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Maryland Occupational Health and Safety Surveillance Project

Grant Number: 1U60OH010912-01
July 1, 2015 – June 30, 2016
Final Report: September 29, 2016

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List of Terms and Abbreviations

BRFSS – Behavioral Risk Factor Surveillance Survey

CSTE – Council of State and Territorial Epidemiologists

DHMH –Department of Health and Mental Hygiene

EPHT – Environmental Public Health Tracking

NEDSS – National Electronic Disease Surveillance System

NIOSH – National Institute for Occupational Safety and Health

MACP – Maryland Asthma Control Program

MCR – Maryland Cancer Registry

MDE – Maryland Department of the Environment

MOSH – Maryland Occupational Safety and Health

MVDRS – Maryland Violent Death Reporting System

OHSSP – Occupational Health and Safety Surveillance Program

VIPP – Violence and Injury Prevention Program

Abstract

The Maryland Occupational Health and Safety Surveillance Project (OHSSP) successfully completed its cooperative agreement on June 30, 2016, with the following accomplishments: (1) The OHSSP created an inter-agency memo on protection for outdoor workers regarding Zika virus, in conjunction with the Department's Infectious Disease Bureau and the Department of Labor, Licensing, and Regulation, which houses the Maryland Occupational Safety and Health (MOSH) program; (2) OHSSP worked with other states and the Council of State and Territorial Epidemiologists (CSTE) to develop sub-state level occupational indicators, and has piloted them in Maryland. These show considerable variability in certain types of common occupational injury across the State; (3) OHSSP and the Department's CDC/CSTE occupational epidemiology fellow collaborated with the Office of Occupational Medicine at the U.S. Occupational Safety and Health Administration (OSHA) on a project to assess the quality of occupational titles and information in Salmonella and Campylobacter cases in the National Electronic Disease Surveillance System (NEDSS) in Maryland. This work, which is ongoing, has the potential to improve ascertainment of occupationally acquired infectious diseases in the states; and (4) OHSSP created several infographics based on occupational health indicators (OHI), and these are now being used on the OHSSP website. In addition, it has developed a new report format for the presentation of OHIs.

Section 1

Maryland Occupational Health and Safety Surveillance Project
Grant Number: 1U60OH010912-01
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Significant (Key) Findings

The Maryland Occupational Health and Safety Surveillance Project (OHSSP) successfully completed cooperative agreement 1U60OH010912-01 on June 30, 2016, with the following findings:

- *Workplace interventions:* The Department of Health and Mental Hygiene's OHSSP created an inter-agency memo on outdoor worker protection related to Zika virus, in conjunction with the Department's Infectious Disease Bureau and the Department of Labor, Licensing, and Regulation, which houses the Maryland Occupational Safety and Health (MOSH) program.
- *Improvement in occupational surveillance capacity:* OHSSP has worked with other states and the Council of State and Territorial Epidemiologists (CSTE) to develop sub-state level occupational indicators, and has piloted them in Maryland. These show considerable variability in certain types of common occupational injury across the State.
- *Improvement in existing national surveillance systems:* OHSSP and the Department's CDC/CSTE occupational epidemiology fellow collaborated with the Office of Occupational Medicine at the U.S. Occupational Safety and Health Administration (OSHA) on a project to assess the quality of occupational titles and information in Salmonella and Campylobacter cases in the National Electronic Disease Surveillance System (NEDSS) in Maryland. This work, which is ongoing, has the potential to improve ascertainment of occupationally acquired infectious diseases in the states.
- *Dissemination of data on occupational illness and injury trends in Maryland:* OHSSP created several infographics based on occupational health indicators (OHI), and these are now being used on the OHSSP website. In addition, it has developed a new report format for the presentation of OHIs.

An example of one success story for OHSSP has been in the development of communications materials for other agencies and the Department of Health and Mental

Hygiene's online presence related to occupational illness and injury surveillance. Two examples include the inter-agency memorandum on Zika virus protection for general employer community, which was in final approval as the grant period was ending, and a set of infographics for the public on various occupational illness and injury trends in Maryland, which are to be placed on the Department's website and in future grant periods on published materials. Examples of these are shown in the appendices to this report.

Translation of Findings

The OHSSP's Technical Advisory Group (TAG) has previously requested that more of the data produced by OHSSP be made available in user-friendly, culturally competent, and audience-appropriate formats. A significant effort this year has been to find ways to do so. Among these are:

- Zika memorandum – A number of questions are being directed to public health and occupational health and safety agencies regarding advice for outdoor workers who may be at risk with local transmission of Zika virus (which has not occurred in Maryland to date). In anticipation of the possibility of local transmission, OHSSP contacted and worked with the Maryland Occupational Safety and Health (MOSH) program at the Department of Labor, Licensing, and Regulation to create an employer memorandum (Appendix A) that clearly spelled out the conditions under which local transmission might be identified by the Department of Health and Mental Hygiene, and then provided recommendations for worker protection, based on Federal guidance developed by the U.S. Occupational Safety and Health Administration (OSHA) and NIOSH.
- Infographics – OHSSP epidemiologist Elisabeth Dissen created a number of infographics (Appendix B) related to illness and injury surveillance, including: overall occupational illness/injury statistics for Maryland (B-1); significant trends in work-related illness and injury (B-2); the value of consistent surveillance data to improve the State's ability to understand occupational illness and injury trends (B-3); and specific conditions including occupational lung disease (B-4) and pesticide poisonings (B-5).
- New format for Occupational Health Indicators Report – OHSSP has developed a new format for presentation of its OHIs (Appendix C).

In addition, OHSSP has been experimenting with displays of sub-state (region, county, and ZIP code) level presentations of occupational injury and illness data, though these have not yet been implemented. An example (Figure 1) shows the crude rate of work-related hospitalizations per 100,000 adults 15-64 years by region, by race/ethnicity. This has not yet been posted for display, but in the next project year will be incorporated within the State's Occupational Health website.

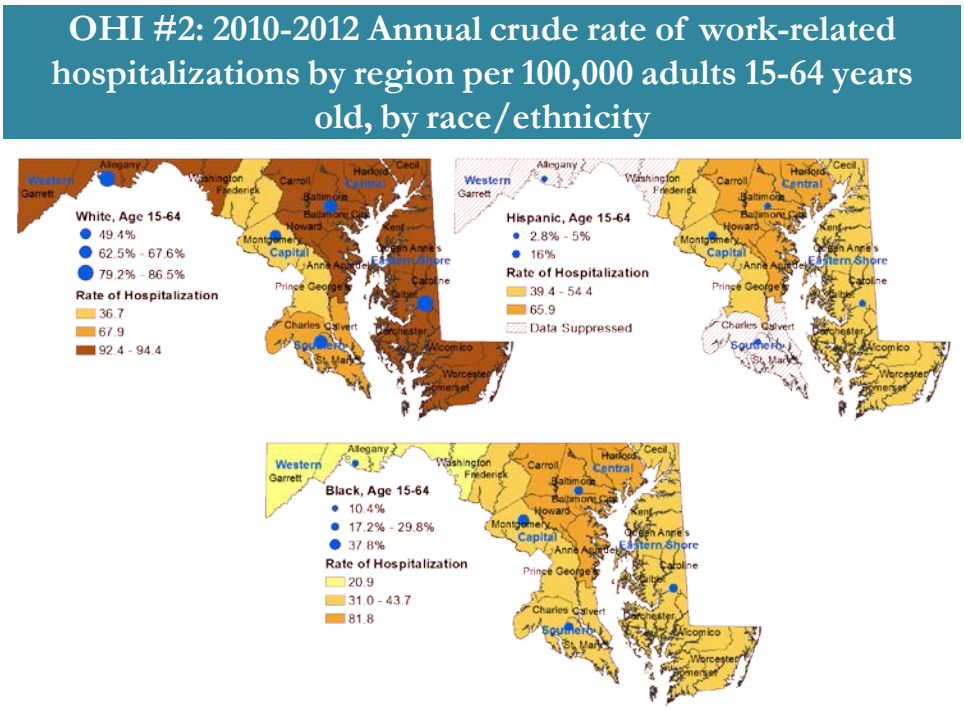


Figure 1. Example of Sub-State Occupational Health Indicator Data Display.

Outcomes/Impact.

The principal outcomes and impacts for the project related to prevention messages for various occupationally acquired conditions, including:

1. *Infectious diseases* – Maryland OHSSP and the Maryland Occupational Safety and Health (MOSH) program collaborated on an interagency memo to employers on prevention of Zika virus, should that disease become locally acquired within the State. The memo is now posted online on the Department's website.

The intermediate outcome for this activity is to improve prevention practices in the general employer community (including the State of Maryland and local governments) about how to protect outdoor workers should there be local transmission of Zika virus within the State. A second end outcome has been the improved collaboration between the Department of Labor, Licensing, and Regulation (DLLR) and its Maryland Occupational Safety and Health (MOSH) program, and the Department of Health and Mental Hygiene's Occupational Health and Safety Surveillance Program. This is the first time that the two departments have collaborated on a joint memorandum related to worker health and safety, and it has opened up communication and understanding of the mutual goals of the

two to improve communication on worker protection.

2. *Infectious disease surveillance* – Maryland is one of several states working with U.S. OSHA to characterize and ultimately improve infectious disease surveillance by evaluating the quality and types of occupational job titles for two commonly acquired infectious diseases, *Salmonella* and *Campylobacter.*

The potential outcome of this activity is improvement in surveillance for occupationally acquired infectious disease in national infectious disease registries. Currently, the quality of industry and occupational (I/O) data in infectious disease registries is limited and inconsistent. Maryland OHSSP has been looking at the data in the Maryland National Electronic Disease Surveillance System (NEDSS) for two conditions (*Salmonella* and *Campylobacter)* for several years, and is now working with U.S. OSHA on a multi-state project aimed at improving these data.

3. *Work-related injuries* – OHSSP developed infographics around worker injuries which are being used on the Department's website and are being integrated with other communications vehicles in the coming year.

The potential outcome for this activity is significant improvement in the translation of surveillance findings to worker protection training and education materials. One such venue will be the Department's website, where the infographics will be posted. Ultimately, the goal is to incorporate the infographics into specific training materials for various communities and industries.

Section 2

SCIENTIFIC REPORT

SPECIFIC AIMS

Based on a new cooperative agreement from NIOSH in 2010, the Maryland Department of Health and Mental Hygiene (DHMH) has successfully re-established an occupational health and safety surveillance program (OHSSP) in Maryland. Our specific aims for the first project period were largely achieved, including development of a permanent occupational disease surveillance structure within DHMH; strengthening pre-existing relationships of OHSSP with the Maryland Asthma Control Program (MACP), Cancer Control Program, and environmental public health tracking (EPHT) program; integration of occupational safety and health programs activities within DHMH, the Maryland Department of Environment (MDE), the Maryland Occupational Safety and Health (MOSH) program, and local health departments; and finally, a start at linking occupational disease surveillance activities with ongoing occupational disease prevention efforts of MOSH and the State.

In the current project period, we proposed to extend these activities and to expand our efforts to improve occupational safety and health surveillance and prevention by continuing our surveillance and production of occupational health indicators (OHIs) with existing data sources, while incorporating new data. The specific aims of this proposal are to:

1. Advance occupational epidemiology public health research in occupational health through continued production of existing OHIs from existing sources of data;
2. Strengthen the current OHIs through new data sources, including workers' compensation data shared with Maryland Occupational Safety and Health, electronic laboratory reporting (ELR) data, data from the Maryland Violent Death Reporting System (MVDRS), and data from the Maryland Behavioral Risk Factor Surveillance System (BRFSS);
3. Enhance outreach and prevention activities in partnership with the Maryland Violence and Injury Prevention Program (VIPP), the Partnership for a Safer Maryland, and the MDE (which houses the State's lead poisoning prevention program).

Specific Aim 1: Advance occupational epidemiology public health research in occupational health.

a. Create OHIs for annual report.

Of the 23 requested occupational indicators, we were able to submit data for all indicators except Indicators 5 and 8 (the state just developed electronic filing of first reports of injury, but does not yet have electronic workers' compensation data otherwise available to DHMH), and Indicator 13 (adult blood lead data is submitted by the Maryland Department of the Environment, which houses the lead poisoning registry, but is not currently available to DHMH). Otherwise, all indicators were submitted to NIOSH including Indicator 24, occupational heat-related ED visits, which is a new indicator in 2016. In order to make the data easier to find and share, we compiled all of the indicator data since 2000 into one report available online at the Maryland Occupational Health and Safety website: http://phpa.dhmh.maryland.gov/OEHFP/EH/Pages/occupational-safety-and-health-in-maryland.aspx.

We also expanded our occupational health indicator data by adding sub-state data, race and ethnicity data, and a state-specific indicator (work-related emergency department

visits). We followed the CSTE sub-state measures guidance document and developed sub-state data for hospitalization data indicators and Indicator #14 (high-risk industries, see Figure 2). Race and ethnicity data were available for hospitalization data indicators and Indicator #3 (census of fatal occupational injuries). The work-related emergency department visit indicator was created by following the guidance for Indicator #2 (work-related hospitalizations). This state-specific indicator was also mapped at the county level by race. All 20 indicators Maryland has data for as well as the expanded surveillance data were included in the occupational indicator report containing Maryland occupational indicator data from 2000-2013 (Appendix C).

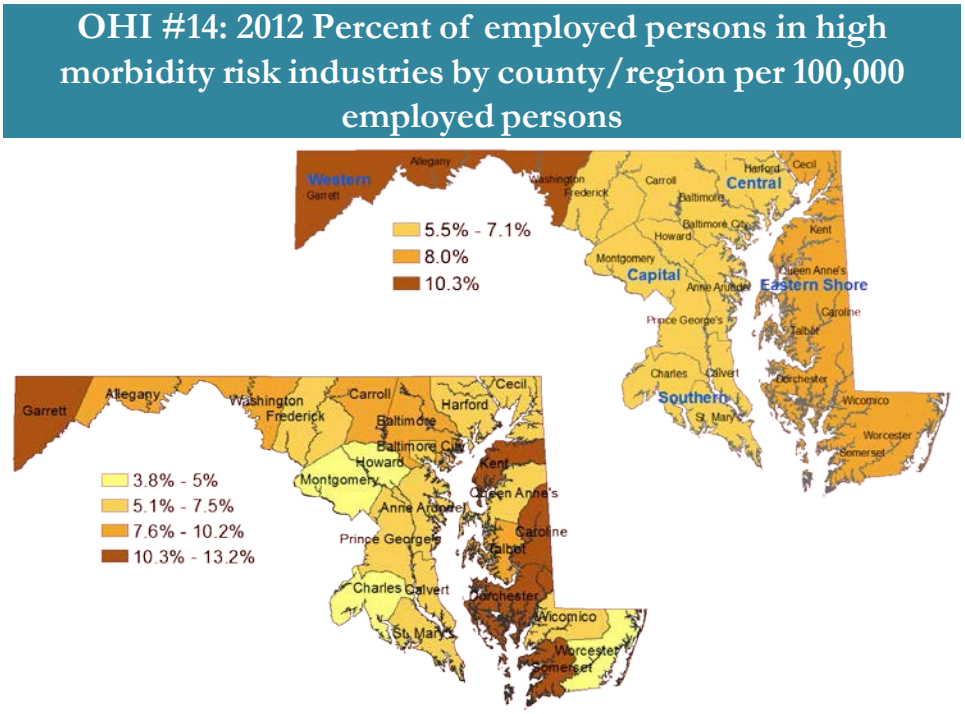


Figure 2. Example of Occupational Health Indicators Sub-State Data Display.

b. Analyze Occupational Health Indicator data and evaluate for potential trends over time.

The OHSSP calculated OHIs using data from 2000 to the present for a variety of data, and created infographics for some of them, as shown in Figure 3.

OHSSP has made significant progress in its ability to analyze and present temporal trend data for OHIs. In the next project period, these displays will be incorporated in online and other presentation materials.

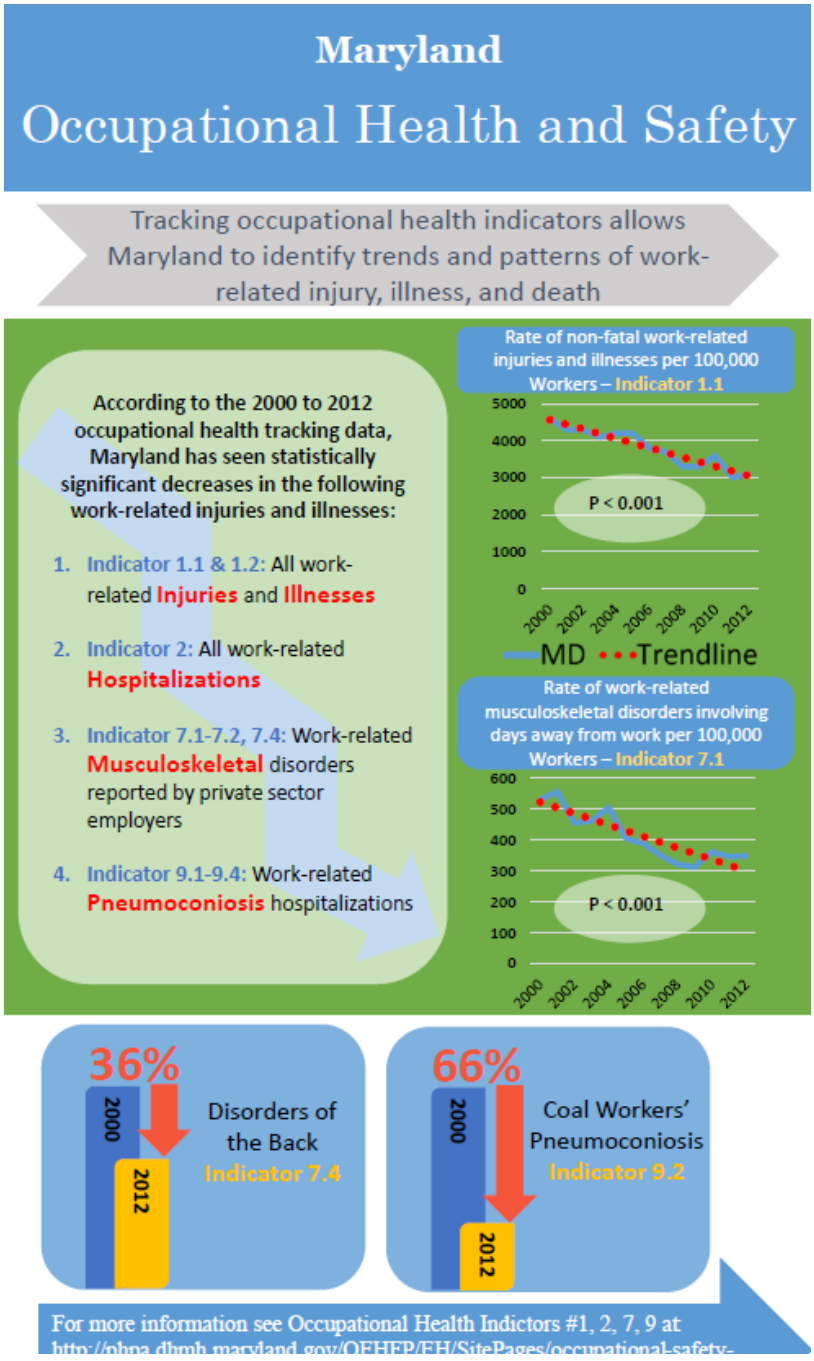


Figure 3. Infographic Showing Occupational Illness and Injury Trends Over Time.

c. *Maintain an occupational surveillance advisory group.*

In the current project period, the OHSSP advisory group did not meet in the past year, but members were consulted on a variety of topics. Part of the challenge has been finding additional members to represent organized labor, employers, and insurance. The Advisory Group also did not meet in part because of the unique timing of this project period and a re-application. However, an Advisory group meeting is scheduled for early in the next project period, and one of the chief topics on the agenda will be expansion of the group to include groups that currently under-represented.

Specific Aim 2: Strengthen the current OHIs through new data sources, including workers' compensation data shared with Maryland Occupational Safety and Health, electronic laboratory reporting (ELR) data, data from the Maryland Violent Death Reporting System (MVDRS), and data from the Maryland Behavioral Risk Factor Surveillance System (BRFSS)

d. Develop OHI #13: Elevated blood lead levels among adults. There has been considerable attention to the issue of blood lead poisoning in Maryland recently, due to the release of new regulations expanding blood lead testing for children, and some high-profile cases of lead exposure. There is ongoing communication between the Maryland Department of the Environment's (MDE's) heavy metals registry, and OHSSP, which has resulted in a number of cases of adult lead exposure being referred either to MDE or to Maryland Occupational Safety and Health (MOSH). This has led to discussions with MDE about the data for OHI #13; these discussions are still ongoing. MDE has submitted these data to NIOSH under the Adult Blood Lead Epidemiology and Surveillance (ABLES) program in the past. DHMH OHSSP anticipates it will eventually be able to obtain the data to compute OHI#13.

e. Evaluate potential new sources of data for occupational health surveillance and assess strengths and limitations of data sources. In the current project period, OHSSP was able to explore the utility of additional data sources to enhance occupational injury and illness surveillance. The status of each is discussed below:

- Workers' Compensation data – OHSSP had some preliminary discussions with MOSH regarding the nature of its data sharing agreement with the Worker's Compensation Commission. The only electronic data available in the Commission is its data base of electronic first reports of injury, which was implemented relatively recently. OHSSP does not have a data sharing agreement and has not yet initiated conversations with the Workers' Compensation Commission regarding the potential for such an agreement. These data are currently considered a lower priority than other data potentially available to OHSSP.
- National Electronic Disease Surveillance System (NEDSS) – there has been considerable discussion with the infectious disease unit of DHMH regarding the possibility of using NEDSS for occupational illness and injury surveillance. The most significant discussion involves evaluation of the quality of industry/occupation data within NEDSS, based on the ongoing evaluation of *Salmonella* and *Campylobacter* records by the CDC/CSTE fellow, in collaboration with U.S. OSHA. This work is ongoing, and it is likely that implementation of even a pilot surveillance project would not start until the next project period.
- Behavioral Risk Factor Surveillance System (BRFSS) – The BRFSS program at DHMH has been in discussions with OHSSP regarding the two years of available data from BRFSS that contain I/O data. These data had not been analyzed by the BRFSS project coordinator at the time of this report, but were expected to be available to OHSSP in the next project period.

Specific Aim 3: Enhance outreach and prevention activities in partnership with the Maryland Violence and Injury Prevention Program (VIPP), the Partnership for a Safer Maryland, and the MDE (which houses the State's lead poisoning prevention program).

f. Develop data-driven programs to advance occupational health prevention, intervention, and outreach strategies for key occupational health concerns. The new State Violence and Injury Prevention Project (SVIPP) in the Maryland Department of Health and Mental Hygiene, which was recently awarded, has a number of components that are expected to dovetail with OHSSP priorities. Due to the timing of both the new application for the OHSSP, and the competing application for the SVIPP, the current project period was primarily devoted to planning activities, but no implementation. In the next project period, more activity is anticipated.

Activity around adult blood lead has already been discussed and described above. Regarding asthma, there is an initiative in the planning stages regarding asthma with the state's Medicaid office, which though focused on pediatric asthma, will at least discuss occupational asthma in the context of working teenagers.

g. Participate in NIOSH meetings and conferences to share results from analyses and lessons learned. OHSSP personnel participated fully in all NIOSH meetings and conferences, and discussed the results of analyses and projects underway.

h. Create annual reports on occupational injuries and illnesses, including trends, vulnerable populations, emerging issues, etc. for public dissemination for NIOSH and for the general public. This activity was discussed earlier in the report.

Publications.
Maryland Occupational Health Surveillance Report, 2000 2013. Available at: http://phpa.dhmh.maryland.gov/OEHFP/EH/Pages/occupational-safety-and-health-in-maryland.aspx.

Data Sets.
Not Applicable

Other Materials available for other investigators.
Not Applicable

MEMORANDUM

TO: **All Maryland Employers**

FROM: **Howard Haft, Deputy Secretary of Public Health Services**
William Dallas, Assistant Commissioner of Maryland Occupational Safety and Health

DATE: **August 15, 2016**

RE: **Zika Virus and Employee Health Recommendations for Outdoor Workers in Maryland**

This memorandum provides guidance to Maryland employers and workers about prevention of potential occupational exposure to mosquito-borne Zika virus. This guidance is based on interim guidance from the U. S. Occupational Safety and Health Administration and the National Institute for Occupational Safety and Health. This Maryland guidance has been adapted from national guidance and reflects the current status of "no local transmission of Zika virus" in the State. The Department of Health and Mental Hygiene and other agencies have established systems to detect local transmission should it occur. The guidance would be revised if local transmission of Zika virus is identified in Maryland.

Occupational Categories Addressed in this Memorandum

This memorandum addresses potential risks confronting outdoor workers, including mosquito control workers. It does not address the occupational risks of health care workers or laboratory workers.

Triggers for Initiating Protective Measures in this Memorandum

The protective measures outlined in this memorandum would apply in areas where the Department of Health and Mental Hygiene has identified one of the following conditions: (1) There is a possibility of local transmission of Zika virus in an identified area of the State; or (2) There is an effort to conduct mosquito control to prevent local transmission of Zika virus in a particular area of the State (this applies specifically to mosquito control workers).

Recommendations

Outdoor Workers

Outdoor workers can acquire Zika via mosquito bites. Recommended prevention strategies, which are based on the more detailed recommendations in the OSHA/NIOSH guidelines,

include the following:

- Employers should educate these workers about Zika transmission and prevention. The DHMH Zika website has information about Zika in Maryland.
- Employees should wear clothing that protects against mosquito bites. Examples include lightweight, loose-fitting long sleeved shirts, long pants, gloves, hats, and mosquito netting to protect the face and neck. Always provide workers with adequate water, rest and shade, and monitor workers for signs and symptoms of heat illness.
- Encourage outdoor workers to apply an insect repellent that is active against *Aedes* mosquitoes. Examples of effective ingredients include DEET, picaridin, oil of lemon eucalyptus. Always follow label precautions when using insect repellents, and choose a repellent that provides protection for the amount of time that will be spent outdoors. Always wash before eating, then reapply when returning to the outdoors.
- Eliminate sources of standing water where mosquitoes can breed.
- If symptoms develop, seek medical attention promptly.
- Workers who are concerned about outdoor work for personal medical reasons such as pregnancy should consult with their personal physicians.

Mosquito Control Workers

Mosquito control workers who are working in areas to control or prevent Zika transmission should follow all of the above recommendations and any additional guidance or requirements from the Maryland Department of Agriculture, but may need additional protection, depending on their job tasks.

- Workers entering or working around areas with dense mosquito populations may need additional skin protection to prevent bites. Employers should assess the risk of mosquito exposure and consider providing additional protective clothing.
- Workers who mix, load, apply, or do other tasks involving wide-area insecticide application, or area application, may need additional protection to prevent chemical exposures, in accordance with manufacturer recommendations and in accordance with the respirator selection, medical clearance, fit-testing, and other requirements of OSHA's Respiratory Protection Standard (29 CFR 1910.134).

Additional information about these recommendations and about the current status of Zika risks in Maryland can be found at: http://phpa.dhmh.maryland.gov/pages/zika.aspx. The complete OSHA/NIOSH interim guidance and additional information for worker protection can be found at: https://www.osha.gov/zika/index.html and https://www.dllr.state.md.us/labor/mosh/.

