Occupational Disease in Connecticut, 2019

This report covers data for 2017
and was prepared under contract for the
State of Connecticut Workers' Compensation Commission,
Stephen M. Morelli, Chairman,
As part of the Occupational Disease Surveillance Program, in cooperation with the Connecticut Department of Labor and the Connecticut Department of Public Health

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A. Executive Summary

This report focuses on occupational *disease* reports for 2017 and recent trends in reported cases. It does not address traumatic occupational *injuries*; data for Connecticut injuries can be found at the national Bureau of Labor Statistics at https://www.bls.gov/iif/oshstate.htm. Occupational diseases are typically harder to detect than injuries, since they often occur over longer periods of time, and can have multiple (including non-occupational) risks. Therefore, this report uses data from three primary sources as a way of establishing a more complete picture of occupational disease: Workers' Compensation First Report of Injury cases (WCC), physicians' reports under the Occupational Illnesses and Injury Surveillance System (OIISS), and the Bureau of Labor Statistics/Connecticut Dept. of Labor Annual Survey (BLS/CTDOL).

Table A-1: Summary of Diseases Reported by Systems, 2015-2017

Type of Disease	BLS/CTDOL			WCC			OIISS (Physicians)			Unique Cases*		
	2015	2016	**2017**	2015	2016	**2017**	2015	2016	**2017**	2015	2016	**2017**
Lung & poisonings	200	200	**100**	364	315	**301**	178	133	**155**	511	431	**431**
Lead **							425	330	**292**	425	330	**292**
Skin	400	500	**400**	178	193	**222**	166	158	**168**	310	313	**348**
Musculoskeletal***	***	***	***	2,831	2,916	**2,501**	734	633	**562**	3,403	3,430	**2,918**
Infectious				1,045	1,155	**1,398**	1390	1513	**1365**	2,262	2,408	**2,384**
Hearing loss	200	300	**200**	84	105	**103**	17	12	**12**	99	115	**111**
Other***	1,500	1,300	**900**	788	770	**810**	178	238	**208**	940	978	**973**
Total	**2,300**	**2,300**	**1,700**	**5,290**	**5,454**	**5,335**	**3,088**	**3,017**	**2,762**	**7,525**	**8,005**	**7,457**

Sources: BLS: Bureau of Labor Statistics/CTDOL survey; WCC: CT Workers' Compensation Commission (First Report of Injury)
OIISS: Occupational Illnesses and Injury Surveillance System (physician reports)
*Unique cases are the combined total of workers' compensation cases and physician reports, adjusted for cases reported to both systems
**Laboratory reports of adult blood lead levels are from the Connecticut Adult Blood Lead Epidemiology and Surveillance program
*** Musculoskeletal Disorders (MSD) definitions vary somewhat between systems. MSD is included in the "other" category for BLS/CTDOL data

Table A-1 summarizes the data from the three different sources for the last 3 years. The BLS/CTDOL survey rounds to the nearest 100, so the subcategories do not always sum exactly to the total and yearly changes should be viewed with caution. The OIISS draws from physician reports for known or suspected occupational illnesses and are required of all physicians but in practice are mostly from the network of occupational health clinics (and therefore are likely to over-represent illnesses from those hospitals).

Approximately 1,700 cases of occupational diseases were reported under the BLS/CTDOL survey, 5,335 through the workers' compensation first report of injuries and 2,762 for OIISS (including lead reports) for 2017. The number of reports in 2017 dropped 26% from 2016 in the BLS system, decreased by 2% for workers' compensation, and decreased 8% for physicians' reports. Reports from workers' compensation and physicians combined (adjusting for matching cases reported to both systems) totaled 7,457 unique reports (including the 292 lead poisoning cases from laboratory reporting), a decrease of 7% from the previous year. Statistically adjusting for estimated unreported cases produces an estimate of approximately 20,600 cases of occupational illnesses in Connecticut for 2017 (Table B1).

Musculoskeletal disorders (MSD) such as Carpal Tunnel Syndrome and tendonitis dominated the workers' compensation reports, accounting for 47% of reports (23% of the physician reports). MSD has not been broken out by BLS since 2002, but MSD cases are presumed to be the main portion of the "other illness" category, which is by far the largest BLS category. **Respiratory diseases and poisonings,** which include respiratory conditions and lung disease such as asthma, as well as poisonings such as from carbon monoxide and lead, accounted for 6% of cases for workers' compensation and 6% of physician reports. **Infectious diseases**, which

include bloodborne diseases such as HIV and hepatitis, Tb, scabies, Lyme disease (and including exposures as well as diagnosed disease) accounted for 21% in workers' compensation but 55% of physician reports (infectious disease is categorized under "other disease" in BLS; also, needlesticks and other bloodborne exposures with lost time are counted under injuries rather than illness in BLS). "Other diseases", which includes infectious diseases and MSD in BLS, physical hazards such as heat and cold exposures, allergies, cancer, and others in Workers' Compensation and physician reports, accounted for 17% (WC) and 9% (physicians). **Skin conditions** accounted for 4% (WC) and 7% (physicians). **Lead poisoning** is tracked separately and is based on laboratory reports to the Connecticut Department of Public Health; very few of those cases are reported to the other systems.

There was an overall illness rate of 12.9 cases per 10,000 workers based on the BLS survey, 26% lower than the previous year. The CT rate was 14% lower than the average national rate of 15.0. The highest specific sector rate was for Utilities at 85.8 cases per 10,000 workers, although the number of cases was too low to be reportable, making this rate difficult to evaluate. Local government had an overall rate of 31.4, followed by manufacturing of 24.0 and health care at 23.6.

Overall (based on Workers' Compensation reports), 49% of reports were for women, but this varied by type of case, with a higher proportion than average for infectious diseases (65% women) but lower for all other types of illness. Based on workers' compensation reports, occupational illnesses occurred more in older workers, with almost half (48%) involving workers between 40 and 59 years old, with 20% involving workers in their 30's, and 18% in their 20's. Based on physician reports where **race and ethnicity** were known, 18% of cases were black and 11% Hispanic.

The most common specific diagnoses for **musculoskeletal disorders** were epicondylitis (tennis elbow) with 22% of the cases, carpal tunnel syndrome (15%), tenosynovitis (12%), and strains and sprains (10%). The most common specific **causes** (aside from the commonly used terms "repetition" or "cumulative") for MSD in workers' compensation reports were lifting and carrying, pushing or pulling, tool use (including vibration exposure), and computing and clerical tasks.

Nonspecific respiratory illnesses were the most common type of physician-reported **lung condition**, with 26% of reports, followed by asthma or reactive airways dysfunction syndrome (RADS) with 22% and asbestos disease or exposures (12%). Exposures associated with respiratory conditions included fumes (including gas, carbon monoxide, and lead), chemicals (including solvents, cleaning chemicals, paint, and oil), mold or indoor air quality, and smoke.

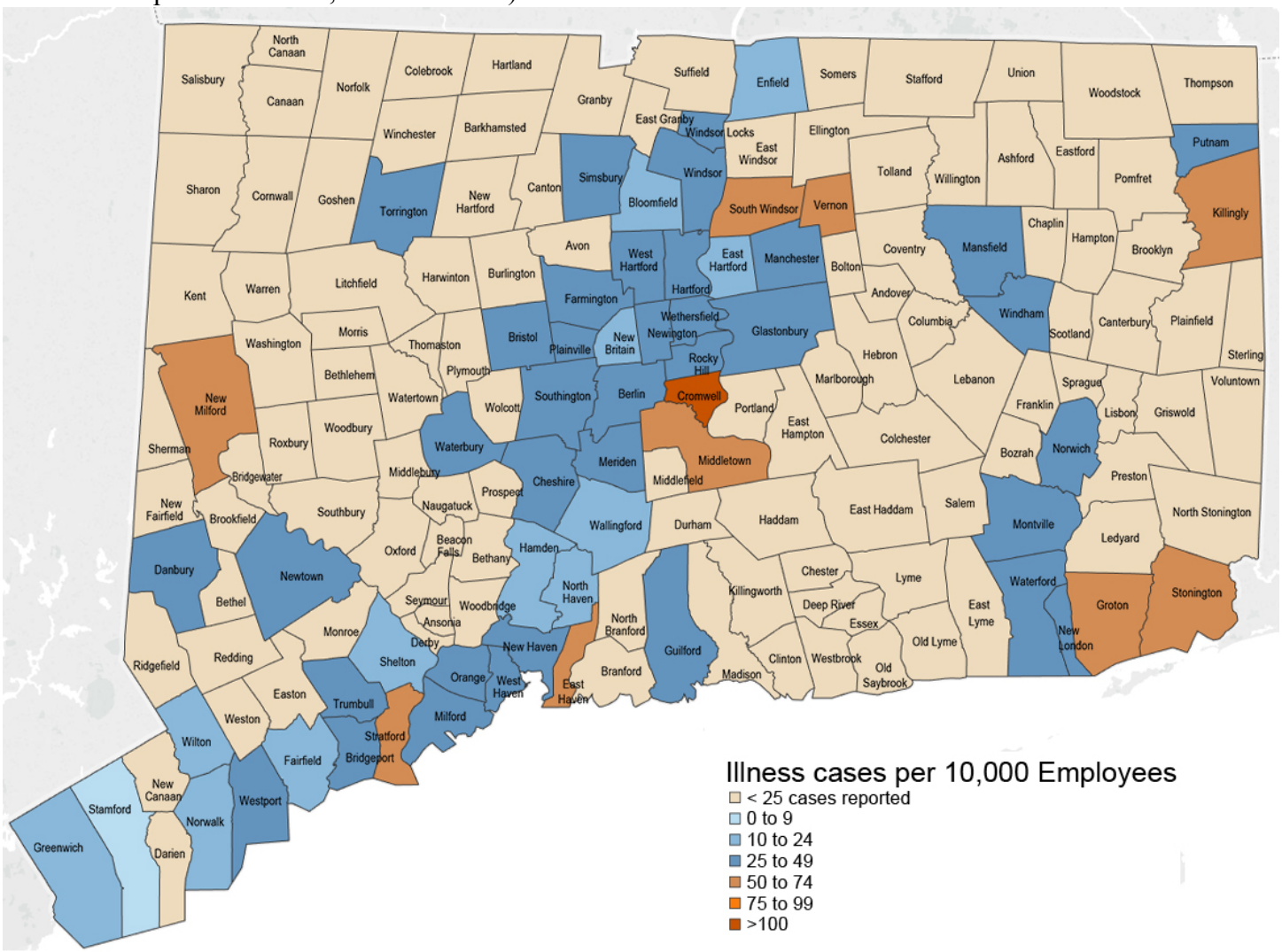
Infectious disease and exposures, based on workers' compensation reports, included 1,029 reports of potential exposure to bloodborne pathogens (including reports of exposure to HIV/AIDS and Hepatitis C), including 378 needlesticks or sharps exposures, accounting for 74% of all infectious disease reports. There were 75 reports of exposure to meningitis in health care settings. There were 86 reports of tick bites, rashes from tick bites and/or a diagnosis of Lyme disease attributed to occupational exposures. There were 194 cases of tuberculosis infection, usually determined by PPD conversion (which is a skin test based on immune response) or based on exposure to patients or clients with TB.

Rates of illness varied widely by **municipality** based on workers' compensation reports. Often the highest rates appear to be related to having large employers in high rate industries. The overall state mean (average) was 33.3 cases per 10,000 employees. There were 59 towns and cities with at least 25 cases of occupational disease reported to workers' compensation, and the overall state mean (average) was 32.0 cases per 10,000 employees. For towns with at least 25 cases, Cromwell had the highest rate at 109 cases per 10,000 employees, over 3 times higher than the average rate of 32. Cromwell was followed by Vernon (67), Killingly (66), Stonington (59), Groton (55), New Milford (54), East Haven (54), Stratford (53), South Windsor (50), and Middletown (50).

Occupational Health Indicator data for 2015 (see summary of diseases, below) found 149 hospital discharges for asbestosis with 14 fatalities; there were also 40 fatalities from mesothelioma (a rare cancer caused almost only by asbestos). There were 23 work-related pesticide poisonings reported by Connecticut Poison Control Centers. There were an estimated 90,000 Connecticut workers employed in high hazard industries and 182,000 workers employed in high risk occupations.

Figure A-1, a map of the rates by town is below, with rates listed in Table D-6. The map is based on 25 or more cases (prepared by Connie Cox Cantor at the Center for Population Health of UConn Health).

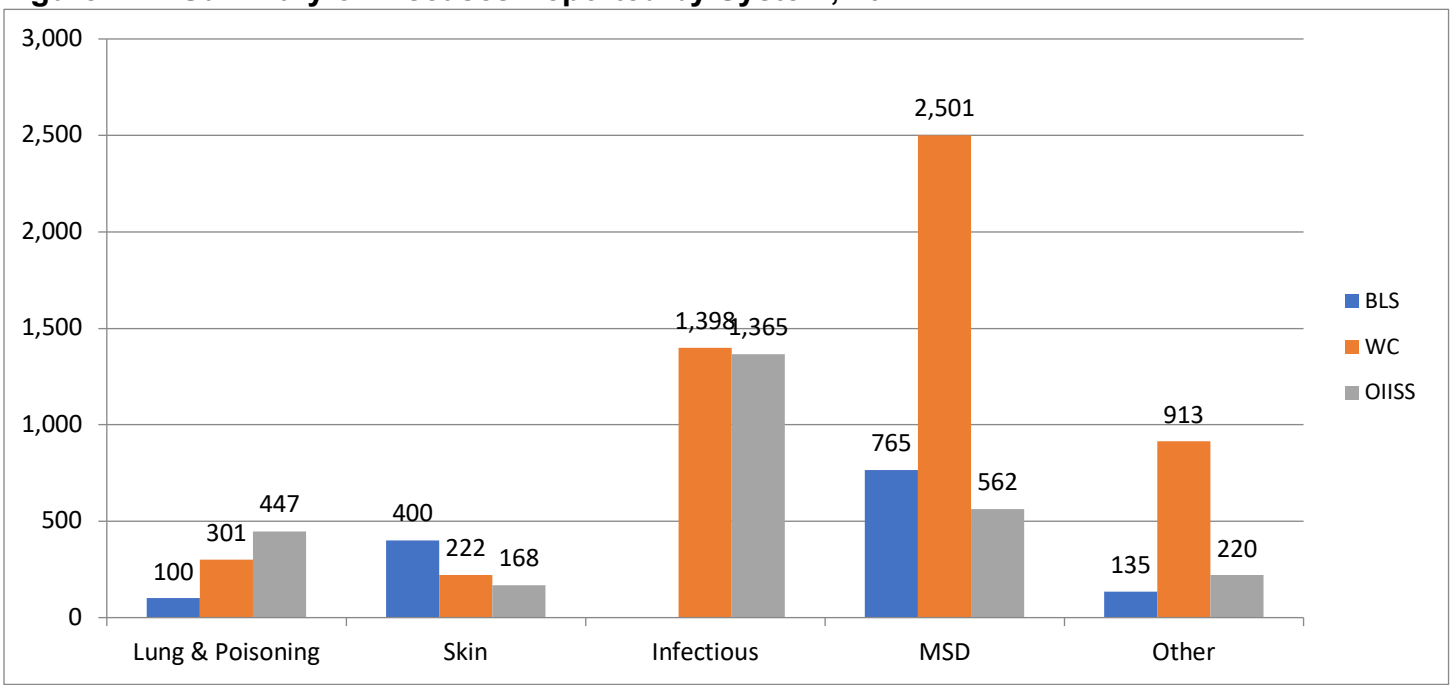
Figure A-1: Map of Occupational Illness Rates by Town, 2017 (map prepared by Connie Cox Cantor, Center for Population Health, UConn Health)



B. Summary of Diseases

Figure B-1 shows the totals by disease category for 2017 for three reporting systems: the Bureau of Labor Statistics/CT Dept. of Labor (BLS) survey; Workers' Compensation (WC) First Reports of Injury; and the Occupational Illnesses and Injury Surveillance System (OIISS) which are physician reports. Categories have been combined to make comparisons as close as possible; however, differences in the three systems' definitions make comparisons incomplete. For example, Workers' Compensation only requires reporting for lost-time or restricted duty cases, while the other two reporting systems require all occupational illnesses to be reported, although the BLS data is based on a sample of employers. Although all physicians are legally required to report occupational disease, only a small minority report, usually from the occupational health clinic network. Lead reports from the laboratory reporting system are combined into "lung and poisoning" for the OIISS. The BLS/CTDOL system discontinued collecting "repetitive trauma" as a category in 2002, so MSD has been estimated based on the proportion of "other illness" in the 2001 dataset, which was 85%. See Appendix 1 for a complete description of methods.

Figure B-1: Summary of Diseases Reported by System, 2017



Notes: BLS=Bureau of Labor Statistics/ConnOSHA survey; WC=Workers' Compensation First Report of Injury Database; OIISS= Physicians reports from the Occupational Illnesses and Injury Surveillance System combined with laboratory reports of lead poisoning. MSD for the BLS database was estimated using prior proportions from "other" (85%) since they are no longer broken out by BLS.

The Workers' Compensation database showed the highest number of cases, with 5,335 cases reported, followed by the physicians' reporting/laboratory database with 2,762 cases, and by the BLS survey with 1,700. There is a low amount of overlap between these systems, so total cases are higher than these figures might indicate (see section below on case matching estimates).

Longer term trends in number of reports are complex (Figure B2), with BLS trends generally declining; Workers' Compensation data generally declining since 2008 (the Workers' Compensation database appears incomplete in 2003 and 2005-2007); and physician reports (OIISS) fluctuating but generally increasing since 2010 with a peak in 2014.

Case Matching and Total of Unique and Estimated Cases of Occupational Illness

There is a fairly low number of cases that are reported to both workers' compensation and by physicians. In order to get a better estimate of the total number of cases of occupational illness in Connecticut, cases were

matched by name, employer, and type of illness for the WC and OIISS reports (Table B-1). This allows a sum of unique cases that were reported to at least one of the two systems and an estimate of cases that were not reported to either. Individual level BLS/ConnOSHA data from their survey was not available for matching, and lab-based lead reports did not have enough detail to match, so BLS and lead reports are not included.

