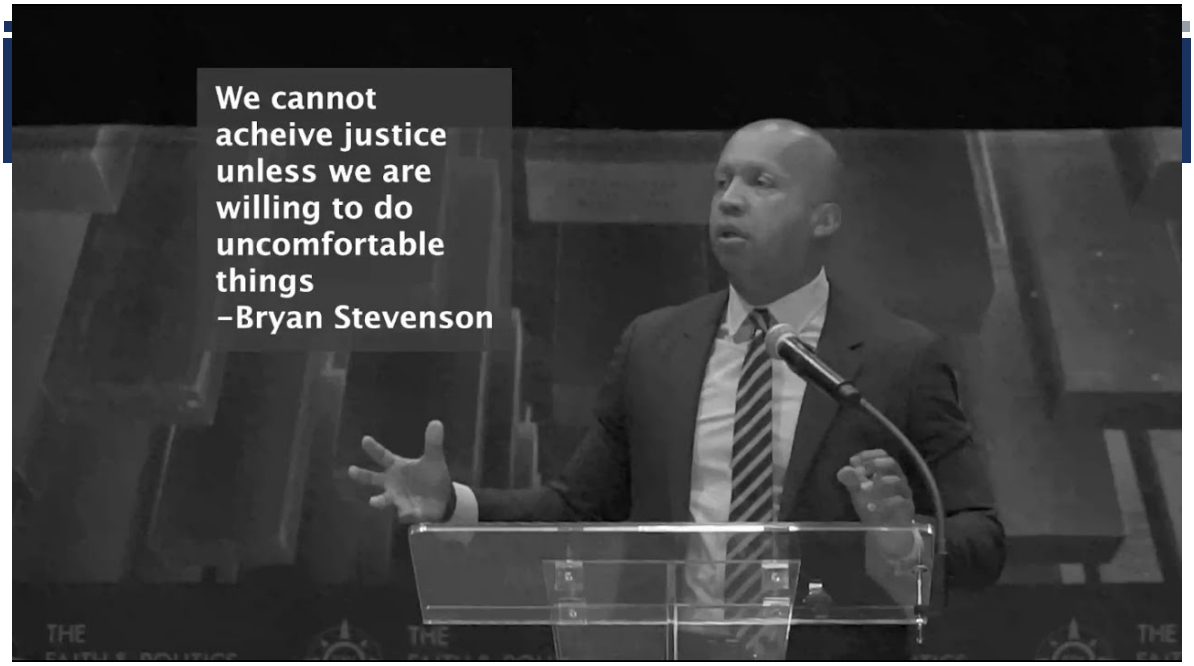

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LECTURE OBJECTIVES

Identify	a case highlighting disparate outcomes by race in the emergency psychiatry setting
Discuss	existing evidence demonstrating racial disparities in emergency psychiatric care
Explore	the association of Black race with restraint use in the emergency setting
Describe	how structural racism contributes to physical and chemical restraint use in emergency psychiatry

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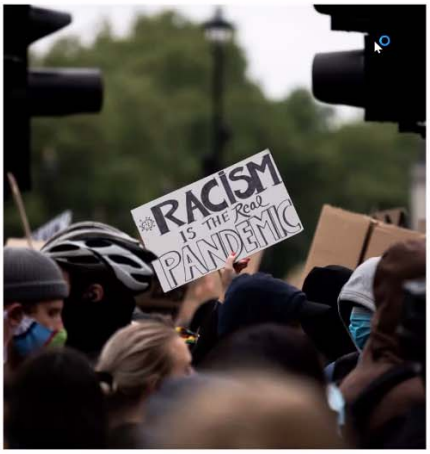
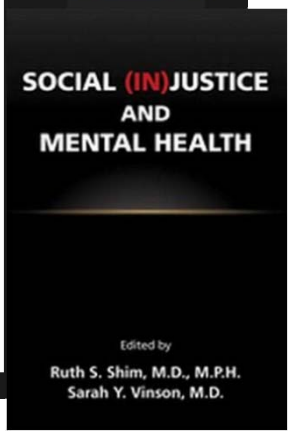
STRUCTURAL RACISM