APPENDIX B

INFOGRAPHICS DEVELOPED BY MARYLAND OCCUPATIONAL HEALTH AND SAFETY SURVEILLANCE PROJECT, 2015-2016

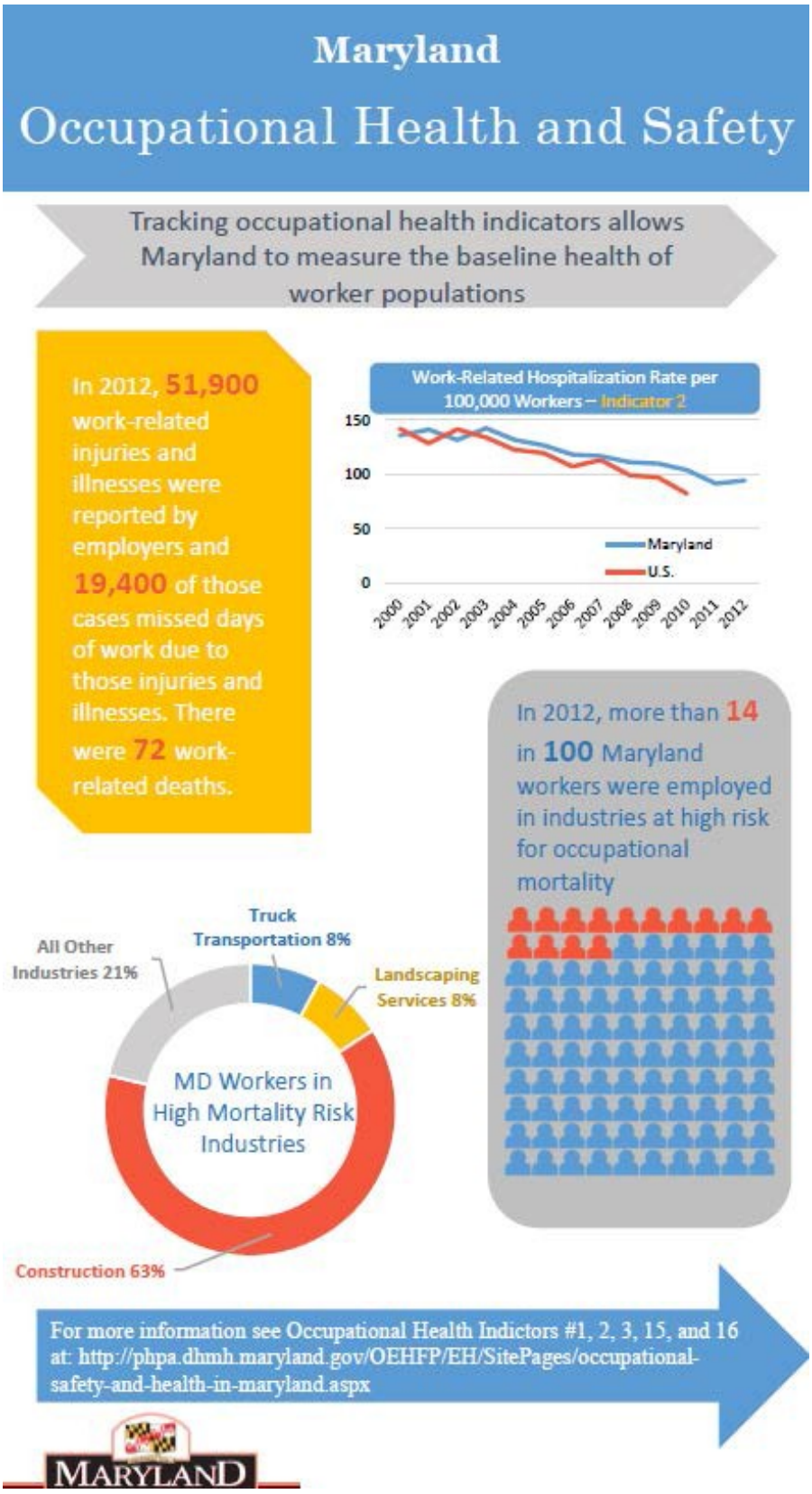


Figure B-1. Overall occupational illness and injury statistics for Maryland, 2000 - 2012

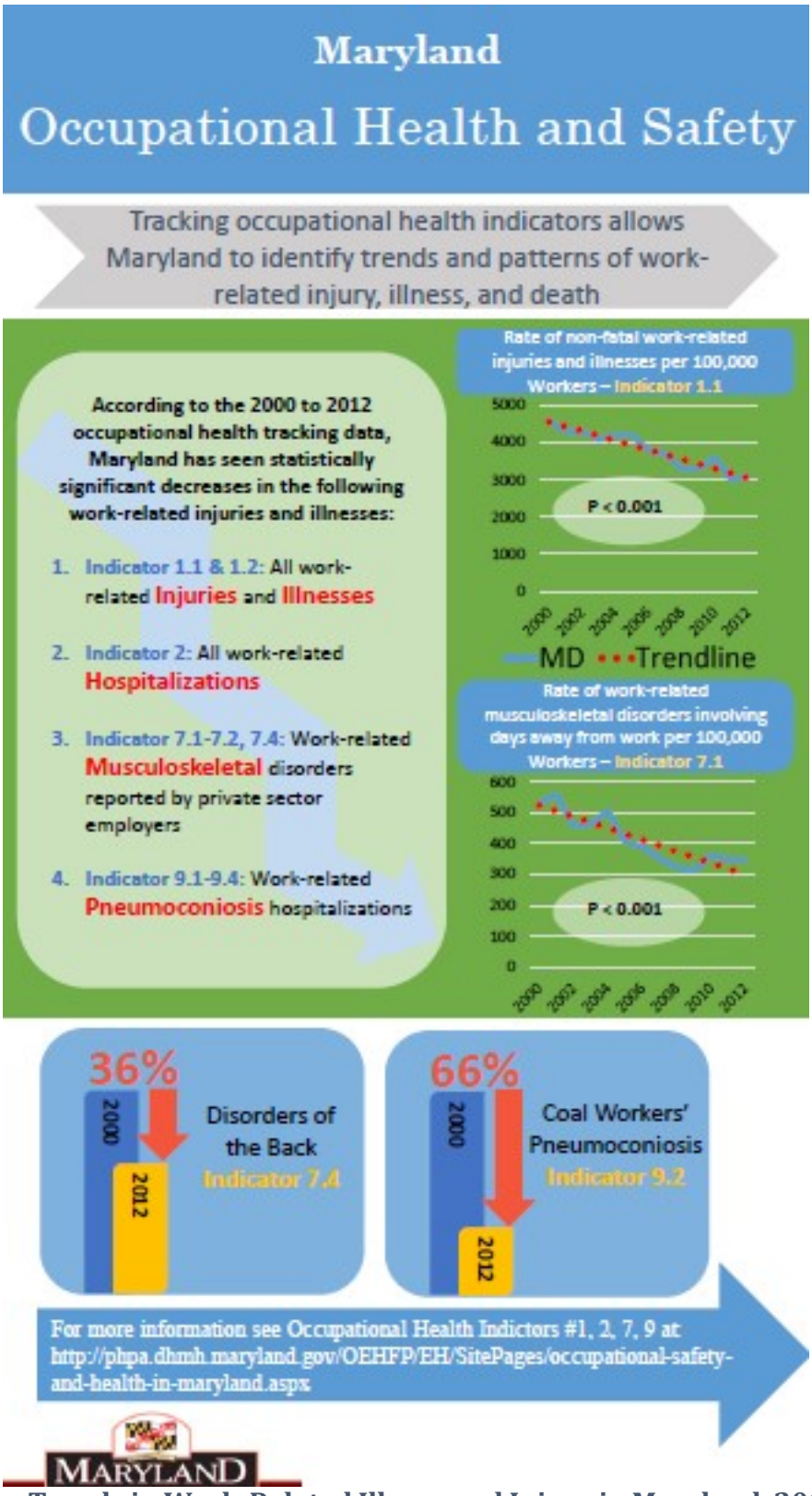


Figure B-2. Trends in Work-Related Illness and Injury in Maryland, 2000 - 2012.

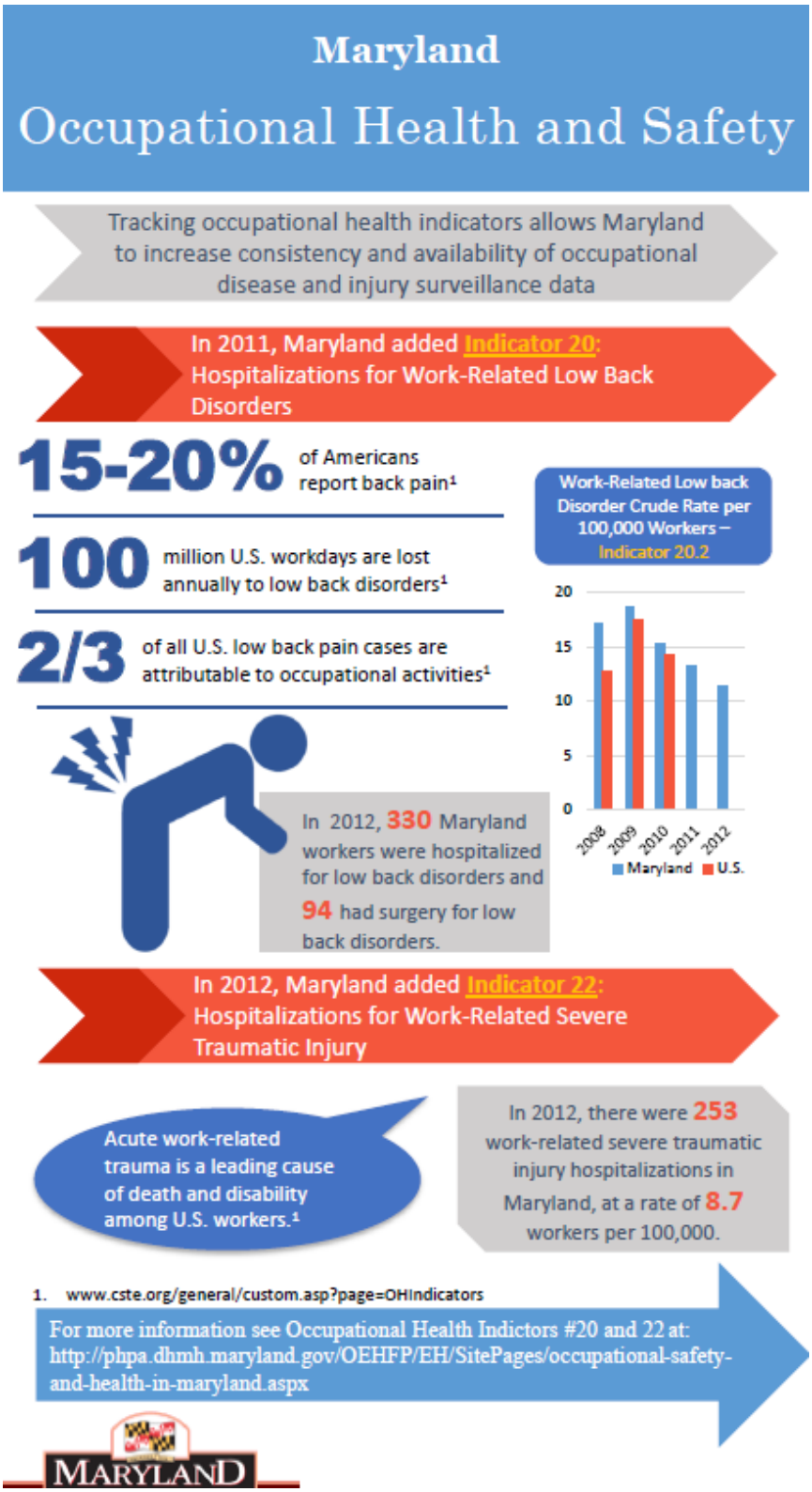


Figure B-3. The Importance of Surveillance to Occupational Injury and Illness Prevention in Maryland.

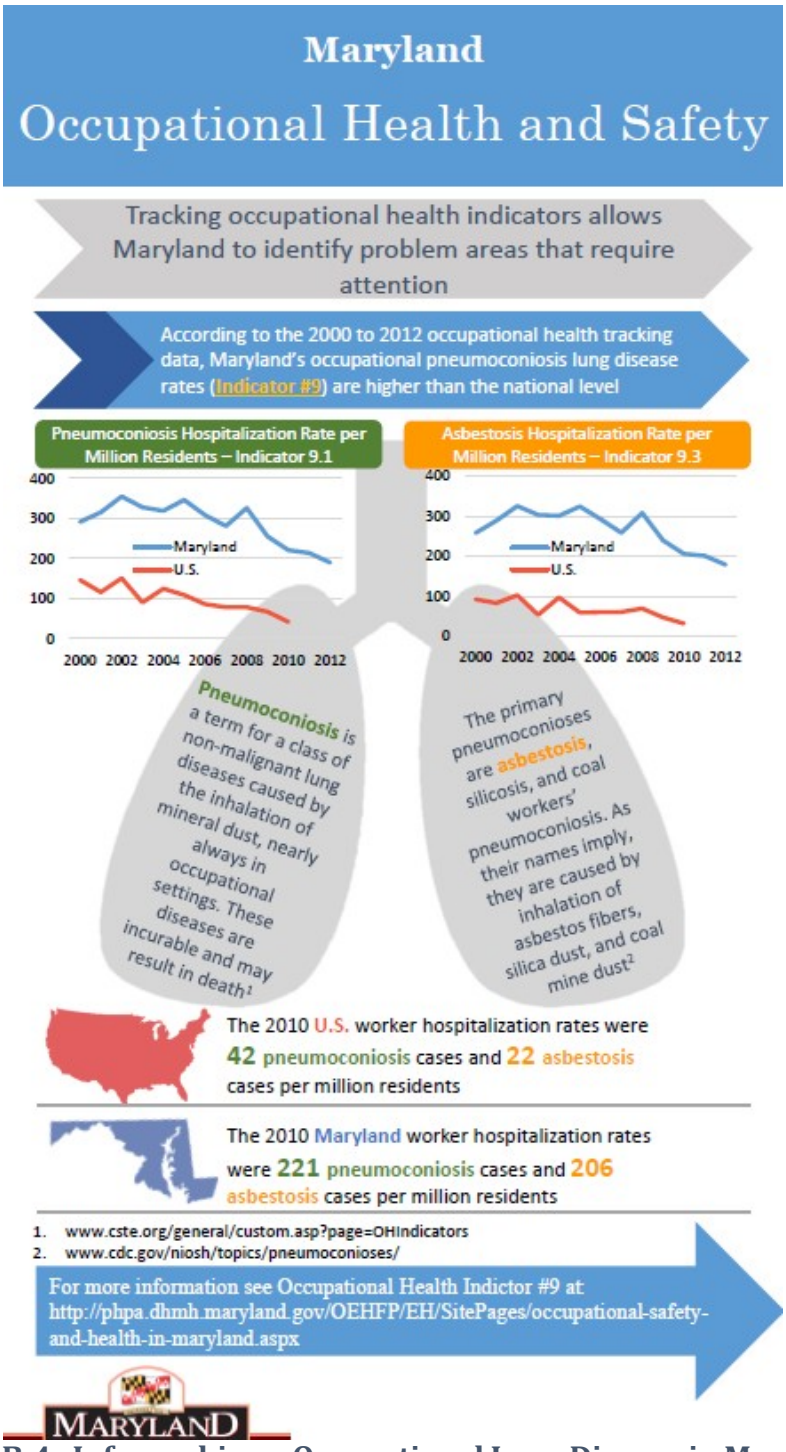
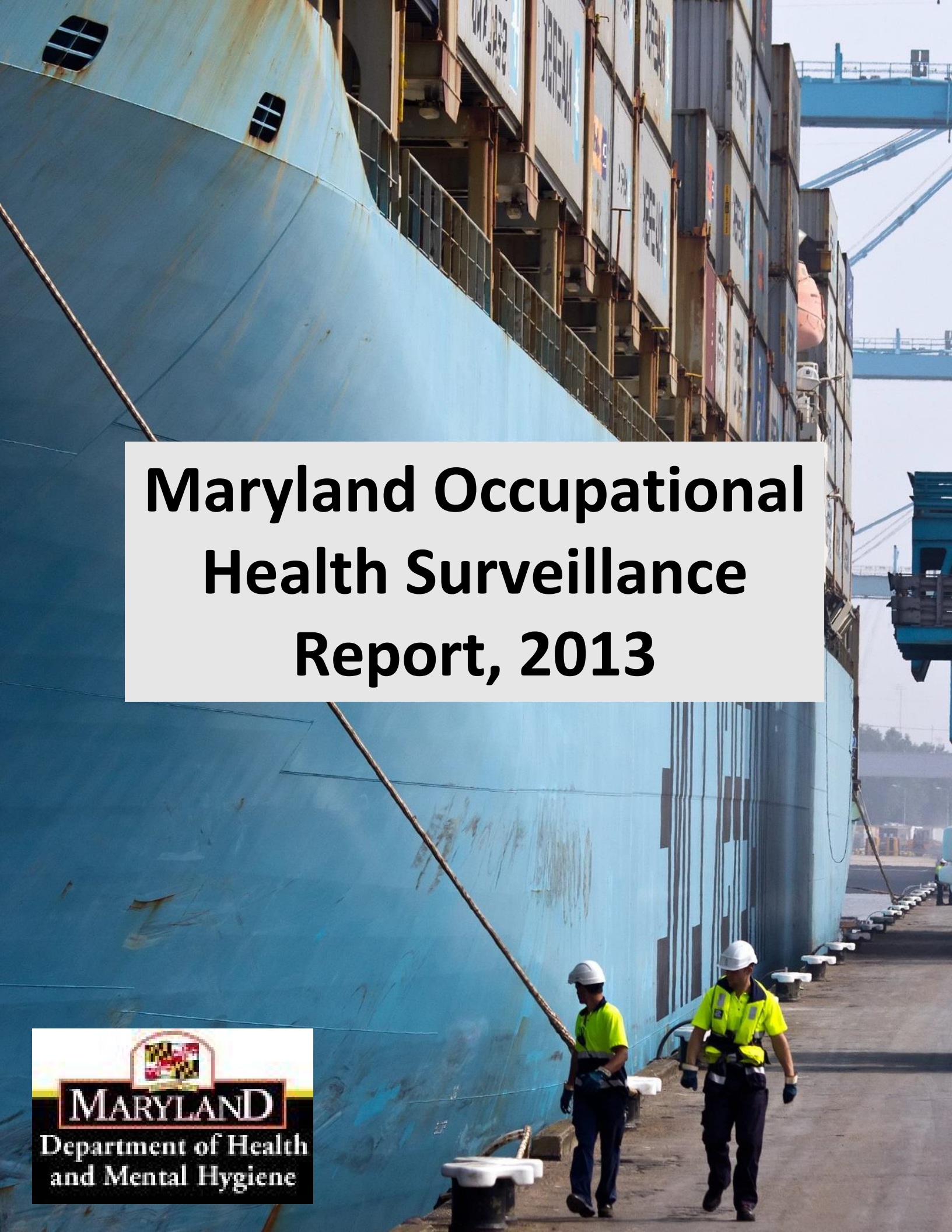


Figure B-4. Infographic on Occupational Lung Disease in Maryland.

Figure B-5. Infographic on Pesticide Poisoning in Maryland.

Appendix C

Occupational Health Indicators for Maryland, 2000 - 2013



Maryland Occupational Health Surveillance Report, 2013

MARYLAND
Department of Health and Mental Hygiene

Acknowledgements

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Environmental Health Helpline:

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Environmental Health email: dhmh.envhealth@maryland.gov

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Indicators not available in Maryland:

Indicator 5: Amputations identified in state workers' compensation systems

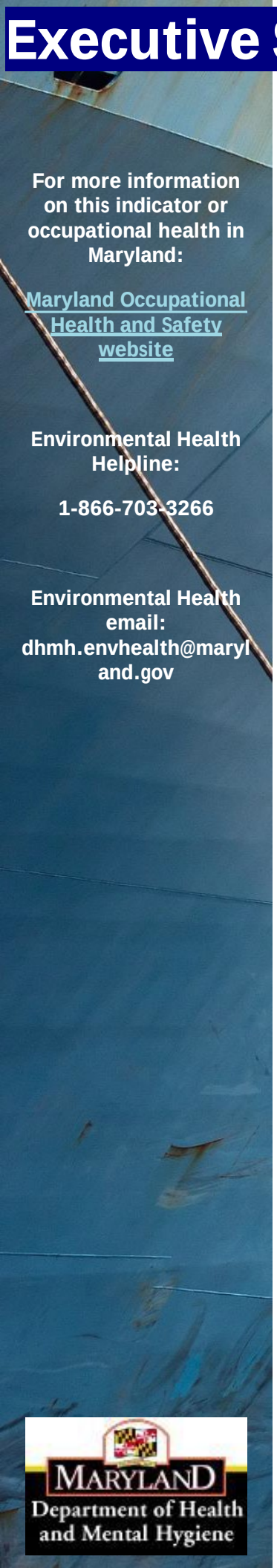
Indicator 8: Carpal tunnel syndrome cases identified in state workers' compensation systems

Indicator 13: Elevated blood lead levels among adults

Indicator 23: Influenza vaccination coverage among healthcare personnel (reporting will begin with 2014 data)

MARYLAND Department of Health and Mental Hygiene

Executive Summary



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About 3 million people work in Maryland, and in 2013 more than 3 of every 100 workers experienced a work-related injury or illness, including a total of 79 work-related fatalities.

The Council of State and Territorial Epidemiologists (CSTE), in association with the National Institute of Occupational Safety and Health (NIOSH), has recommended that states conduct surveillance for a set of 24 occupational health indicators. Occupational health indicators are measures of health (work-related disease or injury) or factors associated with health (workplace exposures, hazards, or interventions) that allow a state to compare its health or risk status with that of other states and evaluate trends over time. These data can help guide priorities for prevention and intervention efforts. The indicators that have been developed represent the consensus view of state and NIOSH representatives and are intended as advisory to the states.

The 24 occupational health indicators include:

- **16 Health effect indicators** (measures of injury or illness that indicate adverse effects from exposure to known or suspected occupational hazards),
- **1 Exposure indicator** (measures of markers in human tissue or fluid that identify the presence of a potentially harmful substance resulting from exposure in the workplace),
- **4 Hazard indicators** (measures of potential for worker exposure to health and safety hazards in the workplace),
- **2 Intervention indicators** (measures of intervention activities or intervention capacity to reduce workplace health and safety hazards), and
- **1 Socioeconomic impact indicator** (measure of the economic impact of work-related injuries and illnesses).

Maryland currently tracks 20 indicators. Tracking occupational health indicators allows Maryland to:

- Measure baseline health of worker populations;
- Identify trends and patterns of work-related injury, illness, and death;
- Identify problem areas that require attention;
- Reduce preventable workplace injuries; and
- Increase consistency and availability of occupational disease and injury surveillance data.

Maryland has also elected to conduct surveillance for one state-specific occupational health indicator (Work-related emergency department visits), and has expanded surveillance for some indicators to include sub-state data and breakdowns by race and ethnicity.

MARYLAND
Department of Health and Mental Hygiene

Employment demographics profile - civilian workforce

About this Indicator:

Why is this Indicator Important?

The workforce in the United States is more diverse than ever. Age, race, sex, ethnicity, and levels of employment in certain industries/occupations varies across states. These characteristics can impact rates of work-related injury and illness.

Limitation of Indicator:

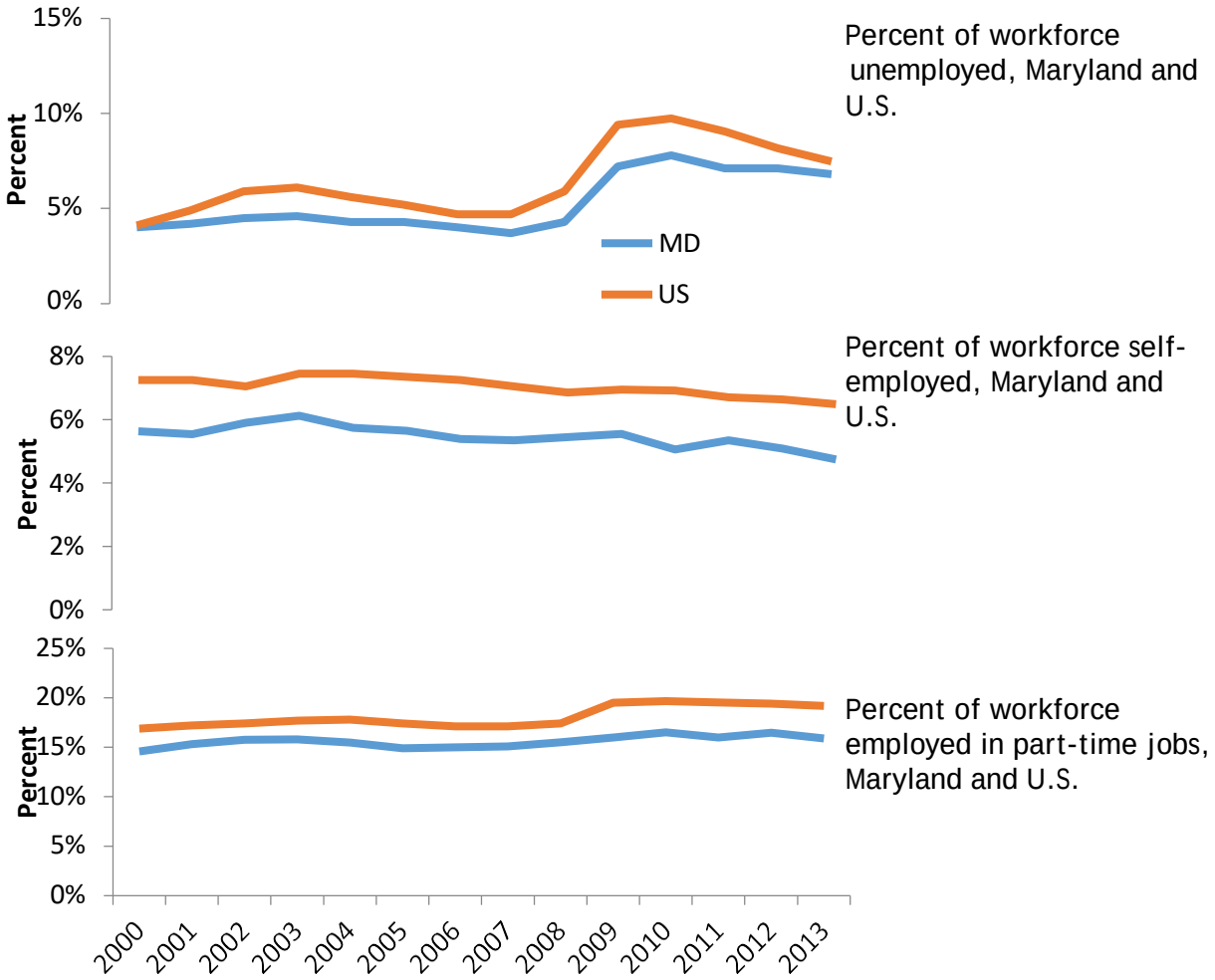
Variations occur regarding employer reporting compliance, accuracy and completeness, and employer utilization of restricted or light duty work for injured workers as a means of decreasing the number of days an injured worker is away from work. Employers may not be aware of work-related conditions for which employees obtained care. The industries for which data are available vary among states. It is not recommended to compare numbers between state or national data.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

MARYLAND Department of Health and Mental Hygiene

Maryland State Occupational Health Indicators

▶ Work-related injuries and illnesses are preventable, and control of occupational hazards is the most effective means of prevention. Estimating the burden and tracking these injuries can help target prevention programs and activities. Information on reported cases can be used to identify contributory factors and to develop improved or new prevention strategies or regulations to protect workers.



Percent of workforce unemployed, Maryland and U.S.

Percent of workforce self-employed, Maryland and U.S.

Percent of workforce employed in part-time jobs, Maryland and U.S.

