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Correspondents are urged to write briefly so that readers may be offered as wide a selection of letters as possible. So many are being received that the omission of some is inevitable. Letters must be signed personally by all their authors.

Family health services and vital statistics: lessons from Singapore

STR.—Your leading article "Social class, occupation, life, and death" (3 June, p 1440) omits any reference to age groups except Farr's observation that "the poor died young, and the rich survived." Perhaps we are beginning now to recognise the importance of family life, its birth and death records, to the fields of social class and occupation. This article seems to ignore the most significant of all factors in epidemiology, and that is age. Both in the more and in the less advanced countries the factor of age is important in the compilation of risks and for the creation of policies and of services. So far it appears that the communist countries have created stability and have promoted economic progress and distribution of services largely by attention to care of children and family living.

"Tropical medicine" has dominated the medical scene in most of the developing areas. "Tropical medicine" has conspicuously ignored child care. "Tropical diseases in children" have received little attention, but even less has been given to "diseases of children in the tropics." The Liverpool School of Tropical Medicine has recently opened a new wing in response to a great demand from overseas for more attention to child and family health. This is excellent.

Singapore Island is close to the equator. In 1937-8 the population was about 900 000 and the infant mortality rate (IMR) about 160 per

1000 live births. (The birth rate (BR) was not large because the male population was about 70%, but the female population was arriving in numbers as prosperity increased, as did the Japanese invasion of mainland China.) The General Hospital had 120 beds for children under 6. There were 3288 admissions with 1574 deaths and 351 necropsies.¹ Among the admissions 20% were for beri-beri, 13% for respiratory diseases, 12% for gastroenteritis, 4% for congenital deformities, 4% for worms (mainly ascaris), 4% for malnutrition, 3% for tetanus, and 2% for anaemia. Among the 1574 deaths there were the following diagnoses: beri-beri 324, respiratory diseases 233, gastroenteritis 226, malnutrition 84, tetanus 83, skin sepsis 80.²

It must be remembered that the majority of children admitted and dying suffered from multiple diseases and the best one could do would be to note the total picture but to record what seemed the most significant factor. In 1958 a good system of maternal and child health had already been established. In the municipal area this extended only to babies under one year. Kadang Kerbau Maternity Hospital has always been exceedingly popular. Antenatal clinics were not started until 1937. The rural maternal and child health centres started in 1924. They included antenatal and postnatal clinics, home deliveries by trained midwives, and treatment

and supervision of children up to and including school age. Difficult cases were all referred to the children's wards and supervised at home on discharge. By 1940 these clinics were giving regular care and supervision to over 70% of the related rural population and the IMR was less than that in the urban areas.

In 1976 the population of Singapore Island was over 2 million, the IMR was about 14 per 1000 live births and the BR 14 per 100 000 population per year. Admissions to the children's wards were about 8000 with 58 deaths. The five leading causes of death were congenital heart disease (11), leukaemia (8), bronchopneumonia (6), encephalitis (5), and septicaemia (4).²

Neither in 1937 nor in 1977 were the so-called "tropical diseases" of great importance. They had been comparatively easy to control. Great improvements in these 40 years have been largely due to close co-operation between the institutional and non-institutional services: between teaching and training of doctors and nurses, between hospitals and follow-up, and between research and existing problems—also between preventive and curative medicine as applied to individuals.

The vast improvement in health is not due to specialisation or mass campaigns for disease control or birth control but is due to gradual establishment of law and order, health and education, and economic development. The remarkable reduction in BR from 50 per 100 000 in 1950 to about 12 per 100 000 now is due to the child care, not to vast expenditure or birth control.

Statistics, vital and health statistics, are the basis of epidemiology. Statistics for children, births and deaths, and diseases and causes of

disease depend on distribution of staff trained in diagnosis and identification and persistent accuracy of observation, *not* on the prevalence or elaboration of computers.³ Until family health services are better organised and distributed "social class, occupation, life, and death" will not provide basic information or policies.

