not given, and there was no indication that these figures were comparable for each of the six treatments administered, which included isoprenaline plus phenylephrine. In Dr. Hume's letter this information was available, but it indicated (a) that the mean PaO_2 before isoprenaline plus phenylephrine (66 mm.Hg) was considerably lower than that before salbutamol (74 mm.Hg), and (b) that the mean change in PaO_2 after drug administration was only +1.7 mm.Hg in the case of isoprenaline plus phenylephrine, and -3.7 mm.Hg in the case of salbutamol. The difference in favour of isoprenaline plus phenylephrine between these mean changes in PaO_2 might have been significant if the figures for PaO_2 before the two treatments had been comparable, but as the difference between the mean pre-treatment PaO_2 (8 mm.Hg) considerably exceeded the mean change recorded after either treatment, it would be improper to draw any such conclusion from the data available.

The combination of a rise in PaO_2 and a fall in PaCO_2 , as observed by Dr. Hume after isoprenaline plus phenylephrine, might merely have been due to hyperventilation caused by either or both of these drugs, and does not necessarily imply that this form of treatment corrects the disturbed ventilation-perfusion relationship, which is the main cause of hypoxaemia in bronchial asthma. Dr. Hume refers only very briefly to the possible effects of hyperventilation on the arterial gas tensions, but implies, by using the phrase "recorded to be hyperventilating" in respect of two of his patients, that his study included measurements of pulmonary ventilation. If that was in fact the case, I would suggest that he publish these data, which might help to show whether the changes in PaO_2 and PaCO_2 after isoprenaline plus phenylephrine were or were not associated with hyperventilation.

Dr. Chapman's patients had "chronic airways obstruction which excludes asthma," and Dr. Hume's had "emphysema with slight reversibility of airway obstruction." Nevertheless, in the advertisement for Medihaler-duo published in the *British Medical Journal* specific reference is made to the advantages of this form of treatment in the "seriously ill asthmatic patient."

In describing the methods he used to compare the effects of isoprenaline plus phenylephrine and salbutamol Dr. Hume stated that he measured the pulse rate and blood pressure, but there is no mention of the results he obtained. This omission is unfortunate, as it is generally acknowledged that the cardiovascular side effects of isoprenaline contributed to the increased death rate from bronchial asthma between 1960 and 1965.

Despite the claims of rival pharmaceutical firms there is as yet no evidence that any sympathomimetic bronchodilator drug administered to a hypoxic asthmatic is completely safe, particularly where there is a risk of overdosage. Orciprenaline and salbutamol are certainly less liable than isoprenaline to increase the heart rate and blood pressure, and the use of phenylephrine in conjunction with isoprenaline may conceivably reduce the tendency of isoprenaline to lower the PaO_2 , but it would be quite wrong to conclude that either of these observations carries the implication that the drug concerned is necessarily less dangerous.

In the present state of knowledge no pharmaceutical firm is in a position to claim a greater degree of safety for one particular bronchodilator aerosol preparation, and active steps should be taken to discourage the publication of the type of advertisement to which this letter refers.—I am, etc.,

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Respiratory Diseases Unit,
Northern General Hospital,
Edinburgh.

Abortion and Rubella

SIR,—In their valuable contribution (2 May, p. 264) Mr. K. M. Thompson and Dr. J. O'H. Tobin omitted to make a practical observation of considerable potential importance. If the rubella virus can be isolated from the fetus and even from the amniotic fluid, it constitutes a threat to the nursing staff handling theatre specimens and to ancillary staff responsible for cleansing apparatus and preparing it for re-sterilization. As many of those concerned are young women, some of whom will be pregnant, practical implications of spreading infection should not be overlooked.—I am, etc.,

JOHN STALLWORTHY.

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Oxford.

Undescended Testis

SIR,—I have been interested in this condition for some years and would like to add a few comments to your leading article (2 May, p. 248).

Existing statistics are not very valuable because they include ill-advised or inadequate surgery. A good many unnecessary operations are done, especially on very young children, and some of these lead to atrophy of a testis that would have descended spontaneously given time. Any operation that needs tension to hold the testis in the scrotum will fail, and this includes most of the textbook procedures. Essential surgery is usually quite a major affair, with scrupulous attention to the course of the vessels and the vasa, sometimes in their entire length, and it can easily occupy two hours for a single side. I now find it possible to get an anatomically normal testis in nearly 90% of cases, but of course function is very difficult to assess short of sperm counts following bilateral surgery. We have no statistics on fertility here because adequate surgery has only been conducted in our unit for the last three years.

It is not true to say that once a high testis has entered the scrotum all is well. It can retract again as the boy grows and surgery may be needed later. Continual observation is necessary until well after puberty where the slightest doubt exists. To give hormones in unilateral cases is irrational and harmful. In bilateral cases hormones are only indicated when proved deficiency exists, after consultation with an endocrinologist. There is no place for hormone therapy in general practice.

