



Public Health Services Administration

Estimated Suicide Rates by Occupation:

A Report of the Maryland Violent Death Reporting System (MVDRS)

November 2025

Three Year Estimates: 2020-2022

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Introduction

Occupation and workplace culture are important social determinants of health that influence potential exposures, risk for injury, access to health insurance, availability of paid time off, socioeconomic status, and other factors that impact a worker's personal life and family well-being. Analyzing suicide rates by occupation can assist public health professionals in identifying populations with an increased risk for suicide, risk factors that may contribute to higher suicide rates, and potential points for intervention. In cases where a person dies by suicide, mental health conditions are often a contributing factor. [Evidence](#) shows that mental illness can lead to increased absenteeism and reduced productivity in the workplace. Employers and leaders in occupational health can use suicide data to identify risks related to specific occupations and provide mental health resources to support a healthier workforce.

Data on suicides in Maryland were obtained from the [Maryland Violent Death Reporting System \(MVDRS\)](#), which is an enhanced surveillance system for homicide, suicide, and other violent death events. Occupation data collected by MVDRS are based on usual occupation as reported on decedent death certificates. Population estimates used for suicide rate estimate calculations were gathered from the US Census Bureau American Community Survey (ACS), which provides employment information about Maryland's working age population. Occupation categories are based on the 2018 Standard Occupational Classification System. Descriptions of the occupation groups shown can be found in the Appendix at the end of this document.

This data brief presents three-year suicide rate estimates for the working-age population by occupation for the years 2020 to 2022, overall and stratified by decedent sex. The data brief also examines trends over time for the five-year period of 2018 to 2022. In this brief, working age is defined as 16 years of age and older. The ACS defines sex as a person's current biological sex. MVDRS records the sex of a victim according to what is documented in the death certificate. Due to low single-year suicide counts across occupation categories when stratified by sex (particularly for females), multiple years of data were combined for this analysis. It should be noted that this report includes the years of the Covid-19 pandemic, which may have impacted suicide numbers and rates.

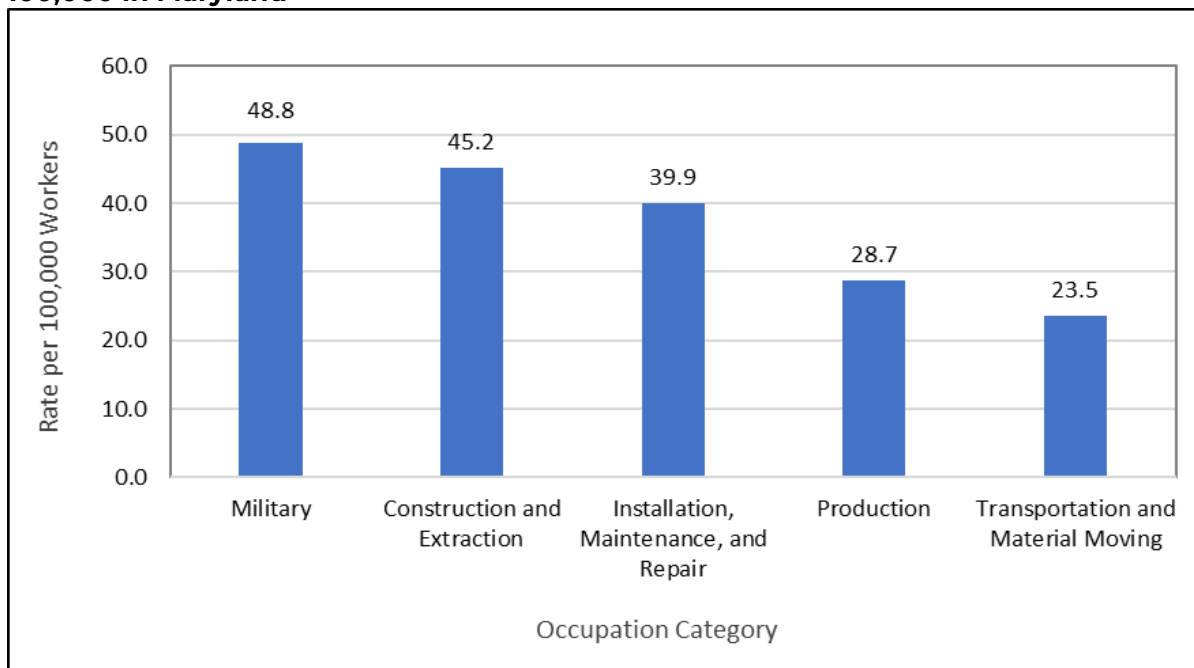
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Suicide Deaths by Occupation in Maryland

In the state of Maryland between 2020 and 2022, people working in non-civilian military occupations had the highest suicide **rates** at 48.8 deaths per 100,000 workers—more than four times the suicide rate for all Marylanders of working age during the same period (11.9 per 100,000 Marylanders age 16 and older, per CDC WISQARS). People working in construction and extraction occupations were close behind, with a rate of 45.2 (see Figures 1 and 2). People working in construction and extraction also represented the category with the highest total **number** of suicide deaths during this period. People who were not in the workforce represented the second highest number of suicide deaths (see Figure 3). Those who are not in the workforce may include students, homemakers, volunteers, and people unable to work.

The occupation categories with the highest suicide rates and the occupation categories with the highest total number of people who died by suicide are listed below in Figures 1-3.

Figure 1: Five Occupation Categories with the Highest Estimated Suicide Rates per 100,000 in Maryland



Numerators are from the 2020-2022 Maryland Violent Death Reporting System. Denominators are from the 2020-2022 US Census Bureau, American Community Survey: one-year population estimates were used for the denominators for 2021 and 2022; however, for 2020, one-year estimates were not available, so five-year population estimates were used instead.

