

3). The environment of both groups was controlled by the Regulations, but the workers in the second group were required, under the Asbestos Regulations, to have periodic medical examinations.

TABLE 3: DEPARTMENTS WITH SEVERE EXPOSURE TO DUST CONTROLLED BY ASBESTOS REGULATIONS

No Periodic Medical Examination		Periodic Medical Examination	
Sectional Pipe Making	AB	Opening	AB
Yarn Store	B	Disintegrating	ABC
ARP Lapping	B	Carding	AB
Bulk Insulation Material	ABC	Spinning	C
		Doubling	B
		Mattress Making	AB
		Crude Store	AB
		Dust and Waste	ABC

A: Amosite; B: Crocidolite; C: Chrysotile.

Men qualified to enter the survey by working for 30 consecutive days in the factory at any time after 1 April 1933 (the date of implementation of

TABLE 4: METHOD OF ALLOCATING WORKERS TO THE THREE SEPARATE STUDIES

Enter Employment at Factory	E-day	
Enter Survey	S-day	E-day + 30 days
Enter Study 1		S-day - 1 year
Leave Study 1 Enter Study 2		S-day + 4 years
Leave Study 2 Enter Study 3		S-day + 16 years

the Asbestos Regulations), and remained in it irrespective of whether they continued to work at the factory till 1 May 1964, or the date of death, if earlier.

TABLE 5: STUDY 1
MORTALITY BEGINNING OF 2ND TO END OF 4TH YEAR,*
UNDER 1 YEAR ON PAYROLL.

Cause of Death	Exposure			
	Low-Moderate		Severe	
	Observed	Expected	Observed	Expected
All Causes	14	19.2	10	14.6
Cancer of Lung and Pleura	1	1.1	0	0.7
Other Cancers	1	2.6	2	1.7
Respiratory Diseases Excluding Cancer	3	3.5	2	3.0
Other Diseases	9	11.9	6	9.2

*In these Tables tests of significance were made by reference to the Poisson distribution and are entered where P is less than 0.05.

For the analysis it was decided to categorize men by the length of time spent actually working in the factory and by the jobs they held. In order to be able to categorize men by their past experience only, the survey was split into three separate studies (Table 4). A man entered the first study after one year in the survey, he remained in it for 4 years then passed to study 2; after 16 years he passed into study 3, where he remained to the end of the survey. If he died he was removed at that point from whichever study he was in. In each study he was categorized by the job in the highest exposure grading he had held and by his length of employment up to the start of the particular study.

A man with only a few months' employment in the factory appeared as a short service man in each study, but if he worked for a number of years he was regraded in studies 2 and 3. Similarly, if he changed his job to one with a higher exposure grading he acquired a new grade in subsequent studies.

The alive and dead in each subgroup of each study were listed by computer. The cause of death was coded according to the 7th Revision of the International Classification of Diseases (WHO 1957). The number of deaths to be expected was derived from the mortality of England and Wales.

The Case Pearson tables which give age, specific death rates for cancers of various sites and for respiratory diseases for 5-year age groups for quinquennia from 1911 to 1960-65 were consulted. The number of man years contributed by each man in each subgroup for each 5-year period was calculated. Multiplication of the sum of the man years by the relevant death rate in the Case Pearson tables gave the expected number of deaths (Doll, 1955). The computer program for this purpose was written by Hill in his Man Year Computer Language (1968).

RESULTS

Study 1. The length of follow up was from 1 to 5 years. The workers were categorized on their experience in this first year in the