
Section 5

NORA Manufacturing (MNF) Sector

Table 5-1. NORA *manufacturing* sector: Number and percent of deaths with selected work-related respiratory condition, U.S. residents age 15 and over, selected states and years, 1990–1999

Condition	Number of Deaths	Percent
All Pneumoconioses	1,960	0.2
Asbestosis	1,035	0.1
Silicosis	386	0.0
Coal Workers' Pneumoconiosis	293	0.0
Unspecified and Other Pneumoconioses	236	0.0
Malignant Mesothelioma (all sites)*	134	0.0
Byssinosis	50	0.0
Hypersensitivity Pneumonitis	13	0.0
All other conditions within this sector	1,034,734	99.6
TOTAL	1,038,841	100.0

NORA - National Occupational Research Agenda

* data for malignant mesothelioma are for 1999 only.

NOTE: The sum of the individual and all other condition death totals may be greater than the total number of deaths in the selected states and years because some decedents have more than one condition listed on their death certificates. Percentages may not total to 100% due to rounding. See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

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Table 5-2. NORA manufacturing sector: Proportionate mortality ratio (PMR) adjusted for age, sex, and race for selected work-related respiratory conditions, U.S. residents age 15 and over, selected states and years, 1990–1999

Condition	Number of Deaths	PMR	95% Confidence Interval	
			LCL	UCL
Byssinosis	50	3.1	2.3	4.1
Silicosis	386	1.7	1.6	1.9
Asbestosis	1,035	1.4	1.3	1.5
Malignant Mesothelioma (all sites)*	134	1.2	1.0	1.4
All Pneumoconioses	1,960	0.7	0.7	0.8
Unspecified and Other Pneumoconioses	236	0.6	0.6	0.7
Hypersensitivity Pneumonitis	13	0.5	0.3	0.8
Coal Workers' Pneumoconiosis	293	0.2	0.2	0.3
All other conditions within this sector	1,034,734			
TOTAL	1,038,841			

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* data for malignant mesothelioma are for 1999 only.

NOTE: The sum of the individual and all other condition death totals may be greater than the total number of deaths in the selected states and years because some decedents have more than one condition listed on their death certificates. See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

Table 5-3. NORA manufacturing sector and asbestosis: Most frequently recorded industries and occupations on death certificate, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	Percent
CIC	Industry		
360	Ship and boat building and repairing	171	16.5
192	Industrial and miscellaneous chemicals	124	12.0
262	Miscellaneous nonmetallic mineral and stone products	75	7.2
270	Blast furnaces, steelworks, rolling and finishing mills	67	6.5
392	Not specified manufacturing industries	61	5.9
142	Yarn, thread, and fabric mills	47	4.5
211	Other rubber products, and plastics footwear and belting	40	3.9
200	Petroleum refining	31	3.0
250	Glass and glass products	30	2.9
160	Pulp, paper, and paperboard mills	29	2.8
	All other industries within this sector	360	34.8
	TOTAL	1,035	100.0
COC	Occupation		
585	Plumbers, pipefitters, and steamfitters	69	6.7
633	Supervisors, production occupations	64	6.2
889	Laborers, except construction	63	6.1
783	Welders and cutters	55	5.3
637	Machinists	44	4.3
779	Machine operators, not specified	41	4.0
575	Electricians	38	3.7
777	Miscellaneous machine operators, n.e.c.	34	3.3
518	Industrial machinery repairers	33	3.2
019	Managers and administrators, n.e.c.	31	3.0
	All other occupations within this sector	553	53.4
	Occupation not reported within this sector	10	1.0
	TOTAL	1,035	100.0

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code n.e.c. - not elsewhere classified

* The total number of deaths with asbestosis reported was 2,859 in these same selected states and years, and the comparable number of asbestosis deaths in the entire United States for this same time period was 10,914.

