additional reward. But paying midwives more will not be enough. Staff establishments need to be increased, especially in the community, where early discharges of mothers and babies from hospital have increased the workload. The job satisfaction of midwives will be increased if the continuity of care desired by women[18] is helped by increasing the proportion of antenatal care provided in the community. This is safe, acceptable to women, and may be the best way to improve the low rates of breast feeding.[19-23]

A new study of health statistics in the European Community has shown that during 1974-8 Britain had a much lower maternal mortality than France or Germany despite lower health expenditure.[24] This cannot be maintained without adequate resources and staff. Harriet Harman is right to call for the maternity services committee to be reconvened to address the crisis.

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Dyslexia

Not one condition but many

Parents often consult general practitioners and paediatricians about their children's learning difficulties. They may be puzzled about an otherwise bright child's problems in mastering reading and spelling. They may be dissatisfied with the response of the school or may be seeking a diagnosis of "dyslexia" in the belief that a label will alleviate the problem. What should general practitioners be looking for and how should they advise parents who have read accounts of the latest miracle cures?

The first thing to note is that severe reading difficulties that cannot be accounted for by low intelligence occur in 4-10% of children in junior schools.[1] Typically such children have lower verbal than practical intellectual skills, and they are more likely to have had difficulties with speech and language and other developmental delays—for instance, in telling left from right. A minority have problems of clumsiness, poor motor control, and difficulties in differentiating shapes. Social factors are important, both those within the family and those at school. The problems often persist in varied forms into adulthood; many of the early developmental features are no longer seen—and, indeed, reading slowly improves in many cases—but difficulties in spelling often persist.

Severe reading and spelling problems arise from many causes. There is no distinct unitary condition, so the label dyslexia does not help either in defining the problem or in pointing to effective help. Often the label is taken to imply an underlying biological condition as if environmental influences are unimportant. Children with a biological impairment may, however, be more vulnerable to environmental adversities, and reading difficulties result from an interaction between constitutional deficits and environmental hazards.

There is increasing consensus that language difficulties are more important than visuomotor difficulties in the causes of reading difficulties.[2,3] The important studies of Bryant and Bradley have shown that children who have difficulties in reliably classifying speech sounds and in producing rhymes go on to have reading problems.[3] Moreover, when such children are given specific help on sound categorisation their reading difficulties abate. Longitudinal and intervention strategies are important in adducting a causal link between these cognitive deficits and reading problems, and for too long the subject has been bedevilled by studies in which good and poor readers have merely been compared cross sectionally. Almost irrespective of the measure used poor readers perform worse than controls—that is, until the correct controls are introduced. Too often it has been found that poor readers perform similarly to younger normal readers matched for reading age—whether on reversing pqbd or on other visuomotor tasks. Confusing correlation with causality may lead to inappropriate remedial treatments as when poor readers are drilled on visuomotor tasks. Such drilling may improve their scores on tests of visual perception, but it does not improve their reading.

Over the past few years the popular press has promoted a breakthrough in treating dyslexia with tinted lenses, while some professional journals have claimed that monocular occlusion has benefited dyslexic children. Given that reading difficulties have many causes and that vision is necessary for reading, some poor readers are bound to have visual problems. It would be surprising, however, if visual problems explained most reading difficulties because of the strong evidence for underlying language problems.

Wilsher and Taylor have reviewed the scant evidence for the effectiveness of tinted lenses in treating dyslexia and find that Irlen's claims have still to be scientifically tested.[4] Much more important are the studies of Stein and Fowler, who claim not only that poor binocular control of vergence eye movements causes some forms of reading difficulty but also

that monocular occlusion helps to establish a fixed reference eye, which in turn leads on to improved reading.[5-7] These authors discuss subtle eye movements and not difficulties in visual acuity, though these do occur and should be treated. Stein, Riddell, and Fowler used both the Dunlop test and a more complex synoptophore vergence test on 44 dyslexic children and 24 normal readers and found that two thirds of the dyslexic children were unable to make proper vergence movements when tracking small targets but were nearer to normal performance with larger targets.[8] In other studies they reported that poor readers without fixed reference eyes developed them after wearing an eye patch, with subsequent improvement in their reading.[9]

