

Surveillance of Occupational Lung Disease: Comparison of Hospital Discharge Data to Physician Reporting

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Abstract: A survey of 762 New Jersey physicians showed that 35% reported seeing patients with either asbestosis, coal worker's pneumoconiosis, occupational asthma or silicosis. Three to four times as many patients with these diagnoses were seen as outpatients as were hospitalized. The implications of these results in using hospital discharge data for occupational disease surveillance are discussed. (*Am J Public Health* 1990; 80:1257-1258.)

Introduction

It has been proposed that hospital discharge data be used as part of an occupational disease surveillance system.^{1,2} One of the limitations of hospital discharge data is the lack of information on non-hospitalized individuals. We conducted a survey of physicians in New Jersey to obtain estimates of how many patients they saw in their practice with asbestosis, coal workers' pneumoconiosis, occupational asthma, or silicosis in comparison to the number of patients they admitted to the hospital with the same diagnosis.

Methods

The names and addresses of physicians were obtained either from the state hospital discharge system or directly from the hospitals under state occupational disease reporting regulations (New Jersey Administration Code 8:57-1.13). Names and addresses of physicians were obtained by linking medical license numbers in the hospital discharge record to a data set of all licensed physicians in the state. The physicians surveyed had discharged at least one patient for the year 1985, 1986 or 1987 from one of New Jersey's 105 acute care (non-federal) hospitals with the diagnosis of asbestosis (ICD 501), coal workers' pneumoconiosis (ICD 500), pneumoconiosis due to other inorganic dust (ICD 503), pneumonopathy due to inhalation of other dust (ICD 504), pneumoconiosis unspecified (ICD 505), silicosis (ICD 502).

In the spring of 1988, a letter was mailed to these physicians requesting information about their medical specialty, an estimate of the total number of their patients newly diagnosed with asbestosis, coal workers' pneumoconiosis, occupational asthma, and silicosis in the calendar year 1987,

and an estimate of the proportion of these patients admitted to the hospital during that same year. Non-respondents to a second and third mailing were contacted by telephone.

Results

A total of 847 physicians were included in the survey, of whom 762 (90.0 percent) completed the questionnaire. The reasons for non-response were: 29 (3.4 percent) letters were undeliverable; 20 (2.4 percent) refused to participate when telephoned; 11 (1.3 percent) were unreachable despite five telephone calls; nine (1.1 percent) had unlisted telephone numbers; six (.7 percent) retired; five (.6 percent) moved out of state; five (.6 percent) were deceased.

Table 1 shows the number of respondents, by medical specialty, who saw patients in 1987 with any of the lung conditions under consideration. The percentage of physicians reporting patients in 1987 is less than 100 percent, because many physicians may have had no patients with these diagnoses in 1987 or because they did not report all such patients.

Table 2 shows the proportion of patients hospitalized: for asbestosis 34 percent (95% CI = 31, 37); for coal workers' pneumoconiosis 26 percent (95% CI = 18, 35); for occupational asthma 23 percent (95% CI = 19, 27); for silicosis 27 percent (95% CI = 20, 35) were hospitalized. For all diseases combined, 548 (30 percent) of 1,814 patients (95% CI = 28, 32) were hospitalized.

Discussion

For the four diseases surveyed, physicians stated that for every patient hospitalized with the condition they had two to three additional patients with the same diagnosis who had not been hospitalized. This selected group of physicians reported nearly as many newly diagnosed cases of pneumoconiosis in New Jersey as are reported annually in the supplementary data system of the Bureau of Labor Statistics.⁴ The number of additional patients not hospitalized varied both by disease as well as by the specialty of the reporting physician. The variation of hospitalization by specialty may be a reflection of the severity of disease seen by different physicians. For example, surgeons reported that 79 percent of their patients with asbestosis were hospitalized. The variation, however, may also reflect the relative amount of time physicians see hospitalized versus ambulatory patients.

None of the physicians reported their specialty as occupational medicine. Hospitalizations were not limited to a few specialty groups such as pulmonary physicians. Percentages of physicians reporting patients with lung conditions in 1987 by specialty varied from 8-79 percent although all physicians had admitted patients with these lung conditions

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TABLE 1—Total Number of Physicians Responding and Percent by Specialty who Reported Patients for the year 1987 with Either Asbestosis, Coal Workers' Pneumoconiosis, Occupational Asthma, or Silicosis

Medical Specialty	Number Physicians Responding	Percent Physicians Reporting Patients with Any of the Lung Conditions	Percent Physicians Reporting Asbestosis	Percent Physicians Reporting Silicosis	Percent Physicians Reporting Coal Workers' Pneumoconiosis	Percent Physicians Reporting Occupational Asthma
Internal Medicine	205	43.9	33.2	8.8	6.3	18.5
Pulmonary	65	78.5	70.8	29.2	30.8	61.5
Family/General Medicine	106	41.5	30.2	7.5	9.4	20.9
Surgery	110	17.3	16.4	3.6	0.9	2.7
Cardiology	80	35.0	31.3	3.8	6.3	10.0
Urology	49	8.2	8.2	0.0	0.0	0.0
All Other Specialties	126	18.3	14.3	1.6	4.0	16.7
No Specialty	21	19.0	14.3	4.8	0.0	4.8
Total	762	34.5	28.1	7.2	7.1	17.6

TABLE 2—Numbers of Reported Patients and Percent Hospitalized in 1987 with each Occupational Lung Disease by Physician Specialty

Physician Specialty	Asbestosis		Silicosis		CWP		Occup Asthma		All Lung Diseases	
	No. pts	% hosp	No. pts	% hosp	No. pts	% hosp	No. pts	% hosp	No. pts	% hosp
Internal Medicine	162	45	33	46	27	37	138	24	360	36
Pulmonary	592	17	66	26	46	15	188	20	892	19
Fam/Gen Medicine	78	32	15	7	11	36	61	13	165	23
Surgery	77	79	15	0	1	0	16	19	109	59
Cardiology	140	61	16	4	12	25	21	62	189	57
Urology	5	20	0	—	0	—	0	—	5	20
All other specialties	53	55	4	25	6	50	21	29	84	46
No specialty given	8	25	1	0	0	—	1	0	10	20
Total	1115	34	150	27	103	26	446	23	1814	30

in 1985, 1986 or 1987. Efforts are underway to follow up this survey by encouraging the physicians to report the names of patients they estimated on the questionnaire. Similar surveys in other states will be useful to examine if there are differences in care patterns in different states.

The physicians response rate to the questionnaire was excellent. We attribute this to its brevity and to our only asking for estimates. This is also its major limitation as we did not evaluate the accuracy of the physicians estimates. According to statewide hospital discharge data for 1986, there were 881 patients discharged with asbestosis, 97 patients with silicosis, and 235 patients with coal workers' pneumoconiosis. For the first two diagnoses, the hospital discharges were less than those reported by the physicians; for coal workers' pneumoconiosis, the hospital discharges were more than those reported by physicians. No data on occupational asthma is available from discharge data.

If the percentages of underreporting of 67 to 75 percent for different diseases found in this survey is generalizable and reassessed by periodic surveys of physicians then hospital discharge data because of its relative ease of collection and low cost would be a useful method to examine trends and estimate the number of occupational pneumoconioses.

Recently, the National Institute for Occupational Safety and Health (NIOSH) has been promoting the concept of sentinel provider-based occupational disease surveillance systems.³ This survey shows that hospital discharge data can be used directly or indirectly to identify names, addresses and medical specialties of potential sentinel providers, and that, with sufficient follow-up, these physicians are willing to report to a state health department information that can be relied on for occupational disease surveillance.

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