
This study by the Prophit scholar is a comprehensive, carefully analysed and clearly tabulated follow-up investigation of 1,200 cases of "minimal tuberculosis", found by two London mass radiography units in persons aged 15-44 years during the period 1946 to 1948.

Of the wealth of material and conclusions, only some can be mentioned here. The excellent summaries to each chapter will be of great help to readers but should not distract them from perusing the entire book and particularly the tables, which are most interesting.

Dr. Springett's report will distress that dwindling but vociferous section of doctors who still believe that early pulmonary tuberculosis causes well-marked clinical symptoms, or physical signs, which can be detected by inspection, percussion, and auscultation. Ninety-nine per cent. of his patients stated at first examination that they were in normal health; physical signs were found in 20% only. The report therefore confirms that timely recognition of minimal tuberculosis is a matter of radiology.

On the other hand, the various types of low density shadows do not permit prognostic conclusions to be drawn with any degree of accuracy or a clear-cut differentiation to be made into those lesions which are likely to remain or become quiescent and those which will progress.

The instability of minimal lesions, particularly in young persons, is clearly shown. Forty-four per cent. of the 1,200 patients showed either radiological progression or produced tubercle bacilli (or both) during the five years' follow-up and the development of larger lesions was, in many cases, associated with lack of regular supervision. Dr. Springett therefore stresses the need for frequent and regular supervision, particularly during the first 18 months after diagnosis. Indeed, his thesis, that "no person with a lesion that is not entirely calcified can properly be discharged from supervision as the result of a single examination", seems to be the most important conclusion of the study and could be usefully attached to the viewing screens of chest physicians and doctors in charge of mass radiography.

From the point of view of prevention, it is significant that in not less than 30% of the examined group tubercle bacilli were found on at least one occasion. This high proportion of positive results in minimal lesions was due mostly to the systematic use of laryngeal swab cultures. In clinics and field investigations, there may still be a much wider scope for the use of this technically easy method than is practised at present.

By an accident of timing, the survey refers to the period immediately before antibacterial drugs became generally available. The indications, as Dr. Springett points out, for active medical and surgical treatment have since become wider. The proportion of patients in whom an artificial pneumothorax would be attempted would today be smaller than in his series.

Not the least important part of the Prophit scholar's study is the discussion of the variability of assessment of radiographs by different readers or even by one reader on different occasions. It should be noted that the "observer error", as in Springett's series, also applies to full-sized films and not, as is sometimes erroneously believed, to miniature films only. One hopes that the formidable practical difficulties, which at present prevent the introduction of dual readings into routine mass radiography, will be overcome.

Dr. Springett does not mention that his investigations have already resulted in a long overdue change of classification of tuberculous lesions found by mass radiography. One hopes that the interpretation of the large amount of material of tuberculous lesions found by mass radiography and now more readily available from the returns of the Registrar-General will be entrusted to a not less competent, incisive, and cautious mind than his.

This book, a very worthy successor to the first Prophit report, must be of great interest, not only to chest physicians and epidemiologists, but also to doctors in industry, closely connected with workers who are under observation for minimal tuberculosis at clinics or who have returned, after treatment, to factories and offices.

The Prophit scholar could hardly have done better than to choose the work of Dr. Eley, one of the pioneers of mass radiography in this country, as the basis of his analysis.

E. Posner


The late Lord Horder, who was consulting Medical Adviser to London Transport, instituted a medical service which must be unique in the history of British industry. The present service partly arose from a demand by Lord Ashfield when he was Chairman of the old London Passenger Transport Board for more statistics about employees. Consequently an excellent system of collection, analysis, and interpretation of sickness absence statistics was started alongside the more formal medical
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system so that the Board’s doctors and others have been able to draw increasingly valuable information from the whole group as well as from the individual.

The statistics were realized to be woefully incomplete before the war, as they were in nearly every other industry or concern. When allegations of high incidences of disease, particularly peptic ulcer in drivers, were levelled at it, the Board had no answer to give and no conception as to whether they were right or not. In 1937 Professor Bradford Hill’s report on sickness absence using the incomplete statistics available served perhaps best of all to highlight the need to have better statistics in a large and expanding modern concern with men of exceptional foresight at the top. With the development of the medical services after the war, and the Central Record of Staff Statistics which was formed, it was easy to include a system of sickness absence recording in this organization. No one would claim, however, that it was easy to institute such an efficient system as London Transport has today. Medical research workers are indebted to the designers of the scheme and many individual doctors and firms have received generous help and advice for designing schemes to suit their own purposes.

