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## Editorial

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### Lead astray?

The recent report<sup>1</sup> of the Parliamentary Commissioner for Administration, the parliamentary Ombudsman, prompts consideration of matters which may be important for the whole of occupational medicine. They extend far beyond just the reorganisation of the Health and Safety Executive (HSE) mentioned in that report.

Problems over the medical aspects of health and safety legislation are not new. The Factories Act of 1833 required that children who were employed in factories should have a certificate from a physician or surgeon that they were of the ordinary strength and appearance of a child aged 9 years.<sup>2</sup> Within four years, the Manchester Short-time Committee (a workers' pressure group) was objecting to "super-intendents of factories (equivalent, then, to our present day factory inspectors) who happen to be medical practitioners deriving extra emolument by entering into private agreements and compacts with particular mill owners to act as certifying and visiting surgeons."<sup>3</sup>

Leonard Horner (perhaps the *primus inter pares* of the early Inspectors of Factories) replied to them in a forthright letter. He wrote that he had only one superintendent who was also a medical man, Mr Baker, and that he had written to him, "I was not aware that you granted certificates of age. As it may give rise to suspicion of partiality . . . I must beg that you grant no more."<sup>4</sup> That episode passed, Robert Baker went on to become the equivalent of Chief Inspector of Factories and, in 1868, the operatives in several northern counties petitioned the Prime Minister for royal favour on Robert Baker. It came, as a CB, in 1878.<sup>5</sup>

In October 1990, following a complaint from a Member of Parliament, the parliamentary Ombudsman reported on a failure, by the Health and Safety Executive, to correct inadequate health checks at a factory where workers were exposed to lead.

The report started with a summary of the various legislative requirements, including the Control of Lead at Work Regulations 1980, which is supplemented by an approved Code of Practice. They require an employer to ensure that an employee, who has significant exposure to lead, is under medical surveillance, and an employee to present himself, when required by the employer, for medical examination or biological tests. Medical surveillance is the responsibility of either a doctor employed by the

HSE, that is an Employment Medical Adviser (EMA), or an "appointed doctor" (often a general practitioner) — the latter being appointed for the purpose by the HSE.<sup>6</sup> The Code of Practice requires an initial medical assessment within 14 days of a person's beginning, for the first time, work with significant exposure to lead. Thereafter, that person's blood lead measurement is to be assessed once every three months.<sup>7</sup> When a pattern of blood lead concentration has been established, the intervals between measurements may vary inversely (in months) with the blood lead concentration (in  $\mu\text{g}/\text{dl}$ ).

The Ombudsman reported that between 1973 and 1978 the HSE had served three Improvement Notices and two Prohibition Notices on the company concerned where 10 cases of apparent lead poisoning were recorded between 1971 and 1976. He noted also that in August 1979 a local medical practitioner, recommended by the factory manager, was made the appointed doctor for the factory.

In his findings, the Ombudsman was critical of that appointed doctor's failure to comply over a period with the statutory requirements for routine blood lead tests and especially that he failed to keep "Mr X", the subject of the inquiry, "continuously under certification" during a period when his blood lead concentration was above 80  $\mu\text{g}/\text{dl}$ . Furthermore, he was unable to establish those periods when Mr X was suspended by his employer from working with lead, commenting, "This confused situation arose essentially because of the inadequate certification and suspension procedures at the factory."

He went on to examine the results of tests on five other employees who worked at the factory during the period 1981 to 1985 and found a similar pattern in each case. "[There were] blood lead levels of 80 and above for the men and in excess of 40 for the women of child-bearing capacity; and [there were] extensive periods, in some cases lasting well over a year, when no certificates of unfitness are recorded as having been issued; and on those few occasions when certificates had been issued, there is often no record of when the employees were stated to be fit to return to work."

His conclusions are unequivocal: "HSE were indecisive in exercising their responsibility for monitoring the appointed doctor's performance and slow to take corrective action to have his appointment revoked." He went on to quote the Director General's response:

“that, although difficulties still remain, steps had been taken to strengthen the appointment system [that is, the selection of appointed doctors], including requiring Senior Employment Medical Advisers to be more critical of the qualities of doctors seeking appointment and in reviewing them; [to introduce] training seminars aimed primarily at doctors with limited industrial experience, [to use] fixed period appointments of between one and five years, and [to provide] up-dated and consolidated advice to appointed doctors in a guidance booklet which would incorporate lessons learned from Mr X’s case.”

Those changes were further emphasised in a written answer, by the Secretary of State for Employment, to a parliamentary question.<sup>8</sup>

“The Health and Safety Executive’s field organisation has been recently substantially changed as the result of internal efficiency reviews. This change, coupled with improvements to the administration of medical surveillance procedures introduced by HSE following its own internal investigation have been acknowledged by the Parliamentary Commissioner for Administration.”

Turning, now, to the future, two further thoughts are prompted by this episode.

