2001

Annual Summary of Occupational Disease Reports to the Michigan Department of Consumer and Industry Services

Summary of 2001 Occupational Disease Reports to the Michigan Department of Consumer & Industry Services

A Joint Report
of the
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SUMMARY

There were 18,245 occupational disease reports submitted to the Michigan Department of Consumer and Industry Services (MDCIS) in calendar year 2001 as required under the Michigan Occupational Disease Reporting Law. These reports were submitted by company medical departments or clinics under contract to companies to provide occupational health services to their employees, as well as health practitioners not associated with a particular company. The most frequent types of occupational diseases reported were repetitative trauma (41%), respiratory disease (22%) and diseases of the nervous system and sense organs (13%).

There were differences in the types of reports submitted by companies compared to those submitted by independent health practitioners. For example, there were 3,934 reports from health care providers and hospitals for diseases of the respiratory system while only 84 such reports were received from employers (Table 4).

The average age of individuals reported was 46 years with a range from 15 to 97. Over 67% of individuals reported were between the ages of 25 and 55. Seventy-two percent of all reports submitted were for male workers.

An initiative begun last year to combine all occupational injury and illness reports from nine programs that track Michigan occupational injuries and illnesses to present a more comprehensive overview of work-related injuries and illnesses in our state is still in progress. Preliminary data suggest the true number of work-related conditions is greater than estimates provided by the Bureau of Labor Statistics.

A new initiative which is just beginning involves the collection of information from the two Michigan Poison Control Centers on work-related illnesses. Given the complementary nature of all the existing programs, we envision that by combining the data across these systems we will be able to better characterize and understand the extent and distribution of individuals who become sick and injured at work. This is an essential first step in reducing the burden of these preventable injuries and illnesses in our state.

INTRODUCTION

Since 1978, physicians, hospitals, clinics, other health professionals and employers have been required by the Michigan Public Health Code (Article 368, Part 56, P.A. 1978, as amended) to report known or suspected cases of occupational diseases. Until 1996, these reports were submitted to the Michigan Department of Public Health (MDPH). Reports are now submitted to the Michigan Department of Consumer and Industry Services (MDCIS). During the initial years after the reporting law was enacted, the number of reports received by the MDPH was generally less than one hundred each year. Following the 1988 implementation of the Sentinel Event Notification System for Occupational Risks (Project SENSOR), a statewide initiative for occupational disease surveillance, active solicitation of occupational disease (OD) reports began. Since 1988, the number of reports sent to the MDPH/MDCIS has increased substantially. Figure 1 shows the number of occupational disease reports received each year since 1985. Over the past eight years approximately 20,000 reports have been received annually. Figure 2 shows the number of reports by reporting source for 1991-2001 (the years for which reporting source is known).

Computerization of the OD report data, which began in 1991, allows for more efficient handling of the high volume of reports submitted and facilitates the use of these reports to direct surveillance, intervention and prevention efforts. This is the eleventh annual report on occupational diseases in Michigan, and is based upon the reports submitted to the MDCIS in calendar year 2001.

Figure 3 is a copy of the occupational disease (OD) report that is submitted to MDCIS by companies and health care providers. The form requests medical and demographic information on the affected employee and information about both the employer and the facility at which the employee became ill. This information is used to monitor occupational diseases within the state, and to assist in directing intervention and prevention efforts.

On-line occupational disease reporting has been available since 2001 through the Michigan State University Occupational and Environmental Medicine website: www.chm.msu.edu/oem. A secure server is used to maintain the confidentiality of the information submitted on-line. In addition to completing the OD report form (Figure 3) on-line, information can be submitted by:

*Email: ODReport@msu.edu
*Postage paid envelopes: call 1-800-446-7805 to request
*Fax: (517) 432-3606
*Phone-in: 1-800-446-7805
*Mail directly to: MDCIS, Occupational Health Division
Bureau of Safety & Regulation
7150 Harris Drive
PO Box 30649
Lansing, MI 48909-8149

METHODS

The computerized OD records contain: 1) the affected employee's name, age, sex, race, zip code and social security number; 2) the employer's name, work site address, city, zip code, number of persons employed at the facility and the company's standard industrial classification code (SIC)[1]; 3) details of the illness, including date of diagnosis, suspected causative agent(s), whether the employee died, and diagnosis or clinical impression coded according to the International Classification of Diseases (ICD-9th Revision[2]); and 4) information about the individual who submitted the report, including company affiliation (i.e., whether the reporter is a practitioner employed by the company, or an outside medical department contracted by the company, or a private practice health professional). An OD report is initiated when a clinician knows or suspects that a patient's illness is work-related. Reports are submitted by physicians, audiologists, employers, hospitals, clinics, laboratories, the 3rd Judicial Court of Michigan (which processes the majority of the asbestos-related claims) and the federal Mine Safety and Health Administration. Additional reports are generated through annual review of death certificates and the Michigan Health and Hospital Association inpatient database.

More than one report on a given individual with different work-related diseases may be submitted to the MDCIS within a given year and across multiple years. If more than one report is submitted in a given year for a chronic disease in a single individual, only one of the submissions is included in our statistics. Further, if multiple reports are submitted over several years on that individual's chronic disease, only the earliest report is included in our statistics. In contrast, if several reports are submitted for acute illnesses for a single individual, all of the reports are included in our statistics. Appendix A lists the chronic disease categories for which duplicate reports within and across years are removed.

