Macomb County Opioid Community Health Assessment

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Executive Summary

Prescription drugs have dramatically changed the quality of life for millions of individuals living with acute or chronic pain. However, misuse, addiction, and overdose of opiates have led to a national crisis. In the past two decades, Michigan's drug death rate grew faster than the US' overall rate, tripling in twenty years. As of 2013, the state has the 18th highest drug overdose mortality rate in the country, with 13.9 per 100,000 people suffering drug overdose fatalities.

Macomb County Health Department serves 870,000 residents, nearly 10% of Michigan's population. The county is located directly north of Detroit, and over the past decade, has grown both demographically and economically. There has been a continuous increase in opiate-related morbidity and mortality. From 2010 to 2012, Macomb led the state in heroin overdoses, and became second only to Wayne County (which includes Detroit) in 2013. Within Macomb in the past year, drug-related deaths increased by 27.8% for a total of 358, with heroin-related deaths having increased by 9.7%. Heroin-related deaths composed 38.9% of all drug-related deaths in 2016, with a significant 204% increase in deaths involving fentanyl. In 2014, Macomb had the highest doctor shopping rate in Michigan, with 6.0 per 100,000 individuals among drug poisoning decedents with at least one prescription filled in the last year.

The County has been increasingly responsive to the growing problem via purchasing naloxone, but the current opioid epidemic has put an additional challenge on health department budgets and staffing. The Health Department is working with community partners to support activities and efforts to address the many complex issues within the opiate crisis.

The principal purpose of the Macomb County Opioid Community Health Assessment Report is to provide the community and stakeholders with information and data regarding opioid mortality. This information is utilized to make recommendations for improving local social services agencies, health care organizations, and coalitions in the community regarding the opioid response.

Methodology

Data

Qualitative

This assessment used focus groups to study opioid use, misuse, overdose, and attitudes among individuals living in Macomb County.

Six focus groups were conducted from April 26th to May 31st, 2018 for the purpose of gathering information on and to develop strategies that address the opioid misuse problem. The focus groups were designed to additionally explore the barriers and obstacles participants faced in discussing opioids (e.g., stigma, treatment, assistance). The group assembled six focus groups ranging in size from four to twelve participants.

Participants

Different populations were contacted to better understand the breadth of knowledge, attitudes, and practices across different sectors related to the opioid epidemic. All groups had inclusion criteria of being 18 years of age or older, and fluent in English. Initial target populations were: persons who currently misuse opioids; persons in recent recovery from opioid misuse; first responder/emergency medical services; friends and family of persons using opioids; substance use treatment center staff; young adults.

Recruitment

A targeted sampling strategy was used with purposive recruitment and some snowballing. Recruitment also occurred via advertisements through some of the health department's community partners, such as CARE of Southeastern Michigan, Abigayle Ministries, Families Against Narcotics, and the Macomb County Emergency Medical Services Medical Control Authority. Physical promotional materials handed out within these institutions included flyers and informational briefs, and interested persons called the number listed. Other organizations such as college campuses, hospitals, and community centers were contacted through email and phone calls.

Particular effort was made to recruit individuals in areas with high drug-related counts. Respondents were offered varying incentives: light meals provided during a discussion; $10 gas gift cards; bus passes. All participants were interviewed once in 2018. Focus group participants were compensated for their participation. Recruitment of new interviewees ceased after 'saturation' was reached determined by new subjects consistently providing redundant information.