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Figure 2: Ten Occupation Categories with the Highest Estimated Suicide Rates per 100,000 Workers in Maryland, 2020-2022

Occupation Category	Rate
Military	48.8
Construction and Extraction	45.2
Installation, Maintenance, and Repair	39.9
Production	28.7
Transportation and Material Moving	23.5
Architecture and Engineering	21.7
Protective Service Occupations	21.6
Arts, Design, Entertainment, Sports, and Media	20.0
Building and Grounds Cleaning and Maintenance	16.4
Sales and Related	15.2

Numerators are from the 2020-2022 Maryland Violent Death Reporting System. Denominators are from the 2020-2022 US Census Bureau, American Community Survey: one-year population estimates were used for the denominators for 2021 and 2022; however, for 2020, one-year estimates were not available, so five-year population estimates were used instead.

Figure 3: Ten Occupation Categories with Highest Numbers of Suicide Deaths in Maryland, 2020-2022

Occupation Category	Count	Percent of Total Suicides
Construction and Extraction	194	11.2
Not in workforce	153	8.8
Transportation and Material Moving	138	7.9
Management	136	7.8
Sales and Related	110	6.3
Installation, Maintenance, and Repair	103	5.9
Production	74	4.3
Office and Administrative Support	68	3.9
Food Preparation and Serving Related	60	3.5
Healthcare Practitioners and Technical	57	3.3

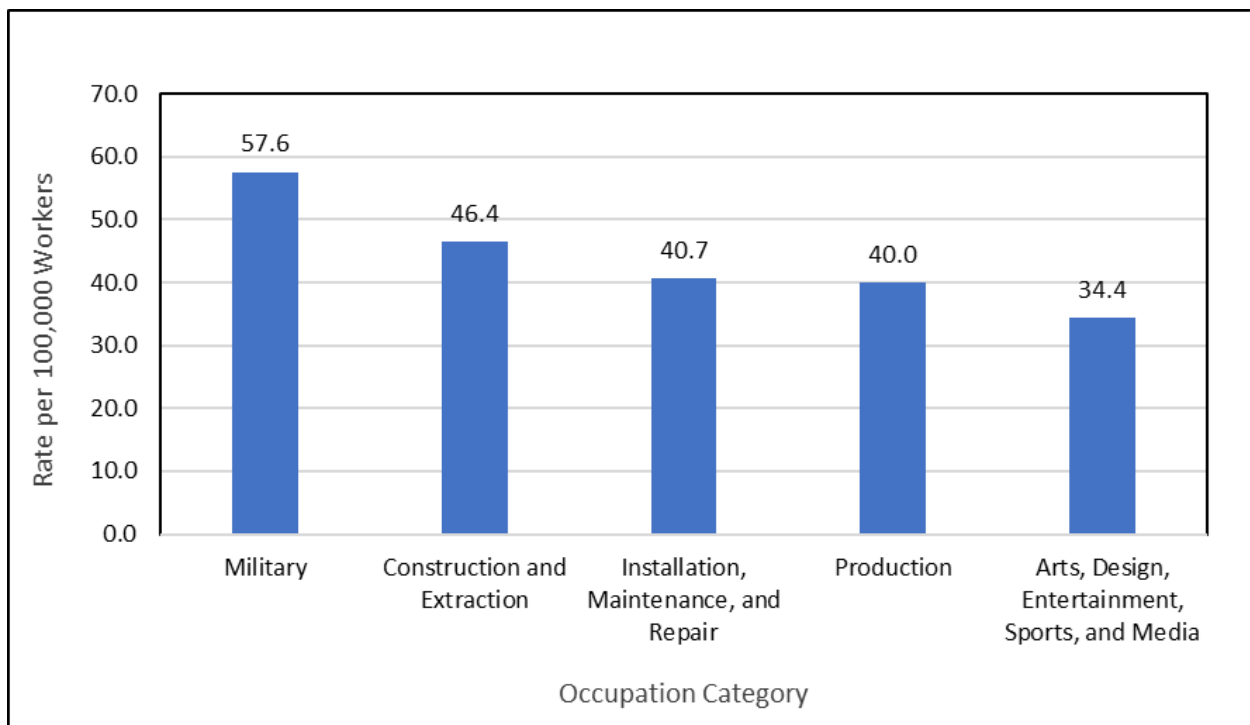
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Patterns in Male Suicide Deaths by Occupation in Maryland

Men working in non-civilian military occupations had the highest suicide **rates** among males between 2020 and 2022, at almost 58 deaths per 100,000 men in that occupation group (see Figures 4 and 5). Men working in construction and extraction occupations represented the largest **number** of suicides, accounting for nearly 14% of suicide deaths among Maryland men of working age during this period (see Figure 6).

Figure 4: Five Occupation Categories with the Highest Estimated Suicide Rates per 100,000 Male Workers in Maryland, 2020-2022



Numerators are from the 2020-2022 Maryland Violent Death Reporting System. Denominators are from the 2020-2022 US Census Bureau, American Community Survey: one-year population estimates were used for the denominators for 2021 and 2022; however, for 2020, one-year estimates were not available, so five-year population estimates were used instead.