A SYSTEM IN WHICH **PUBLIC POLICIES, INSTITUTIONAL PRACTICES, CULTURAL REPRESENTATIONS, AND OTHER NORMS** WORK IN VARIOUS, OFTEN REINFORCING WAYS TO **PERPETUATE RACIAL GROUP INEQUITY.**



https://www.aspeninstitute.org/blog-posts/structural-racism-definition/



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DIFFERENTIAL TREATMENT BY RACE: A TALE OF TWO CASES

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CASE 1

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CASE 2

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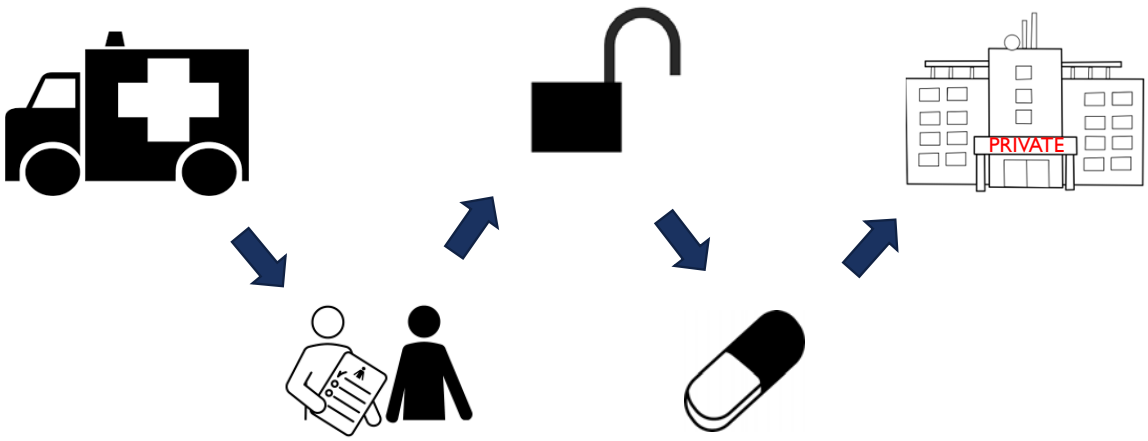
CASE 1



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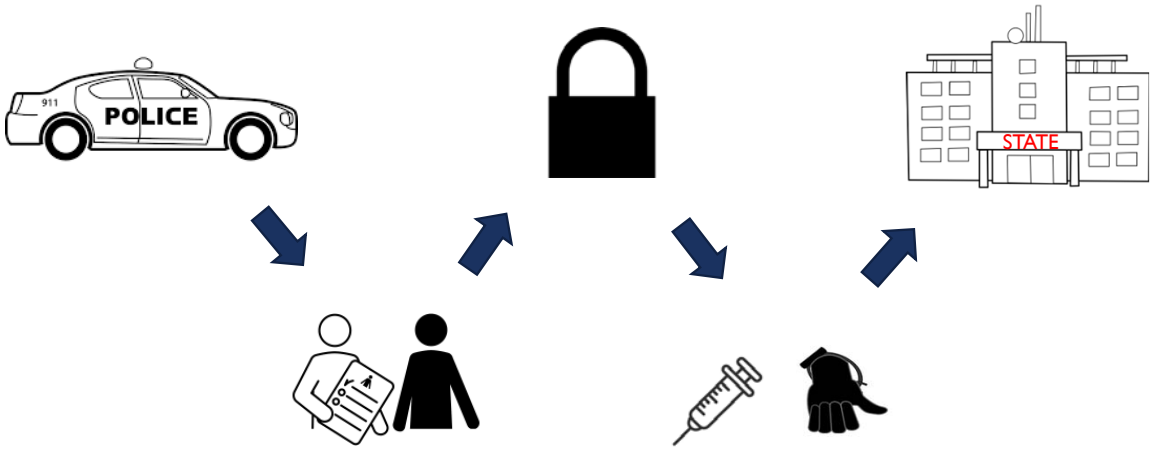
CASE 2



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"Every system is perfectly designed to get exactly the results it gets."
– W. Edwards Deming

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QUALITY IMPROVEMENT PROJECT: PSYCHIATRY ED

- Resident-driven: Drs. Nora Dennis, Krista Alexander, Kim Johnson, April Seay (now Toure)
- 3 weeks of data collection (April 2014): demographics, diagnosis, treatment, and disposition
  - Higher than expected rate of triage to locked psychiatry area for Black (but not white) patients

