CORRESPONDENCE

Occupational Health in the new NHS

Sir,—Although some of the fears expressed in your editorial (1992;49:297-8) might be justified, we would be grateful for the opportunity to sound a more optimistic note. The growth in the practice of occupational medicine in the NHS has been steady, as has the professional quality of many of the consultants who are now able to stand comparison with consultants in longer established medical specialties. The problem of the untrained part timer exists, but the provision of appropriate training in conjunction with the practice of audit¹ in the NHS should go some way to solving this.

In a recent audit of randomly sampled medical consultation records in three Scottish Health Boards, we have, among other things, compared 130 consultations by seven "career" occupational physicians (consultants, senior registrars, and academics) with 125 consultations by 12 "non-career" physicians (mostly part time general practitioners). Statistically significant differences suggesting more effective performance by the career physicians were found in six out of 10 indices studied, for example in reaching a specific diagnosis (91% compared with 67%) and in recording occupational implications (96% compared with 74%). In one Occupational Health Service where internal audit had been introduced, there was some evidence of improving standards. These results, which are part of a study commissioned by the Faculty of Occupational Medicine, are to be reported in detail shortly.

Your statement that many of the traditional roles of occupational medicine, including consultations such as those we studied "can almost all be carried out by trained occupational health nurses with a minimum of medical intervention because relatively little diagnostic acumen is required" is, in our view, defeatist for the specialty as a whole, as well as lacking in objective justification. Such an attitude would ensure that all occupational medicine remains in the doldrums and continues to be

practised in an undisciplined way; we believe it is not shared by many of our colleagues. In our opinion the clinical problem solving skills and critical reasoning that promote advances in the practice of other specialties are equally likely to be effective in occupational medicine. Indeed, the fact that they have hitherto been little deployed in this specialty makes it fertile ground, and there are signs that the new generation of NHS consultants is already exploiting this. We believe that such doctors will be able to show their real value to sceptical managers.

We understand one cause of your pessimism. The lowly state of British occupational medicine is illustrated by a review of the number of British papers judged worthy of publication in the British Journal of Industrial Medicine. If our optimism is justified, this progressive decline will soon begin to be reversed.

R AGIUS

Department of Public Health Sciences,
The University of Edinburgh Medical School,
Edinburgh EH8 9AG

H F V RIDDLE

Occupational Health Service,
Fife Health Board,
Kirkcaldy KY2 5AD

A SEATON

Department of Environmental and
Occupational Medicine,
University Medical School,
Foresterhill,
Aberdeen AB9 2ZD

1 Agius RM. Peer review audit in Occupational Medicine. *J Soc Occup Med* 1990;40:87-8.

Sir,—You make a number of observations about occupational health in the NHS (1992;49:297-9), repeatedly drawing negative conclusions about their significance. Does it matter that there are more nurses than doctors or that many of the services are nurse based? This is true of most clinical specialties. It is more relevant that an increasing number of trainees and appropriately trained consultants are now in post. It is upon them that the future of the specialty depends.

Trainees, preferably at senior registrar grade need practical skills in hygiene and toxicology. The AFOM syllabus and examination are too theoretical and do not encourage the attainment of these skills. The membership diploma also has its limitations. If research is to be encouraged trainees should aspire to an MD or PhD bringing them into line with other specialties. The membership

itself should be used to prove specialist competence in the discipline of occupational medicine, rather than for the production of a dissertation. Management skills must also be developed during training. Properly trained doctors will be able to undertake much of the routine hygiene and environmental work in hospitals. This will help to safeguard their future in the increasingly cost efficient NHS.

Only in departments servicing large units may a multidisciplinary team, including a hygienist, be viable. We believe that medical consultants are better qualified than others to lead these teams but individual consultants will have to prove their worth.

We were surprised at your assertion that pre-employment screening, assessment of fitness for work, and investigations of poor work performance require little diagnostic acumen. In our experience clinical medical skills are essential to these activities.

The specialty of occupational medicine both inside and outside the NHS needs a stronger research base. Occupational physicians often have little or no research experience and for those that do undertake research there are too few opportunities to present their work. Rather than publicly writing off occupational medicine within the NHS, you would, we submit, be better considering the issues of training and research for NHS occupational physicians.

R H MCBRIEN

A B STEVENS

Occupational Health Service for the Health
and Personal Social Services,
91 Lisburn Road,
Belfast BT9 7AE

Byssinosis in developing countries

Sir,—In his review of byssinosis (1992;49:217-9) Parikh suggests that "attempts should be made to harvest clean cotton" and "to some extent hand pickers can be trained to reduce the bract content." These suggestions follow his observation that "reduction in dust concentration by control devices is the most important step in the prevention of byssinosis, but at present such devices are unknown in developing countries."

Accepting that the development in techniques of dust control is the prime ingredient in the reduction in incidence in developed countries to

which he refers, it is nevertheless possible that simpler and less difficult approaches than dust control in spinning mill processes could contribute to improvements in at least some developing countries.

