

# Overdose Death Rates Among Racial Minority Women in Wisconsin: Changes During the COVID-19 Pandemic

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## Aim

The purpose of this study is to investigate OD death rates between White, Black, and Indigenous women in Wisconsin, with a particular focus on rates immediately prior to and during the COVID-19 pandemic (i.e., 2018-2020).

## Implications

This study confirms that OD deaths in Wisconsin are **disproportionately higher in racial minority women**. Understanding the complex intricacies between the impacts of the COVID-19 pandemic coupled with barriers to treatment access or acceptability in these populations is urgently needed. It will take a multi-pronged approach to properly address the OD epidemic and better serve these marginalized, vulnerable populations.

## Introduction

- In Wisconsin, OD deaths increased 11-fold from 2000 to 2020, with over 1,200 deaths in 2020.
- The age-adjusted death rates were 36.7 (34.5-38.9) and 17.4 (15.9-18.9) for men and women, respectively.
- 7.7% of the state identifies as Black or African American, and 2.5% identify as Indigenous.

## Methods

- Data from the Wisconsin Department of Health Services' Interactive Statistics on Health (WISH) data query system examined drug OD death rates (ICD-10) under the following parameters:
  - Female gender, race, year of death, and manner of death (any drug, any opioid, prescription opioids, heroin, synthetic opioids, benzodiazepines, cocaine, and psychostimulants; not mutually exclusive categories).
- Age-adjusted death rates per 100,000 residents (95% CI). Trends over time were examined, including rate increases between-groups by race, as well as comparing rates pre- vs. during-COVID-19.
- In each logistic regression, race, age, and year were entered as independent variables. The reference categories in these analyses were: White, aged 65+, and year 2018. Analyses were completed using R version 4.1.2 software.

## Results

- Rates across all categories increased from 2018 to 2020
- Collapsed across race overall, overdose death rates were 14.6 (13.2-16.0, per 100,000) in 2018 and increased to 18.0 (16.4-19.5, per 100,000) in 2020.
- Stratified by race, overdose death rates in 2018 were 14.1 (12.6-15.5, per 100,000) for White women, 20.8 (14.7-26.9, per 100,000) for Black women, and 26.5 (10.0-42.9, per 100,000) for Indigenous women; these rates increased in 2020 to 16.4 (14.8-17.9, per 100,000), 32.5 (25.0-40.0, per 100,000), and 59.9 (35.8-84.0, per 100,000) for White, Black, and Indigenous women, respectively.

Table 1. OD death rates by race

Manner of OD death	2018		2019		2020	
	Rate	95% CI	Rate	95% CI	Rate	95% CI
Any drug						
White	14.1	12.6-15.5	13.9	12.5-15.3	16.4 <sup>***</sup>	14.8-17.9
Black	20.8	14.7-26.9	19.3	13.4-25.2	32.5 <sup>***</sup>	25.0-40.0
Indigenous	26.5	10.0-42.9	39.0 <sup>*</sup>	19.3-58.7	59.9 <sup>***</sup>	35.8-84.0
Any opioid						
White	10.4	9.2-11.7	10.4	9.1-11.6	12.7 <sup>**</sup>	11.3-14.1
Black	13.3	8.4-18.2	17.6 <sup>*</sup>	12.1-23.2	25.1 <sup>**</sup>	18.5-31.7
Indigenous	20.7	6.2-35.2	30.9 <sup>*</sup>	13.4-48.5	41.0 <sup>**</sup>	21.1-61.0
Prescription opioid						
White	4.1	3.4-4.9	3.7	3.0-4.5	4.0 <sup>*</sup>	3.2-4.8
Black	7.7	4.0-11.4	6.4	3.0-9.7	6.6 <sup>*</sup>	3.2-10.0
Indigenous	-	-	x	-	19.3	5.6-33.0
Heroin						
White	3.1	2.4-3.8	3.0	2.3-3.6	2.1	1.6-2.7
Black	4.4	1.6-7.3	3.8	1.2-6.4	8.0 <sup>**</sup>	4.2-11.7
Indigenous	-	-	x	-	x	-
Synthetic opioid						
White	6.0	5.1-7.0	6.6 <sup>*</sup>	5.6-7.6	10.5 <sup>**</sup>	9.2-11.7
Black	9.1	5.1-13.2	14.1 <sup>*</sup>	9.1-19.0	20.6 <sup>**</sup>	14.6-26.6
Indigenous	15.2	2.8-27.7	25.6 <sup>*</sup>	9.6-41.5	32.7 <sup>**</sup>	14.8-50.5
Benzodiazepine						
White	3.6	2.9-4.4	2.9	2.3-3.6	4.4 <sup>**</sup>	3.6-5.2
Black	5.0	2.0-8.0	4.7	1.8-7.5	5.4 <sup>**</sup>	2.3-8.4
Indigenous	-	-	-	-	x	-
Cocaine						
White	2.6	2.0-3.2	2.6	2.0-3.2	3.7 <sup>**</sup>	3.0-4.4
Black	9.8	5.6-14.0	13.7 <sup>*</sup>	8.7-18.6	16.0 <sup>**</sup>	10.7-21.3
Indigenous	-	-	x	-	x	-
Psychostimulant						
White	1.8	1.3-2.3	1.7	1.2-2.2	3.2 <sup>**</sup>	2.5-3.9
Black	-	-	x	-	x	-
Indigenous	-	-	x	-	17.6	4.5-30.6

Note: All rates are age adjusted per 100,000  
 "-" indicates no data for that cell, "x" indicates less than 5 individuals for that cell, thus the rates were suppressed from the WISH dashboard to protect privacy.  
 Within-group changes: "\*" indicates a 1.0-1.9-fold increase from the prior year, "^^" indicates a >2.0-fold increase from the prior year; "^^" indicates a 1.0-1.9-fold increase from 2018-2020, "+" indicates a >2.0-fold increase from 2018-2020.  
 Between-group changes: rates were compared within year between Black and Indigenous women with White women. Bolded rates indicate a 1.0-1.9-fold increase, italicized rates indicate a 2.0-2.9-fold increase, and bolded and italicized rates indicate a >3.0-fold increase.