Year	Total employed	Unemployed	Self-employed	Employed part-time*
2000	2,697,000	3.9%	5.7%	14.6%
2001	2,722,000	4.1%	5.6%	15.3%
2002	2,772,000	4.4%	6.0%	15.8%
2003	2,773,000	4.5%	6.2%	15.8%
2004	2,762,000	4.2%	5.8%	15.5%
2005	2,800,000	4.2%	5.7%	14.9%
2006	2,886,000	3.9%	5.4%	15.0%
2007	2,852,000	3.6%	5.4%	15.1%
2008	2,875,000	4.2%	5.5%	15.5%
2009	2,821,000	7.1%	5.6%	16.0%
2010	2,819,000	7.7%	5.1%	16.5%
2011	2,873,000	7.0%	5.4%	16.0%
2012	2,903,000	7.0%	5.1%	16.5%
2013	2,919,000	6.7%	4.8%	15.9%

* "Employed part-time" are individuals who work 1 to 34 hours per week. Employees are considered full-time if they work at least 35 hours per week.

Data Source for this Indicator: Bureau of Labor Statistics' Current Population Survey Geographic Profiles of Employment and Unemployment.

Employment demographics profile - hours, sex, race/ethnicity

About this Indicator:

Why is this Indicator Important?

The workforce in the United States is more diverse than ever. Age, race, sex, ethnicity, and levels of employment in certain industries/occupations varies across states. These characteristics can impact rates of work-related injury and illness.

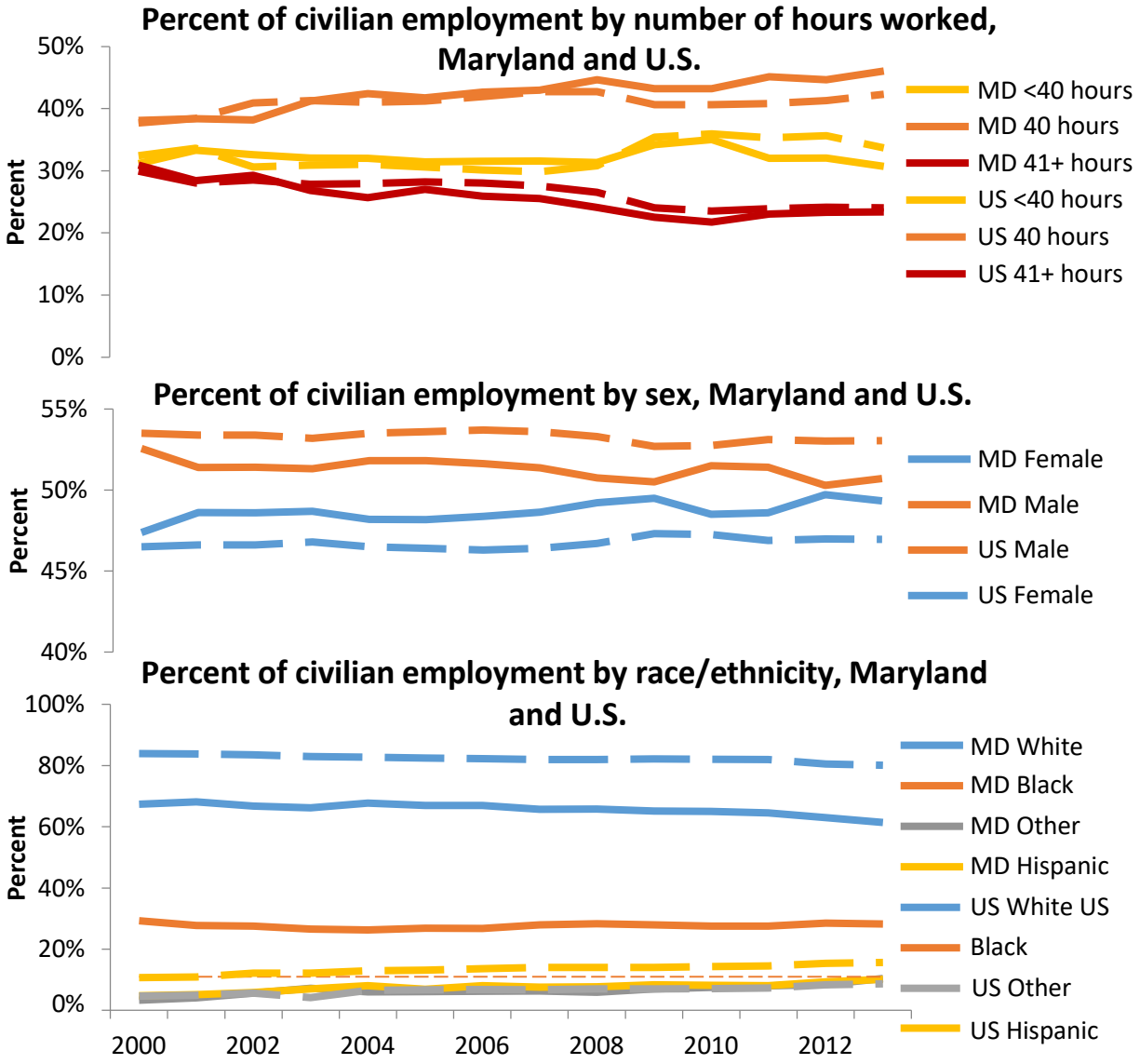
Limitation of Indicator:

Variations occur regarding employer reporting compliance, accuracy and completeness, and employer utilization of restricted or light duty work for injured workers as a means of decreasing the number of days an injured worker is away from work. Employers may not be aware of work-related conditions for which employees obtained care. The industries for which data are available vary among states. It is not recommended to compare numbers between state or national data.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Maryland Department of Health and Mental Hygiene

Maryland State Occupational Health Indicators



	Civilian hours worked per week			Civilian employment by sex		Civilian employment by age group			Civilian employment by race/ethnicity			
Year	<40 hours	40 hours	41+ hours	Male	Female	16 to 17	18 to 64	65+	White	Black	Other	Hispanic origin*
2000	31.1%	38.0%	30.9%	52.6%	47.4%	2.5%	94.4%	3.1%	67.4%	29.3%	3.3%	4.8%
2001	33.3%	38.4%	28.4%	51.4%	48.6%	2.1%	94.5%	3.5%	68.1%	27.8%	4.1%	5.2%
2002	32.6%	38.2%	29.3%	51.4%	48.6%	1.8%	94.4%	3.7%	66.8%	27.6%	5.6%	5.8%
2003	32.0%	41.2%	26.8%	51.3%	48.7%	1.8%	94.3%	3.9%	66.2%	26.5%	7.2%	7.0%
2004	32.0%	42.4%	25.7%	51.8%	48.2%	2.0%	94.4%	3.7%	67.7%	26.2%	6.0%	8.0%
2005	31.4%	41.7%	27.0%	51.8%	48.2%	1.6%	94.6%	3.8%	67.0%	26.9%	6.1%	6.9%
2006	31.5%	42.6%	25.9%	51.6%	48.4%	1.7%	94.3%	4.1%	67.0%	26.8%	6.2%	8.1%
2007	31.6%	43.0%	25.5%	51.4%	48.6%	1.5%	94.2%	4.3%	65.7%	27.9%	6.3%	7.6%
2008	31.3%	44.6%	24.1%	50.7%	49.2%	1.5%	94.2%	4.3%	65.8%	28.3%	5.9%	7.7%
2009	34.2%	43.2%	22.5%	50.5%	49.5%	1.3%	94.3%	4.4%	65.1%	27.9%	7.0%	8.4%
2010	35.0%	43.2%	21.7%	51.5%	48.5%	1.1%	94.0%	4.9%	65.0%	27.5%	7.5%	8.2%
2011	32.0%	45.1%	23.0%	51.4%	48.6%	1.0%	93.9%	5.2%	64.5%	27.5%	8.0%	8.1%
2012	32.0%	44.6%	23.3%	50.3%	49.7%	0.9%	93.4%	5.7%	63.0%	28.6%	8.4%	9.3%
2013	30.7%	46.0%	23.3%	50.7%	49.3%	0.7%	93.3%	6.0%	61.4%	28.2%	10.4%	10.1%

* Person's Identified as Hispanic may be of any race (white, black, other)

Data Source for this Indicator: Bureau of Labor Statistics' Current Population Survey Geographic Profiles of Employment and Unemployment.

Employment demographics profile – industry/occupation

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

The workforce in the United States is more diverse than ever. Age, race, sex, ethnicity, and levels of employment in certain industries/occupations varies across states. These characteristics can impact rates of work-related injury and illness.

Limitation of Indicator:

Variations occur regarding employer reporting compliance, accuracy and completeness, and employer utilization of restricted or light duty work for injured workers as a means of decreasing the number of days an injured worker is away from work. Employers may not be aware of work-related conditions for which employees obtained care. The industries for which data are available vary among states. It is not recommended to compare numbers between state or national data.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

MARYLAND Department of Health and Mental Hygiene

Percentage of civilian employment by industry*, Maryland

Industries	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Mining	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	<0.05
Construction	7.8	8.5	8.6	9.2	8.1	8.3	7.6	7.1	7.4	7.3	7.4
Manufacturing-Durable Goods	3.5	3.4	3.3	3.1	3.3	3.0	3.0	2.9	2.4	2.9	2.5
Manufacturing-Nondurable Goods	2.3	2.4	2.5	2.0	2.0	2.1	1.7	1.9	2.1	1.9	2.2
Trade-Wholesale and Retail	14.0	13.5	12.3	11.2	12.0	12.4	11.5	11.8	11.2	11.4	12.3
Transportation/ utilities	4.5	4.5	4.5	4.8	4.4	4.1	4.2	4.5	4.0	4.1	4.1
Information	3.2	2.7	2.7	2.7	2.2	2.4	2.4	2.2	2.4	2.3	2.2
Financial activities	7.1	6.7	7.0	7.6	7.3	7.2	6.9	7.1	6.6	6.3	6.1
Professional and business services	13.3	14.0	13.7	15.2	15.2	14.4	14.8	15.1	14.8	14.8	15.4
Education / health services	21.4	21.4	21.3	21.4	21.5	22.5	23.0	23.3	23.8	23.5	22.9
Leisure / hospitality	6.5	6.6	7.1	6.5	6.9	7.6	7.9	7.8	8.0	7.7	7.6
Other services	5.4	5.4	5.6	5.4	5.4	5.5	5.1	4.9	5.6	5.4	5.6
Public administration	10.5	10.6	10.7	10.3	10.9	9.9	11.2	10.5	10.7	11.6	11.1
Agriculture	0.6	0.4	0.6	0.6	0.6	0.7	0.5	0.8	1.0	0.8	0.5

* Industry list was updated for use from 2003 on.

Percentage of civilian employment by occupation,* Maryland

Occupations	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Management/business/financial operations	18.0	16.7	17.2	17.1	18.9	18.5	18.3	17.3	18.5	19.1	18.8
Professional/related	24.9	25.4	25.3	25.3	25.9	26.4	27.5	27.2	28.0	27.7	27.8
Service	15.1	15.6	15.7	15.5	15.0	15.7	16.4	16.7	17.1	16.4	16.4
Sales/related	10.3	11.1	10.1	9.3	9.4	9.8	9.5	9.7	9.4	9.0	9.6
Office/administrative support	14.0	13.2	13.9	14.0	13.5	12.4	12.6	13.3	11.9	12.3	12.2
Farming/fishing/forestry	0.3	0.3	0.4	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.3
Construction/extraction	5.7	6.2	6.2	6.9	5.9	5.6	5.3	5.2	5.0	4.7	4.9
Installation/maintenance/repair	2.8	2.9	3.1	3.5	3.5	3.5	2.9	3.3	2.8	2.9	2.9
Production	3.8	3.7	3.6	3.3	3.4	3.3	2.9	2.9	2.4	3.2	2.7
Transportation/material moving	4.9	4.9	4.6	4.9	4.4	4.6	4.4	4.1	4.5	4.3	4.4

* Occupations list was updated for use from 2003 on.

Data Source for this Indicator: Bureau of Labor Statistics' Current Population Survey Geographic Profiles of Employment and Unemployment.

Indicator #1: Non-fatal Work-related Injuries and Illnesses Reported by Employers

About this Indicator:

Why is this Indicator Important?

Estimating the burden and tracking these injuries can help target prevention programs and activities. This information can be used to identify contributory factors and to develop prevention strategies or regulations to protect workers.

Limitation of Indicator:

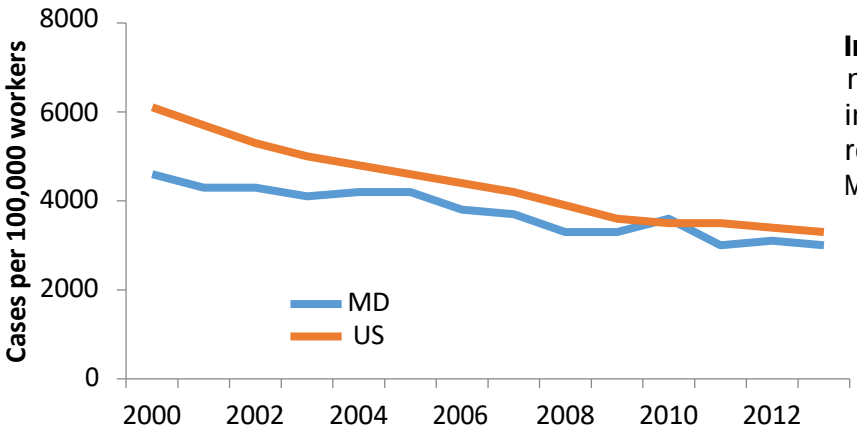
The Survey of Occupational Injuries and Illnesses is conducted by the Bureau of Labor Statistics using a probability sample and not a census of all employers. It is based on injury and illness data reported by employers and is subject to sampling error. Military, self-employed individuals, farms with fewer than 11 employees, and Federal agencies are excluded from the survey.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

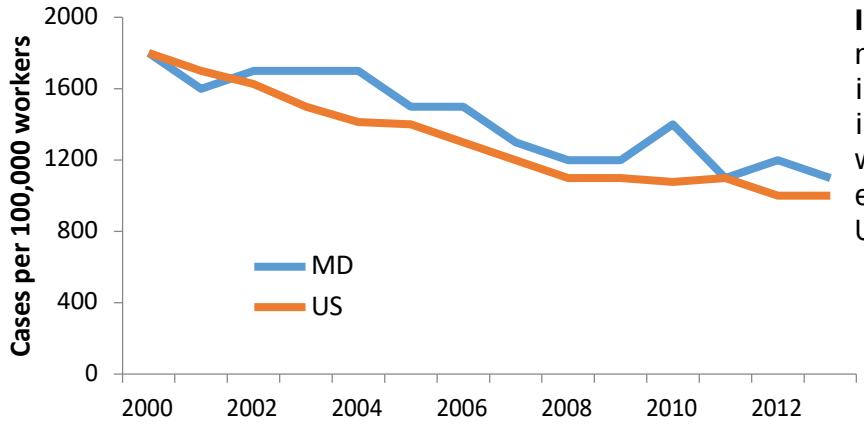
MARYLAND Department of Health and Mental Hygiene

Maryland State Occupational Health Indicators

▶ Work-related injuries usually result from a single event, such as a fall, while work-related illnesses, such as asthma or asbestosis occur as the result of a longer-term exposure to a hazardous chemical, physical hazard or repeated stress or strain at work. Work-related injuries and illnesses are preventable, and control of occupational hazards is the most effective means of prevention.



Indicator #1.1: Rate of non-fatal work-related injuries and illnesses reported by employers, Maryland and U.S.



Indicator #1.2: Rate of non-fatal work-related injuries and illnesses involving days away from work reported by employers, Maryland and U.S.

	1.1. All Cases of Work-Rel ated Injury and Illness		**1.2.** Work-Related Injury and Illness Cases Involving Days Away from Work		**1.3.** Work-Related Injury and Illness Cases Involving more than 10 Days Away from Work
Year	Number	Rate*	Number	Rate*	Number
2000	78,400	4,600	30,300	1,800	21,120
2001	73,600	4,300	27,000	1,600	-
2002	72,500	4,300	28,900	1,700	-
2003	68,600	4,100	28,000	1,700	11,190
2004	69,700	4,200	27,600	1,700	11,190
2005	72,700	4,200	26,400	1,500	9,410
2006	66,400	3,800	25,600	1,500	9,580
2007	65,700	3,700	23,800	1,300	9,190
2008	58,600	3,300	21,100	1,200	8,690
2009	56,700	3,300	20,500	1,200	8,430
2010	58,900	3,600	23,300	1,400	9,430
2011	48,700	3,000	18,200	1,100	7,380
2012	51,900	3,100	19,400	1,200	8,770
2013	51,500	3,000	19,400	1,100	8,790

* Rate per 100,000 full time workers

Data Source for this Indicator: Bureau of Labor Statistics' Annual Survey of Occupational Injuries and Illnesses.

Indicator #2: Work-Related Hospitalizations

About this Indicator:

Why is this Indicator Important?

Information on work-related injury and illness hospitalizations can be used to document the burden of occupational injuries and illnesses, to design, target, and evaluate the impact of prevention efforts over time, and identify settings in which workers may continue to be at high risk.

Limitation of Indicator:

Different factors may affect decisions by health care providers to hospitalize patients, to correctly diagnose work-related conditions, and/or to list the condition as a discharge diagnosis. All admissions are counted, including multiple admissions for a single individual. Because hospital discharge data is not available in all states, nationwide estimates are incomplete.

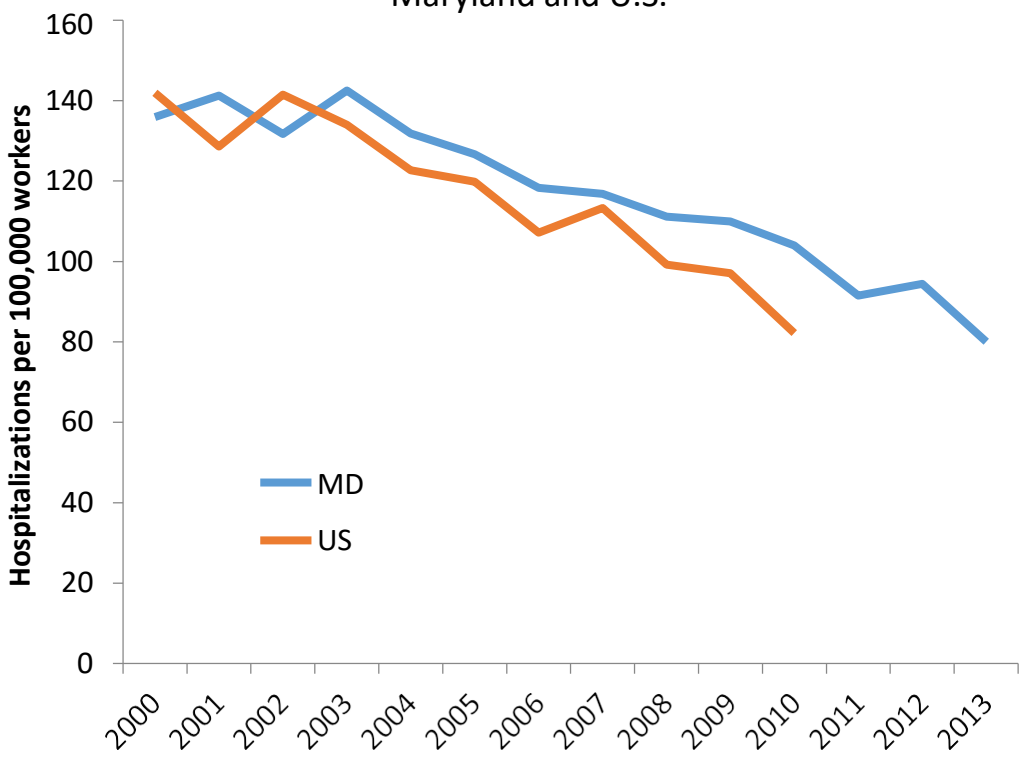
For more information on this indicator or occupational health in Maryland, visit the DHMH website.

MARYLAND Department of Health and Mental Hygiene

Maryland State Occupational Health Indicators

Individuals hospitalized for work-related injuries and illnesses have some of the most serious and costly adverse work-related health conditions. Tracking of these hospitalizations can be used to document the burden of occupational injuries and illnesses, to design, target, and evaluate the impact of prevention efforts over time, and to identify previously recognized settings in which workers may continue to be at high risk.

Indicator # 2: Rate of work-related hospitalizations, Maryland and U.S.



Indicator # 2: Work-related hospitalizations, Maryland

Year	Number	Rate*
2000	3,665	135.9
2001	3,844	141.2
2002	3,650	131.7
2003	3,952	142.5
2004	3,641	131.8
2005	3,547	126.7
2006	3,413	118.3
2007	3,354	116.8
2008	3,195	111.1
2009	3,102	110.0
2010	2,932	104.0
2011	2,629	91.5
2012	2,742	94.5
2013	2,336	80.0

* Rate per 100,000 workers

Data Source for this Indicator: Maryland Hospital Discharge Data (number of work-related hospitalizations); Bureau of Labor Statistics Current Population Survey (total number of employed persons). A condition was considered work-related if workers' compensation was listed as primary payer in the hospital discharge data.

Indicator #2: Work-Related Hospitalizations – Sub-State Data

About this Indicator:

Why is this Indicator Important?

Information on work-related injury and illness hospitalizations can be used to document the burden of occupational injuries and illnesses, to design, target, and evaluate the impact of prevention efforts over time, and identify settings in which workers may continue to be at high risk.

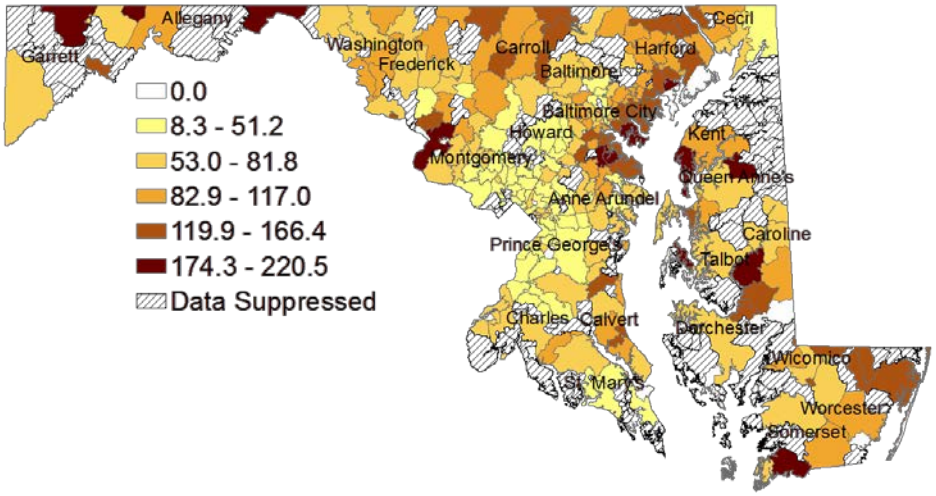
Limitation of Indicator:

Different factors may affect decisions by health care providers to hospitalize patients, to correctly diagnose work-related conditions, and/or to list the condition as a discharge diagnosis. All admissions are counted, including multiple admissions for a single individual. Because hospital discharge data is not available in all states, nationwide estimates are incomplete.

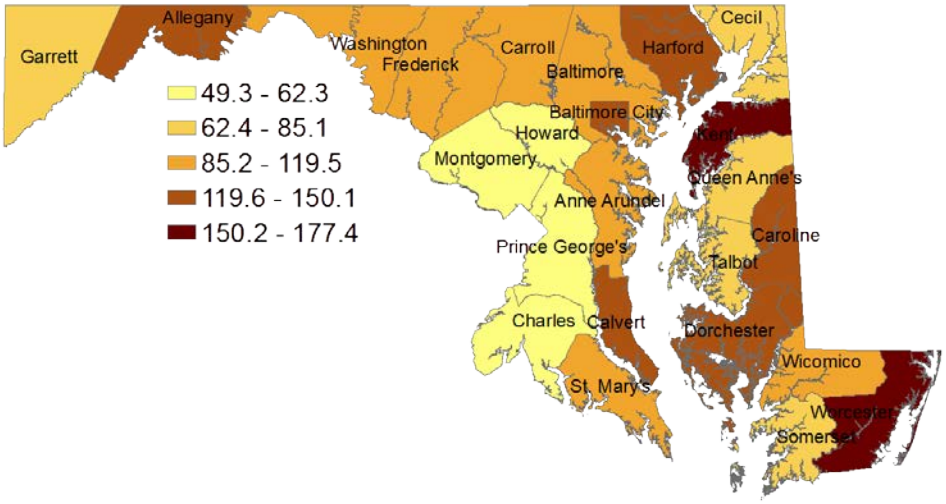
For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Maryland State Occupational Health Indicators

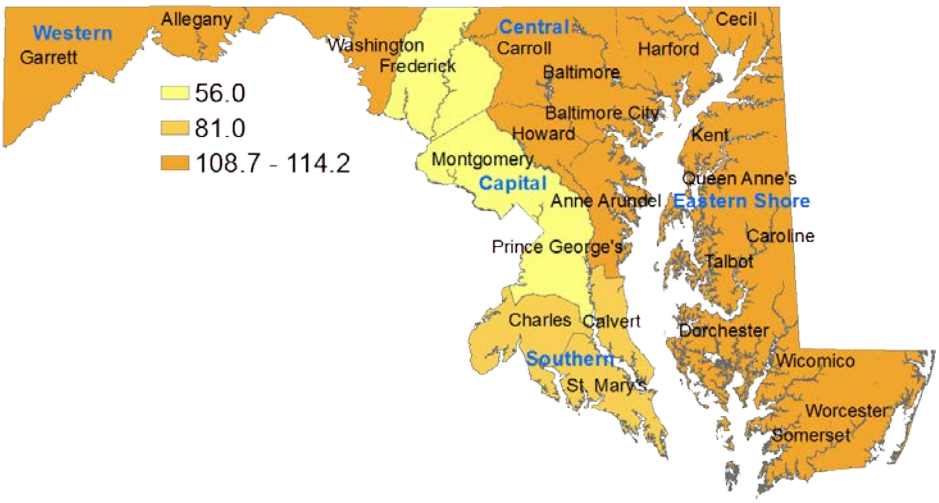
Indicator # 2: 2009-2013 Average annual crude rate of work-related hospitalizations by ZIP code per 100,000 employed persons



Indicator # 2: 2011-2013 Average annual crude rate of work-related hospitalizations by county per 100,000 employed persons



Indicator # 2: 2011-2013 Average annual crude rate of work-related hospitalizations by region per 100,000 employed persons



Data Source for this Indicator: Maryland Hospital Discharge Data (number of work-related hospitalizations). County and region level denominator: Bureau of Labor Statistics Current Population Survey (total number of employed persons). ZIP code level denominator: The Nielson Company. A condition was considered work-related if workers' compensation was listed as primary payer in the hospital discharge data.

MARYLAND Department of Health and Mental Hygiene

Indicator #2: Work-Related Hospitalizations – Race and Ethnicity Data

About this Indicator:

Why is this Indicator Important?

Information on work-related injury and illness hospitalizations can be used to document the burden of occupational injuries and illnesses, to design, target, and evaluate the impact of prevention efforts over time, and identify settings in which workers may continue to be at high risk.

