

Occupational Medicine

Civil Service

P J CONSTABLE

After nearly two decades in general practice and with the exuberant teaching of Donald Hunter impressed firmly on my subconscious it was, perhaps, no surprise that I should want to see at first hand the problems of people at work. My partners were, as always, generous and understanding—"merely a mid-life crisis" or "an unlikely civil servant" were phrases meant to comfort my wife. My children were, and still are, bewitched. On joining the Civil Service I noticed a change. "What exactly do you do, Dad?" By the time I have launched into a tortuous explanation of my role they have disappeared.

The Civil Service Medical Advisory Service provides advice on occupational health to all Civil Service departments except industrial and research and development establishments of the Ministry of Defence that were formerly the responsibility of the Ministry of Supply. We also provide a similar service to a number of other government bodies—for example, the Agricultural Research Council, Forestry Commission, and Crown Agents.

The unit came into being in 1944 as the Treasury Medical Service and was later grafted on to the existing Post Office Medical Service. When the post office became independent recently each medical service developed according to the different needs of the population it serves. But to many people, including doctors and civil servants, we are still the Treasury Medical Service.

There are 14 doctors under the medical adviser. Headquarters are in London, and we have divisional offices in Edinburgh, Manchester, and Cardiff. There is a small occupational health nursing service, and we can call on the special skills of departmental welfare officers to help with social problems or to liaise with family practitioners and hospital staff regarding rehabilitation at work. Safety officers monitor the environment in their own departments, but when more detailed investigations are required—such as an occupational hygiene survey—special skills are sought from within the Civil Service or from commercial or academic bodies.

Population at risk

The popular image of a Civil Service is that of a sedentary office worker in a low risk job cocooned in the mysteries of policy making, administration, or clerical work. Although there are many staff so employed the range of occupations in the Civil Service is varied and thus of much interest to the occupational physician. The Civil Service is the largest employer of scientists in the United Kingdom. Consequently, the health and safety of the laboratory worker are prominent in our work. But in the Civil Service there are people in many specialised occupations, such as divers, air traffic controllers, forestry workers, printers, veterinarians, geologists, engineers, and policemen—the list is long and a variety of queries may arise. Moreover, civil servants come in all shapes and sizes and standards of health may range from the Olympic athlete to the severely physically handicapped person who requires special aids and supervision to work full time.

Nature of work

Some of my friends think that my work must be largely administrative. But mostly it is leg work with a large clinical content. Although the main policy and administrative centres are in London, the Civil Service is scattered throughout the country. I confess to wondering occasionally whether some manual jobs need to be deliberately left to people who are among the most interesting problems in the least accessible sites. A particularly attractive feature of occupational medicine is that

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not only has the patient to be examined but also his place of work. As in home visiting in family practice this sometimes gives a simple answer to what had seemed a complex problem. And, like family practice, there may be unexpected findings—eels living happily in laboratory drains in the middle of Whitehall or a stock of culicid and biting midges in a Ministry of Defence store, apparently for contemporary use.

The environmental problems that arise may affect any of the Civil Service departments or be peculiar to the work of one unit. Formaldehyde sensitivity arising from unsatisfactory cavity wall insulation or concern over the carcinogenic risks of a photocopier toner may affect any department. Other problems are more specific to a particular occupational group. For instance, the surveillance of marine inspectors who have been exposed to high concentrations of crocidolite in their careers or the supervision of veterinarians and milk samplers in the brucellosis eradication scheme. Although we generally supervise over-industrial work, some areas in the Civil Service are manufacturing units such as the Royal Mint, the Ordnance Survey, much of the work of Her Majesty's Stationery Office, and the reproductive services of the national museums.

The clinical content of our work varies. If there is the possibility of a work related illness a formal clinical assessment must be made. Personnel managers sometimes need guidance on an individual's fitness to work in a particular job, perhaps after a prolonged illness or before taking on a particularly demanding task. Inefficient health may occasionally contribute to the decline in a person's efficiency and we may be asked to estimate the likelihood of recovery.

There are also routine medical examinations, much beloved by individuals and trade unions, who have a touching but unjustified faith in their value as predictors of disease. Most are for statutory purposes for divers or heavy goods vehicle licence holders, for instance. Other examinations are based on less sure ground, such as for people going on a tour of duty overseas or for those reaching the most senior grades in the Civil Service. Every few years the United Kingdom hosts the heads of state or senior ministers of the European Economic Community and the Commonwealth, when our unit provides the primary medical and nursing cover for emergencies that might occur among the large staff of such meetings. These meetings may be held in fine country houses, the medical staff invariably being placed firmly below stairs. We once were incarcerated in a wine cellar for two days—sadly empty of the contents for which it was designed.

