The clinical, serological, and haematological features of these cases and those of previously reported epidemics are presented and compared with the features of sporadic seropositive cases of infectious mononucleosis.

Certain outstanding differences between sporadic and epidemic forms of infectious mononucleosis are stressed and it is suggested that the two forms differ in aetiology.

The term "epidemic variant of infectious mononucleosis" is suggested for this condition.

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The report of the Regius Professor of Medicine at Oxford for the year ending July 31, 1953 (*Oxford University Gazette*, February 15, 1954), refers to the proposed extension of the department of anatomy and the "magnificent new building" which is to be built for the department of physiology. In the departments of pathology and pharmacology shortage of teaching space will continue to hamper improvement. The Regius Professor expects that "the increase from 65 to 76 in the annual admission of medical students will be absorbed by the preclinical departments without any effect more troublesome than a perpetuation of rather lower standards of teaching." During the year concerned there were 80 clinical students, including 13 from Cambridge, four from Leeds, and one from London. In the final Oxford B.M. examination the students who had done their clinical training at the Radcliffe Infirmary rather more than held their own with those trained in the London hospitals and elsewhere.

TREATMENT OF ELDERLY PSYCHIATRIC PATIENTS

USE OF A DIAGNOSTIC CLASSIFICATION

BY

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It has become widely recognized that mental and nervous illnesses occurring in old age do not necessarily result in a permanent state of emotional and intellectual disorganization. In many instances the disturbance is temporary and can be alleviated or even removed by appropriate treatment. Clow (1948) found that a recovery rate of 24.1% and an improvement rate of 40% could be obtained if there was a careful selection of patients from favourable social circumstances. In public mental hospitals, where all types of patients are admitted, Cook *et al.* (1952) showed that 40% of patients over 65 could be discharged from hospital. It is therefore of importance to weigh up the chances of successful psychiatric treatment in old people. This is particularly necessary nowadays, when the accommodation for the treatment and care of the aged sick is very limited. Until the time when psychiatric facilities in this country are unlimited some screening method is essential to ensure that the limited facilities available are used to the utmost advantage both to the patient and to the community. Our main aim in this paper is to show that a simple diagnostic screening results in the conservation of active psychiatric care for those patients most likely to benefit from it.

Suggested Solution of Problem

This study was undertaken to test the hypothesis that for patients over 60 referred to a psychiatric clinic the determination of appropriate treatment would be materially facilitated by placing them in one of the following three diagnostic and prognostic categories: (a) dementias of old age—that is, irreversible disorganizations of the personality due to degenerative brain changes; (b) long-standing neurotic, psychotic, or character disorders; and (c) recent reactions, either affective or toxic-confusional.

It may be doubted whether it is possible in practice to classify patients in the older age groups, even under broad diagnostic headings, for it is the exception rather than the rule for elderly patients to suffer from one disease alone. There are, without doubt, patients who present a clinical picture indicative of a combination of "functional" disorder and organic dementia. Affective disturbance is often the leading symptom in cerebral arteriosclerotic dementia, and less frequently in senile dementia, and this association may not be purely due to chance as is sometimes suggested. On the other hand, the occurrence in aged patients of uncomplicated functional psychiatric illnesses in contradistinction to organic psychoses has been clearly recognized since the days of classical descriptive psychiatry, and it is not surprising that, using case records alone, it was possible to differentiate between psychoses showing predominantly either organic or functional features (Post, 1951). Similarly, Roth and Morrissey (1952) were able to point out that senile dementia and depressive psychosis occurring during the senium are two quite separate conditions.

It is contended that for practical purposes most elderly patients with psychiatric disorders can be allocated to one of the three groups given above, and that, as a result of an out-patient consultation, one of the following recommendations can be made: (1) admission to hospital for active psychiatric treatment or attendance for out-patient psychiatric treatment, or (2) home care under supervision of a general practitioner without special psychiatric treatment or admission to chronic wards of mental hospitals primarily for nursing care.