Table 1. Focus Group Recruitment Strategies

Population	Inclusion Criteria	Recruitment Areas
Persons who currently misuse opioids	18 years or older Fluent in English Self-reported use of opioids currently or within 3 months of participation	Treatment Center CARE of Southeastern Michigan
Persons in recent recovery	18 years or older Fluent in English Self-reported use of opioids between 3--12 months of participation	CARE of Southeastern Michigan
First responder/emergency medical services	18 years or older Fluent in English Police, firefighter, or EMS	Emergency Medical Services Medical Control Authority
Friends and family of persons using opioids	18 years or older Fluent in English Self-reported relative or friend of individual who has used opioids	Families Against Narcotics CARE of Southeastern Michigan
Substance Use Treatment Center Staff	18 years or older Fluent in English Employed at a substance use treatment center	Treatment Centers
Young Adults	18 years or older Younger than 27, exclusive Fluent in English	Universities Abigayle Ministries Macomb Intermediate School District

Interview

After informed consent was obtained, participants completed a brief, anonymous background survey.

Separate open-ended discussion guides, which were organized by several domains of inquiry, were used for the focus group discussions. The four overlapping domains of inquiry for this analysis focused on: drug use and acquisition, overdose occurrences and naloxone usage, extent of community knowledge and attitudes, and recommendations for needed health services or prevention strategies. Additional questions tailored to each population's experiences or relation to opioids were created.

Each focus group was moderated by two individuals: a lead facilitator, and a recorder. The recorder wrote field notes, particularly on nonverbal aspects of the groups. The interviews and focus groups were digitally recorded via two microphones, the majority of which were transcribed, and reviewed for accuracy in addition to note-taking during the sessions.

Analysis

The content analysis began with reading through the transcribed interviews and listening to the audio records. Themes were identified across focus groups.

Quantitative

Information regarding all resident deaths was extracted from the Michigan Resident Birth and Death Files within Michigan Department of Health & Human Services' Division for Vital Records & Health Statistics. This report only looks at infants that died within the first year of life.

Cases were included if their residence was within Macomb County and they matched an ICD-10 code related to poisoning and pain. Both underlying and contributing cause of death codes were given. Code references were adopted from the Centers for Disease Control and Prevention's Prescription Drug Overdose Data & Statistics, *Guide to ICD-9-CM and ICD-10 Codes Related to Poisoning and Pain* document. Additional drug poisoning codes regarding opioid-related visits were provided by the Michigan Department of Health and Human Services' Division of Environmental Health Surveillance epidemiologists.

Additional data regarding specific toxicology was provided by the Macomb County Medical Examiner's Office. These cases are defined by local deaths (those that occur within the boundaries of Macomb County) that fall under the jurisdiction of the Medical Examiner. Medical Examiner cases include both residents and non-residents of Macomb County. The primary role of a county Medical Examiner is to determine and certify the cause of death and the manner of death in cases where death has occurred violently, accidentally, unexpectedly, or without medical attendance, and to ascertain the identity of the decedent in order to notify the next of kin. Any drug-related death is provided to the Epidemiologist with basic demographics and toxicology report.

Variable Definitions

Cause of Death

The cause of death referred to in this report is the primary or underlying cause of death, as noted on the death record. This the primary disease or injury that initiated the chain of events leading directly to death. The underlying causes of death are established through a system known as the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10).

Table 2. Cause of Death ICD-10 Codes[1]

Category	Underlying Cause	Contributing Cause
Prescription opioid poisoning	X40, X41, X42, X43, X44, X60, X61, X62, X63, X64, X85, Y10, Y11, Y12, Y13, Y14	T40.2, T40.3, T40.4
Illicit opioid poisoning (opium and heroin)	X40, X41, X42, X43, X44, X60, X61, X62, X63, X64, X85, Y10, Y11, Y12, Y13, Y14	T40.0, T40.1
All opioid poisoning (illicit and prescription)	X40, X41, X42, X43, X44, X60, X61, X62, X63, X64, X85, Y10, Y11, Y12, Y13, Y14	T40.0, T40.1, T40.2, T40.3, T40.4, T40.6

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[1] For ICD-10, the death must have an underlying cause code from among those shown. Contributing cause codes can then be used to indicate the specific type(s) of drug involved but do not specify intent.

