

## Work, Health Disparities and COVID-19

Both Michigan and National data have found increased COVID-19 incidence and mortality rates among minority populations (1, 2). In Michigan, the incidence of and mortality from COVID-19 among Blacks is 15.8 and 1.6 per 100,000 as compared to 5.2 and 0.4 per 100,000 among whites, respectively (3). The reason for this increase is presumably multifactorial: increased prevalence of underlying health conditions among Blacks; implicit and explicit bias in obtaining health care (4); social determinants related to lower socioeconomic status, which means a lack of health insurance and differential access to health care, lack of access to a car and the need to take public transportation, unstable or crowded housing conditions; and lower wage but essential jobs such as home health aides, grocery store workers, and workers at meat and poultry processing facilities with potential COVID-19 exposure.

Outbreaks attributed to workplace exposures have been reported throughout the United States (5, 6). In a detailed analysis from Utah, 210 of 276 (76%) outbreaks identified in Utah occurred in workplaces (6).

**Table 1. Ten Most Common Occupations for Whites, Blacks, Asians and Hispanics in MI: Grouped by Categories- Manager/Professional, Clerical/Sales/Service, and Trades/Operators/Manual Laborers** (Adapted from reference 7)

**White/non -Hispanic** (# employed: white-3,558,662; non-Hispanic-4,041,165)

Manager/professional  
 Manager, all other (2.1%)  
 Nurses (2.1%)  
 Elementary/middle school teachers (2.1%)  
 Clerical/sales/service  
 Cashiers (2.4%)  
 Retail salespersons (2.4%)  
 Secretaries (2.3%)  
 Supervisors of retail sales workers (1.9%)  
 Waiters/waitresses (1.6%)  
 Trades/operators/manual laborers  
 Drivers/sales workers and truck drivers (2.3%)  
**Black** (# employed: 435,105)  
 Clerical/sales/service  
 Nursing/home health aides (4.7%)  
 Personal and home care aides (2.8%)  
 Cashiers (2.8%)  
 Customer service representatives (2.4%)  
 Retail salespersons (2.3%)  
 Cooks (2.2%)  
 Trades/operators/manual labor  
 Janitors (3.1%)  
 Laborers (2.5%)  
 Bus drivers (2.1%)

**Asian** (# employed: 129,414)

Manager/professional  
 Mechanical engineers (9%)  
 Software developers (7.5%)  
 Postsecondary teachers (4.2%)  
 Computer/information systems managers (3.9%)  
 Physical therapists (3.6%)  
 Managers (3.4%)  
 Nurses (3.2%)  
 Accountants (2.9%)  
 Physicians (2.7%)  
 Clerical/sales/services  
 Maids and housekeeping cleaners (2.7)

**Hispanic** (# employed: 161,489)

Manager/professional  
 Accountant (2%)  
 Clerical/sales/service  
 Janitors (3.9%)  
 Retail salespersons (2.7%)  
 Waiters/waitresses (2.7%)  
 Cooks (2.3%)  
 Food preparation workers (2.1%)  
 Trades/operators/manual labor  
 Agricultural workers (9.8%)  
 Assemblers and fabricators (4%)  
 Grounds maintenance workers (2.9%)  
 Packers and packagers, hand (2%)

These outbreaks were as common in manufacturing, construction, food services, retail, and offices as in health care. Seventy-three percent of the COVID-19 cases in these outbreaks were among minorities. The authors of this report suggested a number of reasons for the marked overrepresentation of the cases among minorities: "... the overrepresentation of Hispanic and nonwhite workers in frontline occupations (i.e., essential and direct-service) where

risk for SARS-CoV-2 exposure might be higher than that associated with remote or non-direct-service work, .... less flexible work schedules and fewer telework options..., lack of job flexibility (i.e., ability to vary when to start and end work), lack of telework options, and unpaid or punitive sick leave policies might prevent workers from staying home and seeking care when ill..."(6).

What do we know about work and minorities in Michigan? First, we know that there is a differential pattern by race of the type of work people do (Table 1) (7). Second, an analysis of industry and occupation information was conducted on the death certificates of the 1,822 Michigan COVID-19 deaths who were of working age (age 18-70) and died between March 10, 2020 and June 23, 2020 (8). Usual industry and occupation worked could be coded respectively for 1,510 and 1,735 of the 1,822 COVID-19 deaths among those 18-70. Occupation for 87 and industry for 312 were listed as disabled, not working or unknown. Of the 1,822 COVID-19 deaths aged 18-70 years, 1,039 (57%) were Black and 783 (43%) were non-Black. Concern about exposure to COVID-19 goes beyond the health care profession.