In this study the term "active psychiatric treatment" is not reserved only for those patients who received physical treatment, but also includes those for whom a planned course of psychiatric therapy designed to ameliorate the clinical condition was recommended. It has been thought desirable to include in the same treatment group both home care under supervision of the general practitioner and admission to chronic wards in mental hospitals primarily for nursing care, because these recommendations depended not only on the patient's clinical condition and its severity but also on other factors such as suitability of home accommodation, economic status, and the existence of relatives willing to undertake care of the patient. In effect, treatment recommendations have been classified into two main categories: active and other. If on follow-up these recommendations proved to have been suitable in a significantly high proportion of cases, one might be led to conclude that the diagnostic and prognostic classifications on which they were largely based were also, on the whole, correct and useful.

Method of Investigation

Since 1949 most of the patients over 60 referred to the Maudsley Hospital for consultation have been examined by one of us (F.P.), who has also been responsible for recommending their treatment. Patients thus referred do not form a representative sample of old people with psychiatric illnesses, as acutely disturbed patients are rarely seen in an out-patient clinic, and for this reason examples of acute toxic confusional psychosis were not encountered. Many patients were quite fit to attend the hospital, but had been a problem to their doctors for some time; the behaviour of most did not make the need for any particular type of care or treatment imperative. This study is based on 192 patients over 60 personally examined during 1949 and 1950. Table I shows their age and sex distribution.

TABLE I.—Age and Sex of Patients Included in Survey

Age	Males	Females	Total
60-64 years	27	54	81
65-69	21	43	64
70-74	10	20	30
75-79	3	12	15
80 years and over ..	1	1	2
Total	62	130	192

$$\chi^2 < 0.9; \text{ d.f. } = 3; P = 0.80 \text{ when } \chi^2 = 1.005.$$

The assessment of a patient took between 45 and 75 minutes, and usually began by obtaining information from the accompanying friend. In the examination of the patient, behaviour, mood, and thought content were noted, and a brief assessment was made of the degree of intellectual preservation, with special reference to orientation, past and recent memory, and retention. A physical examination focusing attention on neurological and cardiovascular abnormalities completed the examination. Where possible the patient's own account of the development of symptoms was obtained. The opportunity was taken for a discussion of the patient's troubles, so that even in those cases in which no positive treatment was offered the interview was useful. The co-operation received from the patients and relatives in the follow-up seems to indicate that they regarded the interview as worth while.

In allocating patients to one of the three diagnostic categories whose usefulness is under investigation, evidence

coming from the life history and development of symptoms was given prime consideration. The history of the illness and its relationship to the previous adjustment of the patient were particularly helpful diagnostic pointers. Evidence of gradual decline of the ability to deal with everyday tasks and of impairment of memory was a good indication of dementia, which was almost always confirmed on examination of the patient. On the other hand, it was held that apparent intellectual impairment evinced during the stress of examination was less reliable than the description of intellectual decline given by the informant accompanying the patient. Special inquiry was usually needed to elicit a history of fainting turns, transitory pareses, or speech disturbances; and this, even in the absence of neurological signs or patchy intellectual defects, was regarded as indicative of cerebral arteriosclerosis. In doubtful cases the occurrence of perseveration and failure in manipulating and recalling recent personal and general events were thought to provide more convincing evidence for dementia than the repetition of numbers, addresses, or test stories.

On the whole, it was found that most cases of organic dementia were sent for consultation at a time when the condition had become well established, and the diagnosis only rarely presented a real problem. By contrast, the onset in affective illnesses was as a rule much more recent, and presented a clear-cut and rapidly evolving change from the patient's previous level of adjustment. The most valuable pointers in the subject's life history were previous affective reactions or dysthymic tendencies, in the sense either of lifelong mood swings or of moroseness often associated with so-called obsessional character traits. Difficulties encountered with patients of this type of make-up when exhibiting both affective and organic mental symptoms have already been mentioned.

