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Correspondents are urged to write briefly so that readers may be offered as wide a selection of letters as possible. So many are being received that the omission of some is inevitable. Letters should be signed personally by all their authors.

Neonatal respiratory intensive care at local level

SIR,—Following on the 1974 Oppé report¹ and apparently supported by opinion originally stemming from North American medical schools² the Department of Health and Social Security is currently recommending the centralisation of neonatal respiratory intensive care at a mainly Regional level,³ though "regional" and "Regional" have different meanings and implications on the two sides of the Atlantic, where population density and ease of communications vary considerably.

We have completed a 12-month trial of Searle arterial oxygen probes in a 25-cot peripheral neonatal unit 75 miles (120 km) from the nearest teaching centres but serving a compact industrial and maritime population of 170 000 plus a further 100 000 in a scattered rural area stretching 30 miles (48 km) away. Twenty-eight infants born in four hospitals in this locality were monitored successfully in this unit for a total of 1970 hours (21% of 12 months). Probe insertion failed in a further four infants and three more infants had non-functioning probes. A second monitor (which we now have) would have allowed several other infants to be monitored beneficially during this time and a chart recorder greatly enhanced the value of the technique. No complications or persisting side effects were found, but the management of sick infants was greatly improved because rapid changes in arterial oxygen tension (PaO₂) could be treated instantly, thus reducing the likelihood of

damage by hypoxia or hyperoxia and allowing the selection of optimal therapy.⁴

Safe and effective use of these probes required the laboratory and radiological facilities of a busy district general hospital together with adequate numbers of competent nurses, continuous neonatal resident medical care, readily available and experienced senior medical supervision, rapid blood gas analysis, an adequate through-put of sick infants, plus the means of controlling the varying and potentially dangerous levels of PaO₂, followed by suitable long-term review.

We suggest that many larger UK towns, outside the regional centres, already possess these supporting services together with an adequate work load; and that the recent emergence of inexpensive, reliable arterial oxygen monitoring, which is relatively trouble-free if correctly used, now facilitates the safe intensive care of neonates at a local and more appropriate level than envisaged by the DHSS, without undue cost or the disadvantages and delays of long journeys and separation from mother. On a local basis such infants should of course be centralised together with their mothers in one suitably appointed unit; and at the regional centres facilities should be available for teaching and research as well as service to their larger populations.

On the other hand neonatal surgery, neonatal cardiology, and investigative paediatric neurology certainly do require the

clinical material of a whole region and the facilities of a regional centre. These ultra-specialised disciplines are concerned with rarer and more diverse problems, having less immediate urgency than neonatal respiratory failure; yet they do not seem to be recognised in existing DHSS and health authority documents for adequate funding at regional centres.

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¹ Department of Health and Social Security, *Report of the Working Party on the Prevention of Early Neonatal Mortality and Morbidity*. London, DHSS, 1974.

² Schlesinger, E R, *Journal of Pediatrics*, 1973, **82**, 916.

³ DHSS Health Circular (HC (76) 40), 1976.

⁴ Conway, M, *et al*, *Pediatrics*, 1976, **51**, 744.

A loophole in aseptic technique?

SIR,—In total joint replacement we do all in our power to protect the wound from contamination emanating from the bodies of the surgical team, but I am wondering whether we should pay more attention than we do to the potential danger of sweat from the surgeon's hands saturating the cuff of the operating gown. This is no new idea and we ignore it on the grounds that even the role of glove puncture as a cause of wound infection has never been proved, though double gloves are now almost always used in total joint replacement.

The irony of the situation to which I wish to draw attention is that the hazard from sweat-soaked cuffs is especially great when two pairs of gloves are worn. This is because when two pairs are worn there is a tendency to

change the outer pair during the course of the operation and often this is done not once but several times at critical phases of the operation or if there is the slightest suspicion of glove puncture. The hazard lies in changing the outer pair of gloves, because in doing this the finger tips of the first glove of the new pair (and especially the thumb) can be soiled by contact with the textile of the opposite sleeve which becomes damp inside the rubber cuff of the glove which is about to be stripped off. The danger is peculiar in that there is a 100% chance that the soiled part of the digit will touch instruments and even the implanted material. In most other failures of aseptic technique, such as a surgeon's elbow touching an unsterile surface, there is a 100% chance that the soiled part will not enter the wound and certainly not touch the implant.

Surgeons vary enormously in the amount they sweat during operations involving considerable muscular exertion, and also the same person varies from one operation to another. I have carried out simple tests which suggest that bacteria can be grown from sweat at the wrists more frequently than from the finger tips. Thus in 55 tests (each on both right and left wrists) different surgeons wore small stockinette "bracelets" inside their first pair of gloves from which a snippet was dropped into culture material at the end of the operation; 21 (38%) grew *Staphylococcus albus*, 3 (5.5%) grew *Staph aureus*, and 2 (3.3%) grew anaerobic spore-bearers. On the other hand, in experiments done some years ago in which the finger tips were pressed on a blood agar plate immediately on stripping off the glove at the end of the operation there were only 2% of positive cultures in over 50 experiments.

I have tried many ways of avoiding this sweat hazard, but I think the best is the most convenient and the simplest. I have cylindrical, loose cuffs made of two layers of towel material which I put on before the first pair of gloves. These cuffs are about 15 cm (6 in) long so that the first 2.5-5 cm (1-2 in) can be covered by the cuff of the first pair of gloves. The gown is then put on followed by the second pair of gloves, which thus sandwiches the cuff of the gown between the two layers of rubber. The thickness of the towelling is important because wrist movements produce a bellows action which prevents the humid air stagnating and condensing as liquid. With this protection it is possible to change the outer pair of gloves with cuffs as dry as snuff

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Total joint replacement

SIR,—Mr M A R Freeman's review article on joint replacement (27 November, p 1301) was one of the most concise and lucid yet written. It was, however, a pity that modesty prevented him from giving a little space to his own contributions. I know of no one of his generation who has done more to grapple with the biomechanical problems in this field and his work on knee arthroplasty is particularly well known.