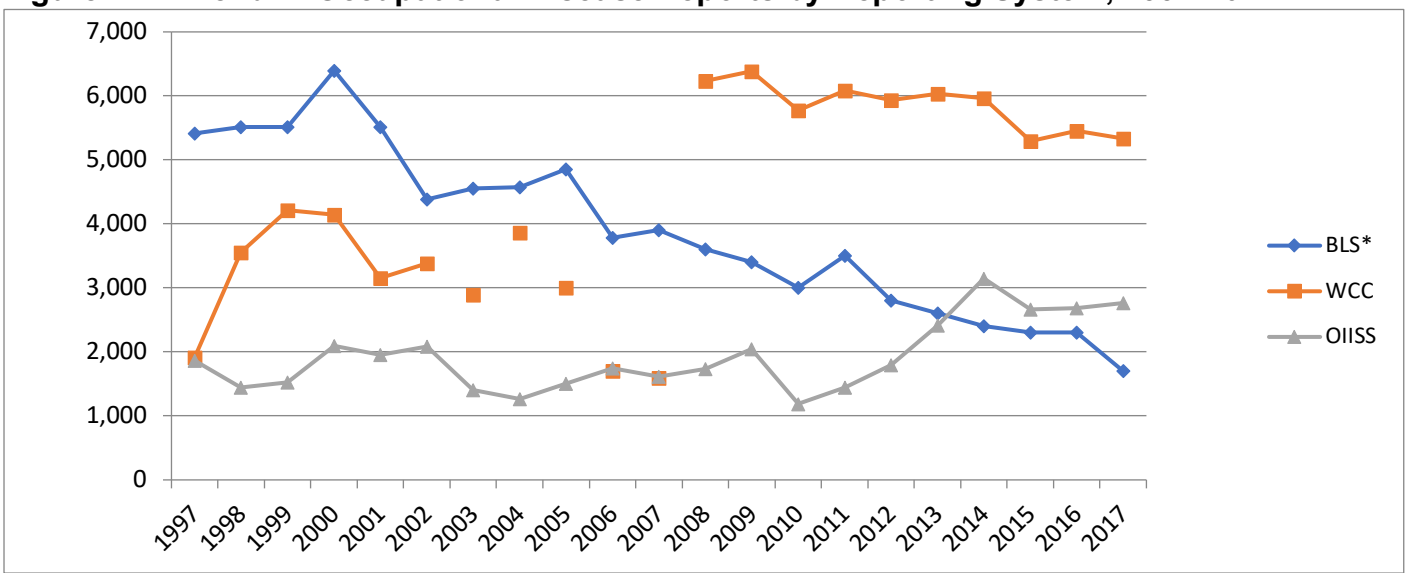
Table B-1: Matched, Unique, and Estimated Total Cases of Occupational Illness, CT, 2017

Illness Type	Matched	OIISS Only	WC Only	Unique Cases	Estimated Unreported	Estimated Total
Infectious	379	986	1,019	2,384	2,651	5,035
Lung	25	130	276	431	1,435	1,866
MSD	145	417	2,356	2,918	6,776	9,694
Other	45	163	765	973	2,771	3,744
Skin	42	126	180	348	540	888
Hearing loss	4	8	99	111	198	309
Total*	**640**	**1,830**	**4,695**	**7,165**	**13,425**	**20,590**

*Total is different than the sum of the categories due to rounding errors in estimating subcategories

There was a total of 640 cases that were reported to **both** workers' compensation (WC) and by physicians; 1,830 cases were reported only to the physician report system, and an additional 4,695 cases were reported only to the workers' compensation system. This gives a total of 7,165 unique cases that were reported to at least one of the two systems, with approximately 2,400 infectious cases, 400 lung cases, 3,000 musculoskeletal (MSD) cases, 350 skin conditions, 100 hearing loss cases, and 1,000 "other" cases. Using a statistical method called "capture-recapture" analysis, an estimate was made of the unreported cases (cases not reported to either workers' compensation nor by physicians), which was about 13,000 cases. When combined with the unique cases, this provides an estimate of approximately 20,500 occupational illness cases in Connecticut for 2017.

Figure B-2: Trend in Occupational Disease Reports by Reporting System, 1997-2017



Notes: BLS= Bureau of Labor Statistics/CTDOL survey; WCC= Workers' Compensation First Report of Injury; OIISS= Occupational Illness and Injury Surveillance System (physician reports).

***Notes:**

BLS figures starting in 2002 not comparable to prior years due to changes in data collection.

WCC data was not complete for 2003 and 2005-2007.

OIISS was not complete for 2010 and did not include most bloodborne infectious diseases/exposures in 2011.

The Connecticut Dept. of Public Health participates in a national program in partnership with the National Institute for Occupational Safety and Health (NIOSH) and the Council of State and Territorial Epidemiologists

(CSTE) to track key indicators in occupational safety and health (https://www.cste.org/page/OHIndicators or https://data.ct.gov/Health-and-Human-Services/Occupational-Health-Indicators/rjrv-6g8e/data). The data is only available to 2015, so this data is two years older than the rest of the data tracked in this report, but this standardized data can be compared to other states and also viewed historically back to the year 2000 for most indicators. Some data is published elsewhere in this report (for example in the Bureau of Labor Statistics data), but other data is from other sources such as hospital discharge data that is available to the Dept. of Public Health and is detailed below.

Pneumoconioses are a set of disabling lung diseases that have a number of occupational causes, including asbestos (asbestosis), silica (silicosis) and coal dust (coal workers' pneumoconiosis or CWP). In Connecticut, there were 163 hospital discharges for pneumoconiosis, including 149 cases of asbestosis, 7 CWP, and a small number of silicosis cases (too small to publish). There were 15 deaths from Pneumoconiosis, including 14 fatalities from asbestosis. There were also 40 fatalities reported by the CT Tumor Registry from mesothelioma, a cancer caused almost exclusively by exposure to asbestos, typically occupational. Poison Control Centers in Connecticut reported 23 work-related pesticide poisoning cases in Connecticut for 2015.

There were approximately 90,000 Connecticut workers employed in 2015 in the 54 specific high-risk **industries** (industries with double the national injury and illness rate based on historical Bureau of Labor Statistics data). Industries can be viewed on the CSTE website (https://www.cste.org/page/OHIndicators). This is approximately 6% of the Connecticut workforce. There were approximately 182,000 Connecticut workers (13.7% of the workforce) employed in the 49 high risk **occupations** that had at least double the national average rate.

Based on survey data from the national Asthma Call-Back Survey (ACBS) for 2015, there were an estimated 142,000 adults in Connecticut who report that their asthma was caused or made worse by exposures at work, which was 46.6% of adults with asthma.

C. Bureau of Labor Statistics/Connecticut Dept. of Labor Surveys

In cooperation with the U.S. Bureau of Labor Statistics (BLS), the Connecticut Department of Labor's (CTDOL) Office of Research conducts an annual survey of employers for job-related injuries and illnesses; data on injuries in Connecticut can be accessed through the national Bureau of Labor Statistics website at https://www.bls.gov/iif/oshstate.htm. Our report focuses on illnesses and includes data from CTDOL that is not published in that report. Since these statistics are based on a survey rather than a census, numbers and rates are estimated and rounded. The Connecticut Department of Labor acknowledges that the BLS/CTDOL survey under-counts occupational diseases, particularly chronic diseases, since these are frequently not recognized nor reported.

Occupational Illnesses in 2017

There were approximately 1,700 reported cases of occupational illnesses in 2017 (Table C-1 and Figure C-1) with an overall rate of 12.9 per 10,000 workers, a 26% decrease from the prior year.

Table C-1: Occupational Disease by Type, BLS/CTDOL 2016-2017

	2016		2017		% Change in Rate
	Cases	Rates	Cases	Rates	
Respiratory	200	1.3	100	1.1	-15%
Skin	500	3.9	400	2.9	-26%
Hearing Loss	300	2.2	200	1.9	-14%
Poisonings				0.4	
Other*	1,300	10.0	900	6.7	-33%
Total	**2,300**	**17.4**	**1,700**	**12.9**	**-26%**

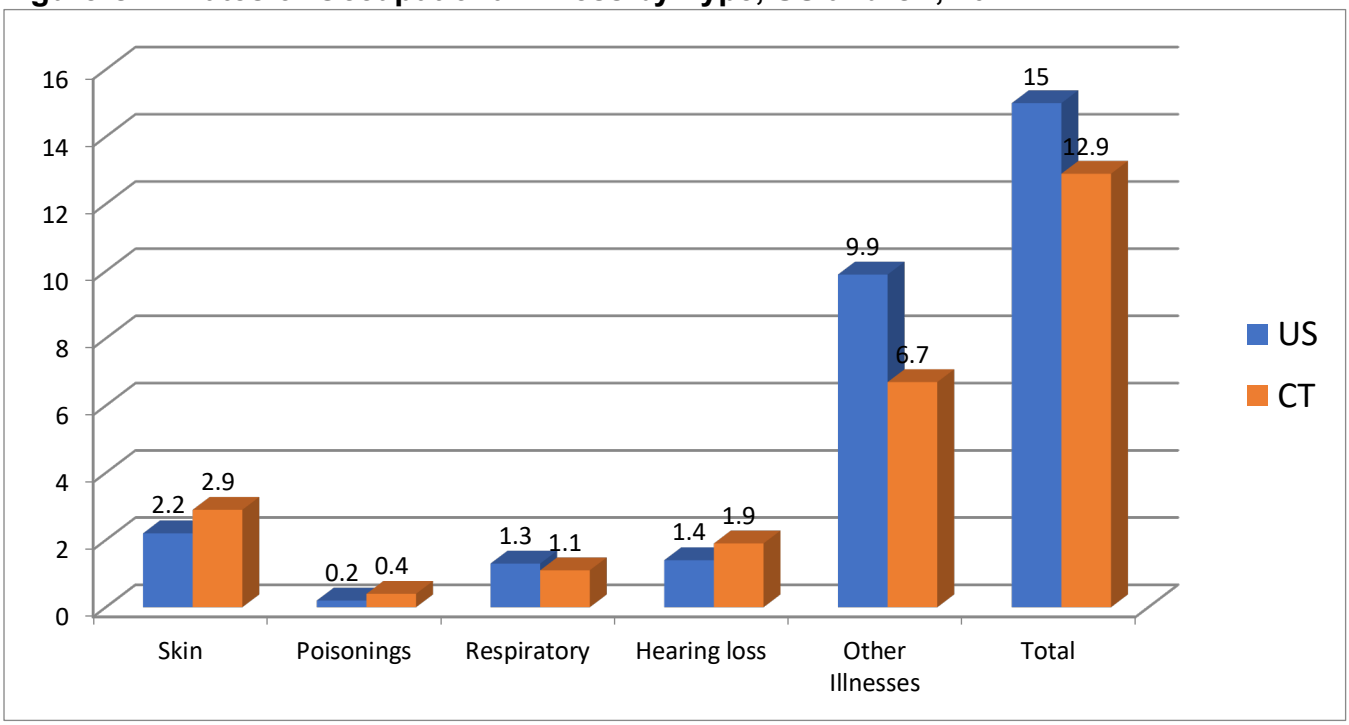
Source: BLS/CTDOL; Rates are per 10,000 workers, adjusted for hours worked. The data includes public sector. Blanks indicate numbers that are too small or unreliable to publish. Total Illnesses may differ from sum due to rounding errors.
*Musculoskeletal disorders (MSD) is categorized under the "Other" category by BLS.

Overall rates for Connecticut in 2017 were lower than the U.S., driven primarily by lower rates of Other Illnesses, which includes repetitive trauma (Figure C-1). The overall Connecticut rate (12.9 cases per 10,000 workers) was 14% lower than the U.S. rate of 15.0. Rates decreased in 2017 for both Connecticut and the U.S.

Connecticut's illness rate of 12.9 cases per 10,000 workers ranked 27th highest out of 43 states with publishable data (26 states had higher rates and 16 had lower rates). Alaska had the highest rate of 35.3 and the District of Columbia had the lowest at 7.6. Private sector rates for occupational illness were 11.3 in Connecticut and 12.8 nationally. Connecticut's public sector rate was 26.4; the U.S. public sector rate was 30.0.

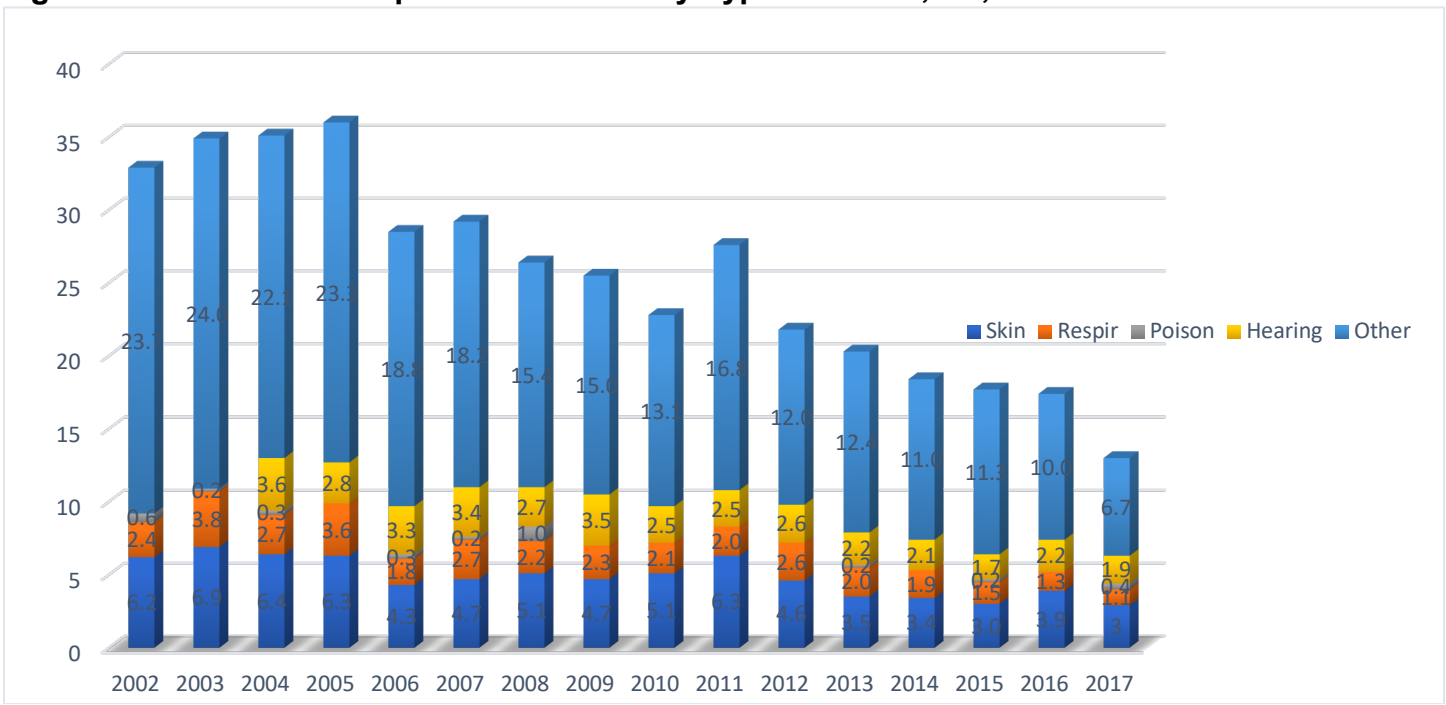
In Connecticut, the rate of illnesses increased slightly from 2002-2005, then generally decreased through 2017 with the exception of 2011 (Figure C-2).

Figure C-1: Rates of Occupational Illness by Type, US and CT, 2017



Source: BLS and CTDOL. Rates per 10,000 workers, adjusted for hours worked.

Figure C-2: Rates of Occupational Disease by Type and Year, CT, 2002-2017



Source: BLS and CTDOL. Rates per 10,000 workers, adjusted for hours worked.

Illnesses by Industry

Numbers and rates by industry sector for 2017 are presented in Table C-2. Overall, the adjusted rate was 12.9 cases of occupational illness per 10,000 CT workers, 26% lower than the 2016 rate of 17.4 (the number of cases also decreased 26% to 1,700). The overall private sector rate was 11.3, with a government rate of 26.4 (more than double the private sector rate).

Table C-2: Illness Rates per 10,000 Workers by Industry and Type of Illness, CT, 2017

	Total		Skin		Respiratory		Poison		Hearing		Other	
	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.
All industries including state and local government	12.9	1.7	2.9	0.4	1.1	0.1	0.4	--	1.9	0.2	6.7	0.9
Private industry	11.3	1.3	2.0	0.2	1.0	0.1	0.4	--	2.0	0.2	5.9	0.7
Goods-producing	18.9	0.4	1.8	--	--	--	--	--	9.2	0.2	6.7	0.1
Manufacturing	24.0	0.4	2.0	--	--	--	--	--	12.4	0.2	8.5	0.1
Service-providing	9.5	0.9	2.1	0.2	1.1	0.1	0.4	--	0.4	--	5.7	0.5
Trade, transportation, and utilities	11.0	0.3	2.0	--	1.9	--	--	--	--	--	5.9	0.1
Wholesale trade	11.3	0.1	--	--	--	--	--	--	--	--	4.3	--
Retail trade	5.9	0.1	--	--	--	--	--	--	--	--	3.7	--
Transportation and warehousing	17.3	0.1	--	--	--	--	--	--	--	--	10.5	--
Utilities	85.8	--	30.4	--	--	--	--	--	--	--	45.4	--
Information	--	--	--	--	--	--	--	--	--	--	--	--
Finance, insurance, and real estate	2.5	--	--	--	--	--	--	--	--	--	1.7	--
Finance and insurance	2.9	--	--	--	--	--	--	--	--	--	2.0	--
Professional and business services	5.2	0.1	--	--	--	--	--	--	--	--	--	--
Educational and health services	19.2	0.5	5.2	0.1	2.2	0.1	--	--	--	--	11.5	0.3
Health care and social assistance	23.6	0.5	6.5	0.1	2.4	--	--	--	--	--	14.2	0.3
Leisure, entertainment, and hospitality	2.4	--	--	--	--	--	--	--	--	--	--	--
State and local government	26.4	0.4	10.3	0.1	2.0	--	--	--	--	--	13.4	0.2
State government	17.1	0.1	10.1	0.1	--	--	--	--	--	--	4.7	--
Local government	31.4	0.3	10.4	0.1	2.0	--	--	--	--	--	18.0	0.2

Source: CTDOL; Rates are adjusted for hours worked and are per 10,000 full-time workers. Number of cases are in thousands (i.e 0.2 means 200 cases). Blanks indicate too little data for reliable estimates. Detailed subcategories with no publishable data are omitted.

The highest specific sector rate was for Utilities at 85.8 cases per 10,000 workers, although the number of cases was too low to be reportable, making this rate difficult to evaluate. Local Government had an overall rate of 31.4, followed by Manufacturing of 24.0 and Health Care at 23.6. Skin conditions were most common at Utilities (30.4), respiratory in Health Care (2.4), hearing loss in Manufacturing (12.4), and "other conditions" (including repetitive trauma) in Utilities (45.4).