- Death rates increased over time across races and substances, with some having a >2.0-fold increase not only over time, but also between races (Table 1)
- Age, race, and year were significantly associated with increased adjusted ORs for overdose deaths (Table 2)

Table 2. Weighted logistic regressions predicting OD death

	Weighted OR	Weighted 95% CI	p-value
Any drug			
Age 15-44	3.66	2.94-4.58	<0.001
Age 45-64	3.95	3.15-4.95	<0.001
Black Race	1.72	1.45-2.04	<0.001
Indigenous Race	2.96	2.19-4.01	<0.001
Year 2019	1.06	0.93-1.22	0.39
Year 2020	1.23	1.08-1.41	0.002
Any opioid			
Age 15-44	6.41	4.68-8.78	<0.001
Age 45-64	5.63	4.09-7.76	<0.001
Black Race	1.58	1.30-1.94	<0.001
Indigenous Race	2.69	1.88-3.85	<0.001
Year 2019	1.07	0.90-1.25	0.45
Year 2020	1.30	1.11-1.52	<0.001
Prescription opioid			
Age 15-44	2.25	1.55-3.27	<0.001
Age 45-64	3.29	2.28-4.77	<0.001
Black Race	1.73	1.25-2.41	0.001
Indigenous Race	3.31	1.90-5.77	<0.001
Year 2019	0.96	0.74-1.24	0.76
Year 2020	1.04	0.81-1.34	0.73
Heroin			
Age 15-44	12.19	5.38-27.59	<0.001
Age 45-64	7.86	3.42-18.11	<0.001
Black Race	1.95	1.35-2.83	<0.001
Indigenous Race	3.53	1.87-6.67	<0.001
Year 2019	0.99	0.73-1.35	0.96
Year 2020	0.85	0.61-1.17	0.31
Synthetic opioid			
Age 15-44	34.24	15.29-76.69	<0.001
Age 45-64	23.65	10.50-53.26	<0.001
Black Race	1.81	1.44-2.27	<0.001
Indigenous Race	3.44	2.35-5.03	<0.001
Year 2019	1.18	0.96-1.46	0.11
Year 2020	1.81	1.49-2.19	<0.001
Benzodiazepine			
Age 15-44	6.39	3.63-11.25	<0.001
Age 45-64	6.58	3.71-11.65	<0.001
Black Race	1.29	0.88-1.90	0.19
Indigenous Race	1.06	0.39-2.84	0.91
Year 2019	0.81	0.60-1.08	0.15
Year 2020	1.17	0.90-1.53	0.24
Cocaine			
Age 15-44	12.24	5.41-27.67	<0.001
Age 45-64	11.48	5.04-26.13	<0.001
Black Race	4.62	3.55-6.01	<0.001
Indigenous Race	4.13	2.30-7.40	<0.001
Year 2019	1.05	0.78-1.43	0.73
Year 2020	1.45	1.10-1.92	0.009
Psychostimulant			
Age 15-44	15.56	5.74-42.18	<0.001
Age 45-64	6.60	2.35-18.50	<0.001
Black Race	0.57	0.28-1.17	0.13
Indigenous Race	3.45	1.69-7.03	<0.001
Year 2019	0.93	0.61-1.41	0.72
Year 2020	1.70	1.18-2.45	0.005

Note: Reference category White, aged 65+, and year 2018

## Abstract

### Objective

We are in the midst of an overdose (OD) epidemic that has grown during the concurrent COVID-19 pandemic. In Wisconsin, OD deaths increased 11-fold from 2000 to 2020, with over 1,200 deaths in 2020. This study's purpose was to investigate OD death rates among marginalized women in Wisconsin from 2018-2020.

### Methods

Wisconsin Department of Health Services' Interactive Statistics on Health (WISH) data query system on drug OD death rates was examined under the following parameters: gender, race (Black, Indigenous, White), age, year, and manner of OD death. Logistic regression analysis was also conducted looking at death count data, with race, age, and year as potential predictor variables.

### Results

OD death rates in 2018 were 14.1 (12.6-15.5) for White women, 20.8 (14.7-26.9) for Black women, and 26.5 (10.0-42.9) for Indigenous women; these rates increased in 2020 to 16.4 (14.8-17.9), 32.5 (25.0-40.0), and 59.9 (35.8-84.0) for White, Black, and Indigenous women, respectively. Regression findings illustrated that being Black or Indigenous and aged 15-44 or 45-64 were significantly more likely to die from most causes of OD death (any drug, any opioid, prescription opioid, heroin, synthetic opioids, and cocaine; weighted OR > 1.25, ps < 0.001).

### Conclusions

This study confirms that OD deaths in WI are disproportionately higher in female minority populations. Understanding the complex intricacies between the impacts of the COVID-19 pandemic coupled with barriers to treatment access or acceptability in these populations is urgently needed. It will take a multi-pronged approach to properly address the OD epidemic and better serve these marginalized, vulnerable populations.

## Acknowledgement

We acknowledge in Milwaukee that we are on traditional Potawatomi, Ho-Chunk and Menominee homeland along the southwest shores of Michigami, North America's largest system of freshwater lakes, where the Milwaukee, Menominee, and Kinnickinnic rivers meet and the people of Wisconsin's sovereign Anishinaabe, Ho-Chunk, Menominee, Oneida, and Mohican nations remain present.



### For More Information

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