CICELY D WILLIAMS

Oxford

¹ Williams, C D, *Journal of Malaya Branch of BMA*, 1938, 2, 113.

² Paul, F M, *Newsletter, Singapore General Hospital*, vol 14, April-May 1978, p 6.

³ Williams, C D, and Jelliffe, D B, *Mother and Child Health: Delivering the Services*, pp 27 and 57. London, Oxford University Press, 1972.

Once- versus twice-daily insulin for diabetic children

SIR,—The essential conclusions expressed in your leading article "Diabetic complications in childhood" (15 April, p 941) should be strongly supported. Good metabolic control should be the objective of all physicians looking after diabetic children in attempting to prevent or slow the progression of diabetic complications.¹ However, you state that "twice-daily insulin injections are needed (at least from puberty)" in order to achieve good control. We feel that this generalisation is unjustified and based largely on clinical impressions.

We have recently studied the metabolic control in a group of diabetic children on once- and twice-daily insulin regimens. Fifteen children (seven boys and eight girls) were included. All but two, both boys, were pubertal, with a mean age of 13.6 (range 9.2-15.5) years and a mean duration of diabetes of 4.3 (range 0.7-10.9) years. The once-daily regimen used was a mixture of Monotard (Novo) and Actrapid (Novo) given in the morning and the twice-daily regimen used was a mixture of Semitard (Novo) and Actrapid (Novo) given morning and evening. Metabolic profiles were used in hospital to measure diabetic control. Each child was studied twice, once on each regimen in random order. Each regimen was treated similarly by optimising "control" at home before each hospital study. This was achieved by frequent Clinitest urine estimations (2-drop method), a 24-h fractional urinary glucose collection,² and a series of preprandial plasma glucose estimations. The results will be published in full elsewhere.

The mean 24-h diabetic control in terms of blood glucose was similar on the two regimens, with no significant differences when assessed by the four methods shown in the table. There were differences in mean blood glucose levels on the two regimens at specific times of the day which reflected the nature of the insulins used.

This study demonstrates that when the current highly purified insulins are used in adolescent children careful manipulation may allow similar diabetic control to be achieved

on these two particular regimens, representing examples of once- and twice-daily insulin therapy. We found no evidence for the blanket statement that twice-daily injections provide better control. It might be argued that better control could have been achieved on alternative twice-daily insulin regimens. While this may be the case (and we are currently extending our studies to include alternative twice-daily regimens), this further illustrates the necessity of specifying exactly the regimen under discussion and avoiding generalisations. Furthermore, by many standards the degree of control achieved in these adolescent children was relatively good on both regimens.

We believe that the insulin regimen must be specifically prescribed for each individual patient, every effort being made to measure the degree of control achieved. It may be that injected insulin given once or twice daily is so unphysiological that ideal control is impossible in both cases unless the patients themselves are producing endogenous insulin, which is frequently the case in the first few years after the diagnosis of clinical diabetes.

G A WERTHER

Department of Paediatrics,
Queen Victoria Medical Centre,
Melbourne, Victoria

J D BAUM

University Department of Paediatrics,
John Radcliffe Hospital,
Oxford

¹ Cahill, G F, Etzwiler, D D, and Freinkel, N, *New England Journal of Medicine*, 1976, 794, 1004.

² Forman, B H, Goldstein, P S, and Genel, M, *Pediatrics*, 1974, 53, 257.

³ Schlichtkrull, J, Munk, O, and Jersild, M, *Acta Medica Scandinavica*, 1965, 95, 177.

Developmental surveillance in general practice

SIR,—The paper by Dr G H Curtis Jenkins and others (10 June, p 1537) describes the work load generated by a developmental surveillance programme in general practice. Their claim that the "results show that paediatric surveillance is worth the effort" is untenable for the following reasons.