(1) The medical surveillance of persons exposed to substances hazardous to health long ago passed the stage when any qualified medical practitioner could go into the factory simply to exercise his or her clinical skills. This seems to be acknowledged in the Director General’s response about providing training seminars and a guidance booklet. Will the appointed doctors be trained only about the hazards in the factory to which they have been appointed or will they be given a wider background in occupational medicine?

More seriously, the Director General’s response fails to distinguish between teaching and learning. It describes simply *teaching* methods. Who is to undertake the task of ensuring that the appointed doctors have *learned* the necessary expertise? Will it be the HSE (a government department setting standards of post-graduate medical attainment)? Or is this a task for the Faculty of Occupational Medicine, perhaps in consultation with the HSE? Is the Faculty’s present Certificate a real measure of achievement or simply little more than a certificate of attendance? Perhaps the Director General’s proposal for fixed period appointments for appointed doctors implies some system of reappraisal.

(2) We should also reconsider the role of doctors in the surveillance of persons exposed to lead, and maybe to some other hazards as well. It is instructive to see, through the historical perspective, how medical surveillance of lead workers has developed

over the last 100 years.

Section 29 of the 1895 Factories Act<sup>9</sup> introduced, for the first time, the notification, by the medical practitioner attending, of cases of poisoning by lead (and other substances).

In 1902 Sir Thomas Oliver, at a meeting of the British Medical Association, supported Thomas Legge’s proposal for medical surveillance of persons at work.<sup>10</sup>

Both these moves, the diagnosis of clinical disease and the recognition of incipient disease, required the exercise of diagnostic clinical skill and judgement and doctors were properly brought in for that purpose. In the second half of this century, however, surveillance has come to depend less on clinical skills and more on biochemical measurements:

up to July 1976 the upper limit of blood lead was set at 120  $\mu\text{g}/\text{dl}$ ;

from 1976 to 1981 it was reduced to 100  $\mu\text{g}/\text{dl}$ ;

from 1981 to 1985 it was reduced further to 80  $\mu\text{g}/\text{dl}$  for male workers.

Since 1986 it has been set at 70  $\mu\text{g}/\text{dl}$  for male workers.

It could be argued, and with some justification, that, although the blood lead concentrations cited above provided a measure of absorption rather than evidence of disease they were, nevertheless, established at those concentrations so as to prevent incipient classical lead poisoning. In other words, they were at about the concentrations where clinical evidence of disease might be sought and for that reason it was reasonable to continue the involvement of doctors in the process.

More recently, however, the emphasis has shifted. Firstly, the blood lead concentration for women of reproductive capacity is now set at 40  $\mu\text{g}/\text{dl}$ , well below the value at which any immediate clinical effects of the lead might be expected. Secondly, there is increasing evidence that neuropsychological effects are demonstrable in groups of workers<sup>11-14</sup> and the evidence for reducing the acceptable blood concentration to lower figures has recently been reviewed in a leading article in the British Medical Journal.<sup>15</sup>

Clearly, we are moving out of the domain where clinical skills are required and we should, therefore, question the future role of the doctor. Administrative action to protect the health of the worker will be based on a figure which is derived from epidemiological studies and which is unrelated to the current clinical state of the worker. Should the doctor be involved simply because the measurements of personal exposure are made on a body fluid? It is claimed, we believe rightly, that occupational medicine is a clinical discipline. Is it not, then, a corollary that, when the levels at which surveillance is exercised move out of the clinical range, occupational physicians should be prepared to consider relinquishing their role in that surveillance?

Let us consider other fields. When administrative action is required on the measurement (*of ethanol concentration*) taken on another body fluid (*exhaled air*) collected by a non-medical person (*a policeman in uniform*) doctors are generally no longer involved. Again, when the measurements of personal exposure can be made outside the body, as with radiation protection, surveillance has moved from the doctor to the health physicist, the doctor having a role in examining those people who might have received a larger dose and where his clinical skills might come in useful. Are we moving in that direction in the surveillance of lead workers and, maybe, of workers exposed to other hazardous materials?

Those considerations impinge, too, on the Faculty of Occupational Medicine's Guidance on Ethics for Occupational Physicians in which the confidential handling of the results of biological monitoring is considered.<sup>16</sup> The Faculty's recommendations are doubtless derived from the usual medical practice of regarding as confidential the results of investigations carried out on a patient. But are measurements of the quantity of a material that has been absorbed, at concentrations well below those at which clinical effects are to be expected ("biological tests" in the words of the approved Code of Practice), to be regarded in the same way as biological monitoring (as considered in the Faculty of Occupational Medicine's Ethical Guidance)? Are biological tests comparable with the results of clinical investigations of a patient and to be regarded ethically in the same light? Is it not important that non-health professionals, like hygienists and managers, should have access to the results of tests which monitor exposure to hazardous substances?

The parliamentary Ombudsman's report leads to the consideration of issues that are well beyond

simply the revision of the HSE's procedures, important and necessary though they might be. Occupational physicians ought to be debating some of these issues, while they may do so at leisure and before the debate is forced on them.

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