The purposes of occupational medicine¹

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Raffle, P. A. B. (1975). *British Journal of Industrial Medicine*, 32, 102-109. **The purposes of occupational medicine.** The purposes of occupational medicine are described in terms of its clinical medical, environmental medical, research, and administrative content. Each of these components is essential in different proportions in comprehensive occupational health services for different industries, and can only be satisfactorily provided by occupational physicians and occupational health nurses who are an integral part of their organizations.

Two-thirds of the working population in the United Kingdom are without the benefits of occupational medicine. The reorganization of the National Health Service and of local government presents the opportunity to extend occupational health services to many more workers who need them. It is suggested that area health authorities should provide occupational health services for all National Health Service staff and, on an agency basis, for local government and associated services, eventually extending to local industry. Such area health authority based services, merged with the Employment Medical Advisory Service, could conveniently then be part of the National Health Service, as recommended by the British Medical Association, the Society of Occupational Medicine, and the Medical Services Review Committee.

Every occupational physician has at some time or other been asked socially 'Are you in practice?' 'No, I'm a doctor working in industry'; then there is that pause and a slightly blank stare—'What do you do?' He starts to explain that he is concerned with the effects of work on health and of health on work. But I, at any rate, end up by saying that occupational medicine is an exciting mixture of clinical medicine, environmental medicine, research, and administration, and that our function is to influence people, and to help others to help themselves. Influence, rather than educate; adults shy away from being educated as being something insulting. Mackenzie knew this in the different and subtle approaches he made to encourage management and workers to aim at health at work.

An advantage of the honour of being asked to deliver the Mackenzie Industrial Health Lecture is

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that the lecturer has to re-read what his distinguished predecessors said. Those particularly germane to my topic are Meiklejohn (1959), Norman (1963), Rogan (1964), Scott (1967), and Lee (1973). I am grateful to them all for their stimulus. It is encouraging how much of the way these giants felt occupational medicine could and should develop has actually happened. One pleasing development is the partnership which has grown up between the occupational physician and the occupational health nurse, to the extent that now any discussion of the activities of an occupational health service includes the work of both the occupational physician and the occupational health nurse.

However, whatever progress has been made in the last 25 years in occupational medicine, perhaps two-thirds of the working population is without any of its benefits. The purposes of occupational medicine have just not got across. Many of our medical administrators started in public health departments in some of which the most junior doctor did the

superannuation examinations of the staff. If they thought that this chore was the whole of occupational medicine, it is not surprising that they did not rate it very highly. This may be why Secretaries of State are still being advised that the National Health Service, the Department of Employment, and local authorities can deploy the services needed by the working population. We know that they do not and on present form cannot fulfil these needs.

I propose first to discuss the purposes of occupational medicine in the terms of its clinical medical, environmental medical, research, and administrative content. Lowe (1974) used the terms clinical medicine, community medicine, and laboratory medicine: the labels of the ingredients do not matter, their blending into the final product does.

Let I appear to be falling into the trap which Lee (1973) pointed out, of describing occupational medicine as what doctors in industry do, I wish to emphasize that I am answering the question he posed, 'Why is it done?', by claiming that most of the purposes of occupational medicine are fulfilling a human need not otherwise satisfied by the present state of development of society or of medicine. If the needs are otherwise satisfied then almost certainly they should not be duplicated by occupational medicine.

Clinical medicine

The clinical content of occupational medicine depends on recognizing the two-way track relationship between work and illness. Some work can produce illness and every illness to some extent affects the capacity to work (Raffle, 1965). Historically (Meiklejohn, 1959), the pioneer occupational physicians were concerned with the recognition of the early signs and symptoms of industrial disease, and of course there is still scope for this. Our techniques have become more elaborate so that diagnosis occurs earlier, as in the use of exfoliative cytology in the detection of occupational bladder cancer and lung function tests in early occupational chest disease. Better still, biological monitoring provides advance warning of excessive absorption of toxic materials before pathological damage has occurred. But more and more, we are having to study the effect of work on individual and group happiness, morale, and efficiency. We are learning to recognize the clinical symptoms and signs in individuals and groups of the stress that these major changes in their work can produce. Equally we must be confident that we can assure management and workers after adequate investigation that not all changes are harmful and that fears of ill health from them are groundless. All this part of clinical occupational medicine is *post hoc*. Our aim is to avoid harm arising from work by adequate planning of new or

reorganized methods of work, but this belongs to the environmental medicine content of occupational medicine.