The three industries with the largest number of COVID-19 deaths in Michigan were manufacturing with 344 (22.7%), health care with 231 (17.6%) and retail trade with 126 (8.3%) deaths. The three occupations with the largest number of COVID-19 deaths were transportation with 475 (27.3%), production with 190 (10.9%) and office/administration with 144 (8.3%) deaths. There were 23 deaths where the usual occupation or industry were police/correction officers, 13 bus drivers and six meat or poultry processing workers. Using the 2018 Census American Community Survey (ACS) employment data (9), the three industries with the highest COVID-19 mortality rates per 100,000 were the military (11.8 (8 deaths)), other services (9.8 (111 deaths)), and transportation (4.3 (89 deaths)) (Table 2). The three occupations with the highest COVID-19 mortality rates per 100,000 were transportation (10.0 (475 deaths)), protective services (5.4 (50)), and maintenance (3.8 (95)) (Table 3).

	# of COVID Deaths	Total Employment Rate	Non-Black COVID Deaths	Non-Black Rate	Black COVID Deaths	Black Rate	Black to Non-Black Rate Ratio
All	1,510	2.57	625	1.22	885	11.37	9.3
Agriculture	6	0.94	6	0.97	0	0.00	--
Arts & Entertainment	35	1.99	15	0.97	20	9.74	10.0
Construction	98	3.12	43	1.45	55	31.50	21.7
Educational	75	1.50	21	0.47	54	10.52	22.4
Finance & Insurance	35	1.54	19	0.96	16	5.53	5.8
Food Service	82	1.90	43	1.21	39	5.14	4.2
Health Care	231	3.24	85	1.42	146	12.72	9.0
Information	19	2.24	6	0.81	13	11.54	14.2
Manufacturing	344	3.31	139	1.52	205	16.22	10.7
Military	8	11.79	1	1.60	7	129.15	80.7
Mining	1	1.18	1	1.20	0	0.00	--
Other Services	111	9.82	44	4.75	67	32.84	6.9
Professional/Scientific/Tech	128	2.22	52	1.04	76	9.67	9.3
Public Administration	79	3.98	46	2.80	58	17.08	6.1
Real Estate	13	2.27	6	1.16	7	12.51	10.8
Retail Trade	126	1.95	74	1.28	52	7.65	6.0
Transportation	89	4.29	37	2.30	52	11.16	4.9
Utilities	16	3.39	4	1.04	12	13.54	13.0
Wholesale Trade	14	1.10	8	0.70	6	4.40	6.3

Tables 2 and 3 also show the overall rate ratio of death rates among Blacks and non-Blacks by usual industry and occupation. Except for agriculture and mining, the rate of death by industry was 4.2 to 80.7 times higher and for occupation 3.3 to 23.1 times higher among Blacks than among non-Blacks. Since this analysis was based on death certificate data, there are limitations. One cannot determine if the person was working in the industry/occupation on the death certificate in the immediate period prior to their death because; 1) the industry and occupation reported on

the death certificate is supposed to be the deceased's usual occupation and industry which may differ from their current occupation and industry where they developed COVID-19; and 2) the individual may not have been working at all or working from home in the 14 days prior to developing COVID-19. In addition, Michigan employers have reported 28 COVID-19 deaths and 191 non-fatal cases to Michigan OSHA.

The Michigan data clearly show a differential risk by industry/occupation and an increased risk among Blacks across almost all industries and occupations. About 30% of all COVID-19 deaths in Michigan have occurred among individuals within the working age of 18-70 years. Exposure to COVID-19 at work from co-workers and interaction with the public or patients/students is a route of transmission. To address the risk of exposure to coronavirus in the workplace, proper personal protective equipment (PPE) and work practices need to be followed. Overall and industry-specific guidance documents on PPE and work practices are available on the web (page 3).

Table 3. Number and Rate/100,000 Employed of COVID-19 Deaths by Occupation, Overall and among Non-Black and Blacks, Michigan 3/10/20-6/23/20, Age 18-70 Years

	# of COVID Deaths	Total Employment Rate	Non-Black COVID Deaths	Non-Black Rate	Black COVID Deaths	Black Rate	Black to Non-Black Rate Ratio
All	1,735	2.90	744	1.46	991	12.7	8.7
Architecture & Engineering	28	1.96	14	1.04	14	17.43	16.8
Arts & Entertainment	28	2.61	9	0.92	19	21.25	23.1
Business & Financial	40	2.44	19	1.30	21	12.06	9.3
Community & Social	44	1.78	11	0.55	33	6.88	12.5
Computers & Math	17	1.20	8	0.61	9	8.16	13.4
Construction	75	2.90	38	1.58	37	20.72	13.1
Education	39	1.26	14	0.50	25	8.19	16.4
Farm/Fish/Forest	7	1.86	6	1.68	1	5.46	3.3
Food Prep & Serving	61	1.56	28	0.86	33	5.01	5.8
Healthcare Practitioners	64	1.83	36	1.13	28	9.06	8.0
Healthcare Support	58	2.66	15	0.92	43	7.86	8.5
Installation/Repair	55	3.37	34	2.24	21	18.21	8.1
Legal	9	1.81	7	1.54	2	4.86	3.2
Life/Physical/Social Science	5	1.11	2	0.48	3	8.74	18.2
Maintenance	95	3.84	31	1.56	64	13.33	8.5
Management	87	1.74	47	1.02	40	10.34	10.1
Office/Admin Support	144	2.19	63	1.12	81	8.64	7.7
Personal Care	64	3.65	15	1.01	49	18.20	18.0
Production	190	3.67	75	1.78	115	12.13	6.8
Protective Service	50	5.42	14	1.91	36	18.93	9.9
Sales	101	1.75	53	1.02	48	7.94	7.8
Transportation	475	10.03	206	5.30	269	31.75	6.0

Fighting a pandemic such as COVID-19 requires modern public health tools. Michigan’s Electronic Death Registration System (EDRS) is a secure, web-based system that enables physicians to complete and sign death certificates electronically, providing more timely information for public health surveillance and response. For more information on EDRS, including enrollment instructions, please visit <https://michiganedrs.org>.

