Evaluation of Naloxone Uptake Disparities Among Harm Reduction Clients in Rhode Island: A Deeper Dive Using Disaggregated Race and Ethnicity Data

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ABSTRACT

INTRODUCTION: Although opioid overdose deaths decreased between 2022 to 2024, racial and ethnic disparities persisted during this time. The goal of this analysis was to explore disparities in naloxone uptake by racial and ethnic identity and harm reduction supply preference. This article builds upon prior work and disaggregates race and ethnicity categories that were previously aggregated due to small numbers.

METHODS: Clients were divided into three mutually exclusive groups based on the type of harm reduction supplies they requested: 1) those who requested injection supplies only, 2) those who requested smoking supplies only, and 3) those who requested both injection and smoking supplies. We calculated descriptive statistics and odds ratios to investigate racial and ethnic disparities in naloxone uptake.

RESULTS: Overall, Black and Hispanic clients were significantly less likely to receive naloxone compared to their White counterparts. Racial and ethnic disparities in naloxone uptake varied after accounting for supply preference. The clearest racial and ethnic disparities were observed among clients who requested smoking supplies.

CONCLUSION: It is important to consider multiple factors when designing harm reduction and overdose prevention interventions, including racial and ethnic identity, culture, preferred substance, and preferred route of administration. People with lived experience should continue to be included when designing interventions. Given the rapidly changing nature of the illicit drug supply and the emergence of novel substances, anyone who uses illicit substances is at risk of an opioid overdose. Harm reduction agencies should continue to educate stimulant users about their risk of opioid overdose and the benefits of naloxone.

KEYWORDS: harm reduction; overdose; naloxone; disparities

INTRODUCTION

Opioid overdose deaths are a leading public health concern in Rhode Island. Although opioid overdose deaths decreased between 2022 and 2024, racial and ethnic disparities persist. In 2023, non-Hispanic Black individuals experienced the highest rate of fatal overdoses in Rhode Island at 47.0 decedents per 100,000 person-years.[1] Nationwide in 2023, non-Hispanic Black individuals experienced a similar rate of fatal overdoses (48.9 per 100,000), which was second to that of Native American or Alaskan individuals (65.0 per 100,000).[2] Racial and ethnic analyses related to opioid overdoses in Rhode Island typically include Hispanic, non-Hispanic White, and non-Hispanic Black individuals. If additional racial identities are included, they are aggregated because of small population sizes. Therefore, the rate of fatal overdose among Native American or Alaskan individuals in Rhode Island is unknown. Although there is strong statistical justification for the suppression of counts and rates based on small numbers,[3] hidden disparities may exist among minority communities.

Naloxone, also known by the brand name Narcan®, is a life-saving medication that can reverse an opioid overdose. Distribution of naloxone, which is plentiful in Rhode Island following a settlement with drug manufacturers, is a key strategy to reduce opioid overdose deaths.[4] Anyone who uses illicit substances is at risk of an opioid overdose given the increased presence of synthetic opioids in the drug supply. People who use stimulants may not know that their drugs contain opioids. Even those who knowingly use opioids may encounter synthetic opioids that are much more potent than they are accustomed to.[5] This article builds upon prior work and disaggregates race and ethnicity categories that were previously aggregated due to small numbers.[6,7] The goal of this analysis was to explore disparities in naloxone uptake by racial and ethnic identity and harm reduction supply preference.

METHODS

AIDS Care Ocean State,[8] Community Care Alliance,[9] Project Weber/RENEW,[10] and Parent Support Network of Rhode Island (until September 2024),[11] with funding in part from the Rhode Island Department of Health, have provided life-saving harm reduction services since as early as 1986. These

Table 1. Unique Clients Requesting Injection Supplies, Smoking Supplies, and Naloxone by Race and Ethnicity (RI, January 1, 2022–June 30, 2025)

Race and Ethnicity	Unique Clients N (%)	Unique Clients who Requested Naloxone n (%)	Unique Clients who Requested Injection Supplies		Unique Clients who Requested Smoking Supplies		Unique Clients who Requested Injection and Smoking Supplies	
			Requested Injection Supplies n	Requested Injection Supplies and Naloxone n (%)	Requested Smoking Supplies n	Requested Smoking Supplies and Naloxone n (%)	Requested Injection Supplies and Smoking Supplies n	Requested Injection Supplies, Smoking Supplies, and Naloxone n (%)
White*	12,612 (61.3%)	6,573 (52.1%)	4,253	2,363 (55.6%)	5,322	2,384 (44.8%)	3,037	1,826 (60.1%)
Hispanic	4,137 (20.1%)	2,041 (49.3%)	1,272	720 (56.6%)	1,928	753 (39.1%)	937	568 (60.6%)
Black*	3,340 (16.2%)	1,572 (47.1%)	842	509 (60.5%)	1,830	623 (34.0%)	668	440 (65.9%)
More than one race*	281 (1.4%)	142 (50.5%)	81	46 (56.8%)	144	62 (43.1%)	56	34 (60.7%)
Native American or Alaskan*	135 (0.7%)	72 (53.3%)	35	24 (68.6%)	72	29 (40.3%)	28	19 (67.9%)
Asian*	48 (0.2%)	20 (41.7%)	15	8 (53.3%)	25	7 (28.0%)	8	5 (62.5%)
Native Hawaiian or Pacific Islander*	13 (0.1%)	9 (69.2%)	—	—	—	—	—	—
All Unique Clients	20,566 (100%)	10,429 (50.7%)	6,503	3,673 (56.5%)	9,326	3,862 (41.4%)	4,737	2,894 (61.1%)