Clinical occupational medicine has much to give in the other and larger interaction, that between illness and the capacity to work. This contribution of occupational medicine to health and happiness is inadequately recognized. It was totally ignored in the definition of occupational medicine given by the Department of Employment to the Robens committee (Safety and Health at Work, 1972) and accepted by that committee. This led to the contradiction of excluding consideration of the effect of health on the capacity to work from occupational medicine and at the same time commending the inclusion of rehabilitation and advice on the employability of persons in the Employment Medical Advisory Service. Occupational physicians with their intimate knowledge of the various occupations in their organization and of its administration can ensure far more easily and effectively than anyone else that persons with disabilities are safely employed in jobs which use their remaining abilities to the full. They can then 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. Doctors outside industry are handicapped in deciding on the employability of a patient in a particular job. A patient can seldom give his doctors a valid description of his work because he fears that if he minimizes its demands his doctor will recommend a return to normal work and thus do his condition further harm; or that if he exaggerates his doctor will recommend a change of work with all it entails and confirm the patient's worst fears about his prognosis.

In the future the community will recognize that inadequate attention to rehabilitation and resettlement on the job is a major deficiency in health care, especially the lack of continued surveillance. Nothing in the reorganization of the National Health Service or in the setting up of the Employment Medical Advisory Service will provide for that two-thirds of the working population without occupational health services the skill and compassion of doctors actually working in industries in dealing with these human problems.

It shows a total lack of understanding of the needs of workers and of the nation for a reduction in the duration of absence from work due to sickness or accident to leave rehabilitation with the Department of Employment in isolation from the National Health Service, against the recommendations of the Tunbridge Committee on Rehabilitation (Department of Health and Social Security, 1972). The assessment clinics at each district general hospital, recommended by Tunbridge, would in time encourage our colleagues in hospital and general

practice to think of re-ablement as the beginning of the illness or accident and not following the completion of treatment. These assessment clinics will be all the more effective with the influence of experienced local occupational physicians.

Horder (1956) pointed out that the relationship between medicine and industry is also a two-way track. In one direction it takes the art and science of medicine into industry; in the other direction occupational physicians have in many ways the opportunity to contribute to general medicine by scientific observation of their defined though selected populations, including observation of the effects of known environmental conditions on the health of populations. In another field they have been evaluating the effect of illness on the capacity to do certain types of work and studying methods of ascertaining these illnesses. Much of this knowledge is unpublished. Perhaps our colleagues in general practice and in hospitals would welcome some more precise definition of what remaining abilities are needed to be able to do specified types of work. I understand that the Occupational Safety Committee of the Medical Commission on Accident Prevention has a project of this kind under study. Sometimes it has been possible to extrapolate from experience within one industry to suggest guidelines of fitness for other occupations, as for example in *Medical Aspects of Fitness to Drive* (Medical Commission on Accident Prevention, 1971). It has also been possible to evaluate with precision the different methods of ascertainment of disabilities of importance. For instance I recently confirmed how much more valuable post-sickness and post-accident medical examinations were than routine age examinations in the ascertainment of disabilities believed to be of importance to the safety of other road users (Raffle, 1974).

In all clinical work, indeed in all his work, the occupational physician must be impartial in his decisions—impartial, and not neutral and failing to give an opinion, as Norman (1963) pointed out. His impartiality, his sense of belonging, his sense of involvement in the organization, and his dedication to knowing what is happening and going to happen in it puts him in a unique position to deal with difficult situations. Where work people develop a misconception about the relationship between some change in work and illness his influence may be enormous. When a trade union claimed that one-man operated buses increased the stress of the driver's job and therefore increased coronary heart disease, demonstration that there was no difference in the incidence of coronary heart disease between the drivers of double-deck vehicles and driver/operators was readily accepted by the union.