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Figure 5: Ten Occupation Categories with the Highest Estimated Suicide Rates per 100,000 Male Workers in Maryland, 2020-2022

Occupation Category	Rate
Military	57.6
Construction and Extraction	46.4
Installation, Maintenance, and Repair	40.7
Production	40.0
Arts, Design, Entertainment, Sports, and Media	34.4
Healthcare Support	30.0
Transportation and Material Moving	28.3
Protective Service	26.9
Personal Care and Service	26.6
Sales and Related	25.5

Numerators are from the 2020-2022 Maryland Violent Death Reporting System. Denominators are from the 2020-2022 US Census Bureau, American Community Survey: one-year population estimates were used for the denominators for 2021 and 2022; however, for 2020, one-year estimates were not available, so five-year population estimates were used instead.

Figure 6: Ten Occupation Categories with Highest Numbers of Suicides Amongst Male Workers in Maryland, 2020-2022

Occupation Category	Count	Percent of Total Suicides
Construction and Extraction	192	13.7
Transportation and Material Moving	131	9.4
Management	111	7.9
Installation, Maintenance, and Repair	100	7.2
Sales and Related	92	6.6
Not in workforce	84	6.0
Production	72	5.2
Protective Service	50	3.6
Computer and Mathematical	50	3.6
Military	48	3.4

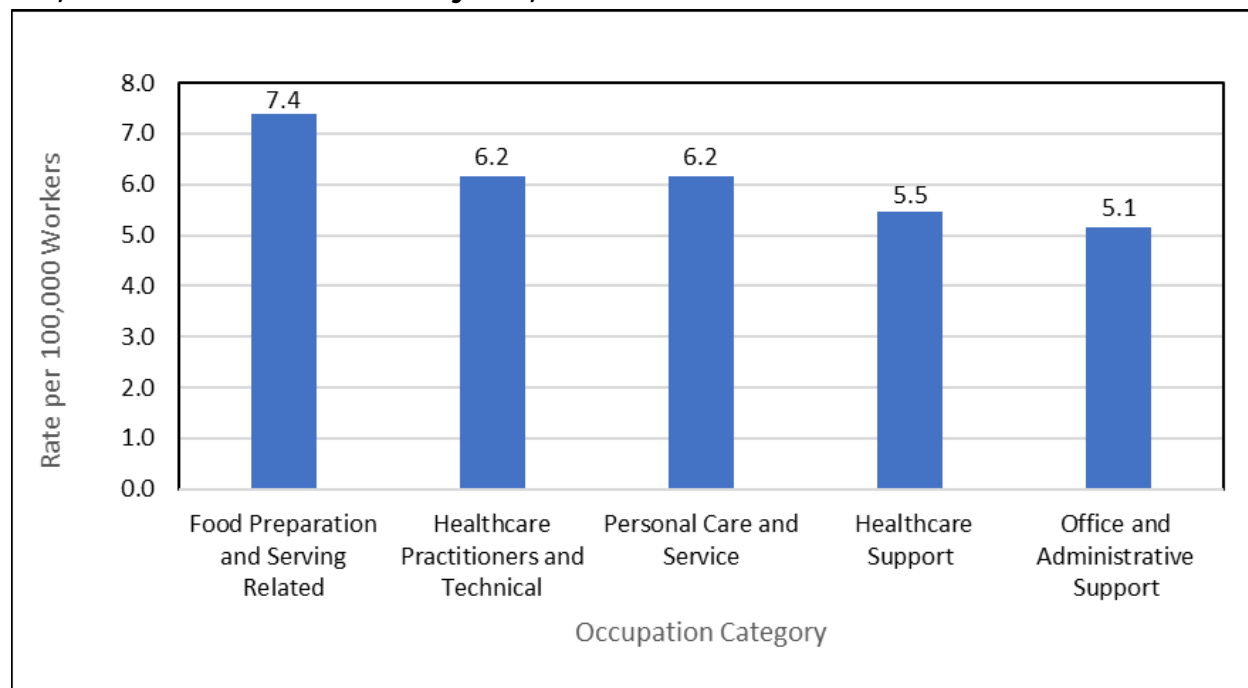
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Patterns in Female Suicide Deaths by Occupation in Maryland

Fewer females in Maryland died by suicide from 2020 to 2022 compared to males. Out of all suicides in the working-age population (aged 16 years old and older), females comprised 19.5%, while males made up 80.5%. Additionally, a higher percentage of female suicide decedents were not in the workforce compared to males (20% compared to 7%, respectively) (see Figures 6 and 9). Women working in food preparation and serving related occupations had the highest **rate** of suicide among females, followed by women working as healthcare practitioners and women in technical occupations (see Figures 7 and 8). Those not in the workforce represented the largest **number** of suicides, followed by women working as office and administrative professionals (see Figure 9).

Figure 7: Five Occupation Categories with the Highest Estimated Suicide Rates per 100,000 Female Workers in Maryland, 2020-2022



Numerators are from the 2020-2022 Maryland Violent Death Reporting System. Denominators are from the 2020-2022 US Census Bureau, American Community Survey: one-year population estimates were used for the denominators for 2021 and 2022; however, for 2020, one-year estimates were not available, so five-year population estimates were used instead.

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Figure 8: Five Occupation Categories with the Highest Estimated Suicide Rates per 100,000 Female Workers in Maryland, 2020-2022

Occupation Category	Rate
Food Preparation and Serving Related	7.4
Healthcare Practitioners and Technical	6.2
Personal Care and Service	6.2
Healthcare Support	5.5
Office and Administrative Support	5.1
Sales and Related	4.9
Management	4.8
Educational Instruction and Library	3.2
Business and Financial Operations	3.0
Not in workforce	2.4

Numerators are from the 2020-2022 Maryland Violent Death Reporting System. Denominators are from the 2020-2022 US Census Bureau, American Community Survey: one-year population estimates were used for the denominators for 2021 and 2022; however, for 2020, one-year estimates were not available, so five-year population estimates were used instead.