Interface with general practitioners

There is a lot of paper work, consisting mainly of referrals from personnel officers about staff who are thought to have health problems. For example, officers with lengthy spells of sickness absence and on whom advice is needed on a likely date of return to work and guidance on rehabilitation; or someone whose health has broken down and recovery seems unlikely, when the possibility of premature retirement must be considered and precise information on the patient's health is required to give a prognosis.

Because the Civil Service has 600,000 employees it is clearly impossible for us to examine all the problems that are referred. Instead we rely on the services of general practitioners. Frequently, with consent, we seek information from the patient's family doctor who can usually give an informed and balanced comment on the circumstances. When such a report might strain the all important doctor-patient relationship an independent assessment is sought from our local medical officer. Local medical officers are experienced family doctors who have an interest in occupational medicine and some knowledge of employment in the nearby Civil Service establishments. With the information collected from these sources we can usually advise the employing department. A valuable relationship is often established with the general practitioner. Exchanging informa-

tion on difficulties at work, domestic problems, or progress of treatment can help us both in our attempts to rehabilitate the patient at work.

When inquiring about a patient's health we like to obtain his informed consent, pointing out that we are seeking information from his doctor which will be kept confidential and that we may be used as a basis for advice to management on his fitness for work. Patient confidentiality is an important and sensitive issue, and when seeking a report from general practitioners we are careful to ensure that neither the patient's name nor the information we receive is kept in confidential medical records that are available only to staff of the medical advisory service and are separate from other personnel records. Whereas the management needs to know when an employee suffers from a condition that inadvertently might be a hazard to himself or colleagues at work, an informed comment, expressed in general terms, is all that is usually required to help them.

Overseas civil service

Many civil servants work overseas, and this expatriate group, together with their families, present particular problems for both the occupational physician and the general practitioner. The standard of fitness for service overseas needs to be higher than at home. We exert much effort in careful selection, health screening, immunisation programmes, and health education of such people, who are exposed not only to different health hazards from their colleagues at home but also to the additional stresses of separation from their family and domestic upheaval. Despite all these efforts, they still fall ill, often where health services are less developed than at home and thus it may be necessary to evacuate the patient to the United Kingdom for assessment and treatment. Surprisingly, the most difficult medical problems faced by people working abroad are not the tropical illness of malaria, amoebiasis, and parasitic infections, common though they are, but the more familiar ones of ischaemic heart disease, breast cancer, and exposure to alcohol. When medical evacuation occurs families may feel the absence of their family doctor; their National Health Service records have often been irrevocably swallowed by the recall system and their home is usually left during their absence overseas, so preventing return to familiar surroundings. An important part of our work is to try to fill this gap in medical care, when necessary to arrange investigation and treatment, and to give support until the patient has returned to the care of his general practitioner.

Postgraduate training

Apart from following our own in-service postgraduate training in, for example, epidemiology, occupational medicine, and tropical medicine, we also have a teaching commitment. Many occupational physicians have been general practitioners. This is invaluable, because these areas of medical care are complementary and close cooperation between family practice and occupational health services may be mutually advantageous and improve the quality of patient care. Despite the large number of general practitioners who have a part time commitment to occupational health, the subject scarcely figures in the programmes of most postgraduate centres. In an attempt to bridge this gap our service contributes in a small way to postgraduate education by giving short courses on occupational health of common interest to both general practitioners and occupational physicians.

The separation that has occurred between occupational medicine and general practice is artificial and inappropriate. The dispersal of the Civil Service from London gives us an opportunity to develop links with family doctors who are interested in the working environment of their patients. It remains to be seen whether general practitioners can also participate in other areas of occupational medicine.

Practice Research

Whooping cough: what proportion of cases is notified in an epidemic?

DOUGLAS JENKINSON

The assessment of changes in the morbidity and mortality from whooping cough over recent decades and the evaluation of the risks versus the benefits of immunisation depend on accurate data on incidence. The principal source of these data is statutory notifications of the disease, but these data may not accurately reflect the true incidence. One possible source of inaccuracy is a change in the notification practice of doctors when the incidence of the disease is high or at a time of public and professional debate about it. This study attempted to measure the notification rate of whooping cough in a large health authority at a time of high incidence and of raised public and professional concern about the disease.