Indications for surgery are by no means easy to assess, and if undescended testis is diagnosed or even suspected the boy should be referred to a surgeon specializing in this condition without delay.—I am, etc.,

W. VAN ESSEN.

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Prescribing Drugs of Addiction

SIR,—At a recent meeting of physicians from hospital drug dependence clinics a review of the present situation confirmed

the following areas of major concern and anxiety.

The increasing numbers of methadone (Physeptone) addicts, a proportion of whom are receiving their supplies of methadone from general practitioners.

The increasing tendency of young drug users to obtain barbiturates and other sedatives, which they inject intravenously with considerable danger to their lives and the risk of abscess formation and other complications.

The ease with which many young persons are still obtaining from doctors preparations containing such drugs as amphetamines, barbiturates, opiates, and other sedatives and stimulants of the central nervous system.

The physicians at the meeting considered unanimously that the medical profession should be alerted to the above dangers, and that doctors should be urged to be particularly careful about prescribing habit-forming sedative or stimulant drugs of any kind to young people, and to warn adult patients with youngsters in the house to keep such drugs carefully locked away. It was suggested furthermore that prescriptions for habit-forming drugs should not be given to temporary residents without a letter of introduction from their previous practitioner (which should be retained) or other appropriate confirmation.—We are, etc.,

P. H. CONNELL. K. H. M. LOTTINGA.

H. DALE BECKETT. JOHN W. MACK.

PHILIP BOYD. J. L. MCCLURE.

G. CHRISTIE. G. B. OPPENHEIM.

S. DAS GUPTA. JOHN OWENS.

JOHN DENHAM. M. H. RATHOD.

J. GUY EDWARDS. JOHN L. REED.

F. P. HALDANE. G. SEDMAN.

H. HASSALL. R. F. TREDGOLD.

THOMAS H. BEWLEY.

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Cost of Anaesthetic Agents

SIR,—Criticism of my article on anaesthetic costs (21 February, p. 488) has been largely directed at me for not going far enough in my suggestions for economy. Users of the totally closed-circuit method of anaesthesia undoubtedly feel offended that I was advocating something less economical than that which they have been using for years. However, if there were many of them, my article need never have been written. My figures showed that the average gas flow rate used was nowhere near the 250 ml./min. they employ, nor the 2 l./min. I suggest, but in fact was 6 l. or above.

The totally closed circuit with a halothane vaporizer inside it, which they advocate, is I am sure safe in experienced hands. However, it has never gained popularity in this country because it has dangers for the unwary. A lethal overdose can be adminis-

tered by artificially ventilating the patient on this circuit. For this reason I chose for my example the much more widely used situation in which the vaporizer is outside the circuit. A fresh gas flow rate of 2 l./min. was selected for comparison with higher flows, as this is the lowest flow which can be used without having to make a large adjustment to the halothane concentration for dilution by gases already in the circuit. In addition, the commonly used Fluotec Mark 2 becomes inaccurate below flows of 2 l./min., but this particular problem has now been overcome by the development of the Fluotec Mark 3 which is stated to be accurate down to flows of 250 ml./min.

Leak-proof apparatus is important for all anaesthetic circuits, and its importance increases as the fresh gas flow entering the circuit decreases. I therefore am quite unrepentant in asking for leak-proof circuits.

One point in Dr. J. R. J. Beddard's letter (18 April, p. 176) needs correcting. It has been shown that 5-6 (not 10-15) l. per minute is adequate to eliminate carbon dioxide from the alveoli on the Magill circuit in both the spontaneously breathing¹ and the ventilated patient.²

Finally, I hope that this article has done something to encourage the more economic practice of anaesthesia, but fear that too much apathy exists in the profession for there to be any great impact.—I am, etc.,

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REFERENCES

- ¹ Kain, M. L., and Nunn, J. F., *Proceedings of the Royal Society of Medicine*, 1967, **60**, 749.
- ² Marshall, M., and Henderson, G. A., *British Journal of Anaesthesia*, 1968, **40**, 265.

Fibrinolysis and Menstrual Bleeding

SIR,—Miss Nafisa Horrobin's (18 April, p. 177) simple theory that menstrual blood loss may be the reason for the low rate of coronary thrombosis in premenopausal women would not appear to be correct. It is, I believe, a well-documented fact that there is a dramatic statistical increase in the rate of coronary thrombosis in women whose ovaries are removed surgically before their menopause as opposed to those whose ovaries are conserved at hysterectomy.^{1,2}

Since both groups of women no longer menstruate, if the theory were valid there would be a similar increase of coronary thrombosis in both groups.—I am, etc.,

F. M. OWERS.

Birkenhead.