Since October 11, 1997, all clinical laboratories doing business in Michigan have been required to report all blood lead analysis results for both adults and children, to the Michigan Department of Community Health. The blood lead results of 10 μg/dL or greater for adults are incorporated into the Occupational Disease reports submitted each year to the MDCIS. Many of the adults reported through this system have had blood lead testing as part of their company's monitoring program. However, it is the clinical laboratories that actually submit the results to the state, not the employers. In fact, aside from the clinical laboratory reports of blood lead analysis, employers themselves almost never submit an elevated blood lead level report to the MDCIS, even though they would be required to do so under the Michigan Occupational Disease Reporting Law. In light of this, blood lead reports submitted by the clinical laboratories are all considered as non-company reports, even though the company may have initially ordered the blood lead test.

RESULTS

A total of 18,245 occupational disease reports were submitted to the MDCIS in calendar year 2001. Figure 1 shows the number of reports received each year since 1985. A quality control audit conducted for the 1998 annual report uncovered a small number of duplicate chronic disease cases. Consequently the number of reports reflected in Figure 1 for 1991-1997 is slightly lower than was reported in the annual reports prior to 1998.

Source of Reports

Sixty-five percent of the reports (11,788 cases) were submitted by company or contract medical departments. The remaining 35% (6,457 cases) were submitted by non-company health practitioners. Most patients worked in large companies (Table 1) with 98% of the 12,201 reports that listed company size coming from businesses with more than 500 employees. A larger proportion of reports involving smaller companies (fewer than 500 employees) come from non-company health practitioners. Just over twenty-one percent of the 470 reports with known company size that were submitted by non-company practitioners involved companies with fewer than 500 employees, while just over one percent of the 11,731 reports with known company size that were submitted by company practitioners involved facilities with fewer than 500 employees.

Four hundred eighty-nine private practice clinicians (non-company affiliated) reported 6,457 incidents of occupational disease. Two hundred fifty-one of the clinicians who reported in calendar year 2001 (81%) reported only one patient each (Table 2), while four clinicians reported more than one hundred patients each. The number of reports submitted by these four clinicians in the year 2001 ranged from 135 to 2,707. Two of these are physicians certified by the federal government to interpret chest x-rays for dust-related lung disease ("B" readers); one is an occupational medicine physician who practices at a hospital based clinic; and one is a large audiology group practice. A "B" reader is a licensed physician who has passed a test on interpreting chest x-rays for pneumoconiosis, and maintains certification by passing an additional test every 4 years. Currently, there are 16 Michigan physicians who are "B" readers.

Demographics

Table 3 shows the age, gender and race distribution of the workers with occupational diseases reported in the year 2001. The mean age of reported patients was 46 ± 16 years (range, 15 to 97 years) with over half of the patients (67%) between the ages of 25 and 55 years. Seventy reports were submitted for patients under age 20, and 402 reports were submitted for patients over age 79.

Seventy-two percent of all reports submitted were for male workers. Eighty-one percent of the submitted reports (14,795 cases) did not indicate the worker's race. Of the 3,450 reports that did indicate race, 79% were white, 14% were African American, 4% were Hispanic and 3% were listed as "other."

Younger workers . Of the 28 workers age 18 and younger, the youngest two were 15 years old, seven were 16 years old, eight were 17 years old, and 11 were 18 years of age. Ten of the reported patients under age 19 were women, and 18 were men.

Three of the younger workers were employed in manufacturing, one worked in health care and five worked in educational services. Place of employment was unknown for 19 of the reported workers.

Nine of the younger workers were reported by company affiliated clinicians or contract medical departments, and 19 were reported by private-practice physicians. Two reports were for repetitive trauma (sprains and strains), three for skin diseases, 14 for elevated blood lead levels, two for

respiratory symptoms, four for conjunctivitis, two for noise-induced hearing loss and one for nonspecific symptoms. No fatalities were reported for any workers under age 19. Of the 14 cases of elevated lead levels, all had serum lead levels between 10 and 24 micrograms per deciliter.

Older workers . Of the 402 workers age eighty and older, 360 were between the ages of 80 and 89, and 42 were between 90 and 97 years old. Three hundred seventy-eight were men, 14 were women and gender for 10 individuals was unknown. All but one of these patients were reported by non-company clinicians.

Three hundred sixty-two of the older workers were reported for dust-related lung disease (including 51 with asbestosis, 298 with pleural thickening, 12 with silicosis, and one with pneumoconiosis, unspecified), 26 for noise-induced hearing loss, five for cancer, one for other respiratory conditions, six for elevated blood lead levels, one for a nonspecific illness and one for carbon monoxide poisoning.

Twenty-nine of the older patients worked in (or were retired from) manufacturing, eight in construction, eight worked in utility services, one in wholesale trade, one in health services, one in education and one in cleaning services. Occupation or former occupation was not indicated in 353 reports.

Illness Information

Table 4 shows the distribution of diagnoses or clinical impressions by reporting source. Diagnoses are grouped by major International Classification of Diseases categories (ICD-9th Revision). Overall, repetitive trauma illnesses (ICD-9 categories 800-999 except 940 and 980-989) were the most frequently reported conditions, with 7,413 cases representing 41% of all OD reports submitted. The majority of reports were for sprains and strains of the wrist, hand and finger.

