Section of Occupational Medicine

President Andrew Raffle MD

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President's Address

The Occupational Physician as Community Physician

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Those of us working in industry are privileged to care for a community. What does this mean in practical terms? It means ascertaining the causes of ill health in the community, actively identifying those individuals with health problems and employing resources to the best advantage to remedy the causes and to help those with problems.

It seems likely that the community physician of the future will have the same broad functions (Morris 1969). In industry we have the ideal situation in which to act as community physicians. We have great opportunities for ascertaining causes of ill health and identifying those with problems because we can define our populations precisely and easily determine what happens to the individual in these populations. Action can then follow based on accurate and early intelligence without major problems of information retrieval and record linkage.

My purpose is to examine some of the work in industry which illustrates our function as community physicians. We start with a major advantage because not only can we define our populations in terms of age, sex and occupation, and hence working environment, but also most members of the population have had a medical examination, or have at least been screened on entry, so there is a baseline for future comparison. Industrial populations are of course selected: self-selected by wanting to enter the occupation and by wanting to stay in it, and selected by management by being and by remaining suitable for the particular employment. Pre-placement examinations help by defining the selection criteria when the populations are subsequently studied. In general communities (which are also selected populations in the sense of choosing to or having to live in certain geographical areas) definition of who is in the population is difficult and there is seldom a medical baseline.

Another advantage which all occupational physicians should have is the speed with which they learn what is happening to the health of the work force. The beginnings of an epidemic are identified simultaneously in the factory surgery and in the general practitioner's surgery. Some general practices, as a research effort, make this information available to the Department of Health and Social Security. Claims for sickness benefit also give some indication of the size and speed of spread of, say, influenza, but this information is usually 1½ or 2 weeks old by the time it is collected and processed. In addition,

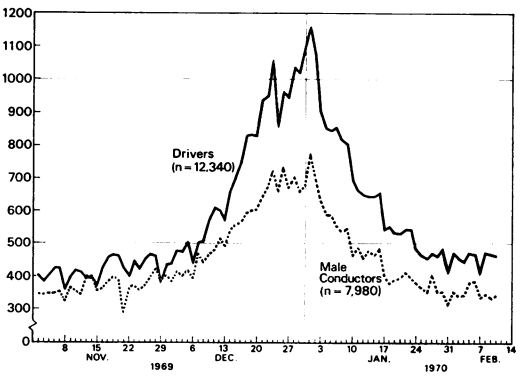

Fig 1 *Daily numbers of London Transport central bus staff absent, winter 1969–70*

those who do not claim benefit are not counted. In industry, the daily count of those at work, or the complement, those who are away, gives an immediate and sensitive index of what is happening.

An example of this simple approach to finding out what is going on in the community is illustrated by the crude daily figures of absence attributed to sickness (Fig 1) for the 12,340 drivers and the 7,980 male conductors of the central buses of London Transport during this winter's influenza epidemic. The peak figures are almost as high as those for the 1957 epidemic but its duration is much shorter. It must not be forgotten that this epidemic started just before the Christmas holidays and came in addition to an outbreak of a moderately severe cold in mid-November. The numbers at the early stage of the epidemic are therefore inflated by what industry is coming to accept as normal Christmas and New Year absenteeism. Nevertheless, the number away in either group on any day did not exceed 10% of those employed. From the beginning of November, before the usual winter increase in sickness absence, to the peak of the epidemic in early January, the percentage of male conductors away doubled whereas in drivers the increase was 2·6 times. This difference is usually the other way round. Amongst other things this could be due to a combination of more conductors than drivers developing immunity through contact with the public during the mild epidemic of A2 influenza last year and drivers being more incapacitated for their job than conductors by a mild attack of influenza. For some years these daily figures have been transmitted to the Department of Health and Social Security once a week, or more

Fig 2 *Average number of days of absence (for spells of four days and more) per person for all diagnoses in London Transport male clerks, 1949–52, 1959–62 and 1965–67*

Fig 3 *Average number of spells of four days and more per person for all diagnoses in London Transport male clerks, 1949–52, 1959–62 and 1965–67*

frequently while an epidemic is developing, because they are such an early and sensitive index of the development and course in London of an epidemic of respiratory infection.

