What Happened to Patients 36 months following a First Hospitalization for Psychosis at Cambridge Health Alliance?
1/1/2019 – 12/31/2023

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Background

- A 1st psychotic episode historically was thought to lead to permanent disability and lifetime schizophrenia
- New psychosocial & pharmacologic treatments combined with early detection may change this course of illness.
- State-of-the art disposition subsequent to a 1st episode of psychosis is CSC (a Coordinated Specialty Care Clinic-RISE) (Kane et al., 2016)
- Racial & Ethnic minoritized people may not receive the same standard of care
- CHA as a safety-net system serves all people regardless of ability to pay

Objectives & Hypotheses

- Examine inpatient treatment and disposition for 1st Episode Psychosis patients with diverse ethnic and racial backgrounds.
- Determine whether patients entered emergency settings and/or were rehospitalized (outcomes) up to 3 years following discharge from initial hospitalization.
- Examine differences between those who entered care pre-COVID (1/2019-2/2020) versus during the COVID pandemic (3/2020-12/2020).
- Do the baseline characteristics differ by race and ethnicity? (Hypothesis 1)
- Were there differences in outcomes for those first hospitalized pre-COVID compared to those who entered care during the COVID pandemic? (Hypothesis 2)

Methods

- **Data:** Epic Electronic Medical Record chart review of individuals (age 15-35) with a first hospitalization for psychosis within the timespan of Jan 2019-Dec 2020, and administrative claims data up to three years through December, 2023.
- **Primary Predictor:** Race & Ethnic Group (Hispanic).
- **Other Descriptive Characteristics:** Age, gender, and residential zip code
- **Key Outcomes**: Rehospitalization and emergency visits up to 3 years following discharge from first hospitalization.
- **Statistical Analysis**: Fisher's Exact Test with Post-Hoc Test for Pairwise Comparisons.

Results

Table 1. Demographic and Clinical Characteristics of Patients at Time of First Hospitalization Discharge (Baseline)

Characteristics	Aggregate	White	Black	Hispanic	Asian	Portuguese	Other/Unknown
Demographics N (%)	275 (100.00)	123 (44.73)	91 (33.09)	37 (13.45)	12 (4.36)	8 (2.91)	4 (1.45)
Age							
Mean (SD), years	24.98 (5.75)	24.72 (5.82)	25.36 (5.58)	24.68 (6.05)	26.92 (5.45)	24.13 (6.66)	23.25 (5.06)
Sex N (%)							
Male	193 (70.18)	94 (48.70)	60 (31.09)	25 (12.95)	9 (4.66)	3 (1.55)	2 (1.04)
Female	82 (29.82)	29 (35.37)	31 (37.80)	12 (14.63)	3 (3.66)	5 (6.10)	2 (2.44)
Inpatient Restraints N (%)							
Yes	66 (24.00)	28 (42.42)	23 (34.85)	9 (13.64)	4 (6.06)	1 (1.52)	1 (1.52)
No	209 (76.00)	95 (45.45)	68 (32.54)	28 (13.40)	8 (3.83)	7 (3.35)	3 (1.44)
Homicidal Ideation N (%)							
Yes	33 (12.00)	17 (51.52)	10 (30.30)	4 (12.12)	0 (0.00)	2 (6.06)	0 (0.00)
No	242 (88.00)	106 (43.80)	81 (33.47)	33 (13.64)	12 (4.96)	6 (2.48)	4 (1.65)
Suicide Attempt Hospitalization N (%)							
Yes	22 (8.00)	16 (72.73)	4 (18.18)	1 (4.55)	0 (0.00)	0 (0.00)	1 (4.55)
No	253 (92.00)	107 (42.29)	87 (34.39)	36 (14.23)	12 (4.74)	8 (3.16)	3 (1.19)
Suicide Attempt History N (%)							
Yes	72 (26.18)	40 (55.56)	23 (31.94)	7 (9.72)	0 (0.00)	1 (1.39)	1 (1.39)
No	203 (73.81)	83 (40.89)	68 (33.50)	30 (14.78)	12 (5.91)	7 (3.45)	3 (1.48)
Suicide Ideation Hospitalization N (%)							
Yes	90 (32.72)	39 (43.33)	32 (35.56)	11 (12.22)	5 (5.56)	2 (2.22)	1 (1.11)
No	185 (67.27)	84 (45.41)	59 (31.89)	26 (14.05)	7 (3.78)	6 (3.24)	3 (1.62)
Suicide Ideation History N (%)							
Yes	133 (48.36)	66 (49.62)	36 (27.07)	17 (12.78)	8 (6.02)	4 (3.01)	2 (1.50)
No	142 (51.64)	57 (40.14)	55 (38.73)	20 (14.08)	4 (2.82)	4 (2.82)	2 (1.41)
Substance Abuse N (%)							
Cannabis	63 (22.91)	29 (46.03)	15 (23.81)	15 (23.81)	2 (3.17)	1 (1.59)	1 (1.59)
Cannabis/Other Substance(s)	84 (30.55)	36 (42.86)	34 (40.48)	9 (10.71)	1 (1.19)	3 (3.57)	1 (1.19)
Tobacco	15 (5.45)	7 (46.67)	5 (33.33)	1 (6.67)	1 (6.67)	0 (0.00)	1 (6.67)
Other Substance	18 (6.55)	5 (27.78)	5 (27.78)	6 (33.33)	1 (5.56)	1 (5.56)	0 (0.00)
Polysubstance/No Cannabis	20 (7.27)	15 (75.00)	4 (20.00)	1 (5.00)	0 (0.00)	0 (0.00)	0 (0.00)
None	75 (27.27)	31 (41.33)	28 (37.33)	5 (6.67)	7 (9.33)	3 (4.00)	1 (1.33)
Qualified for RISE N (%)							
Yes	202 (73.45)	85 (42.08)	66 (32.67)	32 (15.84)	9 (4.46)	8 (3.96)	2 (0.99)
No	73 (26.55)	38 (52.05)	25 (34.25)	5 (6.85)	3 (4.11)	0 (0.00)	2 (2.74)
Referred to RISE (Percent of Qualified) N (%)							
Yes	41 (20.30)	15 (36.59)	17 (41.46)	7 (17.07)	1 (2.44)	1 (2.44)	0 (0.00)
No	161 (79.70)	70 (43.48)	49 (30.43)	25 (15.53)	8 (4.97)	7 (4.35)	2 (1.24)
Length of Stay							
Mean (SD), days	9.07 (7.89)	8.67 (7.54)	9.37 (8.86)	9.32 (6.95)	10.25 (7.52)	11.25 (8.41)	4.50 (2.08)