NOTE: Percentages may not total to 100% due to rounding. See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

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Table 5-4 (page 1 of 2). NORA manufacturing sector and asbestosis: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by industry and occupation, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
CIC	Industry				
262	Miscellaneous nonmetallic mineral and stone products	75	16.4	13.0	20.7
360	Ship and boat building and repairing	171	15.7	13.5	18.3
192	Industrial and miscellaneous chemicals	124	4.8	4.0	5.7
211	Other rubber products, and plastics footwear and belting	40	4.3	3.1	5.9
180	Plastics, synthetics, and resins	12	2.8	1.4	4.9
200	Petroleum refining	31	2.7	1.9	3.9
272	Primary aluminum industries	16	2.7	1.5	4.3
250	Glass and glass products	30	2.6	1.7	3.7
282	Fabricated structural metal products	28	2.3	1.5	3.3
210	Tires and inner tubes	15	2.2	1.3	3.7
270	Blast furnaces, steelworks, rolling and finishing mills	67	1.3	1.0	1.7
	All other industries within this sector	426			
	TOTAL	1,035			
COC	Occupation				
593	Insulation workers	25	93.7	60.5	138.2
643	Boilermakers	23	16.9	10.7	25.4
585	Plumbers, pipefitters, and steamfitters	69	13.3	10.5	17.0
563	Brickmasons and stonemasons	8	11.4	4.9	22.4
534	Heating, air conditioning, and refrigeration mechanics	6	10.9	4.0	23.8
646	Lay-out workers	7	9.1	3.7	18.8
676	Patternmakers, lay-out workers, and cutters	5	7.1	2.3	16.7
757	Separating, filtering, and clarifying machine operators	21	5.0	3.1	7.7
224	Chemical technicians	7	4.8	1.9	9.8
579	Painters, construction and maintenance	5	4.5	1.5	10.5
575	Electricians	38	4.5	3.2	6.2
653	Sheet metal workers	22	4.4	2.7	6.6
567	Carpenters	18	4.1	2.4	6.5
544	Millwrights	27	4.0	2.7	5.9

See footnotes at end of table.

Table 5-4 (page 2 of 2). NORA manufacturing sector and asbestosis: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by occupation, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
COC	Occupation (continued)				
783	Welders and cutters	55	3.7	2.8	4.8
547	Specified mechanics and repairers, n.e.c.	15	3.4	1.9	5.7
549	Not specified mechanics and repairers	13	2.6	1.4	4.4
759	Painting and paint spraying machine operators	9	2.6	1.2	4.8
849	Crane and tower operators	12	2.4	1.2	4.1
518	Industrial machinery repairers	33	2.4	1.6	3.3
696	Stationary engineers	14	2.3	1.3	3.9
856	Industrial truck and tractor equipment operators	13	2.1	1.1	3.6
738	Winding and twisting machine operators	11	2.1	1.1	3.7
777	Miscellaneous machine operators, n.e.c.	34	1.5	1.1	2.2
779	Machine operators, not specified	41	1.5	1.0	2.0
	All other occupations within this sector	494			
	Occupation not reported within this sector	10			
	TOTAL	1,035			

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code

n.e.c. - not elsewhere classified LCL - lower confidence limit UCL - upper confidence limit

* The total number of deaths with asbestosis reported was 2,859 in these same selected states and years, and the comparable number of asbestosis deaths in the entire United States for this same time period was 10,914.

NOTE: See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

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Table 5-5. NORA manufacturing sector and coal workers' pneumoconiosis: Most frequently recorded industries and occupations on death certificate, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	Percent
CIC	Industry		
270	Blast furnaces, steelworks, rolling and finishing mills	56	19.1
392	Not specified manufacturing industries	48	16.4
351	Motor vehicles and motor vehicle equipment	30	10.2
192	Industrial and miscellaneous chemicals	20	6.8
331	Machinery, except electrical, n.e.c.	13	4.4
271	Iron and steel foundries	8	2.7
342	Electrical machinery, equipment, and supplies, n.e.c.	8	2.7
250	Glass and glass products	7	2.4
172	Printing, publishing, and allied industries, except newspapers	6	2.0
300	Miscellaneous fabricated metal products	6	2.0
	All other industries within this sector	91	31.1
	TOTAL	293	100.0
COC	Occupation		
889	Laborers, except construction	73	24.9
779	Machine operators, not specified	25	8.5
453	Janitors and cleaners	17	5.8
637	Machinists	17	5.8
785	Assemblers	15	5.1
777	Miscellaneous machine operators, n.e.c.	12	4.1
633	Supervisors, production occupations	10	3.4
783	Welders and cutters	8	2.7
796	Production inspectors, checkers, and examiners	7	2.4
019	Managers and administrators, n.e.c.	5	1.7
544	Millwrights	5	1.7
766	Furnace, kiln, and oven operators, except food	5	1.7
849	Crane and tower operators	5	1.7
	All other occupations within this sector	84	28.7
	Occupation not reported within this sector	5	1.7
	TOTAL	293	100.0