Limitation of Indicator:

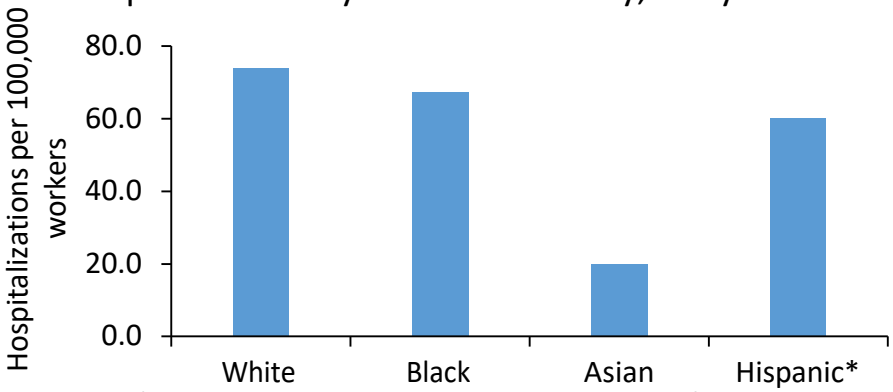
Different factors may affect decisions by health care providers to hospitalize patients, to correctly diagnose work-related conditions, and/or to list the condition as a discharge diagnosis. All admissions are counted, including multiple admissions for a single individual. Because hospital discharge data is not available in all states, nationwide estimates are incomplete.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

MARYLAND Department of Health and Mental Hygiene

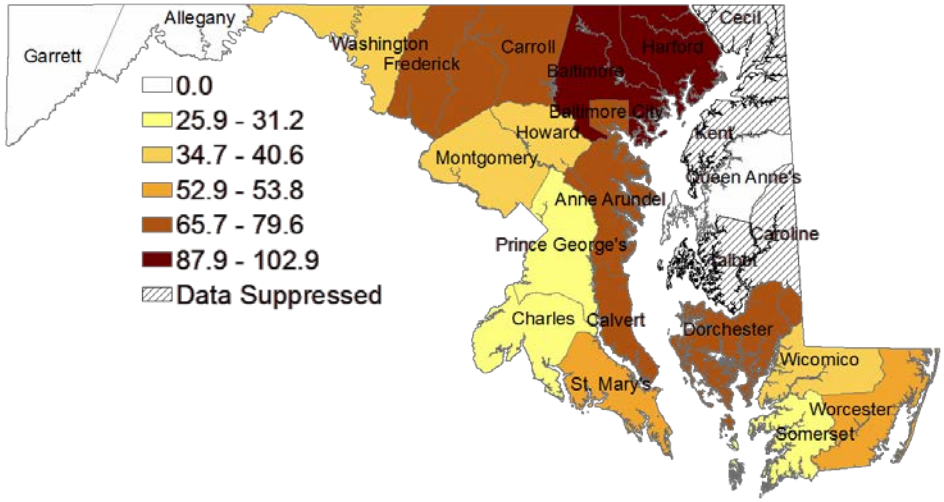
Maryland State Occupational Health Indicators

Indicator # 2: Rate of work-related hospitalizations by race and ethnicity, Maryland

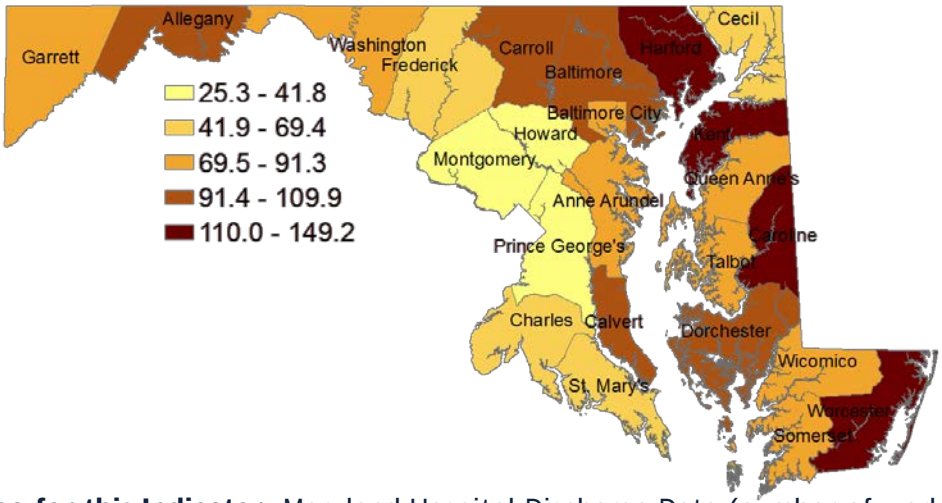


* Persons whose ethnicity is Hispanic may be of any race and, therefore, are classified by ethnicity as well as by race

Indicator # 2: 2009-2013 Average annual crude rate of work-related hospitalizations by county per 100,000 black employed persons



Indicator # 2: 2009-2013 Average annual crude rate of work-related hospitalizations by county per 100,000 white employed persons



Data Source for this Indicator: Maryland Hospital Discharge Data (number of work-related hospitalizations); denominator: Bureau of Labor Statistics Current Population Survey (total number of employed persons). A condition was considered work-related if workers' compensation was listed as primary payer in the hospital discharge data.

Indicator #3: Fatal Work-Related Injuries

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

Many factors contribute to work-related fatalities, including workplace/process design, organization, worker characteristics, economics and other social factors. Surveillance of work-related fatalities can identify hazards and clusters, leading to the development of interventions and new or revised regulations to protect workers.

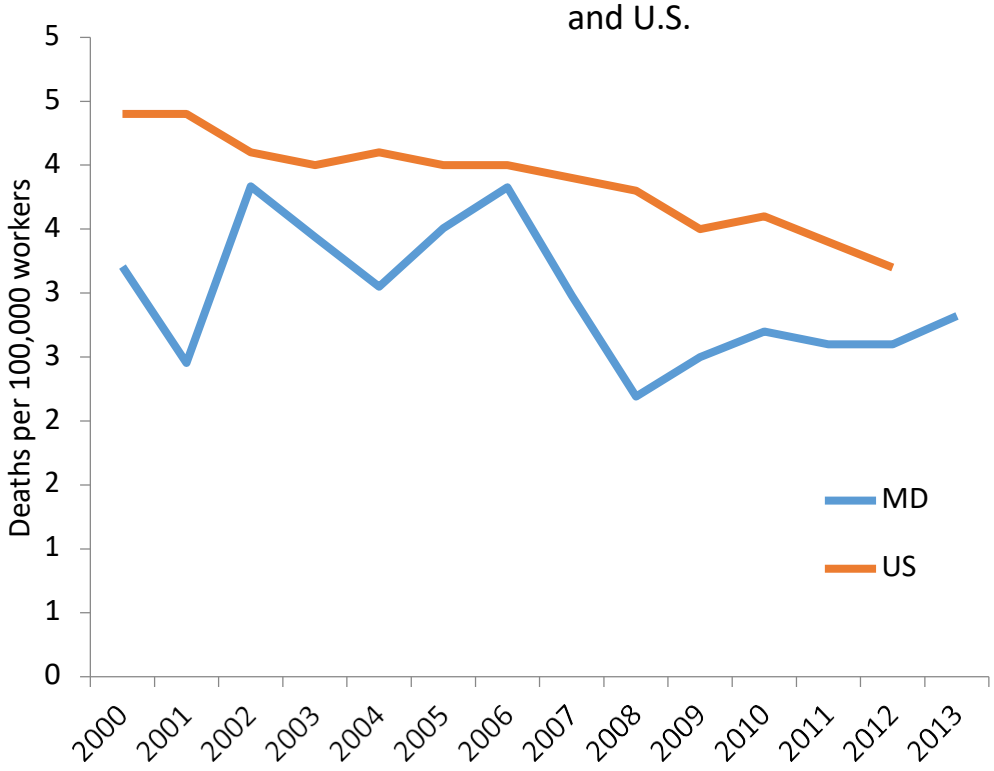
Limitation of Indicator:

Fatalities of people younger that 16 may be included in the numerator but not in the denominator, since employment statistics are only available for those 16 years of age and older. Also, CFOI reports data on work-related fatalities by the state in which the fatal incident occurred, which is not always the state of residence.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

A fatal work-related injury is an injury occurring at work that results in death. The Bureau of Labor Statistics conducts the Census of Fatal Occupational Injuries (CFOI), using multiple data sources to provide counts of all fatal work-related injuries in every state. Fatalities resulting from non-intentional injuries (i.e., falls, acute poisonings, and motor vehicle crashes that occurred during travel for work) and intentional injuries (i.e., homicides and suicides) that occurred at work are included in this measure. Fatalities that occur during a person's commute to or from work are not counted.

Indicator # 3: Rate of fatal work-related injuries, Maryland and U.S.



Indicator # 3: Fatal work-related injuries, Maryland

Year	Number	Rate*
2000	84	3.2
2001	64	2.5
2002	102	3.8
2003	92	3.4
2004	81	3.0
2005	95	3.5
2006	106	3.8
2007	82	3.0
2008	60	2.2
2009	65	2.5
2010	71	2.7
2011	71	2.6
2012	72	2.6
2013	79	2.8

* Annual crude fatality rate per 100,000 full-time workers age 16 years or older

Data Source for this Indicator: Census of Fatal Occupational Injuries (numbers of fatalities); Bureau of Labor Statistics Current Population Survey Data (employment statistics used to calculate rates).

Indicator #3: Fatal Work-Related Injuries – Race and Ethnicity Data

About this Indicator:

Why is this Indicator Important?

Many factors contribute to work-related fatalities, including workplace/process design, organization, worker characteristics, economics and other social factors. Surveillance of work-related fatalities can identify hazards and clusters, leading to the development of interventions and new or revised regulations to protect workers.

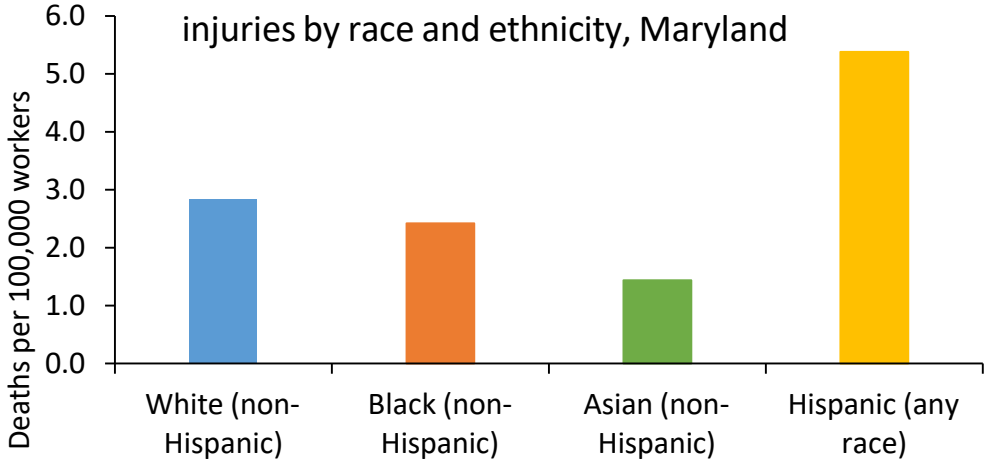
Limitation of Indicator:

Fatalities of people younger that 16 may be included in the numerator but not in the denominator, since employment statistics are only available for those 16 years of age and older. Also, CFOI reports data on work-related fatalities by the state in which the fatal incident occurred, which is not always the state of residence.

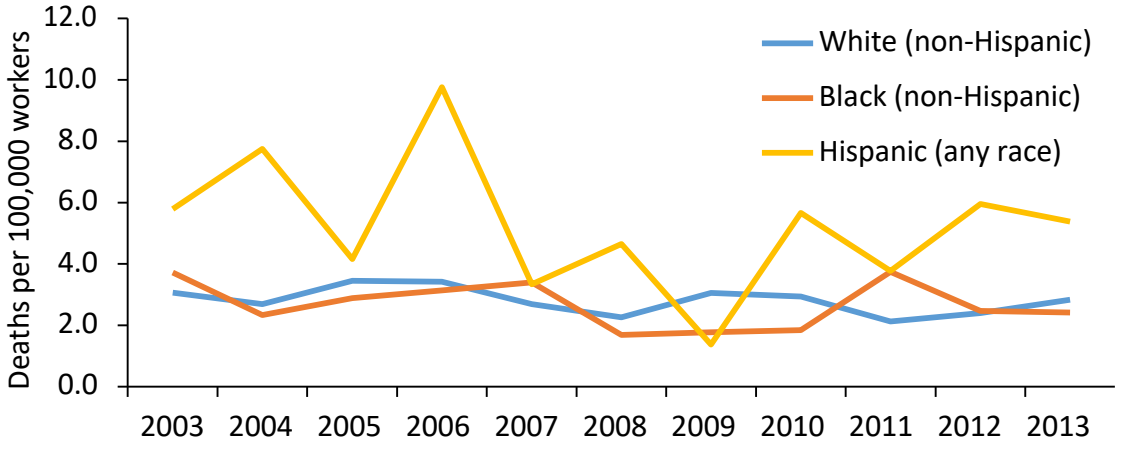
For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Maryland State Occupational Health Indicators

Indicator #3: 2013 Crude rate of fatal work-related injuries by race and ethnicity, Maryland



Indicator #3: 2003-2013 Crude rate of fatal work-related injuries by race and ethnicity, Maryland



Indicator # 3: Fatal work-related injuries by race and ethnicity, Maryland

	White (non-Hispanic)		Black (non-Hispanic)		Asian (non-Hispanic)		Hispanic (any race)	
Year	Number	Crude Rate*	Number	Crude Rate*	Number	Crude Rate*	Number	Crude Rate*
2003	1,600,351	3.1	698,359	3.7	150,823	3.3	189,914	5.8
2004	1,596,394	2.7	684,568	2.3	124,121	4.0	219,332	7.8
2005	1,623,865	3.4	726,358	2.9	135,327	6.7	192,411	4.2
2006	1,639,537	3.4	732,869	3.1	134,897	2.2	225,450	9.8
2007	1,601,044	2.7	764,974	3.4	141,425	4.2	209,666	3.3
2008	1,591,098	2.3	769,050	1.7	136,156	0.0	214,873	4.7
2009	1,505,511	3.1	733,803	1.8	146,300	2.1	218,296	1.4
2010	1,494,999	2.9	704,317	1.8	145,960	0.0	211,870	5.7
2011	1,549,143	2.1	721,838	3.7	178,120	1.7	211,766	3.8
2012	1,541,911	2.4	729,653	2.5	179,172	0.0	251,759	6.0
2013	1,517,149	2.8	743,481	2.4	208,185	1.4	278,665	5.4

* Annual Crude Fatality Rate per 100,000 FTEs, Age 16 Years or Older

Data Source for this Indicator: Census of Fatal Occupational Injuries (numbers of fatalities); Bureau of Labor Statistics Current Population Survey Data (employment statistics used to calculate rates).

Indicator #4: Amputations Reported by Employers

About this Indicator:

Why is this Indicator Important?

Work-related amputations are a preventable serious injury, and control of occupational hazards is the most effective means of prevention. Information on reported cases can be used to identify contributory factors and to develop improved or new prevention strategies or regulations to protect workers.

Limitation of Indicator:

The Survey of Occupational Injuries and Illnesses is conducted by the Bureau of Labor Statistics using a probability sample and not a census of all employers. It is based on injury and illness data reported by employers and is subject to sampling error. Military, self-employed individuals, farms with fewer than 11 employees, and Federal agencies are excluded from the survey.

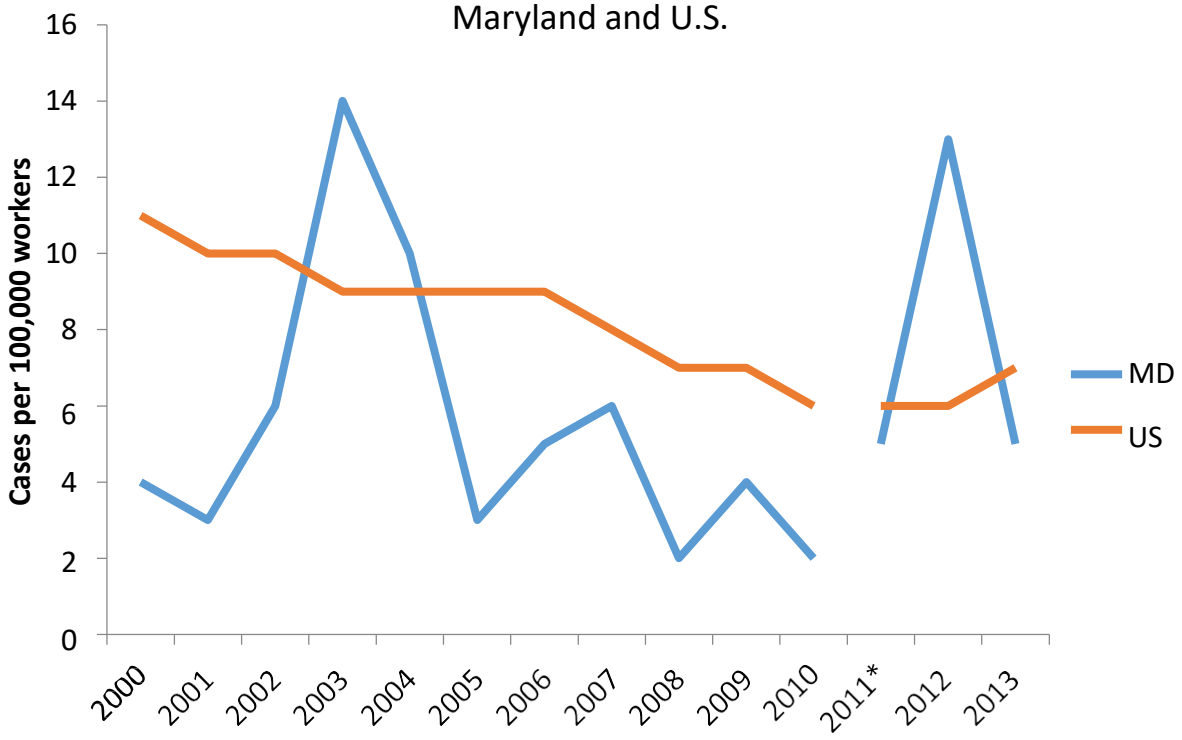
For more information on this indicator or occupational health in Maryland, visit the DHMH website.

MARYLAND Department of Health and Mental Hygiene

Maryland State Occupational Health Indicators

An amputation is defined as full or partial loss of a protruding body part – an arm, hand, finger, leg, foot, toe, ear, or nose. An amputation may greatly reduce a worker's job skills and earning potential as well as significantly affect general quality of life.

Indicator # 4: Rate of work-related amputations involving days away from work reported by private sector employers, Maryland and U.S.



Indicator # 4: Work-related amputations with days away from work reported by employers, Maryland

Year	Number	Rate**
2000	73	4
2001	58	3
2002	97	6
2003	230	14
2004	170	10
2005	60	3
2006	100	5
2007	110	6
2008	30	2
2009	70	4
2010	30	2
2011*	90	5
2012	210	13
2013	80	5

* Revised version of the Occupational Injuries and Illnesses Classification System (OIICS)

** Incidence Rate per 100,000 full-time workers

Data Source for this Indicator: Bureau of Labor Statistics' Annual Survey of Occupational Injuries and Illnesses.

Indicator #6: Hospitalizations for Work-Related Burns

About this Indicator:

Why is this Indicator Important?

Although hospitalized burns are unusual events, they are painful, disabling, and expensive to treat. Many result in significant disfigurement.

Limitation of Indicator:

These data include inpatient hospitalizations of individuals who were hospitalized in acute care hospitals. These data are based only on primary discharge diagnosis codes, and do not include individuals who were seen by an Emergency Department, but not admitted to the hospital. Hospital Discharge records are only available for non-federal, acute care hospitals.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Maryland State Occupational Health Indicators

Burns include injuries to tissues caused by contact with dry heat (fire), moist heat (steam), chemicals, electricity, friction, or radiation. Burns are among the most expensive work-related injuries to treat and can result in significant disability. Thermal and chemical burns are the most frequent types of work-related burn injury. A substantial proportion of burns occur in the service industry, especially in food service, often disproportionately affecting working adolescents.

Indicator # 6: Rate of hospitalizations for work-related burns, Maryland and U.S.

Indicator # 6: Hospitalizations for work-related burns, Maryland

Year	Number	Rate*
2000	17	0.6
2001	17	0.6
2002	40	1.4
2003	57	2.1
2004	52	1.9
2005	48	1.7
2006	74	2.6
2007	65	2.3
2008	55	1.9
2009	55	2.0
2010	44	1.6
2011	45	1.6
2012	43	1.5
2013	34	1.2

* Rate per 100,000 workers

Data Source for this Indicator: Maryland Hospital Discharge Data (number of work-related hospitalizations); Bureau of Labor Statistics Current Population Survey (total number of employed persons).

Indicator #6: Hospitalizations for Work-Related Burns – Sub-State Data

About this Indicator:

Why is this Indicator Important?

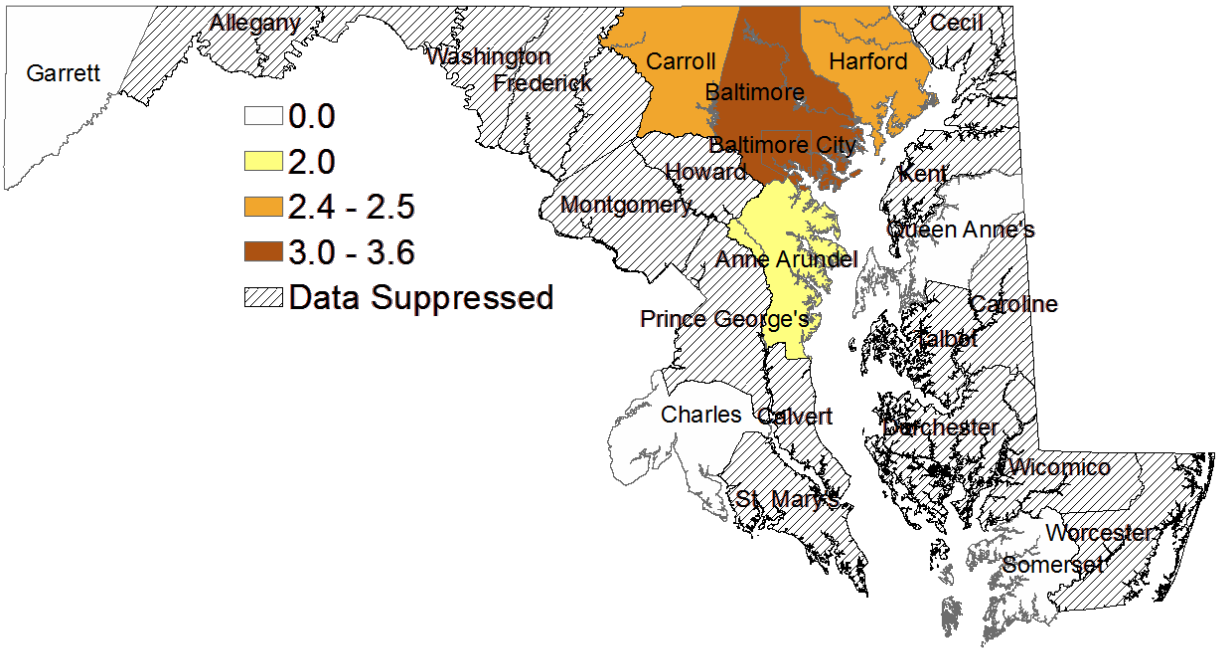
Although hospitalized burns are unusual events, they are painful, disabling, and expensive to treat. Many result in significant disfigurement.

Limitation of Indicator:

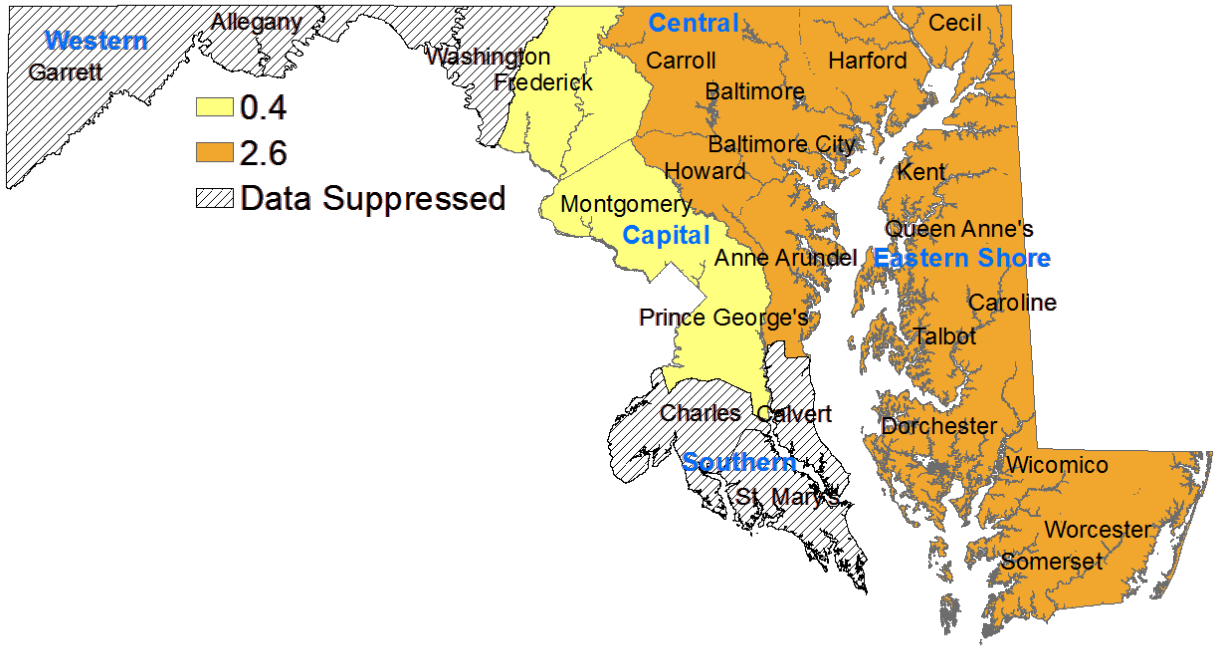
These data include inpatient hospitalizations of individuals who were hospitalized in acute care hospitals. These data are based only on primary discharge diagnosis codes, and do not include individuals who were seen by an Emergency Department, but not admitted to the hospital. Hospital Discharge records are only available for non-federal, acute care hospitals.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Indicator # 6: 2009-2013 Average annual crude rate of hospitalizations for work-related burns by county per 100,000 workers



Indicator # 6: 2009-2013 Average annual crude rate of hospitalizations for work-related burns by region per 100,000 workers



Data Source for this Indicator: Maryland Hospital Discharge Data (number of work-related hospitalizations); Bureau of Labor Statistics Current Population Survey (total number of employed persons).

Indicator #7: Musculoskeletal Disorders Reported by Employers

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

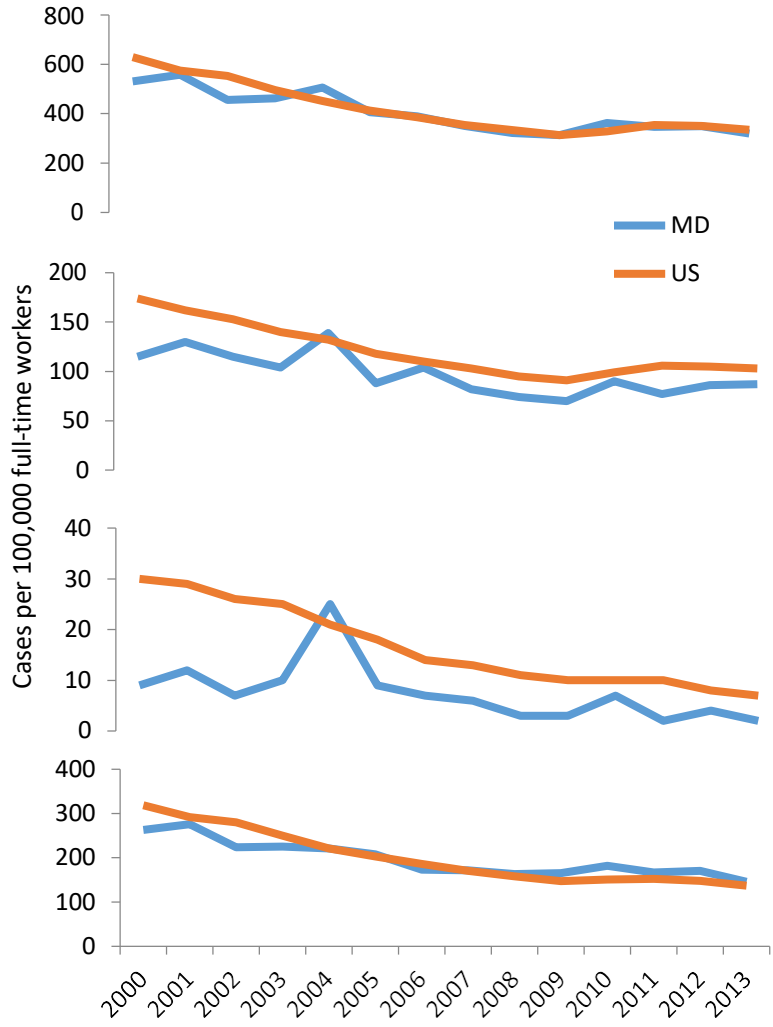
Work-related musculoskeletal disorders are preventable and control of occupational hazards is the most effective means of prevention. Estimating the burden and tracking these injuries helps target prevention programs and activities.