Michigan Occupational Safety & Health Administration (MIOSHA): <https://www.michigan.gov/leo/0,5863,7-336-100207---,00.html>  
 National Institute for Occupational Safety & Health (NIOSH): [https://www.cdc.gov/niosh/emres/2019\\_ncov\\_default.html](https://www.cdc.gov/niosh/emres/2019_ncov_default.html)  
 Personal Protective Equipment: [https://www.cdc.gov/niosh/emres/2019\\_ncov\\_ppe.html](https://www.cdc.gov/niosh/emres/2019_ncov_ppe.html)  
 Specific Industries: [https://www.cdc.gov/niosh/emres/2019\\_ncov\\_byindustry.html](https://www.cdc.gov/niosh/emres/2019_ncov_byindustry.html)

To assure that workers have adequate resources if they do develop COVID-19, medical providers should advise their COVID-19 patients to apply for workers’ compensation when the infection was more likely than not to be work-related. Governor Whitmer’s Executive Order No. 2020-128 makes “.... a COVID-19-response employee who is confirmed as COVID-19 positive on or after March 18, 2020, either by physician or by test, shall be presumed...” to be work-related (10). A COVID-19 response employee is defined as: health care workers in all settings including home health care, hospitals, hospices and nursing homes; emergency responders including ambulance workers, firefighters, and police; and correction officers in penal institutions. All other Michigan workers who develop COVID-19 would not be presumed to have a work-related condition but would be covered by the regular Michigan workers’ compensation criteria where a doctor must determine within a reasonable degree of medical certainty that work caused or was a significant contributor to the development of the disease. From 4/1/20 to 6/30/20, there were 2,416 workers’ compensation claims filed for COVID-19 with seven or more days away from work of which records show that 2,076 had been paid. To put this number into perspective, there were 16,000 paid workers’ compensation claims for seven or more days away from work for all of 2018. Although minimization of work-related exposure is only one component of the response to the COVID-19 pandemic, it plays an important role in the overall public health response.

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\*Project

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News

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\*PS Remember to report all cases of occupational disease!

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<p>The project SENSOR News is published quarterly by Michigan State University-College of Human Medicine with funding from the National Institute for Occupational Safety and Health and is available at no cost. Suggestions and comments are welcome.</p> <p>(517) 353-1846 MSU-CHM West Fee Hall 909 Wilson Road, Room 117 East Lansing, MI 48824-1316</p> <p><b>Advisory Board</b> Michael Berneking, M.D. President, Michigan Occupational &amp; Environmental Medical Association Larry Hennessey, M.D. Michigan Allergy and Asthma Society Daryl Lesoski, M.D., M.P.H. Munson Medical Center Traverse City, MI Thomas G. Robins, M.D., M.P.H. University of Michigan School of Public Health Division of Occupational Medicine Samyr Nasr, MB, BCH President, Michigan Thoracic Society Eric J. Rose, D.O. Marquette General Health System Marquette, MI</p>	<p><b>Project SENSOR staff</b></p> <p><i>At the Michigan Occupational Safety &amp; Health Administration (MIOSHA)</i></p> <p>Barton G. Pickleman Director MIOSHA</p> <p><i>At Michigan State University-College of Human Medicine</i></p> <p>Kenneth D. Rosenman, M.D. Professor of Medicine Project SENSOR, Director Mary Jo Reilly, M.S. Project SENSOR Coordinator Melissa Millertick-May, M.S., Ph.D. Anthony Oliveri, M.P.H., Ph.D. Project SENSOR Office Staff: Tracy Carey Ruth VanderWals</p>	<p>Michigan Law Requires the Reporting of Known or Suspected Occupational Diseases</p> <p>Reporting can be done by:</p> <p><b>WEB</b> <a href="http://oem.msu.edu">oem.msu.edu</a></p> <p><b>E-Mail</b> <a href="mailto:ODREPORT@msu.edu">ODREPORT@msu.edu</a></p> <p><b>FAX</b> (517) 432-3606</p> <p><b>Telephone</b> 1-800-446-7805</p> <p><b>Mail</b> Michigan Occupational Safety &amp; Health Administration (MIOSHA) Management and Technical Services Division PO Box 30649 Lansing, MI 48909-8149</p> <p>Reporting forms can be obtained by calling 1-800-446-7805</p>
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