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code n.e.c. - not elsewhere classified
 * The total number of deaths with coal workers' pneumoconiosis reported was 4,893 in these same selected states and years, and the comparable number of coal workers' pneumoconiosis deaths in the entire United States for this same time period was 15,036.

NOTE: Percentages may not total to 100% due to rounding. See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

Table 5-6. NORA manufacturing sector and silicosis: Most frequently recorded industries and occupations on death certificate, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	Percent
CIC	Industry		
270	Blast furnaces, steelworks, rolling and finishing mills	51	13.2
271	Iron and steel foundries	49	12.7
262	Miscellaneous nonmetallic mineral and stone products	44	11.4
392	Not specified manufacturing industries	33	8.5
331	Machinery, except electrical, n.e.c.	23	6.0
252	Structural clay products	20	5.2
300	Miscellaneous fabricated metal products	18	4.7
261	Pottery and related products	17	4.4
250	Glass and glass products	10	2.6
280	Other primary metal industries	9	2.3
351	Motor vehicles and motor vehicle equipment	9	2.3
	All other industries within this sector	103	26.7
	TOTAL	386	100.0
COC	Occupation		
889	Laborers, except construction	67	17.4
633	Supervisors, production occupations	27	7.0
779	Machine operators, not specified	27	7.0
719	Molding and casting machine operators	25	6.5
453	Janitors and cleaners	14	3.6
637	Machinists	14	3.6
768	Crushing and grinding machine operators	13	3.4
675	Hand molders and shapers, except jewelers	11	2.8
777	Miscellaneous machine operators, n.e.c.	11	2.8
019	Managers and administrators, n.e.c.	9	2.3
	All other occupations within this sector	163	42.2
	Occupation not reported within this sector	5	1.3
	TOTAL	386	100.0

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code n.e.c. - not elsewhere classified

* The total number of deaths with silicosis reported was 881 in these same selected states and years, and the comparable number of silicosis deaths in the entire United States for this same time period was 2,407.

NOTE: Percentages may not total to 100% due to rounding. See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

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Table 5-7. NORA manufacturing sector and silicosis: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by industry and occupation, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
CIC	Industry				
262	Miscellaneous nonmetallic mineral and stone products	44	30.7	22.2	41.2
261	Pottery and related products	17	29.3	17.0	46.9
271	Iron and steel foundries	49	21.6	16.0	28.5
252	Structural clay products	20	19.7	12.0	30.4
300	Miscellaneous fabricated metal products	18	5.7	3.4	9.0
251	Cement, concrete, gypsum, and plaster products	8	4.2	1.8	8.3
280	Other primary metal industries	9	3.5	1.6	6.6
270	Blast furnaces, steelworks, rolling and finishing mills	51	3.2	2.4	4.2
250	Glass and glass products	10	3.0	1.4	5.5
331	Machinery, except electrical, n.e.c.	23	2.5	1.6	3.7
392	Not specified manufacturing industries	33	1.6	1.1	2.2
	All other industries within this sector	104			
	TOTAL	386			
COC	Occupation				
725	Miscellaneous metal and plastic processing machine operators	8	76.8	33.1	151.3
787	Hand molding, casting, and forming occupations	8	43.9	18.9	86.3
675	Hand molders and shapers, except jewelers	11	36.1	18.1	64.6
768	Crushing and grinding machine operators	13	31.2	16.6	53.4
719	Molding and casting machine operators	25	19.8	12.8	29.2
883	Freight, stock, and material handlers, n.e.c.	5	4.9	1.6	11.4
766	Furnace, kiln, and oven operators, except food	8	4.9	2.1	9.6
709	Grinding, abrading, buffing, and polishing machine operators	7	4.8	1.9	9.9
849	Crane and tower operators	7	4.3	1.7	8.9
544	Millwrights	7	3.8	1.5	7.8
779	Machine operators, not specified	27	3.1	2.0	4.4
889	Laborers, except construction	67	2.9	2.3	3.7
453	Janitors and cleaners	14	2.4	1.3	4.0
633	Supervisors, production occupations	27	1.8	1.2	2.6
	All other occupations within this sector	147			
	Occupation not reported within this sector	5			
	TOTAL	386			