Limitation of Indicator:

The Survey of Occupational Injuries and Illnesses is conducted by the Bureau of Labor Statistics using a probability sample and not a census of all employers. It is based on injury and illness data reported by employers and is subject to sampling error. Military, self-employed individuals, farms with fewer than 11 employees, and Federal agencies are excluded from the survey.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Work-related musculoskeletal disorders (MSDs) are injuries or disorders of muscles, tendons, nerves, ligaments, joints, or spinal discs that are caused or aggravated by work activities. Workplace risk factors for MSDs include repetitive forceful motions, awkward postures, use of vibrating tools or equipment, and manual handling of heavy, awkward loads. These disorders also can be caused by single, traumatic events such as falls.



Indicator # 7.1: Rates of work-related musculoskeletal disorders involving days away from work reported by private sector employers, Maryland and U.S.

Indicator # 7.2: Rates of work-related disorders of the neck, shoulder, and upper extremities involving days away from work reported by private sector employers, Maryland and U.S.

Indicator # 7.3: Rates of work-related Carpal Tunnel Syndrome cases involving days away from work reported by private sector employers, Maryland and U.S.

Indicator # 7.4: Rates of work-related disorders of the back involving days away from work reported by private sector employers, Maryland and U.S.

Indicator # 7: Work-related musculoskeletal disorders with days away from work reported by employers, Maryland

Year	1.All Musculoskeletal Disorders		eck, er 3.Carpal Tunnel Syndrome Cases				4. Dis orders of the Back	
	Number	Rate*	Number	Rate*	Number	Rate*	ber	Rate*
2000	9,075	530	1,962	115	160	9	4,50	9
2001	9,053	558	2,201	130	199	12	4,69	9
2002	7,625	456	1,933	115	108	7	3,74	7
2003	7,740	462	1,750	104	160	10	3,76	0
2004	8,300	506	2,280	139	420	25	3,63	0
2005	7,020	406	1,520	88	150	9	3,59	0
2006	6,840	390	1,830	104	110	7	3,04	0
2007	6,240	351	1,440	82	100	6	3,05	0
2008	5,690	322	1,320	74	50	3	7,89	0
2009	5,370	313	1,210	70	50	3	2,83	0
2010	5,950	362	1,490	90	110	7	3,00	0
2011	5,650	347	1,250	77	30	2	2,72	0
2012	5,880	349	1,440	86	60	4	2,87	0
2013	5,430	319	1,480	87	30	2	2,49	0

* Rate per 100,000 full-time workers

Data Source for this Indicator: Bureau of Labor Statistics' Annual Survey of Occupational Injuries and Illnesses.

Indicator #9: Pneumoconiosis Hospitalizations

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

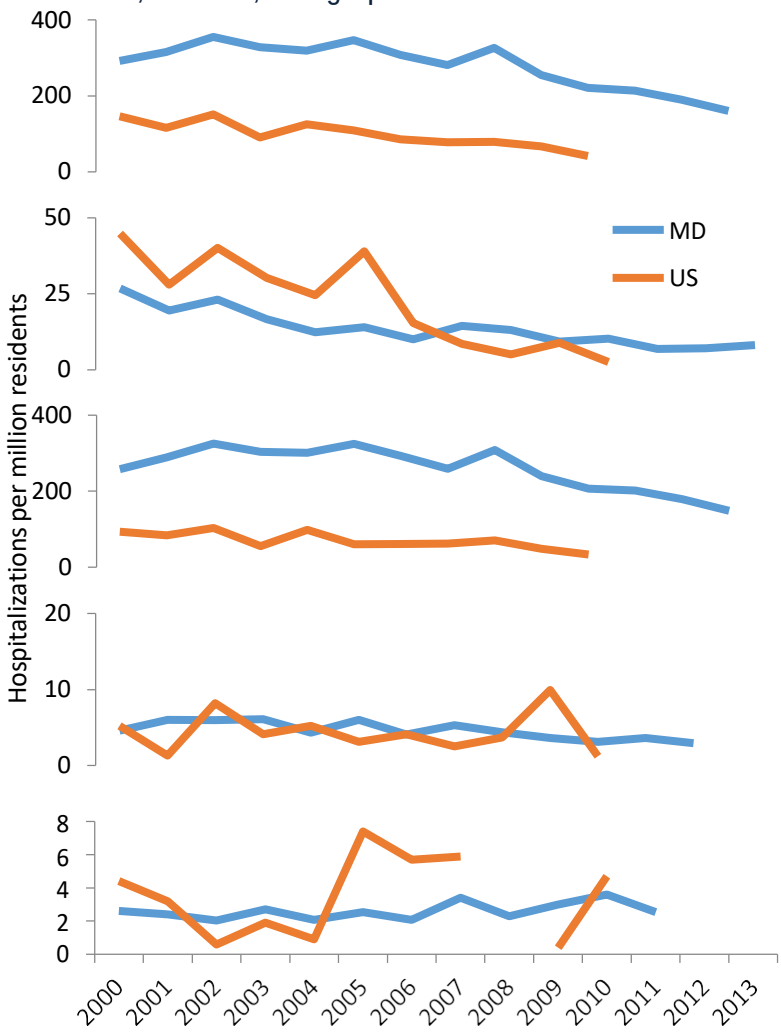
Tracking of pneumoconiosis is essential for measuring progress towards elimination of the disease, as well as for targeting prevention and disease management programs.

Limitation of Indicator:

These data are based on primary discharge diagnosis codes for patients admitted to a hospital, and do not include individuals who were seen by an Emergency Department, but not admitted. Hospital Discharge records are only available for non-federal, acute care hospitals.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Pneumoconiosis is a term for a class of non-malignant lung diseases caused by the inhalation of mineral dust, nearly always in occupational settings. Most cases of pneumoconiosis develop only after many years of cumulative exposure; thus they are usually diagnosed in older individuals, often long after the onset of exposure. Pneumoconiosis includes: silicosis, asbestosis, coal workers' pneumoconiosis (CWP), and, less commonly, pneumoconiosis due to a variety of other mineral dusts, including talc, aluminum, bauxite, and graphite.



Indicator #9.1: Age-standardized rate of hospitalizations from or with Pneumoconiosis, Maryland and U.S.

Indicator #9.2: Age-standardized rate of hospitalizations from or with Coal Workers' Pneumoconiosis, Maryland and U.S.

Indicator #9.3: Age-standardized rate of hospitalizations from or with Asbestosis, Maryland and U.S.

Indicator #9.4: Age-standardized rate of hospitalizations from or with Silicosis, Maryland and U.S.

Indicator #9.5: Age-standardized rate of hospitalizations from or with other or unspecified Pneumoconiosis, Maryland and U.S.

	1. Total Pneumoconiosis			2. Coal Workers' Pneumoconiosis			3. Asbestosis			4. Silicosis			5. Other and Unspecified Pneumoconiosis		
Year	Number	Rate*	Age-Adjusted Rate*	Number	Rate*	Age-Adjusted Rate*	Number	Rate*	Age-Adjusted Rate*	Number	Rate*	Age-Adjusted Rate*	Number	Rate*	Age-Adjusted Rate*
2000	1,114	266.9	291.6	101	24.2	26.8	988	236.7	258.2	17	4.1	4.6	10	2.4	2.6
2001	1,228	290.1	315.3	76	18.0	19.5	1,125	265.8	288.9	24	5.7	6.0	9	2.1	2.4
2002	1,413	329.1	355.2	92	21.4	23.1	1,292	300.9	325.5	25	5.8	6.0	9	2.1	2.0
2003	1,320	303.6	328.1	68	15.6	16.7	1,218	280.1	303.1	25	5.7	6.1	11	2.5	2.7
2004	1,307	297.3	319.1	51	11.6	12.4	1,233	280.5	301.3	18	4.1	4.3	9	2.0	2.1
2005	1,434	322.6	346.4	59	13.3	14.0	1,339	301.2	324.1	26	5.8	6.0	11	2.5	2.5
2006	1,295	288.8	308.3	43	9.6	10.0	1,228	273.8	292.8	18	4.0	4.1	9	2.0	2.1
2007	1,195	264.7	281.5	63	14.0	14.4	1,097	243.0	259.0	23	5.1	5.3	15	3.3	3.4
2008	1,415	311.4	326.3	59	13.0	13.1	1,334	293.5	308.2	19	4.2	4.4	10	2.2	2.3
2009	1,129	246.3	255.0	43	9.4	9.3	1,057	230.6	239.8	18	3.9	3.6	14	3.1	3.0
2010	1,016	217.3	221.2	47	10.1	10.3	946	202.4	206.3	15	3.2	3.1	13	2.8	3.6
2011	991	193.1	213.9	33	7.0	6.9	928	196.7	201.3	19	4.0	3.6	12	2.5	2.5
2012	908	190.2	190.2	34	7.1	7.1	852	178.5	178.9	15	3.1	2.9	**	**	**
2013	785	163.1	160.3	40	8.3	8.2	727	151.0	148.5	**	**	**	**	**	**

* Rate of hospitalizations per million residents

** HSCRC data counts <11 suppressed

Data Source for this Indicator: Maryland Hospital Discharge Data (number of work-related hospitalizations); U.S. Census Bureau (population statistics to calculate rates).

Indicator #9: Pneumoconiosis Hospitalizations – Race Data

About this Indicator:

Why is this Indicator Important?

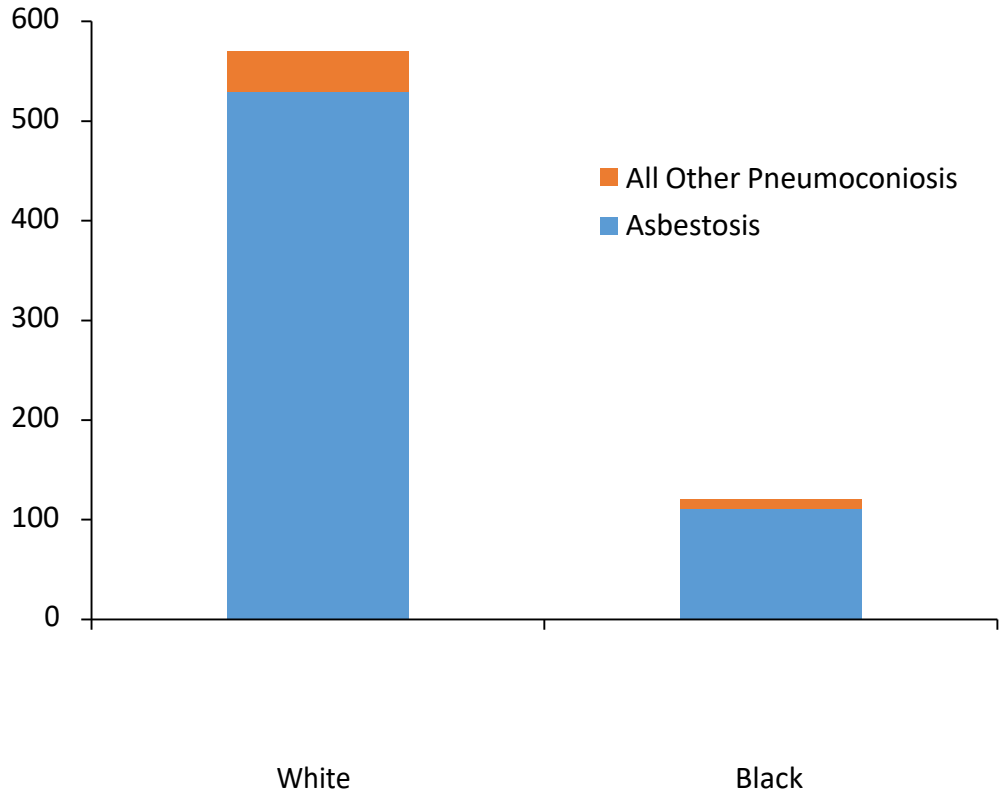
Tracking of pneumoconiosis is essential for measuring progress towards elimination of the disease, as well as for targeting prevention and disease management programs.

Limitation of Indicator:

These data are based on primary discharge diagnosis codes for patients admitted to a hospital, and do not include individuals who were seen by an Emergency Department, but not admitted. Hospital Discharge records are only available for non-federal, acute care hospitals.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Indicator # 9: 2013 number of hospitalizations from or with Pneumoconiosis by race, Maryland



Indicator # 9: 2013 hospitalizations from or with Pneumoconiosis by race, Maryland

	Total Pneumoconiosis				Asbestosis			
	White		Black		White		Black	
Year	Number	Crude Rate*	Number	Crude Rate*	Number	Crude Rate*	Number	Crude Rate*
2003	570	186.9	120	81.7	529	173.5	111	75.6

* Rate per million residents

Data Source for this Indicator: Maryland Hospital Discharge Data (number of work-related hospitalizations); U.S. Census Bureau (population statistics to calculate rates).

Indicator #10: Pneumoconiosis Mortality

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

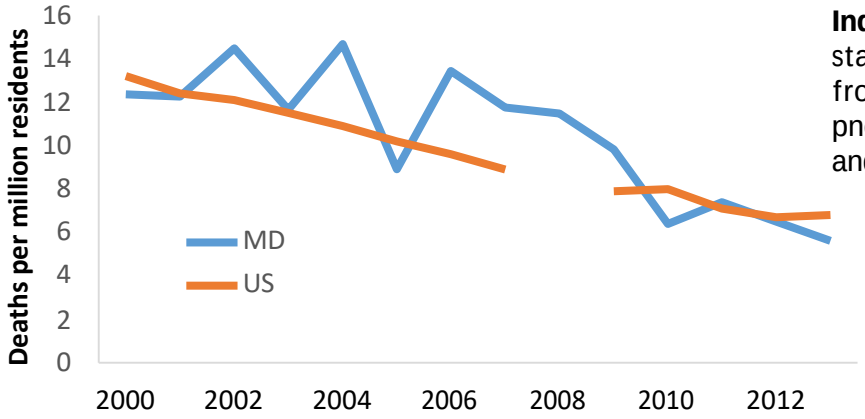
Tracking of pneumoconiosis is essential for tracking progress towards elimination of the disease, as well as for targeting prevention and disease management programs.

Limitation of Indicator:

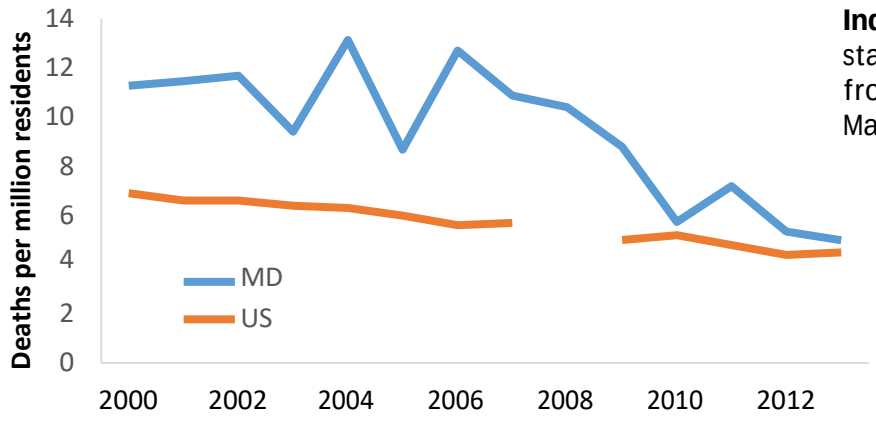
Because pneumoconioses are typically chronic diseases with a long latency, current incidence is not necessarily indicative of current exposures, and it may be several years before reductions in exposures affect mortality. In addition, people may not die in the state where they were exposed.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Pneumoconiosis is a term for a class of non-malignant lung diseases caused by the inhalation of mineral dust, nearly always in occupational settings. Most cases of pneumoconiosis develop only after many years of cumulative exposure; thus they are often diagnosed in older individuals, long after the onset of exposure. These diseases, which include silicosis and asbestosis, are incurable and may ultimately result in death.



Indicator #10.1: Age-standardized mortality rate from or with pneumoconiosis, Maryland and U.S.



Indicator #10.3: Age-standardized mortality rate from or with asbestosis, Maryland and U.S.

Indicator #10: Mortality from or with Pneumoconiosis, Maryland

	1. Total pneumoconiosis deaths			2. Coal workers' pneumoconiosis deaths			3. Asbestosis deaths			4. Silicosis deaths			5. Other and unspecified pneumoconiosis deaths		
Year	Number	Crude Rate*	Age-Adjusted Rate*	Number	Crude Rate*	Age-Adjusted Rate*	Number	Crude Rate*	Age-Adjusted Rate*	Number	Crude Rate*	Age-Adjusted Rate*	Number	Crude Rate*	Age-Adjusted Rate*
2000	46	11.0	12.4	<5	-	-	42	10.1	11.3	<5	-	-	<5	-	-
2001	46	10.9	12.3	<5	-	-	43	10.2	11.5	0	0.0	0.0	0	0.0	0.0
2002	56	13.0	14.5	<5	-	-	45	10.5	11.7	6	1.4	1.5	<5	-	-
2003	46	10.6	11.7	<5	-	-	37	8.5	9.4	<5	-	-	5	1.1	1.2
2004	59	13.4	14.7	<5	-	-	53	12.1	13.1	<5	-	-	<5	-	-
2005	36	8.1	8.9	0	0.0	0.0	35	7.9	8.7	<5	-	-	0	0.0	0.0
2006	55	12.3	13.4	<5	-	-	52	11.6	12.7	0	0.0	0.0	<5	-	-
2007	49	10.9	11.8	<5	-	-	45	10.0	10.9	0	0.0	0.0	<5	-	-
2008	49	10.8	11.5	<5	-	-	44	9.7	10.4	<5	-	-	<5	-	-
2009	45	9.8	9.8	<5	-	-	40	8.7	8.8	0	0.0	0.0	<5	-	-
2010	29	6.2	6.4	<5	-	-	26	5.6	5.7	0	0.0	0.0	<5	-	-
2011	33	7.0	7.4	0	0.0	0.0	32	6.8	7.2	0	0.0	0.0	<5	-	-
2012	31	6.5	6.5	<5	-	-	25	5.2	5.3	<5	-	-	<5	-	-
2013	27	5.6	5.6	<5	-	-	24	5.0	5.0	<5	-	-	0	0.0	0.0

* Deaths per million residents, rates not calculated for types with less than five deaths

U.S. Census Bureau (population statistics to calculate rates).

Data Source for this Indicator: Maryland Vital Statistics Records (number of deaths);

U.S. Census Bureau (population statistics to calculate rates).

Indicator #11: Acute Work-Related Pesticide Poisonings Reported to Poison Control Centers

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

Tracking pesticide poisoning data can be useful in targeting prevention efforts.

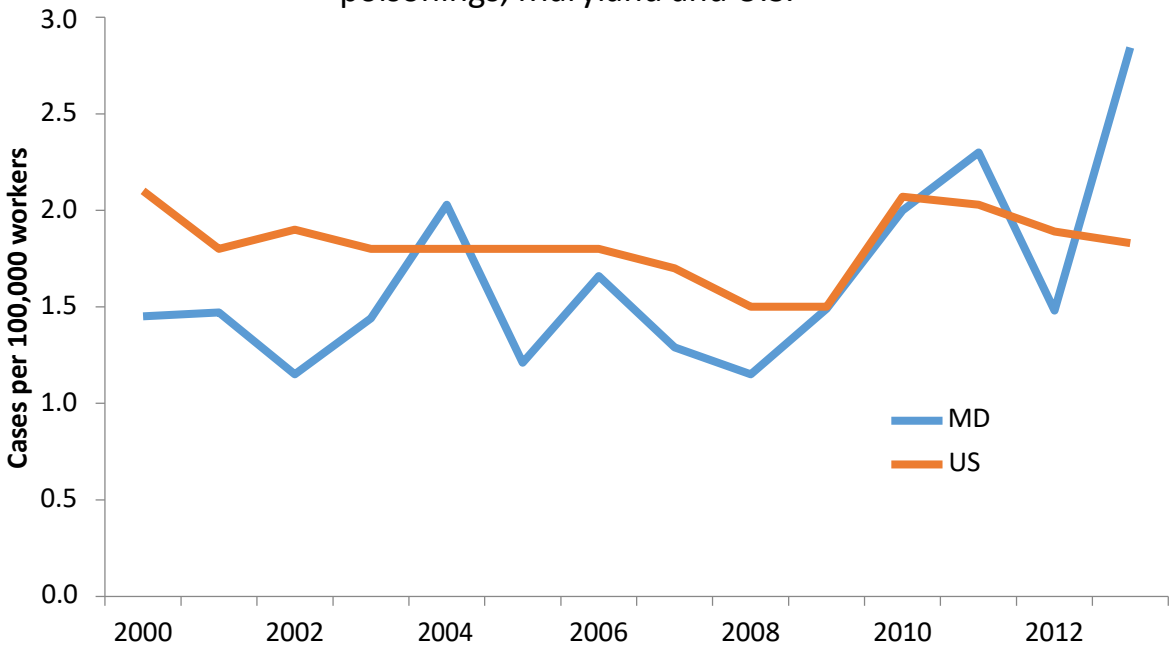
Limitation of Indicator:

Poison Control Centers (PCC) capture only a small proportion of acute occupational pesticide-related illness cases, an estimated 10%. PCCs do not systematically collect information on industry and occupation.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

A pesticide is a substance or mixture of substances used to prevent or control undesired insects, plants, animals, or fungi. Although the value of pesticides in protecting the food supply and controlling disease vectors is well recognized, it is also recognized that pesticides can cause harm to people and the environment. Adverse health effects from exposure vary depending on the amount and route of exposure and the type of chemical used. Agricultural workers and pesticide applicators are at greatest risk for the more severe pesticide poisonings.

Indicator # 11: Rate of work-related pesticide associated poisonings, Maryland and U.S.



Indicator # 11: Acute work-related pesticide associated illness and injury reported to Poison Control Centers, Maryland

Year	Number	Rate*
2000	39	1.5
2001	40	1.5
2002	32	1.2
2003	40	1.4
2004	56	2.0
2005	34	1.2
2006	48	1.7
2007	37	1.3
2008	33	1.2
2009	42	1.5
2010	57	2.0
2011	67	2.3
2012	43	1.5
2013	83	2.8

* Annual incidence rate per 100,000 employed persons age 16 years or older

Data Source for this Indicator: American Association of Poison Control Centers (Numbers of pesticide-associated illness and injury); Bureau of Labor Statistics Current Population Survey (total number of employed persons).

MARYLAND Department of Health and Mental Hygiene

Indicator #12: Acute Work-Related Pesticide Poisonings Reported to Poison Control Centers

About this Indicator:

Why is this Indicator Important?

Malignant mesothelioma, is a fatal cancer largely attributable to workplace exposure to asbestos. Tracking of malignant mesothelioma can be used to document the burden of the disease, design, target, and evaluate the impact of prevention efforts over time, and to identify previously unrecognized settings in which workers may continue to be at risk of asbestos exposure.

Limitation of Indicator:

Not all cases of mesothelioma are caused by occupational exposures. Because cancer is a disease of long latency, current incidence is not indicative of current exposures and it may be many years before reductions in exposures affect incidence.

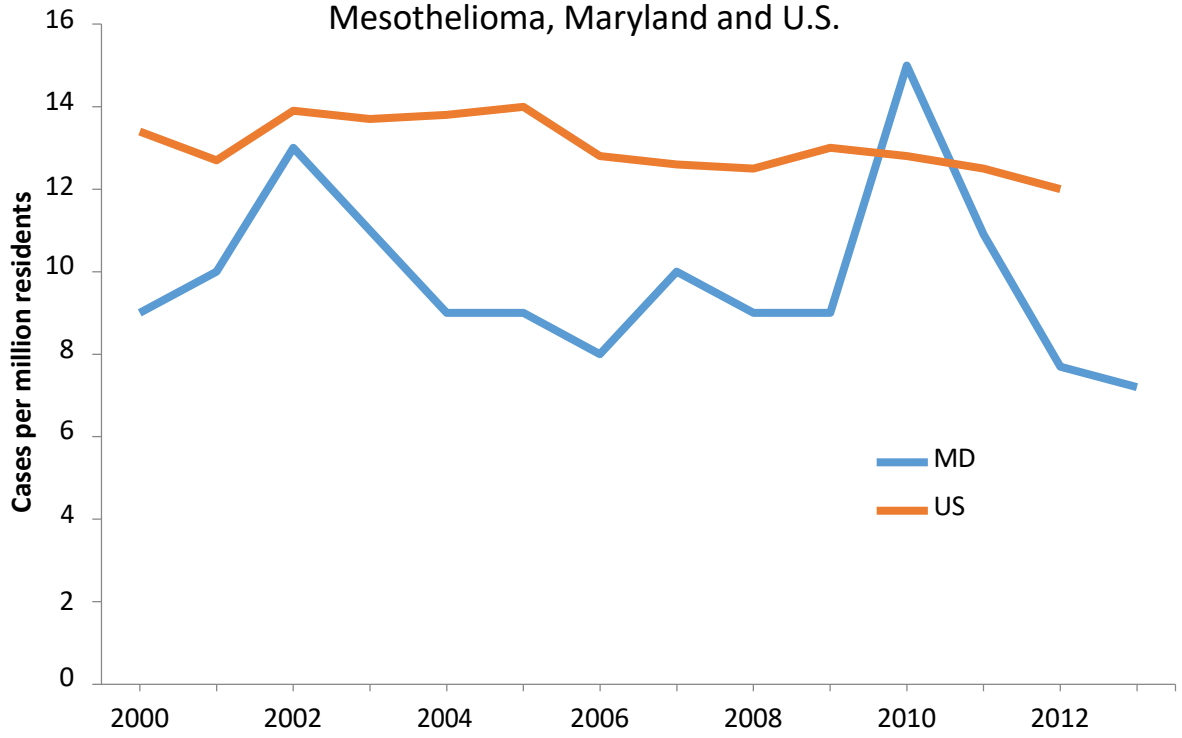
For more information on this indicator or occupational health in Maryland, visit the DHMH website.

MARYLAND Department of Health and Mental Hygiene

Maryland State Occupational Health Indicators

Malignant mesothelioma is a rare but highly fatal cancer of the thin membranes surrounding the chest cavity (pleura) or abdominal cavity (peritoneum). Much less frequently, this tumor affects other sites (e.g., pericardium). The only well-established risk factor for mesothelioma is exposure to asbestos fibers. Prior asbestos exposure, primarily from exposure in the workplace, has been reported in 62 to 85 percent of all mesothelioma cases.

Indicator # 12: Age-standardized incidence rate of Malignant Mesothelioma, Maryland and U.S.



Indicator # 12: Cases of Malignant Mesothelioma, Maryland

Year	Number	Incidence Rate*	Age-standardized Incidence Rate*
2000	47	11.3	9.0
2001	51	12.0	10.0
2002	64	14.9	13.0
2003	57	13.1	11.0
2004	48	10.9	9.0
2005	46	10.3	9.0
2006	44	9.8	8.0
2007	57	12.6	10.0
2008	50	11.0	9.0
2009	42	10.1	9.0
2010	70	15.0	15.0
2011	65	13.8	10.9
2012	46	9.6	7.7
2013	45	9.3	7.2

* Cases per million residents

Data Source for this Indicator: SEER Stat Static data (Numbers of mesothelioma cases); U.S. Census Bureau (population statistics to calculate rates).