It is sometimes said that an outside expert's opinion is more readily accepted by management and unions than that of their own occupational

physician. I cannot believe that this is true in the normal run of clinical problems in industry. This refers not to the use of external diagnostic expertise where necessary but to the giving of opinions on the relationship between work and illness, and on the effect of illness on the capacity to perform particular forms of work.

Referring back to Lee's question 'Why is it done?', the clinical content of occupational medicine is done because it is the only satisfactory way at the moment of providing for the wide range of needs of workers and of industry, and of ensuring that the clinical advice given to the worker/patient about employment is based on a detailed and intimate knowledge of the work. The prevention of industrial disease can no doubt be satisfactorily undertaken by the Employment Medical Advisory Service and the Factory Inspectorate. It is doubtful whether they can deal more than superficially with the huge problem of the effect of health on the capacity to work.

Environmental medicine

The environmental medicine content of occupational medicine is changing much more than the clinical content. In each of the three main components of this field, control of general working conditions, elimination of toxic hazards, and ergonomics, we have learnt to work willingly with experts from other disciplines. Historically the occupational physician, having identified the results of toxic processes through his clinical work, was also involved in suggesting environmental solutions, but often there was little he could do without engineers and other experts. Much of the environmental work is now done by occupational hygiene teams of physicians, chemists, physicists, and engineers, not only in controlling hazards but in identifying or even predicting them. Sometimes the expertise needed is not available within the industry. In an investigation of an allegation that underground railway tunnel dust contained hazardous quantities of free asbestos, calculations on firm theoretical bases and simple scientific observations suggested that the fears of underground railway workers and public were unfounded, but proof by direct measurement had to wait for the marshalling of outside independent experts and equipment. Together the TUC Centenary Institute of Occupational Health, the Asbestosis Research Council, and the London Transport Scientific Advisers' Laboratory have shown conclusively that the fears were groundless.

Routine monitoring of hazards has now passed very largely to other disciplines. Repeated medical examinations of those exposed to hazards, and biological monitoring with clinical interpretation of the results is in many instances being replaced by environmental monitoring. Are we to regret this

handing over of some of our preventive functions to others? No more I suggest than we look on the translation of the Medical Officer of Health into community physician as a retrograde step. This can surely be counted as one of the great successes of medicine in the past century. The Medical Officer of Health successively recognized more and more means of preventing illness and hardship, devised methods of dealing with them, administered their control until firmly based, and then handed them over to others to run. The influence of the Medical Officer of Health in persuading local and central government to think in terms of prevention and mobilization of resources to mitigate hardship is ineradicable. Similarly, the influence of the occupational physician on managements and workers to think in terms of prevention of hazards by substitution, enclosure, automation, segregation, ventilation or personal protection will endure. His very presence in the industry subconsciously reminds those responsible to think in these terms, and even chance remarks can have their effect. After inspecting a steam chassis cleaning method which, although hot, humid and unpleasant, was a great advance on the old method of hand cleaning with paraffin it was to replace, I suggested to the engineer responsible that men should not have to do this type of work and that it should be possible to run the vehicle through a chemical bath to remove the caked mud. Eighteen months later I was taken to see the prototype of an automatic high-pressure cold water chassis cleaner which the engineers had been working out in secret.

It is perhaps in the ergonomic component of environmental work that the progress of the occupational physician's influence is best seen. Working in the industry he is well placed to identify physical and mental stress arising from the bad design of equipment. He can cajole designers into doing better and encourage the formation of teams of engineers, designers, work study experts, and operational research workers among others, and by constant contact influence these teams into realizing that men and machines should and can work comfortably together. Outside experts may be needed for some problems: we shall always be indebted to Broadbent (unpublished) for his help in the theoretical concepts of the design of automated signalling control on the Victoria Line of the London Underground Railway. The object is to get the teams to plan with man and machine in mind and not just the machine. The occupational physician finds that this influence continues within the organization in all other planning and that designers are automatically thinking about human factors in their equipment design. What the occupational physician must watch is that fragmentation does not lead to loss of impetus. In the jargon of the administration of the reorganized National Health Service he must

monitor from the background the performance of these other professional people.