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code
n.e.c. - not elsewhere classified LCL - lower confidence limit UCL - upper confidence limit

* The total number of deaths with silicosis reported was 881 in these same selected states and years, and the comparable number of silicosis deaths in the entire United States for this same time period was 2,407.

NOTE: See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

Table 5-8. NORA manufacturing sector and byssinosis: Most frequently recorded industries and occupations on death certificate, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	Percent
CIC	Industry		
142	Yarn, thread, and fabric mills	39	78.0
151	Apparel and accessories, except knit	2	4.0
351	Motor vehicles and motor vehicle equipment	2	4.0
392	Not specified manufacturing industries	2	4.0
	All other industries within this sector	5	10.0
	TOTAL	50	100.0
COC	Occupation		
749	Miscellaneous textile machine operators	11	22.0
738	Winding and twisting machine operators	8	16.0
518	Industrial machinery repairers	7	14.0
744	Textile sewing machine operators	4	8.0
633	Supervisors, production occupations	2	4.0
637	Machinists	2	4.0
739	Knitting, looping, taping, and weaving machine operators	2	4.0
754	Packaging and filling machine operators	2	4.0
889	Laborers, except construction	2	4.0
	All other occupations within this sector	9	18.0
	Occupation not reported within this sector	1	2.0
	TOTAL	50	100.0

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code n.e.c. - not elsewhere classified
 * The total number of deaths with byssinosis reported was 81 in these same selected states and years, and the comparable number of byssinosis deaths in the entire United States for this same time period was 125.
 NOTE: Percentages may not total to 100% due to rounding. See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.
 SOURCE: National Center for Health Statistics multiple cause-of-death data.

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Table 5-9. NORA manufacturing sector and byssinosis: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by industry and occupation, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
CIC	Industry				
142	Yarn, thread, and fabric mills	39	22.3	15.8	30.4
	All other industries within this sector	11			
	TOTAL	50			
COC	Occupation				
749	Miscellaneous textile machine operators	11	36.0	18.0	64.4
518	Industrial machinery repairers	7	30.8	12.4	63.4
738	Winding and twisting machine operators	8	27.5	11.9	54.2
	All other occupations within this sector	23			
	Occupation not reported within this sector	1			
	TOTAL	50			

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code
 n.e.c. - not elsewhere classified LCL - lower confidence limit UCL - upper confidence limit

* The total number of deaths with byssinosis reported was 81 in these same selected states and years, and the comparable number of byssinosis deaths in the entire United States for this same time period was 125.

NOTE: See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

Table 5-10. NORA manufacturing sector and unspecified and other pneumoconioses: Most frequently recorded industries and occupations on death certificate, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	Percent
CIC	Industry		
270	Blast furnaces, steelworks, rolling and finishing mills	34	14.4
392	Not specified manufacturing industries	30	12.7
351	Motor vehicles and motor vehicle equipment	19	8.1
192	Industrial and miscellaneous chemicals	12	5.1
250	Glass and glass products	11	4.7
271	Iron and steel foundries	10	4.2
331	Machinery, except electrical, n.e.c.	9	3.8
280	Other primary metal industries	8	3.4
252	Structural clay products	7	3.0
262	Miscellaneous nonmetallic mineral and stone products	7	3.0
	All other industries within this sector	89	37.7
	TOTAL	236	100.0
COC	Occupation		
889	Laborers, except construction	44	18.6
633	Supervisors, production occupations	17	7.2
783	Welders and cutters	14	5.9
637	Machinists	12	5.1
453	Janitors and cleaners	10	4.2
779	Machine operators, not specified	8	3.4
785	Assemblers	7	3.0
019	Managers and administrators, n.e.c.	6	2.5
575	Electricians	6	2.5
777	Miscellaneous machine operators, n.e.c.	6	2.5
	All other occupations within this sector	102	43.2
	Occupation not reported within this sector	4	1.7
	TOTAL	236	100.0

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code n.e.c. - not elsewhere classified

* The total number of deaths with unspecified and other pneumoconioses reported was 1,440 in these same selected states and years, and the comparable number of unspecified and other pneumoconioses deaths in the entire United States for this same time period was 3,384.