Non-Hispanic

organizations provide harm reduction supplies, basic needs, case management, education, linkage to services, and more through various access points, such as mobile outreach, fixed sites, and home-delivered services. Clients' autonomy is always respected; they only receive supplies and services that they request. During client encounters, outreach workers at these organizations recorded clients' identification codes, demographic data, and supplies requested; this data is subsequently reported to the Rhode Island Department of Health.[12]

As in previous articles published on this topic,[6,7] clients were divided into three mutually exclusive groups based on the type of harm reduction supplies they requested between January 1, 2022 and June 30, 2025: 1) those who requested injection supplies only, 2) those who requested smoking supplies only, and 3) those who requested both injection and smoking supplies. Injection supplies included sterile needles, and smoking supplies included a variety of pipes intended for different substances. Intranasal naloxone was offered separately from injection and smoking supplies.

Client race and ethnicity data were occasionally discrepant or missing, as the provision of essential supplies and services was prioritized over demographic data collection when necessary. Demographic data were self-reported, and clients may have identified themselves as various races and ethnicities at different encounters. Demographic data reported at the clients' last encounter were used for this analysis. Race and ethnicity were combined to categorize clients into the following groups: non-Hispanic White (henceforth "White"), non-Hispanic Black (henceforth "Black"), Hispanic, non-Hispanic Native American or Alaskan (henceforth "Native American or Alaskan"), non-Hispanic Native Hawaiian or Pacific Islander (henceforth "Native Hawaiian or Pacific Islander"), non-Hispanic Asian (henceforth "Asian"), and non-Hispanic of more than one race (henceforth, "more than one race"). We calculated descriptive statistics [**Table 1**] and odds ratios [**Table 2**] to investigate racial and ethnic disparities in naloxone uptake.

RESULTS

Between January 1, 2022 and June 30, 2025, 20,566 unique clients requested injection supplies and/or smoking supplies [**Table 1**]. Of the clients who requested injection supplies only, 56.5% also requested naloxone. By comparison, 41.4% of people who requested smoking supplies only also requested naloxone, and 61.1% of the clients who requested both injection and smoking supplies also requested naloxone. Receipt of naloxone by race and ethnicity varied within the three groups. Of the clients who requested injection supplies only, Native American or Alaskan clients were most likely to receive naloxone (68.6%), followed by Black clients (60.5%), clients with more than one race (56.8%), Hispanic clients (56.6%), White clients (55.6%), and Asian clients (53.3%). Of the clients who requested smoking supplies only, White clients were most likely to receive

Table 2. Odds Ratios of Clients Requesting Naloxone by Race and Ethnicity for Clients who Requested Injection Supplies, Smoking Supplies, and both Injection Supplies and Smoking Supplies (RI, January 1, 2022–June 30, 2025)

Race and Ethnicity	All Clients	Unique Clients who Requested Injection Supplies: Odds Ratio (OR) of Requesting Naloxone (Lower, Upper 95% CI)	Unique Clients who Requested Smoking Supplies: OR of Requesting Naloxone (Lower, Upper 95% CI)	Unique Clients who Requested Injection and Smoking Supplies: OR of Receiving Naloxone (Lower, Upper 95% CI)
White*	1.00	1.00	1.00	1.00
Hispanic	0.89 (0.83, 0.96)	1.04 (0.92, 1.18)	0.79 (0.71, 0.88)	1.02 (0.88, 1.19)
Black*	0.82 (0.76, 0.88)	1.22 (1.05, 1.42)	0.64 (0.57, 0.71)	1.28 (1.07, 1.53)
More than one race*	0.94 (0.74, 1.19)	1.05 (0.67, 1.64)	0.93 (0.67, 1.30)	1.02 (0.60, 1.76)
Native American or Alaskan*	1.05 (0.75, 1.48)	1.75 (0.85, 3.57)	0.83 (0.52, 1.34)	1.40 (0.63, 3.10)
Asian*	0.66 (0.37, 1.17)	0.91 (0.33, 2.53)	0.48 (0.20, 1.15)	1.11 (0.26, 4.63)
Native Hawaiian or Pacific Islander*	2.07 (0.64, 6.72)	—	—	—

**Non-Hispanic*

naloxone (44.8%), followed by clients with more than one race (43.1%), Native American or Alaskan clients (40.3%), Hispanic clients (39.1%), Black clients (34.0%), and Asian clients (28.0%). Finally, of the clients who requested both injection and smoking supplies, Native American or Alaskan clients were most likely to receive naloxone (67.9%), followed by Black clients (65.9%), Asian clients (62.5%), clients with more than one race (60.7%), Hispanic clients (60.6%), and White clients (60.1%).