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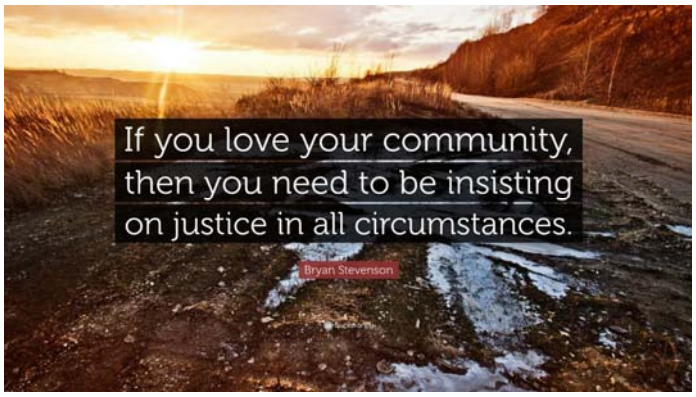
HOW DID WE GET HERE?



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NEXT STEPS

- Data from same health system for FY 2014-2015
- Data from state hospital (Central Regional Hospital) for FY 2014-2015
- Compilation of data table

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Table 2. Demographic characteristics of Durham County, Patients with Psychiatric Consults Placed in the DUH ED (FY 2015), Patients Triaged to PEU (3 weeks in 4/2014), Patients Admitted from DUHS to CRH (FY 2015), and Patients Admitted to Williams Ward (FY 2015)

Race	Durham County Demographic	Number (percent) with psych consults in Emergency Department (FY 2015) Total N = 913	Number (percent) in PEU for 3 weeks in 4/2014 Total N = 79	Patients Admitted to Central Regional Hospital from DUHS (FY2015) Total N = 88	Patients Admitted to Williams Ward (FY2015) Total N = 2076
African-American or Black	38.6%				
Caucasian or White	53%				

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LECTURE OBJECTIVES

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WHAT IS A RESTRAINT AND WHY DO WE CARE?

- Limit individual's freedom of movement
- Inherently coercive and forceful
- Associated with adverse outcomes
- Morally injurious act

Mohr et al, Can J Psychiatry. 2003; 48:330–337 ; Hays, et al., West J Emerg Med 2012; 13:536.

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Wong, et al. *Acad Emerg Med.* 2017;24(2):226-235.

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DISPARITIES IN PHYSICAL RESTRAINT USE

Table 2
Risk of Restraint by Race

Race	Absolute Risk, % (CI)	RR (95% CI) Compared to Whites	p-value
Asian	0.80 (0.62–1.03)	0.71 (0.55–0.92)	0.009*
Hispanic or Latino	1.00 (0.67–1.50)	0.89 (0.59–1.33)	0.568
Declined	1.00 (0.57–1.76)	0.89 (0.50–1.56)	0.677
Other	1.11 (0.96–1.28)	0.98 (0.84–1.14)	0.800
White	1.13 (1.07–1.19)		
Black or African American	1.37 (1.20–1.57)	1.22 (1.05–1.40)	0.007*
Native Hawaiian or Other Pacific Islander	1.48 (0.37–5.94)	1.31 (0.33–5.26)	0.705
American Indian or Alaskan Native	1.52 (0.57–4.06)	1.35 (0.51–3.60)	0.548
Unavailable	2.00 (1.73–2.31)	1.77 (1.52–2.07)	<0.001*

- 195,092 ED visits from 2016-2018
- Controlled for sex, insurance, diagnosis, age, homelessness, violence

Table 2. Odds of Receiving a Physical Restraint Order by Variable in a Logistic Regression Model

Age	0.99 (0.98-0.99)	<.001
Race		
Asian	0.78 (0.56-1.09)	.15
Black or African American	1.13 (1.07-1.21)	<.001
White	1 [Reference]	NA
Other	1.11 (0.99-1.24)	.07

- 726,417 ED visits from 2013-2018
- Controlled for sex, age, ethnicity, insurance, substance use, homelessness

Schnitzer et al. 2020. ACEM 27(10)

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DISPARITIES IN CHEMICAL RESTRAINT USE

- 442 observed patient encounters in 4 urban EDs
- Controlled for psychotic disorder, global assessment scale, psych history, hours in the ED, clinician effort

Black - White
1.92 vs. 1.13 p<.001

Black - White
3.1 vs. 2.2 p<.02

Black - White
Beta .54 p=.04

Black - White
1.821 vs. .825g p< .001

Segal et al. 1996. Psych Serv. 47(3).