The scheme was designed with the close cooperation of the Staff administration officers, Mr. Spratling and Mr. Lloyd, with Dr. Norman, the Chief Medical Officer, and Dr. Raffle, who has been principally concerned in the detail of the scheme. A number of questions are clearly answered by the authors in the introductory part of the book. Perhaps the most burning question of all (despite published work by Raffle on this question) is whether the diagnoses given on the medical certificates are sufficiently accurate to be used. The authors confirm that, in their experience, they are sufficiently accurate. They state “we have no doubt that these medical certificates can safely be used as the basis of analysis of sickness absence into broad diagnostic groups”. The operative word here is “broad” and the 20 diagnostic groups they use are based on the “International Statistical Classification of Diseases, Injuries, and Causes of Death” (1948). The diagnoses are immediately transferable to other groupings for comparison with industries using different groups since they are on the International Classification. Using 20 groups they find that 80% of the diagnoses of the general practitioners coincide with diagnoses made by the medical officers on return to work.

Given that these statistics, including the diagnoses, are accurate enough to be of use, are they of sufficient value to justify the expense and trouble of collection? The authors claim that they are already of considerable service to London Transport and others. They show clearly the influence of the working environment on health, they have been used in medical research, and they are detailed enough to show up more sickness in particular occupations and from particular diseases. By showing trends they are useful in preventive medicine; for example, a man who may not be found to be fully fit in some degree after a pre-employment medical examination, can perhaps be placed in a department free from the conditions likely to aggravate his disability.

Similarly alternative suggestions for employment for those who have become unhealthy in the service of the Authority may be offered, saving a man from compulsory retirement.

With regard to expense the authors state that no extra clerks have been taken on peripherally and these statistics have been collected with little expense of money or effort. This can be confirmed by those (such as the reviewer) who have borrowed this scheme for their own purpose to use elsewhere. It can be said that the cost of the scheme is minimal in London Transport because the machinery for the collection of all types of statistics was already there, and the effort was expended by the authors in the planning stage. The method of collection at the periphery is virtually fool-proof as checks have shown.

In the preliminary chapters the rules are made, each decision being clearly explained. The reasons for taking, for example, the seven-day week against the five working days are that various groups work five, five and a half, or six days a week with varying rest days, and the best comparability can be obtained in this way. From the medical point of view it might also be argued that the seven-day against the five-day week is more realistic as illnesses do not end on Friday night and re-start on Monday morning. Following these rules, the statistical indices and the coding of diagnoses are the tables and graphs.

The tables show the following information in five-year age groups for each occupational group over three or more years:—

(a) The age-distribution of those exposed to risk;
(b) for spells of one, two, or three days’ duration, the number of days of sickness absence and the average annual duration, the number of spells beginning and the annual inception rate (spells); (c) for spells of four or more days the same information as in (b) together with the average length of spell; (d) statistics available in (c) for the 20 diagnostic groups. For central bus drivers additional information is available.

Administrative factors may affect sickness absence directly or indirectly, and these have not been forgotten. At the head of each occupational group the question of pre-employment medical examinations, medical certificates, resumption of duties after an absence, examination of eyesight, transfer to alternative employment, employment after age 65, hours of work, and payments during sickness are considered. Other concerns comparing their statistics with this large experience would be well advised to bear these administrative matters in mind.

The authors are to be congratulated on producing a book which will assist concerns to decide whether to keep statistics of sickness absence or not, how to undertake the collection and analysis of them if they decide to do so, and clear tables which make a base line of comparison for them. With its necessarily limited numbers and occupations this is only the fringe of the subject, but, here, for the first time, are published tables of sufficient numbers at risk for sufficiently long to enable research workers to use them with confidence; never before has such information been collected and analysed and such work is directly in line of tradition of William Farr and his mortality data. There may also
be a crumb of comfort to our general practitioner colleagues in the London area who gave the basic information on which the study depends that their certificate writing has not been in vain; and which the "genius of English healers" has already "put to good account".