Bishop reviewed the Stein and Fowler studies together with related work and concluded that many normal readers also have unfixed reference eyes as measured by the Dunlop test.[9] Performance on this test is strongly related to both chronological age and to mental age and so without controlling for these factors one cannot draw conclusions about causality. The findings on monocular occlusion are interesting, but a reanalysis of the data showed that the differences between treated and untreated groups disappeared and were no longer significant.[9]

So where does this leave parents and general practitioners? Clearly the child with important reading difficulties will have to be referred for further investigations, but the doctor should provide a detailed history of the child's language development together with information on any history of language, reading, or spelling difficulties in other family members. Although they are not common causes of reading difficulties, it is always worth checking visual acuity and hearing. Children should be referred to educational or clinical pyschologists requesting a full psychometric assessment of intelligence, reading, and spelling. Parents should be encouraged to discuss the child's progress with teachers, but when this has already been tried without resolving the parents' concern the general practitioner or paediatrician should consider requesting the local education authority to undertake a full assessment under Section 5 of the 1981 Education Act. Far from "interfering" in the prerogative of educators the act lays a duty on NHS staff to draw to the attention of the local education authority any child whom they suspect of having "special educational needs." However the battles over dyslexia are resolved, one thing is certain—children who have major difficulties in reading and spelling certainly have "special educational needs."

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Regular Review

Prenatal diagnosis of common genetic disorders

Expanding fast

Prenatal diagnosis of genetic disorders may be undertaken occasionally to facilitate prompt, often life saving treatment. The diagnosis in the third trimester of pregnancy of erythroblastosis fetalis because of maternofetal rhesus blood group incompatibility is a good example.[1] Others include the diagnosis of congenital adrenal hyperplasia[2-4] and of severe congenital heart defect.[5] Unfortunately this approach is rarely feasible, and most prenatal diagnosis is in the first or second trimester to permit termination of pregnancy when the fetus is affected or to reassure parents that the fetus is not affected.

Ideally we should be able to use simple, wholly reliable, non-invasive tests for each of the common genetic disorders in every pregnant woman who requests them. In the real world no such tests exist, and we have to make do with selectively using costly tests of variable sensitivity and specificity, often at some risk to mother and child. The nearest to an ideal test is high resolution fetal ultrasonographic screening for morphological abnormalities.[6] But this complex form of diagnostic ultrasonography is available at only a few hospitals, and it is not reliable for most defects before about 18-20 weeks' gestation.[6] Nevertheless, early prenatal diagnosis of fetal abnormality for many of the more common congenital and genetic defects is currently available. It is also available for many rare genetic disorders, including most inborn errors of metabolism and an increasing number of inherited diseases that are closely linked to one or more detectable DNA polymorphisms but in which the gene product is unknown.

High risk may be indicated in several ways. A couple may have had an affected child or one or other parent or more remote relative may be affected. A prenatal screening test, such as measurement of maternal serum α fetoprotein concentration, may have given an abnormal result requiring more specific confirmation or the mother may fall into a high risk group, for instance, because of her age. For a few recessive disorders of specially high incidence in particular populations both parents may have been shown to be carriers in population screening. This may be so for sickle cell disease in people of west African descent; for β thalassaemia in Mediterranean populations and α thalassaemia in certain Asian populations; for different variants of glucose 6-phosphate dehydrogenase deficiency in several populations; and for Tay-Sachs disease among Ashkenazi Jews. It will soon be feasible for cystic fibrosis in white populations.

Five main methods

There are five main methods of prenatal diagnosis in general use. The most widely established technique is amniocentesis performed at 15 to 16 weeks of pregnancy. This should be done under direct continuous ultrasonographic