A current topic of concern is the increase in the absence from work attributed to sickness since the mid-1950s. This increase is, of course, important not only to individual industries but also nationally because of the effect on the cost of living, taxation and the price of exports. If there is any comfort in the situation it is that, as Taylor (1969) has shown, in those countries for which figures can be obtained, increases in sickness absence have also been occurring over the same period. The increase is apparent in the upward trend in claims for sickness benefit recorded by the Department of Health and Social Security. What is not apparent from published figures (Society of Occupational Medicine 1968), but is apparent from statistics collected in industry, is that the increase is mainly in the number of short absences in young people for conditions with vague diagnoses. At a recent symposium at the Royal Society of Medicine some results were presented of an analysis of claims for sickness benefit by the Department of Health and Social Security which broadly supported the results from industry (Connelly 1970). As an example of industrial data (Fig 2) male clerks in London Transport have shown little increase, for spells lasting four days or more, in the average number of days of absence per person per annum in 1965–67 compared with 1949–52 and 1959–62. There was, however, a marked increase in the average number of spells of four days or more per person per annum over the same period (Fig 3), together indicating more frequent short absences with a consequent reduction in the

average length of spell. The increase is greatest at the young ages. National Insurance figures do not record short spells for which no claim for sickness benefit is made but industry does record those short spells attributed to sickness and accepted as such by the employer but for which no medical certificate is demanded. The average number of spells of one to three days' duration per person per annum for male clerks (Fig 4) shows a startling increase over the same period, mainly among the young men. Similar, but not identical results, are found in other occupational groups. Analysis of the data by diagnosis shows increases in conditions labelled neurosis, fibrositis,

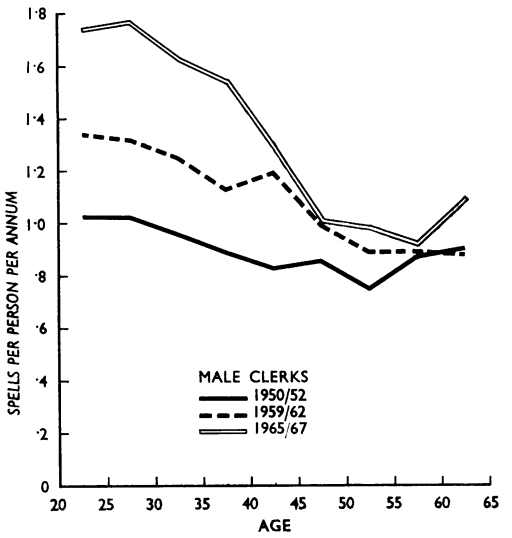

Fig 4 *Average number of spells of 1–3 days per persons for all diagnoses in London Transport male clerks, 1950–52, 1959–62 and 1965–67*

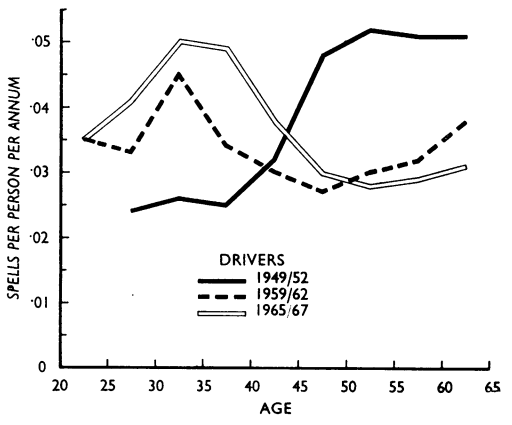

Fig 5 *Average number of spells of diseases of the stomach and duodenum (four days and more) per person in London Transport drivers, 1949–52, 1959–62 and 1965–67*

Table 1
Proportion of clerical and technical staff of London Transport in each age group who commenced no spells, at least 3 spells and at least 6 spells of sickness absence in 1967

	Men			*Women*		
Number of spells	*Up to 44* (%)	*45 and over* (%)	*All ages* (%)	*Up to 44* (%)	*45 and over* (%)	*All ages* (%)
No spells	23	34	28	12	20	16
At least 3 spells	35	25	31	56	41	49
At least 6 spells	8	5	7	19	8	14

upper respiratory tract infection and the like, and decreases in conditions with precise diagnoses or where prevention and treatment have improved over the period, such as diseases of the skin. The exceptions to this general trend of a decrease in conditions with precise diagnoses are cardiovascular conditions and carcinoma of the lung which have followed the national pattern. The point is perhaps best illustrated by diseases of the stomach and duodenum. Common experience is that peptic ulceration is becoming less frequent. Meade *et al.* (1968) showed this convincingly for doctors. If all diseases of stomach and duodenum are taken together, for instance in drivers (Fig 5), the expected fall from 1949–52 to 1965–67 is found in the older men but there is a striking rise in the younger men. This, on further analysis, is found to be due almost entirely to an increase in cases labelled gastritis – a vague diagnosis which can cover a number of ills.