J. P. W. HUGHES


Occupational health has so far made but slow progress in the academic sector. Most medical students learn little of the subject. Yet in field, factory, dockyard, mine, transport, and building construction the doctor also serves. All over the world this service is expanding. In Great Britain, the membership of the Association of Industrial Medical Officers has grown in 21 years from 35 to over 800. The Association has chosen the occasion of its 21st anniversary to issue a booklet of 70 pages setting out the functions and aims of an occupational health service. The booklet also describes the present extent of existing services and includes short descriptions of many of the societies and associations concerned with occupational health. Presumably the intention is to clarify, not to plan, and truly clarification is needed. The examples of existing services described, together with the appendix of associated organizations, provide a substantially complete picture. In addition there are useful tables of comparative costs of medical services and a reasonably full bibliography of occupational health publications. The main value of the booklet lies in these factual sections. All the threads in the tangle are here collected neatly. Many hours will be saved for any newly appointed industrial medical officer, social worker, industrial or medical administrator, who may wish to study or to make use of these services. The booklet would have been improved by a summary of the existing law on the subject (that relating to rehabilitation is given), and by at least a cursory glance at the more significant variations in practice in other countries.

On the matter of functions and aims the book is less satisfactory. In the first five pages some 20 or 30 functions are dealt with in a few lines each. Elsewhere, the functions of the National Coal Board's medical service are well summarized under seven heads, and those of the British Overseas Airways Corporation under six heads. Clearly it is possible to make do with a single sentence: "The function of an occupational health service is to foster the health and safety of people at work." Enlarging on this, there is hardly a function of medicine that cannot be found a place in appropriate circumstances—from psychiatry to sanitation, from vital statistics to Civil Defence, from cancer research to control of infectious disease. There could even be a place for paediatrics in factory creches. Where then is the value of a functional breakdown? It should serve to explain the details of the service and to influence those who may doubt its value. Moreover, it should guide the inexperienced on priorities and warn them of pitfalls. Unfortunately, insufficient guidance is given here. A carefully considered and detailed statement on some 10 or a dozen of the main activities consistently associated with preserving health at work would have gone a long way to help those who seek guidance. It is of doubtful value to mention continued observation of young persons, advice on health and employment of older workers, advice on health of senior staff, encouragement of managers to advise staff to obtain medical advice, and accessibility of employees of medical advice as five separate functions (Page 4).

Only rehabilitation is dealt with at any length. The short chapter on this subject begins with the statement: "It has been estimated that there are three million people actually in need of rehabilitation; if this is correct, much remains to be done." Much indeed, but is it correct? This is the type of assertion that the Association's members between them should have confirmed or refuted. One function which should have been discussed in detail is the vexed question of treatment and diagnostic investigation. At this point much is done that should not be done and much left undone that is necessary. Surely this needs a thorough airing.

Also it is not made clear who exactly is to be served by the occupational health service. Presumably "industrial organization" includes all the personnel in factories, mines, transport undertakings, and construction works, but who else? Will the farmer, the nurseryman, and the orchardist be included? Is an occupational health service to function for professional men, shop assistants, and local government personnel? The objective should not fall short of all who work, even the housewife in some aspects of her labour.

Besides those already referred to, there are short chapters of two or three pages each on the introduction of an occupational health service, the constitution and functions of an occupational health team, and occupational health nursing services. The subject matter is not clearly demarcated, as indicated by the titles, and the principal characters of doctor and nurse wander somewhat indiscriminately across chapter boundaries. The fine intention of this booklet is not fully realized.

T. O. GARLAND


The manufacture of chromates and bichromates used in electroplating, anodizing, and surface treatment of metals, tanning and colour making is a small but essential part of the heavy chemical industry. In the United States as in this country there are some six factories where manufacture takes place. On the user's side the skin hazards of chrome, ulceration, dermatitis, and perforation of the nasal septum, have been well known, particularly in the chrome-plating industry, and the chrome producers until recently were thought merely to share these hazards. But since Lehmann in 1932 described cases of lung cancer in chromate workers suspicion has been increasing that a real risk of this disease exists on the manufacturing side. It is noteworthy that no malignancy has been reported in any of the skin or nasal cases.