# A controlled study of medical work-load before and after 'ill-health retirement' of a group of mineworkers

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THIS paper examines the surgery work load produced by a group of miners retired early for medical reasons.

The Doncaster Area Director of the National Coal Board invited the local general practitioners to a meeting in 1968 to describe the pattern of development of the coal mining industry in the area and its problems. Among the medical problems described by the area medical officer was that of attendance at work in relation to ill-health. Speaking of this problem he expressed the view that there were many men in the industry who were incapable of attending work regularly due to incapacity who could and ought to take advantage of early retirement under the Mineworkers Pension Scheme.

In the discussion which followed the opinion was put forward that 'ill-health retirement' increased the work load of the general practitioner. This opinion received a degree of support, but did not reflect the general opinion of the meeting.

An earlier study in the Stainforth Dunscroft practice examined the work load before and after retirement at 65 years (Lunn and Waters 1969) and showed a fourfold drop in work load among miners after retirement. It would be unwise to argue that this pattern would be repeated among men retired for 'medical reasons' and this study was set up in the hope of producing a direct answer.

## Method

The records of all miners still in the practice, who were retired early for medical reasons by the National Coal Board during the years 1965, 1966 and 1967, were extracted from the practice files. Data were collected of all surgery consultations for one year before and one year after retirement. Two age-matched control groups were collected. The first group was assembled by extracting, for each case, the record of the next miner in the practice files, born in the same year but not retired early. The second group was assembled in a similar manner but consisted of non-miners who had not retired early. Data were recorded for the controls for one year before and one year after each man's retirement. The occupations of the non-miners are shown in table I.

## Findings

The sample contained 41 miners with a median age at retirement of 55 years. The mean age at retirement (52 years) was weighted by five men retired before 45 years of age.

The medical reasons for retirement are shown in table II. Three quarters of the

patients were sufferers from chronic bronchitis or degenerative conditions affecting arteries or organs of movement.

Table III shows the surgery work load produced by the men for the year immediately preceding and the year immediately following retirement. All of the 'sick miners' and

TABLE I

OCCUPATIONS OF THE 41 NON-MINERS

| *Occupation* | *No.* |
|---|---|
| Factory worker (various) | 10 |
| Farmer or farm worker | 7 |
| Transport worker | 6 |
| Clerk | 5 |
| Labourer | 4 |
| Manager | 2 |
| Various (*e.g.* policeman, electrician, salesman, etc.) | 7 |
| TOTAL | 41 |

TABLE II

MEDICAL REASONS FOR EARLY RETIREMENT OF THE 41 MINERS

| | *No.* |
|---|---|
| Chronic bronchitis (includes pneumoconiosis) | 17 |
| Coronary artery disease | 7 |
| Osteoarthritis | 5 |
| Strained back | 2 |
| 'Neurosis' | 2 |
| Other (*e.g.* congestive cardiac failure, hypertension, diabetic gangrene, Parkinson's disease) | 8 |
| TOTAL | 41 |

TABLE III

SURGERY CONSULTATIONS FOR ALL ILLNESSES OVER A PERIOD OF ONE YEAR BEFORE AND ONE YEAR AFTER EARLY RETIREMENT FOR MEDICAL REASONS

| | *Number of* | | *Rates* | |
|---|---|---|---|---|
| | *Persons consulting* | *Consultations* | *Persons consulting percentage* | *Consultations per person* |
| 41 miners retired early for medical reasons | | | | |
| Before retirement | 41 | 770 | *100* | 18.8 |
| After retirement | 41 | 412 | *100* | 10.0 |
| 41 control miners | | | | |
| Before 'retirement' | 35 | 324 | *85* | 7.9 |
| After 'retirement' | 37 | 418 | *90* | 10.2 |
| 41 control non-miners | | | | |
| Before 'retirement' | 33 | 173 | *80* | 4.2 |
| After 'retirement' | 31 | 174 | *76* | 4.2 |

nearly all the control miners and control non-miners saw the doctor at some time during each of the years. The average number of surgery consultations per person required by the 'sick miners' before retirement (18.8) was over twice the number required by the control miners (7.9) and over four times the number required by the control non-miners (4.2). These differences were significant. ('Sick miners'—control miners $P < 0.001$, control miners—non-miners $P < 0.01$).

