all of these and many more human errors have been factors in maternal deaths, and they might have been eliminated if education and training and organization had been better and more conscientiously applied.

The reason that these confidential inquiries have been so valuable and have contributed to the falling maternal mortality of recent years is that they have been the result of professional collection of data in confidential conditions followed by assessment and publication of conclusions carefully drawn. But above all it has been the devotion of those in maternity care which has made them, on the ground, heed the messages of these statistical inquiries and look hard at areas in which they may have been failing to provide the best possible service. They have been able to use the lessons as a guide to their future practice. This is the value of such a medical audit. It is not a witch-hunt: nobody knows who has erred, but others learn from the errors that have been made.

Different communities, different parts of the country, and different countries have different patterns of maternity care, so that though England and Wales were first in this field their experiences in detail are not necessarily applicable elsewhere. All countries should institute a system of inquiry into maternal deaths. The first report of an inquiry into maternal deaths in Scotland 1965-71 is a very welcome addition to a growing series. The voluntary system is similar to that for England and Wales. On the death of a woman, married or unmarried, where there is good presumptive evidence that pregnancy or childbirth was a cause, the procedure is set in motion. Evidence is collected from all concerned and submitted to a regional assessor, who after making further inquiries and an assessment sends the details to the Chief Medical Officer of the Scottish Home and Health Department. The authors of the report have some criticisms to make of the procedures and where they may have failed, and they are taking corrective action. Despite these shortcomings the report manages to cover 85% of all the maternal deaths occurring during the period—a credit to the system and to those who voluntarily provided the data.

As might be expected the report draws special attention to the mother at high risk—she who is over 35 years of age, or who has five or more children, or is of low socioeconomic class, or is unmarried. The causes of death seen most frequently were pulmonary thromboembolism, sepsis, and haemorrhage, and these were often associated with caesarean section. There was an avoidable factor on the part of the patient in 50% of deaths, of hospital medical staff in 48%, of the general practitioner in 27%, and of the hospital nursing staff in 3%. Clearly it is especially important to try to help those women who for one reason or another seem to be incapable of looking after themselves, and it is here that the social services need strengthening. The hospital staff figure so largely because now in Scotland 97% of all deliveries take place in hospital.

[1] *A Report of an Enquiry into Maternal Deaths in Scotland, 1965-71*. Edinburgh, H.M.S.O., 1974.

Paediatric Allergy

Many aspects of allergy in paediatric medicine were discussed at the first Unigate paediatric workshop last year at the Royal College of Physicians of London, and the proceedings have been published as a special supplement to *Clinical Allergy*.[1] Participants came from the United Kingdom, Europe, and North America.

Emphasis was laid on the problems of "atopy," with its familial tendencies. This term aroused much controversy on whether it should be used to describe a clinical state on its own, or a clinical state with evidence of type I, reagin, IgE, antibody mediated allergy, or solely the capacity to develop, without symptoms, specific IgE antibodies in response to ordinary environmental allergens. The probability that the inheritance of the atopic constitution differs from the inheritance of the tendency to IgE immunological response is evident from the report by B. B. Levine. Family studies showed a genetic locus close to the HLA system for an immune response gene controlling production of IgE and also IgG, and the trait was inherited as a Mendelian dominant. More than one genetic control mechanism probably operates, for while ragweed hay-fever depends on an immune response gene which specifically recognizes low concentrations of a ragweed antigen, its presence is not alone sufficient for the clinical disease. Other factors such as mucosal permeability and beta-adrenergic blockade appear to play a part.

A different approach to mechanisms responsible for allergy is provided by J. Soothill. He suggests that it is secondary to the impairment of the ability to exclude or eliminate antigen because of immunodeficiency. And indeed secretory deficiency of IgA of even a transitory nature has been found in patients later showing evidence of atopy. He concludes that variation within or near the conventional normal range in the ability to exclude or eliminate the antigen may influence the patient's vulnerability to chronic allergic disease and that environmental adjustments may help. This raises many questions about infant nutrition and environmental control. Further insight into the problems will come from better understanding of the earliest stages of the development of the immune response, discussed by A. R. Hayward.

The identification of reaginic antibody, characteristic of atopy, as the immunoglobulin IgE has enabled us to identify specific IgE antibodies—for example, by the radioallergosorbent test (R.A.S.T.)—and to measure their total amount. L. Wide reports on the sensitivity of this test for common allergens and its close correlation with skin tests, passive transfer (P.K.), provocation, and chopped-human-lung sensitization tests. The use of the R.A.S.T. is likely to be particularly helpful in paediatric allergy. It may also help in the assay and preparation of purer specific allergens.

The implications of recent work for the treatment of allergic disorders such as hay-fever and asthma are discussed by C. B. S. Wood, and of paediatric gastrointestinal allergy by S. Freier, who analyses the features and management of food allergy in infancy. There may be a place for giving sodium cromoglycate by mouth.

In allergic diseases of the skin the roles of immune complexes in erythema, purpura, or necrosis and of T cells in contact dermatitis are discussed by J. L. Turk and S. Katz. Atopic dermatitis remains a mystery, though its recognition is important if dietary and other measures are to be taken to prevent the development of respiratory and other disorders due to allergy. Upper and lower respiratory allergic diseases provide clinical examples of the different types of allergic reaction. J. Pepys described the slowly developing, prolonged, and potentially severe type III reactions responding well to corticosteroids, which in turn have no obvious effect on type I, immediate, reactions. Methods of study of nasal allergy described by G. Taylor can be useful for diagnosis, assessment of response to treatment, and possibly for direct nasal treatment as well. In the lower respiratory tract the features of the clinically important varieties of pulmonary aspergillosis and fibrosing

alveolitis and their management were analysed by Margaret Turner-Warwick. N. S. C. Rice and B. R. Jones added a detailed analysis of the symptoms of vernal kerato-conjunctivitis and its management with corticosteroids, acetyl-cysteine, and sodium cromoglycate.

