unwarranted. I recently had in my care a patient from eastern Europe sent for investigation of a suspected haemoglobin anomaly.³ It turned out that this patient was taking huge amounts of phenacetin-containing analgesics, which were never found on him but which he stopped taking—as proved by the above urine test—when threatened with being returned to his country with the diagnosis of a grave psychiatric abnormality. Screening large numbers of persons in Switzerland for N-acetyl-*p*-aminophenol in urine has shown that up to 10% of a given population is taking phenacetin-containing analgesics.³ Intake of salicylate on its own is rare in Switzerland. Only two of five leading brands⁴ contain 0.125 g. and 0.37 g.

In addition, it seems important that patients who have regularly abused analgesics containing phenacetin should have their urinary tract searched for tumours at necropsy. Within the last year five of 625 women regularly taking analgesics containing phenacetin died while under close observation, and one developed a carcinoma of the bladder.⁵ This tends to confirm the findings of Bengtsson⁶ and underlines the appeal by Dr. Koutsaimanis and Professor de Wardener that phenacetin should be sold only on prescription, although the evidence for an increased incidence of tumours of the urinary tract after many years' intake of phenacetin-containing analgesics is so far inclusive.—I am, etc.,

U. C. DUBACH.

Medical Polyclinic,
University of Basel,
Switzerland.

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Health Services Financing

SIR,—Professor Dennis Lees reviewed (31 October, p. 292) the descriptions of health services in the United Kingdom and 14 other European countries published in Appendices A-Q of the B.M.A. report *Health Services Financing*. While agreeing with him that they are indeed a valuable contribution to our knowledge of health services and deserve further study, it is difficult to accept his interpretation of them to advocate increasing private finance of the N.H.S. Several of Professor Lees's points deserve specific answers beyond the case put elsewhere.¹

In any discussion of health services, it is axiomatic that their first concern must be the patient, not the system or any members of it. The fact that the N.H.S. is unlike health systems in other countries in having relatively few user charges at the point of use is not a case for having them.

The effectiveness of the market mechanism in allocating resources is by no means convincing in the health sector and these studies do little to change that. By definition the market mechanism attracts

resources to those areas and to those people who make an effective demand. (Demand backed by money as opposed to just "demand.") The present inequalities broadly favour the affluent South and the price mechanism might be expected to perpetuate and aggravate this. Likewise it would attract resources to the higher socio-economic groups who are better economically enabled and more socially disposed to make effective demands for health care than the lower socio-economic groups, as is markedly the case in the U.S.A.²

Professor Lees quotes Cooper and Culyer's study as part of his case for more private payment for health. But their demonstration of regional inequalities of health provisions is primarily focused on the hospital service (60% of N.H.S. expenditure), and, as Professor Lees summarizes, in most countries "the bulk of hospital construction is financed from public funds." Likewise, with the exception of the U.S.A., Switzerland, and Australia, "In-patient hospital care is provided virtually free and financed by taxes or compulsory contributions." In short, private finance in the hospital sector has not been a source of salvation in other countries.

The existence of a substantial private sector in other countries has often led to a two-class system—pullman or second class—for example, graded wards and separate waiting rooms of the Austrian system. It has likewise led to severe problems of multiple and non-integrated provision with the more onerous and unprofitable cases (like severe accidents) being left to the public sector, as so often happens—for example, in the U.S.A. and France.

The concept of the potential patient free to choose the type, quality, and amount of care he will consume and freely negotiating the fees with doctor is spurious. Choice on all three criteria may exist for elective treatment, and then often only initially, but moving up the scale of severity choice diminishes to become almost non-existent at the emergency end of the spectrum. Likewise "free" negotiation of fees might well oblige the doctor to behave like a small shopkeeper, simply to maintain his income.

Finally Professor Lees states, "cutting other public expenditures or raising taxes are simply not on." This Government has just cut some areas of public expenditure and is committed to more of the same. Likewise, we are far short of any tax and social security ceiling at around the middle of the range % of G.N.P.—Sweden pays 48.4% of G.N.P. in tax and social security, Austria 43.2%, Norway 42.7%, France 42.5%, Netherlands 42.2%, Denmark 40.8%, and the U.K. in seventh place pays 40.1%.³ In short, others pay more tax and more privately for health services and there is no reason why we should not divert more money to health and/or raise more from taxation, or preferably specific social security contributions.

The most important lesson gained from these national studies is that the means of health service production are entangled in archaic structures, and that the doctors themselves need to come into the twentieth century. Health is now the third largest industry in developed countries; nowhere has management kept pace with its growth. The N.H.S.'s dilemma, and its basic crisis

in common with other health systems, is lack of management and the role of the profession in it, not whether we have fees at the point of consumption.—I am, etc.,

ADRIAN GRIFFITHS.