Diseases of the respiratory system were the second most frequently reported conditions, with 4,018 cases representing 22% of all reports. Diseases of the nervous system and sense organs were third, with 2,424 cases representing 13% of all reports submitted. There were 1,262 reports of musculoskeletal and connective tissue disease (7%), 1,318 reports for toxic effects of substances (7%), 776 reports of skin and subcutaneous tissue disease (4%), 518 reports of mental disorders (3%), 33 reports of cancer (<1%), and 48 burns to the eye (<1%). Infrequently reported conditions included infectious and parasitic diseases, diseases of the digestive system and diseases of the circulatory system.

Three hundred eighty-six reports of symptoms, signs and ill-defined conditions were also submitted, which suggests that physicians and other health care providers are reporting both *known* and *suspected* cases of occupational disease.

Reporting source differences . Company affiliated and non-company affiliated practitioners differ markedly in the types of occupational diseases they report (Table 4). Sixty-three percent of submissions by company health care providers are reports of repetitive trauma illnesses, while less than one percent of submissions by non-company providers represent these diagnoses. Conversely, sixty-one percent of non-company submissions are reports of respiratory illness, while less than one percent of company submissions are for respiratory illness. The second, third and fourth most frequently reported diagnoses for company providers are diseases of the musculoskeletal system and connective tissue (11%), nervous system and sense organs (10%), and skin and subcutaneous tissue (7%). Toxic effects of substances are the second most frequently reported diagnoses by non-company providers (19%). The third and fourth

most frequently reported diagnoses for non-company providers are diseases of the nervous system and sense organs (19%) and ill-defined symptoms (1%).

Company and non-company practitioners also differ in the types of industries represented in their reports (Table 5). Ninety-seven percent of patients reported by company affiliated health care providers are employed in manufacturing, primarily automobile production. In contrast, only 68% of patients reported by non-company affiliated providers are employed in manufacturing. The second and third industry types most frequently reported by company providers are service industries (primarily hospitals) (1%) and transportation services (0.6%). The second and third industry types most frequently reported by non-company providers are construction (11%) and educational services (8%). The type of industry was missing on 4,385 non-company and 105 company reports.

***Gender differences*.** Repetitive trauma illnesses were the most frequently reported diagnoses for both men and women, with 34% of submissions on men and 60% of submissions on women reporting one of these diagnoses (Table 6). The second, third and fourth most frequently submitted diagnoses for men were diseases of the respiratory system (28%), nervous system and sense organs (15%) and toxic effects of substances (9%). For women, the second, third and fourth most frequently submitted diagnoses were musculoskeletal system and connective tissue (11%), nervous system and sense organs (9%) and diseases of the skin and subcutaneous tissue (7%). Two hundred eighty-seven reports did not indicate gender.

Fatalities. Fatalities related to occupational illnesses were reported for 25 workers. None of the fatalities reported were for acute traumatic fatalities. The state also conducts surveillance for acute traumatic fatalities. There were additional 169 acute work-related traumatic fatalities in Michigan in 2001.

All of the 25 individuals with occupational illnesses who died were reported by non-company clinicians. Gender was unknown for all 25 cases. The workers who died ranged in age from 51 to 87. Nineteen died from asbestos-related cancer and six died from asbestosis. Nine of the deceased workers had been employed in manufacturing, two were utility workers and six worked in construction. Former occupation was not specified for eight workers.

Comparison With Other Data Systems

Data Linkage Initiative. This past year, we initiated a project to obtain a better estimate of the true number of occupational illnesses and injuries in Michigan. One of the main objectives of this project is to combine data across several reporting systems and look at the overlap of patients reported. Then, using a capture-recapture methodology, we will develop parameters for the magnitude of work-related conditions in our state.

Preliminary data from this effort reveals very minimal overlap between the major occupational injury and illness systems. For example, in 1999 78,131 of the 83,342 (93.7%) Workers' Compensation Claims, 18,953 of the 21,351 (88.8%) occupational disease reports and 7,527 of 11,407 (66.0%) injuries and illnesses reported to the Bureau of Labor Statistics were <u>not</u> found in any of the other systems used to track the work place injuries and illnesses. This would suggest that the magnitude of occupational injuries and illnesses is much greater than currently estimated.

Published Data in Michigan at a Disease Category Level. Prior to the new data linkage initiative, the best picture of occupational disease in our state was to compare data from the OD reporting system with Workers' Compensation Claims and the MDCIS Annual Survey (Table 8). Those data also suggest that the magnitude of occupational conditions among Michigan workers is greater than what currently gets reported.

The most recent data that is available from the MDCIS Bureau of Workers' Compensation (BWC) at a disease-category level is from 1990[3]. In that year, there were 8,851 claims for compensation due to occupational illnesses and 70,829 claims for occupational injuries. Although not available at a disease-category level, in 2001 the BWC reported 43,178 claims for both occupational injuries and illnesses.

The other major data on occupational injuries and illnesses available in Michigan comes from the MDCIS annual survey of company injury and illness logs. For this data source, the most recent published data available at a disease category level is from 1994 with an estimate of 52,098 occupational illnesses in the state[4]. Table 8 compares occupational disease reports received by MDCIS with this and the BWC reports.

Poison Control Center Data. A new initiative that began in July of 2002 is the collection of work-related illnesses from the two Poison Control Centers (PCC) in Michigan. On a monthly basis, the work-related reports are incorporated into the occupational disease reporting database. In 1999, for example, 1,406 (1.6%) of the 87,604 human exposure-related PCC calls were related to occupational exposures. We expect this new source of sentinel health event data will help us characterize the health problems among the Michigan workforce with even greater detail.