Firstly, comparison with a control group is mandatory for evaluation of any programme. Ideally, children should have been randomly allocated into surveillance and non-surveillance groups. Had there been no surveillance programme many of the suspected disorders might have been detected, without harm, at consultation for other problems or by the mother bringing the child with the suspected abnormality to a routine surgery.

Secondly, any assessment of the value of a programme must depend on the result of outcomes and not just process (such as numbers of specialist referrals). The outcomes must be shown to be beneficial to the child or parents and to have resulted from the intervention of the surveillance programme. For example, there is little to be gained by the detection of "obesity" if the child does not lose weight.

Thirdly, normality has not been defined. The sensitivity and specificity of the screening programme were not evaluated. In particular, we have no idea how many children were classified as "normal" but were later found to have some abnormality. Such measures of validity are necessary to evaluate any screening programme.

Fourthly, the diagnoses of the suspected disorders have not been tested for repeat-

ability. Detection has depended on subjective assessment by individual doctors. A similar survey in other practices may produce very different results and referral patterns. Therefore any conclusions about the resources required if such surveillance programmes were started on a national scale are tenuous.

Fifthly, the majority of referrals were for speech, vision, and hearing problems. Such abnormalities may be detected as easily by the health visitor during her routine work and home visits as by the general practitioner in the developmental surveillance programme.

Finally, there is no assessment of the disadvantages of this programme, such as anxiety created in the mothers, unnecessary investigation of children, and any deleterious effects on other work in the practice. The costs and manpower involved in running such a programme are considerable.

F G R FOWKES

JOHN CATFORD

Department of Community Health,
London School of Hygiene and
Tropical Medicine,
London WC1

SIR,—Dr G H Curtis Jenkins and his colleagues (10 June, p 1537) claim to validate the use of developmental surveillance in general practice with the high pick-up rate of suspected abnormalities at their clinics. However, they do not state how many of their abnormalities were occult—that is, not suspected by parents or health visitors before the clinic. For example, how many of the cases of strabismus would have had someone suspecting abnormality which without the facility of a well-baby clinic would present at a normal surgery.

It is only a high pick-up rate of occult abnormalities which would validate developmental surveillance, for otherwise a well-baby clinic in general practice will be just a clearing house for dealing with abnormalities and as a very useful forum for the development of doctor/parent and child relationships.

M T RHODES

Harrow Weald, Middx

If I had . . .

SIR,—Professor Bryan Jennett writes cogently (17 June, p 1601) of what he would do if his son had a trivial head injury with brief loss of consciousness: clinical assessment, good skull radiographs, and observation at home. But it is *his* son who is going home to that particular father, who is prepared to accept the responsibility which in "normal" practice has to fall upon a far less experienced casualty officer. He comments that skull fractures are present in 90% of patients with extradural and 75% with intradural haematomas, but the remaining 10% and 25% present a clinical and medicolegal hazard which is hard for the ordinary doctor to bear and very difficult to defend in court when a normal skull radiograph provided the grounds for not admitting the patient for observation. Furthermore, this advice invites the casualty officer to use the skull radiograph in relatively trivial cases rather than the clinical presentation as the indication for admission.

Whether it is wise to rely upon a relative or a friend to observe and report the development of untoward symptoms is doubtful, and the responsibility for judging the trustworthi-

Control of diabetes on once- and twice-daily insulin regimens in 15 children (mean values)

	Single injection	Two injections
24-h mean blood glucose (mmol/l) . .	8.2	8.2
Area under blood glucose curve (mmol/l h)	182.9	169.7
M value ^a	57.8	69.7
Urinary glucose excretion (mmol/24 h)	67	67

Conversion: SI to traditional units—Blood glucose: 1 mmol/l $\approx$ 18 mg/100 ml. Area under blood glucose curve: 1 mmol/l h $\approx$ 0.18 g/l h. Urinary glucose excretion: 1 mmol/24 h $\approx$ 0.18 g/24 h.