Race

Race has been collapsed as follows: White, Black, Asian (Chinese, Filipino, Indian, Japanese, Korean, Vietnamese, Other Asian), Other, and Unknown. Individuals classified as American Indian, Native Hawaiian, Guaman, Samoan, Other Pacific Islanders, or multiple races were collapsed into 'Other. Ethnicities (e.g., Latino or Arab) were not evaluated in this report.

Statistics

The relative standard error (RSE) is used in this report to evaluate reliability of rates. Values with a relative standard error of 30 percent or less are considered reliable. Values with a relative standard error greater than 30 percent but less than 50 percent are considered unreliable, and rates with RSE greater than 50 percent have been suppressed in this document. This is consistent with standard National Center for Health Statistics (NCHS) practice.

Caution should be exercised in the interpretation of rates based on small numbers. Chance variations in the number of deaths occurring in sparsely populated areas can cause rates to fluctuate widely over time. Rates based on fewer than 20 deaths or fewer than 20 cases in the denominator are considered unreliable for analysis purposes. Therefore, these rates are not displayed and are indicated by ** in the appropriate cell. For purposes of analyzing mortality rates for small areas, calculation of three- or five-year average rates and other statistical methodologies for analyzing small numbers may provide more meaningful measures.

Proportions or percentages were not rounded, and simply truncated at the 10th place.

The following statistical tests have been applied where statistically significant differences have been noted in the document:

> If there were two groups, Welch's Student T-test was used to assess difference.

> ANOVA with a subsequent Tukey or Scheffe post-hoc test was used to assess difference of means when there were more than two groups; individual pairwise comparisons were assessed using a post-hoc test, not individual t-tests. Confidence intervals were calculated at the 95% confidence level. If the confidence intervals of two values do not overlap it is considered a conservative estimate of a significant difference. Statistical significance is considered at the 0.05 level. With respect to mother's race, white was the reference group.

> The z-test was used for comparing two mortality rates and Poisson Joinpoint regression models were used for trend analysis.

Results

Qualitative Focus Groups

From April 26th to May 31st, 2018 six focus groups were conducted in various locations in Macomb County. Forty-one individuals participated. Only four populations were able to participate in focus groups: persons in recent recovery from opioid misuse; first responder/emergency medical services; friends and family of persons using opioids; young adults. Two groups did not respond to recruitment strategies.

Demographic information was collected on 35 of 41 (85.36%) of the participants; the youth focus group was not provided a demographic survey (Table 3). Participants were mostly female, white, and older than 40 years.

Table 3. Focus Group Demographic Characteristics

Variable	Overall (n = 41)	Recent User (n = 7)	EMS (n = 8)	Friends and Family (n = 20)	Youth (n = 6)
Age, n (%)					
20-29	2 (4.9)	2 (28.6)	0 (0.0)	0 (0.0)	0 (0.0)
30-39	5 (12.2)	3 (42.9)	1 (12.5)	1 (5.0)	0 (0.0)
40-49	5 (12.2)	1 (14.3)	1 (12.5)	3 (15.0)	0 (0.0)
50-59	17 (41.5)	1 (14.3)	6 (75.0)	10 (50.0)	0 (0.0)
60+	4 (9.8)	0 (0.0)	0 (0.0)	4 (20.0)	0 (0.0)
Not Reported	8 (19.5)	0 (0.0)	0 (0.0)	2 (10.0)	6 (100.0)
Gender, n (%)					
Female	26 (63.4)	2 (28.6)	2 (25.0)	16 (80.0)	6 (100.0)
Male	15 (36.6)	5 (71.4)	6 (75.0)	4 (20.0)	0 (0.0)
Race, n (%)					
African American	1 (2.4)	1 (14.3)	0 (0.0)	0 (0.0)	0 (0.0)
White	31 (75.6)	6 (85.7)	8 (100.0)	17 (85.0)	0 (0.0)
White, Hispanic	1 (2.4)	0 (0.0)	0 (0.0)	1 (5.0)	0 (0.0)
Not Reported	8 (19.5)	0 (0.0)	0 (0.0)	2 (10.0)	6 (100.0)

There were repeated themes brought up during each session, as described in Table 4.