Lost-Time Illnesses

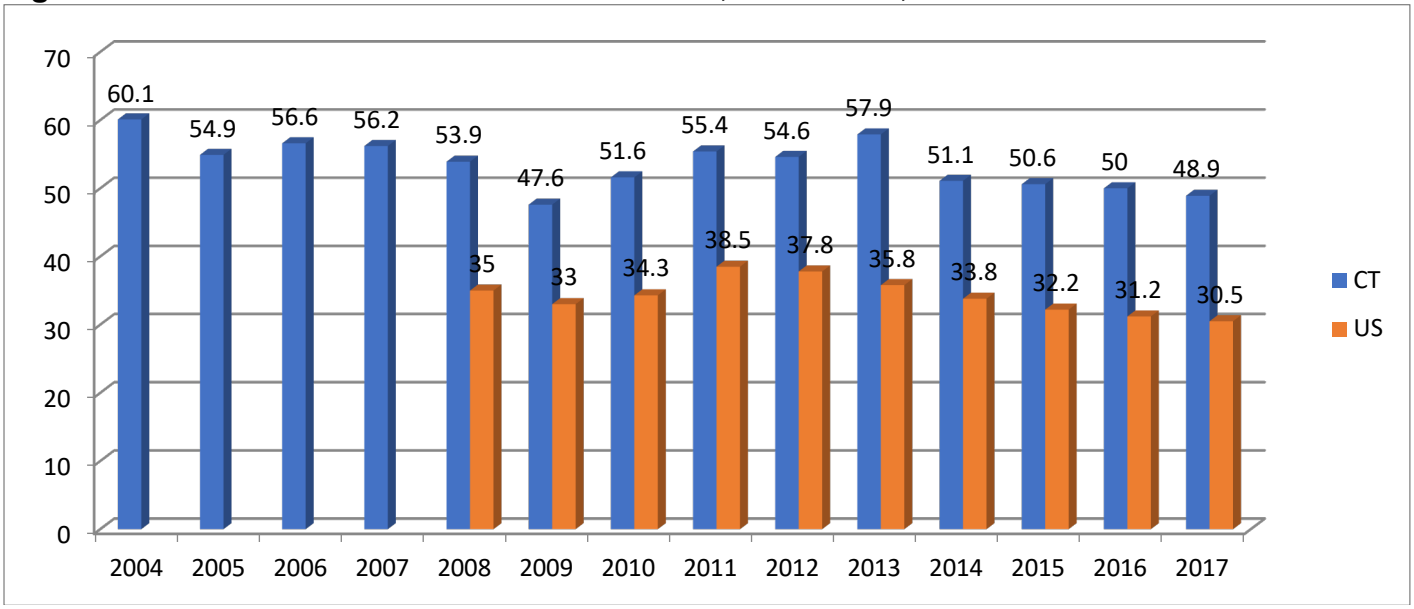
BLS obtains additional data for the subset of cases that result in lost worktime and provides additional detail on specific conditions and causes. The following draws from this data for conditions that are more chronic in nature (usually classified as occupational illness). Restricted work cases are not included in this data, which is about half again the number of lost worktime cases.

Musculoskeletal Conditions

The rate of musculoskeletal disorders (MSD) with lost time was 2% lower than the previous year at 48.9 cases per 10,000 workers (Figure C-3). The Connecticut rate is 60% higher than the national MSD rate of 30.5. MSD rates in Connecticut have generally decreased over the last seven years. National rates for all private and public employees have only been available since 2008.

Musculoskeletal conditions are the most common category of specific injury and illness conditions and is a category that includes both chronic conditions and sprains and strains from overexertion. BLS defines this fairly complex category as "includes cases where the nature of the injury or illness is pinched nerve; herniated disc; meniscus tear; sprains, strains, tears; hernia (traumatic and non-traumatic); pain, swelling, and numbness; carpal or tarsal tunnel syndrome; Raynaud's syndrome or phenomenon; musculoskeletal system and connective tissue diseases and disorders, when the event or exposure leading to the injury or illness is overexertion and bodily reaction, unspecified; overexertion involving outside sources; repetitive motion involving microtasks; other and multiple exertions or bodily reactions; and rubbed, abraded, or jarred by vibration."

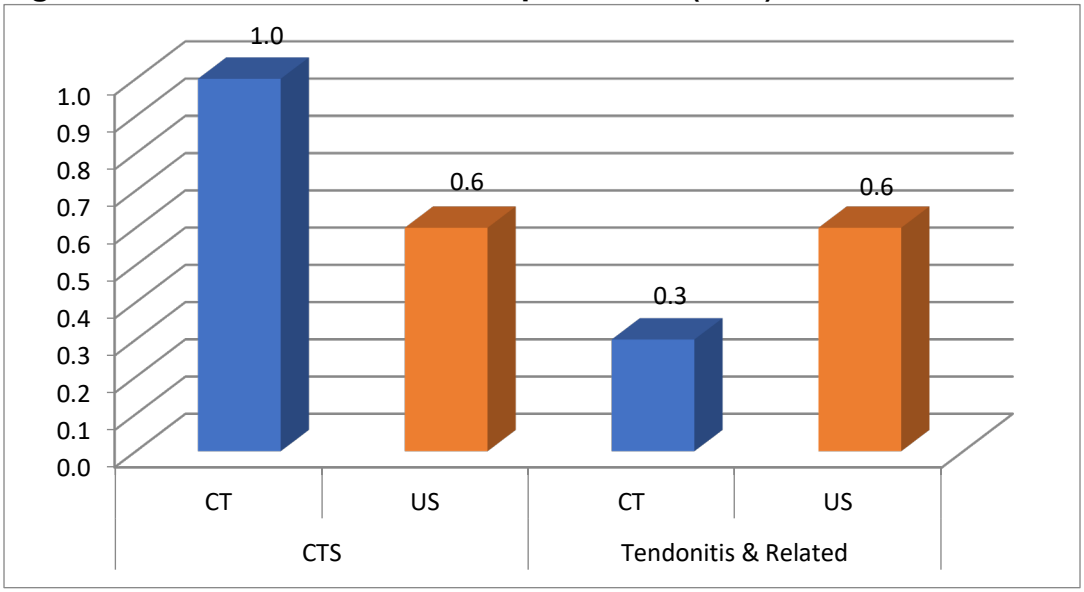
Figure C-3: Rates of Musculoskeletal Disorders, CT and US, 2004-2017



Source: U.S. Bureau of Labor Statistics (Customized Tables); http://data.bls.gov
Rates are cases per 10,000 full time employees, public and private

Carpal Tunnel Syndrome (CTS) was the most common specific illness in CT, with a rate of 1.0 cases per 10,000 workers in 2017 (Figure C-4), and 0.3 cases per 10,000 of **tendonitis**. The rate of CTS in CT was 67% higher than the national rate, but 50% lower for tendonitis. CTS had a very high number of lost work days, with a median of 20 days of lost time per case (compared to 8 days for all cases of injury and illness) in CT. Tendonitis (and related soft-tissue disorders) was also high at 27 days.

Figure C-4: Rates of Lost-time Carpal Tunnel (CTS) and Tendonitis, US & CT, 2017



Source: BLS Website http://www.bls.gov customized tables, private and public, cases per 10,000 full time employees.

Connecticut lost time cases coded as "**repetitive motion**" for cause decreased to 2.7 cases per 10,000 workers from 3.3 in the previous year. Computer tasks was the largest specific cause of repetitive motion (Table C-3). The CT rate was 17% higher than the national rate of 2.3. Repetitive motion lost time cases in CT had a median of 20 days away from work.

Table C-3: Illnesses involving Repetitive Motion by Type, 2016-2017

Repetitive Motion Injuries	**2016**	**2017**
Microtasks (unspecified)	1.1	0.7
Typing and computer	0.7	0.9
Tools	0.4	0.5
Grasping, placing, moving	0.6	0.5
Hand use (not tools)	0.1	0.1
Multiple types of repetitive motions	0.2	
Other microtasks		
All repetitive with microtasks (total)	**3.3**	**2.7**

D. Workers' Compensation First Report of Injury Data

There was a total of 5,335 reports in the Workers' Compensation First Report of Injury Database for 2017 (Table D-1), a 2% decrease from 2016, with a 21% increase in infectious diseases, a 15% increase in skin disorders, a 4% decrease in lung disorders, a 14% decrease in musculoskeletal disorders (MSD) and a 4% increase in "other illnesses".

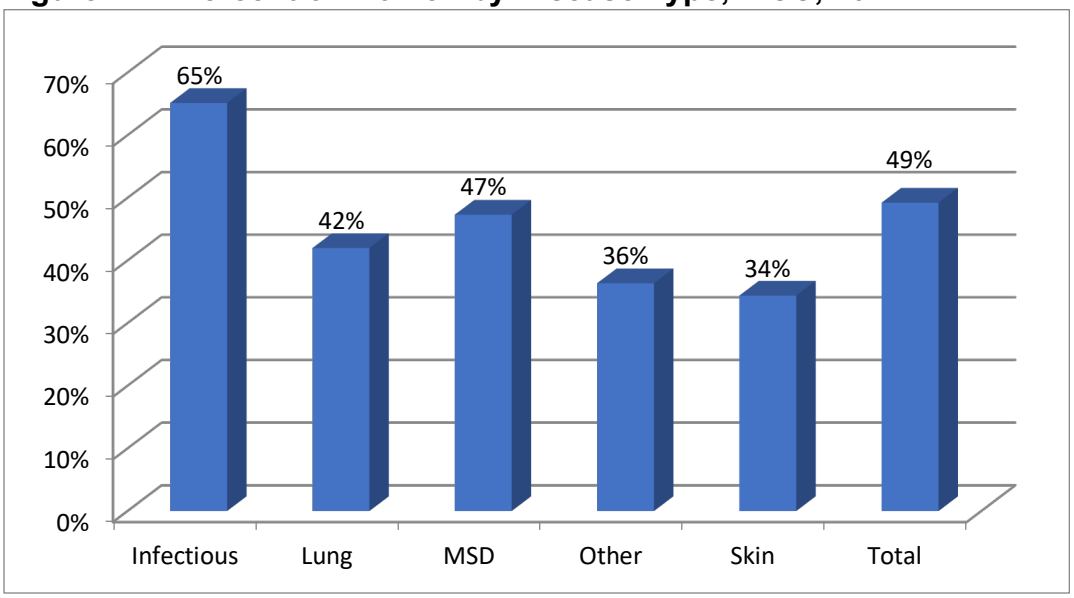
Approximately half (47%) of the reports were due to chronic musculoskeletal disorders (MSD) such as carpal tunnel syndrome and tendonitis. Infectious diseases accounted for 21% of the cases, lung diseases (including nonspecific respiratory illness and chronic lung conditions such as asthma and asbestos-related illnesses and exposures) 6%, skin disorders 4%, and "Other Illnesses" (which includes heart conditions, stress cases, noise-induced hearing loss, and other conditions), 17%.

Table D-1: Occupational Disease by Type, WCC, 2016-2017

Illness type	2016 Cases	2017 Cases	% of Total	% Change
Musculoskeletal Disorders (MSD)	2,916	2,501	47%	-14%
Infectious Disease	1,155	1,398	26%	21%
Lung Disorders	315	301	6%	-4%
Skin Disorders	193	222	4%	15%
Other Illnesses	875	913	17%	4%
Total	**5,454**	**5,335**	**100%**	**-2%**

Overall, 49% of reports were for women, but this varied by type of case, with a higher proportion than average for infectious diseases (65% women) but lower for all other types of illness (Figure D-1).

Figure D-1: Percent of Women by Disease Type, WCC, 2017



Reported occupational illnesses occurred more in older workers, with almost half (48%) involving workers between 40 and 59 years old (Table D-2), with 20% involving workers in their 30's, and 18% in their 20's.

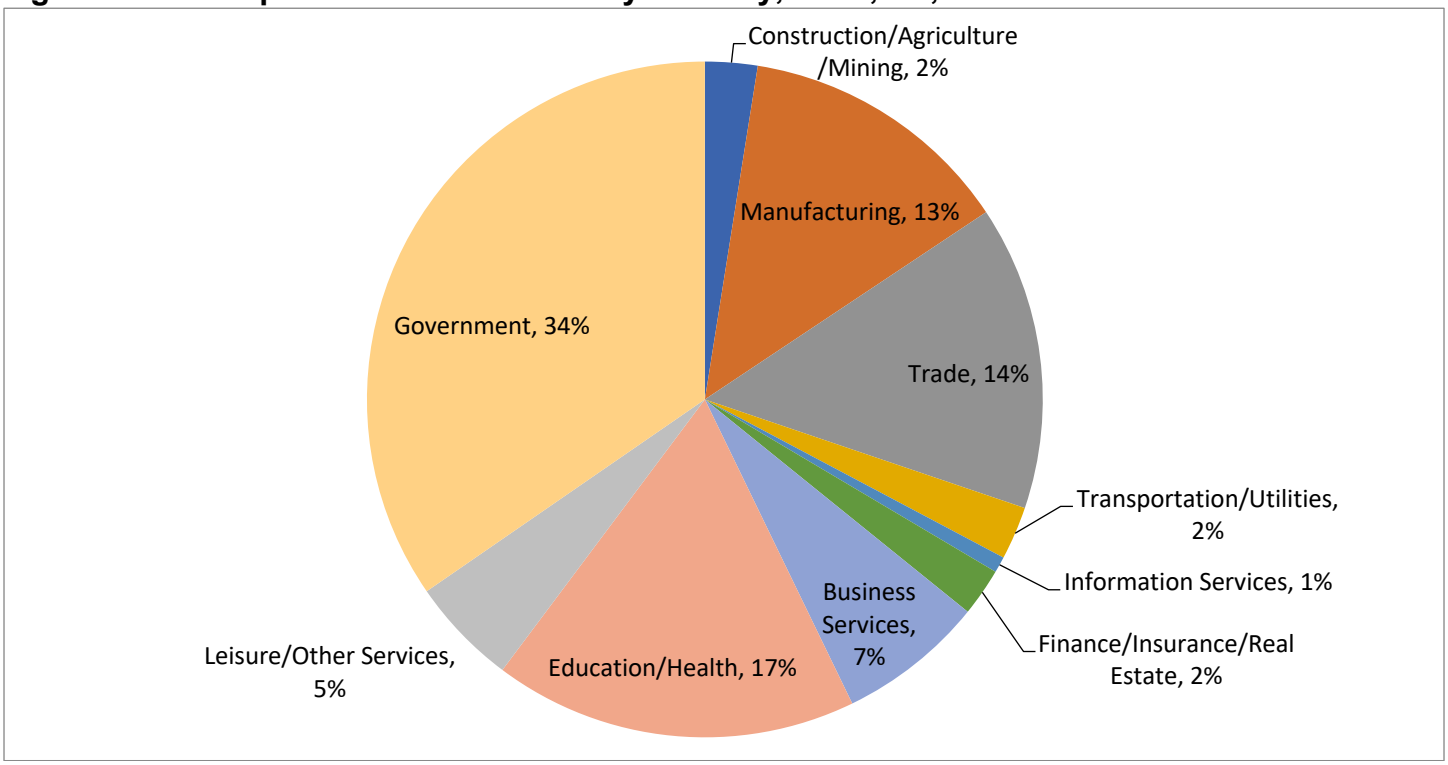
Numbers and rates of occupational illnesses by industry sector are presented by major North American Industry Classification System (NAICS) classifications in Figure D-2 and Table D-3. Ninety-eight percent (98%) of

reported cases were able to be coded for major industry sector. The largest sectors in terms of overall numbers were Government (34%), Manufacturing (13%), Education/Health (17% of all cases; there are also health and education cases classified under government, such as employees in public schools), and Trade (14%).

Table D-2: Occupational Illness by Age, 2017

Age Range	Cases	Percent
Under 20	63	1%
20-29	942	18%
30-39	1,042	20%
40-49	1,162	22%
50-59	1,394	26%
60-69	646	12%
70+	78	1%
Unknown	8	--
Total	**5,335**	**100%**

Figure D-2: Occupational Illness Cases by Industry, WCC, CT, 2017



The number of illnesses by industry may be compared to the size of employment in those industries to understand which industries are at higher risk for illness. Table D-3 shows these figures, excluding cases where the industry was unknown. Overall, the rate of illness is 32.0 cases per 10,000 workers, a decrease of 2% from the 32.7 cases per 10,000 in 2016. The highest rates by industry sector were for Government (79.6, 149% higher than the overall rate) and Manufacturing (43.3 or 35% higher), with all other sectors below the average rate.

Table D-4 provides the detail of industry sector by type of condition. Patterns of illness by industry differed by the type of illness, although Government was relatively high in all categories. Table D-4 is based on **numbers**

of cases and not **rates**, so they are not adjusted for employment size in the different sectors (rates are shown in Tables D-3 and D-5).

Table D-3: Cases of Occupational Disease by Major Industry Sector, WCC, 2017

NAICS Sector	Cases	%	Employment	%	Rate
Construction/Agriculture/Mining	131	2%	63,616	4%	20.6
Manufacturing	687	13%	158,810	10%	43.3
Trade	761	14%	246,054	15%	30.9
Transportation/Utilities	133	2%	51,345	3%	25.9
Information Services	40	1%	31,513	2%	12.7
Finance/Insurance/Real Estate	120	2%	126,071	8%	9.5
Business Services	366	7%	218,370	13%	16.8
Education/Health	910	17%	325,450	19%	28.0
Leisure/Other Services	270	5%	220,804	13%	12.2
Government*	1,809	34%	227,238	14%	79.6
Unknown	108	2%	498		
Total	**5,335**	**100%**	**1,669,766**	**100%**	**32.0**

Notes: Employment is adjusted for hours worked. A small number of reports that could not be coded for industry are categorized as unknown. Rates are illnesses per 10,000 workers. Total employment and percent do not equal the sum of components due to rounding errors. *Government sector includes cases that could alternately be classified under health and education (i.e. public schools). NAICS is the North American Industry Classification System.

Government had a high number of cases in all categories of illnesses. **Infectious diseases** were concentrated in Government (50%) and Education/Health (37%). **Lung diseases** were concentrated in Government (48%), Manufacturing (13%), and Trade (11%). **Musculoskeletal disorders** (MSD) were spread across Trade (22%), Government (21%), Manufacturing (21%), and Education/Health (12%). **Skin disorders** were spread across Government (43%), Education/Health (14%), and Business Services (11%). **"Other" illnesses**, including heart conditions and hypertension, stress, and hearing loss cases (see below) were most common in Government (41%), Trade (18%) and Manufacturing (13%).