DISCUSSION

There were 18,245 Occupational Disease Reports sent to the MDCIS in calendar year 2001. The most frequent types of occupational diseases reported to the MDCIS were repetitive trauma illnesses (41%), respiratory disease (22%), diseases of the nervous system and sense organs (13%), and diseases of the musculoskeletal system (7%).

It is important to note that we used the ICD-9 codes to classify the diagnosis or clinical impression recorded on the occupational disease reports submitted to the MDCIS. In the ICD-9 coding system, sprains and strains are classified as injuries. However, in Michigan, employers are only required to report *illnesses* on the OD reporting form, not injuries. We assume the reports received for sprains and strains represent illness secondary to cumulative trauma, which are required to be reported.

Many employers, physicians and other health care providers do not report patients with occupational diseases either because they are unaware of the reporting law or choose not to report for a different reason. We currently receive reports from approximately 191 companies and 310 non-company physicians. There were approximately 262,744 companies in the year 2000 (the most recent year for which this information is available) and 25,231 practicing physicians in Michigan in the year 2001. Accordingly, we are receiving reports from 0.1% of companies and 1.2% of physicians. Over the last several years, these percents have remained largely unchanged. We have continued our efforts to remind employers of the requirement to report by routinely distributing reporting forms during MIOSHA inspections. Also, all new physicians receive information on the requirement to report when

they apply for medical licensure in Michigan.

We know that the approximately 20,000 reports received each year do not represent the actual incidence of occupational disease in Michigan. Using capture-recapture analysis we have previously estimated that 29,193 to 60,968 individuals are diagnosed with occupational diseases each year in Michigan[5]. Even this range is an underestimate because it assumes that all physicians recognize work related illness in their patients and that all employers are informed when work-related conditions are diagnosed. These assumptions often go unmet.

The type of illness and the type of industry where occupational diseases occur as reported by non-company health practitioners differs from company-based health practitioners (Tables 1, 4 and 5). These differences vary depending on the specialties of the private practice physicians who submit reports. For example, the non-company health practitioners who reported patients in the year 2001 were more likely to report patients with respiratory disease who work in small, non-manufacturing companies. A large percentage of the year 2001 reports from non-company health practitioners were from physicians who are specialists in the radiographic interpretation of mineral and dust-related lung disease. Without these reports the increased diagnosis of asbestos related lung disease would be missed. However, regardless of the mix of non-company specialists reporting, the data illustrate that relying on company based reports alone would cause occupational illness statistics to markedly under-count certain work-related conditions. For the years 1992-1994, only 9.6% of the workers for whom an Occupational Disease Report was submitted had definitely filed a Workers' Compensation reference claim, although an additional 36% may have filed a claim for a total of 45.6%[6]. To determine the true burden of occupational disease in our state, multiple reporting sources must be used. Efforts to develop a comprehensive surveillance system for Michigan as well as the nation are needed.

We are continuing to work on a project that began last year to combine the reports of occupational injuries and illnesses from nine databases, eliminating duplicate reports. The nine databases are:

- Michigan Adult Blood Lead Epidemiologic Surveillance System (ABLES)
- Michigan Bureau of Workers' Disability and Compensation First Injury and Illness Reports
- Michigan Census of Fatal Occupational Injuries (CFOI)
- Michigan Hospital Inpatient/Outpatient Database
- Michigan Occupational Disease Reports
- United States Department of Labor Bureau of Labor Statistics Annual Survey
- United States Department of Labor Mine Safety and Health Administration Injury and Illness Reports
- United States Department of Labor Occupational Safety and Health Administration Annual Survey
- United States Department of Labor Occupational Safety and Health Administration Integrated Management Information System

Preliminary estimates show little overlap between these systems. We are in the process of adding a new source for occupational disease reports, two poison control centers in Michigan. We estimate this may add up to 1,500 new reports per year.

In addition to tracking the incidence of occupational disease, such a comprehensive system would allow us to prioritize and evaluate the effectiveness of interventions designed to prevent occupational disease.

REFERENCES

1. Office of Management and Budget. *Standard Industrial Classification Manual*. Springfield, Virginia: National Technical Information Service, 1987.

2. Public Health Services and Health Care Financing Administration. *International Classification of Diseases, 9th Revision, Clinical Modification*. Washington: Public Health Service, 1980.

3. Michigan Department of Labor, MIOSHA Information Division. *Compensable Occupational Injury and Illness Report, Michigan 1990*. Lansing: Michigan Department of Labor, 1993.

4. Michigan Department of Labor, MIOSHA Information Division. *Occupational Injuries and Illnesses Michigan Survey, 1994*. Lansing: Michigan Department of Labor, 1995.

5. Reilly MJ, Rosenman KD, Kalinowski DJ, and Deliefde JW. *Summary of 1996 Occupational Disease Reports to the Michigan Department of Public Health*. Lansing, Michigan, March 20, 1997.

6. Biddle J, Roberts K, Rosenman KD, Welch EM. *What Percentage of Workers With Work-Related Illnesses Receive Workers' Compensation Benefits?* Journal of Occupational and Environmental Medicine 1998; 40:325-331.