To answer again the question 'Why is it done?', the environmental medicine content is done because by this means prevention precedes events and does not follow them, to prevent subsequent events. It is only by constant surveillance of what is going on and by being totally involved, knowing what is planned for the future, and foreseeing possible problems that we can successfully influence management. This type of influence cannot be provided by outside agencies.

Research

Horder's two-way track relationship between medicine and industry is well illustrated by the research content of occupational medicine. Defined industrial populations and environments can provide opportunities for fundamental research into the aetiology and natural history of disease, and the results and methods of research from academic and other fields can be applied in investigating particular problems in industry. There are many examples of fundamental research carried out within industries, most of them being collaborative efforts between occupational health services and academic bodies. Three examples are the investigation of the relationship between coal dust concentration and the development of pneumoconiosis, with the spin-off of the quantification of observer variation in chest radiograph reading and lung function tests; the study of the natural history of chronic bronchitis in Post Office and transport workers; and the study of predictive factors in ischaemic heart disease in busmen. The first was totally industry-orientated and, except for the radiograph reading and lung function tests, the results were applied to that industry's problems. The second was wholly academic, for which industry provided convenient facilities. The third, which started as academic research for which an industry provided facilities, produced results which were of great importance to the industry.

Epidemiology is probably the technique of applied research most commonly used in industry with such diverse examples as Taylor's (1968) study of the various factors affecting sickness absence in the oil industry and Case's (1966) study of the incidence of bladder cancer in the rubber industry. An ambitious use of the epidemiological technique is the large-scale long-term mortality survey among the refiners, blenders, transporters, and users of oil products now being sponsored by the Institute of Petroleum with the assistance of the Chester Beatty Research Institute. The chemical industry has applied the techniques from fundamental research to the investigation of the toxicity of new products. The

proposals put forward in the consultative paper for control of toxic substances and for the formal testing of new products will greatly increase this. The aircraft industry, airlines, and armed Forces utilize the results of research into applied psychology in the ergonomic design of equipment and of procedures.

Sometimes a two-pronged attack on a problem is needed as in the study of the effects of variability in work load on signal regulators in automated signalling control rooms. This was a situation common in automation where for long periods the human monitor has very little to do, often for many shifts. Then some abnormality develops and he is very busy for a period during which he takes many, often critical, decisions. Observation of signal regulators at times of interruption to the train service suggested that they were stressed by the change from passive monitoring to highly active involvement in returning the service to normality. Two methods of study were used. Epidemiological techniques demonstrated that any stress which they did undergo was not affecting their health in the long term; they had only 50% of the spells and 58% of the days of sickness absence of the signalmen from whom they were promoted. However, short-term effects were demonstrable by Sayers' (1973) technique of studying the rate of change of heart rate by computer analysis of electrocardiograms radio-transmitted and tape-recorded during periods of normality and of high activity. This demonstrates more accurately and sensitively than straight heart rate measurement the effect of mental work load on a subject's physiology. Results showed that signal regulators at the time of disruption of the service had physiological responses similar to those volunteers doing laboratory tasks which were very hard but not impossible, and they rapidly returned to normal. This finding gave added impetus to the provision of a computer which among other things will reduce the work load on the regulators at times of disruption of the service.

The role of the occupational physician is unique in his recognition of situations in which facilities for fundamental research can be provided in his industry and which might have long-term benefits to the workers, but especially in recognition of the fact that solutions to human problems could be more easily found by applying research techniques from many varied fields. Without his help these tools would not be used.

When applying Lee's question 'Why is it done?' to the research content of occupational medicine it must be admitted that industrial populations and environments would continue to be used in fundamental research in the absence of occupational physicians. But academic research workers would have much more difficulty in identifying suitable situations and getting consent from management and

workers. Without the influence of occupational physicians there would be much less application of research methods to human problems in industry, because there is no one else who combines the intimate knowledge of the industry, of the human demands of the processes, and what scientific biological and physical research can contribute.

