which the statutory dose limit (equivalent to 50 mGy in a year) is rarely exceeded. In a survey of British exposures the highest dose rate in any exposed medical staff was 23 mGy a year, corresponding to 4 mGy in the most sensitive eight week period if the radiation was received at a constant rate during a pregnancy. The Radiation Effects Research Foundation is also reassessing the lowering of intelligence by atom bomb exposures (W J Schull et al, report in preparation). If small reductions in intelligence quotient by low doses represent lesser degrees of a more severe mental damage caused at higher doses such reductions might occur without any threshold at low doses, even though severe mental retardation was seen only if a substantial threshold dose had been exceeded. Radiation exposure at low doses during the relevant two periods in pregnancy might then result in a small reduction in the intelligence quotient of the developing child—probably by a few hundredths of one percentage point in the intelligence quotient for each milligray dose. Such a possibility would add to the already recognised risk of childhood cancer because of exposure at any stage in pregnancy, re-emphasising the importance of efficient protection from radiation during pregnancy.

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6 International Commission on Radiological Protection. Developmental effects of irradiation on the brain of the embryo and fetus. Ann ICRP 1986;64-1-44. (ICRP Publication 49.)

Treating asthma in preschool children

Children over 2 may use a Nebuhaler

Asthma should be considered in any preschool child with recurrent respiratory symptoms, even if related to viral infection. At least 10% of infants under 1 year have recurrent chest symptoms, mostly cough and wheezing.1 Persistent nocturnal coughing is a particularly common presentation of asthma. Differential diagnoses of the recurrent symptoms include cystic fibrosis, inhaled foreign bodies, tuberculosis, and recurrent aspiration, but these conditions should be easy to exclude. Some young children can use the Wright peak flow gauge to help diagnosis, but in many a therapeutic trial is necessary to confirm the diagnosis.

Four fifths of those who have recurrent respiratory symptoms at the age of 1 year do not have asthma by the age of 10.2 Most probably have bronchiolitis with recurrent post-bronchiolitic wheezing rather than classic asthma,3 but the treatment is the same for both conditions. The prognosis is poorer in children who develop symptoms early and have frequent and prolonged attacks and coexistent eczema.4

Treatment should include recommending avoiding cigarette smoke and other airway irritants. Attention to psycho-social factors is important, but for most cases all that is required is an explanation of the condition and its treatment.

Many infant wheezers are poorly responsive to β agonists even when given by nebuliser; indeed, sometimes β agonists produce a deterioration in lung function.5 Infants do, however, have smooth muscle and β adrenoceptors as their airways can be protected from the bronchoconstricting effect of ultrasonic nebulised water and histamine by nebulised salbutamol.6 It is thus worth trying β agonists, but nebulised ipratropium bromide may be a more useful bronchodilator in infants below 18 months.7 Theophyllines are available as elixirs, but the unpleasant taste often hampers compliance. Side effects are troublesome and include sleep disturbance, poor concentration, and impaired learning.8 The slow release granule form (Slo-Phyllin) may be given in a dose of 10-12 mg/kg twice daily with benefit even to very small children,9 though one recent trial highlighted the problems associated with poor compliance and side effects.10 Once bronchodilators are required frequently or have been ineffective, a prophylactic agent is required. Sodium cromoglycate, which may be given by nebuliser, powder inhaler, or aerosol, should be used. It does not prevent severe explosive asthma associated with viral infection but does improve the symptoms of children with more chronic, less severe disease.11 Nebulised beclomethasone dipropionate has been disappointing in the prophylaxis of more severe infantile asthma unresponsive to sodium cromoglycate,12 but promising preliminary results are coming from using nebulised budesonide.13 Occasionally infantile asthma is sufficiently severe to require oral steroids, when doses on alternate days are preferred which theoretically suppress the adrenals to a lesser extent.14 Any oral steroid regimen will, however, suppress growth if used for long periods.