Credit for organizing this meeting is due to T. Oppé and J. Pepys, and for its editing to J. Brostoff. The sponsors, Unigate, deserve thanks for making the proceedings available free on request to interested paediatricians and others.

[1] Unigate Paediatric Workshop No. 1, ed. J. Brostoff, *Clinical Allergy*, 1973, 3, suppl.

Paying for Research

Medical research is one of the very few aspects of health care where non-government finance makes more than a marginal contribution. So it is interesting that, according to a recent estimate[1] by the Office of Health Economics, it is also one of the fastest growth areas in terms of money spent. Between 1961-2 and 1972-3 expenditure from all sources—public and private—went up four-fold, from £26 million to £108 million. This impressive rise, even allowing for inflation, represents a far greater rate of increase than that recorded by expenditure on the N.H.S. during the same period. In short, medical research seems to have benefited from being able to draw on a number of different sources of finance, rather than being entirely dependent on the Treasury.

Still, the trend is towards greater reliance on central government finance: a trend which, though at present only slight, could have long-term implications both for the sort of research that is carried out and for the conditions in which researchers work. In 1961-2 government finance, channelled through the Medical Research Council and the University Grants Committee, accounted for 58% of the total spent on medical research. By 1972-3 this had crept up to 61%. The rest was paid for partly by the pharmaceutical industry and partly by charities and trusts, the industry's share declining from 30·5 to 26·5%, while the charities' rose from 11·5 to 12·5% of the total.

Equally noteworthy has been the changing role of the Department of Health and Social Security. At the beginning of the period the D.H.S.S. made no direct contribution to expenditure on medical research. By the end it was spending £10 million a year. Yet this was before the full effects of the Government's adoption of the Rothschild recommendations[2] which introduced the "customer/contractor" principle, giving government departments more influence at the expense of the research councils.

If the Government's role in the financing of medical research is to become both bigger and more direct, then it is crucial that the system for allocating funds should become more open. Increasing public participation should also mean increasing opportunities for public scrutiny of what the D.H.S.S. is doing, how, and why. Fortunately there has already been some progress in this direction. The appointment of a Chief Scientist, Sir Douglas Black, backed[3] by "a small team of scientists of widely varying experience in the medical and social sciences" from outside the department should help to ensure that criteria other than administrative expediency will be applied to financing research. Further, the publication[4] of details of the research funded by the D.H.S.S. allows an examination of departmental priorities. The hope must be that these will be vigorously debated since it is far from clear at present what the Department's policy is: for example, it has been financing 56 projects concerned with technology and hardware and 40 using computers as against only eight dealing with handicapped children—though those projects vary greatly in cost and scale.

It would be illusory, however, to expect general agreement about what the right priorities in medical research should be. Should they be determined by the size of the groups of sufferers? Or by the availability of research staff? Or by calculations about the likelihood of making a research breakthrough? There are no self-evident answers to such questions, underlining the importance of diversity both in the source of finance and in the criteria applied. Since no one has a monopoly of wisdom in this field, it would be unfortunate if there were a monopoly of control over funds.

It is precisely because diversity is so desirable that the trend towards government-financed research requires watching. At present the danger of an excessive government role in the funding of medical research is still extremely remote; the rapid growth of charity and foundation contributions is particularly reassuring, and the main problem remains that of persuading the government to spend more. But if the nationalization of the pharmaceutical industry, or any part of it, were to become an active political issue, then the effects on the balance of research funding ought to be one of the considerations in the debate. As the report of the Sainsbury Committee[5] pointed out, the pharmaceutical industry has played a major part in the "great advances in therapeutics during the past few decades," even if much of the industry's effort was concerned with the "imitation of existing products by the minimum of molecular manipulation required to circumvent patents."

Since the Sainsbury report appeared, the pharmaceutical industry has rather lagged behind in the financing of research, but it is not clear whether or how the balance of the research effort has changed. As in the case of the public sector, the first need seems to be for more information before decisions are taken.

[1] Office of Health Economics, *Expenditure on Medical Research*, Information sheet no. 25. London, O.H.E., 1974.
[2] The Lord Privy Seal, *A Framework for Government Research and Development*. Cmnd. 4814. London, H.M.S.O., 1971.
[3] Department of Health and Social Security, *Annual Report*, 1972, Cmnd. 5352. London, H.M.S.O., 1973.
[4] *Portfolio for Health No. 2*, ed. G. McLachlan for the Nuffield Provincial Hospitals Trust, London, Oxford University Press, 1973.
[5] Report of the Committee of Enquiry into the Relationship of the Pharmaceutical Industry with the National Health Service (chairman Lord Sainsbury). *Report*, Cmnd. 3410. London, H.M.S.O., 1967.

Obsessional Slowness

Discussing[1] obsessional illness in 1956 Sir Aubrey Lewis was fully justified in saying that little progress was apparent in our knowledge or management of obsessional-compulsive disorders. Response to treatment was poor—whether psychoanalytical, psychotherapeutic, with drugs, or by other means. Both Lewis[2] and Pollitt[3] had found high remission rates but there was a strong suspicion that these were independent of the treatment given.

Since then considerable advances have been made in treatment. Enduring unremitting illnesses with severe incapacity have long been known to respond to prefrontal leucotomy, but at the risk of some damage to personality. More accurate stereotactic surgical techniques are now used and are devoid of serious risk of such damage[4 5]; so much is this so that surgery might well be offered to less severely ill