Administration

The administrative content of occupational medicine is the means by which we deploy the clinical, environmental, and research content of occupational medicine, in varying proportions, for the benefit of an industry and its workers, that is, how we provide a comprehensive occupational health service. It is evident from what I have said so far that much of occupational medicine can be provided satisfactorily only by a team of physician and nurse who are integrated into the organization, who provide continuity, and whose prime object is the health of the whole enterprise and of all its constituent parts down to the last individual. This does not necessarily mean a full-time service to one organization which would be enormously wasteful of scarce resources in many cases, but that the team even if part-time should identify completely with the organization. This has been successfully achieved in many large, medium, and small organizations by providing their own full-time or part-time service or through membership of one of the group occupational health services. Altogether they possibly care for one-third of employed persons, though perhaps the service could not be called comprehensive in some cases. Even assuming that existing occupational health services are all satisfactory, a dubious assumption, the Employment Medical Advisory Service now has the task of trying to care for the remaining two-thirds of the working population. Say that half of that two-thirds because of the nature of their employment have no real need of occupational medicine at this stage, the task for the 120 Employment Medical Advisers is overwhelming. There was a welcome ministerial statement during the second reading of the Health and Safety Bill in the House of Commons that the Employment Medical Advisory Service would be recruiting a substantial number of extra whole-time advisers. But even with this augmentation it is very doubtful whether they could even give the type of surveillance of environmental matters which I have indicated, much less provide the clinical and research content which is needed.

Future developments

For many years the British Medical Association and the Society of Occupational Medicine have recom-

mended that occupational medicine should be part of the National Health Service and that responsibility for occupational health care should be transferred to the Department of Health and Social Security from the Department of Employment. The Porritt Committee (The Medical Services Review Committee, 1962) recommended that occupational health services of the future should be based on Area Health Boards, with parallel development of private and National Health Service based services. The re-organization of the National Health Service and of local government has stimulated further thought and discussion on the administration of occupational health services. Following the stimulus of the Tunbridge Committee recommendations on occupational health services for hospital staff (Department of Health and Social Security, 1968), a number of hospitals formed occupational health services. Some of these services are comprehensive in scope, but others have caused concern as it seems that some appointments of part-time doctors and full-time nurses have recently been made without any clear understanding of the difference between the role of an occupational health service and the treatment role provided by general practitioners. Some new services plan for these doctors to spend a great deal of time performing unnecessary and costly medical examinations, and many of those recently appointed have no training or experience in the preventive and environmental aspects of occupational health. This situation has arisen largely because hospital management committees and the new area health authorities have had little guidance on the subject, and the message of the Tunbridge Report has been largely ignored or forgotten. Perhaps this is an understatement because in a National Health Service Reorganization Circular (HRC (73) 37) on the Organization for Personnel Management, the task of the district personnel officer includes the provision of advice and service to line managers and staff in the fields of, *inter alia*, staff safety, health, and welfare. Later in the document he is required to review conditions of district staff and identify hazards with the aid of available staff health services. In a somewhat confused situation the area health authorities, who have become heir to the hospital occupational health services, are examining the administrative arrangements for them and by implication for the rest of area health authority staff.

The Society of Occupational Medicine has welcomed the development of comprehensive occupational health services for National Health staff and has recommended that for their proper development consultants in occupational medicine are needed at regional health authority level. Scarce as occupational physicians are, it should be possible to find 14 for these posts. The British Medical Association has recommended to the Secretary of

State for Social Services that occupational health services for hospital staff should not be provided without taking into account the Tunbridge Report which included the appointment of regional consultants in occupational medicine. The British Medical Association has set up a working group to study the establishment, development, and staffing of occupational health services for National Health Service staff. The regional consultants in occupational medicine would have to monitor the provision of occupational health services at area level. They would, no doubt, also provide as a separate function clinical occupational medical expertise to their consultant colleagues in hospitals. In other words, they would advise in cases of possible occupationally induced disease and in the assessment of illness and disability on the capacity to do certain types of work. Until all undergraduates are introduced to occupational medicine, especially to the effect of illness on the capacity to work, and these undergraduates have become senior registrars or consultants, this clinical service to consultant colleagues will be needed. The regional consultants could also be a stimulus in setting up the assessment clinics at district hospitals as recommended by the Tunbridge Committee on rehabilitation and for teaching occupational medicine to undergraduates. No doubt the regional consultants would meet together and gradually develop common policies throughout England and Wales and also develop links with occupational physicians in the private and nationalized sectors in their regions.