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- ¹ *British Medical Journal*, 1968, **1**, 784.
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Group A Streptococci Resistant to Clindamycin

SIR,—The paper of Dr. I. Phillips and his colleagues (11 April, p. 89) prompts us to describe our recent experience with clindamycin (Dalacin C), and to report the appearance of group A streptococci resistant

to this antibiotic soon after we began to use it.

In January this year we treated some patients in our burns unit with clindamycin in an attempt to eradicate group A streptococci from the burnt surfaces. Penicillin is still the most effective antibiotic for the purpose, but unfortunately it is easily inactivated by the penicillinase-producing staphylococci that frequently colonize the burns. There was no evidence of clinical sepsis due to the streptococci, and our object was to minimize the risk of cross-infection, so we decided after consultation with the manufacturers to use the standard dose of clindamycin recommended for moderate infections—for example, 150 mg. 4 times a day for 5 days.

Macrolides and lincomycin had not been used in the unit for some time, and the disk sensitivity tests showed that the group A streptococci isolated from recent cases were fully sensitive to clindamycin. The first case treated responded well and the streptococci appeared to have been eliminated. The second case, in which the streptococcus first isolated was also sensitive to erythromycin, lincomycin, and clindamycin, yielded after treatment a group A streptococcus resistant to all three antibiotics. The streptococcus isolated from the fifth case had the same resistance on first isolation, and again the treatment was ineffective. In each case the presence of resistance was confirmed in tube-dilution tests. The use of clindamycin was discontinued after five cases had been treated.

A similar situation¹ had arisen two years ago in this unit, when resistance to lincomycin and erythromycin appeared in group A streptococci soon after the treatment of burned patients with lincomycin was begun. On both occasions the streptococcus belonged to type 4. The resistant culture isolated in the earlier outbreak was not available for retesting, but we obtained three other cultures of lincomycin-resistant group A streptococci from the Streptococcus Reference Laboratory at Colindale and found that they also showed cross-resistance to clindamycin. This result was not unexpected in view of the close chemical relationship between lincomycin and clindamycin.

We wish to thank Dr. M. T. Parker, Cross Infection Laboratory, for his most helpful advice and cooperation.

—We are, etc.,

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REFERENCE

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Children in Adult Intensive Therapy Units

SIR,—The only benefit which the children reported by Drs. J. R. Harper and G. Varakis (28 March, p. 810) derived from being nursed in an adult intensive therapy unit was the presence of more staff. These children, we submit, could have been better nursed in an

intensive care area within a children's ward. It is because the children's wards are under-staffed that consideration has to be given for the critically ill child to be nursed elsewhere. Surely the emphasis should be on having adequate trained staff in the children's ward. Intensive therapy units tend to draw off trained staff from the general wards. If an intensive care area is incorporated within a children's ward the nurses undertaking intensive care would still be available to work in the main ward during non-peak periods. Any enjoyment or novelty value that these children might bring to nursing staff untrained in paediatrics must surely be outweighed by the view of 19 out of 30 of the Northampton General Hospital children's nurses who thought that the environment of an adult unit was basically unsuitable for children, and also by the detrimental effect on the training of junior nurses in the management of the critically ill child if these children are taken away from the children's ward.

It has become established that the care of children in hospital requires the concentration of medical and nursing specialist staff, equipment, and many ancillary services into a ward architecturally designed for infants, children, and their mothers. With a critically ill child these factors increase in importance, and it is unwise to deny very sick children optimal comprehensive paediatric care. Moreover, Drs. Harper and Varakis accept that newborn babies with respiratory disease require the basic nursing skills in a premature or special care unit. Seventeen out of 24 of their medical cases requiring intensive therapy were under 2 years old. We maintain that these infants and older children also primarily require basic paediatric specialist skills. We are, therefore, piloting an intensive care area within the paediatric wards of Guy's. It consists of two large cubicles with facilities for the care of up to four children adjacent to the three-bedded burns unit. In the first four months 22 children, excluding burn cases, were admitted out of a total of 275 admissions to the main wards. Patients requiring intensive care included postoperative cases (including cardiac surgery), 7; acute respiratory disorders, 3; severe heart failure, 5; neurological disorders (including a child with peripheral neuritis on a ventilator), 2; renal failure (requiring peritoneal and/or haemodialysis), 4; and one other.

The main advantages of the unit attached to a paediatric ward are that comprehensive paediatric facilities are available; that mothers can live in; that there is constant children's trained nursing staff; intensive care facilities are immediately available if a child deteriorates while in the main ward; progressive patient care is more easily carried out within the paediatric floor; and continuity of care of the child is better.

A trend towards management of children in adult intensive care units run by nurses who have not had postgraduate training in paediatric nursing is retrogressive. Paediatric skills and expertise, both nursing and medical, are already available in the children's wards, part of which can easily be set aside for the critically ill infant or child.—We are, etc.,

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