Figure 9: Ten Occupation Categories with the Highest Numbers of Suicides Amongst Female Workers in Maryland, 2020-2022

Occupation Category	Count	Percent of Total Suicides
Not in workforce	69	20.4
Office and Administrative Support	37	10.9
Healthcare Practitioners and Technical	27	8.0
Management	25	7.4
Sales and Related	18	5.3
Food Preparation and Serving Related	16	4.7
Educational Instruction and Library	15	4.4
Healthcare Support	12	3.5
Business and Financial Operations	12	3.5
Personal Care and Service	11	3.2

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Trends in Total Maryland Population Suicide Rates by Occupation Over Time

Evaluating trends in suicide rates over time can help public health professionals identify emerging risk factors and high-risk populations. In this analysis, we examined the average annual change in Maryland's estimated suicide rates by occupation between 2018 and 2022.

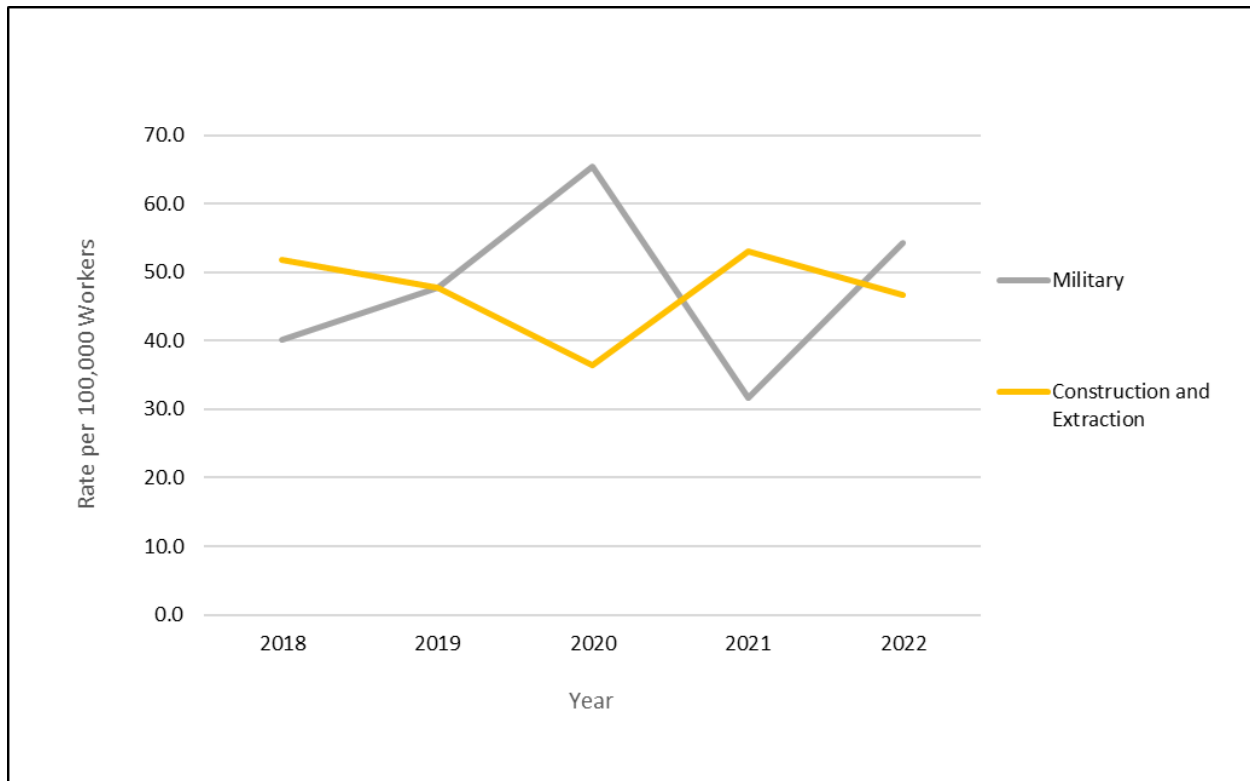
The **greatest average annual increase** in suicide **rate** was among people working in transportation and material moving occupations, which on average increased by 1.5 deaths per 100,000 workers every year during this five-year period. The non-civilian military population had the second largest average annual increase of 1.2 deaths per 100,000 workers per year.

Individuals working in protective service occupations had the **greatest average annual decrease** in suicide **rate** during the 5-year period, decreasing by an average of nearly 4 suicides per 100,000 workers every year. Large declines in suicide were also seen among those working in architecture and engineering occupations, which experienced an average decrease of almost 3 deaths per 100,000 workers per year.

It is important to note that for many occupation groups, there were large fluctuations in rates each year between 2018 and 2022. Many factors may contribute to increasing or decreasing suicide rates within an occupation category, including normal variation for that group, small numbers of suicides (which are more susceptible to large rate changes even if the count change is small), and the impacts of the Covid-19 pandemic. The following graphs display trend lines for suicide rates within occupation categories. The categories are organized according to their suicide rates in 2022.