The differentiation of mild affective states occurring in persons with long-standing neurotic difficulties from the group of chronic psychotic, neurotic, or character disorders was problematical in a number of instances; but on the whole this last group stood out clearly in terms of biographies rather than of clinical pictures defined on examination. To what extent the "caricaturing" in old age of previously unsatisfactory and unstable personalities, as seen in this group, may mark the beginning of a dementing illness did not have to be considered during this investigation, which was concerned only with the usefulness of our three diagnostic categories for short-term prognosis and choice of treatment. Only four patients were excluded from classification: a woman with an arrested G.P.I.; a woman with a hemiplegia without psychological symptoms; a woman with a doubtful conversion hysteria, denying previous neurosis; and a man with an advanced cerebral tumour.

Unless the patient had been kept under observation, a letter was sent after the lapse of at least one year to the relative who had accompanied the patient—or, if he had originally come alone, to the patient himself—asking for information in general terms. In the rare instances in which this letter remained unanswered, the family doctor or the hospital to which the patient had been recommended was approached, and in this way failure to elicit information occurred in only 14 of 192 cases. Though in a number of instances the patients were followed over longer periods, for the purposes of this study their status has been recorded as between 12 and 18 months after the first consultation. A postal follow-up was regarded as reliable enough to discover whether the patient was still alive, at home, or in hospital. No analysis has been made of the descriptive statements concerning the subject's mental state; these qualitative accounts are briefly considered later.

Assessment of Results

Among the patients examined there was a marked preponderance of affective disorders. There was only one hypomanic man in this group, which otherwise ranged from severely agitated, deluded, and perplexed patients to mildly anxious and dejected people, and which also included

patients with some paranoid symptoms. Recent development of the disorder, either for the first time or, more often, in repetition of similar attacks throughout life or late maturity, was common to all in this group. Most patients had illnesses of moderate severity, retaining "insight" and a wish for help, and it is not surprising that this group should preponderate at an out-patient clinic. There were 46 patients with organic psychoses of old age. Finally, 33 others were regarded as long-standing cases of psychoses (mainly paranoid schizophrenia), neurosis—for example, chronic obsessional states and various types of hysteria—and character disorders—for example, paranoid personalities.

Recommendation of long-term institutional care had to be made in only 11 cases, including nine with advanced senile dementia. Seventy-five patients were referred back to their doctors with advice for future management. Some of them were seen on two or three occasions, and assistance was given by the psychiatric social worker in many instances. Active psychiatric treatment was recommended in 102 cases. In-patient treatment was advised for 95 of these, and most patients were admitted on a voluntary basis to the Bethlem Royal Hospital or to the regional mental hospital; there were only six refusals. Regular out-patient attendance for social and psychological treatment was advised in only seven cases. This unsatisfactory state of affairs was partly owing to the fact that at the time the geriatric service of this hospital was still in the process of gradual development. At present, much larger numbers of patients are given out-patient supervision, but, even so, in a considerable proportion admission to hospital has to be recommended ultimately, possibly because there is reluctance among general practitioners to send old people to a psychiatrist unless they feel admission should be considered. Mildly deteriorated, anxious, depressed, and lonely old persons who made up 11.2% of the random sample of the aged population examined in Sheldon's (1948) field study are only rarely seen in the psychiatric out-patient clinic.

In determining the utility of this diagnostic classification two main issues arise: (1) Does the diagnostic classification help to decide the appropriate treatment? (2) Are the results of treatment in accordance with the clinician's expectations? It must be stressed here with regard to the first question that we do not expect a diagnostic classification to fix automatically the appropriate treatment. It can do no more than help the clinician in his decision. There are some patients who are not easy to classify into the three categories used here because they show features of more than one diagnostic category. These patients have been arbitrarily assigned to one or other category and may require different treatment from that given to others in the same diagnostic group.