TABLE 1—Number of notified cases of whooping cough in Nottingham Health Authority between 1 August and 11 November 1982 by date of onset

	Week of the year											
	August	September	October									
	31	32	33	34	35	36	37	38	39	40	41	42
No. of cases	14	18	32	20	27	35	26	23	22	9	25	21

Methods

A letter with a stamped preaddressed envelope was sent to every general practitioner on the family practitioner committee list (correct at mid-September 1982) who practised in the Nottingham Health Authority, timed to arrive in the first few days of October 1982. Each doctor was asked to estimate the number of patients living in the health authority boundary in whom he or she had made the diagnosis of whooping cough during the month of September 1982 and to write the number on the letter and return it anonymously. Doctors were asked not to change their normal notification practice as a result of the inquiry. There were obtained every case of whooping cough notified between 1 August and 12 November 1982 to the health departments of the four borough and city councils whose boundaries form the limits of the Nottingham Health Authority.

Results

Of 292 general practitioners who were asked for information, 244 replied (83.6%). Three doctors gave a number range; the average number was used. Two doctors qualified their estimate with "possible cases were discounted." The total estimated number of whooping cough diagnoses made during September 1982 was 518 (table 1). The population of the Nottingham Health Authority at the 1981 census was 566,800.

Cases of whooping cough notified in the Nottingham Health Authority were arranged chronologically according to the date of

TABLE 2—Number of cases of whooping cough diagnosed by doctors in the Nottingham Health Authority during September 1982

No. of cases reported	0	1	2	3	4	5	6	7	8	10	12	24
No. of doctors	109	21	31	30	15	4	13	3	6	2	1	1

Keywords: Health Centre, Bunny Lane, general practice, Nottingham NG15 5RQ.
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onset of the disease stated on the form (table 1). To compare the estimated number with the notified number it was necessary to compensate for the interval between the date of onset as stated on the notification form and the date of diagnosis, which was the criterion for inclusion in the estimate. Since there is no clear point in the evolution of the disease that can be defined as onset the date stated on the form is probably a fairly arbitrary one. It may, however, be assumed that the date of diagnosis lies between the date of onset and the date of notification. To determine the interval between onset and notification all certificates (52 from one health department) were examined. The mean interval was 10.2 days (median 8, range 0-63), information missing from 9.

The number of notifications for September would be 120 if the interval between onset and diagnosis was assumed to be zero days. If the interval was 10 days the total would be 117. For this calculation the mid-point of five days was taken. The applicable number is then 116. There were three forms that did not state the date of onset but according to the date of notification probably related to the period in question. These were included. Twelve notifications from hospital were also included.

Account has also been taken of non-responders (16.4%). They may have had no cases and mistakenly thought that there was no need to return the form. It is more likely that they had the same number of cases as responders, in which case 518 cases represents only 83.6%, and the total equivalent estimate for all 16 220. The proportion notified is therefore 116/620 or 18.7%.

Discussion

It is the statutory duty of doctors to notify cases of whooping cough, but it is known that many cases are unnotified. Workers at different times and places, using various methods, have suggested notification rates that are remarkably consistent: Stocks in 1949, 22%; Haward in Hull in 1971-2, 15-22%; and Bryon in Nottingham in 1979, 22% (personal communication).

Morbidity and mortality statistics for whooping cough usually use notification figures as the denominator of risk, but this may not be appropriate if the notification rate is not constant. Some data is cast on the reliability of the notification rates by the fact that consultation rates for whooping cough notified to the Royal College of General Practitioners Research Unit in the 1978-9 and 1981-2 outbreaks rose proportionally less than notifications, whereas in the smaller outbreaks of 1970-1 and 1974-5 the rise in both was similar.¹

This study was undertaken at a time when notifications

nationally were the highest since 1957—that is, about six per 100,000 population a week—and the month of September chosen because it was the peak of the epidemic. The pattern of notifications in Nottingham was closely similar to the national one. The peak occurred at the same time and the number over the month was about four and a half per 100,000 population a week. During this period there was also much public discussion about whooping cough in the press and on radio and television.

There is some uncertainty about the 16% of doctors who did not respond. The questionnaire emphasises the need to return zero counts so it is probable that the number of cases diagnosed was similar to responders. Trainee general practitioners, of whom there may have been a dozen, were not included and patients living in the district but registered with a doctor whose address was outside it could not be accounted for. Both sources of error would be small and would have the effect of underestimating the number of cases diagnosed. Cases notified more than six weeks after diagnosis could not be accounted for either, but the number is probably very small.