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Figure 10: Occupations in Maryland with Suicide Rates in 2022 at or Above 30 Deaths per 100,000, Trend Graph and Table

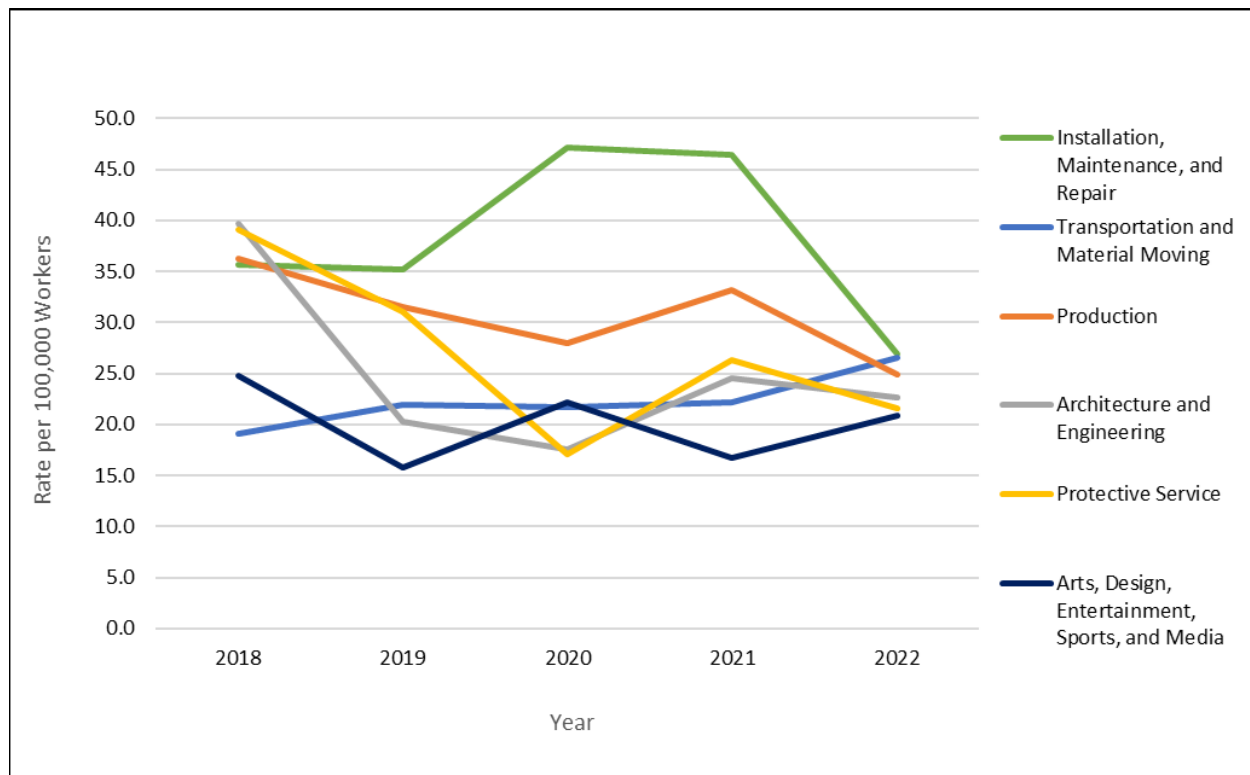


Occupation Category	2018	2019	2020	2021	2022
Military	40.1	47.7	65.4	31.6	54.2
Construction and Extraction	51.8	47.6	36.5	53.0	46.7

Numerators are from the 2018-2022 Maryland Violent Death Reporting System. Denominators are from the 2020-2022 US Census Bureau, American Community Survey: one-year population estimates were used for the denominators for 2018-2019 and 2021-2022; however, for 2020, one-year estimates were not available, so five-year population estimates were used instead.

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Figure 11: Occupations in Maryland with Suicide Rates in 2022 Between 20-29.9 Deaths per 100,000, Trend Graph and Table

