

the excess in respiratory cancer in the slag wool plant but I do not believe it played the major part in the overall respiratory cancer excess in the slag wool plants in our study. In two slag wool plants for which we are fairly certain asbestos was never used the respiratory cancer SMR was 258.5 (13 deaths).

- 1 McDonald JC, Case BW, Enterline PE, *et al.* Lung dust analysis in the assessment of past exposure of man-made mineral fiber exposure. *Ann Occup Hyg* (in press).
- 2 Marsh GM, Enterline PE, Stone RA, *et al.* Mortality among a cohort of U.S. man-made mineral fiber workers: 1985 follow-up. *J Occup Med* (in press).

Evaluation of a system recording non-pneumoconiotic abnormalities as part of coal workers' x ray surveillance programme

Sir,—Section 203 of the Federal Coal Mine Health and Safety Act of 1969 mandated the establishment of a programme of radiographic examinations to enable early detection of pneumoconiosis in underground coal miners. The Federal Mine Safety and Health Act of 1977 continued the congressional mandate for these radiographic examinations. The coal workers' x ray surveillance programme (CWXSP) is administered by

the National Institute for Occupational Safety and Health (NIOSH).¹ Examinations and initial interpretation (from an "A" or "B" reader) are arranged and paid for by the coal mine operator. The NIOSH approves each operator's plan for examination of miners, approves x ray facilities, and certifies physicians to interpret radiographs for the programme according to the International Labour Office (ILO) classification system.² For each film, NIOSH also obtains a second interpretation (from a "B" reader) before a final determination regarding the presence of pneumoconiosis is made.

As well as classifying pneumoconiosis, the readers are required to note other radiographic abnormalities using symbols specified in the ILO guidelines. The standardised form for recording radiograph interpretations for the NIOSH programme includes an obligatory "other symbols" section comprised of labelled boxes that the reader marks to indicate the presence of particular suspected abnormalities.³

Although CWXSP data have been reviewed to assess the prevalence of pneumoconiosis,^{4,5} to date no studies have described non-pneumoconiotic abnormalities noted on these films. We reviewed readings of the 51 374 posteroanterior radiographs taken from 1 June 1981 to 27 November 1989, and tabulated results for the 21 specific symbols in the "other symbols" section of the form.

The table shows the relative frequencies with which each symbol was marked. The symbol "co" (abnormality of cardiac size or shape) was the most often cited overall and by second readers, and "em" (emphysema) was the most often used symbol by first readers and the second most frequent abnormality overall. By contrast, "rp" (rheumatoid pneumoconiosis) was marked only once and "px" (pneumothorax) was noted only twice. First and second reader agreement on the presence of "other symbol" abnormalities was generally poor.

These findings highlight the need for further evaluation of the use and interpretation of the "other symbols" section of the ILO classification.

JAMES COLLET
*Department of Occupational Medicine,
University of Oklahoma*
ROBERT M CASTELLAN
THOMAS K HODOUS
*Division of Respiratory Disease Studies,
Center for Disease Control,
National Institute for Occupational Safety
and Health,
ALOSH 994 Chestnut Ridge Road,
Morgantown WV 26505-2888, USA*

- 1 Code of Federal Regulations. *Specifications for medical examinations of underground coal miners*. Washington: Government Printing Office, 1989. (Title 42, part 1, part 37.)
- 2 International Labour Office. *Guidelines for the use of ILO international classification of radiographs of pneumoconioses*. Geneva: International Labour Office, 1980. (Occupational safety and health series No 22 rev.)

Frequency of specific "other symbols" abnormalities reported by first reader only, by second reader only, and by both readers for chest radiographs taken in coal workers' x ray surveillance programme between 1 June 1987 and 27 November 1989 (n = 51 374)

Symbol	Description	No (first reader only)	No (second reader only)	No (both readers)
ax	Coalescence of small pneumoconiotic opacities	58	26	7
bu	Bulla(e)	35	172	14
ca	Cancer of lung or pleura	78	125	16
cn	Calcification in small pneumoconiotic opacities	165	20	0
co	Abnormality of cardiac size or shape	185	456	58
cp	Cor pulmonale	9	0	0
cv	Cavity	14	9	0
di	Marked distortion of intrathoracic organs	18	23	1
ef	Effusion	2	20	1
em	Definite emphysema	373	224	53
es	Eggshell calcification of hilar or mediastinal lymph nodes	13	0	1
fr	Fractured rib(s)	103	226	20
hi	Enlargement of hilar or mediastinal lymph nodes	62	238	13
ho	Honeycomb lung	4	11	0
id	Ill defined diaphragm	19	20	0
ih	Ill defined heart outline	20	13	0
kl	Septal (Kerley) lines	28	20	0
pi	Pleural thickening in interlobar fissure or mediastinum	140	34	6
px	Pneumothorax	0	2	0
rp	Rheumatoid pneumoconiosis	1	0	0
tb	Tuberculosis	151	187	15

- 3 National Institute for Occupational Safety and Health. *Roentgenographic interpretation form*. Washington: Government Printing Office, 1981: 758-353. (CDC (NIOSH) (M)2.8 rev 4/80.)
- 4 Althouse R, Attfield M, Kellie S. Use of data from x-ray screening program for coal workers to evaluate effectiveness of 2 mg/ml³ coal dust standard. *J Occup Med* 1986;28:741-5.
- 5 Althouse R. Ten years' experience with the coal workers' health surveillance program, 1970-1981. *MMWR supplement* 1985;34:33ss-37ss.

NOTICES

Control and prevention of repetitive motion trauma in the textile, apparel, and fibre industries, Auburn, Alabama, 23-25 October 1990

Control and prevention of musculoskeletal injuries due to highly repetitive jobs and work environments is currently a major concern of the textile, apparel, and fibre industries. Tightened government surveillance, increased public and worker awareness, and more frequent and expensive lawsuits have compounded the problem. The purpose of this conference is to bring together key national personalities from government, management, labour, consulting, academia, and the medical and legal professions to consider the problem of repetitive motion. Interchange between attendees and area specialists will be fostered by a seminar environment. Emphasis will be placed on case studies and known successes in countering injuries.

The conference will be held at the Auburn University Hotel and Conference Center in Auburn, Alabama. For further information, contact J Fred O'Brien, director, Engineering Extension Service, 107 Ramsay Hall, Auburn University, Alabama, 36849-5331. Phone 205/844-4370; Fax 205/844-5715.

Eighth International Symposium, Epidemiology in Occupational Health, Paris, 10-12 September 1991.

The symposium is organised under the auspice of the Scientific Committee on Epidemiology of the International Commission on Occupational Health (ICOH). The official language of the symposium is English, which will be used for all presentations and printed material. Simultaneous interpretation in French will be provided for plenary sessions. For further information write to Convergence 120, Avenue Gambetta, 75020 Paris, France.