Indicator #14: Workers Employed in Industries with High Risk for Occupational Morbidity

About this Indicator:

Why is this Indicator Important?

Work-related injuries and illnesses are preventable, and control of occupational hazards is the most effective means of prevention. Concentrating on high-risk industries for non-fatal injuries and illnesses helps prioritize limited resources.

Limitation of Indicator:

It is possible that some new employers are not counted in the County Business Patterns mid-March survey. In addition, differences in regional industrial practices may cause the ranking of high-risk industries within a specific State to differ from those identified from national data.

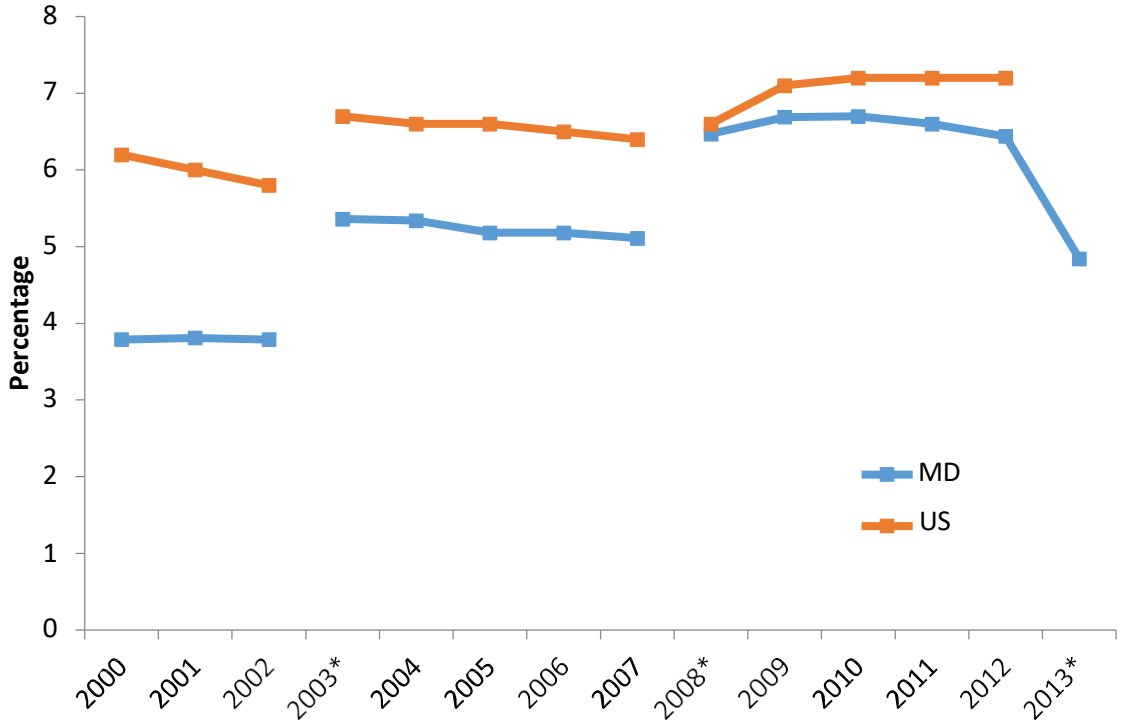
For more information on this indicator or occupational health in Maryland, visit the DHMH website.

MARYLAND Department of Health and Mental Hygiene

Maryland State Occupational Health Indicators

▶ Workers in certain industries sustain non-fatal injuries and illnesses at much higher rates than the overall workforce. The proportion of the workforce that is employed in these high-risk industries varies by state. This variation can help explain differences in injury and illness rates among states.

Indicator #14: Percentage of workers in industries with high risk for occupational morbidity, Maryland and U.S.



* List of High Risk Industries Updated in Guidelines

Indicator #14: Workers in industries at high risk for occupational morbidity, Maryland

Year	Number	Percentage
2000	77,907	3.8
2001	79,641	3.8
2002	78,244	3.8
2003*	111,995	5.4
2004	114,887	5.3
2005	112,306	5.2
2006	115,668	5.2
2007	114,358	5.1
2008*	144,551	6.5
2009	141,903	6.7
2010	139,937	6.7
2011	139,245	6.6
2012	138,622	6.4
2013*	105,641	4.8

* List of High Risk Industries Updated in Guidelines

Data Source for this Indicator: Census Bureau County Business Patterns.

Indicator #14: Workers Employed in Industries with High Risk for Occupational Morbidity – Sub-State Data

About this Indicator:

Why is this Indicator Important?

Work-related injuries and illnesses are preventable, and control of occupational hazards is the most effective means of prevention. Concentrating on high-risk industries for non-fatal injuries and illnesses helps prioritize limited resources.

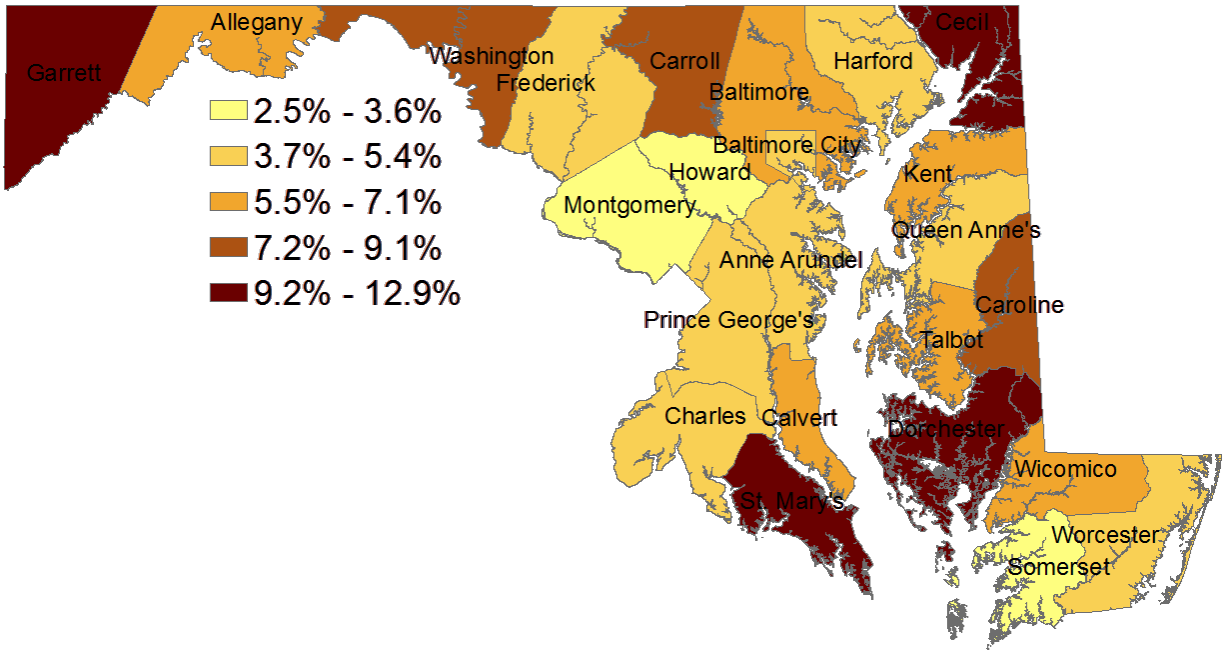
Limitation of Indicator:

It is possible that some new employers are not counted in the County Business Patterns mid-March survey. In addition, differences in regional industrial practices may cause the ranking of high-risk industries within a specific State to differ from those identified from national data.

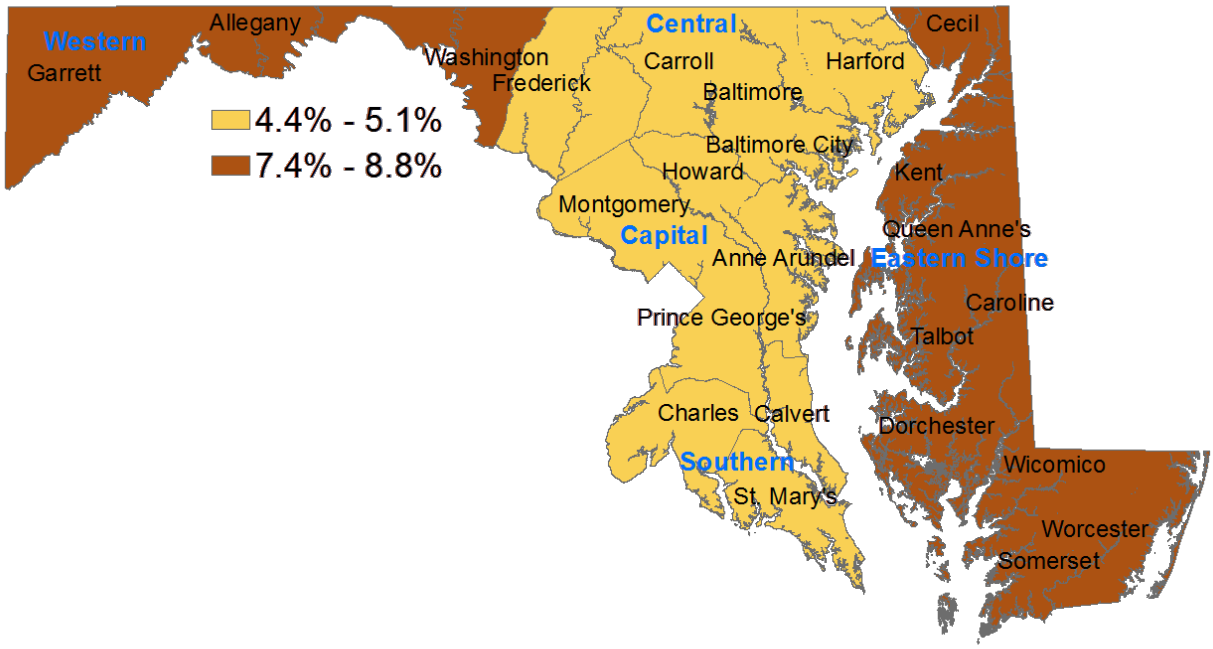
For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Maryland State Occupational Health Indicators

Indicator # 14: 2013 Percentage of workers in industries with high risk for occupational morbidity by county



Indicator # 14: 2013 Percentage of workers in industries with high risk for occupational morbidity by region



Data Source for this Indicator: Census Bureau County Business Patterns.

Indicator #15: Workers Employed in Occupations with High Risk for Occupational Morbidity

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

Work-related injuries and illnesses are preventable, and control of occupational hazards is the most effective means of prevention. Concentrating on high-risk occupations for non-fatal injuries and illnesses helps prioritize limited resources.

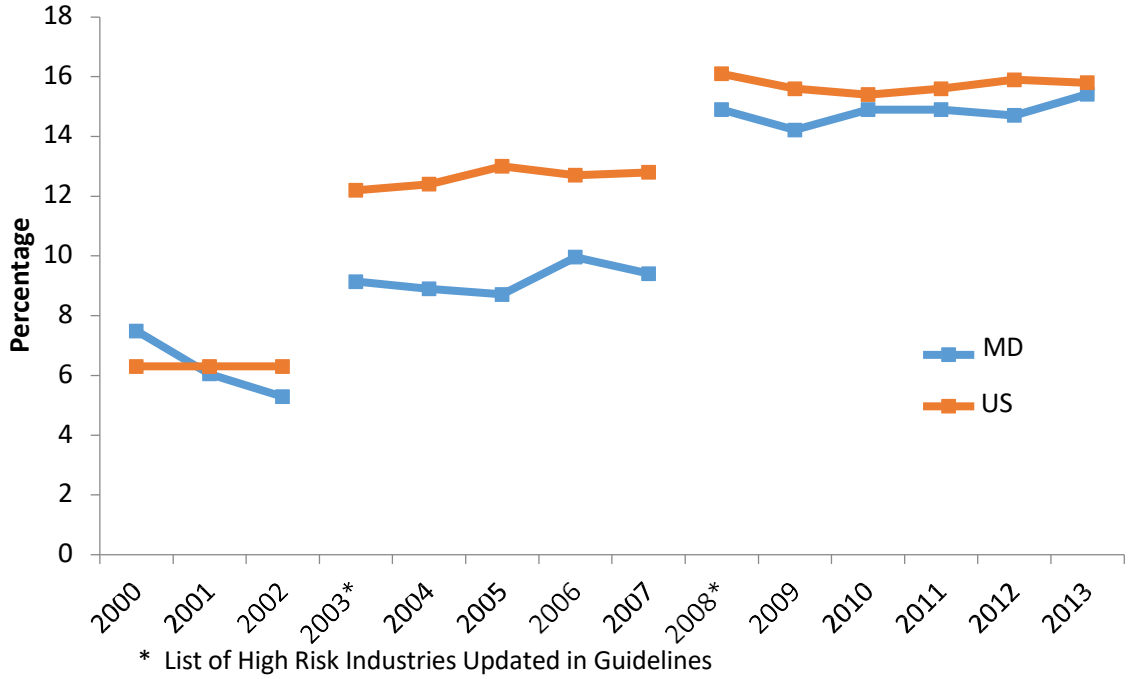
Limitation of Indicator:

Differences in regional industrial practices may cause the ranking of high-risk occupations within a specific state or industry to differ from those identified from national data.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Workers in certain occupations sustain non-fatal injuries and illnesses at much higher rates than the overall workforce. The proportion of the workforce that is employed in these high-risk occupations varies by state. This variation can help explain differences in injury and illness rates among states.

Indicator # 15: Percentage of workers in occupations with high risk of occupational morbidity, Maryland and U.S.



* List of High Risk Industries Updated in Guidelines

Indicator # 15: Percentage of workers in occupations at high risk for occupational morbidity, Maryland

Year	Number	Percentage
2000	228,906	7.5
2001	204,523	6.1
2002	145,725	5.3
2003*	252,956	9.1
2004	246,527	8.9
2005	244,934	8.7
2006	287,293	10.0
2007	270,002	9.4
2008*	292,328	14.9
2009	268,627	14.2
2010	292,295	14.9
2011	291,925	14.9
2012	293,357	14.7
2013	308,205	15.4

* List of High Risk Occupations Updated in Guidelines

Data Source for this Indicator: Bureau of Labor Statistics Current Population Survey.

Indicator #16: Workers Employed in Industries and Occupations with High Risk for Occupational Mortality

About this Indicator:

Why is this Indicator Important?

Surveillance of work-related fatalities can identify new hazards and case clusters, leading to the development of new interventions and development of new or revised regulations to protect workers. Concentrating on high-risk occupations and industries for fatalities helps prioritize limited resources.

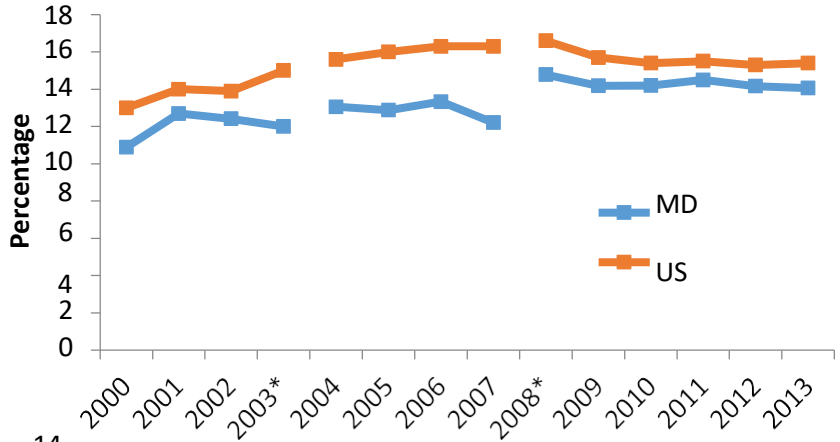
Limitation of Indicator:

Differences in regional industrial practices may cause the ranking of high-risk occupations and industries within a specific State to differ from those identified from national data.

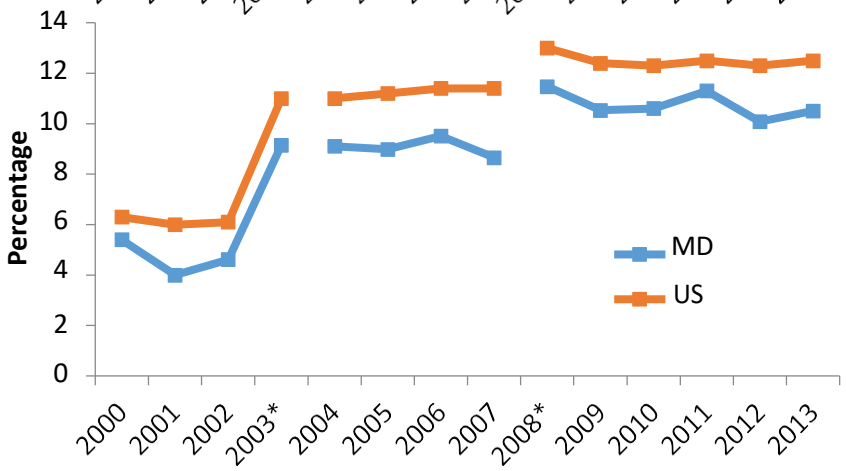
For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Maryland State Occupational Health Indicators

Multiple factors and risks contribute to work-related fatalities, including workplace and process design, work organization, worker characteristics, economics and other social factors. Workers in certain industries and occupations sustain fatal injuries at much higher rates than the overall workforce. The proportion of the workforce that is employed in these high-risk industries and occupations varies by state. This variation can help explain differences in injury mortality rates among states.



Indicator #16.1: Percentage of workers employed in industries with high risk for occupational mortality, Maryland and U.S.



Indicator #16.2: Percentage of workers employed in occupations with high risk for occupational mortality, Maryland and U.S.

* List of High Risk Industries Updated in Guidelines

Indicator # 16: Percentage of workers employed in industries and occupations at high risk for occupational mortality, Maryland

	1. Industries		2. Occupations	
Year	Number	Percentage	Number	Percentage
2000	332,573	10.9	165,104	5.4
2001	429,229	12.7	135,357	4.0
2002	342,263	12.4	127,263	4.6
2003*	332,181	12.0	253,335	9.2
2004	361,682	13.1	252,201	9.1
2005	362,092	12.9	252,580	9.0
2006	384,467	13.3	274,269	9.5
2007	350,495	12.2	248,518	8.7
2008*	331,222	14.8	257,145	11.5
2009	306,088	14.2	227,360	10.5
2010	314,269	14.2	235,024	10.6
2011	322,878	14.5	251,296	11.3
2012	318,659	14.2	226,828	10.1
2013	318,802	14.1	238,299	10.5

* Lists of High Risk Industries and Occupations Updated in Guidelines

Data Source for this Indicator: Bureau of Labor Statistics Current Population Survey.

Indicator #17: Occupational Safety and Health Professionals

About this Indicator:

Why is this Indicator Important?

Work-related injuries and illnesses are preventable. It is

if there are sufficient trained personnel to implement occupational health preventive services.

Limitation of Indicator:

Other important occupational health specialties such as fire prevention, health physicists, and ergonomists are not included.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Maryland State Occupational Health Indicators

This occupational health indicator provides information about occupational safety and health professionals who are board-certified occupational medicine physicians, members of the American College of Occupational and Environmental Medicine (ACOEM), board-certified occupational health nurses, members of the American Association of Occupational Health Nurses (AAOHN), board-certified industrial hygienists, members of

and members of the American Society of Safety Engineers (ASSE).

Indicator # 17: Occupational safety and health professionals, Maryland

Year	American Board of Preventive Medicine (ABPM)		American College of Occupational and Environmental Medicine (ACOEM)		American Board of Occupational Health Nurses (ABOHN)		American Association of Occupational Health Nurses (AAOHN)	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
2000**	108	4.0	156	5.8	143	5.3	143	5.3
2001**	108	4.0	156	5.7	143	5.3	143	5.3
2002**	108	3.9	156	5.6	143	5.2	143	5.2
2003	108	3.9	156	5.6	143	5.2	143	5.2
2004	113	4.1	142	5.1	141	5.1	198	7.2
2005	113	4.0	148	5.3	135	4.8	176	6.3
2006	112	3.9	135	4.7	171	5.9	169	5.9
2007	115	4.0	130	4.6	153	5.4	173	6.1
2008	113	3.9	126	4.4	150	5.2	149	5.2
2009	113	4.0	132	4.7	150	5.3	138	4.9
2010	122	4.3	137	4.9	145	5.1	N/A	N/A
2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2012	131	4.5	128	4.4	N/A	N/A	116	4.0
2013	N/A	N/A	125	4.3	131	4.5	N/A	N/A

Indicator # 17: Occupational safety and health professionals, Maryland, Continued

Year	American Board of Industrial Hygiene (ABIH)		American Industrial Hygiene Association (AIHA)		Board of Certified Safety Professionals (BCSP)		American Society of Safety Engineers (ASSE)	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
2000**	221	8.2	359	13.3	191	7.1	588	21.8
2001**	221	8.1	359	13.2	191	7.0	588	21.6
2002**	221	8.0	359	13.0	191	6.9	588	21.2
2003	221	8.0	359	12.9	191	6.9	588	21.2
2004	231	8.4	341	12.3	198	7.2	630	22.8
2005	238	8.5	323	11.5	204	7.3	685	24.5
2006	239	8.3	312	10.8	201	7.0	566	19.6
2007	247	8.7	281	9.9	206	7.2	562	19.7
2008	246	8.6	266	9.3	220	7.7	544	18.9
2009	244	8.7	272	9.6	238	8.4	502	17.8
2010	241	8.6	259	9.2	242	8.6	666	23.6
2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2012	177	6.1	306	10.5	271	9.3	546	18.8
2013	210	7.2	198	6.8	285	9.8	556	19.0

* Rate per 100,000 employed persons age 16 years or older

** Records of past membership totals do not exist for most organizations. For this reason, for years 2000-2002, membership counts for 2003 were used in the numerator of this indicator, while the number employed for each respective year was used in the denominator. For 2003 onward, numerator and denominator data come from the same year.

Data Source for this Indicator: Current membership rosters of cited organizations (Numbers of health and safety professionals); Bureau of Labor Statistics Current Population Survey (Employment estimates used to calculate rates).

MARYLAND Department of Health and Mental Hygiene

Indicator #18: Occupational Safety and Health Administration (OSHA) Enforcement Activities

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

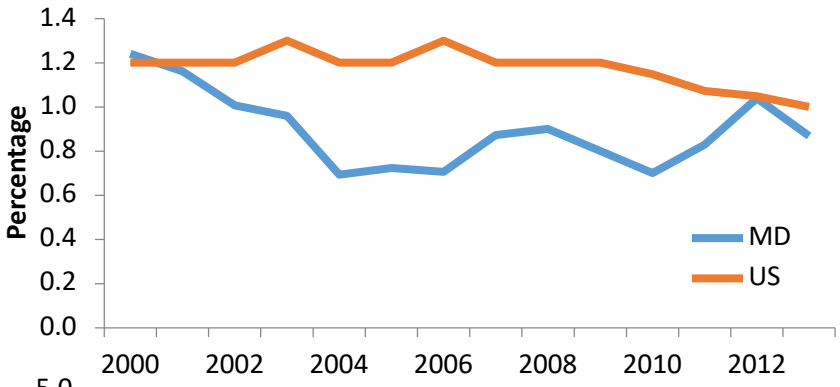
The measures of frequency for this indicator may approximate the added health and safety benefits and protections felt by workers as a result of their worksites being inspected.

Limitation of Indicator:

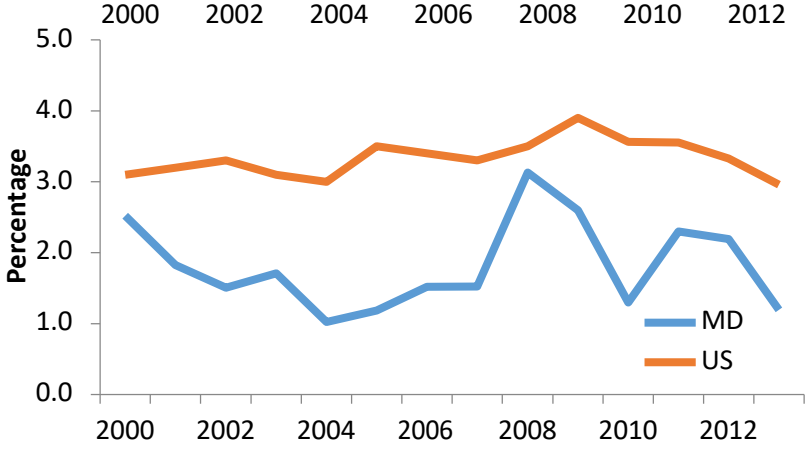
This indicator only measures enforcement activity and no other measures of OSHA activity such as education and compliance assistance. OSHA may conduct multiple inspections of one establishment during a calendar year, therefore the percent of establishments inspected may be overestimated.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

The Occupational Safety and Health Act of 1970 was passed by Congress to assure safe and healthy working conditions for every worker in the nation. Under the Act, the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) is authorized to conduct worksite inspections to determine whether employers are complying with health and safety standards. OSHA may issue citations and impose fines on employers if violations are found. This indicator provides a measure of the workers and worksites potentially benefiting directly from Federal/State OSHA inspection activity.



Indicator #18.1: Percentage of establishments under OSHA jurisdiction inspected by OSHA, Maryland and U.S.



Indicator #18.2: Percentage of workers in establishments under OSHA jurisdiction whose work areas were inspected by OSHA, Maryland and U.S.

Indicator #18: OSHA enforcement activities, Maryland

	1. Number of Establishments Inspected by OSHA		2. Number of Establishments Eligible for Inspection	3. Number of Employees at Inspected Sites	4. Number of Covered Employees in State	
Year	Average Number	Percentage	Average Number	Average Number	Average Number	Percentage
2000	1,814	1.2	146,148	184,584	2,400,659	2.5
2001	1,703	1.2	146,748	173,884	2,417,010	1.8
2002	1,504	1.0	149,176	136,432	2,422,473	1.5
2003	1,440	1.0	149,999	162,965	2,429,457	1.7
2004	1,074	0.7	154,973	49,955	2,454,451	1.0
2005	1,156	0.7	159,636	67,007	2,492,242	1.2
2006	1,149	0.7	162,536	87,834	2,524,798	1.5
2007	1,454	0.9	166,617	87,815	2,542,297	1.5
2008	1,487	0.9	165,484	95,642	2,532,654	3.1
2009	1,303	0.8	163,736	63,271	2,456,465	2.6
2010	1,206	0.7	163,239	31,841	2,448,540	1.3
2011	1,367	0.8	164,221	57,078	2,473,732	2.3
2012	1,747	1.0	167,221	54,778	2,506,593	2.2
2013	1,465	0.9	168,565	30,228	2,527,159	1.20

Data Source for this Indicator: Bureau of Labor Statistics' Covered Employers and Wages (Number of establishments and workforce estimates).

Indicator #19: Workers' Compensation Awards

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

Accepted awards represent known work-related injuries and illnesses, and often more severe cases. The total and average amounts of benefits paid estimate the burden of these events, which can help justify prevention programs and activities.