If it is not possible in elderly patients to differentiate clearly between diverse diagnoses, and if their treatment recommendations are based on other criteria, we should expect to find equivalent proportions of patients receiving the various treatments in each of our diagnostic groups. Table II shows the treatment recommendations by psychia-

TABLE II.—Treatment Recommendations by Psychiatric Diagnosis

Disorder	Active Psychiatric Treatment	Other Treatment	Total
Recent affective	85	24	109
Long-standing	7	26	33
Organic	10	36	46
Total	102	86	188

$$\chi^2 = 56; P < 0.0001.$$

tric diagnosis. There are obvious differences with respect to treatment between diagnostic groups and these are too large to be due to chance ($\chi^2 = 56$, $P < 0.0001$). It may be argued that age might have been a determining factor in recommending treatment. Table III shows recommendations by age; the proportions of patients receiving active

TABLE III.—Treatment Recommendations by Age

Age	Active Psychiatric Treatment	Other Treatment	Total
60-64 years	42	37	79
65-69	33	30	63
70 years and over	27	19	46
Total	102	86	188

$$\chi^2 = 0.9; P = 0.3.$$

treatment in each of the age groups are similar ($\chi^2 = 0.9$, $P = 0.30$). There seems reason to believe, therefore, that the diagnostic classification did determine on broad lines the type of treatment recommended. Thus for affective disorders of recent onset we find that the predominant recommendation is active treatment; for each of the other diagnostic categories the most frequent recommendation is reference back to general practitioner or institutional care. As stated earlier, in each diagnostic group there were some patients who showed atypical features. If the grouping of the cases by diagnosis gives positive guidance on treatment recommendation to the clinician we should expect to find that the typical case in each diagnostic group receives the typical treatment—for example, active treatment for affectives—and, *mutatis mutandis*, atypical cases receive atypical treatment. Table IV shows for each group the treatment recommendations for the typical and atypical cases. The differences are significant (in each case P is less than 0.02) and thus support this contention.

TABLE IV.—Treatment Recommendations by Psychiatric Diagnosis

Treatment Recommendation	Psychiatric Disorder					
	Acute Affective		Long-standing Psychotic, Neurotic, or Personality		Organic	
	Typ.	Atyp.	Typ.	Atyp.	Typ.	Atyp.
Active psychiatric treatment ..	76	9	2	5	2	8
Other treatment ..	15	9	22	4	31	5
χ^2 using Yates's correction. Probability (P)	9.836 0.01 > P > 0.001		5.544 0.02 > P > 0.01		12.92 0.001 > P > 0.0001	

To test the validity of the advice given at consultations, and, indirectly, the usefulness of the diagnostic categories on which it was based, each case was scored either as *recommendation successful* when the outcome after one year was in accordance with expectation, or *recommendation unsuccessful* when this was not so. All patients whose follow-up has been unsuccessful were classed as failures, as were all who had been recommended for active treatment but who had remained in hospital continuously throughout the follow-up period. Admissions to hospital or institution in all cases in which supervision by the general practitioner had been advised were scored as failures. Deaths were scored as indicating faulty disposal when they were unexpected in the sense of being intimately associated with the psychiatric illness whose nature or severity had not been correctly assessed—for example, suicide in a patient returned home, or death from cerebral thrombosis in a person diagnosed as suffering from a recurrent depressive psychosis. Cases of affective illness which responded to active treatment but had to be readmitted during the follow-up period were counted as successful predictions in view of the well-recognized tendency of affective illnesses to recur.

The next problem is to see whether the patient's response to treatment was in accordance with the clinician's expectations. If classification by diagnosis aids the clinician to make an appropriate treatment recommendation, then we should expect to find that, on the whole, typical cases responded in accordance with expectation and that the outcome of atypical cases was more difficult to predict. In all, there were 148 cases which were so clear-cut as to be

easily classifiable into the three diagnostic groups used. Of these the clinician was able to predict correctly in 83%. The remaining 40 cases, which although assigned to one of the three groups showed symptoms of one or two of the other categories, had an accurate prediction rate of only 52.5%. This difference is highly significant ($\chi^2=16.5$, $P<0.0001$).