Note 1. Percentages in the aggregate column are based on a total sample size of 275.
Note 2. Percentages in race and ethnicity columns are calculated based on row totals.

Table 2. Follow-up Emergency Department Visits 36 Months Post-Discharge by Race and Ethnicity Relative to Whites

Race/Ethnicity	No (%)	Yes (%)	Total (%)
Asian	5 (45.45)	6 (54.55)	11 (4.17)
Black	33 (37.93)	54 (62.07)	87 (32.95)
Hispanic	15 (42.86)	20 (57.14)	35 (13.26)
Other/Unknown	4 (100.00)	0 (0.00)	4 (1.52)
Portuguese	2 (25.00)	6 (75.00)	8 (3.03)
White (Reference)	64 (53.78)	55 (45.22)	119 (45.08)
Overall Fisher's Exact P-Value = **0.043**			

Note 1. No/yes percentages based on race/ethnic group totals; total percentages based on total sample (N=264).
Note 2. Bold values indicate statistically significant results (p<0.05).

- Overall, follow-up emergency department visits differed by race and ethnicity for those who entered care over the study period (p=0.043), with higher rates of ED use among most minoritized groups. However, pairwise comparisons did not reveal racial/ethnic group differences relative to White patients. (Table 2)

- In the pre-COVID sample, follow-up emergency department visits also differed by race and ethnicity for those who entered care in the pre-COVID period (p=0.046), with higher rates of ED use among most minoritized groups. Pairwise comparisons did not reveal racial/ethnic group differences. (Table 3)

Table 3. Follow-up Emergency Department Visits 36 Months Post-Discharge Pre-COVID-19 Pandemic (1/1/2019 - 2/1/2020) by Race and Ethnicity Relative to Whites

Race/Ethnicity	No (%)	Yes (%)	Total (%)
Asian	3 (60.00)	2 (40.00)	5 (2.99)
Black	21 (36.84)	36 (63.16)	57 (34.13)
Hispanic	6 (31.58)	13 (68.42)	19 (11.38)
Other/Unknown	4 (100.00)	0 (0.00)	4 (2.40)
Portuguese	1 (20.00)	4 (80.00)	5 (2.99)
White (Reference)	40 (51.95)	37 (48.05)	77 (46.11)
Overall Fisher's Exact P-Value = **0.046**			

Note 1. No/yes percentages based on race/ethnic group totals; total percentages based on total sample (N=264).
Note 2. Bold values indicate statistically significant results (p<0.05).

Results

Table 4. Follow-up Inpatient Visits 36 Months Post-Discharge by Race and Ethnicity Relative to Whites

Race/Ethnicity	No (%)	Yes (%)	Total (%)	Pairwise Fisher's Exact p-value
Asian	9 (81.82)	2 (18.18)	11 (4.17)	0.726
Black	47 (54.02)	40 (45.98)	87 (32.95)	**0.008**
Hispanic	25 (71.43)	10 (28.57)	35 (13.26)	1.000
Other/Unknown	4 (100.00)	0 (0.00)	4 (1.52)	0.573
Portuguese	4 (50.00)	4 (50.00)	8 (3.03)	0.230
White (Reference)	86 (72.27)	33 (27.73)	119 (45.08)	-
Overall Fisher's Exact P-Value = **0.032**				

Note 1. No/yes percentages based on race/ethnic group totals; total percentages based on total sample (N=264).
Note 2. Bold values indicate statistically significant pairwise results (Bonferonni-corrected p<0.01).

- In the total sample, Black patients showed significantly higher rates of inpatient visits 36 months post-discharge relative to White patients (p=0.008). (Table 4)

Conclusions & Limitations

- Inpatient treatment characteristics and disposition did not differ at baseline by race/ethnicity.
- Higher rates of any ED use at 36 months were primarily driven by Latino, Black and Portuguese patients who were first hospitalized before COVID.
- Higher rates of rehospitalizations at 36-months were also evident among Black patients first hospitalized during the study period.
- These findings suggest lower quality of long term care for minoritized patients with first episode psychosis who had a first hospitalization pre-COVID.
- Coordinated specialty care may be particularly important among to redress disparities. Yet, referrals to RISE, the CHA CSC clinic, were very low before and during the pandemic, suggesting educating inpatient staff about CSC is necessary.
- Limitations: Administrative data typically focus on individual episodes of care rather than long-term follow-up. As a result, they may not capture the full trajectory of a patient's health or outcomes over time.
- Ongoing work to clarify extent ED and rehospitalizations are due to behavioral health crises or COVID-related hospitalizations

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