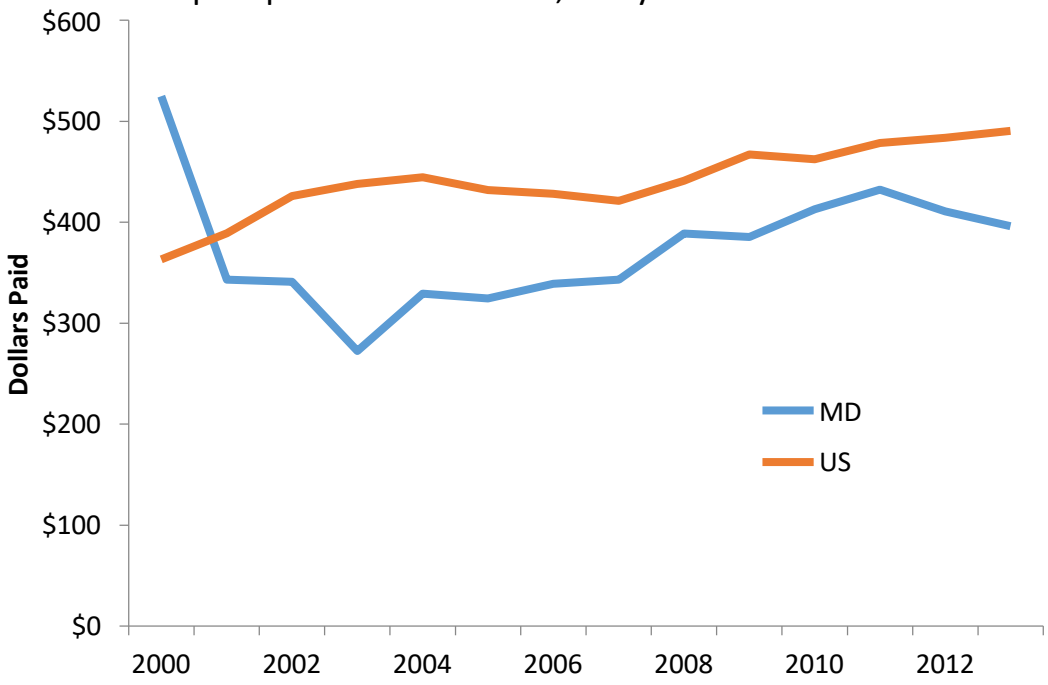
Limitation of Indicator:

Workers' compensation data is not complete, as many individuals with work-related illnesses do not file for workers' compensation. Differences among states in benefits paid could be due to a variety of factors other than injury and illness incidence. For this reason, this occupational health indicator should be used to monitor trends within states over time rather than to compare states.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Workers' compensation is a state-based social insurance program, developed to provide compensation for workers with work-related injuries or illnesses while limiting the liability exposure of employers. Workers' compensation provides benefits to partially replace lost wages and pay for medical expenses associated with a work-related injury or illness. Workers' compensation awards are reviewed to establish whether the reported medical condition is work-related. Accepted awards represent known work-related injuries and illnesses, and often more severe cases. The total and average amounts of benefits paid estimate the burden of these events.

Indicator #19: Average Workers' Compensation benefit paid per covered worker, Maryland and U.S.



Indicator # 19: Workers compensation awards, Maryland

Year	Total Amount of workers' compensation benefits paid	Average amount of workers' compensation paid per covered worker
2000	$1,194,629,000	$524.65
2001	$787,442,000	$343.11
2002	$783,686,000	$340.88
2003	$628,510,000	$272.55
2004	$767,576,000	$329.15
2005	$769,563,000	$324.44
2006	$815,351,000	$339.02
2007	$830,927,000	$343.07
2008	$935,948,000	$388.84
2009	$895,905,000	$385.17
2010	$953,533,000	$412.78
2011	$1,006,998,000	$432.19
2012	$970,734,000	$410.81
2013	$944,612,000	$396.23

Data Source for this Indicator: National Academy of Social Insurance (total amount and average benefits paid).

Indicator #20: Work-related low back disorder hospitalizations

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

Hospitalizations for work-related back disorders have serious and costly effects, including: high direct medical costs, significant functional impairment and disability, high absenteeism, reduced work performance, and lost productivity. Well-recognized prevention efforts can be implemented for high risk job activities and reduce the burden of work-related low back disorders.

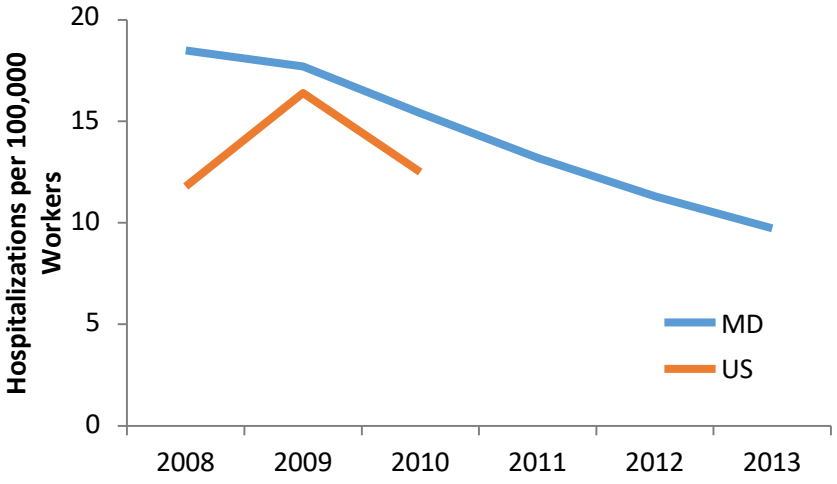
Limitation of Indicator:

Hospital discharge records are only available for non-federal, acute care hospitals. Many individuals with work-related injuries do not file for workers' compensation or fail to recognize work as the cause of their injury. Self-employed individuals are not covered by state workers' compensation systems.

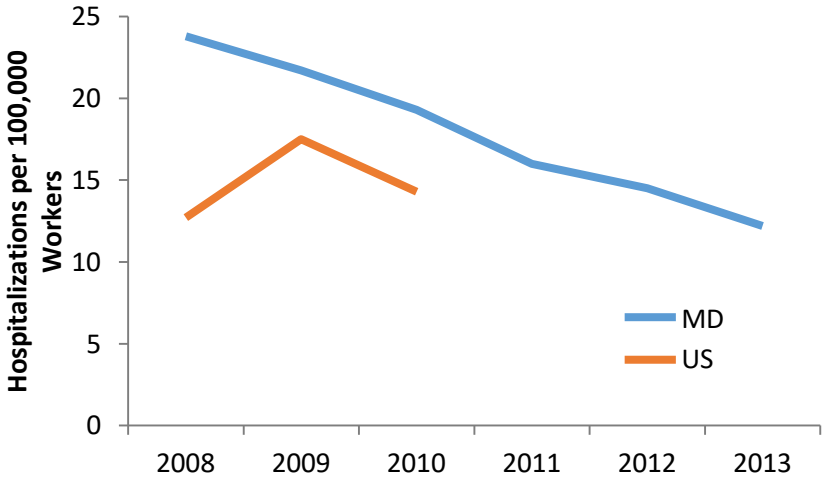
For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Maryland Department of Health and Mental Hygiene

Each year 15-20% of Americans report back pain, resulting in over 100 million workdays lost and more than 10 million physician visits. National Health Interview survey data estimates 2/3 of all low back pain cases are attributable to occupational activities. The cost of back pain is also disproportionate, as it represents about 20% of workers' compensation claims but nearly 40% of the costs. In 2003, 3.2% of the total US workforce experienced a loss in productive time due to back pain. The total cost of this productive time lost to back pain is estimated to be in excess of $19.8 billion dollars.



Indicator #20.1: Crude Rate of Work-Related Surgical Low Back Disorder Hospitalizations by State and U.S.



Indicator #20.2: Crude Rate of Work-Related Low Back Disorder Hospitalizations by State and U.S.

Indicator # 20: Hospitalizations for work-related low back disorders

	20.1. Surgical Low Back Disorder Hospitalizations		20.2. Low Back Disorder Hospitalizations	
Year	Number	Rate	Number	Rate
2008	531	18.5	670	23.8
2009	498	17.7	613	21.7
2010	433	15.4	545	19.3
2011	380	13.2	460	16.0
2012	328	11.3	420	14.5
2013	284	9.7	356	12.2

* per 100,000 employed persons age 16 years or older

Data Source for this Indicator: Hospital discharge data (numerator); BLS Current Population Survey Data (denominator).

Indicator #20: Work-Related Low Back Disorder Hospitalizations – Sub-State Data

About this Indicator:

Why is this Indicator Important?

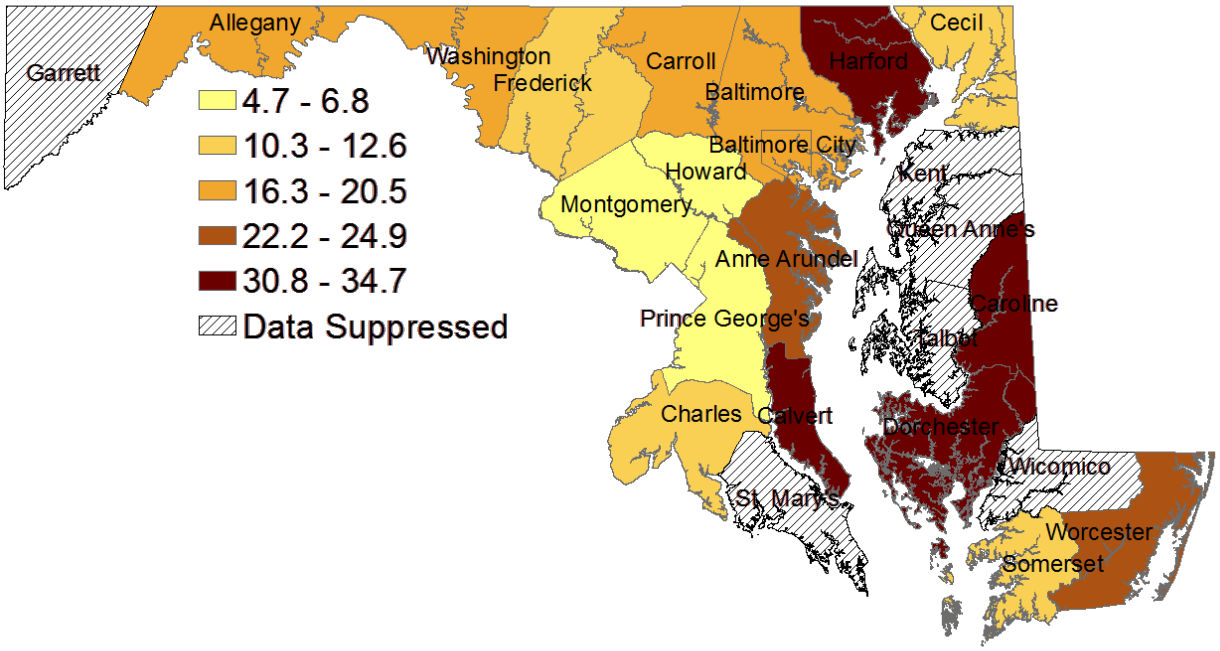
Hospitalizations for work-related back disorders have serious and costly effects, including: high direct medical costs, significant functional impairment and disability, high absenteeism, reduced work performance, and lost productivity. Well-recognized prevention efforts can be implemented for high risk job activities and reduce the burden of work-related low back disorders.

Limitation of Indicator:

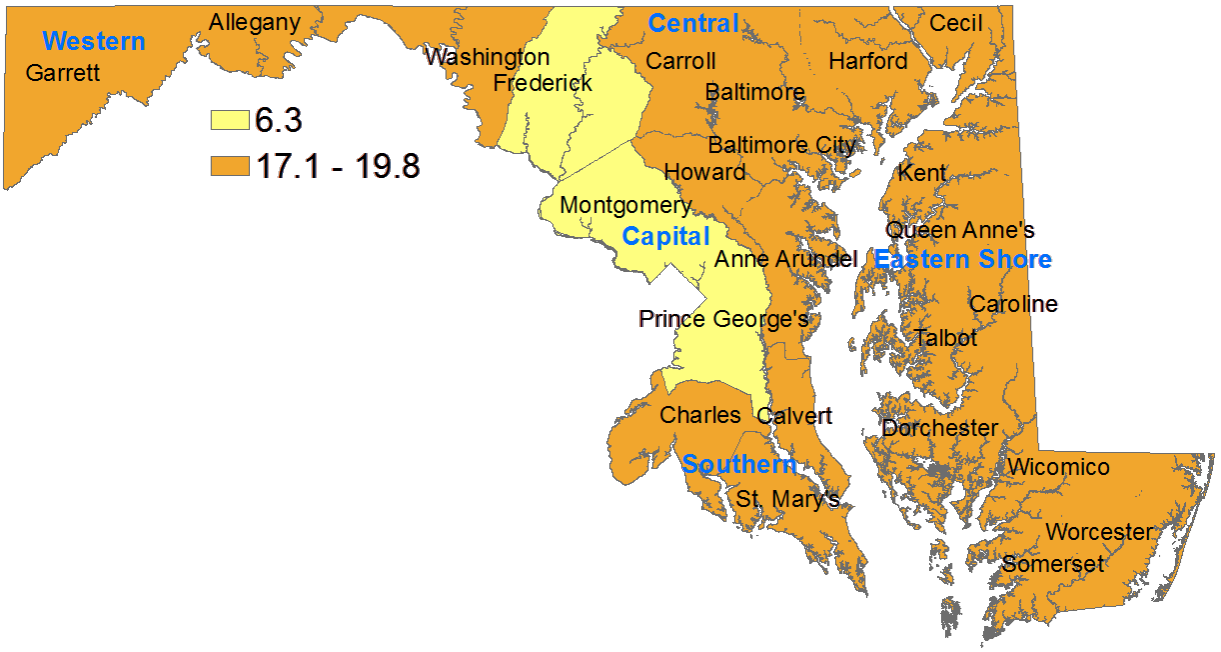
Hospital discharge records are only available for non-federal, acute care hospitals. Many individuals with work-related injuries do not file for workers' compensation or fail to recognize work as the cause of their injury. Self-employed individuals are not covered by state workers' compensation systems.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Indicator # 20.2: 2011-2013 crude rate of work-related low back disorder hospitalizations by county



Indicator # 20.2: 2011-2013 crude rate of work-related low back disorder hospitalizations by region



Data Source for this Indicator: Hospital discharge data (numerator); BLS Current Population Survey Data (denominator).

Indicator #20: Work-Related Low Back Disorder Hospitalizations - Race and Ethnicity Data

About this Indicator:

Why is this Indicator Important?

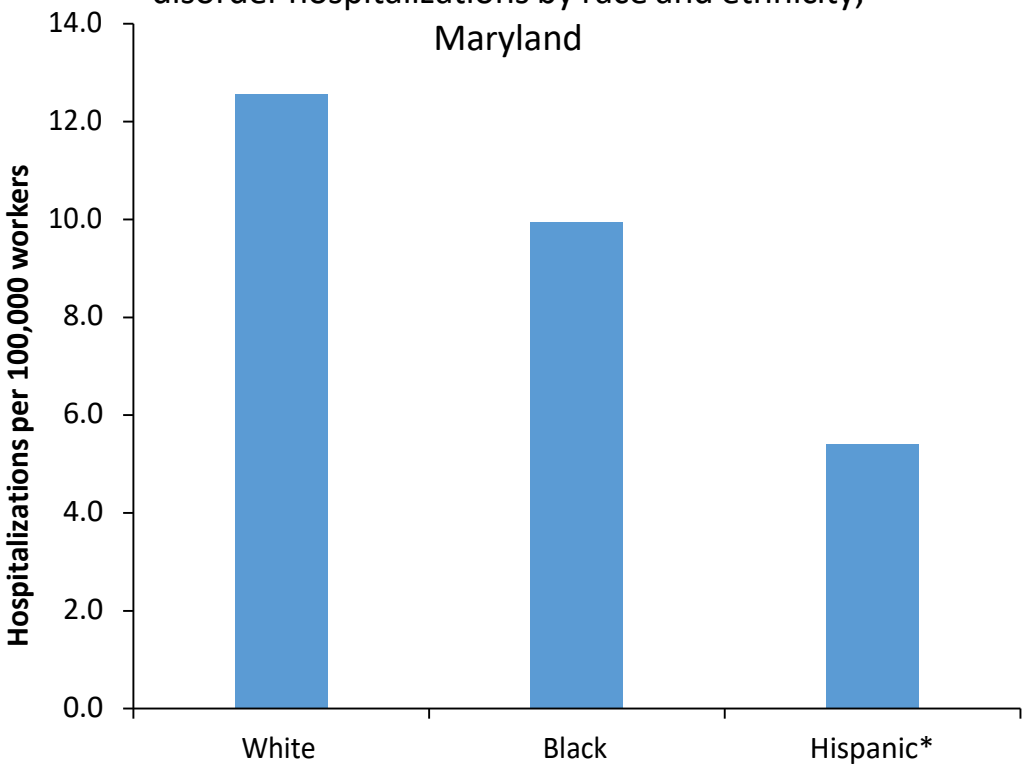
Hospitalizations for work-related back disorders have serious and costly effects, including: high direct medical costs, significant functional impairment and disability, high absenteeism, reduced work performance, and lost productivity. Well-recognized prevention efforts can be implemented for high risk job activities and reduce the burden of work-related low back disorders.

Limitation of Indicator:

Hospital discharge records are only available for non-federal, acute care hospitals. Many individuals with work-related injuries do not file for workers' compensation or fail to recognize work as the cause of their injury. Self-employed individuals are not covered by state workers' compensation systems.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Indicator #20: 2013 rate of work-related low back disorder hospitalizations by race and ethnicity, Maryland



* Persons whose ethnicity is Hispanic may be of any race and, therefore, are classified by ethnicity as well as by race

Indicator #20: 2013 work-related low back disorder hospitalizations by race, Maryland

	White		Black		Hispanic*	
Year	Number	Crude Rate**	Number	Crude Rate**	Number	Crude Rate**
2013	225	12.6	82	10.0	16	5.4

* Persons whose ethnicity is Hispanic may be of any race and, therefore, are classified by ethnicity as well as by race

** Rate per 100,000 employed persons 16 years or older

Data Source for this Indicator: Hospital discharge data (numerator); BLS Current Population Survey Data (denominator).

Indicator #21: Asthma Among Adults Caused or Made Worse by Work

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

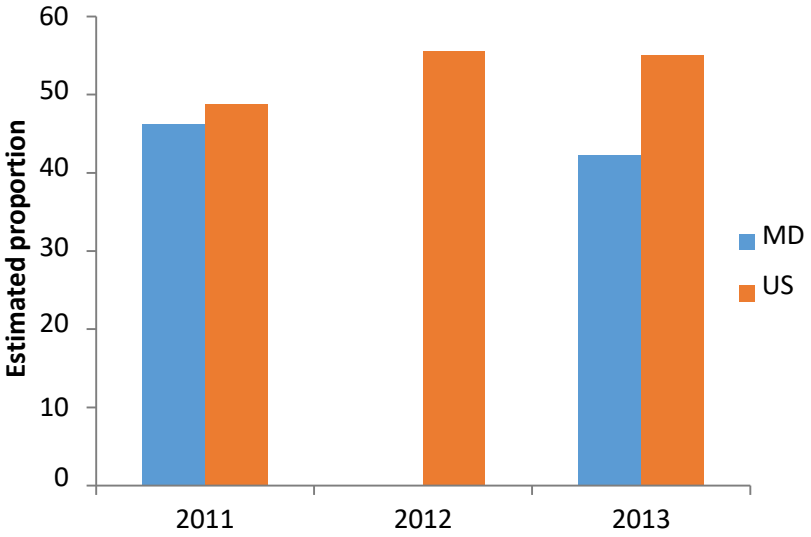
Asthma is a chronic inflammatory disease of the airways that is life threatening and can be managed but not cured. Adult asthma can be caused by or made worse by workplace exposures.

Limitation of Indicator:

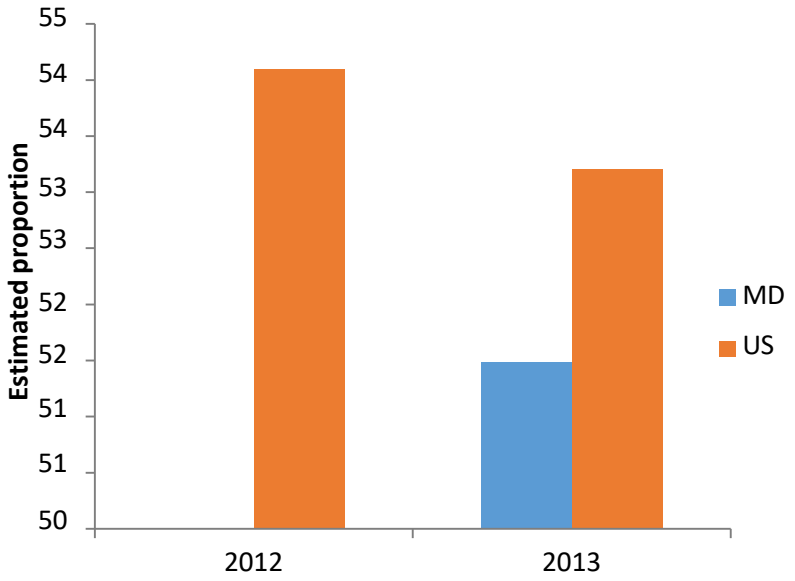
This population-based estimate is subject to measurement, non-response and sampling errors. The indicator does not distinguish between new-onset and work-aggravated asthma. The Asthma Call Back Survey began new weighting methods in 2011 and the wording and order of questions changed in 2012. Any trend analysis would need to be restricted to 2012 forward. States using landline only versus landline and cellphone methodology do not have comparable estimates.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Work-related asthma is preventable but often goes undiagnosed by physicians. Research has shown that work-related asthma can have adverse effects on the worker, including increased morbidity, adverse socioeconomic impacts and difficulty getting and sustaining work. Estimating the burden of asthma caused or made worse by work can help target prevention programs and activities. If diagnosed early, work-related asthma may be partially or completely reversible if exposures can be identified and properly stopped or controlled. The Asthma Call-Back Survey (ACBS) contains multiple questions related to the work-relatedness of a respondent's asthma and these questions are administered to adults 18 years or older.



Indicator #21.2: Estimated proportion of ever-employed adults with current asthma who report that their asthma was caused or made worse by exposures at work by state and U.S. (Landline only survey methodology)



Indicator #21.2: Estimated proportion of ever-employed adults with current asthma who report that their asthma was caused or made worse by exposures at work by state and U.S. (Landline & Cellphone survey methodology)

Indicator # 21: Asthma Among Adults Caused or Made Worse By Work

	Landline Only Survey Methodology		Landline & Cellphone Survey Methodology	
Year	21.1. Weighted Frequency	21.2. Estimated Proportion	21.1. Weighted Frequency	21.2. Estimated Proportion
2011	194,859	46.3	N/A	N/A
2012	N/A	N/A	N/A	N/A
2013	202,747	42.3	229,988	51.5

Data Source for this Indicator: Asthma Call-Back Survey (numerator & denominator).

Indicator #22: Work-Related Severe Traumatic Injury Hospitalizations

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

Acute work-related trauma is a leading cause of death and disability for U.S. workers. Severe traumatic injury can lead to long-term pain and disability and is very costly for workers' compensation systems and society as a whole.

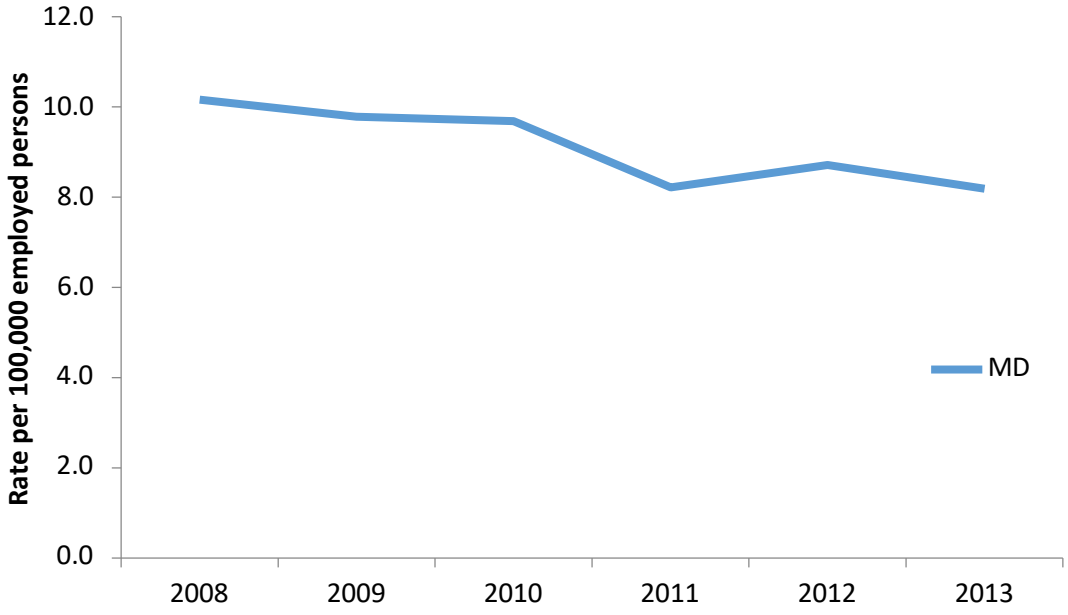
Limitation of Indicator:

Hospital discharge records are only available for non-federal, acute care hospitals. Many individuals with work-related injuries do not file for workers' compensation or fail to recognize work as the cause of their injury. Self-employed individuals are not covered by state workers' compensation systems.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Acute work-related trauma is a leading cause of death and disability among U.S. workers. Changes in hospitalization practices and workers' compensation coverage/reporting may increasingly reduce capture of minor injuries but have little effect on severe injuries. Use of a severity threshold can decrease the impact of changing utilization and service delivery patterns on observed injury trends. When hospitalization data are used to calculate occupational injury trends in the absence of severity restriction, observed trends are biased downward. Accurate characterization of injury trends is critical to understanding how we are doing as a nation with regard to occupational injury prevention.

Indicator # 22: Work-related severe traumatic injury hospitalizations, Maryland



Indicator # 22: Work-related severe traumatic injury hospitalizations, Maryland

Year	Number	Rate*
2008	292	10.2
2009	276	9.8
2010	273	9.7
2011	236	8.2
2012	253	8.7
2013	239	8.2

* Rate per 100,000 employed persons

Data Source for this Indicator: Hospital discharge data (numerator); BLS Current Population Survey Data (denominator).

Indicator #22: Work-Related Severe Traumatic Injury Hospitalizations – Sub-State Data

About this Indicator:

Why is this Indicator Important?

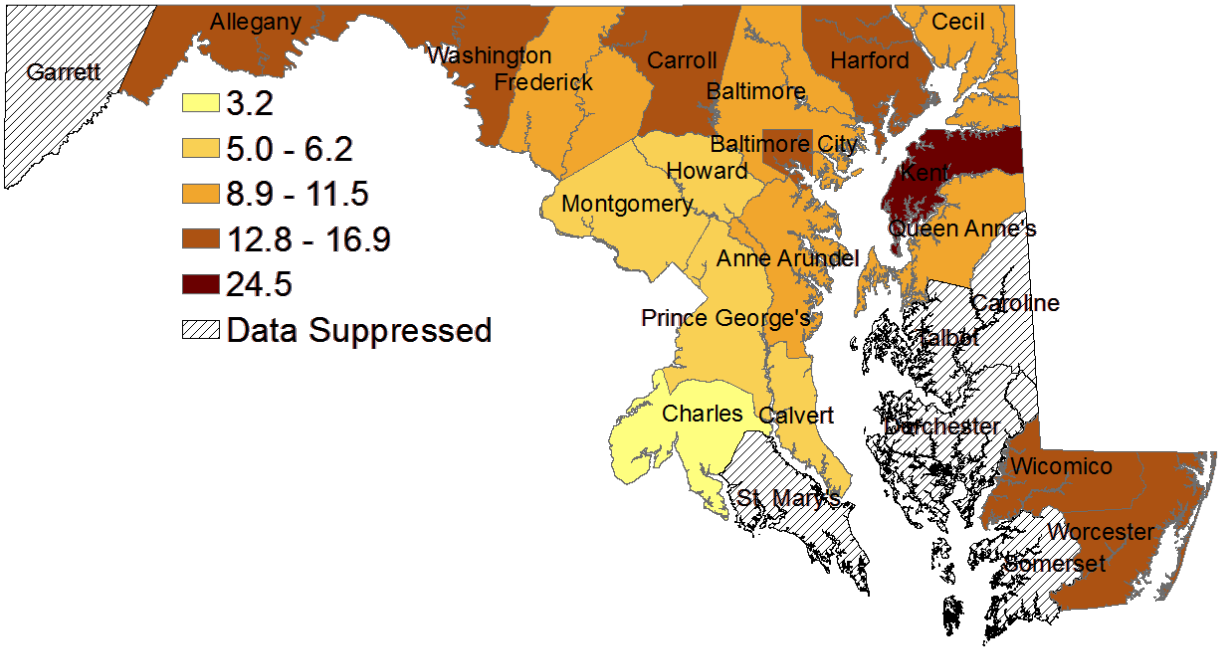
Acute work-related trauma is a leading cause of death and disability for U.S. workers. Severe traumatic injury can lead to long-term pain and disability and is very costly for workers' compensation systems and society as a whole.