The outcome (Table V) was successfully predicted in 83% of the affective disorders, and it was found easier to predict the outcome of typical rather than atypical cases, for the success rates (proportion of successes to all cases) were 88% and 55% for typical and atypical cases respectively; this difference is highly significant, as the likelihood of obtaining

TABLE V.—*Result of Predictions by Psychiatric Diagnosis*

Result of Prediction	Psychiatric Diagnosis					
	Acute Affective		Long-standing Psychotic, Neurotic, or Personality		Organic	
	Typ.	Atyp.	Typ.	Atyp.	Typ.	Atyp.
Successful ..	80	10	18	5	25	6
Failed ..	11	8	6	4	8	7
χ^2 using Yates's correction. Probability (P)	7.987 0.01 > P > 0.001		1 P > 0.30		2.6 P > 0.10	

so large a difference by chance is less than 1 in 100. In the long-standing disorders the overall success rate was 70%, with 75% in the typical and 55% in the atypical cases. For all organic psychoses the success rate was 67%, with rates of 76% and 46% for typical and atypical cases respectively. These differences are not large enough to be considered due to other than to chance. If we compare the success rates for typical cases only in each of the three diagnostic groups—that is, 88% for affectives, 75% for the long-standing, and 67% for the organic—the differences are not significantly large. The outcome of recommendations in 69 out of 76 (91%) typical affectives receiving *active* treatment, and in 17 out of 22 (77%) typical long-standing cases, and in 24 out of 31 (77%) typical organic cases receiving *other* treatment were successfully predicted. On the other hand, in only five out of nine (55%) of atypical affectives receiving *active* treatment were successful predictions achieved. The difference between results in typical and atypical affectives is statistically significant (χ^2 , using Yates's correction, =5.5; $P=0.02$). Thus it would seem that when a diagnosis of typical affective disorder is made the outcome of treatment can be predicted with good likelihood of success. The numbers of atypical cases in the other two diagnostic groups are very small, but similar results are obtained—that is, in atypical long-standing cases receiving *other* treatment only one out of four successes was obtained, and one success out of five atypical organic cases receiving *other* treatment was achieved.

Additional support for the claim that most patients were assessed correctly at the out-patient consultation is provided by a comparison of the death rates. During the follow-up period 12 of the 30 senile demented and 3 of the 16 cerebral arteriosclerotics had died—that is, 1 in 3 of the patients classified as afflicted with one of the old age organic psychoses, or 1 in 2½ if the two patients who could not be traced are presumed dead. By contrast, only 2 of the 33 people with long-standing personality disorders had died (1 in 17, or on the unjustified assumption that all 5 whose follow-up had failed were dead, 1 in 4½). Finally, of the 109 patients with affective disorders only 7 were known to have died—1 in 15; or, if all 7 failed follow-up cases are assumed to have died, 1 in 8. As the age distributions for the three diagnostic groups are different the mortality rates should be age-standardized. This is hardly meaningful for the small numbers involved, but in each age group the mortality rates are higher for the organic disorders than for the other two groups (Table VI).

TABLE VI.—*Deaths by Age Group and Psychiatric Diagnosis*

Diagnosis	60-64 Years	65-69 Years	70+ Years	Total
Affective disorders: No. of patients ..	46	42	21	109
.. .. deaths ..	3 (6.5%)	4 (9.5%)	0	7 (6.4%)
Long-standing neurotic, psychotic, and per- sonality disorders: No. of patients ..	20	8	5	33
.. .. deaths ..	0	1 (12.5%)	1 (20%)	2 (6.1%)
Organic disorders: No. of patients ..	13	13	20	46
.. .. deaths ..	1 (7.7%)	4 (30.8%)	10 (50%)	15 (32.6%)

Our follow-up method is not reliable enough to allow qualitative assessment of the patients' state of health, but a brief examination of adequate statements given in 144 surviving cases demonstrates for each diagnostic category a pattern in accordance with expectation. Of the surviving organic patients only 3 were reported to be much improved (this includes 2 arteriosclerotics), 12 were unchanged, and 13 had become more severely demented. Twenty of the people with long-standing disorders were unchanged, only 3 had grown worse, and 3 were claimed to have improved in mental health. The mental health of the patients with affective disorders had definitely deteriorated in only 6; 52 were described as free from symptoms, and 32 either had not recovered at all or had shown frequent recurrences without a downward trend having become apparent.