There are not sufficient occupational physicians available to provide comparable facilities at area level, nor is the need yet there, hence the recommendation is that the focus at area health authority level should be an occupational health nurse adviser holding an occupational health nursing certificate, who would have professional help from a part-time doctor, possibly a general practitioner, who had had some training in occupational medicine. They would both have the help and guidance of the regional consultant. In order to maintain confidentiality and independence, the ultimate responsibility for occupational health at area level must be vested in the area health authority itself though probably through an advisory subcommittee, but it would be accepted that for day-to-day administrative purposes the service could be under the aegis of the Area Medical Officer.¹

Before the reorganization of local government some local authorities provided through the Medical Officers of Health some form of occupational health service for their staffs. Many authorities provided similar clinical facilities for other services like fire, police, and education. With the reorganization of local government, these services are no longer

¹See addendum on p. 109.

formally available and many local authorities are looking to the area health authorities to provide them on an agency basis. Though the National Health Service Reorganization Act 1973 places no duty on the Secretary of State to provide an occupational health service to local government, the National Health Service Working Party on Collaboration (Department of Health and Social Services, 1973) recommended that area health authorities should make one of their medical staff responsible for advising on staff health matters, and this was subsequently accepted by the Department of Health and Social Services, the arrangements to be made according to local circumstances. This designated medical officer of the area health authority could with advantage be the part-time adviser in occupational health to the health authority.

If this opportunity is grasped it could lead to the provision of comprehensive occupational health services for National Health Service staff by the area health authority and a developing occupational health service on an agency basis for local authority staff and the associated services like fire, police, and education. The fear is that argument about financial arrangements between the two sets of authorities will delay this development, and the opportunity of maintaining one of the traditional links between local government and preventive medicine will be lost. Already some local authorities have appointed or are considering appointing their own staff medical officers. It would be sad for two services which should be one to develop in parallel. This would help to perpetuate the isolation of occupational medicine and lose the opportunity of developing it.

Why should development of occupational health services stop at area health and local authority collaboration? Why should this agency service not gradually become available on payment to any industry in the area which needed it? This would, of course, eventually mean full-time occupational physicians at area level. These would have to be trained, but the need for and the training of doctors and nurses would be a gradual process developing together. The question will immediately be raised where the resources in man and woman power are to come from. Most of the resources are already there, being used in a haphazard fashion. Harte (1974) has pointed out that there has always been a form of health care in hospital, but this was unorganized, *ad hoc*, wasteful of time, and probably inefficient. Much money is being wasted on unnecessary routine medical examinations, radiographs and investigations by hospitals and local authorities. Properly channelled, these resources could be fashioned into comprehensive occupational health services. Can we attract the doctors and nurses of the necessary quality? I believe we can, once the

opportunities for comprehensive care of working communities are realized. That occupational medicine now stands beside all the other medical specialties in provision for higher specialist training also helps. The main stress would fall on those institutions which provide training for future occupational physicians and occupational health nurses. More full-time and especially part-time courses would be essential. The training should be provided on the same basis and terms as for any other specialist training for doctors and nurses in the National Health Service.