Limitation of Indicator:

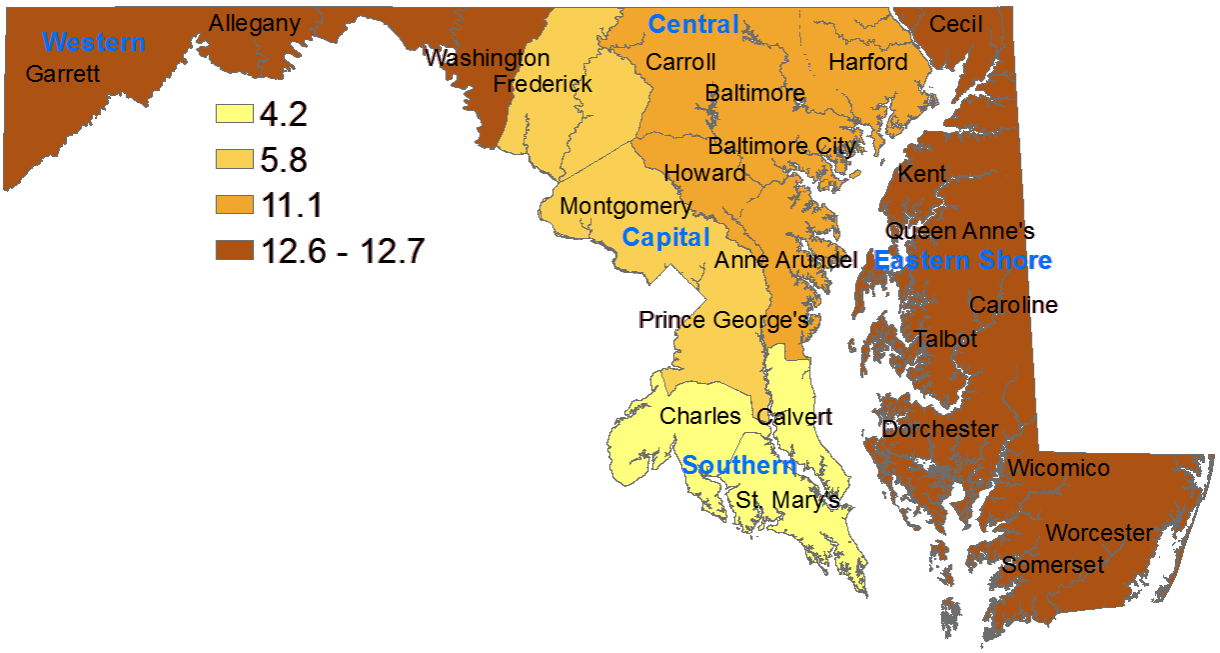
Hospital discharge records are only available for non-federal, acute care hospitals. Many individuals with work-related injuries do not file for workers' compensation or fail to recognize work as the cause of their injury. Self-employed individuals are not covered by state workers' compensation systems.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Indicator # 22: 2009-2013 crude rate of work-related severe traumatic injury hospitalizations by county



Indicator # 22: 2009-2013 crude rate of work-related severe traumatic injury hospitalizations by region



Data Source for this Indicator: Hospital discharge data (numerator); BLS Current Population Survey Data (denominator).

Indicator #22: Work-Related Severe Traumatic Injury Hospitalizations – Race and Ethnicity Data

About this Indicator:

Why is this Indicator Important?

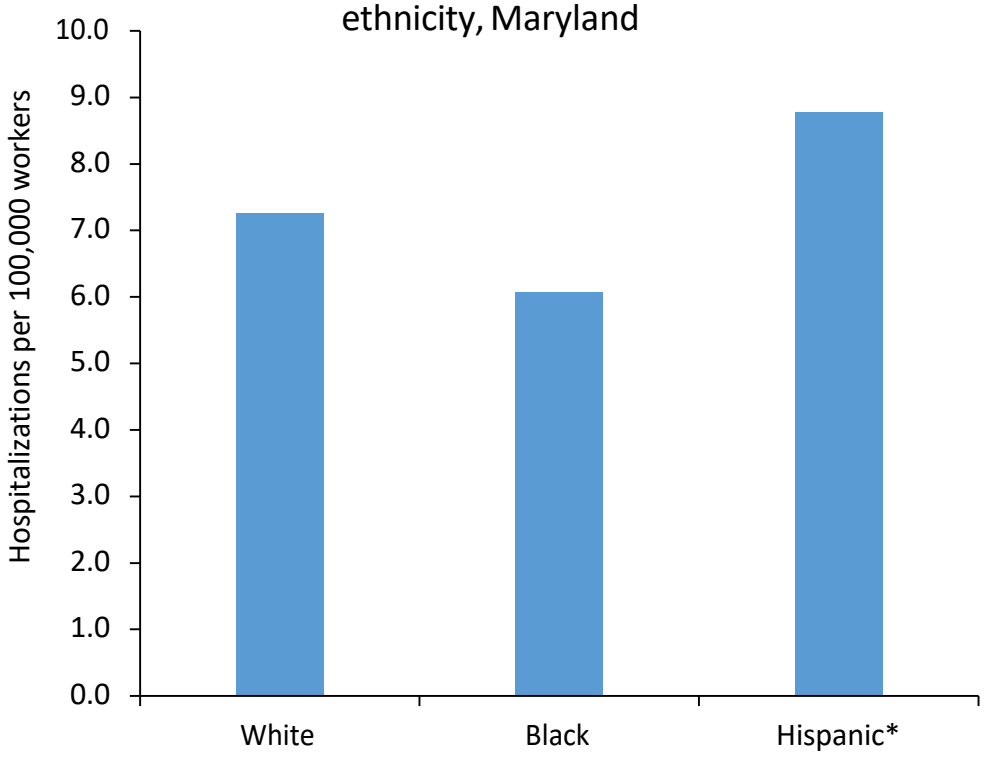
Acute work-related trauma is a leading cause of death and disability for U.S. workers. Severe traumatic injury can lead to long-term pain and disability and is very costly for workers' compensation systems and society as a whole.

Limitation of Indicator:

Hospital discharge records are only available for non-federal, acute care hospitals. Many individuals with work-related injuries do not file for workers' compensation or fail to recognize work as the cause of their injury. Self-employed individuals are not covered by state workers' compensation systems.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Indicator #22: 2013 rate of work-related severe traumatic injury hospitalizations by race and ethnicity, Maryland



* Persons whose ethnicity is Hispanic may be of any race and, therefore, are classified by ethnicity as well as by race

Indicator #22: 2013 work-related severe traumatic injury hospitalizations by race, Maryland

	White		Black		Hispanic*	
Year	Number	Crude Rate**	Number	Crude Rate**	Number	Crude Rate**
2013	130	7.3	50	6.1	26	8.8

* Persons whose ethnicity is Hispanic may be of any race and, therefore, are classified by ethnicity as well as by race

** Rate per 100,000 employed persons 16 years or older

Data Source for this Indicator: Hospital discharge data (numerator); BLS Current Population Survey Data (denominator).

Indicator #24: Occupational Heat-Related Emergency Department Visits

Maryland State Occupational Health Indicators

About this Indicator:

Why is this Indicator Important?

Exposure to environmental heat is a hazard for many workers who are not able to maintain thermal equilibrium due to their work environment, required clothing, and usage of protective equipment.

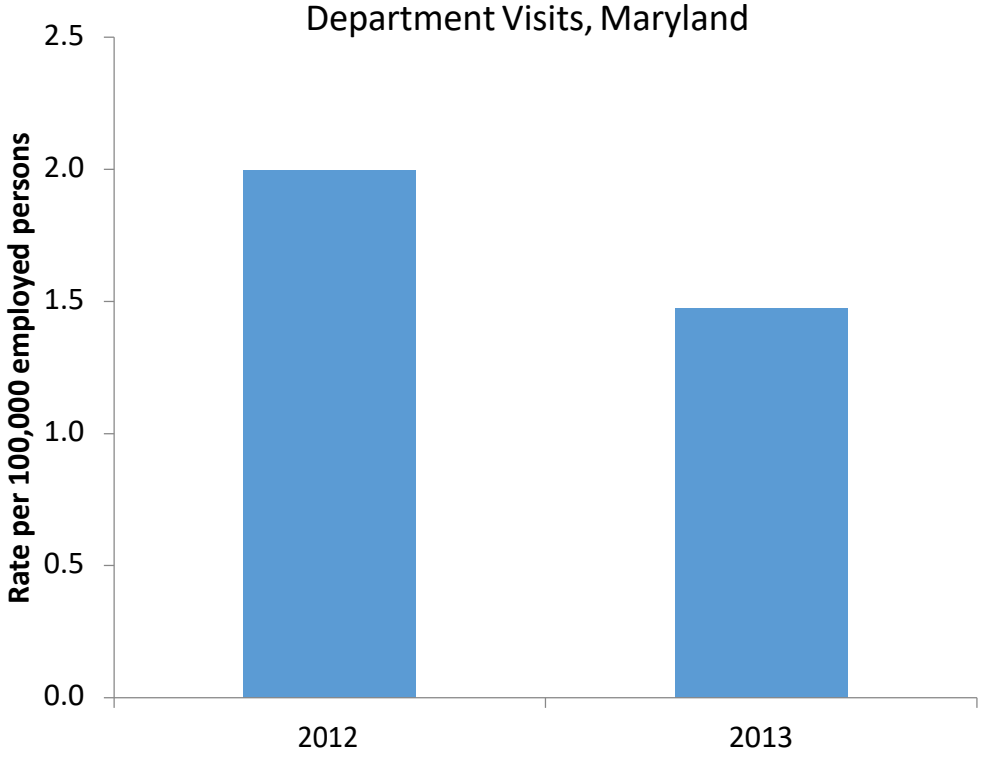
Limitation of Indicator:

The number of diagnostic fields in ED records and utilization of EDs varies by state. The majority of individuals with work-related illnesses and injuries do not file for workers' compensation. Self-employed individuals and out-of-state workers are not captured. Attribution of payer in may not be accurate. The effectiveness of identifying work-relatedness through E-codes will vary within each facility.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Minimal epidemiological information about occupational heat-related morbidity is available. Tracking occupational heat-related illness using emergency department data will establish a baseline for occupational epidemiologist to understand the magnitude of the disease burden in the population and support implementation and evaluation of prevention measures.

Indicator # 24: Occupational Heat-Related Emergency Department Visits, Maryland



Indicator # 24: Occupational Heat-Related Emergency Department Visits

Year	Number	Rate*
2012	58	2.0
2013	43	1.5

* Rate per 100,000 employed persons

Data Source for this Indicator: Emergency department visits data (numerator); BLS Current Population Survey Data (denominator). A condition was considered work-related if workers' compensation was listed as primary payer in the hospital discharge data.

State Specific Indicator #1: Work-Related Emergency Department Visits

About this Indicator:

Why is this Indicator Important?

Information on work-related emergency department visits can be used to document the burden of occupational injuries and illnesses. Work-related visits to emergency departments may differ compared to inpatient hospitalizations over time and between sub groups of Maryland residents based on differences in utilization patterns and severity of injury.

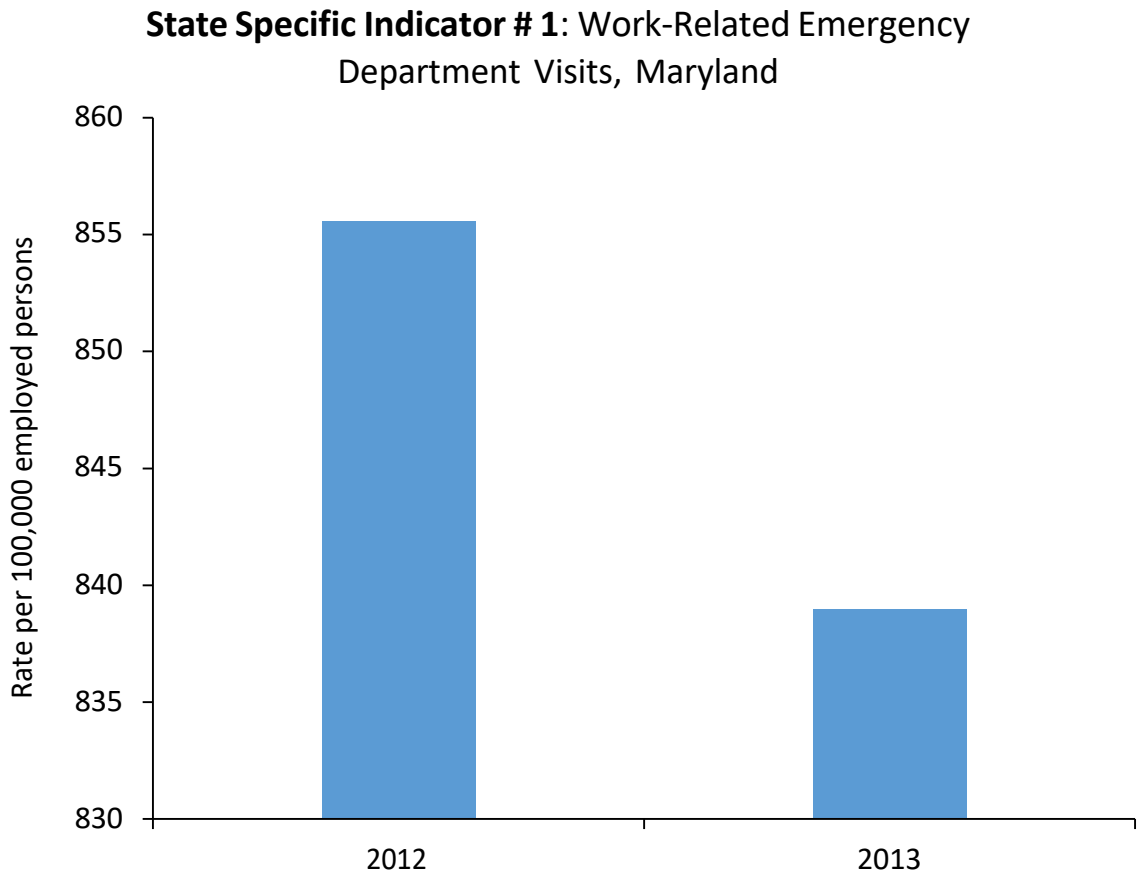
Limitation of Indicator:

The majority of individuals with work-related illnesses and injuries do not file for workers' compensation. Self-employed individuals and out-of-state workers are not captured. Attribution of payer may not be accurate.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Maryland State Occupational Health Indicators

Collecting data on emergency department visits for occupational illness and injury allows for tracking of emergency department utilization for work-related diseases and helps document the burden of occupational injuries and illnesses, including less severe cases that do not require inpatient hospitalization. These data can be used to design, target, and evaluate the impact of prevention efforts over time, and identify settings in which workers may continue to be at high risk.



State Specific Indicator # 1: Work-Related Emergency Department Visits

Year	Number	Rate*
2012	24,839	855.6
2013	24,510	839.0

* Rate per 100,000 employed persons

Data Source for this Indicator: Emergency department visits data (numerator); BLS Current Population Survey Data (denominator). A condition was considered work-related if workers' compensation was listed as primary payer in the hospital discharge data.

State Specific Indicator #1: Work-Related Emergency Department Visits – Sub-State Data

About this Indicator:

Why is this Indicator Important?

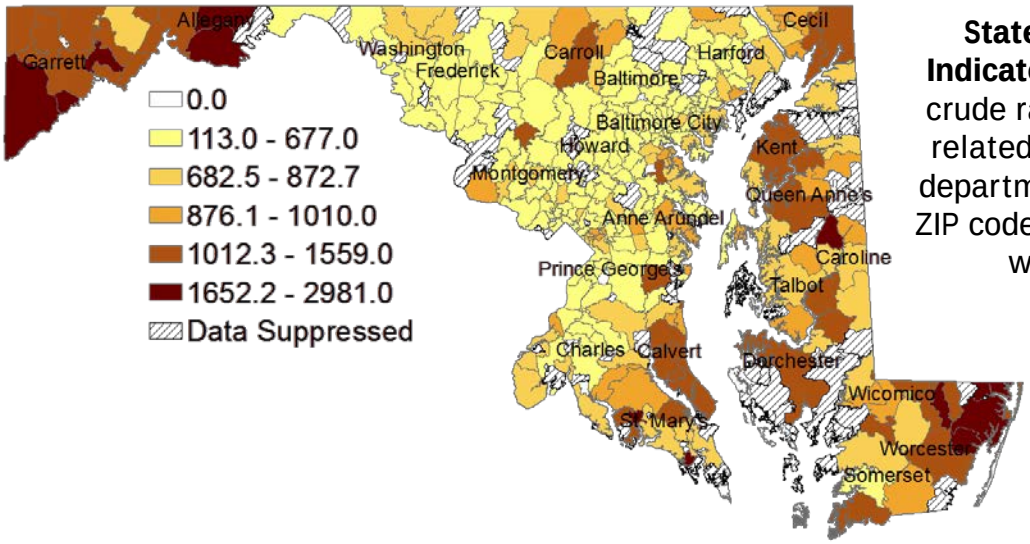
Information on work-related emergency department visits can be used to document the burden of occupational injuries and illnesses. Work-related visits to emergency departments may differ compared to inpatient hospitalizations over time and between sub groups of Maryland residents based on differences in utilization patterns and severity of injury.

Limitation of Indicator:

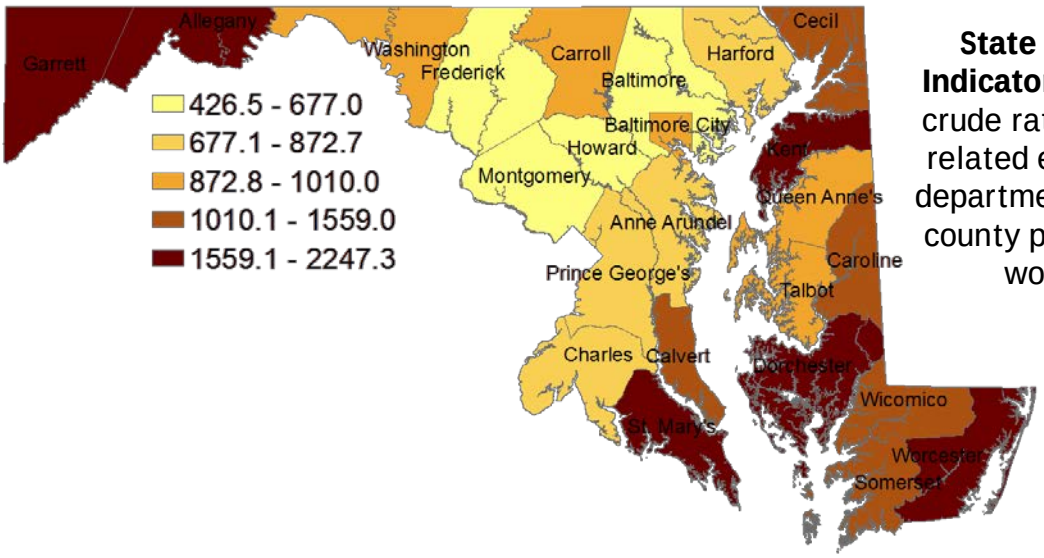
The majority of individuals with work-related illnesses and injuries do not file for workers' compensation. Self-employed individuals and out-of-state workers are not captured. Attribution of payer may not be accurate.

For more information on this indicator or occupational health in Maryland, visit the DHMH website.

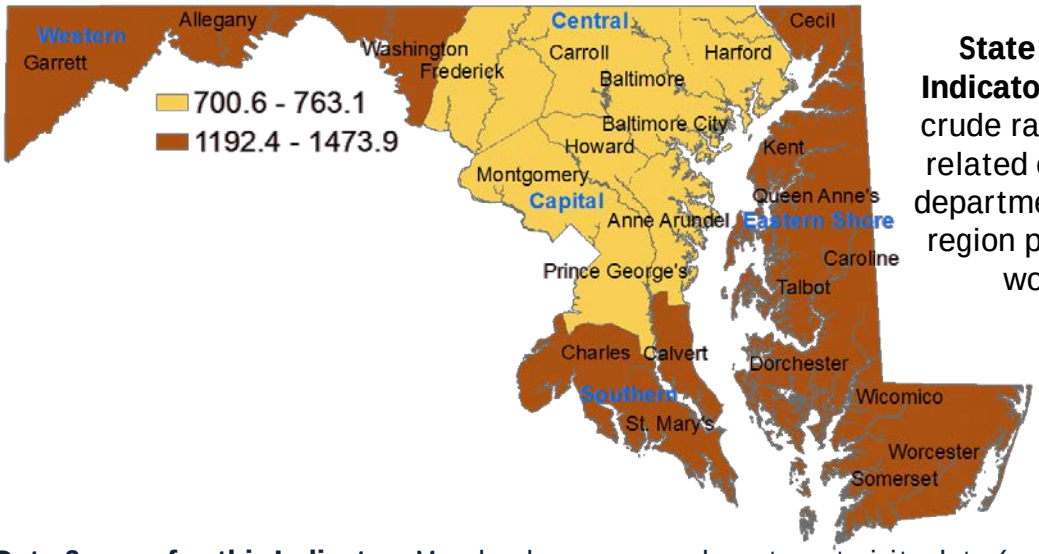
Maryland State Occupational Health Indicators



State Specific Indicator # 1: 2013 crude rate of work-related emergency department visits by ZIP code per 100,000 workers



State Specific Indicator # 1: 2013 crude rate of work-related emergency department visits by county per 100,000 workers



State Specific Indicator # 1: 2013 crude rate of work-related emergency department visits by region per 100,000 workers

Data Source for this Indicator: Maryland emergency department visits data (numerator). County and region level denominator: Bureau of Labor Statistics Current Population Survey (total number of employed persons). ZIP code level denominator: The Nielson Company. A condition was considered work-related if workers' compensation was listed as primary payer in the hospital discharge data.

MARYLAND Department of Health and Mental Hygiene

State Specific Indicator #1: Work-Related Emergency Department Visits – Race and Ethnicity Data

About this Indicator:

Why is this Indicator Important?

Information on work-related emergency department visits can be used to document the burden of occupational injuries and illnesses. Work-related visits to emergency departments may differ compared to inpatient hospitalizations over time and between sub groups of Maryland residents based on differences in utilization patterns and severity of injury.

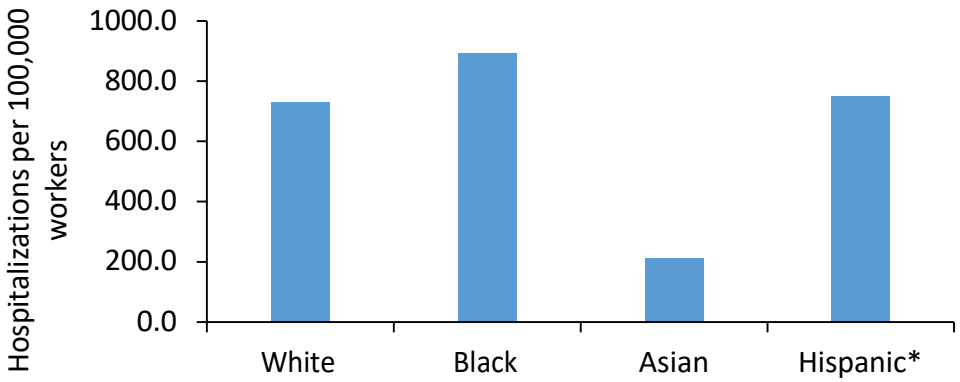
Limitation of Indicator:

The majority of individuals with work-related illnesses and injuries do not file for workers' compensation. Self-employed individuals and out-of-state workers are not captured. Attribution of payer may not be accurate.

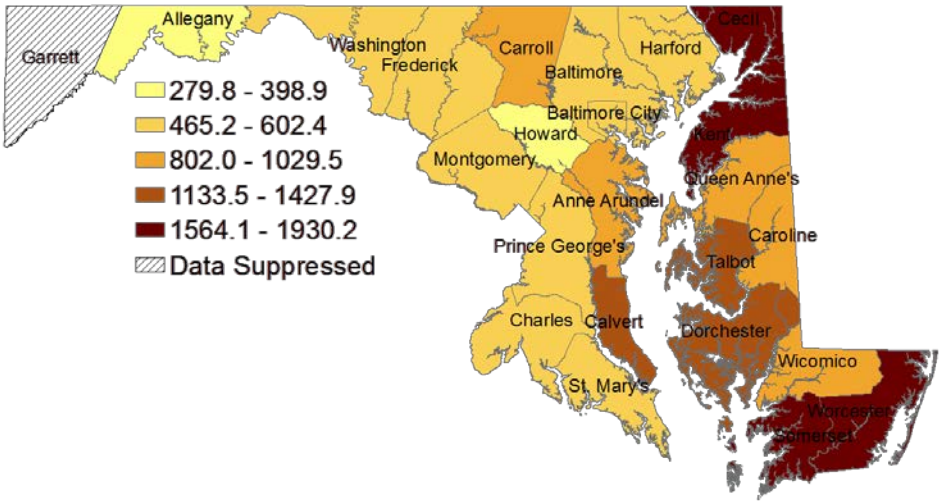
For more information on this indicator or occupational health in Maryland, visit the DHMH website.

Maryland State Occupational Health Indicators

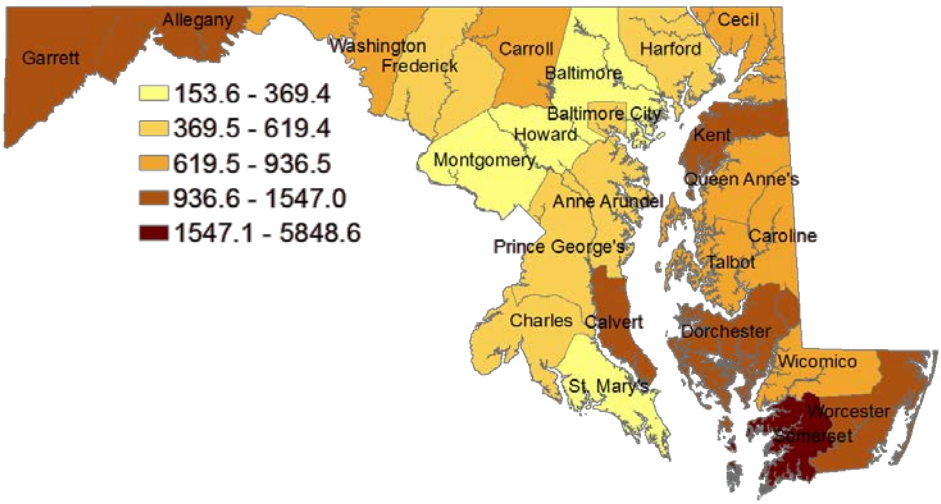
State Specific Indicator # 1: Work-Related Emergency Department Visits, Maryland



State Specific Indicator # 1: 2013 crude rate of work-related emergency department visits by county per 100,000 black employed persons



State Specific Indicator # 1: 2013 crude rate of work-related emergency department visits by county per 100,000 white employed persons



Data Source for this Indicator: Maryland emergency department visits data (numerator). County and region level denominator: Bureau of Labor Statistics Current Population Survey (total number of employed persons). A condition was considered work-related if workers' compensation was listed as primary payer in the hospital discharge data.