Table 4. Focus Group Themes, Sorted by Topic Area

Topic 1: Perception of current situation	Topic 2: Suggestions for intervention	Topic 3: Current successful strategies
Almost everyone knows, or has a connection to, someone who suffers from opioid misuse disorder	Peer recovery education for students and parents	There are many resources currently available in Macomb County that can help a person work through their substance use disorder
There is still stigma and shame around addiction as a moral failing rather than a brain disease	Advertisements in public spaces for addiction awareness and getting help	There isn't enough public knowledge on resources available and how to use them.

Addiction begins as a result of coping with trauma, exposure through recovery from physical ailments (medical prescriptions), or from exposure due to a romantic partner or friends	Prescribers should use alternatives to opioid pain killers	
People who are in treatment have had multiple encounters with recovery	Narcan needs to be publicized better	
Some actively search for Fentanyl despite knowing the high risk		

An example of a reoccurring perspective was that opioid misuse began as a result of coping with trauma, exposure through recovery from physical ailments (medical prescriptions), or from exposure due to a romantic partner or friends. There was also talk and allusion to a presence of stigma and shame around addiction as a moral failing rather than a brain disease. These findings echo those found by other focus groups discussing naloxone[2], stigma, and the trajectory from first use to addiction[3].

Among suggestions for intervention, many members of the focus groups spoke of peer recovery education, more public awareness, better access to Narcan, and prescribing alternatives to opioid pain killers. Lastly, several focus group participants felt that there wasn't enough public knowledge on resources available and how to use them despite there being many resources currently available in Macomb County that can help a person work through their substance use disorder.

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[2] Green TC, Case P, Fiske H, et al. Perpetuating stigma or reducing risk? Perspectives from naloxone customers and pharmacists on pharmacy-based naloxone in 2 states. J Am Pharm Assoc. 2017;57:S19–27. https://doi.org/10.1016/j.japh.2017.01.013

[3] Cicero, T. J., & Ellis, M. S. (2017). The prescription opioid epidemic: a review of qualitative studies on the progression from initial use to abuse. Dialogues in clinical neuroscience, 19(3), 259-269.

