ignores recent contributions to the literature from a number of centres.¹⁻⁴ The implications are that current radiological techniques of orbital investigation are dangerous and inaccurate and that computer assisted tomography (E.M.I. scan) will supersede them.

In the Orbital Clinic at Moorfields, which is the largest clinic of its kind in Europe, we investigate over 150 patients each year and our preoperative diagnostic rate using current techniques is over 90%. We are at present engaged in an evaluation of computer assisted tomography of the orbit, comparing it with existing techniques; these include orbital venography, axial hypocycloidal tomography (Polytome), and ultrasonography (B-scan and holography). The latter two examinations are harmless, non-invasive techniques and are as well tolerated by the patient as computer assisted tomography. The preliminary results of this study, in which to date 17 patients in the series have had a lesion in the orbit verified surgically and histologically, shows an accuracy of preoperative diagnosis for computer assisted tomography of 76.5%. This compares with orbital venography 76.5%, axial hypocycloidal tomography 75%, and ultrasonic examination 62.5% in the same group of patients.⁵ It should be emphasized that a combination of these techniques was required for successful preoperative diagnosis in all cases, and in this respect the two most complementary procedures were orbital venography and ultrasonography. In addition, carotid angiography is still required in selected cases for complete diagnosis; this is particularly true of vascular lesions in the orbit, which make up 20-25% of orbital disease in the patients we investigate.

In the present state of development of the E.M.I. scan we feel that it is unlikely entirely to replace existing techniques. Positive contrast orbitography, which is presumably the dangerous method referred to, requires no replacement since it has long been discontinued in most centres because of the danger of optic nerve damage. The E.M.I. scan is complementary to existing procedures, and the results of our study show that we are in no way likely to abandon any of the methods listed above. This remains true in spite of the use, in the later E.M.I. scans in the series, of a prototype fine matrix system (Dr. J. A. E. Ambrose), which has improved the quality of the scans enormously and, in particular, has brought optic nerve abnormalities well within the diagnostic range of the apparatus.

Without wishing to detract in any way from the excellence of the results of orbital investigation which we have obtained using computer assisted tomography, we feel that it is premature to abandon accepted procedures on evidence from centres which perhaps do not always employ the full range of modern investigative techniques in the work-up of patients with suspected orbital tumours.—We are, etc.,

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¹ Vignaud, J., Clay, C., and Bilaniuk, L. T., *Radiology*, 1974, 110, 373.

² Lloyd, G. A. S., *British Journal of Radiology*, 1971, 44, 373.

³ Lloyd, G. A. S., *Transactions of the Ophthalmological Society of the United Kingdom*, 1973, 93, 301.

⁴ Coleman, D. J., Jack, R. L., and Franzen, L. A., *Archives of Ophthalmology*, 1972, 88, 358.

⁵ Ambrose J. A. E., Lloyd, G. A. S., and Wright, J. E. (to be published).

*Dr. Lloyd and Mr. Wright seem to be criticizing their own misinterpretation of our leading article. They quote articles concerned with hypocycloidal tomography and ultrasound, but these are not really relevant. Both techniques can be applied to the brain as well as the orbit and neither uses a contrast medium; ultrasound does not even employ x-rays. One of their references concerns phlebography, which the leading article accepted as being safe.

The article did not say, and we hope did not imply, that current ophthalmological radiological techniques are dangerous and inaccurate. We drew attention to the dangers of the past, as indeed do Dr. Lloyd and Mr. Wright in the second sentence of their penultimate paragraph. As far as radiological inaccuracy is concerned, we gave no figures for either the orbit or the brain.—ED., *B.M.J.*

Nursing Staff and Work Load

SIR,—The sudden influx of several major problem patients to one ward is a recurring problem of increasing seriousness as the progressive patient care concept deprives all but the intensive care unit of more than skeleton staff. Such cases do not always justify admission to the intensive care unit, which may in any case be full.

An example of this occurred recently in the burns unit of the South West Region, where the estimated work load doubled in three days and remained at this level for three months. The position was aggravated by a multiresistant staphylococcus infection which appeared on several of the major burns within a few days of their admission. In addition, the ward sister's annual leave commenced as the influx began, members of the nursing staff developed boils due to these organisms, and influenza caused further reduction of trained personnel.

It was considered that the volume of work represented by the three major burns was such as to justify an intensive care level of nursing and, as obviously the burns could not be cared for in the intensive care unit of the hospital because of their infections, eight beds in one arm of the 22-bed unit were closed, leaving the three major burns on the "dirty" side of the ward. Over the next eight weeks these patients were grafted and discharged or transferred.