The inhaled route is best for antiasthma drugs, but there are considerable difficulties in young children.15 Under 18 months of age the only inhalation treatment that is possible is with nebulisers. A high driving flow of at least 6 l/min will be required, and compliance is likely to fall if the nebuliser must be used for longer than 10 minutes. β Agonists, sodium cromoglycate, ipratropium bromide, and budesonide can be used via a nebuliser. Beyond 2 most children can use a Nebuhaler, and studies have established its value for β agonists16 and now corticosteroids (p 163). A simple technique is required to use the Nebuhaler optimally, and it will increase drug delivery to the airway by as much as 50%17 by reducing impaction of aerosol on the posterior pharyngeal wall and delivering small particles.18 Dry powder inhalers have been used in preschool children, but an inspiratory flow above 100 l/min is required for both the Rotahaler and the Spinhaler—and children under 5 cannot achieve this.19 A new powder inhaler, the Turbuhaler, requires lower respiratory flows and may prove useful in preschool children.20 Care is required in choosing the inhalation device and in training the child and the family to use the system correctly.

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Testing overseas doctors

PLAB is fair to all

The PLAB (Professional and Linguistic Assessment Board) test assesses the competence of doctors from overseas seeking entry to the limited registration list of the General Medical Council (GMC). The first exam was conducted in 1975 by the Temporary Registration Assessment Board (TRAB) to allow doctors to gain temporary registration with the GMC, but when temporary registration was replaced by limited registration in 1978 TRAB became PLAB. The standard of the examination was originally set after several pilot tests that included British volunteers.

PLAB itself has undergone scrutiny by a GMC working party, which concluded that “the PLAB tests are a fair assessment of the standard required of overseas qualified doctors for practice at senior house officer level in the United Kingdom. Both the medical and the language components of the test are valid and reliable.”

The tests are held in London, Glasgow, and Edinburgh—usually in at least one centre monthly. The linguistic and medical component must be passed at the same time. Both spoken and written English are assessed. Candidates listen to sentences prerecorded on tape and select from their answer papers the most suitable of four possible responses to each sentence. A new type of English test will start this year and will include more modern methods of testing the candidate’s understanding of spoken English; questions will have to be answered about conversations among doctors, patients, and other staff recorded in hospital wards. Essay questions and the writing of imaginary letters check efficiency at written English. Linguistic proficiency is also measured by the CLOZE test: certain words in passages of prose are left blank, and the candidate has to fill in the word to complete the sentences. The paper is piloted on English speaking medical students, whose results are then analysed and applied to the scale of marking.

The medical component consists of a multiple choice questionnaire, an examination of projected material, and a medical short answer paper. The last of these is being modified into a clinical problem solving paper, which should be better for judging competence in a clinical setting. In the projected material paper, begun in 1985, slides of common clinical conditions—for example, rashes and papilloedema—and radiographs are shown, and questions likely to be asked at the bedside have to be answered. A panel selects the slides and questions. After the examination the examiners’ comments and the candidates’ marks for each slide are used to improve the questions or to discard the slide.

An essential of both components of PLAB is the oral examination, in which the candidate meets two examiners face to face: this tests ability to speak and to be understood, and questions are directed towards judgment and safety in coping with emergencies. The English examiners may play the role of a patient.

All components of PLAB are monitored by comments from the examiners and by studying correlations among the various parts. The examiners are issued afterwards with an analysis of their severity or leniency compared with other examiners for each part of the test.

PLAB is probably achieving its objective, but there are criticisms that patients are not used and that candidates do not have to use language settings commonly encountered by doctors. Although often considered, a clinical examination has never been included, but the introduction of the projected material and a clinical problem solving paper is an attempt to mitigate this lack. The cost of running a clinical examination would add considerably to the current fee of £240 for the first attempt and £190 for each subsequent attempt. The value of an oral test in assessing medical skills has been questioned, but it is important because language skills also have to be assessed.

The number of candidates for PLAB and the proportion passing has fallen over the years: 1100 (43% of entrants) passed in 1980, and 410 (23%) in 1986. Most fail because of lack of medical knowledge rather than poor linguistic skills. After a marginal failure the test can be retaken in two months, but a severe fail means a six month wait. Those who fail are told whether the failure was marginal or severe for each component, and the GMC publishes Advice for Candidates.

The number of those exempted from PLAB have remained fairly constant: 582 in 1980 and 624 in 1986. Exemption, which is solely for postgraduate training, is suitable for doctors who have trained in a specialty—and saves them going back to acquire the broad knowledge needed for PLAB. Experience in the specialty and in English has to be vouched for by a sponsor overseas with a personal knowledge of the doctor, and this is linked with sponsorship by a consultant in Britain. Conditions that allow the GMC to grant limited registration are governed by the Medical Act 1983, and a training programme in an approved hospital has to be