Quantitative

Table 5. Characteristics of Overdose Deaths by Year

Variable	Overall (n = 1230)	2005 (n = 78)	2006 (n = 92)	2007 (n = 87)	2008 (n = 108)	2009 (n = 106)	2010 (n = 107)	2011 (n = 109)	2012 (n = 97)	2013 (n = 132)	2014 (n = 147)	2015 (n = 167)
Sex, n (%)												
Male	906 (73.7)	56 (71.8)	71 (77.2)	67 (77.0)	74 (68.5)	80 (75.5)	79 (73.8)	80 (73.4)	69 (71.1)	100 (75.8)	111 (75.5)	119 (71.3)
Female	324 (26.3)	22 (28.2)	21 (22.8)	20 (23.0)	34 (31.5)	26 (24.5)	28 (26.2)	29 (26.6)	28 (28.9)	32 (24.2)	36 (24.5)	48 (28.7)
Race, n (%)												
White	1153 (93.7)	73 (93.6)	86 (93.5)	82 (94.3)	107 (99.1)	101 (95.3)	102 (95.3)	103 (94.5)	90 (92.8)	121 (91.7)	134 (91.2)	154 (92.2)
Black	59 (4.8)	5 (6.4)	3 (3.3)	5 (5.7)	0 (0.0)	4 (3.8)	5 (4.7)	5 (4.6)	6 (6.2)	8 (6.1)	9 (6.1)	9 (5.4)
Asian	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
American Indian	6 (0.5)	0 (0.0)	2 (2.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.9)	0 (0.0)	0 (0.0)	1 (0.7)	2 (1.2)
Pacific Islander	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Other	10 (0.8)	0 (0.0)	1 (1.1)	0 (0.0)	0 (0.0)	1 (0.9)	0 (0.0)	0 (0.0)	1 (1.0)	3 (2.3)	2 (1.4)	2 (1.2)
Unknown	2 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.7)	0 (0.0)
Hispanic, n (%)												
Yes	27 (2.2)	1 (1.3)	2 (2.2)	1 (1.1)	2 (1.9)	1 (0.9)	1 (0.9)	1 (0.9)	4 (4.1)	2 (1.5)	6 (4.1)	6 (3.6)
No	1201 (97.6)	77 (98.7)	90 (97.8)	86 (98.9)	106 (98.1)	105 (99.1)	106 (99.1)	108 (99.1)	93 (95.9)	129 (97.7)	141 (95.9)	160 (95.8)
Unknown	2 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	0 (0.0)	1 (0.6)
Age, n (%)												
< 10	2 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	0 (0.0)	0 (0.0)
10-19	36 (2.9)	1 (1.3)	2 (2.2)	6 (6.9)	5 (4.6)	2 (1.9)	4 (3.7)	2 (1.8)	1 (1.0)	4 (3.0)	4 (2.7)	5 (3.0)
20-29	282 (22.9)	11 (14.1)	29 (31.5)	18 (20.7)	23 (21.3)	19 (17.9)	17 (15.9)	36 (33.0)	24 (24.7)	35 (26.5)	30 (20.4)	40 (24.0)
30-39	272 (22.1)	16 (20.5)	13 (14.1)	16 (18.4)	23 (21.3)	27 (25.5)	22 (20.6)	22 (20.2)	19 (19.6)	35 (26.5)	36 (24.5)	43 (25.7)
40-49	325 (26.4)	33 (42.3)	30 (32.6)	27 (31.0)	31 (28.7)	32 (30.2)	34 (31.8)	22 (20.2)	25 (25.8)	27 (20.5)	31 (21.1)	33 (19.8)
50-59	264 (21.5)	13 (16.7)	16 (17.4)	18 (20.7)	23 (21.3)	24 (22.6)	27 (25.2)	25 (22.9)	21 (21.6)	26 (19.7)	34 (23.1)	37 (22.2)
60-69	44 (3.6)	4 (5.1)	2 (2.2)	1 (1.1)	2 (1.9)	2 (1.9)	0 (0.0)	2 (1.8)	6 (6.2)	4 (3.0)	12 (8.2)	9 (5.4)
70+	5 (0.4)	0 (0.0)	0 (0.0)	1 (1.1)	0 (0.0)	0 (0.0)	3 (2.8)	0 (0.0)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)

Variable	Overall (n = 1230)	2005 (n = 78)	2006 (n = 92)	2007 (n = 87)	2008 (n = 108)	2009 (n = 106)	2010 (n = 107)	2011 (n = 109)	2012 (n = 97)	2013 (n = 132)	2014 (n = 147)	2015 (n = 167)
Education, n (%)												
None/Unknown	10 (0.8)	0 (0.0)	1 (1.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.9)	0 (0.0)	1 (0.8)	1 (0.7)	6 (3.6)
<= High School	945 (76.8)	55 (70.5)	74 (80.4)	68 (78.2)	95 (88.0)	88 (83.0)	77 (72.0)	82 (75.2)	65 (67.0)	105 (79.5)	116 (78.9)	120 (71.9)
Some Post-Secondary	169 (13.7)	12 (15.4)	12 (13.0)	9 (10.3)	7 (6.5)	15 (14.2)	13 (12.1)	18 (16.5)	19 (19.6)	19 (14.4)	22 (15.0)	23 (13.8)
College Graduate	106 (8.6)	11 (14.1)	5 (5.4)	10 (11.5)	6 (5.6)	3 (2.8)	17 (15.9)	8 (7.3)	13 (13.4)	7 (5.3)	8 (5.4)	18 (10.8)
Manner of Death, n (%)												
Accident	1090 (88.7)	66 (84.6)	84 (91.3)	76 (87.4)	93 (86.1)	94 (88.7)	95 (88.8)	94 (86.2)	90 (92.8)	123 (93.2)	128 (87.1)	147 (88.6)
Indeterminate	103 (8.4)	9 (11.5)	5 (5.4)	7 (8.0)	7 (6.5)	10 (9.4)	11 (10.3)	12 (11.0)	5 (5.2)	6 (4.5)	16 (10.9)	15 (9.0)
Homicide	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)
Natural	1 (0.1)	0 (0.0)	1 (1.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Pending	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Suicide	33 (2.7)	3 (3.8)	2 (2.2)	4 (4.6)	8 (7.4)	2 (1.9)	1 (0.9)	2 (1.8)	1 (1.0)	3 (2.3)	3 (2.0)	4 (2.4)