Conclusions

An evaluation of our follow-up results would be incomplete without recording some of the errors of clinical judgment which were brought to light. One patient committed suicide and another one attempted it while awaiting admission as voluntary patients, and a suicidal attempt by a patient diagnosed as suffering from a mild depressive reaction in a setting of arteriosclerotic dementia and recommended for continued home care must also be recorded. A chronic drug addict died of accidental poisoning and ought to have been placed under supervision. Less serious mistakes, though more humiliating for the prognostician, were (1) the man diagnosed as suffering from a mild hypochondriacal depression who died four days later of a cerebral haemorrhage (post-mortem report); (2) the woman assessed as a paranoid senile dement who was described as much benefited by a prefrontal leucotomy, though still in hospital. Further errors have become evident in cases followed for more than 18 months, but long-term prognosis was not attempted in this investigation, as we know too little about the natural history of the psychiatric illnesses of old age, and in any case will never be able to predict the occurrence of external stresses which may influence their course and outcome.

While not making light of these errors of judgment, it is claimed that as a rule the correctness of the original assessment was confirmed by the subsequent course of the disorder. Patients who were classified as suffering from affective reactions or phasic mood-disorders, and who were thought likely to benefit from active psychiatric treatment, responded in the great majority of cases with recovery or at least temporary remission of symptoms. Patients categorized under the heading of long-standing personality disorders did not deteriorate into more seriously disturbed states because specialist treatment was withheld, nor did they improve very much in the few instances in which hospital admission was advised. In the organic groups some success can be claimed in picking out patients likely to respond to active hospital treatment—for example, on account of affective components—and in deciding the question whether institutional care was necessary or could be postponed without inflicting undue hardships on the patients or their families.

The results of this study seem to support the claim made initially that, even at a single out-patient consultation, clinical assessment of aged patients in terms of transitional

reactions, or long-standing personality disorders, or dementing illnesses is possible. It is useful in allowing us to concentrate our limited facilities for active treatment on the patients most likely to benefit. But classifying our patients with a view to "disposal" does not mean that we subscribe to a watertight system of disease entities, or assume that affective illness precludes insidious organic dementia. The fact that active treatment was advised in 17 patients belonging to groups thought to be therapeutically unrewarding indicates that we have not been using our three types rigidly, but merely as points of orientation. To an increasing extent we are attempting to treat elderly patients as out-patients whenever possible. Apart from the obvious advantages, this furnishes us in doubtful cases with a period of observation during which to assess the relative importance in the individual patient of irreversible dementia, lifelong or long-standing personality disorder, or of affective, and thus mostly reversible, reaction.

Summary

Of 192 patients over 60 attending consecutively for psychiatric consultation at an out-patient clinic, 188 were allocated to one of three clinical groups: (a) organic psychoses of old age; (b) long-standing neurotic, psychotic, or character disorders; and (c) affective illnesses of recent onset. Corresponding recommendations for their treatment were made.

The status of the patients 12-18 months later demonstrated that these categories had been useful pointers towards making prognostic assessments and recommendations for treatment.

The assumption was supported that affective illnesses in aged patients show a favourable immediate response to active treatment.

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PREMATURE DELIVERY IN HAEMOLYTIC DISEASE OF THE NEWBORN

BY

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Premature delivery of the baby with haemolytic disease of the newborn has been widely condemned (Allen, Diamond, and Vaughan, 1950; Mollison and Walker, 1952; Bourne and Williams, 1953) because the premature baby with haemolytic disease is less likely to survive and more likely to develop kernicterus than is the full-term baby. However, in our experience, individual cases do arise in which there are definite clinical indications for premature delivery of the baby. This is exemplified in the following case.