Sickness absence data can be useful in identifying susceptibles. Taylor (1967) has drawn attention to the group he has classified as the 'frequently sick' – those who have many short absences. In London Transport data, frequency distributions of persons by number of spells show that there is a surprising number of people who have multiple short absences. For instance, in 1967 (Table 1) 8% of the male clerks and 19% of the women clerks under 45 commenced at least six absences of all durations in the year. In fact, 1% of the men and 3·6% of the women in this age group had ten or more absences. What must not be forgotten, of course, is that 28% of the men and 16% of the women of all ages did not have any absences in the year. The occupational physician becomes aware of the frequently sick, not only because of analyses of sickness absence data, but also because he encourages managers, who are only too aware of the problem, to refer such cases to him.

Not all those who are frequently absent need help in the accepted sense. Having identified the individuals, the occupational physician must determine into which of five categories they should be placed:

(1) Those who have a pathological condition which would account for repeated absences and for which no improvement can be foreseen. Management can be encouraged to understand and accept the situation.

(2) Those with a pathological condition which should improve with treatment, who can be referred to the National Health Service and who can be kept under surveillance at work.

(3) Those whose absence is apparently due to social problems, usually at home, and for whom the welfare services within the organization and from local or national resources can be deployed. Again, management can be encouraged to accept the situation where possible.

(4) Those in whom, after investigation, no apparent medical cause for repeated absences can be found but who were unaware of the number of their absences. The sickness absence record of some of these people will improve after explanation, especially if they are seen within a year or eighteen months of the commencement of their poor sickness absence pattern. After that, the pattern has been established and accepted.

(5) Those in whom no apparent cause is found and whose sickness absence experience does not improve. These then become a management problem.

Much can be done, first by identifying the members of these categories and then by providing appropriate help and guidance, with the occupational physician collaborating with the individual's doctor and with management to get the best solution in each case.

With our defined populations we are fortunately placed for undertaking prospective cohort studies on the natural history of disease, attempting to define the causes and to identify susceptibles. Many studies have been done on general populations, for instance those at Framingham (Kannel *et al.* 1966) and Tecumseh (Epstein *et al.* 1965) on ischæmic heart disease and the work on bronchitis in the Rhondda Fach by Gilson and his colleagues (Higgins & Cochrane 1961). Industrial populations have advantages. Working environments and rates of pay with their effect on the standard of living can be defined. The effect of a single etiological factor can be investigated – for instance, the investigation of Lowe *et al.* (1968) on the effect of industrial air pollution on respiratory function and on lung pathology in steel workers, and the studies of ischæmic heart disease and the effect of exercise at work in busmen by Morris *et al.* (1966). Repeated pathological specimens and continuing information about morbidity can be collected with relative ease as in the study by Fletcher *et al.* (1970) of bronchitis in the General Post Office and London Transport. Follow up of those leaving industrial populations is easier because pension and other occupational records can be added to the usual means of search, as in a study of senior staff which is discussed later.

Epidemiological studies in the chronic diseases as a rule demonstrate association and not causation (Bradford Hill 1965), but some have given sufficiently clear-cut results on which the employment of resources, especially health education, can be and have been planned. The association of cigarette smoking with lung cancer, chronic bronchitis and ischæmic heart disease is an obvious example. The application of the results from other studies is not nearly so easy and can present the occupational physician with some difficult problems. The transport industry provides one example of this. In the well-known investigation by Morris *et al.* (1966) a sample of nearly 700 bus drivers and male conductors was examined and a number of parameters were measured. These men were then followed up for at least five years so that the incidence of ischæmic heart disease amongst them was determined. The investigation showed (as other studies have done) that by defining certain causes and precursors of ischæmic heart disease and certain manifestations of early disease, it was possible to identify quarters of men of high, intermediate and low risk.