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DISPARITIES IN CHEMICAL RESTRAINT USE

- 389,885 US mental health pediatric ED visits, 2009-2019

Visit characteristics	All mental health ED visits, n = 389 885 (%)	ED visits with pharmacologic restraint use, n = 13 643 (%)	ED visits without pharmacologic restraint use, n = 376 242 (%)	*P* value
Race				
White	231 947 (59.5)	8010 (58.7)	223 937 (59.5)	.004
Black	87 147 (22.3)	3560 (26.1)	83 587 (22.2)	<.001

Foster et al. 2021. J Pediatr. 236:276-283.

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Identify	a case highlighting disparate outcomes by race in the emergency psychiatry setting
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Describe	how structural racism contributes to physical and chemical restraint use in emergency psychiatry

LECTURE OBJECTIVES

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Association of Black Race With Physical and Chemical Restraint Use Among Patients Undergoing Emergency Psychiatric Evaluation

Colin M. Smith, M.D., Nicholas A. Turner, M.D., M.H.Sc., Nathan M. Thielman, M.D., M.P.H., Damon S. Tweedy, M.D., Joseph Egger, Ph.D., Jane P. Gagliardi, M.D., M.H.S.

Colin Smith et al. Psychiatr Serv. 2021

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TEAM


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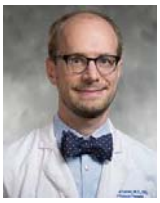
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OBJECTIVE

- To determine whether physical and chemical restraint use was more common in Black patients undergoing emergency psychiatric evaluation compared to white patients

Smith et al. Psychiatr Serv. 2021

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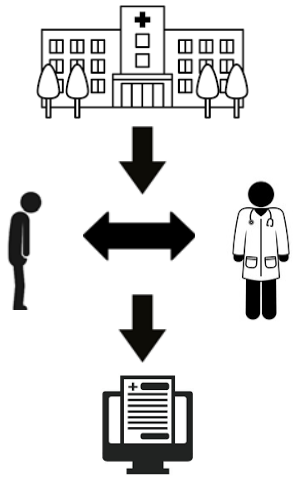
METHODS: STUDY DESIGN

- Single center retrospective cohort study
- Patients ≥ 18 years old evaluated by Duke University Hospital Psychiatry consult service in the emergency department
- Electronic health record data from 2014-2020



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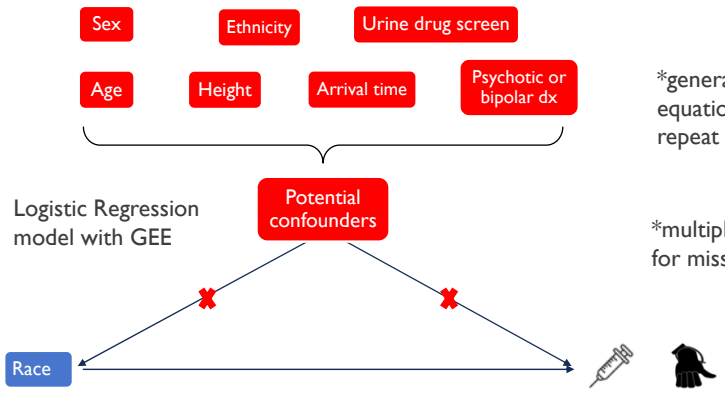
METHODS: STATISTICAL ANALYSIS



*generalized estimating equation (GEE) for repeat encounters

*multiple imputation x 5 for missing data

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METHODS: DEFINING EXPOSURE

Race → Self-reported

Black, White, Asian, Multiracial, Other, unreported

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METHODS: DEFINING OUTCOMES

→ physical holds, mitts, soft restraints, locking cuffs, or neoprene cuffs

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METHODS: A NOTE ON VIOLENT RESTRAINTS

- Violent restraint: Invoked for patient behaviors including violence, severely aggressive behavior, self- injurious behavior, or inability to exhibit safe behaviors
- Non-violent restraint: Ordered for [illegible]iors including pulling of lines or tubes or behaviors related to toxic, metaboli[illegible]ndromes, dementia, or brain injury

Colin Smith et al. Psychiatr Serv. 2021

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METHODS: DEFINING OUTCOMES

Parenteral administration of chlorpromazine, fluphenazine, haloperidol, olanzapine, and ziprasidone