Figure 1. Occupational Disease Reports to the Michigan Department of Consumer and Industry Services, 1985-2001

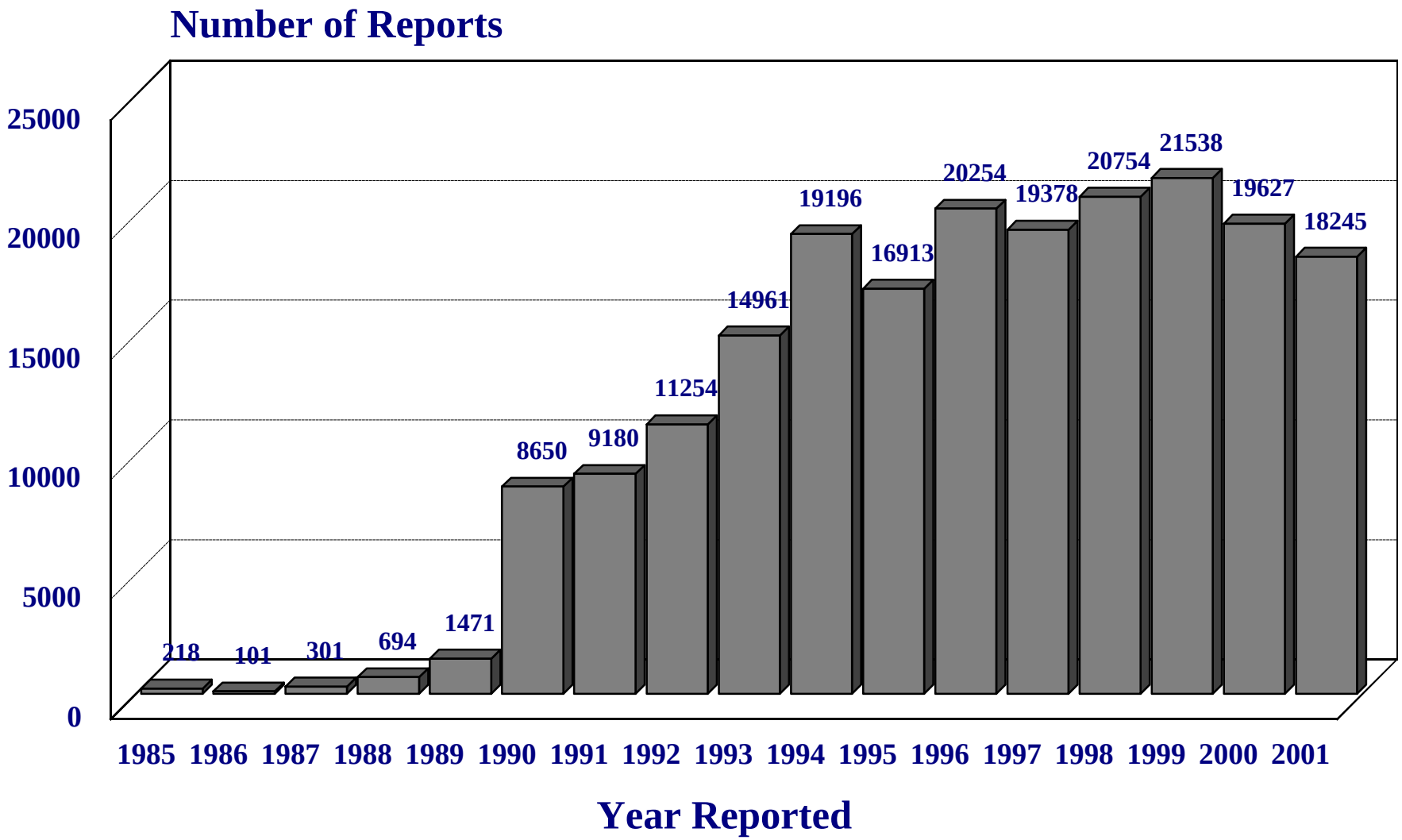
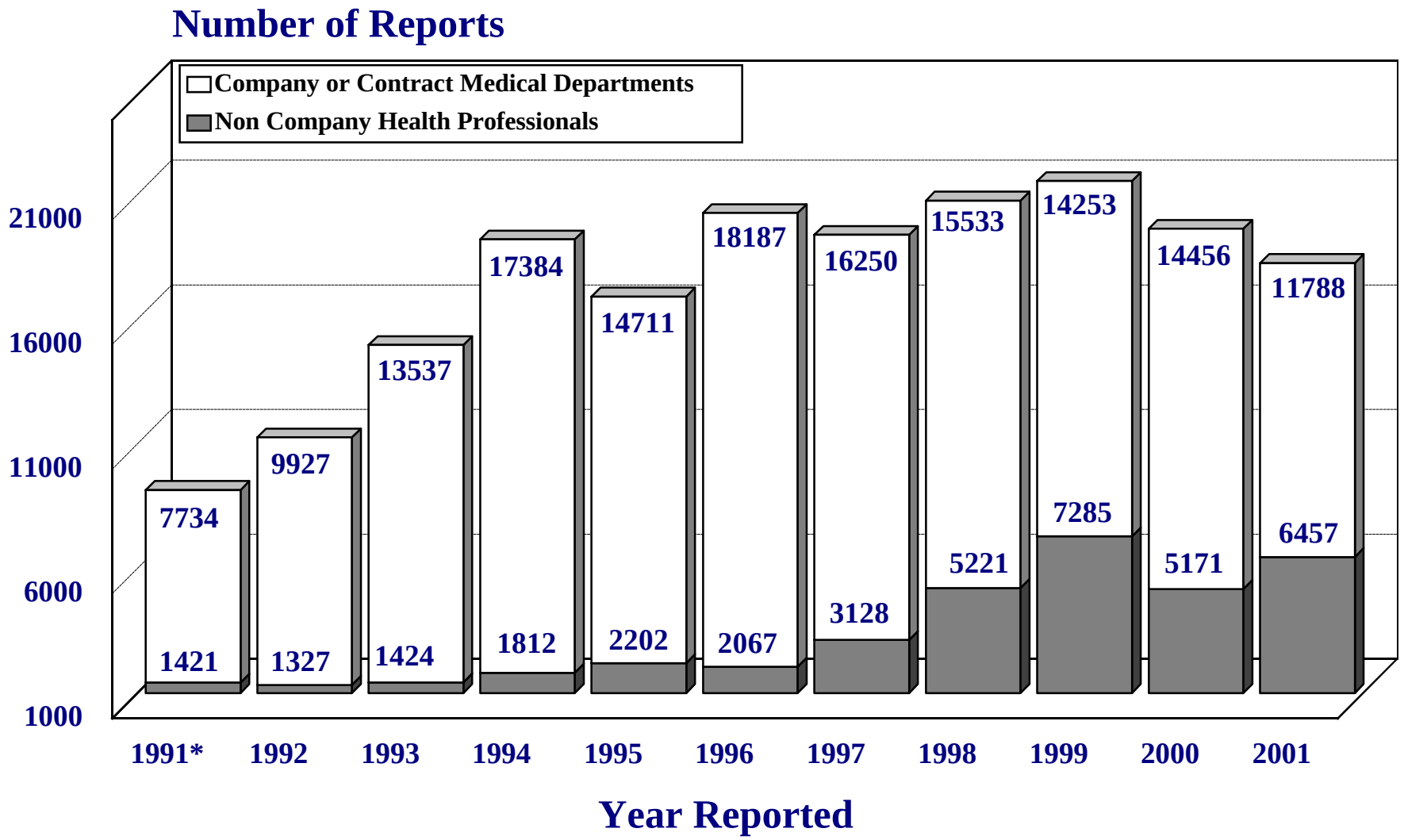