Twenty-five of 147 men in the high quarter and only two of 150 in the low quarter developed ischæmic heart disease in the subsequent five years. Profiles of the high and low risk groups showed that the men in the high risk group were older, had earlier parental mortality, were shorter, fatter, were more likely to be nonphysically active drivers, were more likely to smoke, had a higher mean casual systolic blood pressure, had a higher mean blood cholesterol level and were more likely to have nonischæmic electrocardiographic abnormalities at their initial examination than the men in the low risk groups. A similar study in the general population of Framingham by Truett *et al.* (1967), using seven instead of nine factors (six being the same), gave a similar separation of men into risk groups. However, the number of new cases expected in the sample of busmen when the Framingham 'predictor' was applied to them was greater than the number observed, a reminder that estimates of absolute risk derived from one population should not be directly applied to another (Morris & Gardner 1969).

Table 2
Age examinations of London Transport bus drivers 1965–69

Age	*No. examined*	*No. not passed*	*% not passed*
50	1,511	20	1·32
56	2,131	33	1·54
62	1,695	48	2·83
64 and over	3,430	51	1·48

Table 3
Factors in the assessment for fitness for bus driving in borderline hypertension

(1) Age and appearance	(9) Peripheral pulses
(2) Stature	(10) Cardiac rhythm
(3) Obesity	(11) Fundus oculi
(4) Family history	(12) Proteinuria
(5) Smoking	(13) Glycosuria
(6) Symptoms	(14) Electrocardiograph
(7) Xanthelasma	(15) Chest radiograph
(8) Arcus senilis	(16) Blood lipids

Overall, about 1·8% of drivers in London Transport (Table 2) are considered not to come up to the medical standards required at the age examinations undertaken at 50, 56, 62, 64 and annually thereafter. The normal retiring age is 65 so that those who continue to drive after this are a highly selected group. Most of those not passed were suffering from disease of the cardiovascular system, especially hypertension (Norman 1966). The higher percentage of drivers not passed at the examination at age 62 is interesting and needs more investigation. It may indicate a more rapid deterioration in fitness for the job in the six years gap in examination from 56 to 62 then previously suspected. It could be partly due to a complicated interaction of administrative matters related to availability of alternative employment and to pension arrangements.

There have rightly been many warnings about applying the results of epidemiological research directly to individuals because the results relate to groups. In the routine age examinations of bus drivers with public safety in mind, we have an example of the validity of the warning and an example of the occupational physician doing his well-known balancing act of trying to be scrupulously fair to the individual and to the group (in this case the public) at the same time. The predictor from the prospective study of busmen showed that one in 75 of the low risk group of drivers and conductors would develop ischæmic heart disease in five years in spite of all the favourable factors in causes, precursors and early disease. These might be called the false negatives and the acceptance of some false negatives seems inevitable with our present knowledge. False positive results can have serious repercussions in the individual. One in six of the high risk group is likely to develop ischæmic heart disease in five years. This enables us to pick out those who really should reduce weight, take exercise, give up smoking and possibly reduce their blood cholesterol or even their blood pressure if this is shown to be worthwhile. This is unpopular advice, but it is not catastrophic to the individual. It is much less useful if it means taking six men off their life's work because one of them is expected to develop ischæmic heart disease in the next five years, possibly at the wheel. In practice, therefore, higher levels in the predictive factors have been chosen. As systolic blood pressure predominates as a predictive factor it is worth looking at this in more detail, although in practice sixteen other recognized factors are taken into account in assessing whether a bus driver with borderline hypertension should continue to drive after an age examination (Table 3) (Norman & Raffle 1967, unpublished material). The lower level of systolic blood pressure for the upper quarter in the sample of busmen studied by Morris *et al.* (1966) was 168 mmHg of mercury. Using 200 mmHg as the upper limit of symptomless hypertension for drivers, however, seems to work in practice in keeping incidents of ischæmic heart disease at the wheel at a low level. The mean systolic blood pressure (taken by eight observers) of 983 drivers at age examinations at 50 and 56 was 150 mmHg with a standard deviation of 22. For comparison, the mean systolic blood pressure (taken by the same eight observers) of the 153 drivers who developed ischæmic heart disease during the years 1959–67 and who had been passed at their age examinations at 50 and 56 within the previous six years was 154 mmHg with a standard deviation of 21, a difference which is not statistically significant at the 5% level. These are the false negatives which have been subsequently identified. We know that the ischæmic heart disease rate is much higher in those drivers who were not passed because of hypertension. A study by the Social Medicine Research Unit and the London Transport Medical Service will quantify this and will tell us how few false positives there were among them. The continuing study by the Social Medicine Research Unit and the London Transport Medical Service on the incidence of ischæmic heart disease amongst busmen will show whether the standards which have developed since routine age examinations were started in 1958 have satisfactorily modified the occurrence of ischæmic heart disease, especially sudden death, among bus drivers who continued to drive.

