systems are commonly affected, producing myocarditis, encephalitis, cough and pain in the chest, renal symptoms, and diarrhoea and vomiting.[1 2] In children there may be a less severe illness which may present with diarrhoea and vomiting, leading to a mistaken diagnosis of gastroenteritis.

Blood culture is the most important investigation. The Widal reaction may be helpful, but it can be unreliable, especially in the early stages of the illness. Leucopenia and anaemia are frequent, and there may be evidence of disseminated intravascular coagulation.[3] Although jaundice is unusual in typhoid, mild abnormalities in the results of liver function tests are common.[3]

Typhoid responds to chloramphenicol, amoxycillin, co-trimoxazole, and mecillinam; and studies suggest that, given sensitive organisms, there is little to choose among the various antibiotics.[4] Nevertheless, unlike other infections caused by Gram-negative bacilli, response to treatment is slow. The mean duration of fever after start of treatment is five days irrespective of the antibiotic used; while blood culture results may remain positive for up to 10 days after the start of treatment, a curious phenomenon for which there is no apparent explanation.

The best advice on enteric fever is contained in the *Memorandum on Typhoid and Paratyphoid Fevers:* prepared by the Standing Medical Advisory Committee for the Central Health Services Council: "Typhoid and paratyphoid fevers should be considered as a possible diagnosis in any patient who has unexplained pyrexia for three days or more; if the patient has recently been abroad it should be considered from the first day of illness."

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[3] Nasrallah, S M, and Nassar, V H, *American Journal of Gastroenterology*, 1978, **69**, 63.
[4] Geddes, A M, *Journal of Antimicrobial Chemotherapy*, 1977, **3**, 382.
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Manic states in affective disorders of childhood and adolescence

Whether or not children ever develop diagnosable and treatable affective disorders is still hotly disputed—despite a mass of publications over more than two decades[1 2] and an international conference.[3] A recent American paper[4] on the treatment of depressed children with learning disorders even carried a cautionary editorial paragraph on the dangers of diagnosing let alone treating this condition in children. Yet depressive illness in children accounted for 10% of the unselected-intake patients seen in a European urban child psychiatric service,[5 6] and the malignant effects of the untreated illness on the intellectual and general development of children is beginning to be realised and described.[7]

Clinical reality has forced the occasional recognition of manic states in childhood, and several reports of single cases or small groups have appeared from time to time. Such reports have become more common since the increasing acceptance of lithium treatment in adults.

The manic state, like the depressive, can be considered as an affective response to endogenous (physiological) or environmental stress.[8] This may be especially true in children. While manic behaviour is to be expected within the manic-depressive illness, a manic component may also complicate schizoaffective illnesses[9 10] and severe chronic anxiety states. Response to lithium treatment is occasionally used as a diagnostic pointer in all these groups, and several workers have described[8 11-13] some children who respond to lithium among apparently hyperactive anxious individuals difficult to identify within the total group of overactive children. Anthony and Scott[14] listed the characteristic features of manic illness in children as including the following: evidence of an abnormal psychiatric state close to the classical clinical description at some time of the illness; a family history suggesting a manic-depressive diathesis; and an early tendency to a manic-depressive type of reaction as manifested in a cyclothymic tendency with gradually increasing amplitude and length of the oscillations and in delirious manic or depressive outbursts occurring during pyrexial illness. The illness might be recurrent or periodic with at least two observed episodes; or diphasic with swings of pathological dimensions; or endogenous illness, with its phases showing minimal reference to environmental events. Often it would be severe enough to indicate the need for inpatient treatment, heavy sedation, or electroconvulsive treatment. Finally, they looked for an abnormal underlying personality of an extroverted type in the absence of schizophrenic or organic states—and emphasised that these should be current not retrospective assessments.

A more clinical approach may often be helpful, with particular attention being given, firstly, to affectivity—exuberant noisy hilarity, unrestrained playfulness, mischievousness, arrogance, aggressiveness; secondly, to stream of thought—ideas of grandeur, delusions of wealth or power, sarcasm, flight of ideas, illogicality, short attention span, and distractability; and, thirdly, to psychomotor activity—overactivity, noisiness, meddlesomeness, socially inappropriate behaviour, loquaciousness and emphatic speech, physical aggression and impulsiveness, and accident proneness. Typically, some vegetative disturbance is also found—failure to eat, insomnia, and abdominal pain—and, particularly in younger children, an admixture of depression which may suddenly supervene with suicidal intensity. Many manic-affective disorders may be misdiagnosed as behavioural disorders or personality problems.[15] The symptoms are intense but variable, and in children they merge all too easily into apparent boisterousness or attention seeking. Vegetative and intellectual problems should give the clue to the diagnosis.