Having postulated a National Health Service based occupational health service providing agency services, why stop there? Why not coalesce the Employment Medical Advisory Service and the area health authority based occupational health services? Could there be a more convenient method of occupational health services becoming part of the National Health Service and of reaching by evolution the Porritt recommendations (Medical Services Review Committee, 1962) and the implications which flow from them which Rogan (1964) detailed; the National Health Service, the largest employer of labour in the country, providing occupational health services for its own one million staff and providing similar services for another nationwide large employer of labour, the local authorities, on an agency basis and then combining with the Employment Medical Advisory Service to provide services for those industries in the locality which need them. The Employment Medical Advisers would also bring to the area health authority based services the expertise in occupational medicine which for a time would be short. Together these merged services could provide the clinical, environmental, research, and administrative content of comprehensive occupational health services to those industries and organizations which were without and because of the nature of the work needed it. They could provide the type of service which has the essential ingredient of being capable of being an integrated part of each industry. A cadre of occupational physicians would be needed at the Department of Employment or the Commission on Health and Safety as expert advisers in occupational medicine to the Commission. The key to this evolution is the appointment of regional consultants in occupational medicine who believe in the clinical, environmental, and research content of occupational medicine. Of course there are administrative and organizational difficulties, but I submit, on nothing like the scale of the reorganization of the National Health Service or the formation of the Health and Safety Commission.

I believe that the influence for good of the occupational physician is like the influence that the family doctor of yesteryear had on the village community.

Being part of the community he subtly changed things without this being recognized. By answering the question 'What do you do?', I have tried to define what comprehensive occupational health services of different types can and should do to contribute to the health and dignity of man at work, the man himself, the group in which he works, and the organization made up of the groups. These comprehensive occupational health services should be available where there is a need, spreading as their value is realized. I believe that at last we can have the opportunity to bring the benefits of occupational medicine to all those workers who need them.

References

- Case, R. A. M. (1966). Tumours of the urinary tract as an occupational disease in several industries. *Annals of the Royal College of Surgeons of England*, **39**, 213-235.
- Department of Health and Social Security (1968). *The Care and the Health of Hospital Staff*. Report of the Joint Committee, Central and Scottish Health Services Councils. Tunbridge, R., Chairman. HMSO, London.
- (1972). *Rehabilitation*. Report of a Sub-Committee of the Standing Medical Advisory Committee. HMSO London.
- Department of Health and Social Services (1973). *Reorganization of the National Health Service: A Report from the Working Party on Collaboration between the National Health Service and Local Government on its activities from January-July 1973*.
- Harte, J. D. (1974). Royal Society of Health Congress. Papers for discussion, Occupational health for area health authority staff, p. 149.
- Horder, Lord (1956). In *Health in Industry, London Transport Executive*. Butterworths, London.
- Lee, W. R. (1973). An anatomy of occupational medicine. *British Journal of Industrial Medicine*, **30**, 111-117.
- Lowe, C. R. (1974). Occupational medicine and epidemiology. *Proceedings of the Royal Society of Medicine*, **67**, 643-646.
- Medical Commission on Accident Prevention (1971). *Medical Aspects of Fitness to Drive*. London.
- Medical Services Review Committee (1962). *A Review of the Medical Services in Great Britain*. Social Assay, London.
- Meiklejohn, A. (1959). Industrial health—meeting the challenge. *British Journal of Industrial Medicine*, **16**, 1-10.
- Norman, L. G. (1963). Advancing frontiers in industrial health. *British Journal of Industrial Medicine*, **20**, 73-81.
- Raffle, P. A. B. (1965). The occupational physician as community physician. *Proceedings of the Royal Society of Medicine*, **63**, 731-739.
- (1974). The disability rates of bus drivers. *British Journal of Industrial Medicine*, **31**, 152-158.
- Rogan, J. (1964). The future of industrial medicine in Great Britain. *British Journal of Industrial Medicine*, **21**, 251-258.
- Safety and Health at Work (1972). Report of the Committee, cmd. 5034. HMSO, London.
- Sayers, B. McA. (1973). Computer analysis of heart rate variability. *Ergonomics*, **16**, 17-33.
- Scott, T. S. (1967). Industrial medicine—an art or a science. *British Journal of Industrial Medicine*, **24**, 85-92.
- Taylor, P. J. (1968). Personal factors associated with sickness absence. *British Journal of Industrial Medicine*, **25**, 106-118.

Addendum

Since preparing this lecture I have been persuaded that there would be many advantages in the occupational health service relating to the area administrator (in his personnel function) rather than to the Area Medical Officer.

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