Figure 2. Occupational Disease Reports by Reporting Source: Non-Company Health Professionals and Company or Contract Medical Departments, 1991-2001



*Reporting source was unknown for 25 reports.

Michigan Department of Consumer and Industry Services — Occupational Health Division

Known or Suspected Occupational Disease Report

(Information will be held confidential as prescribed in Act.)

EMPLOYEE AFFECTED

Name (Last, First, Middle)	Age	Sex M F	Race: ◯ White ◯ Black ◯ Hispanic ◯ Other
Street	City	State	Zip
Home Phone Number	Social Security Number		

CURRENT EMPLOYER

Current Employer Name	Worksite County		
Worksite Address	City	State	Zip
Business Phone	If Known, Indicate Business Type (products manufactured or work done)		
Number of Employees ◯ < 25 ◯ 25-100 ◯ 100-500 ◯ > 500			
Employee's Work Unit/Department	Dates of Employment From:_____ (Mo Day Year) To:_____ (Mo Day Year)		
Employee's Job Title or Description of Work			

ILLNESS INFORMATION

Nature of Illness or Health Condition (Examples: Headache, Nausea, Difficulty Breathing, Cough, etc.)		Date of Diagnosis _____ Mo Day Year
Suspected Causative Agents (Chemicals, Physical Agents, Conditions)	Did Employee Die? Yes ◯ No ◯	If Yes, Date of Death _____ Mo Day Year
If Physician, Indicate Clinical Impression for Suspected Occupational Disease, or Diagnosis of Confirmed Occupational Disease		

ADDITIONAL COMMENTS

_____

_____

REPORT SUBMITTED BY

If Report Submitted by Non-Physician, Did Employee See a Physician? *If yes, record information below.*	Yes ◯ No ◯ Don't Know ◯		
Physician's Name	Phone		
Office Address	City	State	Zip
Name of Person Submitting Report	Physician ◯ Non-Physician ◯		
Address	City	State	Zip
Signature	Phone		Date

The Michigan Department of Consumer and Industry Services is an equal opportunity, affirmative action employer, service provider and buyer.

Return completed form to:

Michigan Department of Consumer and Industry Services
Occupational Health Division
Bureau of Safety and Regulation
7150 Harris Drive, P.O. Box 30649
Lansing, MI 48909-8149

OH - 51 (02/02)

Authority: P.A. 368 of 1978
Completion: Required
Penalty: Misdemeanor

Table 1. Number of Employees at Facilities Where an Occupational Illness Occurred By Reporting Source: Company vs. Non-Company Clinician

NUMBER OF EMPLOYEES	Reports from Non-Company Practitioners		Reports from Companies		Total Reports	
	Number	*Percent*	*Number*	*Percent*	*Number*	*Percent*
<25	17	3.6	2	<0.1	19	0.2
25-100	57	12.1	20	0.2	77	0.6
100-500	26	5.5	125	1.1	151	1.2
>500	370	78.7	11,584	98.7	11,954	98.0
Total	470[a]	99.9[b]	11,731[c]	100.0	12,201	100.0

[a] The number of employees was missing on 5,987 reports.
[b] Percent does not add to 100 due to rounding.
[c] The number of employees was missing on 57 reports.

Table 2. Number of Occupational Disease Reports Submitted by Non-Company Health Practitioners

Number of Reports	Health Practitioners Number	Percent	Number of Patients Represented
1	251	(81.0)	251
2-5	38	(12.3)	99
6-10	5	(1.6)	33
11-20	9	(2.9)	121
21-100	3	(1.0)	90
101+	4	(1.3)	4659
Total[a]	310	(100.1)[b]	5253

[a] 1,204 reports were submitted by labs for lead poisoning, representing 179 clinicians. These are not included in the above statistics.
[b] Percent does not add to 100 due to rounding.