This opinion is based on findings on cotton growing and primary processing in Uganda between 1955 and 1971. The peasant grower would take his produce by bicycle to the buying shed or cotton gin where it was sold by weight. The ginneries (roller gins for processing high grade long staple cottons) sold their finished bales to the Lint Marketing Board to formulae that, among other things, assumed a certain ratio of baled, ginned, cotton weight to raw cotton weight purchased. There was, in consequence, an incentive to eliminate weight loss between picking and baling in at least two stages in the passage from grower to the user (the cotton spinner).

Provided that the cotton buyer could be satisfied that the picked cotton was not unduly contaminated there was little incentive to the grower to be overwhelmingly concerned to eliminate bract fragments—at considerable extra trouble—in the picking, although it is understood that such carryover is less than in machine harvested cottons. More to the point is the situation in the ginny. Here the first process of "opening" was intended mechanically to tease out the fibres to prepare them for the roller gins in which the lint was separated from the cotton seed. This provided the only, but potentially very effective, method of removing a proportion of dust contaminants—including, of course, bract fragments—at any point between harvest and delivery to the spinning mill bale opening area. Exhaust ventilation on the cotton opener was an essential ingredient in its successful execution, and cotton openers were built as standard with the necessary fans and ductwork incorporated. These were fairly effective, but at the period described, it was considered that the optimum practicable performance was far from being achieved. Although, byssinosis in Uganda ginny workers never became a problem—owing, it is generally believed, to the short term and seasonal exposures to cotton dust—good maintenance and proper operation of openers were, none the less, major ingredients in achieving a reasonably low dust atmosphere throughout the rest of the ginning

processes. Whether or not they constituted a long term hazard to health, the dusty conditions that otherwise occurred in ginneries undoubtedly had adverse effects on the wellbeing of workers. Consequently opener function was kept under surveillance both by Lint Marketing Board inspectors concerned with national export product quality and by factories inspectors concerned with working conditions. Nevertheless, there was a commercial disincentive for the ginner to install openers with the most efficient possible dust removal arrangements, as shown by the necessity for the factories inspectorate to take court action against ginneries in which surreptitious means had been adopted to render the openers still less effective by making the exhaust system completely inoperative: visible contaminants in the lint could still be eliminated but the microscopic fragments of the dust content were not, so that the net outturn of baled cotton was somewhat higher than should have been the case. Profit margins could thereby be increased, but in consequence unsatisfactory dust concentrations resulted elsewhere in the ginny.

In answer to Parikh's comments, therefore, I suggest that whereas it may be difficult to devise a system to give incentive to growers to reduce bract content in the picked cotton, simple improvements can be made in ginny openers. Adequate regulatory surveillance of their function, while further improving dust conditions and wellbeing of ginny workers, might also result in the baled cotton that proceeds to spinning mills having a content of byssinosis generating material sufficiently low that any further dust control measures are unnecessary. At the least, this would permit the use of less sophisticated devices of lower efficiency in achievement of adequate working conditions.

It is recognised that this approach may only be effective in cotton growing areas where cotton is hand picked and roller ginning is practised, and that it may only be workable where the marketing procedures have been adjusted to take account of effects on economic returns throughout the progression from field to finished yarn.

GERALD V COLES
Occupational Hygiene Unit,
Deakin University,
Geelong,
Victoria 3217, Australia

Renal and immunological effects of occupational exposure to inorganic mercury

Sir,—We read with interest the study by Langworth *et al* on the renal and immunological effects of occupational exposure to inorganic mercury (1992;49:394–401) in which seven indices of renal dysfunction (excretion of albumin, orosomucoid, β_2 -microglobulin, N-acetylglucosaminidase (NAG), and copper; serum creatinine concentration and relative clearance of β_2 -microglobulin) were determined in 89 mercury exposed workers and 75 controls. Urinary mercury concentration (U-Hg) was moderate (25.4 $\mu\text{g/g}$ creatinine in the exposed *v* 1.9 $\mu\text{g/g}$ creatinine in the controls) and no glomerular or tubular effects were found except for a slight increase in NAG.

Recently, we conducted a comparable cross sectional study in mercury exposed chloroalkali workers to validate a new segment specific renal marker, intestinal type human alkaline phosphatase (IAP).¹ In the normal human kidney IAP is exclusively located at the brush border of the tubulopithelial cells present in the S3-segment of the proximal tubule and IAP can thus be considered a specific marker for effects at the S3-segment of the human proximal tubule, a part of the nephron particularly susceptible to some toxins.² An accurate and easy to perform immunoassay using the high affinity specific monoclonal IAP250-antibody has been developed.³

In our study, 83 exposed workers were compared with 84 controls. Their exposure was lower than in the Swedish study (13.4 $\mu\text{g/g}$ creatinine in exposed *v* 1.3 $\mu\text{g/g}$ creatinine in controls) but IAP ($p < 0.001$), NAG ($p < 0.02$), and tissue non-specific alkaline phosphatase (TNAP) ($p < 0.05$) were significantly increased (Mann-Whitney U test). Exposed workers were older than the controls (39.1 years *v* 32.7 years) and multiple regression analyses with each of the enzymes as the dependent variable showed that NAG and TNAP were related only to age. The increased NAG and TNAP excretion in the exposed workers can thus be partly explained by the age difference. For IAP, on the other hand, 12% of the variance in IAP could be explained by urinary mercury whereas age accounted only for a further 2%.