Regrettably, though, the orthopaedic department at the Middlesex Hospital clearly failed in one facet of his training there. I refer to his reference to the first clinical use of total, as

opposed to partial, joint replacement—in short, to the originator of present hip replacement. Philip Wiles, orthopaedic surgeon to his erstwhile hospital, was in fact first in the field. He was among the first to advocate such total replacement and was the first to use such replacements—in six patients before the last war.¹ After war service he returned and improved upon his earlier efforts.² Unfortunately his results were never good, largely because of his use of stainless steel components.

The recognition of Wiles's pioneering work in no way detracts from the debt that we all owe to Ken McKee and John Charnley, to both of whom must go in large measure the credit for giving to the world one of the best operations in surgery. Let the record, though, be straight. Philip Wiles first "did it."

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¹ Wiles, P, *British Journal of Surgery*, 1957/58, **45**, 488.
² Lowy, M, *Proceedings of the Royal Society of Medicine*, 1968, **61**, 665.

SIR,—The article by Mr M A R Freeman (27 November, p 1301) does what it sets out to do—namely, to review the current position of joint replacement. Mr Freeman himself rightly enjoys an international reputation for his own work in this field. None the less, although the article is both authoritative and informative, I fear that it may be misinterpreted.

In the field of joint replacement the needs of the rheumatoid patient are paramount and there can be no question that many patients crippled by the ravages of rheumatoid arthritis have great cause to be thankful for all the developments that have taken place. At the same time it must be remembered that many patients with rheumatoid arthritis have symptomatic remissions, while one of the most perplexing problems in evaluation of the results of treatment is how grossly deformed and cosmetically ugly limbs may still retain a remarkable freedom of function.

There is no suitable alternative to joint replacement at this moment, but I am sure that neither enthusiasts like Mr Freeman nor orthopaedic surgeons generally would disagree with the view that surgery will never be the answer to rheumatoid arthritis, for which systemic treatment—that is, chemotherapy or even, more remotely, vaccination—must be the long-term solution. If resources are limited and are going to be increasingly limited in the future, surely our advice to the administrators and to those responsible for finance must be that the aetiology and medical treatment of rheumatoid arthritis must have priority. It must be remembered that in the past 20 years Salk vaccination and antibiotics have changed the face of orthopaedic surgery. It is to be hoped that similar methods of treatment or prophylaxis in rheumatoid arthritis will not be long delayed.

Mr Freeman refers to the indications for surgery in osteoarthritis and indicates that the problem of patient numbers is considerable. It certainly is if we are to accept his view that any patient with degenerative changes who himself feels that he wishes major surgical replacement would therefore be a candidate for such treatment. Might I suggest to Mr Freeman that another solution to the increasing number of patients who appear to require total

hip replacement will come from a totally different direction?

There can be no question that osteoarthritis of the hip is not one disorder but several, and in a considerable percentage of such sufferers spontaneous or assisted stabilisation is the natural history of the disorder. It is a fallacy to believe that anyone with osteoarthritis must inevitably deteriorate. Mr Freeman is right when he states that there is no correlation between x-ray appearances and the patient's symptoms. Preliminary studies in this department on psychogenic factors and pain in osteoarthritis show that there is a clear relationship. It seems a reasonable hypothesis to suppose that patients who are told that they will get worse are likely to do so. Attending my hip clinic at this hospital are many patients whose condition has not changed clinically, symptomatically, or radiologically for a number of years, while we have many who have shown restoration of joint space and healing of cysts, with clinical and symptomatic improvement. I would suggest that total hip replacement be reserved for those patients who are seen to require it after a careful and prolonged clinical and radiological assessment coupled with the simple and old-fashioned regimens of physical methods and support for their general wellbeing. If these measures are adopted routinely (they are very inexpensive by comparison) the number of patients requiring joint replacement will be seen to fall quite rapidly.

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"Nurse consultants"

SIR,—Like Dr D W Eyre-Walker (4 December, p 1386) I was astonished to hear recently of the appointment of a "clinical nurse consultant (anaesthetics)" in another region. My incredulity was stretched even further when I was shown the job description.

The role of this individual is described as "a Registered Nurse who demonstrates a high degree of professional competence in a specialised field of nursing, and who is available to Line Managers for advice." It is a staff post (nursing officer, grade B) and is responsible to the senior nursing officer, theatres. The responsibilities are listed under the following headings:

- "(1) Identifies needs of patients, and plans and implements care.
- "(2) Develops staff towards excellence in nursing practice in the clinical specialty.
- "(3) Recommends changes and approaches to solution of problems to achieve quality patient care.
- "(4) Design, develop, and/or participate in research and studies.
- "(5) Supports and counsels members of the nursing staff.
- "(6) Programme for professional development and role fulfilment.
- "(7) Participation in the administration of the theatre area."

Each responsibility has between six and nine subheadings, all of which include current administrative phrases such as "develops," "evaluates effectiveness of problem solving," "identifies level of performance," "provides orientation programmes," "assesses," "assists," "recommends," and of course "reports." Despite rereading the description on several occasions I have been unable to discover what this person would actually do in the form of