Table 3. Demographic Characteristics of Reported Occupational Disease Cases

	Number of Reports	*Percent of Reports*
AGE		
≤19	70	0.4
20-24	791	4.5
25-29	1,963	11.2
30-34	2,078	11.9
35-39	1,748	10.0
40-44	1,961	11.2
45-49	2,145	12.3
50-54	1,879	10.8
55-59	1,377	7.9
60-69	1,629	9.3
70-79	1,427	8.2
80+	402	2.3
Total	17,470[a]	
GENDER		
Male	12,929	72.0
Female	5,029	28.0
Total	17,958[b]	
RACE		
White	2,732	79.2
African American	497	14.4
Hispanic	126	3.7
Other	95	2.8
Total	3,450[c]	

[a]Age was missing on 775 reports. Mean age = 46± 16 years.
[b]Gender was missing on 287 reports.
[c]Race was missing on 14,795 reports.

Table 4. Number of Occupational Disease Reports by Disease Type and Reporting Source

DISEASE TYPE	Non-Company		Company		Total	
	Number	*Percent*	*Number*	*Percent*	*Number*	*Percent*
Infectious and Parasitic Diseases (ICD 001-139)	3	<0.1	25	0.2	28	0.2
Neoplasms (ICD140-239)	33	0.5	0	--	33	0.2
Metabolic and Immunity Disorders (ICD 270-279)	0	--	1	<0.1	1	<0.1
Mental Disorders (ICD 290-319)	0	--	518	4.4	518	2.8
Diseases of the Nervous System and Sense Organs (ICD 320-389)	1198	18.6	1226	10.4	2424	13.3
Diseases of the Circulatory System (ICD 390-459)	1	<0.1	4	< 0.1	5	<0.1
Diseases of the Respiratory System (ICD 460-519)	3934	60.9	84	0.7	4018	22.0
Diseases of the Digestive System (ICD 520-579)	1	<0.1	14	0.1	15	0.1
Diseases of the Skin and Subcutaneous Tissue (ICD 680-709)	8	0.1	768	6.5	776	4.3
Diseases of the Musculoskeletal System and Connective Tissue (ICD 710-739)	4	0.1	1258	10.7	1262	6.9
Symptoms, Signs and Ill-Defined Conditions (ICD 780-799)	54	0.8	332	2.8	386	2.1
Repetitive Trauma: Sprains and Strains (ICD 800-999 except ICD 940 & ICD 980-989)	11	0.2	7402	62.8	7413	40.6
Burn Confined to Eye (ICD 940)	0	--	48	0.4	48	0.3
Toxic Effects of Substances Chiefly Non-Medicinal (ICD 980-989)	1210	18.7	108	0.9	1318	7.2
Total	6,457	99.9[a]	11,788	99.9[a]	18,245	100.0

[a]Percent does not add to 100 due to rounding

Table 5. Number of Reports by Industry Type and Reporting Source

INDUSTRY TYPE	Non-Company		Company		Total	
	Number	*Percent*	*Number*	*Percent*	*Number*	*Percent*
Agricultural and Forestry Services (SIC 01,07,08)	7	0.3	0	--	7	0.1
Mining (SIC 10-14)	2	0.1	26	0.2	28	0.2
Construction (SIC 15-17)	219	10.6	12	0.1	231	1.7
Manufacturing (SIC 20-39)						
Food and Kindred Products (SIC 20)	7	0.3	51	0.4	58	0.4
Furniture (25)	1	<0.1	272	2.3	273	2.0
Paper and Allied Products (SIC 26)	6	0.3	4	<0.1	10	0.1
Printing and Publishing (SIC 27)	4	0.2	0	--	4	<0.1
Chemicals and Allied Products (SIC 28)	42	2.0	172	1.5	214	1.6
Rubber and Misc. Plastics Products (SIC 30)	5	0.2	258	2.2	263	1.9
Stone, Clay, Glass & Concrete Products (SIC 32)	12	0.6	12	0.1	24	0.2
Primary Metal Industries (SIC 33)	644	31.1	351	3.0	995	7.2
Fabricated Metal Products (SIC 34)	51	2.5	1,387	11.9	1,438	10.5
Industrial & Commercial Machinery & Computer Equipment (SIC 35)	50	2.4	66	0.6	116	0.8
Electronic Equipment and Components (SIC 36)	5	0.2	659	5.6	664	4.8
Transportation Equipment (SIC 37)	532	25.7	8,055	68.9	8,587	62.4
Miscellaneous Manufacturing (SIC 24, 29, 38, 39)	58	2.8	16	0.1	74	0.5
Transportation, Communications, Electric, Gas & Sanitary Services (SIC 40-49)	134	6.5	67	0.6	201	1.5
Wholesale and Retail Trade (SIC 50-59)	28	1.4	4	<0.1	32	0.2
Insurance & Real Estate (SIC 60-67)	8	0.4	0	--	8	0.1
Services						
Hospitals (SIC 80)	41	2.0	162	1.4	203	1.5
Schools (SIC 82)	156	7.5	61	0.5	217	1.6
Misc. (SIC 70,72,73,75,79,83,86,87,88)	26	1.3	45	0.4	71	0.5
Public Administration (SIC 90-97)	34	1.6	3	<0.1	37	0.3
Total	2,072	100.0	11,683	99.8[b]	13,755[a]	100.1[b]