Medical Care Research Unit,
London School of Hygiene and
Tropical Medicine,
London W.C.1.

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Length of Gestation

SIR,—Your leading article on the length of gestation (14 November, p. 382) draws attention to the problem of assessing gestational age even where the date of the last menstrual period has been carefully recorded. Estimation of expected date of delivery by Naegele's rule (counting back three months from the first day of the last menstrual period and adding seven days) is based on the premise that menstrual and ovarian cycles are regular. This is not correct.

In order to apply Naegele's rule, menstrual cycles must be regular. While 60 to 80% of all cycles fall within the range of 25 to 31 days, this does not mean that the majority of women are sufficiently regular to be able to apply the rule correctly. There is wide variability in cycle length both between different women and in the same individual from time to time. In bulk statistics so often quoted the cycle length variability is not apparent. For example, only 16% of women have a difference of less than six days between the shortest and longest cycle in the course of a year, and 30% experience a difference of thirteen days or more.

Furthermore, regularity of cycle length, whether long or short, is not accompanied by regularity in the timing of ovulation. While in the majority of cycles ovulation occurs 12 to 16 days before the next menstruation, the timing of ovulation varies between one woman and another and there is considerable scatter within each individual. Prolongation of cycle length adds another variation which should be taken into account. For every nine days increase in cycle length the average increase in the pre-ovulatory phase is seven days and that in the post-ovulatory phase is two days.—I am, etc.,

W. M. O. MOORE.

Department of Obstetrics and Gynaecology,
University of Manchester.

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Bell's Palsy and Surgery

SIR,—Leading articles are very important since they present or should present facts as objectively as possible. The *British Medical Journal* usually follows this rule, but your article on Bell's palsy and surgery (17 October, p. 126) is not at all objective, particularly in its second half. It contains many

half truths, and on top of this, it does not give the sources of the known data. Allow me to quote some examples.

"A review of the literature shows no evidence . . ."—of course not, how could it. Our (statistical) science never proves anything. It indicates "significance." "Experienced otologists do not agree on the time . . ." is only true if one stopped reading the relevant literature five years ago. Today they do agree; surgery should be undertaken as soon as progressive denervation is found. "Once degeneration of the nerve has begun, decompression cannot help." Many authors suggesting the positive influence of decompression in well selected cases of Bell's palsy have stated that degeneration is not an end state, but a dynamic process. It is certainly possible to save a number of living fibres when the first symptoms of denervation of some other fibres become evident.

"Secondly, the lesion may be proximal to the site of the operation . . ." This remark is based on the wrong idea that the compression takes place inside the bony Fallopian canal. In reality it has been shown many years ago¹ that only in the vertical part of the facial nerve the sheath is very thick and without elastic fibres; the rest of the sheath is thin and elastic. In the entire course of the bony canal the space inside the bone is ample and compression is very unlikely. In some 300 cases I have never seen compression more central than the site of the stapes. "J. Groves . . . found five cases to do worse" is an ambiguous argument. In a leading article such an argument without any statistical analysis is unacceptable. If the author of the article had read the recent international literature, he would have found figures indicating that statistics in some better evaluated groups point to significant positive influence of surgery in well selected cases of Bell's paralysis.

If McGovern and co-workers² and Jain and Sharma³ are quoted as defenders of a hypothesis on the aetiology of Bell's palsy, why not quote their experimental work which suggests (on statistical grounds) that decompression has a very favourable effect on various traumas inflicted upon facial nerves included artificial oedema of the facial nerve? "Taverner and colleagues with special experience—(why this distinction of one group of workers?)—have shown how to prevent . . ." Why doesn't the author, so critical when he discusses the surgery of Bell's palsy, warn the reader that the groups which these authors compare are not completely comparable?

Finally, it is well known and accepted even by those who do not favour surgery that surgical decompression takes away the often severe spontaneous pain. I have never heard any complaints about the pain inflicted by the operation. Usually patients disliked electrical treatment more than the operation.—I am, etc.,

L. B. W. JONGKEES.

Academisch Ziekenhuis,
Universiteit van Amsterdam,
Holland.

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Rational Oxygen Therapy

SIR,—Modern equipment used to administer oxygen to patients breathing spontaneously may be subdivided into devices which administer precise concentrations and those in which there is no control over concentration.¹ Examples of the former devices are the Ventimask series giving 24%, 28%, and 35% oxygen mixtures without rebreathing² which is achieved by high air flow with oxygen enrichment (HAFOE). All other devices belong to the second category and are used for varied indications in which control over oxygen concentration is not currently considered necessary.