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METHODS: DEFINING POTENTIAL CONFOUNDERS

- **Sex** → Self reported; Male, female, unknown
- **Age** → At presentation (in years)
- **Ethnicity** → Self reported; Hispanic, non-Hispanic, unavailable
- **Height** → From chart (in inches)
- **Urine drug screen / BAC** → Amphetamine, THC, cocaine, opiates, BAC >.08
- **Arrival time** → 1200 - 0400, 0400 - 0800, etc.
- **Psychotic/bipolar d/o** → ED encounter diagnosis code query

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RESULTS: DEMOGRAPHICS

Characteristic	Overall (N=12,977) Median	IQR
Age (years)	37.0	27.0–52.0
Height (inches)[a]	67.0	64.0–70.0
	N	%[b]
Sex		
Female	5,816	44.8
Male	7,159	55.2
Missing	2	<.01
Race		
Asian	234	1.8
Black	6,287	48.4
White	5,263	40.6
Multiracial	682	5.3
Other	326	2.5
Unreported	178	1.4
Missing	7	0.1
Ethnicity		
Hispanic	566	4.4
Non-Hispanic	12,137	93.5
Unreported	266	2.0
Missing	8	<0.1

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RESULTS: DEMOGRAPHICS

Shift		
12:00 a.m.–3:59 a.m.	1,620	12.5
4:00 a.m.–7:59 a.m.	782	6.0
8:00 a.m.–11:59 a.m.	1,640	12.6
12:00 p.m.–3:59 p.m.	2,881	22.2
4:00 p.m.–7:59 p.m.	3,143	24.2
8:00 p.m.–11:59 p.m.	2,911	22.4
Diagnosis		
Bipolar disorder	2,045	15.8
Psychotic disorder	4,383	33.8
Missing	225	1.7
Laboratory tests[c]		
Amphetamine[d]	320	3.8
THC[e]	2,239	26.8
Cocaine[f]	1,646	19.7
Opiate[g]	552	6.6
Peak ethanol level ≥80 mg/dl[h]	1,063	13.1

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RESULTS: PRIMARY OUTCOMES

TABLE 2. Unadjusted rate of physical restraint and chemical restraint use, by patient's race

	Overall (N=12,977)		Black (N=6,287)		White (N=5.263)	
Characteristic	N	%	N	%	N	%
Patients receiving physical restraint	961	7.4	548	8.7	284	5.4
Patients receiving chemical restraint	2,047	15.8	1,136	18.1	647	12.3

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RESULTS: PRIMARY OUTCOMES

TABLE 3. Adjusted odds of receiving physical restraint, by patient's race[a]

Characteristic	OR	95% CI	AOR	Robust 95% CI
Asian	1.03	0.58–1.83	0.58	0.21–1.64
Black	1.67	1.44–1.94	1.35	1.07–1.72
Multiracial	2.09	1.60–2.75	1.84	1.20–2.80
Other	1.39	0.90–2.15	1.32	0.65–2.65
Unreported	2.09	1.28–3.42	0.84	0.29–2.43

[a] Reference group: White.

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RESULTS: PRIMARY OUTCOMES

TABLE 4. Crude and adjusted odds of receiving chemical restraint, by patient's race[a]

Characteristic	OR	95% CI	AOR	Robust 95% CI
Asian	1.13	0.77–1.66	1.10	0.66–1.84
Black	1.57	1.42–1.75	1.33	1.15–1.55
Multiracial	1.84	1.50–2.26	2.11	1.56–2.84
Other	1.23	0.90–1.69	1.52	0.94–2.46
Unreported	2.27	1.60–3.23	1.30	0.64–2.65

[a] Reference group: White.

Colin Smith et al. Psychiatr Serv. 2021

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DISCUSSION: LIMITATIONS

- Physical restraint was based on order
- EHR data does not include "appropriateness" of use
- Retrospective
- Generalizability