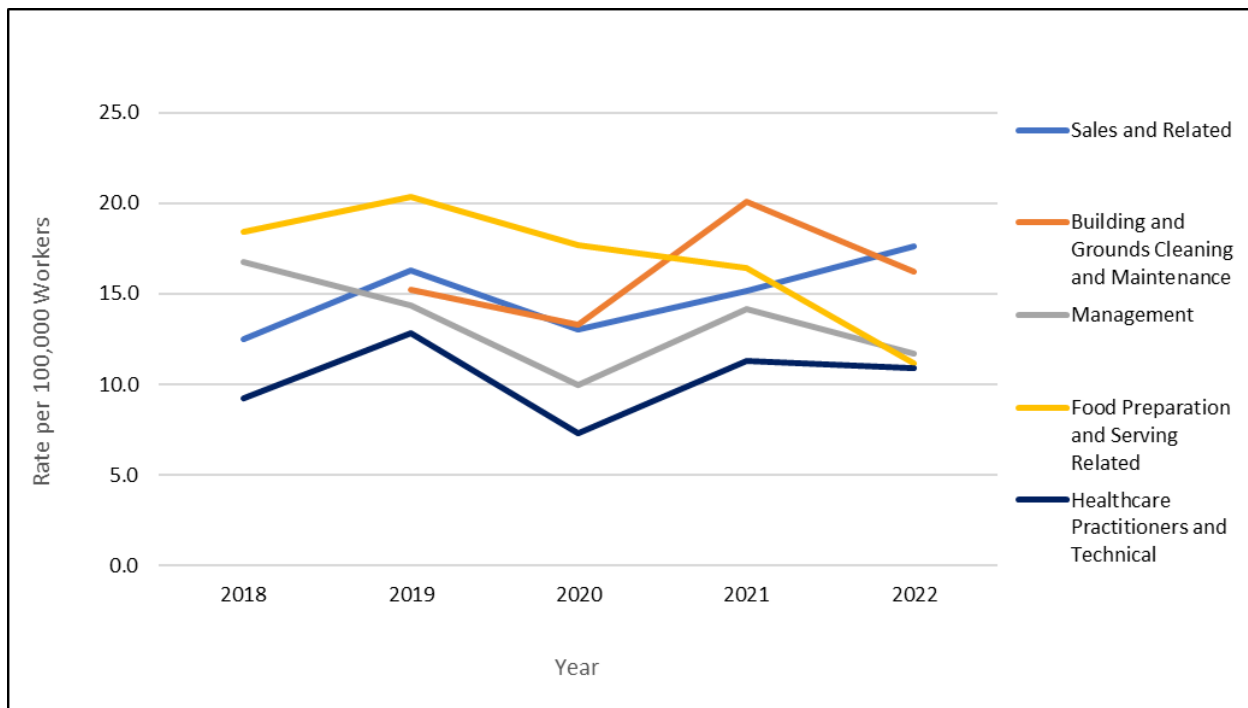


Occupation Category	2018	2019	2020	2021	2022
Installation, Maintenance, and Repair	35.7	35.2	47.1	46.4	27.0
Transportation and Material Moving	19.1	22.0	21.7	22.2	26.6
Production	36.3	31.6	27.9	33.2	24.9
Architecture and Engineering	39.6	20.2	17.5	24.5	22.6
Protective Service	39.1	31.0	17.0	26.3	21.6
Arts, Design, Entertainment, Sports, and Media	24.8	15.7	22.1	16.8	20.8

Numerators are from the 2018-2022 Maryland Violent Death Reporting System. Denominators are from the 2020-2022 US Census Bureau, American Community Survey: one-year population estimates were used for the denominators for 2018-2019 and 2021-2022; however, for 2020, one-year estimates were not available, so five-year population estimates were used instead.

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Figure 12: Occupations in Maryland with Suicide Rates in 2022 Between 10-19.9 Deaths per 100,000, Trend Graph and Table

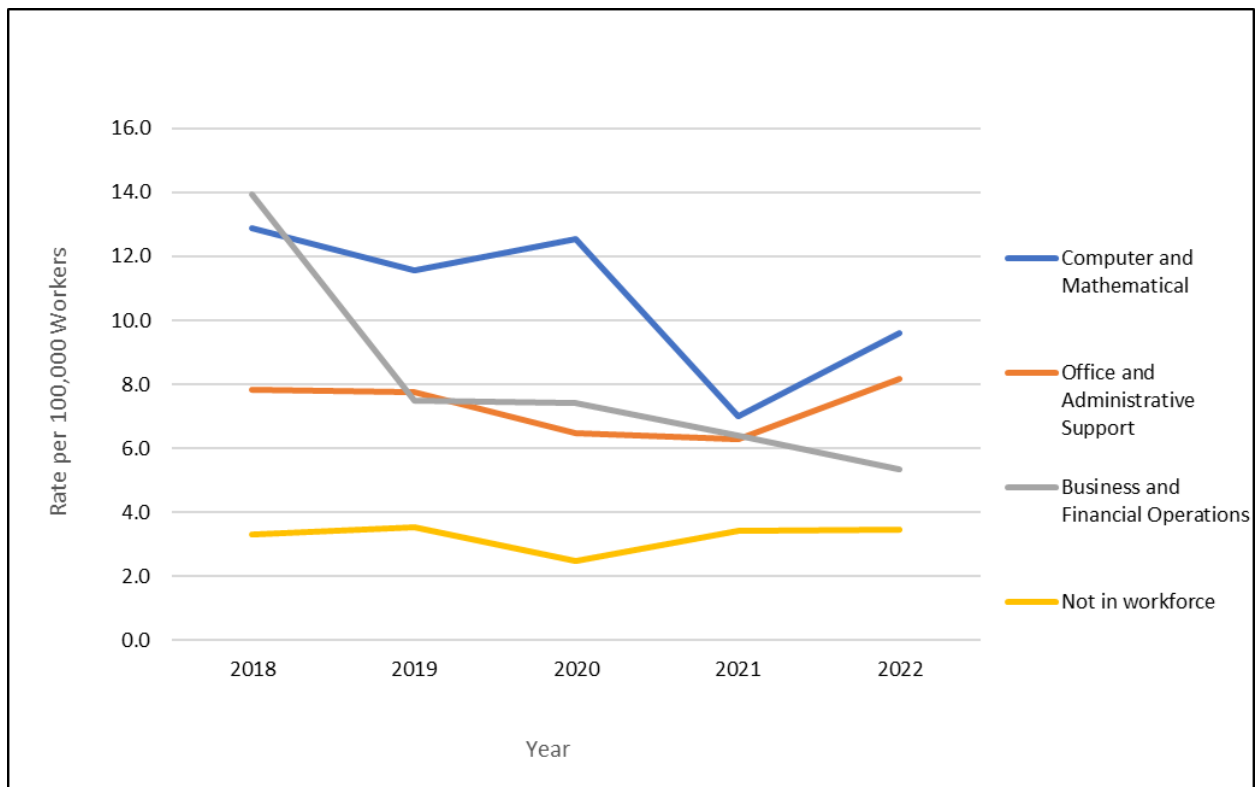


Occupation Category	2018	2019	2020	2021	2022
Sales and Related	12.5	16.3	13.0	15.2	17.6
Building and Grounds Cleaning and Maintenance	N/A	15.2	13.3	20.1	16.2
Management	16.7	14.4	10.0	14.2	11.7
Food Preparation and Serving Related	18.4	20.3	17.7	16.5	11.2
Healthcare Practitioners and Technical	9.3	12.8	7.3	11.3	10.9

Numerators are from the 2018-2022 Maryland Violent Death Reporting System. Denominators are from the 2020-2022 US Census Bureau, American Community Survey: one-year population estimates were used for the denominators for 2018-2019 and 2021-2022; however, for 2020, one-year estimates were not available, so five-year population estimates were used instead.

