therapist is no substitute. In addition, patients are able to establish or resume their own routines and are not regimented to sleep, wake, eat, and drink according to a fixed and often quite inappropriate schedule.

In conclusion our experience with the rapid transit system has convinced us that there are very great advantages in returning patients with fractures of the proximal femur to their home environments as early as possible. The benefits outweigh the risks. The scheme as practised in our unit has produced a group of patients who did not seem to suffer from the lack of prolonged hospital rehabilitation and who avoided some of the complications which are commonly associated with this injury. The patients themselves were pleased to return home. Although there were major economic gains, these were overshadowed by the medical and social advantages.

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Communicable Diseases

Deaths from measles in England and Wales, 1970-83

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The annual number of deaths attributed to measles on death certificates fell from 39 in 1970 to 17 in 1983, but the ratio of deaths to measles notifications showed no declining trend over the period (table).

Deaths from measles in (a) previously normal and (b) previously abnormal persons, and deaths from subacute sclerosing panencephalitis 1970-83

Year	Total measles deaths	Ratio/10 000 notifications	(a) Previously normal (No %)	(b) Previously abnormal	Subacute sclerosing panencephalitis
1970	39	1·3	24 (62)	15	5
1971	25	1·9	17 (68)	8	9
1972	29	2·0	18 (62)	11	15
1973	27	1·8	18 (67)	9	15
1974	19	1·7	12 (63)	7	12
1975	13	0·9	10 (77)	3	14
1976	11	2·0	4 (36)	7	15
1977	18	1·0	5 (28)	13	18
1978	13	1·0	6 (46)	7	15
1979	14	1·8	7 (50)	7	15
1980	23	1·6	8 (35)	15	12
1981	12	2·3	3 (25)	9	15
1982	10	1·1	3 (30)	7	13
1983	17	1·6	9 (50)	8	2
	270	1·5	144 (53)	126	175

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Methods and results

To establish the age, primary cause of death, and proportion associated with previous abnormalities, copies of death certificates were obtained from the Office of Population Censuses and Surveys for 270 deaths from measles and 175 from subacute sclerosing panencephalitis over the period. Where information on death certificates was inadequate or ambiguous inquiries were made to the hospital or notifying doctor. No attempt was made to establish further clinical details, vaccination history, or social class.

The overall ratio of deaths to measles notifications was 1·5 per 10 000, but for children under 1 year it was 4·8 and for those aged 1-2 it was 2·3. Fifty-three per cent of the 270 deaths occurred in individuals with no pre-existing condition, and for these the proportion was highest (32/42) under 1 year and decreased with age. The converse was true for those previously abnormal: 31 of the 38 deaths over the age of 10 occurred in this group.

The most common primary cause of death at all ages was bronchopneumonia, followed by encephalitis and a combination of the two. In those previously normal 73% of deaths under the age of 2 and 45% from 2-9 were due to bronchopneumonia. Nearly twice as many children aged 2-9 died of encephalitis (28/78) than children under 2 (11/59). Other causes included toxaemia from measles (12), cerebral thrombosis, rupture of lung, acute pericarditis, adrenal failure, and disseminated intravascular coagulation.

The pre-existing conditions in the 126 previously abnormal individuals included cerebral palsy (24), mental retardation (20), Down's syndrome (19) and various congenital abnormalities (22). There were nine children with immune deficiency or immunosuppression, and 19 aged 2-8 with lymphatic leukaemia, a number of them in remission.

Deaths from subacute sclerosing panencephalitis were few in 1970 and 1971, probably because it was not widely diagnosed before

the late 1960s and coding of the cause of death was still erratic. There was little change in the annual number of deaths in the next 10 years. The two deaths in 1983 probably reflect the smaller number of cases with onset in 1982-3 than in earlier years, but there were six deaths in the first half of 1984. Forty-one per cent of deaths occurred between the ages of 10 and 14; this is in keeping with the median age of onset of 10 years, and the interval between onset and death of less than two years in 70% of cases.

Comment

Measles is widely considered a benign disease with a negligible mortality in developed countries. Certainly the number of deaths has fallen over the past 13 years, particularly in normal children; in the first four years 65% of deaths were in normal individuals compared with 35% in the last four year period. Nevertheless, over half the 270 deaths were in those with no pre-existing condition, and there has been no overall downward trend in the ratio of deaths to notifications. As in other studies, this ratio was highest in children under 1 year.[1 2] The increased ratio of deaths to notifications in adults which has been reported may well be due to the larger number of deaths in abnormal adults; in this study 16 were over 15 years compared with three (aged 16, 20, and 94) in those previously normal.

Of those with pre-existing conditions, most were grossly physically or mentally abnormal or both. Nineteen deaths occurred in children with lymphatic leukaemia, however, some of them in remission. Since children with leukaemia are now living longer measles is an increasing danger to them, and a report from Japan of the successful vaccination against measles of children with acute lymphatic leukaemia in remission is of interest.[3]

Clearly measles still carries a risk—not only of complications and subacute sclerosing panencephalitis but also of death—which is not confined to abnormal children.[4] Vaccination has reduced the number of deaths, but 90% of deaths in those previously normal occurred in those over the age of 15 months, when vaccine is usually given. Protection of those under 1 year who are at greatest risk has up to now been complicated by the presence of maternal antibody. Recent reports of a vaccine produced in human diploid cells which has been given successfully at 4-6 months may be the answer.[5]

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Lesson of the Week

Problems with inactivation of drugs used in Parkinson's disease

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All manufactured drugs have a finite shelf life even under optimal storage conditions. If drugs are kept for excessive periods or in an inappropriate environment chemical change of the active ingredient —for example, by hydrolysis—may result in a reduced or absent therapeutic response.

Drugs can be inactivated by altering their formulation. Full details of stability should be obtained from the manufacturer

Case report

A 66 year old woman had developed symptoms of Parkinson's disease at the age of 54. Her physical ability steadily deteriorated, and she was initially treated with amantadine and orphenadrine by her general practitioner. This resulted in improved mobility, and her condition remained static for several years. About 10 years after her initial presentation she was referred to a neurology outpatient clinic. Her walking had deteriorated, she often fell, and resting tremor had developed. She also complained of dysphagia with a sensation of food sticking at the back of her throat, and she had lost about 12·7 kg in weight. Barium swallow showed neuromuscular incoordination in the pharynx; oesophagoscopy yielded normal results. It was concluded that the dysphagia was due to Parkinson's disease.

She was treated with combinations of levodopa and a decarboxylase inhibitor but could not tolerate these preparations because of severe dyspepsia and vomiting. Her condition improved with a small dose of bromocriptine and was eventually managed with a combination of bromocriptine, orphenadrine, amantadine, and clomipramine for bouts of severe depression. With this drug regimen her symptoms were fairly well controlled and her weight was static for the next two years. Then her dysphagia became more noticeable and she began to have severe problems taking her tablets even when they were crushed.

Her general practitioner and pharmacist gave her amantadine syrup and prepared suspensions of bromocriptine and orphenadrine. Soon after this her tremor became more severe and she was unable to feed herself or to perform the simplest motor tasks unaided. She also developed distressing akathisia. Her dysphagia became almost absolute, and she was eventually admitted to hospital as an emergency with dehydration and cachexia.

She was fed and rehydrated via a nasogastric tube. The pharmacist (JF) and the drug manufacturers informed us that bromocriptine is unstable in

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