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CONCLUSION

- Evidence of *systemic injustice and racism* in healthcare

Smith et al., Psych Serv. 2021

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LECTURE OBJECTIVES

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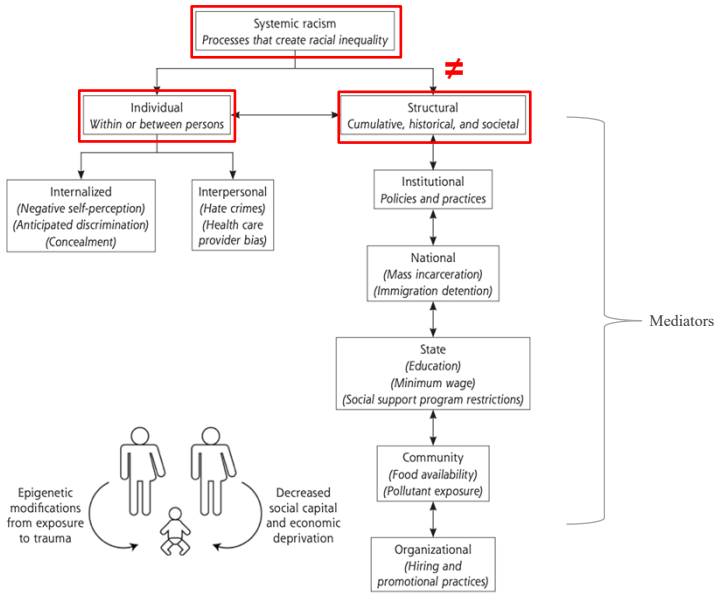
DISCUSSION: LEVELS OF RACISM IN CARE



Lett et al. Ann Fam Med. 2022 Jan 19;2792.doi: 10.1370/afm.2792

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DISCUSSION: INTERPERSONAL RACISM

- Clinicians have implicit preference for white patients
- Hold false beliefs about biological differences between races
- Beliefs impact outcomes
  - E.g., pain

Dehon et al. Acad Emerg Med 2017; 24:895–904

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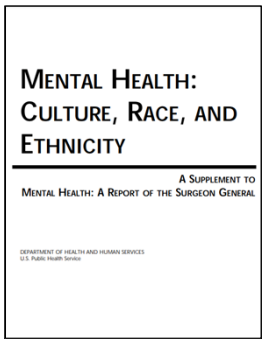
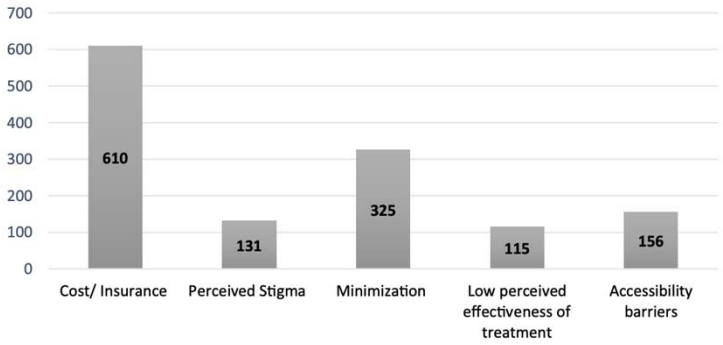
DISCUSSION: ACCESS AS STRUCTURAL RACISM





HHS, 1999; HHS, 2001; Alang, SM. Health Serv Res. 2019;54(2):346-355.

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DISCUSSION: INSURANCE STATUS AS A MEDIATOR FOR ACCESS

Payor	OR (95% CI)
Private	1 (Reference)
Medicaid	10.35 (5.57 - 21.47)
Medicare	7.47 (3.98 -15.57)
Uninsured	9.71 (5.21 – 20.18)
Other	4.88 (1.64 -13.30)

Colin Smith et al., unpublished

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DISCUSSION: CRIMINALIZATION AND HYPERINCARCERTAION

- In the U.S., 3 of the largest centers for mental health are county jails

- Black people are 5x more likely to be imprisoned

NAMI, 2022

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RECONSIDERING OUR APPROACH

Strategies to address bias in ED agitation management

Jin et al. 2021. Acad. Emerg. Med. doi: 10.1111/acem.14277

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"*A bad system will beat a good person every time.*"
– W. Edwards Deming

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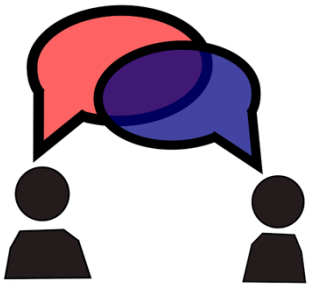
LIVED EXPERIENCE

- Develop an understanding of experiences and needs of Black individuals seen in the DUH psych ED



- Develop hypotheses for drivers of racial inequities in care

Colin Smith et al., unpublished

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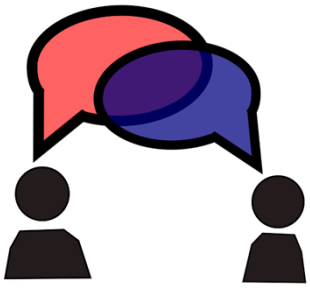
LIVED EXPERIENCE: *criminalization, stigma, vulnerability, helpful interventions, insight, mismatch*

"I am thinking I am going to go to a hospital bed…when I got to the hospital it was like you took me to jail anyway."