Table D-4: Type of Disease by Industry Sector, WCC, 2017

	Other		Lung		Infectious		MSD		Skin		Total	
Construction/Agric/Mining	25	3%	5	2%	11	1%	84	3%	6	3%	131	3%
Manufacturing	120	13%	39	13%	5	0%	505	21%	18	8%	687	13%
Trade	158	18%	32	11%	17	1%	534	22%	20	9%	761	15%
Transport/Utilities	17	2%	6	2%	10	1%	98	4%	2	1%	133	3%
Information Services	9	1%	3	1%	1	0%	27	1%		0%	40	1%
Finance/Insurance/RE	23	3%	13	4%	4	0%	74	3%	6	3%	120	2%
Business Services	61	7%	19	6%	117	8%	145	6%	24	11%	366	7%
Education/Health	57	6%	27	9%	514	37%	282	12%	30	14%	910	17%
Leisure/Other Services	64	7%	9	3%	15	1%	164	7%	18	8%	270	5%
Government	364	41%	141	48%	693	50%	518	21%	93	43%	1,809	35%
Subtotal	**898**	**100%**	**294**	**100%**	**1,387**	**100%**	**2,431**	**100%**	**217**	**100%**	**5,227**	**100%**
Unknown	15		7		11		70		5		108	
Total	**913**		**301**		**1,398**		**2,501**		**222**		**5,335**	

Table D-5: Specific Industry Sectors with over 25 Cases of Occupational Disease, WCC, 2017

Specific Industry Sector	Cases	Employment	Rate	2016	Change from 2016
Computer and Electronic Product Manufacturing	121	11,236	107.7	153	-21%
State Government	590	61,481	96.0	658	-10%
Local Government	1,220	147,734	82.6	1,202	1%
Electric Power Generation	37	5,333	69.4	24	54%
Hospitals	387	58,876	65.7	268	44%
Food and Beverage Stores	272	43,892	62.0	139	96%
Electrical Equip, Appliance, Component Manufactg.	42	7,993	52.5	47	-11%
Transportation Equipment Manufacturing	224	43,975	50.9	248	-10%
Fabricated Metal Product Manufacturing	127	29,413	43.2	142	-11%
Merchant Wholesalers, Nondurable Goods	76	20,149	37.7	70	9%
Food Products	30	8,128	36.9	35	-14%
Couriers and Messengers	28	7,587	36.9	28	0%
Chemical Manufacturing	28	7,795	35.9	33	-15%
Administrative and Support Services	276	83,745	33.0	284	-3%
Accommodation	36	11,895	30.3	33	9%
Nursing and Residential Care Facilities	179	61,645	29.0	181	-1%
General Merchandise Stores	82	28,428	28.8	97	-15%
Non-residential Construction	29	10,865	26.7	27	7%
Merchant Wholesalers, Durable Goods	79	29,972	26.4	100	-21%
General Purpose Machinery Manufacturing	34	13,402	25.4	39	-13%
Repair and Maintenance	33	13,576	24.3	23	43%
Motor Vehicle Dealers	50	21,517	23.2	74	-32%
Hardware Stores	33	15,124	21.8	23	43%
Residential Building Leasing	32	14,814	21.6	21	52%
Educational Services	121	57,860	20.9	59	105%
Clothing and clothing accessories	35	17,248	20.3	35	0%
Health and Personal Care Stores	27	13,675	19.7	58	-53%
Specialty Trade Contractors	79	40,504	19.5	91	-13%
Physician Offices	175	90,605	19.3	204	-14%
Amusement, Gambling, and Recreation	33	21,468	15.4	29	14%
Credit Intermediation and Related Activities (Banks)	37	24,337	15.2	36	3%
Personal and Laundry Services	26	21,883	11.9	26	0%
Social Assistance	47	56,465	8.3	53	-11%
Food Services and Drinking Places	96	116,341	8.3	112	-14%
Professional, Scientific, and Technical Services	66	96,354	6.8	99	-33%
Insurance Carriers and Related Activities	36	58,375	6.2	32	13%

Table D-5 shows those specific industry (3-digit NAICS code) sectors that reported 25 or more cases of occupational illness in 2017, ordered by the highest ***rate*** of illness. Local Government and State Government do not show detailed sector (such as Education or Health) since the data did not provide reliable detail. The highest rates were in Computer and Electronic Product Manufacturing (107.7 cases per 10,000 workers), State government (96.0), Local Government (82.6), Electric Power Generation (69.4), Hospitals (65.7), Food and Beverage Stores (62.0), Electrical Equipment, Appliance, and Component Manufacturing (52.5), Transportation Equipment Manufacturing (50.9), Fabricated Metal Product Manufacturing (43.2), Merchant Wholesalers of Nondurable Goods (37.7), Food Products (36.9), Couriers and Messengers (36.9), Chemical Manufacturing (35.9), and Administrative and Support Services (33.0). Although all of the specific sectors in the table had over 25 cases reported, the other 23 categories were at or below the average overall state rate of 32.0 per 10,000 workers (primarily because they are sectors that employ relatively large numbers of workers).

Illnesses by Town/Municipality

Occupational illnesses were coded by the town where the illness occurred (typically the town where the employer is located). Table D-6 and Figure A-1 show the rates of illness per 10,000 employees per town (based on total employment by town of employment, provided by the CT Dept. of Labor) for all towns and municipalities with at least 25 cases of occupational illness reported in 2017. The table is ordered by rates, with the highest rates first. Rates of illness varied widely by municipality; often high rate towns appear to be related to large employers in high rate industries. The overall state average was 32.0 cases per 10,000 employees.

For towns with at least 25 cases, Cromwell had the highest rate at 109 cases per 10,000 employees, over 3 times higher than the average rate of 32. Cromwell was followed by Vernon (67), Killingly (66), Stonington (59), Groton (55), New Milford (54), East Haven (54), Stratford (53), South Windsor (50), and Middletown (50).

Table D-6: Illnesses by Town/Municipality, 25 or more cases, WCC, 2017

Town	Cases	Employment	Rate per 10,000	Rank
Cromwell	82	7,518	109	1
Vernon	56	8,336	67	2
Killingly	59	8,989	66	3
Stonington	46	7,737	59	4
Groton	152	27,520	55	5
New Milford	44	8,128	54	6
East Haven	32	5,952	54	7
Stratford	135	25,404	53	8
South Windsor	68	13,551	50	9
Middletown	136	27,294	50	10
Farmington	157	32,223	49	11
Guilford	39	8,081	48	12
Cheshire	72	16,254	44	13
Mansfield	50	11,431	44	14
Southington	72	16,601	43	15
Waterbury	166	39,205	42	16
Manchester	116	27,481	42	17
Hartford	467	111,319	42	18
Putnam	25	6,106	41	19
Torrington	60	14,759	41	20

Waterford	43	11,242	38	21
New Haven	308	82,438	37	22
Danbury	155	44,128	35	23
Newington	58	16,559	35	24
Trumbull	53	15,434	34	25
New London	48	14,117	34	26
Glastonbury	58	17,113	34	27
Westport	48	14,992	32	28
Simsbury	27	8,437	32	29
Plainville	31	9,898	31	30
Windsor	81	25,980	31	31
Newtown	26	8,469	31	32
Rocky Hill	53	17,346	31	33
Wethersfield	29	9,778	30	34
Bridgeport	125	42,178	30	35
Windham	29	10,225	28	36
Bristol	63	22,317	28	37
Orange	30	10,650	28	38
Milford	76	27,779	27	39
West Hartford	79	28,899	27	40
Montville	35	12,836	27	41
Berlin	31	11,413	27	42
Meriden	61	22,682	27	43
Norwich	45	17,221	26	44
Windsor Locks	32	12,886	25	45
West Haven	38	15,441	25	46
Enfield	46	18,793	24	47
Bloomfield	45	18,791	24	48
Wilton	29	12,608	23	49
Norwalk	97	44,680	22	50
Wallingford	61	28,297	22	51
East Hartford	68	32,027	21	52
Greenwich	72	34,780	21	53
New Britain	49	24,583	20	54
North Haven	33	18,157	18	55
Hamden	32	20,372	16	56
Fairfield	39	25,159	16	57
Shelton	36	23,774	15	58
Stamford	57	76,052	7	59
Connecticut	**5,342**	**1,669,921**	**32**	

*****Lower rank indicates higher rates of illness (i.e. the town ranked first has the highest rate of illness). Ranks are based on the towns with at least 25 cases of illness reported for the year. Employment figures are based on the town of employment. The Connecticut rate is the average of all towns, not just those with 25 or more cases.

Musculoskeletal Disorders (MSD)

"Musculoskeletal disorders" is the currently-used term for conditions also known as cumulative trauma disorders or repetitive strain injuries. There were 2,501 cases of MSD reported to Workers' Compensation in 2017, a 14% decrease from 2016 (Table D-7). MSD accounted for just under half (47%) of the reported occupational diseases to Workers' Compensation. MSD do not include cases for conditions determined to be injuries caused from sudden events (this is a different definition than that used by BLS/CTDOL for lost time MSD, which includes some acute injuries). Most cases for the lower back are not included (since the descriptions of back conditions are typically insufficient to be able to distinguish between acute injuries and cumulative back injuries) unless they specifically noted that they were due to repetitive exposures.

Strains and sprains (which do not include acute strains or sprains such as those from single events/accidents) was the most common category of MSD, with 70% of reports (Table D-7) coded for that general category. Carpal Tunnel Syndrome (CTS), which is a very debilitating pinching of the median nerve at the wrist, accounted for 10% of total MSD reports. Other nerve-related problems (with descriptions of numbness or tingling) accounted for an additional 4% of cases. Tendon-related problems including tendonitis and tenosynovitis, epicondylitis ("tennis elbow" or "golfer's elbow"), trigger finger, and rotator cuff accounted for 3% of cases. A large number of cases did not have a specific description other than inflammation, swelling, pain or no specific description.

Table D-7: Musculoskeletal Disorders (MSD) by Type, WCC, 2016-2017

	2016	2017		
MSD Type	**Cases**	**Cases**	**%**	**Change**
Sprain/strain	2,140	**1,755**	70%	-18%
Carpal Tunnel Syndrome	260	**262**	10%	1%
Numbness	112	**91**	4%	-19%
Tendonitis/tenosynovitis	38	**38**	2%	0%
Trigger finger	29	**29**	1%	0%
Ganglion cyst	17	**16**	1%	-6%
Epicondylitis	16	**13**	1%	-19%
Rotator cuff	11	**7**	0%	-36%
Arthritis/bursitis	6	**11**	0%	83%
Other/Unknown	287	**279**	11%	-3%
Total	**2,916**	**2,501**	**100%**	**-14%**

Over two-thirds (70%) of the cases of MSD were in the upper limbs of the body such as hands, arms, elbows, and shoulders (Table D-8). Another 15% were for the lower extremity (legs, knees and feet), and 7% for the neck, upper back, and torso (note that lower back cases were excluded from these figures unless they explicitly indicated they were due to cumulative exposures).

Causes of conditions were often incomplete, overlapping, and not consistently coded nor described. Approximately 80% of MSD cases had enough description to show some cause. Of the MSD that could be classified (Table D-9), the most frequently mentioned cause was the broad category of "repetitive" (26% of cases). This term is often used as a general description to describe any chronic musculoskeletal problem. Repetitive motion was followed by lifting and carrying (18.6%), pushing or pulling (13.6%), tool use (including references specifically to pneumatic tools or vibration exposure; 10.2%), and computing and clerical tasks (8.3%).

Table D-8: Musculoskeletal Disorders by Part of Body, WCC, 2017

Part of body	Cases	Percent
Lower Arm, Wrist, Hand	1,042	42%
Upper Arm, Shoulder, Upper Extremity	521	21%
Legs, Knees, and Feet	375	15%
Elbow	176	7%
Neck and Upper Back	114	5%
Trunk	54	2%
Multiple	201	8%
Other/Unknown	18	1%
	2,501	**100%**

Table D-9: Musculoskeletal Disorders (MSD) with Identified Cause, WCC, 2017

Cause of MSD	Reports	%
Repetitive	525	25.7%
Lifting/carrying	380	18.6%
Push/pull	279	13.6%
Tools/vibration	209	10.2%
Computer/clerical	170	8.3%
Reaching	88	4.3%
Bending/kneeling/crawling	65	3.2%
Assembly	43	2.1%
Climbing	39	1.9%
Twisting	36	1.8%
Machine	33	1.6%
Cleaning/mopping/sweeping	29	1.4%
Walking/running/moving	28	1.4%
Grasping/gripping/squeezing	25	1.2%
Patient care	19	0.9%
Sitting/standing	16	0.8%
Selecting/sorting/inspecting/packing	16	0.8%
Shoveling	15	0.7%
Driving	13	0.6%
Scanning/cashier	13	0.6%
Overhead	5	0.2%
Sub-Total	**2,046**	**100.0%**
Unknown/other	**455**	
Total	**2,501**	

Infectious Diseases

There were 1,398 reports of infectious diseases or exposures in the database for 2017 (Table D-10), a 21% increase from the previous year. Infectious disease reports include both actual disease and exposure to infectious agents. There were 1,029 reports of exposure to bloodborne pathogens (including reports of exposure to HIV/AIDS and Hepatitis C), accounting for 74% of all infectious disease reports and an 17% increase from the previous year. These included 378 needlestick injuries or cuts from sharps or surgical instruments that may have resulted in exposure to a patient's blood, 459 reports of exposures to human bites (cases were excluded if they specifically indicated the skin was not broken), and 192 reports of skin or eye exposure to blood or bodily fluids. There were additional reports of exposure to "spit" or "sputum" that are not reported here, since risks tend to be extremely low from such exposures. Diseases that can be contracted through blood and body fluid exposures include hepatitis B and C and HIV. Human bites are considered to be relatively low risk exposures in terms of bloodborne disease transmission. Exposure to blood and fluids are somewhat higher risk (especially if the worker has open wounds or sores). Sharps (i.e. scalpels) and needlesticks are considered the highest risk (especially if they are deep cuts or injections). Incidents concerning prisoners or clients (including special needs students) accounted for the vast majority of human bites as well as some of the other bloodborne exposures. The data does not have consistent information on whether the source patient is known to be infected with a bloodborne illness such as HIV or hepatitis, so many of these reported incidents will have little or no actual risk of disease transmission. However, preventive efforts focus on universal precautions, so it is important to reduce these incidents regardless of whether patients/clients are known to be infected.

Table D-10: Infectious Diseases and Exposures by Type, WCC, 2016-2017

	2016		2017		
Illness	**Cases**	**%**	**Cases**	**%**	**Change**
Bloodborne: Human bite	406	35%	**459**	33%	13%
Bloodborne: Sharp and needlestick exposures	290	25%	**378**	27%	30%
Bloodborne: Blood/body fluids	176	15%	**192**	14%	9%
TB, PPD conversion or TB exposure	47	4%	**194**	14%	313%
Lyme Disease/tick bite	57	5%	**86**	6%	51%
Other infectious	45	4%	**43**	3%	-4%
Scabies/lice	20	2%	**17**	1%	-15%
Rabies	12	1%	**12**	1%	0%
MRSA/staph/strep	20	2%	**8**	1%	-60%
Meningitis exposure	75	6%	**7**	1%	-91%
Chicken pox, measles, whooping cough	7	1%	**2**	0%	-71%
Total	**1,155**	**100%**	**1,398**	**100%**	**21%**

There were 194 cases of tuberculosis infection (usually determined by PPD conversion, a skin test based on immune response to TB) or exposure to clients with TB; this was an increase of 313% from 2016. There were 86 reports of tick bites, rashes from tick bites and/or a diagnosis of Lyme disease attributed to occupational exposures, a 51% increase. In addition, there were 17 cases of scabies or lice exposures/illnesses, 12 cases of exposure to rabies, 8 reports of exposure or cases of MRSA (Methicillin-resistant Staphylococcus aureus, or staph infection that responds poorly to antibiotics) or other staph or strep infections, 7 reports of meningitis exposure or illness, and 2 cases of chicken pox, measles or whooping cough.

Court decisions have broadened the definition of compensable disease under Workers' Compensation to include exposures, particularly where exposure requires medical treatment such as prophylactic treatments for tuberculosis (TB) and AIDS (HIV) exposures. It is often difficult to determine whether the first report of injury was actual disease or only exposure (for example, actual Lyme disease or only a report of a tick bite).

Respiratory Illness and Poisonings

There were 183 cases of respiratory illnesses (mostly nonspecific respiratory illness from relatively acute chemical or biological exposures) for 2017 (Table D-11), a 15% increase from 2016. There were 16 cases of poisonings from carbon monoxide, other gases, mercury, or lead, a 16% decrease from the previous year. In addition, *chronic* lung disease such as asbestos-related illnesses, asthma, and lung cancer are addressed in the following section.

Chemical exposures were the most common cause of respiratory illness, (33% of cases) followed by smoke or fire (20%), general indoor air quality (IAQ) or mold (9%), and dust or fumes (21%). There were 15 cases of poisoning from exposure to carbon monoxide or other gases and fumes, and no Workers' Compensation reports of lead and 1 mercury poisoning or exposure in 2017.

In addition to the more general categories of smoke and mold, specific substances were reported as connected to the respiratory cases: Acetone (2), acid, bleach (4), cleaning chemicals (5), fire extinguisher (2), Freon, glycol (11), police inadvertent exposure to narcotic drugs (3), paint (4), perfume (2), and welding fumes.

Table D-11: Respiratory Conditions and Poisonings by Cause, WCC, 2016-2017

Cause	2016		2017		
Respiratory	**Cases**	**%**	**Cases**	**%**	**Change**
Chemical exposure	66	42%	**60**	33%	-9%
Smoke or fire	37	23%	**36**	20%	-3%
IAQ/mold/odor	21	13%	**17**	9%	-19%
Dust/fumes	14	9%	**38**	21%	171%
Other respiratory	21	13%	**32**	17%	52%
Respiratory subtotal	**159**	**100%**	**183**	**100%**	**15%**
Poisoning					
Carbon monoxide/gas	17	81%	**15**	94%	-12%
Lead	0	0%	**0**	0%	
Other poisoning	4	19%	**1**	6%	-75%
Poisoning subtotal	**21**	**100%**	**16**	**100%**	**-24%**
Total Respiratory and Poisoning	**180**	**100%**	**199**	**100%**	**11%**

Chronic Lung Conditions

There were 102 cases of chronic lung conditions in 2017, a 24% decrease from the previous year (Table D-12). These included asbestos-related diseases and exposures, occupational asthma, and other chronic lung diseases. Acute respiratory illnesses are classified under respiratory conditions and poisonings (above).

Asbestos

There were 14 reports of asbestos-related disease or exposures in 2017. The descriptions of the cases often make it difficult to determine whether the cases are actual disease or current exposure to asbestos; the notations may be either describing historic exposures that contributed to current disease, or current exposures that raise the risk of future disease. Cancers, including those caused by asbestos, are noted below (under "other illnesses"). See also separate data from the Occupational Health Indicators project in relation to asbestosis and mesothelioma deaths in the Summary of Disease section above.

Asbestos exposure is known to increase the risk of lung disease and cancer. If disease occurs as a result, it often appears between 10-40 years after exposure. Asbestos disease may be under-reported by traditional surveillance sources such as Workers' Compensation.

Table D-12: Chronic Lung Diseases by Type, WCC, 2016-17

Illness	2016	2017	Change
Asthma/bronchitis	33	**20**	-39%
Asbestos-related	33	**14**	-58%
Allergies	13	**4**	-69%
Other chronic lung	56	**64**	14%
Total	**135**	**102**	**-24%**

Other Chronic Lung Conditions

There were 20 occupational asthma cases reported in 2017 (a 39% decrease from the previous year), 4 lung-related allergies, and 64 other chronic lung conditions. The causes mentioned for asthma and other chronic lung conditions were paint (2), construction, exertion, mold (2), smoke, and dust.

Skin Conditions

There were 222 skin conditions in the database in 2017 (Table D-13), an increase of 15% over the previous year. These included 79 cases of contact dermatitis from poison ivy or other plants (35% of all skin cases). There were 42 cases of skin conditions caused by chemicals, as well as 24 additional cases attributed specifically to cleaning chemicals. There were 10 cases caused by allergic reactions to clothing, gloves, or latex, and 19 other allergic skin conditions. There were 48 cases of poorly defined skin conditions, frequently just described as rashes.

In addition to cleaning chemicals and latex, specific substances associated with skin conditions included acid (5 cases), animal sources (such as dander or bug bites; 9 cases), oil or oil mist (8 cases), dust (2 cases), food, paint, sewage, solvents (3 cases), "wet patch mix", radiation, caustics, Arcall, NBMA, gasoline, shampoo, oven cleaner, boiler chemicals, "Adhesive 926", alcohol, acetone, de-limer, corrosion inhibitor, metal hydroxide, wet ceiling tiles, foam insulation, peanut wrap, and mold.