This seems a good example of community medicine. A population is used in a piece of epidemiological research which helps to define

Table 4
Comparison in London Transport of experience of 77 senior staff with two matched control groups of clerical staff 1950–59

	No. leaving service on account of:						
Group	*Transfer to BTC &c.*	*Resignation*	*Age retirement*	*Death in service*	*Ill-health retirement*	*No. still in service 31.12.59*	*Deaths after leaving service*
Senior staff	5	1	34●	5	–	32	14
Group A controls	–	1	29	8	3	36	15
Group B controls	–	2	35	6	2	31	11

●In 2 cases there were also medical reasons for retirement

certain risk factors for a naturally occurring disease. This information is then used to identify the susceptibles in the same population. The susceptibles can then be advised how to modify their way of life in order to reduce the risks, without necessarily revealing what the risk is. In this particular situation, however, the identification of susceptibles also helps the public at large by attempting to reduce the already low incidence of collapsing at the wheel among bus drivers – twenty-five incidents causing eight accidents due to ischæmic heart disease in 15 years in an average population of 18,000 drivers who drove 4,000 million miles during the period. For reasons already stated the criteria of the risk factors have to be modified for this purpose. One of the functions of the occupational physician is to apply the results of modern research in his community. He has to discriminate between what criteria are and are not valuable in caring for the particular vulnerable groups in his community. For instance, it has recently been reported by Chiang *et al.* (1969) from the Tecumseh prospective population study that, independent of the known risk factors of blood pressure, serum cholesterol, relative weight and smoking habits, men over 30 with ventricular extrasystoles have twice the sudden death rate from ischæmic heart disease of the remainder of the population – whereas there is no difference in the rate in those with supraventricular extrasystoles – a finding which if confirmed will need careful evaluation and which could be valuable in assessment of hypertensives.

Seeking out the susceptibles is a major part of the occupational physician's and the community physician's work. But of equal importance is reassurance to a population that they are not at special risk. Unfortunately, we do not seem to shed our childhood enjoyment of being frightened, even though we lack the comforting arms to run to. It is all too easy for the frightening things about health to be highlighted and the cheering things to become non-news. The health of senior executives is an example. Much has been made of the stress to which they are exposed, forgetting that only those who can withstand stress, in the main, without showing strain get to the top. The Registrar General's mortality rates give no support to the theory that they are at major risk. The standardized mortality ratio for Social Class I is below that for the other Social Classes. The exception is for ischæmic heart disease. The rates for this are higher in Social Class I, perhaps mainly because of obesity and lack of exercise. On the other hand, Hinkle *et al.* (1968) showed that in the Bell Telephone System in America, men who attained the highest levels of management as a group did not have a higher risk of ischæmic heart disease than men who remained at lower levels. Friedman *et al.* (1968) have shown that men showing strong drive, competitiveness, time urgency and preoccupation with deadlines and the frustration attendant on these – the kind of picture we are given of the senior executive – have a higher ischæmic heart disease rate than those without these traits. This work is so far unconfirmed in this country, though Carruthers (1969) has produced an interesting hypothesis to explain the link between aggressiveness and atheroma through secretion of noradrenaline and subsequent mobilization of free fatty acids. In an attempt to get at some facts about the health of senior executives, twelve years ago Leslie Norman started an investigation which he never published. He studied 77 senior staff, in fact the two top levels of management in London Transport, who were in service on January 1, 1950 and compared them with two separate sets of controls – both male clerks matched for age and length of service but otherwise randomly chosen and randomly allocated to the two groups. He followed their experience for ten years (Table 4). The mortality in or after leaving the service, the age and ill-health retirement and survival experience was very similar in the three groups to the end of 1959. He also found that the pattern of serious illnesses during the period was virtually the same in the three groups. He had personally medically examined many of these men and found no evidence of an excess of psychosomatic disease in the senior staff.