NOTE: Percentages may not total to 100% due to rounding. See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

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Table 5-11. NORA manufacturing sector and unspecified and other pneumoconioses: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by industry and occupation, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
CIC	Industry				
252	Structural clay products	7	4.5	1.8	9.2
262	Miscellaneous nonmetallic mineral and stone products	7	3.0	1.2	6.3
271	Iron and steel foundries	10	2.8	1.3	5.1
	All other industries within this sector	212			
	TOTAL	236			
COC	Occupation				
783	Welders and cutters	14	1.9	1.0	3.2
	All other occupations within this sector	218			
	Occupation not reported within this sector	4			
	TOTAL	236			

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code
 n.e.c. - not elsewhere classified LCL - lower confidence limit UCL - upper confidence limit

* The total number of deaths with unspecified and other pneumoconioses reported was 1,440 in these same selected states and years, and the comparable number of unspecified and other pneumoconioses deaths in the entire United States for this same time period was 3,384.

NOTE: See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

Table 5-12. NORA manufacturing sector and all pneumoconioses: Most frequently recorded industries and occupations on death certificate, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	Percent
CIC	Industry		
270	Blast furnaces, steelworks, rolling and finishing mills	203	10.4
360	Ship and boat building and repairing	176	9.0
392	Not specified manufacturing industries	170	8.7
192	Industrial and miscellaneous chemicals	159	8.1
262	Miscellaneous nonmetallic mineral and stone products	127	6.5
142	Yarn, thread, and fabric mills	97	4.9
351	Motor vehicles and motor vehicle equipment	78	4.0
271	Iron and steel foundries	71	3.6
331	Machinery, except electrical, n.e.c.	68	3.5
250	Glass and glass products	55	2.8
	All other industries within this sector	756	38.6
	TOTAL	1,960	100.0
COC	Occupation		
889	Laborers, except construction	245	12.5
633	Supervisors, production occupations	119	6.1
779	Machine operators, not specified	99	5.1
637	Machinists	88	4.5
783	Welders and cutters	82	4.2
585	Plumbers, pipefitters, and steamfitters	73	3.7
453	Janitors and cleaners	63	3.2
777	Miscellaneous machine operators, n.e.c.	62	3.2
019	Managers and administrators, n.e.c.	51	2.6
518	Industrial machinery repairers	51	2.6
	All other occupations within this sector	1,002	51.1
	Occupation not reported within this sector	25	1.3
	TOTAL	1,960	100.0

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code n.e.c. - not elsewhere classified

* The total number of deaths with all pneumoconioses reported was 10,014 in these same selected states and years, and the comparable number of all pneumoconioses deaths in the entire United States for this same time period was 31,455.

NOTE: Percentages may not total to 100% due to rounding. See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

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Table 5-13. NORA manufacturing sector and all pneumoconioses: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by industry and occupation, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
CIC	Industry				
262	Miscellaneous nonmetallic mineral and stone products	127	7.9	6.6	9.4
360	Ship and boat building and repairing	176	4.5	3.9	5.2
261	Pottery and related products	27	3.8	2.5	5.6
271	Iron and steel foundries	71	2.8	2.2	3.6
361	Railroad locomotives and equipment	7	2.7	1.1	5.5
252	Structural clay products	29	2.6	1.8	3.8
192	Industrial and miscellaneous chemicals	159	1.8	1.5	2.1
211	Other rubber products, and plastics footwear and belting	48	1.5	1.1	1.9
250	Glass and glass products	55	1.4	1.0	1.8
	All other industries within this sector	1,261			
	TOTAL	1,960			
COC	Occupation				
593	Insulation workers	25	27.2	17.6	40.1
725	Miscellaneous metal and plastic processing machine operators	9	8.8	4.0	16.7
643	Boilermakers	24	5.0	3.2	7.5
787	Hand molding, casting, and forming occupations	10	4.8	2.3	8.8
563	Brickmasons and stonemasons	12	4.8	2.5	8.3
585	Plumbers, pipefitters, and steamfitters	73	4.0	3.2	5.1
768	Crushing and grinding machine operators	17	3.7	2.1	5.9
675	Hand molders and shapers, except jewelers	13	3.5	1.9	6.0
534	Heating, air conditioning, and refrigeration mechanics	6	3.1	1.2	6.8
719	Molding and casting machine operators	38	2.8	2.0	3.8
646	Lay-out workers	7	2.6	1.0	5.3
544	Millwrights	42	1.8	1.3	2.4
757	Separating, filtering, and clarifying machine operators	24	1.6	1.0	2.4
575	Electricians	47	1.6	1.2	2.1
783	Welders and cutters	82	1.6	1.3	2.0
	All other occupations within this sector	1,506			
	Occupation not reported within this sector	25			
	TOTAL	1,960			

