lacks the necessary degree of external support. Consequently, the only course of action open to the D.H.S.S. is to withdraw the report and fend for itself and interested bodies accordingly.—I am, etc.,

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Sir,—Dr. I. K. Scott (8 September, p. 541) praises the report of the D.H.S.S. on promotion of research in deafness. It is, in many ways, a very informative report, specifically to those who are not familiar with the various problems of research in the subject. But similar general descriptions can already be found in numerous publications, symposia, or reports of working parties.

In particular, the solution of major problems of sensorineural hearing loss is concerned stagnation has set in during the past few years. An important stage in research has been almost completed. Variables are studied as individual research workers, or small groups in isolated research units. No further progress can be made until the various fragments of information could be brought together from a very large field of knowledge and studied how they influence each other and how they are linked. A new way of thinking and a new approach is called for. I suggested a few years ago that a new type of research centre should be created with research facilities where research workers from the wide field could work together. This idea was incorporated in an Act of Parliament, and the Department of Health and Social Security was given the task to carry out a detailed analysis of the major problems and conditions for research. A report was called for which would enable the M.R.C. to consider whether the new research centre should be created. The Rawson report is criticized principally because it did not fulfill the task given to the D.H.S.S. by the Act of Parliament. It is difficult to imagine how a single person not familiar with this type of research could prepare such an analysis requiring an insight to complex problems of hearing loss and fundamental problems of research. This was the task for a small working party.

Dr. Scott mentioned as a great merit of Dr. Rawson's report that it drew attention to certain problems of adult deafness. This, of course, has been done even more forcefully and in greater detail many times in the past. Dr. Rawson quotes extensively from the report of a working party on the elderly deaf (of which I happened to be the chairman), which was submitted to the Department of Health and Social Security in 1969. It is somewhat regrettable that this report was not referred to in the Rawson report. It was pointed out what the deficiencies were concerning the care of the adult and elderly deaf. What happened to this report goodness knows.

It is clear that an entirely new approach is required in order to solve the urgent problems of sensorineural hearing loss. The conclusion of Dr. Rawson's report, and consequently of the Medical Research Council, is that we should carry on more or less in the same manner as we did for years. It is suggested that present facilities should be increased, perhaps a few more grants should be given, a few more small isolated research centres should be created, some kind of committee to "coordinate" research should be formed, and so on.

This shows a fundamental misunderstanding of the major problems of research into major problems of deafness is.—I am, etc.,

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Sir,—Though intensive intrathecal chemotherapy for the prophylaxis and/or treatment of acute leukaemia of the central nervous system has greatly contributed to increased survival, serious neurological damage is being reported not infrequently after both methotrexate and cytarabine (cytosine arabinoside). Six cases of severe neurotoxicity, ranging from seizures to paraplegia, have been ascribed to Stajit and a further two have been reported by Kay et al. All were in young patients with acute lymphoblastic leukaemia and the chief offending drug was methotrexate. We wish to report briefly the case of a patient with an acute myeloblastic leukaemia in which the nervous damage was caused by intrathecal cytarabine.

A 50-year-old physician was diagnosed as having acute myelogenous leukaemia in September 1971. He was treated with various combinations of vincristine, daunorubicin, and thioguanine and went into complete remission, fully resuming his medical activity, until January 1973, when he developed hand tremor and sonnnolence. On 9 February he was admitted to hospital because of severe retinoculoh headache and drowsiness. Though the bone marrow and blood were normal, the cerebrospinal fluid contained 400 blast cells/mm3, and 10 mg of methotrexate and cytarabine were given intrathecally on the same day. He received an additional dose of saline and the cytarabine in 5 ml of distilled water containing 45 mg of benzyl alcohol (the investigator's practice) three days later. During the next 24 hours, the later cerebrospinal fluid was clear of blasts, while signs and symptoms disappeared within 24 hours. He was treated with the same combination, first twice weekly, then weekly, and later every other week.

On 10 March the patient was given 50 mg of cytarabine intrathecally. After a few hours he developed a non-productive cough and hoarseness. After three days he was swallowing with difficulty and after five days he had complete dysphagia and aphonia. Later he developed diplopia and left accessory nerve paralysis, so that the clinical deficit included the sixth, ninth, tenth, and eleventh cranial nerves. The patient was treated conservatively, and complete recovery of all pareses occurred in about three weeks except for persistence of moderate diplopia, which cleared up in two months.

Two theories have been proposed for the mechanism of antimitabolite neurotoxicity, which is still unclear. The possibility of damage by the antimitabolites to the nerve roots within the subarachnoid space is supported by its reversal with folinic acid. However, the demonstration of neurotoxicity in two preservatives, methyldoxbenzate and benzyl alcohol, has made them also highly suspect. Perhaps a better prophylaxis of antimitabolite neurotoxicity will be achieved by avoiding both higher doses and dilution with preservative-containing diluents.—We are, etc.,

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Neurotoxicity of Intrathecal Chemotherapy for Leukaemia

Sir,—The recent letter from Professor M. K. D'Orrissic and Mr. J. M. Stronge (15 September, p. 590) calls for comment on a somewhat sterile exercise. Nonetheless, in this instance it is justifiable to point out that in the Report on Confidential Enquiries into Maternal Deaths in England and Wales, 1965-1969, to quote the exact wording, "there were no deaths due to subarachnoid haemorrhage as being 17-15 of whom were delivered by forceps—between 1963 and 1969 in an obstetric unit, any mention of what part, if any, epidural analgesia played in these particular cases, they proceed to the generalization that epidurals create a high incidence of forceps delivery (though Dougherty gives a figure of 26% under close supervision), the implication being that there is a connexion between the particular as quoted and the subsequent generalization. This is a complete non sequence.

The authors then leave a deafening silence over the "total welfare of the mother," which they have stipulated as a mandatory consideration. Admittedly, selective quotation is a somewhat sterile exercise. Nonetheless, in this instance it is justifiable to point out that in the Report on Confidential Enquiries into Maternal Deaths in England and Wales, 1965-1969, to quote the exact wording, "there were no deaths due to subarachnoid haemorrhage as being 17-15 of whom were delivered by forceps—between 1963 and 1969 in an obstetric unit, any mention of what part, if any, epidural analgesia played in these particular cases, they proceed to the generalization that epidurals create a high incidence of forceps delivery (though Dougherty gives a figure of 26% under close supervision), the implication being that there is a connexion between the particular as quoted and the subsequent generalization. This is a complete non sequence.

Finally, it has been stated and reiterated that pain in labour is an emotive subject. But the effect on the mother actually experiencing it is severe, and the degree of severity depends not solely, as is implied by Professor D'Orrissic, upon the duration of the stimulus; it depends equally upon the intensity of each succeeding stimulus. With full respect to the authors, diminution or modification of but one of these factors cannot put the problem in a "new setting".

Admittedly, pain may well be a subjective phenomenon in labour, it well have an emotive background as well as an emotive effect. But if the woman feels—and the key word is "feels"—severe pain, she receives some degree of psychological impact, the imposition of which is not fortuitously delayed for a latent period of 12 hours.

The history of the recognition of the value of epidural nerve block both to mother and to fetus is one of a long and an uphill