We feel that this episode exemplifies the problems of modern medicine and nursing, which can be summarized as follows:

(1) Wards are being run on the absolute minimum of staff.

(2) When their work load snowballs, it will almost never be possible to supplement them from other wards.

(3) If the pressure is kept up by continuing admissions the work load is intolerable. Physical illness and severe reduction in morale follows. If continued, resignations are likely to follow, thus increasing the work load yet further. Mistakes could be made and patients suffer neglect.

(4) The only solution is to estimate regularly not the bed state but the work load, and reduce the bed state officially to match the available staff.

It is probable that this cannot be done objectively by the ward sister, who is in the thick of it.

(6) The Salmon system has provided a

person of experience to integrate and supervise small groups of wards. It would seem to be a most valuable function for her to assess the work load daily and initiate discussion and action with the doctors and administrators concerned leading to modification of the bed complement of the ward as often as is necessary.

(7) In this way the nursing staff might enjoy a tolerable balance between gross overwork and almost equally demoralizing under-employment.—We are, etc.,

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RONALD MILES
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Accidental Injection of Potassium

SIR,—All medical graduates are surely aware of the risk of cardiac arrest if potassium is injected intravenously as a large bolus. Ten-millilitre ampoules of potassium chloride solution are currently produced looking very similar to ampoules of water for injection and normal saline. At least one firm has identical colours (green and white) on the boxes.

Several times I have observed drugs for intravenous use being dissolved in error in potassium chloride instead of water for injection. The mistake has been recognized by rechecking the ampoule before the injection was given. Colleagues of mine have known incidents in which potassium chloride solution has been used in error to dissolve antibiotics and to flush blocked intravenous cannulas, with immediate death resulting. Intravenous injections should be carefully checked (preferably by two people), but in emergencies and where understaffing is extreme this may not happen.

Is there not a case for potassium chloride, one of the most instantly fatal of poisons, to be in a coloured solution or in coloured ampoules?—I am, etc.,

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Contraceptives and Health

SIR,—The conclusions of the interim report on this subject by the Royal College of General Practitioners¹ that "adverse effects associated with the use of the pill are rare and that poor continuation rates could and should be greatly improved" are surprising in view of the evidence presented in the report.

There were statistically significant increases in the incidences of about 60 conditions among the 23,611 pill takers when compared with 22,766 controls. These were mostly mood changes, vascular disorders, some infections, and allergic disorders. It is noted that a variety of vascular diseases taken together suggest that the pill may affect small vessels and perhaps enhance neurovascular sensitivity. The findings of the Council for the Investigation of Fertility Control trial relating endometrial arterioles and sinusoids to clinical effects are overlooked.^{2,3}

During the four years of the survey

11,337 (48%) of the women were known to have stopped taking the pill, 7,563 (32%) were lost or withdrawn, and only 4,711 (20%) were known to be still taking the pill at the time of the final analysis. The main reason given for stopping the pill was inter-current morbidity (33.6%). This was mostly depression and headaches. However, it is stated, "the report shows that only in a small fraction of these diseases is there any convincing evidence that the pill has any adverse pharmacological influence, and the justification for stopping in other circumstances must be questioned." Only 7.1% stopped for side effects which were unspecified.

In the C.I.F.C. trial of 797 women receiving one or more of 34 oral contraceptives over six years we found that "women found oral contraceptives so efficient and beneficial that few discontinued the method unless they had multiple complaints. These were headaches, mood changes, vein changes, irregular cycles and weight gain."² The number stopping the pill within a year related closely to the number with headaches and the number whose endometrial biopsies showed prominent arterioles. For several progestogen-oestrogen combinations a critical dose level was found which produced a maximum effect on headaches and endometrial arterioles, and this peak effect was very sensitive to small changes in either oestrogen or progestogen. In view of these findings it is odd to say that headache is unlikely to be a pharmacological side effect of the pill and that the increase is affected by excess reporting and substantial bias.

The report dismisses the studies showing a significant increase of depression and an association of progestogen use as being "less well controlled than those with a more favourable conclusion." Our finding of 28% of depression and loss of libido with strongly progestogenic low-oestrogen pills and 6% with the strongly oestrogenic pills was supported by the matching changes in monoamine oxidase activity in the endometrium.⁴ There is now strong evidence⁵⁻⁷ in support of our earlier findings that depression and loss of libido are due to hormone and enzyme changes. In the same C.I.F.C. trial vein complaints, leg cramps, and thrombophlebitis were significantly more frequent with the combined pills containing a relatively low dose of progestogen and a high dose of oestrogen than with the other groups tested, and the clinical symptoms correlated with changes in endometrial sinusoids.³

Salaries in Occupational Medicine

SIR,—Doctors working in occupational medicine will note that new recommended salary scales have been approved and are now published (see p. 130).