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code

n.e.c. - not elsewhere classified LCL - lower confidence limit UCL - upper confidence limit

* The total number of deaths with all pneumoconioses reported was 10,014 in these same selected states and years, and the comparable number of all pneumoconioses deaths in the entire United States for this same time period was 31,455.

NOTE: See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

Table 5-14. NORA manufacturing sector and malignant mesothelioma: Most frequently recorded industries and occupations on death certificate, U.S. residents age 15 and over, selected states, 1999

Bureau of Census Industry/Occupation		Number of Deaths*	Percent
CIC	Industry		
192	Industrial and miscellaneous chemicals	19	14.2
392	Not specified manufacturing industries	10	7.5
351	Motor vehicles and motor vehicle equipment	8	6.0
270	Blast furnaces, steelworks, rolling and finishing mills	7	5.2
360	Ship and boat building and repairing	7	5.2
142	Yarn, thread, and fabric mills	6	4.5
200	Petroleum refining	5	3.7
160	Pulp, paper, and paperboard mills	4	3.0
211	Other rubber products, and plastics footwear and belting	4	3.0
262	Miscellaneous nonmetallic mineral and stone products	4	3.0
282	Fabricated structural metal products	4	3.0
342	Electrical machinery, equipment, and supplies, n.e.c.	4	3.0
	All other industries within this sector	52	38.8
	TOTAL	134	100.0
COC	Occupation		
019	Managers and administrators, n.e.c.	12	9.0
889	Laborers, except construction	9	6.7
633	Supervisors, production occupations	8	6.0
453	Janitors and cleaners	6	4.5
637	Machinists	6	4.5
779	Machine operators, not specified	6	4.5
785	Assemblers	6	4.5
777	Miscellaneous machine operators, n.e.c.	4	3.0
259	Sales representatives, mining, manufacturing, and wholesale	3	2.2
575	Electricians	3	2.2
696	Stationary engineers	3	2.2
744	Textile sewing machine operators	3	2.2
796	Production inspectors, checkers, and examiners	3	2.2
804	Truck drivers	3	2.2
	All other occupations within this sector	55	41.0
	Occupation not reported within this sector	4	3.0
	TOTAL	134	100.0

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code n.e.c. - not elsewhere classified
 * The total number of deaths with malignant mesothelioma reported was 541 in these same selected states and year, and the comparable number of malignant mesothelioma deaths in the entire United States for this same time period was 2,484.

NOTE: Percentages may not total to 100% due to rounding. See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

NORA Manufacturing Sector

Table 5-15. NORA manufacturing sector and malignant mesothelioma: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by industry, U.S. residents age 15 and over, selected states, 1999

Bureau of Census Industry		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
CIC	Industry				
360	Ship and boat building and repairing	7	6.0	2.4	12.3
192	Industrial and miscellaneous chemicals	19	4.8	2.9	7.5
200	Petroleum refining	5	3.8	1.2	8.9
	All other industries within this sector	103			
	TOTAL	134			

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code

n.e.c. - not elsewhere classified LCL - lower confidence limit

UCL - upper confidence limit

* The total number of deaths with malignant mesothelioma reported was 541 in these same selected states and year, and the comparable number of malignant mesothelioma deaths in the entire United States for this same time period was 2,484.