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Figure 13: Occupations in Maryland with Suicide Rates in 2022 Between 0-9.9 Deaths per 100,000, Trend Graph and Table



Occupation Category	2018	2019	2020	2021	2022
Computer and Mathematical	12.9	11.6	12.5	7.0	9.6
Office and Administrative Support	7.8	7.8	6.5	6.3	8.2
Business and Financial Operations	13.9	7.5	7.4	6.4	5.3
Not in workforce	3.3	3.5	2.5	3.4	3.5

Numerators are from the 2018-2022 Maryland Violent Death Reporting System. Denominators are from the 2020-2022 US Census Bureau, American Community Survey: one-year population estimates were used for the denominators for 2018-2019 and 2021-2022; however, for 2020, one-year estimates were not available, so five-year population estimates were used instead.

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Appendix

All occupational categories referenced in this data brief are based on the 2018 Standard Occupation Classification (SOC) system. This appendix contains additional information about the major occupation groups along with examples of specific occupations within these groups. Descriptions of major occupation groups were obtained from the U.S. Bureau of Labor Statistics (BLS) [Occupational Outlook Handbook](#). Additional details on the SOC major occupation groups can be found at the BLS webpage dedicated to the [2018 Standard Occupational Classification System](#). For more comprehensive information, please refer to the [2018 SOC manual](#).

11-0000 Management Occupations: Workers in these occupations establish plans and policies, direct business activities, and oversee people, products, and services.

Some examples of specific occupations within this major group include Chief Executives; Legislators; Sales Managers; Facilities Managers; Human Resources Managers; Construction Managers; Education Administrators, Kindergarten through Secondary; Postmasters and Mail Superintendents; Emergency Management Directors; Funeral Home Managers


13-0000 Business and Financial Operations Occupations: Workers in these occupations are involved in the day-to-day activities of running a business or with matters related to money.

Some examples of specific occupations within this major group include Agents and Business Managers of Artists, Performers, and Athletes; Claims Adjusters, Examiners, and Investigators; Human Resources Specialists; Project Management Specialists; Fundraisers; Accountants and Auditors; Appraisers and Assessors of Real Estate; Financial and Investment Analysts; Loan Officers; Tax Preparers

15-0000 Computer and Mathematical Occupations: Workers in these occupations create or support computer applications, systems, and networks; and use arithmetic and apply advanced techniques to make calculations, analyze data, and solve problems.

Some examples of specific occupations within this major group include Information Security Analysts; Computer and Information Research Scientists; Database Architects; Software Developers; Mathematicians; Statisticians; Data Scientists; Web and Digital Interface Designers

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17-0000 Architecture and Engineering Occupations: Workers in these occupations design and develop structures, products, and systems and collect information for mapping and other purposes.

Some examples of specific occupations within this major group include Landscape Architects; Surveyors; Aerospace Engineers; Mechanical Engineers; Architectural and Civil Drafters; Calibration Technologists and Technicians; Surveying and Mapping Technicians

25-0000 Educational Instruction and Library Occupations: Workers in these occupations share information through teaching and distribution.

Some examples of specific occupations within this major group include Postsecondary Teachers; Special Education Teachers; Tutors; Museum Technicians and Conservators; Archivists; Librarians and Media Collection Specialists; Library Technicians; Instructional Coordinators; Teaching Assistants

27-0000 Arts, Design, Entertainment, Sports, and Media Occupations: Workers in these occupations create products and concepts that have practical or aesthetic purposes; perform and oversee artistic and athletic ventures; and use words and images to convey information and ideas.


Some examples of specific occupations within this major group include Fine Artists, Including Painters, Sculptors, and Illustrators; Interior Designers; Actors; Producers and Directors; Athletes and Sports Competitors; Choreographers; Broadcast Announcers and Radio Disc Jockeys; Editors; Authors; Photographers; Sound Engineering Technicians; Camera Operators, Television, Video and Film; Interpreters and Translators

29-0000 Healthcare Practitioners and Technical Occupations: Workers in these occupations help clients maintain and improve wellbeing by performing a broad range of tasks including diagnosing, treating, and preventing illnesses, or performing procedures and operating equipment.

Some examples of specific occupations within this major group include: Orthodontists; Dietitians and Nutritionists; Pharmacists; Physical Therapists; Speech-Language Pathologists; Veterinarians; Registered Nurses; Cardiologists; Pediatric Surgeons; Acupuncturists; Medical and Clinical Laboratory Technologists; Magnetic Resonance Imaging Technologists; Paramedics; Pharmacy Technicians; Medical Records Specialists; Hearing Aid Specialists; Health Information Technologists and Medical Registrars; Athletic Trainers; Surgical Assistants

31-0000 Healthcare Support Occupations: These occupations are entry-level jobs that provide assistance to healthcare professionals in completing their tasks.

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Some examples of specific occupations within this major group include Home Health Aides; Nursing Assistants; Occupational Therapy Aides; Physical Therapist Assistants; Massage Therapists; Dental Assistants; Veterinary Assistants and Laboratory Animal Caretakers; Phlebotomists

33-0000 Protective Service Occupations: Workers in these occupations provide public safety.

Some examples of specific occupations within this major group include Firefighters; Fire Inspectors and Investigators; Correctional Officers and Jailers; Detectives and Criminal Investigators; Fish and Game Wardens; Police and Sheriff's Patrol Officers; Animal Control Workers; Private Detectives and Investigators; Security Guards; Crossing Guards and Flaggers; Transportation Security Screeners; School Bus Monitors

35-0000 Food Preparation and Serving Related Occupations: Workers in these occupations make and provide food and drink to customers.