Table D-13: Skin Diseases by Cause, WCC, 2016-2017

Category	2016	2017	%	Change
Poison Ivy/plants	70	**79**	36%	13%
Chemical	30	**42**	19%	40%
Soap/cleaning products	15	**24**	11%	60%
Allergic	13	**19**	9%	46%
Gloves/latex/clothing	9	**10**	5%	11%
Rash/other/unknown	56	**48**	22%	-14%
Total	**193**	**222**	**100%**	**15%**

Stress and Heart Conditions

Heart and Hypertension

There were 301 cases involving heart conditions, stroke, chest pain, hypertension, or stress in the database for 2017 (Table D-14), a 14% increase from the previous year. Reports noted 149 cases of heart attacks, myocardial infarctions or acute heart events and 15 reported strokes or blood clots, often associated with emergency care at a hospital. There were 27 cases that described the condition as hypertension or "heart and hypertension" (the usual legal term for heart or hypertension cases that are covered under workers' compensation for police and fire fighters).

Approximately one-half of the heart cases appeared to involve police or firefighters or other municipal and state employees who are frequently covered under heart and hypertension laws that presume those conditions to be work-related for Workers' Compensation purposes. Though not generally well described, causes of the heart cases included exertion (including climbing, shoveling, exercise, or lifting, approximately 20 cases), firefighting, and stress (4).

Table D-14: Heart, Hypertension and Stress Conditions by Type, WCC, 2016-2017

Category	2016	2017	Percent	Change
Heart attack/severe symptoms	144	**149**	50%	3%
Hypertension	17	**27**	9%	59%
Stroke/clots	12	**15**	5%	25%
Stress/anxiety/depression	90	**110**	37%	22%
Total	**263**	**301**	**100%**	**14%**

Mental Stress

There was a total of 110 stress-related claims in the database in 2017, a 22% increase over the previous year. Approximately one third (30%) of the cases where cause was noted referred to violence or post-traumatic stress disorders after violence (Table D-15), 19 cited either harassment or a hostile work environment, and 11 noted conflicts with supervisors, co-workers, or customers.

Table D-15: Stress Conditions by Cause, WCC, 2016-2017

Sources of Stress Conditions	2017	%	2016
Violence/robbery/trauma	**33**	30%	31
Harassment/hostile work environment	**19**	17%	9
Supervisor/co-worker/customer	**11**	10%	7
Excessive work demands	**6**	5%	5
Unknown/other	**41**	37%	38
Total	**110**	**100%**	**90**

Stress cases included intervening in conflicts between students, conflicts with an insubordinate worker, harassment from an intoxicated co-worker, verbal abuse from taxpayers, long hours and mandatory weekend work, arguments over discipline and termination, racially motivated email, bullying, an aggressive airport screening, inappropriate touching, verbal abuse, sexual assault, PTSD from experiencing trauma as a paramedic, being chased and trapped by a student, getting trapped inside a machine, exposure to blood, motor vehicle accidents, driving long distances, police involved in shooting incidents, and assaults.

Stress-related claims that are not also associated with a physical injury are typically not compensable under the Workers' Compensation statute, so it is likely that there are additional unreported (non-compensable) cases. It should be noted that this report is based on First Reports of Injury for compensation, and the number of cases that were ultimately awarded compensation was not determined.

Other Occupational Diseases

Hearing Loss

There were 103 reports of hearing loss in 2017 (Table D-16), approximately the same as the previous year. Of these cases, 18 appeared to be caused by acute (single incident) noises or injuries such as an indoor pile driving machine, loud shouts close to the ear, gun fire, a metal elevator, a helium machine, fire sirens, fire alarms, a tire explosion, a milling tool, and an explosion in a welding shop. Of all the hearing loss cases, most were from manufacturing (64 cases), in particular transportation equipment manufacturing (49 cases), as well as schools/police/firefighting/government (24 cases).

Table D-16: Other Occupational Illnesses, WCC, 2016-2017

Type of illness	2016	2017	%	Change
Chemicals in eye	97	**78**	13%	-20%
Hearing loss	105	**103**	17%	-2%
Dizziness/fainting/seizure	122	**142**	23%	16%
Cold/heat related conditions	65	**65**	11%	0%
Allergic	47	**73**	12%	55%
Cancer	10	**13**	2%	30%
Other conditions	163	**138**	23%	-15%
Total	**609**	**612**	**100%**	**0%**

Other Disease Conditions

There were 142 reports of workers becoming dizzy, fainting, or seizures, a 16% increase. Some of these are likely from pre-existing conditions that occurred while at work (such as epilepsy or diabetes) and some of these were accompanied by an injury from a fall. Some may reflect more serious conditions such as heart attacks but are just described based on initial symptoms.

There were 78 reports of chemical exposures to the eyes (this does not include other physical acute eye injuries such as particles or dust), a 20% decrease.

There were 65 reports of temperature-related problems from heat or cold, the same as the previous year.

There were 73 cases of allergic reactions reported in addition to those noted above under respiratory and skin conditions, a 55% increase.

There were 13 cases of cancer reported, which included asbestos-related cancers.

There were 138 "other" conditions that were difficult to classify, usually due to incomplete information.

E. Occupational Illnesses and Injury Surveillance System (OIISS)

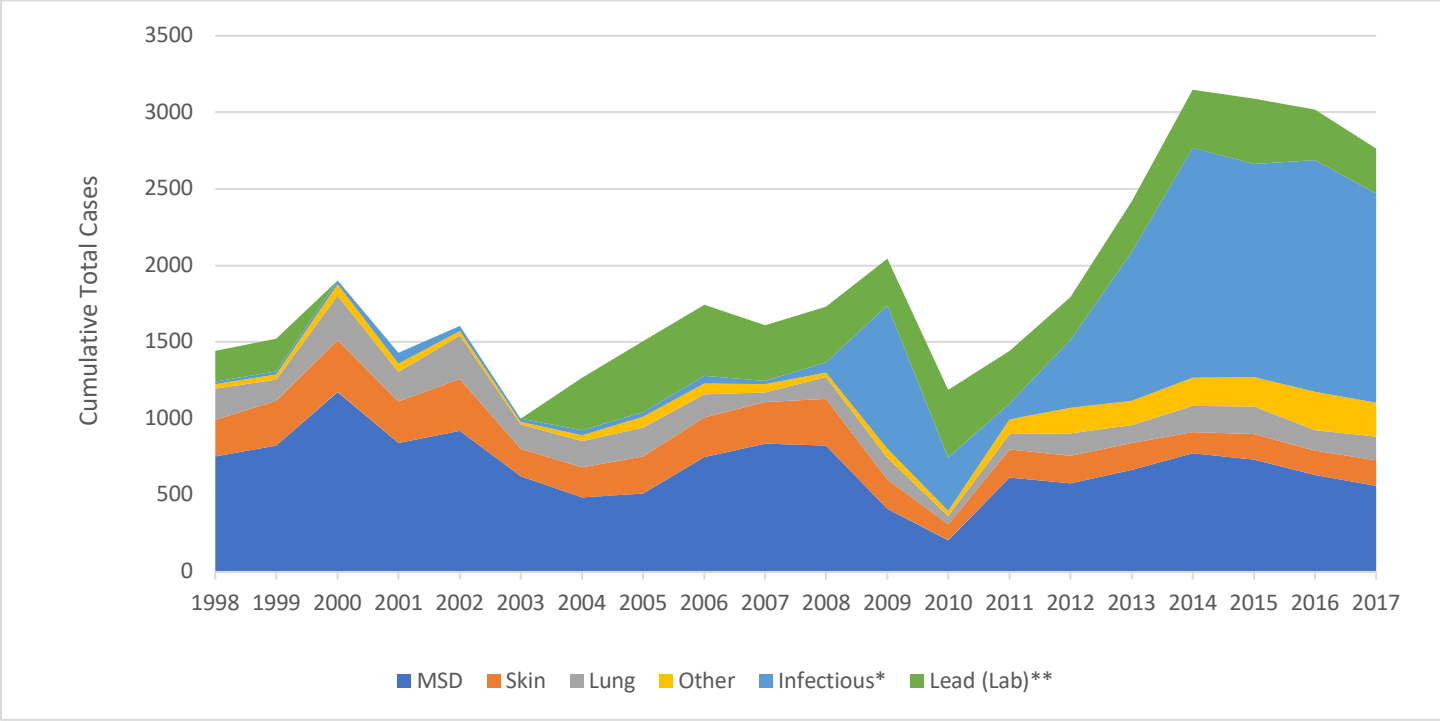
Physicians are required to report known and suspected occupational disease to the Occupational Illnesses and Injury Surveillance System (OIISS) that is maintained by the Department of Public Health. Although all physicians are required to report, most reports are from Connecticut's occupational health clinics and industrial medicine programs. Information on blood lead level laboratory reports is received from the Connecticut Adult Blood Lead Epidemiology and Surveillance (ABLES) program. Data for lead and infectious diseases were incomplete for certain years prior to 2012 (as noted in the table and figure below), so comparisons for total disease with earlier years should be made cautiously.

Table E-1: Occupational Disease Case Reports by Type, OIISS and ABLES, 2008-2017

Category	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	% change 2016-17
MSD	827	411	208	616	580	666	774	734	633	562	-11%
Skin	302	193	102	183	180	174	140	166	158	168	6%
Lung	142	140	56	101	146	120	171	178	133	155	17%
Other	31	59	33	96	164	159	184	195	250	220	-12%
Infectious*	66	939	347	103	443	973	1500	1390	1,513	1,365	-10%
Sub-total	**1,368**	**1,742**	**746**	**1,099**	**1,513**	**2,092**	**2,769**	**2,663**	**2,687**	**2,470**	**-8%**
Lead (Lab)	364	304	443	345	283	327	379	425	330	292	-12%
Total	**1,732**	**2,046**	**1,189**	**1,444**	**1,796**	**2,419**	**3,148**	**3,088**	**3,017**	**2,762**	**-8%**

*Infectious did not include most bloodborne pathogen exposures in 2008 and 2011

Figure E-1: Occupational Disease Case Reports by Type, OIISS and ABLES, 1998-2017



*Infectious category did not include most bloodborne pathogen exposures up to 2008, and again in 2011.
** Lead values for 1998-99 did not include cases in the blood lead level range of 10-19 micrograms per deciliter (ug/dl).

There were 2,470 occupational illness reports received from physicians for 2017 (Table E-1). Physician reports decreased 8% in 2017 compared to the prior year. Infectious disease (such as bloodborne diseases and exposures) was the largest category of reports, accounting for 55% of the reports, followed by musculoskeletal conditions (MSD) such as tendonitis and carpal tunnel syndrome (23%). Skin disorders (including poison ivy and chemicals as causes) accounted for 7% and lung conditions (including respiratory conditions, asthma, and other lung diseases) comprised 6% of the physician reports. "Other" conditions (including heart disease, stress, and noise-induced hearing loss) accounted for 9%. There were 292 laboratory-reported adult blood lead levels of 10 micrograms per deciliter (ug/dl) or greater (a 12% decrease from the prior year), giving a total of 2,762 occupational illnesses reported by physicians or laboratories in 2017.

In 2017, 94 physicians from 13 clinics (at 17 locations) reported at least one case of occupational illness to the OIISS. Twenty-six of the physicians reported 20 or more cases, accounting for 86% of the reports; seven reported 100 or more cases and accounted for 48% of reports. Seven clinics reported 100 or more cases and contributed 88% of the cases.

Many workers with occupationally-related illness seek care from their primary care providers. Although it is a state law that known and suspected occupational diseases diagnosed by any physician in the state must be reported to CT Departments of Labor and Public Health (CGS § 31-40a), the majority of reporters are from the academic occupational health clinics and auxiliary occupational health clinics that are funded under the state occupational disease surveillance network. Therefore, these reports should be viewed as a small portion of physician-diagnosed occupational diseases in Connecticut.

Where certainty was reported, 80% of the cases were classed as "high certainty" for being an occupationally-related disease, 14% were "moderate certainty," and 5% "low certainty". There was a fairly low amount of reporting on whether exposure was continuing or if others are likely to be exposed, but 14% of those reported that the exposure that caused the illness was continuing, and 6% reported other workers were likely to be exposed to the same hazard.

Of the 1,422 reports where race was known, 262 (18%) were identified as black, and 189 (of 1,725 or 11%) were identified as Hispanic (where ethnicity was known).

Figure E-2: Occupational Disease by Age, OIISS, 2017

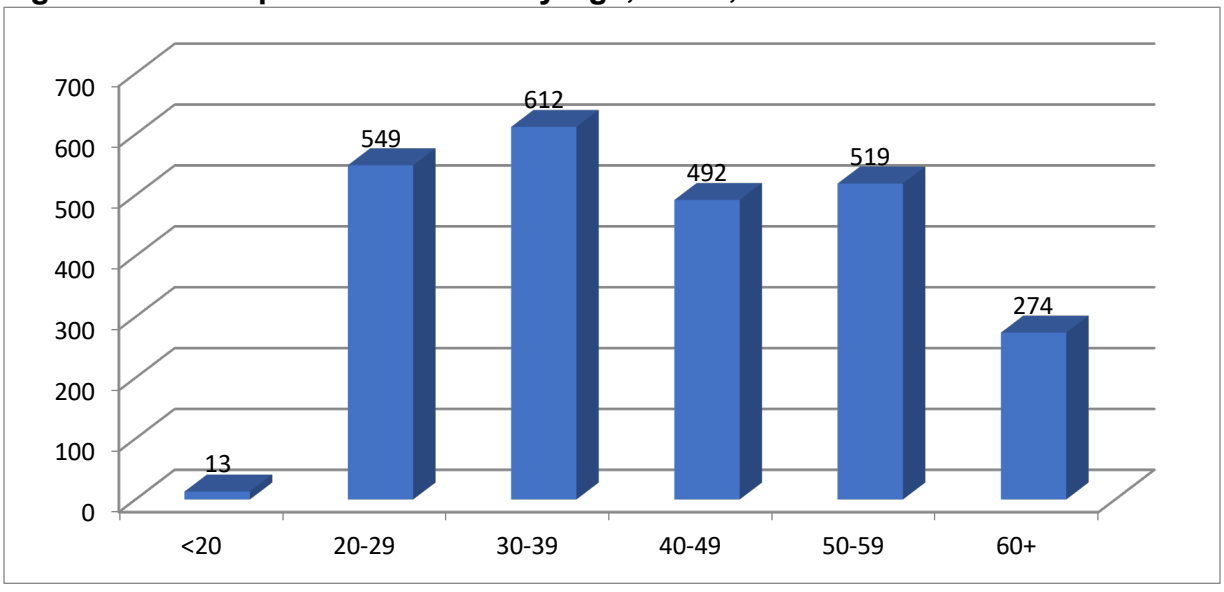


Figure E-2 shows the age distribution of reported cases (where data was available). There were similar proportions (between 20%-25%) for workers in their 20's, 30's, 40's and 50's. Only 11% were 60 or older, and only 13 cases were reported in workers less than 20 years of age.

The Education and Health sector had the most cases (55%), followed by State and Local Government (22%), Manufacturing (9%), and Trade (5%); see Figure E-3 and Table E-2. It should be noted that the Education and Health sector workplaces that were also government workers (such as public schools or hospitals) were counted as government.

Figure E-3: Occupational Disease by Industry Sector, OIISS, 2017

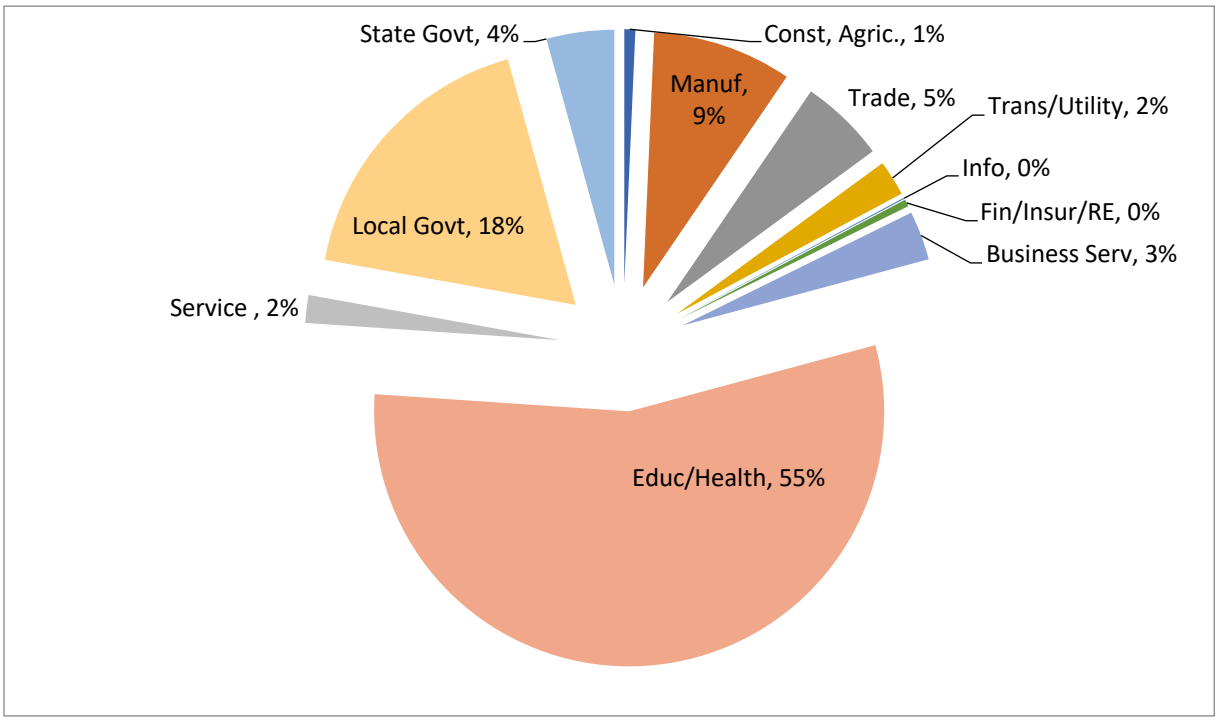


Table E-2: Type of Illness by Industry Sector (NAICS*), OIISS, 2017

Industry	All		Infectious		Lung		MSD		Other		Skin	
	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
Construction/ Agriculture	17	1%	3	0%	6	4%	5	1%	2	1%	1	1%
Manufacturing	216	9%	4	0%	26	17%	118	21%	35	16%	33	20%
Trade	132	5%	10	1%	10	6%	88	16%	17	8%	7	4%
Transport/Utilities	55	2%	11	1%	5	3%	22	4%	13	6%	4	2%
Information Services	2	0%	0	0%	0	0%	2	0%	0	0%	0	0%
Finance/Insur/Real Estate	11	0%	1	0%	2	1%	7	1%	1	0%	0	0%
Business Service	76	3%	35	3%	7	5%	18	3%	6	3%	10	6%
Education/Health	1,351	55%	1,041	76%	28	18%	146	26%	82	37%	54	32%
Other Services	43	2%	12	1%	4	3%	16	3%	4	2%	7	4%
Local Govt	437	18%	199	15%	52	34%	91	16%	46	21%	49	29%
State Govt	105	4%	45	3%	7	5%	42	7%	10	5%	1	1%
Unknown	25	1%	4	0%	8	5%	7	1%	4	2%	2	1%
Total	2,470	100%	1,365	100%	155	100%	562	100%	220	100%	168	100%

* North American Industry Classification System

Industry distribution was somewhat different by condition (Table E-2), although Education and Health was prominent in all the categories of illness. Infectious disease was highly concentrated in Education and Health (76%), with Government contributing another 18%. MSD were primarily from Education and Health (26%), Government (24%), Manufacturing (21%), and Trade (16%). Dermatitis (skin disorders) was primarily from Education and Health (32%), Government (30%), and Manufacturing (20%). Respiratory cases ("Lung") were primarily from Government (38%), Education and Health (18%), and Manufacturing (17%). "Other" illnesses were from Education and Health (37%), Government (25%). And Manufacturing (16%).