[a]Type of industry was unknown in 4,385 non-company reports and 105 company reports.
[b]Percent does not add to 100 due to rounding

Table 6. Number of Occupational Disease Reports by Disease Type and Gender[a]

DISEASE	MALES		FEMALES	
	Number	*Percent*	*Number*	*Percent*
Infectious and Parasitic Diseases (ICD 001-139)	2	<0.1	26	0.5
Metabolic and Immunity Disorders (ICD 270-279)	1	<0.1	0	--
Mental Disorders (ICD 290-319)	281	2.2	230	4.6
Diseases of the Nervous System and Sense Organs (ICD 320-389)	1932	14.9	444	8.8
Diseases of the Circulatory System (ICD 390-459)	46	0.4	2	<0.1
Diseases of the Respiratory System (ICD 460-519)	3643	28.2	175	3.5
Diseases of the Digestive System (ICD 520-579)	14	0.1	1	<0.1
Diseases of the Skin and Subcutaneous Tissue (ICD 680-709)	436	3.4	336	6.7
Diseases of the Musculoskeletal System and Connective Tissue (ICD 710-739)	728	5.6	533	10.6
Symptoms, Signs and Ill-Defined Conditions (ICD 780-799)	227	1.8	159	3.2
Repetitive Trauma Injuries (ICD 800-999 except ICD 940 and ICD 980-989)	4383	33.9	2994	59.5
Burn Confined to Eye (ICD 940)	42	0.3	6	0.1
Toxic Effects of Substances Chiefly Non-Medicinal (ICD 980-989)	1194	9.2	123	2.4
Total[a]	12,929	100.0	5,029	99.9[b]

[a] Gender was missing on 287 reports.
[b] Percent does not add to 100 due to rounding.

Table 7. Number of Reported Occupational Disease Fatalities

	Number	*Percent*
Fatal	25	0.1
Non-Fatal	18,212	99.9
Total[a]	18,237	100

[a]Vital Status was missing on 8 reports.

Table 8. Comparison of 1994 Occupational Illness Survey Data and 1990 MDCIS Workers' Disability Compensation Claims with 1992-2001 Occupational Disease Reports

DISEASE CATEGORY	MDCIS Survey & Compensation Claims				MDCIS Occupational Disease Reports[a]									
	1994 Survey[b]		1990 Claims[c]		1992-1993		1994-1995		1996-1997		1998-1999		2000-2001	
	Number	*Percent*	*Number*	*Percent*	Mean Number[d]	Percent	Mean Number[d]	Percent	Mean Number[d]	Percent	Mean Number[d]	Percent	Mean Number[d]	Percent
Occupational Skin Disease or Disorders	6,336	12.2	372	4.2	776	6.0	1,034	5.9	1,405	7.3	1,307	6.3	953	5.1
Dust Diseases of the Lung	186	0.4	12	0.1	914	7.1	966	5.5	1,159	6.0	3,225	15.6	1,165	6.3
Respiratory Conditions Due to Toxic Agents	2590	5.0	87	1.0	290	2.3	570	3.0	799	4.1	1,481	7.2	2,334	12.5
Poisoning	765	1.5	403	4.6	207	1.6	315	1.8	631	3.3	1,120	5.4	1,246	6.7
Disorders Due to Physical Agents	1,944	3.7	80	0.9	469	3.6	419	2.4	414	2.1	328	1.6	231	1.2
Disorders Due to Repeated Trauma	1,944	71.0	3,425	38.7	7,151	55.8	10,601	60.3	11,293	58.3	9,644	46.7	9,068	48.7
All Other Occupational Illnesses	3,283	6.3	4,475	50.5	2,972	23.2	3,680	20.9	3,668	18.9	3,541	17.2	3,639	19.5
Number of Reports Per year	52,098		8,851		12,779[e]		17,585		19,369		20,644		18,635	

[a]Counts published in previous years' OD reports for 1992-1997 have been corrected here.
[b]1994 is the last year this report was generated. Combines public and private sector reports.
[c]1990 is the last year this report was generated.
[d]Number of reports per year (averaged over the 2 years).
[e]Type of occupational disease was missing on 97 reports.

APPENDIX A

Chronic Occupational Diseases

Multiple reports for an individual patient with one of the following diseases may be submitted within and across years, but only one of these submissions is counted in our statistics.

ICD-9 Code	Description
011	Pulmonary Tuberculosis
015	Tuberculosis of the bones and joints
135	Sarcoidosis
137	Tuberculosis , Late Effects of
140-239	Neoplasms (Cancers)
250-259	Diseases of Other Endocrine Glands
260-269	Nutritional Deficiencies
270-279	Metabolic and Immunity Disorders Except 276, Dehydration
280-289	Disease of the Blood and Blood Forming Organs
290-319	Mental Disorders Except 308:Acute Reaction to Stress, and 309: Adjustment Reaction
320-340	Selected Diseases of the Nervous System and Sense Organs
388-389	Disorders of the Ear: Noise Induce Hearing Loss, Tinnitus
390-409	Selected Diseases of the Circulatory System
491-505	Selected Diseases of the Respiratory System
509	Pleural Plaques with no parenchymal abnormality marked on the ILO Form
515	Interstitial Lung Disease, Pulmonary Fibrosis
517	Connective Tissue Lung Disease
520-579	Diseases of the Digestive System
580-629	Diseases of the Genitourinary System