Table 5
Comparison in London Transport of experience of 76 senior staff with two matched control groups of clerical staff. Mortality 1950–69

	Total No. of years exposed to risk	*Total No. of deaths*	*No. of deaths where age attained in calendar year of death was or would have been:*	
			<66	*66 and over*
Senior staff	1,245	28	15	13
Group A controls	1,204	30	16	14
Group B controls	1,284	28	11	17

I have taken the opportunity of bringing the mortality data up to date to the end of 1969, that is for 20 years (Table 5). One case is untraced so it and its two controls have been dropped from the analysis. The total number of years exposed to risk, the total number of deaths and the number of deaths under the age of 66 or aged 66 and over are all very similar and in fact the mortality rates are not significantly different. The death certificate diagnoses of the cases and the two control groups have been analysed (Table 6) into the broad categories of coronary thrombosis/myocardial infarction; other cardiovascular diseases, including hypertension and cerebrovascular catastrophes; neoplasms and others. Considering the small numbers involved there is a remarkable similarity in the pattern of causes of death in the three groups. The difference between the control groups is greater than the difference between the senior staff and either control group. The total number of cardiovascular deaths in the senior staff group, fourteen, lies half-way between the totals of the two control groups, or, putting it another way, is the same as the average of the two groups. Presumably an excess would be expected in this group of diseases if any stress from occupation in the senior staff had been affecting their health. This study is reassuring. It does not mean that we should not offer these senior men voluntary consultations with batteries of screening tests, but it does, I suggest, mean that we should not hint that they need these check ups because they are at special risk. They need reassurance just as any other group in the community which has had its self-confidence undermined, like the women who are taking the contraceptive pill.

Environments change, new housing estates are developed and the community physician needs to know how these changes affect the community; methods of work change in industry, and we want to know the effect on the workers. The introduction of automation is an example. I have previously discussed the possible problems (Raffle 1967) and reported that, in one situation at least, there was no change in sickness absence rates following transfer to an automated process. These men have now been followed for a further two years and more have joined them as more equipment has been automated. They were former signalmen on the Underground who became traffic regulators monitoring automated signalling systems on various lines. Their sickness absence rates have been compared with controls, matched for age and length of service but otherwise randomly chosen, who remained as signalmen. There continues to be no difference in their sickness absence rates nor any difference in the types of illnesses which they have. In 231½ man years of observation the traffic regulators commenced 101 spells of absence of all durations compared with 99 spells in the signalmen controls. The number of days of absence were 1,370 and 1,366 in the regulators and signalmen respectively. Also their wastage rates from retirement, resignation and promotion are the same. This is reasuring to the men and to those who have care of them. When one of the traffic regulators developed an organic nervous disease which caused him to make foolish errors and to be euphoric about it (the safety of the trains could not be jeopardized) the information about sickness absence was particularly useful in reinforcing the reassurance to everyone concerned that the new and strange job was not the cause of his illness.

In every community there are some who become disabled and who need assistance from various agencies. These individuals are quickly identified in industry, either at post-sickness medical examinations or from referral by their supervisors because of work problems or, only occasionally I fear, from referral by their

Table 6
Comparison in London Transport of experience of 76 senior staff with two matched control groups of clerical staff. Mortality 1950–69

	Total no. of years exposed to risk	*Total no. of deaths*	*Causes of death*			
			Coronary thrombosis	*Other cardiovascular disease*	*Neoplasms*	*Others*
Senior staff	1,245	28	6	8	8	6
Group A controls	1,204	30	6	12	5	7
Group B controls	1,284	28	5	5	8	10

outside medical advisers. Within those industries with occupational physicians it is possible to ensure that disabled persons are employed in different jobs, as far as possible, jobs which employ their remaining abilities to the full. They can be kept under surveillance so that those who deteriorate can have their work further modified and those who improve can be moved to more exacting work until they can be returned to their old jobs. The community physician of the future will recognize that inadequate attention to rehabilitation and resettlement is a major deficiency in the care of the community, especially the lack of continued surveillance. There are too many individuals whose capacities and talents are underemployed because there are no adequate means of ascertaining those who have improved sufficiently to do more demanding work. There are too many who have been resettled, registered as disabled and forgotten and who are disgruntled. Let us hope that the future employment medical advisers will be given the opportunity to tackle this problem of follow up which is now almost untouched.