Musculoskeletal Disorders (MSD)

There was a total of 562 reports of musculoskeletal disorders (MSD) in 2017, a decrease of 11% from the previous year (Table E-3). This table does not include MSD caused by acute incidents such as falls or individual lifts and also excludes all lower back diagnoses unless specifically defined as caused by cumulative strain. The most common specific diagnoses for musculoskeletal disorders were epicondylitis (tennis elbow) with 22% of the cases, carpal tunnel syndrome (15%), tenosynovitis (12%), and strains and sprains (10%).

Table E-3: Musculoskeletal Disorders (MSD) by Type, OIISS, 2016-2017

Illness	2016	2017	Percent	Change
Epicondylitis	108	**122**	22%	13%
Carpal Tunnel Syndrome (CTS)	76	**85**	15%	12%
Tenosynovitis (including deQuervain's)	89	**69**	12%	-22%
Strain/Sprain	13	**59**	10%	354%
Other Neuropathy & Radiculopathy (nerve disorder)	37	**50**	9%	35%
Bursitis/Arthritis	46	**27**	5%	-41%
Tendonitis	47	**25**	4%	-47%
Trigger Finger	18	**22**	4%	22%
Plantar fasciitis	10	**17**	3%	70%
Ganglion Cyst	15	**13**	2%	-13%
Rotator Cuff	5	**5**	1%	0%
Other MSD	169	**68**	12%	-60%
Total	**633**	**562**	**100%**	**-11%**

Musculoskeletal disorders (also referred to as cumulative trauma disorders or repetitive strain injuries) include tendon-related conditions, nerve problems, circulatory, as well as combined conditions.

Tendon Disorders

- Tendonitis: swelling of the tendons
- Epicondylitis: tendon irritation in the elbow area, including "golfer's elbow" and "tennis elbow"
- Rotator Cuff Syndrome: tendonitis in the shoulder area
- Tenosynovitis: inflammation of the tendon sheaths, lubricated covers that surround the tendons, particularly in the hand
- deQuervain's Syndrome: tendon sheath disorder of side of wrist and base of thumb
- Trigger Finger: a bump on the tendon that catches on the tendon sheath that makes the finger or thumb difficult to move
- Ganglion Cysts: swelling of the tendon sheaths from excess lubricating fluid
- Bursitis: inflammation of the fluid-filled sacs around ligaments and tendons

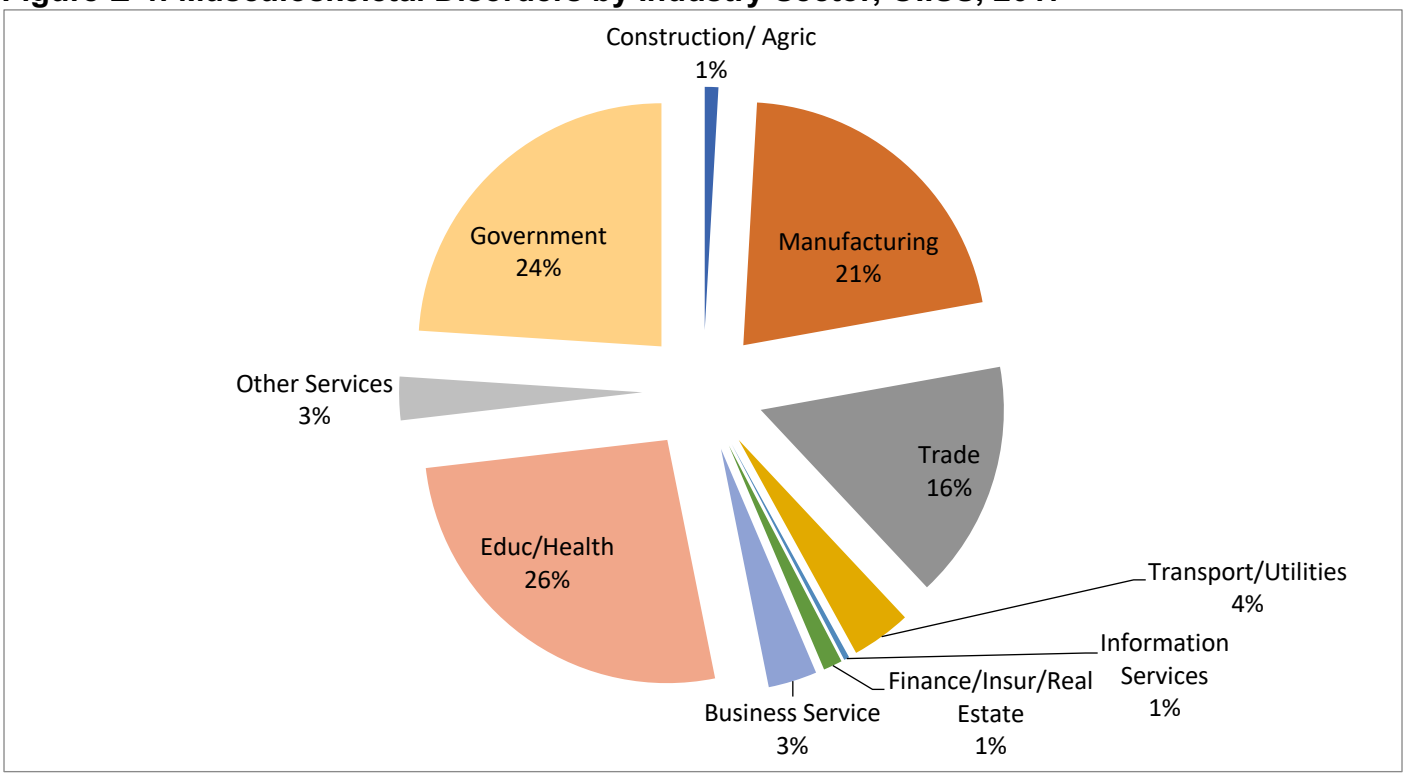
Nerve Disorders

- Carpal Tunnel Syndrome: pinching of the median nerve in the wrist, usually by swollen tendons that pass through the carpal tunnel (median and ulnar nerves can also be pinched in the elbow, shoulder, or neck)

Circulatory/Combined/Other

- Thoracic Outlet Syndrome: pinching of the nerves and blood vessels in the neck/ shoulder area

Figure E-4: Musculoskeletal Disorders by Industry Sector, OIISS, 2017



Note: Government includes education and health care facilities such as schools and state hospitals

Table E-4: Common causes of MSD, OIISS, 2017

Cause	Cases
Lifting	42
Computer/clerical	32
Push/pull	27
Repetitive	26
Gripping/grasping	17
Patient-related	14
Tools & Vibration	13
Standing/walking/running	11
Climbing	7
Assembly	5
Kneeling	3
Other	19
Total	**216**
Unknown	**346**

The largest number of MSD's were in Education and Health (146), followed by Government (133), Manufacturing (118), and Trade (88); see Figure E-4 and Table E-2.

Causes for MSD are difficult to classify since they are frequently described differently by the various people recording the case, and most case reports do not describe cause. The most common specific cause noted for MSD (Table E-4) was lifting (42 cases) and followed by computer use and data entry (32), and pushing or pulling (27). Twenty-six (26) additional cases were attributed to the general description of "repetitive".

Skin Conditions

There were 168 reports of skin disorders in 2017 (Table E-5), a 6% increase from the previous year. The largest single cause was poison ivy or other plant exposures (32% of all cases). Other causes of dermatitis or other skin conditions included chemicals (28 cases), cleaning or cleaning chemicals (5 cases), and latex or clothing (4 cases).

Table E-5: Skin Conditions by Type, OIISS, 2016-2017

Illness	2016	2017	Percent	Change
Dermatitis	86	**86**	51%	0%
Poison ivy & other plants	54	**53**	32%	-2%
Other skin conditions	18	**29**	17%	61%
Total	**158**	**168**	**100%**	**6%**

Skin conditions in 2017 occurred most commonly in Education and Health (33%), State and Local Government (30%), and Manufacturing (20%).

Lung/Respiratory Diseases and Poisonings

There were 155 cases of respiratory and other lung diseases and poisonings reported by physicians in 2017 (Table E-6), an increase of 17% from the previous year. Nonspecific respiratory illnesses were the most common type of condition, with 26% of reports, followed by asthma or reactive airways dysfunction syndrome (RADS) with 22% and asbestos disease or exposures (12%). In addition to asbestos (some of the asbestos cases appeared to be reports of asbestos *exposures* rather than asbestos-related *disease*) exposures associated with respiratory conditions included fumes (23 cases, including gas, carbon monoxide, and lead), chemicals (including solvents, cleaning chemicals, paint, and oil; 23), mold or indoor air quality (9), and smoke (7).

Table E-6: Respiratory Diseases and Poisoning by Type, OIISS, 2016-2017

Illness	2016	2017	Percent	Change
Respiratory	71	**40**	26%	-44%
Asthma/RADS	14	**34**	22%	143%
Asbestos exposure/disease	4	**18**	12%	350%
Poisoning	24	**7**	5%	-71%
Rhinitis/ Sinusitis	4	**5**	3%	25%
Bronchitis	0	**4**	3%	--
Other Lung	16	**47**	30%	194%
Total	**133**	**155**	**100%**	**17%**

Respiratory disease and poisoning cases in 2017 occurred mainly in Government (38% of cases), Education and Health (18%), and Manufacturing (17%).

Lead Poisoning (Laboratory Reports)

Connecticut requires laboratories to report all blood lead tests of 10 micrograms per deciliter (ug/dl) of whole blood or greater to the Connecticut Department of Public Health (CGS § 19a-110). These cases are classified into childhood (less than 16 years of age) and adult cases (only adult cases are reported here), with the majority of adult cases being attributed to an individual's occupation (although some cases occur in individuals engaged in activities such as home paint removal or target shooting). Up to a third or more of cases in recent years are related to the use of indoor shooting ranges. The numbers are based on the highest level measured for each individual during the calendar year; they do not include multiple tests on the same individual. OSHA medical removal protections apply at the level of 50 ug/dl of whole blood or above (and require a reduction to 40 ug/dl before return to work). Lead can have neurological, reproductive and other negative effects on health at much lower levels of exposure.

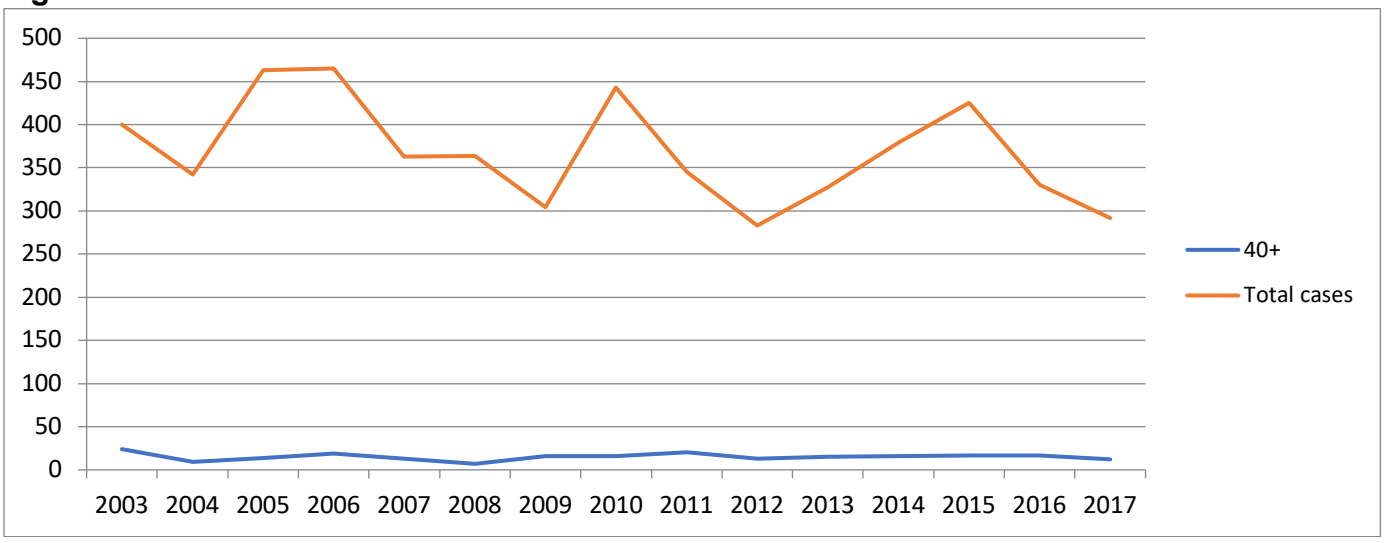
The 292 lead poisoning reports in 2017 decreased 12% from the previous year. The lowest category (10-24 ug/dl) of recorded elevated lead levels accounted for 79% of all cases (Table E-7). There was a decrease in all categories of lead levels except the over 60 ug/dl group. Almost all of the reported lead poisoning cases (93% of cases) occurred in men; there were only 19 reports for women. Thirty-three percent (33%) were under 40 years old, 39% were between 40 and 59, and 29% were age 60 or older.

Table E-7: Lead Cases by Level of Blood Lead, CT ABLES, 2016-2017

Blood lead level*	2016	2017	Percent	Change
10-24	257	**230**	79%	-11%
25-39	56	**50**	17%	-11%
40-49	9	**5**	2%	-44%
50-59	7	**3**	1%	-57%
>=60	1	**4**	1%	300%
Total	**330**	**292**	**100%**	**-12%**

Source: Connecticut Adult Blood Lead Epidemiology and Surveillance (ABLES program), CT Dept. of Public Health
* Micrograms per deciliter (ug/dl) of whole blood. Number of individuals with elevated lead levels (multiple tests for individuals were eliminated.)

Figure E-5: Lead Cases 2003-2017



NIOSH (The National Institute of Occupational Safety and Health) has lead level data for 26 states for 2016 (most recent year available; https://www.cdc.gov/niosh/topics/ables/data.html). Connecticut is the 9th highest among those states for the rate of lead levels above 10 ug/dl, with a rate of 1.83 per 10,000 employed adults

(compared to the average of 1.58 for the 26 states as a whole). Connecticut was 6th highest for rates of lead levels above 25 ug/dl, with a rate of 0.40 compared to the overall average of 0.28.

Lead cases have fluctuated since 2003, from 400 in 2003 to 292 in 2017, with a high of 465 cases in 2006 and a low of 283 cases in 2012. Cases at or above the OSHA level of 40 ug/dl have stayed relatively constant at 15 to 20 cases since 2004 (Figure E-5), but dropped to 12 in 2017. Fluctuations in the past have been observed due to lead screening programs and special bridge maintenance projects involving the removal of lead paint.

Infectious and Other Diseases

Infectious diseases decreased 10% to 1,365 cases in 2017. Bloodborne pathogen exposures (to needlesticks, blood, body fluids or human bites) or diseases (such as HIV or Hepatitis) were the most common infectious diseases reported, with 1,074 reports in 2017, a 12% decrease over 2016. Bloodborne exposures are of most concern when there is a needlestick or other sharp injury, particularly if there is an injection of blood into the caregiver's body. These reports do not generally specify whether the source patient/client was infected with a bloodborne illness such as HIV or Hepatitis B or C.

Table E-8: Infectious and Other Illnesses, 2016-2017

Illness	2016	2017	% Change
Bloodborne	1,226	**1,074**	-12%
TB/PPD	63	**172**	173%
Scabies	41	**32**	-22%
Lyme/tick bite	21	**26**	24%
Meningitis	93	**16**	-83%
Rabies	5	**4**	-20%
MRSA	2	**4**	
Measles/chickenpox	4	**2**	-50%
Brucella	15	**3**	-100%
Other infectious	43	**32**	-26%
Total Infectious	**1,513**	**1,365**	**-10%**

Other Illnesses	2016	2017	% Change
Chemicals in eyes	75	**49**	-35%
Headache/dizzy	25	**20**	-20%
Allergic	22	**15**	-32%
Stress/heart	18	**20**	11%
Hearing loss	12	**12**	0%
Heat/cold	10	**12**	20%
Other	88	**92**	5%
Total Other Illnesses	**250**	**220**	**-12%**

Of the bloodborne exposures where cause was noted, 47% were due to a needlestick or sharps injury, despite OSHA regulations that require safe needle devices where available. Thirty-six percent (36%) of the reports were due to blood or body fluid exposures, 15% were from a human bite and 2% were not described. Bites often do not have a description on whether these bites penetrated the skin. Exposure to saliva is not included in these numbers, since the risk of disease transmission is very low in those cases.

There was a large increase in reports of potential exposure to tuberculosis (TB) or positive PPD tests for TB, with 172 cases in 2017 compared to 63 cases reported in 2016. In addition to bloodborne disease/exposures and TB exposures, there were 32 cases of scabies, 26 cases of Lyme disease or tick bites, and 16 reports related to meningitis reported (the last a sharp drop from 2016). Most of the "Other Infectious" cases were not well-defined in the database and may include some of the more common reports (such as bloodborne or TB).

In addition to the infectious diseases, there were 220 other occupational illnesses reported by physicians in 2017 (Table E-8), a decrease of 12%. This included 49 cases of chemical exposures to the eyes, 20 cases of headache, dizziness, or similar symptoms, 15 cases of allergic reactions to substances or foods, 20 cases of either heart or stress-related conditions, 12 cases of hearing loss and 12 cases of over-exposures to heat or cold.

F. Appendix 1: Databases and Methods

Determining the incidence of occupational illness is difficult. The problem is two-fold: 1) occupationally-related illness is not consistently recognized as work-related; and 2) the cases reported to either the Department of Labor and/or the Occupational Health Surveillance Division of the Department of Public Health are not complete. Consequently, this assessment of occupational disease reviews a number of sources of information: the Workers' Compensation Commission's First Report of Injury database (WCC), the Bureau of Labor Statistics/Connecticut Dept. of Labor Survey of Occupational Injuries and Illnesses (BLS), the Occupational Illnesses and Injury Surveillance System (OIISS), and the Connecticut Adult Blood Level Epidemiology Surveillance Program (ABLES). The Workers' Compensation database was provided in electronic form from the CT Workers' Compensation Commission and the physicians' reports from the CT Department of Public Health. The BLS survey data was provided in table form from the Connecticut Department of Labor and derived from the U.S. BLS website at https://www.bls.gov/iif/#data.