These new scales are in line with the increases recommended for doctors in the N.H.S. by the Review Body. They are within stage three and may legally be paid by employers back-dated to 1 April 1974 provided that the 12-month rule is observed. They do not, however, include threshold payments since these cannot be paid unless threshold agreements have been made.

Some large industries fix their doctors' salaries in discussions with the B.M.A. and these employers have, of course, been asked to make the appropriate increases; they have

There are many other criticisms that could be levelled against the report, but it is important as it highlights the large numbers of conditions made worse by the pill in a short time and shows an increase in the deaths when the large number of drop-outs are taken into account. As it was supported by so much public money, it is unfortunate that the general public has been given a wrong impression of what the report does show. A close look at it does not give the reassurance of the pill's advantages compared with other methods of contraception implied by the press coverage, and there is no reason to think doctors need not be on the look-out for warning symptoms of disease which can lead to irreversible changes.—I am, etc.,

ELLEN C. G. GRANT

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- 1 Royal College of General Practitioners, *Oral Contraceptives and Health*. London, Pitman Medical, 1974.
- 2 Grant, E. C. G., *British Medical Journal*, 1968, 3, 402.
- 3 Grant, E. C. G., *British Medical Journal*, 1969, 4, 73.
- 4 Grant, E. C. G., and Pryse-Davies, J., *British Medical Journal*, 1968, 3, 777.
- 5 Wyatt, D. L., and Murphy, R. G., *Science*, 1973, 173, 916.
- 6 Coppin, A., Eccleston, E. G., and Peet, M., *Lancet*, 1973, 2, 60.
- 7 Aylward, M., *International Research Communications System*, 1973, 1, July, p. 30.

Achalasia of the Cardia

SIR,—Your leading article on this subject (8 June, p. 515) rightly stresses the importance of early treatment. In the very early stages of the disease stripping waves may be seen in the oesophagus at a barium swallow examination which are more forceful than normal waves, but they are rendered ineffective because the distal sphincter does not relax. As the condition progresses the stripping waves diminish until eventually they may disappear. It has never been established whether the loss of stripping waves is secondary to the dilatation and obstruction of the oesophagus or whether it is a part of the disease itself.

If the condition is treated early enough the oesophagus never dilates and is able to empty with the patient lying. It is not, perhaps, as widely known as it should be that the presence of stripping waves does not refute the diagnosis of early achalasia.—I am, etc.,

F. R. BERRIDGE

Cambridge

the Secretary of the B.M.A.). The important point, however, is that doctors should try to make a threshold agreement as soon as possible because payment is lawful only if the agreement is made before the monthly cost of living figures are announced.—I am, etc.,

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Clinical Public Health Doctors and Community Medicine

SIR,—Your leading article (18 May, p. 348) rightly stresses the current uncertainty of the clinical medical officers. As more Ministry circulars are published the links of the previous clinical public health doctors with community medicine are becoming more uncertain. An alarming fact is that the Faculty of Community Medicine seems to have turned its face against all preventive clinical work as not being part of the work of the community physician.

It is obvious that Ministry and regional medical officers are totally administrative and this is largely true for the area medical officer. When the duties of the specialists in community medicine and the district community physician are considered, though there is a large administrative responsibility, the contact with the patient is potentially greater. However, Ministry teams travel the country and inform us that clinical work is no part of the role of the consultant in community medicine. There must be no reduction in preventive services to the patient and it is hopefully assumed that there are enough clinical medical officers left to continue this work.

To consider two illustrations of the dilemma. I submit that the community specialists in child health with no interest in clinical work will have poor advice to offer in their responsibilities to the education authorities. Similarly the specialists in community medicine (environmental health) need an up-to-date clinical knowledge to control infectious disease adequately.

It seems to me that at district and area levels a small but significant part of the work of the community physician is clinical in content and is thus complementary to the work of the clinical doctors, who are no longer in "public health" but in "community medicine"—it is well to remember that many of these clinical doctors are members of the Faculty of Community Medicine. Thus the clinical preventive work should be fostered.

All of us await the Court Report with interest, and 12 months to two years is a long time to wait. In the meantime clinical medical officers remain in their state of uncertainty. The school health service and other preventive clinical services are enfeebled in those industrial areas where the service is needed most. Am I too cynical in suggesting that perhaps some management expert somewhere has decided that the child health service has had its day? Personally, I do not think careful assessment of children is ever a waste of time and I trust that this aspect at least will be preserved in the future. However, we had better hurry and decide on the career structure for the clinical doctors, or by the time the decision has been taken at top management level the older clinical