Further analyses were conducted to determine if there were racial and ethnic disparities in naloxone uptake based on type of supplies requested [**Table 2**]. Among clients who requested injection supplies only, only Black clients had statistically significant higher odds (Odds ratio (OR)=1.22; 95% Confidence Interval (CI): 1.05, 1.42) of receiving naloxone compared to their White counterparts. Hispanic clients (OR=1.04; 95% CI: 0.92, 1.18), clients with more than one race (OR=1.05; 95% CI: 0.67, 1.64), and Native American or Alaskan clients (OR=1.75; 95% CI: 0.85, 3.57) had higher odds of receiving naloxone compared to their White counterparts, but the findings were not statistically significant. Asian clients (OR=0.91; 95% CI: 0.33, 2.53) had lower odds of receiving naloxone compared to their White counterparts, but the findings were not statistically significant. Among clients who requested smoking supplies, Hispanic clients (OR=0.79; 95% CI: 0.71, 0.88) and Black clients (OR=0.64; 95% CI: 0.57, 0.71) had statistically significant lower odds of receiving naloxone compared to the White counterparts. Clients with more than one race (OR=0.93; 95% CI: 0.67, 1.30), Native American or Alaskan clients (OR=0.83; 95% CI: 0.52, 1.34), and Asian clients (OR=0.48; 95% CI: 0.20, 1.15) had lower odds of receiving naloxone compared to their White counterparts, but the findings were not statistically significant. Finally, among clients who requested both injection and smoking supplies, only Black clients had statistically significant higher odds (OR=1.28; 95% CI: 1.07, 1.53) of receiving naloxone compared to their White counterparts. Hispanic clients (OR=1.02; 95% CI: 0.88, 1.19), clients with more than one race (OR=1.02; 95% CI: 0.60, 1.76), Native American or Alaskan clients (OR=1.40; 95% CI: 0.63, 3.10), and Asian clients (OR=1.11; 95% CI: 0.26, 4.63) had higher odds of receiving naloxone compared to their White counterparts, but the findings were not statistically significant.

DISCUSSION

This analysis demonstrated the importance of including supply preference when investigating racial and ethnic disparities in naloxone uptake. Among all clients, Hispanic and Black clients were significantly less likely to receive naloxone than their White counterparts. Asian clients and those with more than one race were also less likely to receive naloxone, while Native American or Alaskan clients and Native Hawaiian or Pacific Islander clients were more likely. Unfortunately, Native Hawaiian or Pacific Islanders had to be excluded from further analyses because of small numbers. Among clients who requested injection supplies, Black clients were significantly more likely to receive naloxone than their White counterparts. Hispanic clients, clients with more than one race, and Native American or Alaskan clients were more likely to receive naloxone compared to their White counterparts, while Asian clients were less likely. The clearest racial and ethnic disparities were observed among clients who requested smoking supplies. Compared

to their White counterparts, all other racial and ethnic identities were less likely to receive naloxone, although the only significant findings were among Hispanic and Black clients. Finally, among clients who requested both types of supplies, all other racial and ethnic minorities were more likely to receive naloxone than their White counterparts, although the only significant findings were among Black clients.

There were some limitations to this analysis. First, the data in this analysis only represented the efforts of harm reduction agencies funded by the Rhode Island Department of Health. Although the vast majority of naloxone is distributed by these agencies, this analysis undercounts the number of individuals who requested naloxone because it is possible to access naloxone from other sources. Next, client counts were approximate because there may have been client code data entry errors and clients may have used various codes to preserve their anonymity. Finally, despite the 3.5-year study period, clients who identified with previously aggregated racial and ethnic categories (non-Hispanic and more than one race, Native American or Alaskan, Asian, and Native Hawaiian or Pacific Islander) represented only 2.3% of all clients. The small numbers in these categories contributed to wide confidence intervals.

In conclusion, racial and ethnic disparities in naloxone uptake vary based on supply preference. It is important to consider multiple factors when designing harm reduction and overdose prevention interventions, including racial and ethnic identity, culture, preferred substance, and preferred route of administration. Most importantly, people with lived experience should continue to be included when designing interventions. The clearest racial and ethnic disparities were observed among clients who requested smoking supplies. Clients who smoke substances are typically using stimulants and may not perceive themselves to be at risk of opioid overdose.[5] Given the rapidly changing nature of the illicit drug supply and the emergence of novel substances, anyone who uses illicit substances is at risk of an opioid overdose. Harm reduction agencies should continue to educate stimulant users about their risk of opioid overdose and the benefits of naloxone. Future research into overdose-related topics should attempt to disaggregate racial and ethnic identities as much as possible to uncover hidden disparities. In Rhode Island where small numbers are an evergreen issue, this can be most easily accomplished by looking at multiple years of data. Finally, access to evidence-based, life-saving harm reduction services must be maintained, including a comprehensive and culturally responsive array of supplies and services offered through various low-barrier access points.

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