Assumptions and Conventions

The Workers' Compensation Commission's First Reports of Injury database and the Occupational Illnesses and Injury Surveillance System (OIISS, referred to as Physicians' Reports) were reviewed in depth. A rationale for the data review was developed to differentiate occupational *illnesses* from acute traumatic *injuries* and to classify the workplace reports by nature and cause of the illness. Each entry was reviewed for internal consistency and reasonableness. Specifically, the process employed the following steps:

1) **Clear acute injuries were eliminated**. In assessing the Workers' Compensation First Reports of Injury, a line by line review of injury descriptions, nature descriptions and codes, listed causes, and part of body were used to differentiate whether an injury vs. illness was described. The determination relied most heavily on the text description and then on the other data fields in the order listed above.

   The Physicians' Reports are organized differently. Numerical "Nature of Injury or Illness" codes from the Bureau of Labor Statistics Occupational Injury and Illness Classification System (ANSI Z16.2-1995, American National Standard for Information Management for Occupational Safety and Health) were used as the primary indicator to evaluate the records. Cause, certainty, diagnosis, ICD codes, suspected agent and symptom fields were also reviewed in determining illness or injury. Categories that were eliminated included all burns, eye problems such as conjunctivitis or objects in the eye, lower back problems (including sciatica) unless clearly and specifically labeled as a cumulative injury, hernias, infected wounds or burns, insect and animal bites (with the exception of tick bites because of the relationship with Lyme disease), and electrical shocks.

2) **Validity of remaining records was determined.** Records were reviewed to be sure that the coding of types of disease was consistent with other information in the record. In addition, diseases were categorized by type of disease. Several approaches were utilized to eliminate duplicate records such as line by line review and matching on first and last name, date of birth and employer (to identify reports with misspellings or reversed first and last names), etc.

3) **Fields were either revised or added to the databases**: *Illness Type* and *Nature of Illness*. The *Nature of Illness* was based on the information in the databases, research, and general information about the illnesses. Then each entry was categorized by *Illness Type*. The specific nature categories were grouped into broader categories to support graphic representation. For the Workers' Compensation database, the description of injury was used as the key description of the illness if it disagreed with the coding for other variables. This coding was categorized into illness types (i.e.

skin, lung, infectious, MSD, other), specific illness (i.e. Carpal Tunnel Syndrome, heart conditions, asthma), and cause (i.e. chemical exposure, computer use, needlesticks).

4) **Employers were coded for industry** utilizing a comprehensive list of Connecticut employers from the CT Department of Labor and coded based on the NAICS (North American Industry Classification System) for the BLS and workers' compensation data. Employers who could not be found from previous datasets from the Dept. of Labor were coded based on an internet search using such databases as Manta or naics.com. Physician reports were coded by the Connecticut Dept. of Labor. Rates were calculated using employment figures from the U.S. Bureau of Labor Statistics based on Connecticut Dept. of Labor figures.

5) **Data was cleaned, tabulated and put into presentation form** using Microsoft Excel and Word software.

6) **The report is reviewed** and approved by the Connecticut Workers' Compensation Commission prior to publication.

G. Appendix 2: Occupational Disease Detail by Type and Year

Table G-1: Cases of Occupational Disease, by Type, Bureau of Labor Statistics/CT Dept. of Labor, 1979 – 2017

	Employ.*	All Ill	Skin	MSD	Lung-dust	Respir.	Poison	Physical	Other
1979	1,358	3,322	1,716	471	25	317	175	250	368
1980	1,394	3,066	1,586	513	88	214	66	199	400
1981	1,409	3,214	1,509	701	38	290	89	192	395
1982	1,400	2,549	1,130	580	31	223	31	216	323
1983	1,419	2,930	1,236	665	20	154	152	176	519
1984	1,490	2,735	1,109	665	24	273	65	162	432
1985	1,528	2,809	928	727	44	233	51	130	693
1986	1,567	2,719	808	761	39	274	65	235	538
1987	1,607	4,643	1,352	1,430	31	300	62	704	754
1988	1,637	4,364	1,257	405	35	332	56	405	733
1989	1,634	5,844	1,248	2,629	57	277	74	468	1,087
1990	1,593	5,307	1,032	2,535	93	457	54	496	641
1991	1,518	6,094	946	3,454	62	422	113	501	591
1992	1,483	6,458	1,084	3,852	37	471	53	349	612
1993	1,487	8369	965	5526	52	512	166	346	802
1994	1,502	7,319	957	4,482	74	410	97	313	986
1995	1,520	6,787	884	4,220	80	323	35	349	896
1996	1,538	6,021	827	3,711	40	418	34	235	756
1997	1,570	5,419	620	3,335	21	287	70	150	936
1998	1,597	5,510	989	3,398	10	459	45	92	517
1999	1,630	5,513	793	3,306	20	386	71	265	671
2000	1,653	6,396	897	3,827	65	438	29	137	1,003
2001	1,572	5,514	916	3,220	10	630	29	118	591
	Employ.*	**All Ill**	**Skin**			**Respir.**	**Poison**	**Hearing**	**Other**
2002	1,602	4,387	831			320	78		3,159
2003	1,605	4,559	903			490	32		3,132
2004	1,603	4,572	832			354	35	466	2,886
2005	1,614	4,850	848			480	8	381	3,134
2006	1,636	3,787	575			235	38	439	2,500
2007	1,667	3,904	624			358	22	457	2,443
2008	1,675	3,562	690			293	130	360	2,088
2009	1,629	3,400	600			300	--	500	2,000
2010	1,629	3,000	700			300	--	300	1,700
2011	1,578	3,500	800			300	--	300	2,100
2012	1,628	2,800	600			300	--	300	1,500
2013	1,640	2,600	500			300	--	300	1,600
2014	1,653	2,400	400			200	--	300	1,400
2015	1,663	2,300	400			200	--	200	1,500
2016	1,667	2,300	500			200	--	300	1,300
2017	1,670	1,700	400			100		200	900

Source: U.S. Bureau of Labor Statistics (BLS) and the Connecticut Dept. of Labor, Office of Research. Data collection methods and categories changed in 2002 and are not comparable to prior years. Employment in thousands. Since this data is based on a weighted survey, some of these numbers (particularly the smaller numbers) are not reliable.

Table G-2: Rate per 10,000 Workers of Occupational Disease, by Type, Bureau of Labor Statistics/CT Dept. of Labor, 1979-2017

Year	Employed	Skin	MSD	Resp/Lung	Poisoning	Other	Hearing	Total
1979	1,358,000	12.6	3.5	2.5	1.3	8.2		24.5
1980	1,394,000	11.4	3.7	2.2	0.5	8.6		22
1981	1,409,000	10.7	5	2.3	0.6	9.4		22.8
1982	1,400,000	8.1	4.1	1.8	0.2	8.2		18.2
1983	1,419,000	8.7	4.7	1.2	1.1	9.7		20.6
1984	1,490,000	7.4	4.5	2	0.4	8.6		18.4
1985	1,528,000	6.1	4.8	1.8	0.3	10.4		18.4
1986	1,567,000	5.2	4.9	2	0.4	10		17.4
1987	1,607,000	8.4	8.9	2.1	0.4	18.2		28.9
1988	1,637,000	7.7	2.5	2.2	0.3	9.6		26.7
1989	1,634,000	7.6	16.1	2	0.5	26		35.8
1990	1,593,000	6.5	15.9	3.5	0.3	23.6		33.3
1991	1,518,000	6.2	22.8	3.2	0.7	30.4		40.1
1992	1,483,000	7.3	26	3.4	0.4	32.7		43.5
1993	1,487,000	6.5	37.2	3.8	1.1	45.2		56.3
1994	1,501,800	6.4	29.8	3.2	0.6	39		48.7
1995	1,520,000	5.8	27.8	2.7	0.2	36.5		44.7
1996	1,538,000	5.4	24.1	3	0.2	30.8		39.1
1997	1,570,500	3.9	21.2	2	0.4	28.3		34.5
1998	1,596,900	6.2	21.3	2.9	0.3	25.2		34.5
1999	1,630,100	4.9	20.3	2.5	0.4	26.1		33.8
2000	1,653,000	5.4	23.2	3	0.2	30.4		38.7
2001	1,571,000	5.8	20.5	4.1	0.2	25.1		35.1
Year	**Employ**	**Skin**		**Resp/Lung**	**Poisoning**	**Other**	**Hearing**	**Total**
2002*	1,602,000	6.2	*	2.4	0.6	23.7	*	32.9
2003	1,605,000	6.9	*	3.8	0.2	24	*	34.9
2004	1,603,100	6.4	*	2.7	0.3	22.1	3.6	34.9
2005	1,614,100	6.3	*	3.6	*	23.3	2.8	36
2006	1,635,700	4.3	*	1.8	0.3	18.8	3.3	28.4
2007	1,666,600	4.7	*	2.7	0.2	18.2	3.4	29.2
2008	1,666,600	4.7	*	2.7	0.2	18.2	3.4	29.2
2009	1,675,000	5.1	*	2.2	1	15.4	2.7	26.3
2010	1,639,300	5.1	*	2.1	*	13.1	2.5	23.1
2011	1,578.200	6.3	*	2	*	16.8	2.5	27.8
2012	1,628,028	4.6	*	2.6	*	12	2.6	21.9
2013	1,640,223	3.5	*	2	0.2	12.4	2.2	20.3
2014	1,653,545	3.4	*	1.9	*	11	2.1	18.7
2015	1,662,822	3.0	*	1.5	0.2	11.3	1.7	17.7
2016	1,666,580	3.0	*	1.3	*	10.0	2.2	17.4
2017	1,669,766	2.9	*	1.1	0.4	6.7	1.9	12.9

Source: U.S. Bureau of Labor Statistics (BLS) and the Connecticut Dept. of Labor, Office of Research. "Other" includes the pre-2002 categories of MSD, Physical, Lung-dust, and Other. *Data collection methods and categories changed in 2002 and are not comparable to prior years.

H. Appendix 3: Internet Resources for Job Safety and Health; 2016

General Health and Safety Sites

One of the best sources of information for job health and safety on the internet is the **OSHA** (**Occupational Safety and Health Administration**) homepage, which includes an ergonomics homepage, a searchable index of standards, and many other resources.

http://www.osha.gov

To look up **OSHA citations** by company or industry: http://www.osha.gov/pls/imis/establishment.html

OSHA funds a number of **training programs for workers**, community groups and managers across the U.S. through their Susan Harwood Training grants at https://www.osha.gov/dte/sharwood.

OSHA has a resource page for **medical clinicians** at https://www.osha.gov/dts/oom/clinicians/index.html

American Family Physician also has a number of articles for clinicians at https://www.aafp.org/afp/topicModules/viewTopicModule.htm?topicModuleId=89.

The **Bureau of Labor Statistics** tracks occupational injuries and illnesses https://www.bls.gov/iif.

NIOSH (the National Institute for Occupational Safety and Health) is another good general source. A searchable section on diseases and injuries briefly describes conditions with updates on current research and guidance on prevention.

http://www.cdc.gov/niosh/homepage.html http://www.cdc.gov/niosh/topics/diseases.html

NIOSH supports a large number of **Education and Research Centers (ERCs)** based at universities across the US. Expert centers also include **agriculture, construction, and total worker health centers** (for example, see the link for the UConn CPH-NEW program below). ERCs primary purpose is to train health and safety professionals, so the various ERCs host a broad array of training programs for safety experts, industrial hygienists, ergonomists, occupational physicians and nurses and other professionals. In addition, the programs provide extensive in-service training programs for professionals already in the field as well as occasional programs for workers, health and safety committee members, and managers. They are also home to extensive research programs and consultation programs. The list of ERC's and related centers can be found at https://www.cdc.gov/niosh/oep/ercportfolio.html.

NIOSH has a **workplace health promotion** website at https://www.cdc.gov/workplacehealthpromotion/initiatives/resource-center/index.html

EPA (the Environmental Protection Agency**)** has a number of sites relevant to occupational health on indoor air quality, office and school environments, and other topics.

www.epa.gov www.epa.gov/iaq/

The **Veterans Administration (VA)** occupational health department has resources on **safe patient handling, wellness, and workplace violence prevention**. https://www.publichealth.va.gov/about/occhealth/index.asp

The **Council of State and Territorial Epidemiologists** (CSTE) has links to reports, contacts and resources in occupational health https://www.cste.org/group/OHResources.

The **Canadian Centre for Occupational Health and Safety** has hundreds of resources on their health and safety internet resource list. http://www.ccohs.ca

New Jersey Department of Health has 1,600 excellent **chemical hazard factsheets** that are free, independently researched, and clearly written (900 in Spanish) on hundreds of substances.
http://web.doh.state.nj.us/rtkhsfs/indexfs.aspx

Vermont Safety Information Resources, Inc. has a database of **material safety data sheets (MSDS)** from a large number of chemical companies. http://hazard.com

Several safety organizations have useful websites:

www.nsc.org	The National Safety Council
www.aiha.org	The American Industrial Hygiene Association
www.asse.org	American Society of Safety Professionals
www.nfpa.org	National Fire Protection Association
www.safetycentral.org	International Safety Equipment Association

For a labor perspective, the **national AFL-CIO** includes a health and safety page.
http://www.aflcio.org/Issues/Job-Safety,

COSH (Coalitions for Occupational Safety and Health) are labor-oriented nonprofit groups based in many states, including Connecticut, with information on a variety of hazards. They can all be accessed through the National Coalition for Occupational Safety and Health http://www.coshnetwork.org

The **Connecticut Business and Industry Association** has a health and safety page that helps businesses understand what OSHA laws apply to them and provides information on upcoming conferences and events.
https://www.cbia.com/resources/category/hr-safety

The **Environmental Defense Fund** has a "pollution information site" called Scorecard with information about 11,200 chemicals and their recognized and suspected health effects. The site offers information with interactive data based on the 2002 Toxics Release Inventory and is currently working on providing an update.
http://www.scorecard.org/

The **Cal-OSHA Reporter** (California OSHA) carries current stories on job health and safety.
http://www.cal-osha.com.

Some **blogs carry job health and safety news and commentary.**

Jordan Barab has a labor perspective on OSHA and job health and safety
http://jordanbarab.com/confinedspace

The USMWF United Support and Memorial for Workplace Fatalities posts current stories about workers who have been killed on the job and their families https://www.facebook.com/USMWF or www.usmwf.org

The Pump Handle connects to Facebook and Twitter, written by Liz Borkowski and Celeste Monforton http://www.thepumphandle.org.

Workers' compensation issues are covered at http://workerscompinsider.com.

The **Toxic Use Reduction Institute** at UMass Lowell has extensive resources on safer alternatives to toxic substances, including a database on alternatives to solvents.
http://www.turi.org.

UMass-Lowell's Center for Sustainable Production has information on changing chemical policies.
http://www.sustainableproduction.org/

The **Health and Safety Executive of Great Britain** has extensive information on the European Union's REACH (Registration, Evaluation, and Authorization of Chemicals).

http://www.hse.gov.uk/reach/index.htm http://www.hse.gov.uk/index.htm

OSHA has a discussion of the US program that responds to the International Globally Harmonized System for Hazard Communication. http://www.osha.gov/dsg/hazcom/global.html.

State of Connecticut and Select Other Resources

The **Connecticut Workers' Compensation Commission** has an excellent website, including information on the locations of offices, a searchable version of the workers' compensation statutes, new decisions, and other information. http://wcc.state.ct.us

The **Connecticut (CT)** website allows access to all branches of state government including agencies.
https://portal.ct.gov

The **CT Department of Public Health** includes a site for the occupational health program, including database access, health alerts and fact sheets on a wide variety of occupational health topics.
http://www.ct.gov/dph/occupationalhealth

The **CT Department** of **Labor** includes an occupational health services site, which includes information on their free consultation program and a great set of links to other health and safety sites including regulations, training, and Spanish publications. CTDOL offers a variety of consulting services to both public and private employers in Connecticut, available at no charge. http://www.ctdol.state.ct.us/osha/osha.htm

The **Connecticut General Assembly** website lets you search for any bill being considered or get information about relevant committees such as Labor and Public Employees or Public Health. http://www.cga.ct.gov

You can track national bills on the **National Library of Congress** site. https://www.congress.gov/

You can search the medical literature at **US National Library of Medicine PubMed**.
http://www.ncbi.nlm.nih.gov/pubmed/

You can search general academic literature through **Google Scholar**. http://scholar.google.com/schhp?tab=ws .