Table 5 demonstrates the characteristics of individuals over a decade that have died from drug-related causes. There is a strong sexual difference in drug-related deaths, with males generally accounting for 73% of deaths. Similarly, white individuals account for more than 90% of all drug-related deaths, though this proportion has decreased slightly in the past decade. The most affected individuals are between the ages 20-60.

Discussion & Initiatives

Incorporating the findings from both the qualitative and quantitative aspects of this community health assessment, the Health Planning team created a strategic plan in conjunction with the local coalition, OperationRx. OperationRx is a coalition of representatives from multiple agencies equally committed to decreasing opioid and substance-related harm. This group has been very active in the education of both community members and providers, as well as focusing on specific subpopulations (elder adults, faith-based community, etc).

Using the findings from the focus group, the proposed next steps have been identified as:

- Education implementation—working with stakeholders such as Families Against Narcotics to design and draft a substance abuse awareness educational series to be taught in classrooms and to parents of students.
- Stigma reduction campaign—the creation and dispersion of materials (stickers, advertisements, etc) that will invite conversation. This may include advertisements or campaigns at gas stations, party stores, and on bus lines that will encourage people to take action and find out where to get help or get Narcan.
- Prescriber/first responder awareness—work with county prescribers and first responders to educate and familiarize addiction as a disease and a problem that they can help alleviate. Connect CARE Peer Recovery Coaches with first response staff so as to break down biases and repeal addiction stigma.

This assessment has exposed a need for data across numerous sources. In response to this need, MCHD will design, build, and maintain an integrated opiate surveillance and response system (IOSR) to better track the occurrence of overdoses and Naloxone usage across hospitals, law enforcement agencies, and the health department. The design would allow for the integration of multiple health information databases into a single repository with a united homepage (as in the case of MDHHS' MILogin). The database would follow national standards for the sharing of public health information, and be designed in either Microsoft Access or SQL (via Drupal).

Limitations

This report's findings are subject to several limitations. An important concern is the issue of receiving vital events from other states within the MDHHS reporting deadline. Vital statistics are gathered on an occurrence basis but are traditionally reported on a residence basis. For complete residence statistics, reports must be received from other states for events occurring to Michigan residents. Because of delays or other late reporting, some out-of-state vital event reports have not been received by MDHHS by the cutoff date of the year following the event year.

The ICD-10 death classification system limits the bias of human coding of mortality information. The system also attempts to reduce the effect of spelling errors or placement of literal information in the cause of death fields. One limitation is the system's inability to take into account differences in knowledge and attitudes among physicians who complete the cause of death information. Individual biases, unfamiliarity with the patient, or inability to perform an autopsy may affect the information available to the physician when certifying the cause of death. While many death certificates contain four full lines of detailed information on the events or illnesses leading up to the death, some death certificates contain only limited information.