The history of oxygen therapy is studded with misconceptions as to dosage. One patient may receive a very different concentration from another patient with the same device at the same oxygen flow rate. Moreover there can be considerable variation in oxygen concentration from breath to breath even in an individual patient. It is a precept of medicine that the dosage of a drug should be known. The pioneers of oxygen therapy, Barach and Eckman,³ stated that the dosage of oxygen should be known and controllable.

This is still not fully accepted even though it has been reiterated many times, the most recent and authoritative being in a report to the Scottish Home and Health Department.⁴

Additionally it does not appear to be widely appreciated that the dangers of giving too much oxygen may be as great as not giving enough (3 October, p. 5). There are thus many circumstances when we do not know whether we are giving too little or too much oxygen, although patients are not necessarily mistreated.

It is undeniable that the entire state of affairs would be improved if oxygen dosage was always known. Under such circumstances repeated assessment of patient response to a given oxygen concentration, either clinically or by direct blood measurements, would be of both diagnostic and prognostic significance. Greater understanding of the pathophysiology of oxygenation and the increasing employment of blood oxygen measurements makes a more rational approach to all oxygen therapy highly desirable. The recent introduction of a 40% Ventimask is therefore opportune. Masks delivering 50% and 60% oxygen could also usefully be employed under certain circumstances. A prototype 60% mask has been produced. This value was selected as the probable upper limit of clinically useful oxygen concentrations for spontaneously ventilating patients. It is the concentration above which patients with normal lungs cannot be exposed without running the risk of pulmonary oxygen toxicity. A cyanosed patient who cannot maintain a reasonable arterial P_{O_2} while breathing such a concentration should be ventilated artificially. With the range of masks indicated above, patients can be subdivided into groups and treated accordingly.

Group 1.—Patients in chronic ventilatory failure with hypoxaemia and CO_2 retention. High oxygen concentrations should be avoided. Masks giving 24%, 28%, and 35% and possibly 40% can be used.

Group 2.—Patients with mild hypoxaemia often arising from non-respiratory conditions

and with normal lungs in whom oxygen therapy is beneficial, but in whom prolonged administration of high oxygen concentrations will produce a risk of pulmonary oxygen toxicity. 28-40% masks (limit 60%).

Group 3.—Patients with severe hypoxaemic conditions without CO_2 retention who may require maximal oxygen concentrations to produce small increases in arterial oxygenation. 40%, 50%, and 60% masks.

Group 4.—Patients with such severe hypoxaemic conditions that intermittent positive pressure ventilation is necessary.

Provision of controlled oxygen concentrations, and particularly of 50% and 60% by the high air flow with oxygen enrichment (HAFOE) system would be more costly than present methods. However, the informed use of such devices, perhaps only in specialized intensive care units, would improve clinical care.—I am, etc.,

JULIAN M. LEIGH.

Magill Department of Anaesthetics,
Westminster Hospital,
London, S.W.1.

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Vasectomy

SIR,—Although regeneration of the vas deferens is frequently cited as a possible cause of failure of the operation of vasectomy there appear to be very few accurately documented reports of this process. The following case therefore seems worthy of record.

A patient, a normal adult of 41, had previously had a vasectomy carried out by another surgeon on eugenic grounds, but continued to produce normal quantities of spermatozoa in his seminal fluid. Fortunately, histological specimens of the previous operation were available. These showed that although vas tissue was in the specimen taken from the left side, only blood vessels were found in the specimen on the right. It was therefore thought to be a simple situation where the vas had not been ligated on the right side and therefore vasectomy in the normal fashion on the right side was carried out, and a normal vas was in fact present. Seminal specimens were examined in the usual fashion post-operatively but were still found to contain normal numbers of spermatozoa.

Although there was no clinical evidence of a double vas on either side this seemed to be the most likely cause for the persistence of spermatozoa in the seminal fluid. It was therefore decided to re-explore both sides under general anaesthesia. Satisfactory division of the vas on the right side was found. Histological examination confirmed that there was no continuity in the vas, and no second vas was found. On the left side there was complete continuity of the vas and no second vas was present. At one point there was scar tissue around the vas. This area was excised together with a length of healthy vas on either side. Histological examination of this specimen showed that regeneration had occurred. There was normal epithelium present and there was continuity between the two ends past the site where inflammatory reaction had occurred. Following the operation the patient rapidly developed azoospermia and there has been no sign in the six months since this was carried out of any further appearance of spermatozoa in the seminal fluid.