If a high incidence of whooping cough and more public discussion of it cause an increase in the notification rate by doctors then the timing of this study was most appropriate to detect it. The rate of 18.7% calculated from this study, which corresponds closely to previous estimates, suggests that the notification rate does not change materially at such times. The notification rate therefore remains a reliable measure of the incidence of the disease.

Conclusions

Two hundred and ninety two general practitioners practising in the Nottingham Health Authority were asked to estimate

the number of cases of whooping cough that they had diagnosed during September 1982. Two hundred and forty four (83.6%) of them reported 518 cases; 116 cases were notified during the same period. If it is assumed that non-responders diagnosed as many cases as responders then about 19% are notified. This study was undertaken at the peak of the recent epidemic yet the results show a similar level of undernotification as previous studies during non-epidemic times, which suggests that the notification rate is still an accurate measure of the incidence of this disease.

I am indebted to Dr K. Mason and the health departments officers of Broxtowe, Gedling, Rushcliffe, and Nottingham City Councils for providing details of notified diseases, to Jacqueline D. Pepper for analysing data; to all the general practitioners who responded to the inquiry so splendidly; and to Abbott Laboratories Ltd for meeting postal expenses.

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Accepted 7 June 1983

Diary of Urban Marks: 1880-1949

One afternoon a man of 73 was brought in. He had a large cancer of the tongue and it was obviously futile to attempt to give either chloroform or ether by the usual method. Ether was at that time given from a Glycer Inhaler, which consisted of a mouthpiece which covered the whole of the face. Attached to this facepiece was a bag into which the patient drew ether as he breathed. The patient was set straight on to the operation table and the surgeons debated what to do and how to do it. I looked on. After some discussion Bates turned to me and said in a sarcastic manner "Now Dr Marks, you fancy yourself at anaesthetics, what do you suggest here?" I asked him first what he wanted to operate on such a case that was obviously dying from suffocation and starvation. What good would it do? He told me that that was his business. I said that I would give an anaesthetic, but that the man died under it he would have to back me up at the inquest or I would tell the coroner a few things which would surprise him. Bates looked very sheepish while the others could scarcely conceal their mirth. All this was taking place while the patient could hear every word. I said that I would give chloroform and oxygen together. None of them had ever heard of this. They stood round while I made my preparations. I fixed up a bottle containing chloroform with a tube leading from it. To this was attached a pump like one attached to a siphon bottle. Then we found there was no oxygen in the place. Some was procured and we were all ready. I told Bates to perform a tracheotomy and he asked why. I told him for Heaven's sake to get on with the job and not to argue. Like a lamb he did so and then through the tracheotomy tube put the ether and oxygen together. Bates and the other with chloroform. So I got the man under and then told Bates to plug the back of the throat with sponges. He obeyed and some kind of operation was performed by cutting up the chest of the tongue as he bled. Fortunately the patient survived the operation while on the operating table.

Afterwards, Bates never said a word but on the following occasion asked me to give chloroform and oxygen, or suffice without the tracheotomy. Apparently he wanted the mixture to be given in every

case, which of course was absurd but quite natural in coming from Bates. I told him I would do no such thing but that if he were now convinced that I was an expert on anaesthetics I would proceed to administer them if he would not interfere. He agreed to leave me alone and all went well until one Sunday afternoon when Lushington was about to operate on a woman who had a cancer of the lower part of the gut. This was a case for chloroform and I administered when I was the patient unconscious so that she could be sent into the operating room. She was a small woman and very wasted. The porter brought her into the theatre on a wheeled stretcher and lifted her into his arms from the stretcher to the table. But he slipped in so doing and the patient came down with a bang on to the table. She ceased to breathe. I tried artificial respiration while Bates danced round the room in grief, shouting "I told you so. I told you so." I yelled to him to stop making a loss of himself if he possible and to cut down over the heart. He had to confess that he did not know what to do or what the object of this was. I did not waste time in explanation but took a scalpel and slit under the ribs and plunged my hand into the abdomen. I massaged the heart from that position but to no avail. The patient did not come round and she was removed to the mortuary. Lushington, whose case it was, said that I had better inform the coroner. I asked him whether he would be at the inquest and he replied that it was not necessary since that he had not operated. With a glint in my eye I informed him that she had better be present or I might say something that he would not like and I should be sorry to offend him. He said that I could say what I liked but the next morning he was present at the proceedings and later expressed the opinion that the anaesthetic had been properly given. I narrated to the coroner my attempt to massage the heart and the same evening the local paper had large headlines: It was the first time that massage of the heart had been tried in Worcester, although I had done two in Swansea, one of which was successful. Modesty forbids me to quote what the Worcester papers said about the "brilliant young house physician".