UConn Health's Division of Occupational and Environmental Medicine has information and links on job health and safety. http://health.uconn.edu/occupational-environmental

The **Center for the Promotion of Health in the New England Workplace (CPH-NEW)** is a research-to-practice initiative led by investigators from the UMass Lowell and UConn Health.
http://health.uconn.edu/occupational-environmental/academics-and-research/cph-new/

UConn Health's Center for Indoor Environments and Health provides guidance on environmental exposures in indoor settings including schools and office buildings
http://health.uconn.edu/occupational-environmental/consultation-and-outreach/cieh/

I. Appendix 4: Who's Who: Resources in Connecticut on Job Safety and Health

Academic Programs and Courses

Central Connecticut State University, School of Technology
Type of Degree: Certificate Program in Environmental and Occupational Safety
Faculty contact: Ravindra Thamma, Department Chair
Address: Copernicus Hall - Room 2120900, CCSU, 1615 Stanley Rd., New Britain, CT 06050
Phone: 860-832-3516
e-mail: thammarav@ccsu.edu
Web: http://www.ccsu.edu/mcm/environmentalOccupationalSafetyOCP.html

UConn College of Agriculture, Health and Natural Resources, Department of Allied Health Sciences
Type of Degree and Program: Bachelor in Allied Health Sciences with an Occupational and Environmental Health and Safety Concentration; and an Online Occupational Safety and Health Post-Baccalaureate Certificate Program
Faculty contact: Paul Bureau, MS CIH
Address: Koons Hall Room 100-G, 358 Mansfield Road, Unit 1101, Storrs, CT 06269-1101
Phone: (860) 486-0040
e-mail: paul.bureau@uconn.edu
Web: http://osh.uconn.edu

UConn Health, Department of Community Medicine
Type of Degree: Masters in Public Health program with ergonomic/occupational health courses
Director: David Gregorio, PhD
Address: UCONN Health, 263 Farmington Ave., Farmington, CT 06030-6325
Phone: (860) 679-5480
Fax: (860) 679-1581
e-mail: gregorio@uchc.edu
Web: https://mph.uconn.edu

UConn Health, Department of Community Medicine
Type of Degree: Ph.D. in Public Health with courses in Occupational and Environmental Health Sciences
Faculty Contact: Helen Swede, Ph.D.
Address: UCONN Health, 263 Farmington Ave., Farmington, CT 06030-6325
Phone: (860) 679-5568
Fax: (860) 679-1581
e-mail: swede@uchc.edu
Web: https://phd.publichealth.uconn.edu

OSHA

Connecticut Department of Labor's Division of Occupational Safety and Health/CTDOL: CONN-OSHA enforces state occupational safety and health regulations as they apply to state and municipal employees, and offers free consultations to public agencies, school districts and private companies.
Director: Kenneth C. Tucker III
Address: 38 Wolcott Hill Rd., Wethersfield, CT 06109
Phone: (860) 263-6900
Fax: (860) 263-6940
Web: http://www.ctdol.state.ct.us/osha/osha.htm
Publications: ConnOSHA Quarterly https://www.ctdol.state.ct.us/osha/Quarterly/coqtrly.htm

OSHA (Occupational Safety and Health Administration): Federal OSHA inspects workplaces in the private sector for violations of standards, and also has information and pamphlets.
National Website: https://www.osha.gov

OSHA Bridgeport Office (Fairfield, New Haven, and Middlesex counties).
Area Director: Steve Biasi
Address: 915 Lafayette Blvd, Room 309, Bridgeport, Connecticut 06604
Phone: (203) 579-5581; National Hotline after hours: (800) 321-OSHA (6742)
Fax: (203) 579-5516
e-mail: oshabridgeport@dol.gov

OSHA Hartford Office
Area Director: Dale Varney
Address: 135 High Street, Suite 361, Hartford, CT 06103
Phone: (860) 240-3152; National Hotline after hours, etc.: (800) 321-OSHA (6742)
Fax: (860) 240-3155
e-mail: oshahartford@dol.gov

Academic Occupational Health Clinics

UConn Occupational and Environmental Medicine Clinic
Clinic Director: George W. Moore, M.D., M.Sc., FACPM, FACOEM
Address: UCONN Health, 263 Farmington Ave, Farmington, CT 06032-8077
Clinic address: UCONN Main Building (Hospital Entrance), Room CG228
Phone: (860) 679-2893
Fax: (860) 679-4587
e-mail: occmedehs@uchc.edu
Web: http://health.uconn.edu/occupational-environmental/clinical-services/

Yale Occupational and Environmental Medicine Program
Director: Carrie A Redlich, MD, MPH
Address: 367 Cedar Street, ESHA 2nd Floor, New Haven, CT 06510
Clinic address: 135 College St. Rm. 392, New Haven, CT 06510
Phone: (203) 785-4197
Fax: (203) 785-7391
e-mail: Carrie.Redlich@yale.edu
Web: http://medicine.yale.edu/intmed/occmed/

Occupational Health Clinics

Concentra
Medical Director: David Feinstein, MD
Address: 701 Main Street, East Hartford, CT 06108
Phone: (860) 289-5561
Fax: (860) 291-1895
e-mail: david_feinstein@concentra.com
Web: http://www.concentra.com/employers/occupational-health/
Other Offices:
972 West Main Street, New Britain (860) 827-0745
1080 Day Hill Road, Windsor (860) 298-8442
8 South Commons Rd, Waterbury (203) 759-1229
333 Kennedy Drive, Torrington (860) 482-4552
900 Northrup Rd, Wallingford (203) 949-1534
370 James Street, New Haven (203) 503-0482
60 Watson Blvd, Stratford (203) 380-5945
15 Commerce Road, 3rd Floor, Stamford, (203) 324-9100
10 Connecticut Avenue, Norwich, (860) 859-5100

Connecticut Occupational Medicine Partners, St. Francis Hospital and Medical Center
CEO and Administrative Director: Jeff Schlosser
Address (corporate): 675 Tower Avenue, Suite 404B, Hartford, CT 06112
Phone: (860) 714-6188
Fax: (860) 714-2775
Web: http://compllc.org/
Clinics: St Francis; 1000 Asylum Ave, Ste 4320, **Hartford**, 860-714-4270; 1598 East Main St, **Torrington**, (860) 482-3467; 100 Deerfield Road, **Windsor**, 860-714-9444
ECHN Corporate Care; 2800 Tamarack Ave., Suite 001, South Windsor, CT 06074, (860) 647-4796
MedWorks of Bristol Hospital; 975 Farmington Ave. Bristol (860) 589-0114
MedWorks; 375 East Cedar St., Newington (860) 667-4418
Johnson Memorial Medical Center: Director, Clinical Services: Kathy Heim, RN, MSN 155 Hazard Ave., Suite 6. Enfield, CT 06082, (860) 763-7668

Griffin Hospital Occupational Medicine Center
Director: Myra Odenwaelder, DPT
Address: 10 Progress Drive. Shelton, CT 06484
Phone: (203) 944-3718
Fax: (203) 929-3068
e-mail: Modenwaelder@griffinhealth.org
Web: http://www.griffinhealth.org/locations/shelton/griffin-hospital-occupational-medicine-center

Hartford Medical Group—Occupational Medicine
Business Development Director: Suzanne Cutter
Clinic Address: 445 South Main Street, West Hartford, (860) 696-2200
Phone: (860) 993-4441
e-mail: Suzanne.Cutter@hhchealth.org
Web: https://hartfordhealthcaremedicalgroup.org/specialties/primary-care/occupational-medicine
Other Offices; 80 Norwich-New London Tnpk, Montville, 06353, (860) 898-1297

Middlesex Hospital Occupational Medicine
Director: Matthew Lundquist, MD, MPH
Address: 534 Saybrook Rd., Middletown, CT 06457
Phone: (860) 358-2750
Fax: (860) 348-2757
e-mail: matthew.lundquist@midhosp.org
Web: https://middlesexhealth.org/occmed
Other Office: Essex Medical Building, 252 Westbrook Road, Essex (860) 358-3840

St. Mary's Hospital Occupational Health and Diagnostic Center
Medical Director: Erica Martinucci, MD
Address: 1312 West Main Street, Waterbury, CT
Phone: (203) 709-3740
Fax: (203) 709-3741
Email: occhealth@stmh.org
Web: http://www.stmh.org/occupational-medicine-2892

Yale-New Haven Health Systems
Manager for Clinical Operations (St. Raphael campus): Andrea Santerre, RN
Address: 175 Sherman Avenue, New Haven, CT 06511
Phone: (203) 789-6216
Fax: (203) 789-5174
e-mail: andrea.santerre@ynhh.org
Web: https://www.ynhh.org/services/occupational-health.aspx
Other Offices:
2080 Whitney Ave., Suite 150, **Hamden** (203) 789-6242
Greenwich Hospital, 5 Perry Ridge Rd, (203) 863-3483
Bridgeport Hospital, (203) 988-2551
20 York St., **New Haven**, 203-688-4242

Lawrence and Memorial Occupational Health Center
Medical Director: Saima Khalid**,** MD
Address: 52 Hazelnut Hill Rd., Groton, CT 06340
Phone: (860) 446-8265 x7074
Fax: (860) 448-6961
Web: https://www.lmhospital.org/services/occupational-health.aspx

Organizations

American Lung Association (ALA) in Connecticut
The ALA is a non-profit association geared towards preventing lung disease, including occupational lung disease.
Director, Health Promotion: Michelle Caul
Connecticut Address: 45 Ash St., East Hartford, CT 06108
Phone: (860) 838-4370
e-mail: Michelle.Caul@lung.org
Web: Lung.org

Coalition for a Safe and Healthy Connecticut
This is a community-based coalition of environmental, public health, and labor organizations providing resources and advocacy for reducing the use of toxic chemicals through substitution of safer alternatives.
Coordinator: Anne B. Hulick, RN MS JD
Address: c/o Clean Water Action, 2074 Park Street, Suite 308, Hartford, CT, 06106
Phone: (860) 232-6232
Fax: (860) 232-6334
e-mail: ahulick@cleanwater.org
Web: https://safehealthyct.wordpress.com

Connecticut Safety Council/Safety Roundtable
The Safety Council is associated with the Connecticut Business and Industry Association and offers seminars, training courses, consulting, and policy discussions on safety and regulations.
Contact: Phillip Montgomery
Address: 350 Church St. Hartford, CT 06103-1126
Phone: (860) 244-1982
e-mail: phillip.montgomery@cbia.com
Web: https://www.cbia.com/resources/hr-safety/hr-safety-councils/safety-health-roundtable

ConnectiCOSH (The Connecticut Council for Occupational Safety and Health)
CTCOSH is a union-based non-profit organization for education and political action on job safety and health. They have conferences, fact sheets, and speakers.
Director: Mike Fitts
Address: 683 No. Mountain Rd, Newington, CT 06111
Phone: (860) 953-COSH (2674)
Fax: (860) 953-1038
e-mail: mike.ctcosh@snet.net
Web: http://connecticosh.org

The Center for the Promotion of Health in the New England Workplace (CPH-NEW)
CPH-NEW is a NIOSH-funded center for scientific research and education, based in participatory action research, integrating occupational health and safety with worksite health that is administered jointly by UMass Lowell and UConn Health.
Co-Director: Martin Cherniack, MD, MPH
Address: 263 Farmington Ave, Farmington, CT 06030-8077
Phone: (860) 679-4916
Fax: (860) 679-1349
e-mail: cherniack@uchc.edu
Web: http://health.uconn.edu/occupational-environmental/academics-and-research/cph-new/

The Ergonomic Technology Center (ErgoCenter) at UConn Health
The ErgoCenter is a center for prevention of repetitive strain injuries based at UCONN Health, which does training, research, and clinical care.
Contact: Jennifer Garza, ScD, Ergonomist
Address: 263 Farmington Ave, Farmington, CT 06030-8077
Phone: (860) 679-4916
Fax: (860) 679-1349
Phone: 860-679-5418
e-mail: garza@uchc.edu
Web: https://health.uconn.edu/occupational-environmental/consultation-and-outreach/ergonomics-consultation/

UConn Health- Center for Indoor Environments and Health (CIEH)
The CIEH at the University of Connecticut Health Center works with public health agencies, companies, clinics and individuals to promote indoor environments which protect the health of building occupants and provide productive, creative spaces for learning and work. The website on hurricane health (below) provides educational materials on protecting workers from exposures when addressing flooded buildings after severe wet weather.
Director: Paula Schenck, MPH
Address: 263 Farmington Ave, Farmington, CT 06030-8077
Phone: (860) 679-2368
Fax: (860) 679-1349
e-mail: schenck@ uchc.edu
Web: http://health.uconn.edu/occupational-environmental/consultation-and-outreach/cieh/
http://hurricane-weather-health.doem.uconn.edu

Professional Associations

American Industrial Hygiene Association (AIHA), Connecticut River Valley Section
AIHA is a professional association for industrial hygienists.
Contact: Kristin Kramer
Phone: (203) 675-2821
e-mail: kristen.cramer2821@gmail.com
Web: http://www.crvaiha.wildapricot.org

Connecticut Safety Society
This society is a professional association for anyone that promotes occupational safety, health, and accident prevention in CT.
President: Larry French
Phone: (860)391-7285
e-mail: lfrench@berlinsteel.com
Web: Facebook Group – Connecticut Safety Society

American Society of Safety Professionals (ASSP)
American Society of Safety members are dedicated to creating safe work environments by preventing workplace fatalities, injuries and illnesses. Sound safety practices are both socially responsible and good business, leading to increased productivity, a better reputation and higher employee satisfaction.
Connecticut Valley Chapter
President: Ed Zimmer
e-mail: president@ctvalley.assp.org
Web: http://ctvalley.assp.org

Air & Waste Management Association (AWMA), Connecticut Chapter
AWMA provides training, information, and networking opportunities to environmental professionals. The Connecticut Chapter, New England Section, provides periodic forums for discussion and sponsors an annual student scholarship.
Chair: David Krochko
Phone: (888) 265-8969
e-mail: dkrochko@woodardcurran.com
Web: http://awmact.org

Connecticut Trial Lawyers Association, Workers' Compensation Committee
CTLA is a professional association of attorneys whose mission reads *Trial lawyers protecting individual rights through fair laws and access to justice.* The purpose of this section is to ensure that workers who have been injured or suffered illness arising out of and in the course of their employment are provided the benefits to which they are entitled under the Connecticut Workers' Compensation Act.
Executive Director: Joan D. Maloney
Workers' Compensation Section Chair: Ken Katz
Address: 150 Trumbull Street, 2nd Floor, Hartford, CT 06103
Phone: (860) 522-4345
Fax: (860) 522-1027
e-mail: jmaloney@cttriallawyers.org
Web: https://www.cttriallawyers.org

Connecticut Bar Association, Workers' Compensation Section
This is a professional association of attorneys who concentrate in workers' compensation.
Chair: Francis "Bud" Drapeau
Phone: (860) 875-7000
E-mail: bdrapeau@ctinjurylawyers.com
Web: https://www.ctbar.org/members/sections-and-committees/sections/workers'-compensation

New England College of Occupational and Environmental Medicine/NECOEM
NECOEM is an association for occupational medicine physicians.
Executive Director: Dianne Plantamura, MSW
Address: 22 Mill Street, Groveland, MA 01834
Phone: (978) 373-5597
e-mail: necoem@comcast.net
Web: http://www.necoem.org/

Connecticut Association of Occupational Health Nurses (CTOHN)
CTAOHN is an association of occupational health nurses, including most of the nurses working in industry.
CT President: Richard Sandrib, BSN, MS, APRN
Address: 5 Research Pkwy, Wallingford, CT 06492
Phone: (203) 677-6441
e-mail: richard.sandrib@bms.com
Web: https://ctaohn.nursingnetwork.com

Connecticut State Agencies

Department of Public Health (DPH), Occupational Health Unit
This unit investigates clusters of occupational diseases. Programs for radon, asbestos, AIDS, lead, asthma, CT Schools Environmental Resource Team, TB control and infectious disease are also at the DPH.
Director: Thomas St. Louis, MSPH
Address: DPH/ OHP, 410 Capitol Ave, MS #11EOH, PO Box 340308, Hartford, CT 06134-0308
Phone: 860) 509-7740
Fax: (860) 509-7785
e-mail: Thomas.st.louis@ct.gov
Web: http://www.ct.gov/dph/occupationalhealth

State Department of Emergency Services and Public Protection
The Department of Emergency Services and Public Protection (DESPP) is comprised of the Commission on Fire Prevention and Control, the CT State Police, Emergency Management and Homeland Security, the Police Officers Standards and Training Council, Scientific Services, and Statewide Emergency Telecommunications.
Public Information Officer: Scott Devico
Phone: (860) 685-8246; (203) 525-6959 (cell)
Fax: (860) 685-8902
e-mail: scott.devico@ct.gov
Web: https://portal.ct.gov/despp

State Emergency Response Commission, Department of Energy and Environmental Protection
This commission oversees plans for response to chemical accidents and collects chemical information for the public under Community Right to Know.
Chairman: Gerard P. Goudreau
Address: 79 Elm St, Hartford, CT 06106-5127
Phone: (860) 424-3373
Fax: (860) 424-4062
e-mail: deep.ctepcra@ct.gov
Web: http://www.ct.gov/serc

Connecticut Fire Academy, Commission on Fire Prevention & Control
Safety training & standards compliance.
Training Director: Bill Higgins
Address: 34 Perimeter Road, Windsor Locks, CT 06096-1069
Phone: 860-264-9272 or toll free (877) 5CT-FIRE (only in CT)
Fax: (860) 654-1889
e-mail: william.higgins@ct.gov
Web: http://www.ct.gov/cfpc/site/default.asp

Connecticut Department of Environmental Protection, Radiation Safety Unit
Director: Jeff Semancik
Phone: (860) 424-3029; (860) 424-3333 24/7 Emergency
Fax: (860) 706-5339
e-mail: jeffrey.semancik@ct.gov
Web: http://www.ct.gov/deep/cwp/view.asp?a=2713&q=324824&deepNav_GID=1639

Workers' Compensation Commission
Chairman's Office and Compensation Review Board
The Workers' Compensation Commission (WCC) administers the workers' compensation laws of the State of Connecticut with the ultimate goal of ensuring that workers injured on the job receive prompt payment of lost work time benefits and attendant medical expenses. To this end, the Commission holds hearings on disputed matters, facilitates voluntary agreements, makes findings and awards, hears and rules on appeals, and closes out cases through full and final stipulated settlements.

The WCC Safety & Health Services unit assists employers with implementation of the workers' compensation regulations regarding "Establishment and Administration of Safety and Health Committees at Work Sites."

Chairman: Stephen M. Morelli
Address: 21 Oak St., 4th Floor, Hartford, CT 06106-8011
Phone: (860) 493-1500
Information: (800) 223-WORK (9675)
Fax: (860) 247-1361
e-mail: wcc.chairmansoffice@po.state.ct.us
Web: http://wcc.state.ct.us/

Workers' Compensation District Offices
1. 999 Asylum Ave., **Hartford**, CT 06105; (860) 566-4154; Fax: (860) 566-6137
2. 55 Main St., **Norwich**, CT 06360; (860) 823-3900; Fax: (860) 823-1725
3. 700 State St., **New Haven**, CT 06511; (203) 789-7512; Fax: (203) 789-7168
4. 350 Fairfield Ave., 2nd Floor, **Bridgeport**, CT 06604; (203) 382-5600; Fax: (203) 335-8760
5. 55 West Main St., **Waterbury**, CT 06702; (203) 596-4207; Fax: (203) 805-6501
6. 233 Main St., **New Britain**, CT 06051; (860) 827-7180; Fax: (860) 827-7913
7. 111 High Ridge Rd., **Stamford**, CT 06905; (203) 325-3881; Fax: (203) 967-7264
8. 90 Court St., **Middletown**, CT 06457; (860) 344-7453; Fax: (860) 344-7487

The Who's Who is compiled by Tim Morse, Ph.D., at UConn Health. To update or add a listing, please contact Tim at tmorse@uchc.edu.

Ergonomic Sites and Links

Ergoweb has good factsheets, documents, and news.
https://ergoweb.com/

Thomas Bernard's website at **University of South Florida** has many of the standards and excellent free electronic ergonomic analysis tools such as the NIOSH lifting equation and heat stress.
https://health.usf.edu/publichealth/tbernard.

Tom Armstrong at the **University of Michigan** runs one of the most respected university training programs for ergonomics, and has extensive information, tools, and lectures.
http://www-personal.umich.edu/~tja

Cornell University's Alan Hedge has an active ergonomics program, with reports posted on graduate student projects and evaluation of ergonomic products. http://ergo.human.cornell.edu

The University of Virginia has ergonomics training and resources. http://ehs.virginia.edu/Ergonomics.html

Human Factors and Ergonomics Society is the main professional association in ergonomics.
http://www.hfes.org

Since 1994, the **National Ergonomics Conference & Ergo Expo** has provided a forum on ergonomics, safety and wellness programs. http://www.ergoexpo.com

The **Typing Injury FAQ** has links and information on repetitive strain injuries from user and injured workers groups. http://www.tifaq.org

The National Health Service/UK has information about repetitive strain injuries/RSI
http://www.nhs.uk/conditions/Repetitive-strain-injury/Pages/Introduction.aspx

Paul Landsbergis has a good website on job stress. http://unhealthywork.org/about-us/team/paul-a-landsbergis

The **European Agency for Health and Safety at Work's Job Stress Network** web page is dedicated to increasing communication among researchers and others interested in job stress and its impact on health
https://osha.europa.eu/data/links/795

Internet Resources for Job Safety and Health is compiled by Tim Morse, Ph.D., at UConn Health. To update or add a listing, please contact Tim at tmorse@uchc.edu.