"Being put in a police car and in hand restraints felt like I was a criminal. I just wanted to get help."

"I was strapped down - ten or more Caucasian people strip my clothes off - that was rape to me."

"Experiences were traumatic but it was the only way to get help."

Colin Smith et al., unpublished

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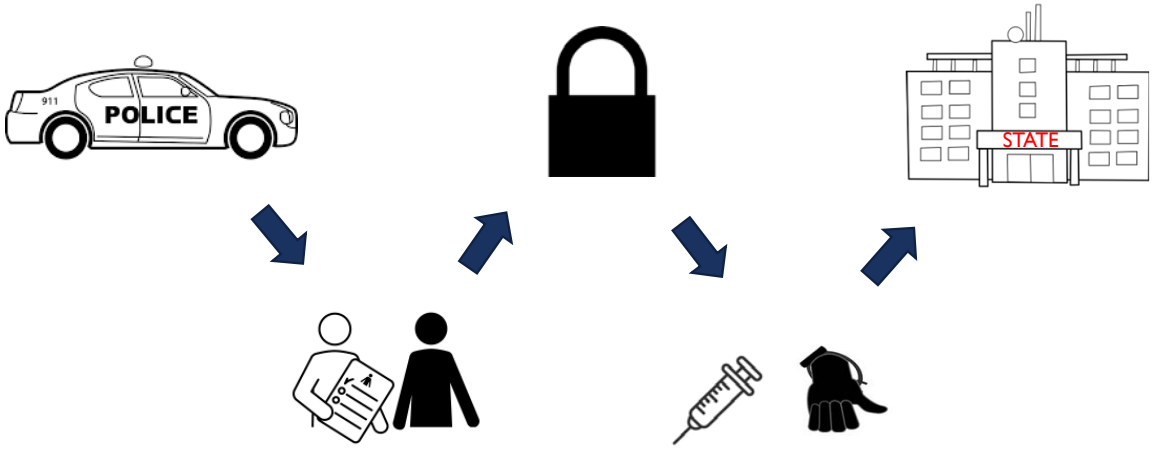
WHERE DO GO FROM HERE?



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WHERE DO GO FROM HERE?

"What has not been reveled cannot be healed."
- Candice Cox, LCSW

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QUESTIONS?

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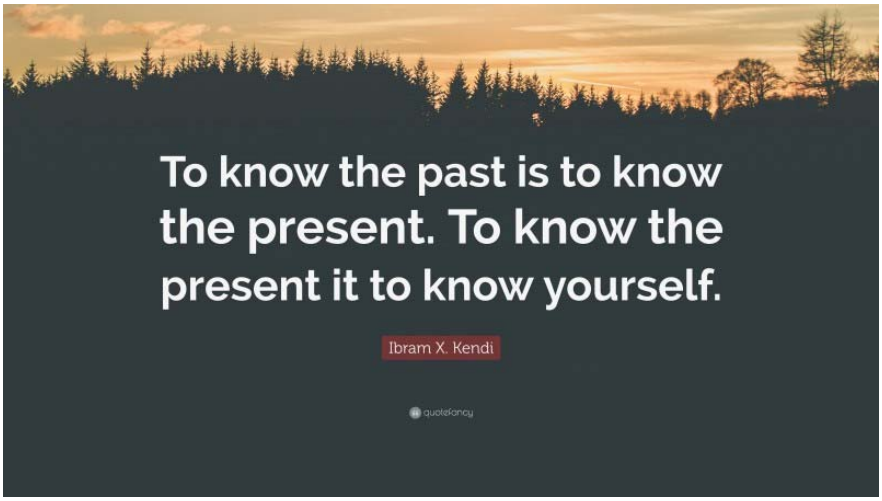

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Denial is the heartbeat of racism, beating across ideologies, races, and nations. It is beating within us.
Ibram X. Kendi

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