Some examples of specific occupations within this major group include Chefs and Head Cooks; Bartenders; Fast Food and Counter Workers; Waiters and Waitresses; Dishwashers; Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop

37-0000 Building and Grounds Cleaning and Maintenance Occupations: Workers in these occupations ensure that structures and land remain attractive, orderly, and safe.


Some examples of specific occupations within this major group include Maids and Housekeeping Cleaners; Pest Control Workers; Landscaping and Groundskeeping Workers; Pesticide Handlers, Sprayers, and Applicators; Tree Trimmers and Pruners

39-0000 Personal Care and Service Occupations: Workers in these occupations attend to clients' beauty, fitness, and other needs.

Some examples of specific occupations within this major group include Animal Trainers; Gambling Dealers; Motion Picture Projectionists; Ushers, Lobby Attendants, and Ticket Takers; Amusement and Recreation Attendants; Crematory Operators; Funeral Attendants; Hairdressers, Hairstylists, and Cosmetologists; Manicurists and Pedicurists; Baggage Porters and Bellhops; Tour Guides and Escorts; Childcare Workers; Exercise Trainers and Group Fitness Instructors; Residential Advisors

41-0000 Sales and Related Occupations: Workers in these occupations sell goods and services or connect buyers with sellers in a specific market, such as real estate or securities; or perform tasks related to these activities.

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Some examples of specific occupations within this major group include Cashiers; Retail Salespersons; Insurance Sales Agents; Travel Agents; Demonstrators and Product Promoters; Models; Real Estate Sales Agents; Telemarketers; Door-to-Door Sales Workers, News and Street Vendors, and Related Workers

43-0000 Office and Administrative Support Occupations: Workers in these occupations prepare and organize documents, track products, and provide information to the public.

Some examples of specific occupations within this major group include Telephone Operators; Bill and Account Collectors; Payroll and Timekeeping Clerks; Tellers; Customer Service Representatives; Hotel, Motel, and Resort Desk Clerks; Couriers and Messengers; Public Safety Telecommunicators; Postal Service Mail Carriers; Legal Secretaries and Administrative Assistants; Data Entry Keyers; Proofreaders and Copy Markers; Statistical Assistants

47-0000 Construction and Extraction Occupations: Workers in these occupations use a variety of resources to build and repair roads, homes, and other structures.

Some examples of specific occupations within this major group include: Boilermakers; Stonemasons; Carpenters; Tile and Stone Setters; Cement Masons and Concrete Finishers; Construction Laborers; Plumbers, Pipefitters, and Steamfitters; Roofers; Structural Iron and Steel Workers; Construction and Building Inspectors; Elevator and Escalator Installers and Repairers; Hazardous Materials Removal Workers; Rotary Drill Operators, Oil and Gas; Explosives Workers, Ordnance Handling Experts, and Blasters; Continuous Mining Machine Operators; Rock Splitters, Quarry


49-0000 Installation, Maintenance, and Repair Occupations: Workers in these occupations set up, take care of, and fix many types of goods and equipment.

Some examples of specific occupations within this major group include: Computer, Automated Teller, and Office Machine Repairers; Avionics Technicians; Security and Fire Alarm Systems Installers; Aircraft Mechanics and Service Technicians; Rail Car Repairers; Bicycle Repairers; Heating, Air Conditioning, and Refrigeration Mechanics and Installers; Electrical Power-Line Installers and Repairers; Musical Instrument Repairers and Tuners; Locksmiths and Safe Repairers; Automotive Service Technicians and Mechanics

51-0000 Production Occupations: Workers in these occupations operate machines and other equipment to assemble goods or distribute energy.

Some examples of specific occupations within this major group include: Aircraft Structure, Surfaces, Rigging, and Systems Assemblers; Structural Metal Fabricators and Fitters; Timing Device Assemblers and Adjusters; Bakers; Butchers and Meat Cutters; Food and Tobacco

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Roasting, Baking, and Drying Machine Operators and Tenders; Machinists; Pourers and Casters, Metal; Welders, Cutters, Solderers, and Brazers; Printing Press Operators; Laundry and Dry-Cleaning Workers; Shoe and Leather Workers and Repairers; Tailors, Dressmakers, and Custom Sewers; Upholsterers; Furniture Finishers; Power Plant Operators; Jewelers and Precious Stone and Metal Workers; Ophthalmic Laboratory Technicians; Etchers and Engravers

53-0000 Transportation and Material Moving Occupations: Workers in these occupations move people and goods.

Some examples of specific occupations within this major group include: Aircraft Cargo Handling Supervisors; Commercial Pilots; Air Traffic Controllers; Flight Attendants; Heavy and Tractor-Trailer Truck Drivers; Taxi Drivers; Locomotive Engineers; Subway and Streetcar Operators; Captains, Mates, and Pilots of Water Vessels; Parking Attendants; Transportation Inspectors; Crane and Tower Operators; Industrial Truck and Tractor Operators; Laborers and Freight, Stock, and Material Movers, Hand; Stockers and Order Fillers; Gas Compressor and Gas Pumping Station Operators; Refuse and Recyclable Material Collectors; Tank Car, Truck, and Ship Loaders

Military

This category is for military (non-civilian) service in the U.S. Armed Forces

Not in workforce

This category is for the working-age population not in the workforce, and includes students, homemakers, volunteers, and those unable to work (e.g. children, patients, inmates)

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