Case Report

A married woman aged 33 attended Solihull Hospital in August, 1951, and gave the following obstetric history. Her first pregnancy, in 1939, ended in a stillbirth at 28 weeks

gestation; her second pregnancy, in 1941, ended in an abortion at 24 weeks; her third pregnancy, in 1943, ended in a stillbirth at 38 weeks gestation (at this time she had a blood transfusion, but the full details are not available, and, of course, this was before the days of routine rhesus grouping); her fourth pregnancy, in 1945, ended in a stillbirth (spina bifida) at 36 weeks; and her fifth pregnancy, in 1950, ended in a stillbirth at 36 weeks; there was an associated mild toxæmia, and antirhesus antibodies were found early in this pregnancy. Her last menstrual period was April 3, 1951. She was blood group A Rh-negative (cde/cde), and blocking antirhesus antibodies were present in the serum. The husband belonged to blood group O Rh-positive; the most likely genotype being CDE/cDE.

The pregnancy continued normally, and serological examination showed virtually no change in the antibody titre. At the thirty-third week of pregnancy she described a reduction in the frequency and strength of the foetal movements. She stated: "The baby moves as if it is tired." When questioned further she said that the other babies had behaved similarly prior to the intrauterine death of the foetus. It was therefore thought that unless the baby was delivered within a short time it would die *in utero* like its predecessors, and that nothing more would have been achieved than in the previous pregnancies. The spur to action was the symptom of diminishing foetal movements.

Accordingly, on November 27, lower segment caesarean section was performed, and a living male child weighing 4 lb. 6 oz. (2 kg.) was delivered. It was noticeably pale at birth, and the findings on examination of the cord blood were: Group O Rh-positive; genotype cDE/cde; haemoglobin, 4.8 g.%; direct Coombs test positive.

A replacement transfusion was given three hours after birth and 430 ml. was exchanged (100 ml. per lb.—220 ml. per kg.). Next day the jaundice had deepened, but an attempt at a second replacement transfusion failed. At this stage the haemoglobin was 18.2 g.%. During the following month it was necessary to give three small "topping-up" blood transfusions. At 21 months the baby was normal in every respect.

In September, 1952, the mother returned to the antenatal clinic when 12 weeks pregnant. Serological examination confirmed the presence of blocking antirhesus antibodies of approximately the same titre as in the previous pregnancy, and it remained so throughout this pregnancy. At the thirty-fourth week of this pregnancy the foetal movements again diminished, and the patient was immediately admitted to hospital and caesarean section again performed. A living male child weighing 3 lb. 10 oz. (1.6 kg.) was delivered. The spleen was just palpable and the liver edge was 2 cm. below the costal margin. There was slight oedema of the legs, and jaundice developed within one hour of birth. The findings on examination of the cord blood were: Group O Rh-positive; genotype cDE/cde; haemoglobin, 6.5 g.%; direct Coombs test positive. A replacement transfusion of 600 ml. (166 ml. per lb.—365 ml. per kg.) was given four hours after delivery. Jaundice became more severe on the following day and lasted 24 days. "Topping-up" blood transfusions were given on the eighteenth and the sixtieth days. At seven months the baby was completely normal.

Discussion

It is obvious from the mother's history that she belongs to the group of women who in each pregnancy have infants severely affected by haemolytic disease of the newborn, and it seems that if a mother's first affected infant is stillborn or hydropic, subsequent infants delivered at term are unlikely to be viable (Davies, Gerrard, and Waterhouse, 1953). Our patient had had five successive stillbirths or abortions, and the outlook for further pregnancies seemed even more hopeless. We considered that the only chance of having a viable infant was by premature delivery. The serological findings, the diminishing foetal movements, and the condition of these two babies at birth indicated that premature delivery was a life-saving procedure. The indication for premature delivery