NOTE: See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

Table 5-16. NORA *manufacturing* sector and hypersensitivity pneumonitis: Most frequently recorded industries and occupations on death certificate, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	Percent
CIC	Industry		
142	Yarn, thread, and fabric mills	3	23.1
	All other industries within this sector	10	76.9
	TOTAL	13	100.0
COC	Occupation		
633	Supervisors, production occupations	2	15.4
637	Machinists	2	15.4
	All other occupations within this sector	9	69.2
	Occupation not reported within this sector	0	0.0
	TOTAL	13	100.0

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code n.e.c. - not elsewhere classified

* The total number of deaths with hypersensitivity pneumonitis reported was 122 in these same selected states and years, and the comparable number of hypersensitivity pneumonitis deaths in the entire United States for this same time period was 398.

NOTE: Percentages may not total to 100% due to rounding. See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

NORA Manufacturing Sector

Table 5-17. NORA manufacturing sector and asthma: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by occupation, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Occupation		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
COC	Occupation				
069	Physicists and astronomers	5	7.9	2.6	18.4
549	Not specified mechanics and repairers	28	1.5	1.0	2.2
	All other occupations within this sector	4,247			
	Occupation not reported within this sector	68			
	TOTAL	4,348			

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code
 n.e.c. - not elsewhere classified LCL - lower confidence limit UCL - upper confidence limit

* The total number of deaths with asthma reported was 29,703 in these same selected states and years, and the comparable number of asthma deaths in the entire United States for this same time period was 115,729.

NOTE: See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

Table 5-18. NORA manufacturing sector and chronic obstructive pulmonary disease: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by industry and occupation, U.S. residents age 15 and over, selected states, 1999

Bureau of Census Industry/Occupation		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
CIC	Industry				
242	Furniture and fixtures	335	1.2	1.1	1.3
142	Yarn, thread, and fabric mills	1,423	1.1	1.0	1.1
	All other industries within this sector	8,899			
	TOTAL	10,657			
COC	Occupation				
747	Pressing machine operators	25	1.6	1.0	2.3
709	Grinding, abrading, buffing, and polishing machine operators	50	1.5	1.1	1.9
727	Sawing machine operators	59	1.4	1.1	1.8
804	Truck drivers	187	1.3	1.1	1.5
783	Welders and cutters	182	1.2	1.0	1.4
779	Machine operators, not specified	571	1.2	1.1	1.3
889	Laborers, except construction	1,041	1.2	1.1	1.2
777	Miscellaneous machine operators, n.e.c.	266	1.2	1.0	1.3
785	Assemblers	474	1.1	1.0	1.2
	All other occupations within this sector	7,516			
	Occupation not reported within this sector	286			
	TOTAL	10,657			

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code
n.e.c. - not elsewhere classified LCL - lower confidence limit UCL - upper confidence limit

* The total number of deaths with chronic obstructive pulmonary disease reported was 57,073 in the same selected states and year, and the comparable number of chronic obstructive pulmonary disease deaths in the entire United States for this same time period was 245,415.

NOTE: See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

NORA Manufacturing Sector

Table 5-19. NORA manufacturing sector and respiratory tuberculosis: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by industry and occupation, U.S. residents age 15 and over, selected states and years, 1990–1999

Bureau of Census Industry/Occupation		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
CIC	Industry				
141	Carpets and rugs	13	2.1	1.1	3.7
280	Other primary metal industries	24	1.7	1.1	2.5
	All other industries within this sector	1,195			
	TOTAL	1,232			
COC	Occupation				
768	Crushing and grinding machine operators	10	3.7	1.8	6.7
	All other occupations within this sector	1,193			
	Occupation not reported within this sector	29			
	TOTAL	1,232			

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code
 n.e.c. - not elsewhere classified LCL - lower confidence limit UCL - upper confidence limit

* The total number of deaths with respiratory tuberculosis reported was 8,071 in these same selected states and years, and the comparable number of respiratory tuberculosis deaths in the entire United States for this same time period was 35,417.