Treatment with lithium carbonate is often effective in resolving manic illnesses in children and adolescents.[10 11 17 18] The problem is to recognise those patients who will respond among the anxious, the schizoaffective, and the manic manic-depressive patients—for a mixed manic-depressive picture is frequently seen in children.[16]

Youngerman and Canino[18] collected reports of 190 children and adolescents aged 3-19 treated with lithium carbonate. Full details were given of only 46—25 boys and 21 girls. Thirty of the 46 had responded. The important features among manic patients who responded to lithium seem to be a positive family history of affective illness,[16] especially if this had responded to lithium treatment; a strong affective component to the presenting illness, particularly with mood swings or fluctuations in learning ability or other periodic behaviour alterations; major mood disturbances with an irregular cyclic pattern (recurrent stupors, frequent outbursts or suicide attempts, or fluctuating psychotic illness[10]), and aggressive or hyperactive behaviour with a major affective component.

Lithium carbonate is certainly worth a trial in such patients

as well as in those children and adolescents who satisfy the rigid criteria of manic-depressive illness. Brumback and Weinberg[17] gave 30 mg per kg per day (divided into three doses) to five prepubertal children with manic episodes, and this easily maintained therapeutic blood concentrations between 0·6 and 1·5 mmol(mEq)/l. But this is a very large dose. A sound procedure is to start with a much lower dose, which is often clinically effective,[11] and modify it if necessary according to the child's response; but—unless toxic reactions develop—treatment should not be abandoned until therapeutic blood concentrations have been maintained for at least two weeks without improvement.

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Registers for the prevention of genetic disease

Following a recommendation by the World Health Organisation[1] a working party of the Clinical Genetic Society has now proposed[2] that preventive genetic registers should be used in Britain to reduce the transmission of inherited disease. This report scrupulously explores the implications of such registers and deserves careful study—because the prospect of genetic registers may alarm some people. In fact, registers of various sorts have been in operation for many years without causing much concern. Hospital diagnostic indexes, lists of "teaching patients," and registers of rare disorders such as haemophilia, polyposis coli, or phenylketonuria have been widely accepted, while registers for the prevention of genetic disease have already been set up in several parts of the world—for example, in Edinburgh, Belgium, and the United States[3]—without excessive difficulty.

Preventive genetic registers appear to be novel because they identify people who are healthy but who risk transmitting inherited disorders to their children. Even this concept is not entirely new: public health authorities have long had the responsibility for seeking out apparently healthy contacts of patients with tuberculosis, typhoid, venereal disease, and other infections. Nevertheless, what might be acceptable in other specialties becomes suspect where genetic disorders are concerned, because of the totalitarian excesses of the twentieth century, and we would all be apprehensive about authoritarian intervention in this area.

To see how a preventive genetic register might work let us consider Duchenne muscular dystrophy. The first step would be to identify all known cases. Next blood tests could be offered to appropriate female relatives. The results of these tests, together with pedigrees and complicated statistics, would allow most carriers to be identified. When pregnant, carriers could then be offered prenatal fetal sexing and abortion of male fetuses. These procedures are available and to some extent already routine even without genetic registers. There are, however, still some uncertainties about the accuracy of carrier detection and the morality of aborting males, half of whom would be normal, while allowing the survival of females, half of whom would be carriers. These reservations make it essential that the parents concerned should always be fully informed and that each stage—inclusion in a register, carrier detection, prenatal diagnosis, and termination—should be wholly voluntary. A Duchenne register of this kind is not a eugenic measure: though the prevalence of affected boys might be greatly reduced the numbers of carriers would probably increase—as would the frequency of the gene in the population. The gain from the existence of a register would be the avoidance of the agony for all concerned in watching affected boys slowly die of an untreatable disease—and it would almost certainly save money, too.

What other diseases would be included in a genetic register? In theory,[4] the autosomal dominant and X-linked recessive disorders offer the best scope for prevention, and this has been confirmed by follow-up of individuals referred for genetic counselling.[5] A preventive register should include particularly those diseases in which some positive benefit may follow—for example, carrier detection or prenatal diagnosis, as in Duchenne muscular dystrophy, haemophilia, and polyposis coli. Individuals with balanced chromosome translocations could also be helped by the prenatal detection of chromosomally unbalanced fetuses. There are even some autosomal recessive disorders (admittedly rare) such as Tay Sachs disease in which carriers can be detected and affected fetuses aborted; within groups of people where these diseases are common a register would have considerable advantages. Huntington's chorea has probably become more clearly associated with genetic registers than any other disorder. Some progress has been made in our understanding of this dreadful disease,[6] but we still cannot identify symptomless heterozygotes or treat choreics. Furthermore, some heterozygotes may take no notice of genetic counselling: they tend to be defiant towards the disorder, often refusing to let it interfere with their lives or their procreation. In these circumstances, the inclusion of Huntington's chorea in a preventive genetic register would be unlikely to achieve very much. Research in Huntington's chorea must go on, but until a diagnostic or therapeutic breakthrough occurs registers are best maintained by specialised units on a research rather than a service basis.

While clinical geneticists are familiar with registers for preventing inherited disease, whether the medical profession as a whole and their patients will accept them will depend on their image. If registers are seen to be part of diagnosis and support they are likely to be accepted. On the other hand, a government-run, national, multiaccess computer register for the prevention of genetic disease would probably be unacceptable, and the working party of the Clinical Genetics Society has