In rehabilitation and resettlement, our aim for the good of the individual and for the good of the community is to return people to their normal work as early as is good for them and for the community; but situations arise in which a man can do his normal work to his benefit though with a risk to those around him. The transport industry provides examples in airline pilots, train drivers and bus drivers, who have satisfactorily recovered from ischæmic heart disease. The accepted standard is that any man who has had ischæmic heart disease should not continue in any of these jobs because of the added risk to the public from a recurrence on duty. Certainly, the clinical impression from following those transferred to alternative work within the industries is that this standard is completely justified but can the risk be quantified? There are few studies which have followed all the survivors (not just those who reach hospital) from a first clinical attack of myocardial infarction for an adequate number of years. Those which have, for instance that of Morris *et al.* (1957) in their study of doctors, have used overall mortality or survival as the indices and not the further occurrence of myocardial infarction which is the index that matters. What we want to know is how much greater is the added risk of a second infarction developing in men who have survived for varying numbers of years from their first infarction, compared with the risk of a first infarction occurring in the men in the remainder of the population from which they originally came. One American study does help. Weinblatt *et al.* (1968) reported a study of 55,000 men of all occupations who were insured under the Health Insurance Plan of Greater New York – a highly selected population. They found for men under 55 that the risk of a first recurring myocardial infarction among men surviving one month from an initial myocardial infarction compared with the risk for a first myocardial infarction in the same population was 9·8 times for the period 6 months to 1½ years after the event, 11·9 times for 1½–2½ years and 9·1 times for the period 2½–4½ years after the event. The rates were lower for older men, but still greater than the difference in the risk rates between the higher risk group and the remainder in the sample of bus drivers previously discussed. Extreme caution is needed before drawing conclusions from this study of insurance policy holders of many different occupations in America and applying them to men in specific occupations in the United Kingdom, but the results of the study do not surprise; they are in line with clinical impression, they do not prompt a change in the accepted current standard. To this extent they are useful.

A similar study amongst these key groups in transport would be very valuable. The difficulties of follow up, especially of those who have left the industry, using occurrence and recurrence of myocardial infarction instead of death as an index, are daunting but are a challenge. We believe that in this instance we are balancing correctly, on the evidence available, the rights of the individual and the rights of the group. It would be satisfying to confirm this belief.

The situation in a community is never static. We deploy our resources in a certain way in response to the demands of the time, but we must always be ready to change them. Continuing feedback about the effect of the use of the resources is essential, so that if the situation changes their use can be altered. Assessment of the value of medical examinations and screening tests is an example. Some men are coming back to work earlier after serious illnesses because of improvements in therapy, especially following the use of antibiotics. It therefore seemed prudent to reduce the length of time a bus driver could be off sick before a post-sickness medical examination was required. After examining the evidence, including frequency distributions by length of spell of sickness absence, it was decided to change the period of 28 days to 21 days. The importance of this type of medical examination can be gauged from the fact that 15% of bus drivers were considered to be unfit to resume driving, at least temporarily, at these examinations before resumption of duty. It has already been indicated that only 1·8% of drivers are not passed

at age examinations. On the other hand, physical examination yielded so little additional information to that gained from a questionnaire that the routine preplacement screening of clerks could be reduced to a questionnaire, a vision and a urine examination and a chest X-ray, only including a physical examination where the answers to the questionnaire indicated the need. Similar findings have led to the proposed changes in the Appointed Factory Doctor Service – reducing routine medical examinations which are of little value and increasing those which are of more value to the individual and to the community.

The total care of a community, therefore, requires the collection of data about that community in order that the health problems can be recognized, and the active seeking for those with health problems. This may mean the use of epidemiological methods to help define the problems and to identify the susceptibles. The total care of a community requires the deployment of resources to correct the causes of ill health and to help those with health problems. It also means the continual feeding back of information about the effect of the use of the resources to ensure that they are being used to the best effect.

The report of the Royal Commission on Medical Education, the Todd Report, stated that the community physician would be concerned '. . . with broad questions of health or disease in, for example, particular geographical and occupational sections of the community'. If these are to be the terms of reference of the community physician of the future, it is to be hoped that they will be given the tools to do the job, especially record linkage and adequate data processing facilities. We, as occupational physicians, are fortunate that we have, and have had, the opportunity to act as community physicians in the widest sense to our selected populations for many years. We have had the opportunity and the tools and we have used them – we still have much to do.

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Meeting December 11 1969

The following papers were read:

Time Zone Disruption and Sleep Patterns in Pilots
Dr Frank S Preston

Keeping Fit on World-wide Business and Holiday Travel
Dr A C Turner

Immunization Requirements for International Travel
Dr A S R Peffers