After retirement the 'sick miners' averaged the same number of surgery consultations as the control miners, but significantly more than the control non-miners (10.0,10.2 and 4.2 respectively $P < 0.001$).

The surgery consultation rate for the 'sick miners' showed a significant drop ($P < 0.001$) after retirement. This compares with a non-significant rise among the

control miners and no change among the control non-miners, and suggests that the pattern among the 'sick miners' was directly related to retirement and not influenced either by some event affecting the coal industry generally or some secular change involving the population as a whole. The reason for the drop in the 'sick miners' rate after retirement can be seen in table IV which shows the types of National Insurance (NI) certificate issued.

Before retirement the 41 'sick miners' required 633 certificates mostly of short duration, to cover over 11,000 days of incapacity for work. After retirement they

TABLE IV

CERTIFICATES ISSUED AND DAYS OF CERTIFIED INCAPACITY OVER A PERIOD OF ONE YEAR BEFORE AND ONE YEAR AFTER EARLY RETIREMENT FOR MEDICAL REASONS

| | *Type of certificate* | | | | | *Calculated days of certified incapacity* | |
|---|---|---|---|---|---|---|---|
| | *7 days per-centage* | *14 days per-centage* | *28 days per-centage* | *13 weeks per-centage* | *Total* | *Number* | *Average days per man* |
| 41 miners retired early for medical reasons | | | | | | | |
| Before retirement .. | *36* | *32* | *30* | *3* | *100*=633 | 11,249 | 274 |
| After retirement .. .. | *8* | *22* | *37* | *32* | *100*=267 | 11,613 | 283 |
| 41 control miners | | | | | | | |
| Before 'retirement' .. | *76* | *20* | *4* | *0* | *100*=225 | 2,065 | 50 |
| After 'retirement' .. .. | *82* | *9* | *8* | *0* | *100*=277 | 2,688 | 66 |
| 41 control non-miners | | | | | | | |
| Before 'retirement' .. | *91* | *6* | *2* | *0* | *100*= 81 | 644 | 16 |
| After 'retirement' .. .. | *81* | *10* | *9* | *0* | *100*= 81 | 770 | 19 |

required only 267 certificates, mostly of long duration, to cover a similar number of days. The change in certification pattern was accompanied by a significant rise in the proportion of consultations at which no certificate was issued, from 18 per cent before to 35 per cent after retirement.

The NI certificates issued to the control groups were mostly of short duration, but the miners had three times as many days of certified incapacity as the non-miners.

## Discussion

The number of days of certified incapacity for work among the coal miners in this practice is considerably above that expected from national figures. Data from the MPNI Report on the Incidence of Incapacity (1965) suggest that equivalent control samples of miners and non-miners should average 1,239 and 625 days of incapacity per annum respectively. (Practice mean over two years 2,377 and 707 days respectively.)

Taylor (1968) commenting on sickness absence in an oil refinery population stated that the attitude of the men towards themselves and their work was of major importance. Taylor and Fairrie (1968) reported that dislike of the job was progressively and significantly more common among men in grades of increasing disability. Simpson (1962), referring to teachers and talking of psychological rather than physical stress, suggested that man's susceptibility to illness during adult life is, to a large degree, influenced by his

relation to the society in which he works.

These findings are relevant to this study in that the conditions of coal mining involve to a great measure, both physical and psychological stress and damage. These factors and the present relationship of coal mining to society as a contracting industry, may account for the large numbers of days of incapacity among the control miners.