NOTE: See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

Table 5-20. NORA manufacturing sector and lung cancer: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by industry and occupation, U.S. residents age 15 and over, selected states, 1999

Bureau of Census Industry/Occupation		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
CIC	Industry				
371	Scientific and controlling instruments	55	1.4	1.1	1.9
360	Ship and boat building and repairing	84	1.3	1.1	1.7
130	Tobacco manufactures	95	1.3	1.1	1.6
271	Iron and steel foundries	90	1.3	1.1	1.6
351	Motor vehicles and motor vehicle equipment	493	1.2	1.1	1.3
282	Fabricated structural metal products	124	1.2	1.0	1.4
172	Printing, publishing, and allied industries, except newspapers	271	1.2	1.1	1.4
392	Not specified manufacturing industries	782	1.1	1.0	1.2
	All other industries within this sector	5,573			
	TOTAL	7,567			
COC	Occupation				
636	Precision assemblers, metal	14	2.4	1.3	4.1
646	Lay-out workers	10	2.3	1.1	4.2
704	Lathe and turning machine operators	10	2.1	1.0	3.9
319	Receptionists	11	2.0	1.0	3.6
806	Driver-sales workers	34	1.5	1.1	2.1
689	Inspectors, testers, and graders	39	1.5	1.1	2.1
683	Electrical and electronic equipment assemblers	90	1.4	1.1	1.7
756	Mixing and blending machine operators	45	1.4	1.0	1.9
653	Sheet metal workers	51	1.4	1.0	1.8
337	Bookkeepers, accounting, and auditing clerks	58	1.3	1.0	1.7
518	Industrial machinery repairers	185	1.3	1.1	1.5
783	Welders and cutters	142	1.3	1.1	1.5
633	Supervisors, production occupations	516	1.3	1.2	1.4
785	Assemblers	330	1.1	1.0	1.3
019	Managers and administrators, n.e.c.	512	1.1	1.0	1.2
	All other occupations within this sector	5,325			
	Occupation not reported within this sector	195			
	TOTAL	7,567			

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code
n.e.c. - not elsewhere classified LCL - lower confidence limit UCL - upper confidence limit

* The total number of deaths with lung cancer reported was 37,562 in these same selected states and year, and the comparable number of lung cancer deaths in the entire United States for this same time period was 162,546.

NOTE: See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

NORA Manufacturing Sector

Table 5-21. NORA manufacturing sector and other interstitial pulmonary diseases: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by industry and occupation, U.S. residents age 15 and over, selected states, 1999

Bureau of Census Industry/Occupation		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
CIC	Industry				
232	Wood buildings and mobile homes	5	4.8	1.5	11.1
282	Fabricated structural metal products	19	1.8	1.1	2.8
	All other industries within this sector	762			
	TOTAL	786			
COC	Occupation				
533	Miscellaneous electrical and electronic equipment repairers	5	5.1	1.6	11.8
544	Millwrights	10	2.4	1.2	4.4
	All other occupations within this sector	748			
	Occupation not reported within this sector	23			
	TOTAL	786			

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code
n.e.c. - not elsewhere classified LCL - lower confidence limit UCL - upper confidence limit

* The total number of other interstitial pulmonary diseases was 4,471 in these same selected states and year, and the comparable number of other interstitial pulmonary diseases deaths in the entire United States for this same time period was 18,655.

NOTE: See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.

Table 5-22. NORA manufacturing sector and pneumonia and influenza: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by occupation, U.S. residents age 15 and over, selected states, 1999

Bureau of Census Occupation		Number of Deaths*	PMR	95% Confidence Interval	
				LCL	UCL
COC	Occupation				
444	Miscellaneous food preparation occupations	13	2.1	1.1	3.5
	All other occupations within this sector	8,573			
	Occupation not reported within this sector	224			
	TOTAL	8,810			

NORA - National Occupational Research Agenda CIC - Census Industry Code COC - Census Occupation Code
n.e.c. - not elsewhere classified LCL - lower confidence limit UCL - upper confidence limit

* The total number of deaths with pneumonia and influenza reported was 52,295 in these same selected states and year, and the comparable number of pneumonia and influenza deaths in the entire United States for this same time period was 229,136.

NOTE: See selected limitations for general cautions regarding inferences based on small numbers of deaths, and see appendices for source description, methods, ICD codes, industry and occupation codes, industrial sector groupings, and list of selected states and years.

SOURCE: National Center for Health Statistics multiple cause-of-death data.