In the case of the 'sick miners', the disability produced a fivefold increase, as compared with the control miners, in the number of days of incapacity in the year before retirement. Following retirement these men continued to attend the doctor for prescriptions, advice and for long period, rather than short period, certificates. Consequently, although there was a slight increase in the number of days of incapacity, the surgery work load was almost halved and the proportion of consultations for prescriptions or advice, but no certificate, increased. The marked change in certification pattern reflected a change in the doctors' attitude (and the patients' attitude?), from endeavours at rehabilitation, to acceptance of the illnesses as totally disabling so far as mining work was concerned. The illnesses appeared to be equally disabling as regards non-mining work since these men had just as much sickness absence after leaving mining as before. Two factors played an important part here. First, most of these men had moved into light colliery work many years before the study. Edmonds and Kerr (1960) have described how men tend to leave coal face work at a fairly early age complaining of injury or illness and find alternative colliery work, mostly of a light nature. Over half of their ex-coal face workers were able to do only the lightest of work such as conveyor operator (button job), belt patrol, engine driver or loco-driver. Secondly the manpower reduction in the coal industry in recent years has provided local factories with a good supply of younger and healthier men. As a measure of this, the manpower of the Coal Board in Yorkshire has dropped from 105,985 in 1965 to 90,368 in 1968 (NCB 1965–1968[a]) and in the Doncaster area from 24,758 to 21,185 in the same period of time (NCB 1965–1968[b]). Under these conditions there has been little opportunity for the employment of these 'sick miners' elsewhere.

## Summary

This paper studies the surgery work load of 41 miners retired early because of ill-health. Comparison is made with age-matched control groups of working miners, and working non-miners.

The average number of surgery consultations per person required by the 'sick miners' over a period of one year before retirement was over twice the number required by the control miners and over four times the number required by the control non-miners. Over a period of one year after retirement the 'sick miners' averaged the same number of surgery consultations as the control miners, but significantly more than the control non-miners.

Before retirement the 41 'sick miners' required 633 NI certificates mostly of short duration to cover over 11,000 days of incapacity for work. After retirement they required only 267 certificates mostly of long duration to cover a similar number of days. The certificates issued to the control groups were mostly of short duration but the miners had three times as many days of certified incapacity as the non-miners.

The marked change in certification pattern after early retirement of the 'sick miners' reflected a change in the doctors' attitude (and patients' attitude?) from endeavours at rehabilitation to acceptance of the illnesses as totally disabling so far as mining work was concerned. The illnesses appeared to be equally disabling as regards non-mining work since these men had just as much sickness absence after leaving mining as before.

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**The College of General Practitioners.** *Research Newsletter* No. 1. 1953.

There was a time in the history of medicine when all research was general-practitioner research, for there were none but general practitioners to undertake it. Advances were made through careful observation of one patient, or of several patients, by a doctor in practice who drew his conclusions from facts observed during the routine of a day's work. In this way Jenner recognized the relationship between cowpox and smallpox, and Withering observed the diuretic effect of the foxglove leaf. Then came a change in the pattern of medical practice. Institutional care of serious illness and research in hospital developed on an increasing scale. The quest for more facts in the field of general practice slackened, and family doctors devoted their energies to relaying to patients the new knowledge that their hospital colleagues had gained. The flame of general-practitioner research burned low, to be fanned into occasional brilliance by such men as James Mackenzie and William Pickles. Now, once again it is being realized that opportunities to undertake research into conditions encountered in general practice are unique and wide, and that general practitioners have a duty to work on many problems which might otherwise not receive the attention they deserve.

**The College of General Practitioners.** *Research Newsletter* No. 2. November 1953.

It is a curious quality of humanity that similar thoughts, ideas and beliefs may spring up at one time in the minds of several different people; these new ideas may initiate a period of progress and set the pattern which it may follow. Perhaps the research work of the College of General Practitioners is an expression of the contemporary re-awakening of interest in research and enquiry which has taken place in the last few years. The members of the Research Committee would like to think that this was so, and that their work, which began in January, 1952, may act as an outlet for the quiet, steady work which they now know to have been carried out by their practitioner colleagues. They feel that a new phase in medical research has begun.

As the College Research Register has grown, month by month, evidence has come to light that a great deal of research work is being done by general practitioners, whose interest in their work has enabled them to overcome their difficulties of isolation and lack of training in research methods. One doctor modestly confesses that he has collected practice records in statistical form for many years, while another has been undertaking haematological research in his practice on an advanced level, and that many others have—as one member of the Register put it—'a drawer full of theories, and quite a collection of facts about disease which I have been unable to put together for lack of encouragement and advice.'