CORRESPONDENCE

- *All letters must be typed with double spacing and signed by all authors.*
- *No letter should be more than 400 words.*
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- *Because we receive many more letters than we can publish we may shorten those we do print, particularly when we receive several on the same subject.*

Population registers and public health

SIR,—Much NHS effort has gone into developing population registers on computers.[1] In Scotland this is the community health index, which holds personal details of all people in a defined population registered with the NHS and is currently used for various activities, including handling of hospital and primary care medical records; immunisation, screening, and surveillance programmes; and forming a sampling frame in epidemiological studies.[2] An underused role is the identification of specific target populations for intervention during a public health emergency.

Twice in the past year the department of public health of Argyll and Clyde Health Board has assisted in managing emergencies in which the public water supply has had to be suspended for potentially protracted periods. In neither case was an alternative supply immediately available. Having advised on public health grounds that the water should not be consumed, the department arranged for a list to be produced from the community health index of people potentially at most risk—arbitrarily defined as those aged under 2 or 65 and over. The water department of Strathclyde regional council regularly delivered water to the addresses where such residents had been identified; other households were considered to have a member able to collect supplies from the strategically placed bowsers or to communicate their difficulties to the water department.

The public health department was able to produce the information in less than three hours because of an agreed mechanism for the emergency release of such data—specific permission had previously been obtained from the board's chief administrative medical officer on the recommendation of the consultant of public health medicine responsible for communicable diseases and environmental health. The Scottish Home and Health Department recently confirmed that the chief administrative medical officer "has responsibility for confidentiality, security and access to personal health information held by a health board."[3] The immediate cooperation of computing and primary care staff is essential for the necessary prompt response.

Colleagues in public health medicine are recommended to have a contingency plan to deal with such an event in conjunction with primary care departments or family practitioner committees.

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Sleep disorders in children

SIR,—Dr Gregory Stores's editorial did not emphasise the failure of growth in children with sleep disorders.[1] Secretion of growth hormone is influenced by various stimuli (for example, stress and sleep) and is pulsatile and episodic. One of the largest increases in the secretion of growth hormone occurs during sleep,[2] supporting the adage that if you don't get your sleep you won't grow.

The initial secretion of growth hormone is probably synchronised with the onset of slow wave sleep. Sleep disturbance is likely to reduce the amount of slow wave sleep and, therefore, reduce secretion of growth hormone.[3] Children with sleep disorders such as nocturnal asthma and obstructive sleep apnoea show developmental delay. Though underlying disorders like asthma and recurrent tonsillitis can cause poor appetite and slow growth, reduced secretion of growth hormone may also be relevant.

In a child with growth retardation symptoms of disordered sleep (loud snoring, episodes of stopping breathing, difficulty breathing when asleep, restless sleep, etc) may not be appreciated by the parents or by doctors. This is due to the lack of awareness of the problem. Adenotonsillectomy in children with upper airway obstruction due to enlarged tonsils and adenoids improves the symptoms during sleep and has been shown to be associated with a growth spurt.[4]

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2 Finkelstein JW, Roffwarg HP, Boyal RM, Kaream J, Hellman L. Age related change in twenty-four hour spontaneous secretion of growth hormone. *J Clin Endocrinol Metab* 1972;**35**:665-70.
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SIR,—Dr Gregory Stores's editorial[1] and another recent paper[2] described the diversity of causes and clinical presentation of disorders of sleep. Unfortunately, neither considered chronic hyperventilation—one cause of nocturnal panic attacks, nightmares, pain, and agitation.[3] We have often noted hyperventilation in children living in households in which the level of arousal is high and in which the adult members have presented with symptoms related to hyperventilation, such as chest pain or palpitations.

Sleep disturbance by hyperventilation is produced as follows. Daytime chronic hyperventilation produces alkalosis, for which the kidneys compensate by increasing excretion of buffer salts.[4] This reduces the body's capacity to accommodate shifts towards acidosis so increased breathing becomes essential to maintain the normal pH. During sleep breathing is reduced and may fall below the level required to neutralise metabolic acids, resulting in respiratory acidosis. The compensatory response is hyperventilation, which overshoots the mark and produces hypocapnia and alkalosis and often presents as nocturnal angina or panic attacks.

In clinical practice we have often noticed this pattern of sleep disturbance in people with chronic hyperventilation. It commonly occurs between 3 and 4 am and may be mistaken for a biological symptom of depression. To correct this sleep disorder it is essential to overcome the daytime hyperventilation. This is achieved by reducing emotional arousal during the day and recovering a physiological (diaphragmatic) breathing pattern.[5]

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Sleep laboratories

SIR,—Professor Ian Oswald responded to a question on sleep laboratories and who should be referred to them.[1] Understandably, he was unaware of all the respiratory sleep laboratories that have been established in the past few years. I recently chaired a working party of the British Thoracic Society on the facilities for the diagnosis and treatment of abnormal breathing during sleep, the report of which was published in *BTS News*.[2] As this publication is readily available only to British Thoracic Society members it might be helpful to list the British sleep laboratories. These are located at Bristol Royal Infirmary, Bristol; City Hospital, Edinburgh; Leicester Infirmary,

Leicester; Fazakerley Hospital, Liverpool; Charing Cross, Guy's, London Chest, and Brompton Hospitals, London; Wythenshawe Hospital, Manchester; Freeman Hospital, Newcastle; Newmarket General Hospital, Newmarket; John Radcliffe Hospital, Oxford; and City General Hospital, Stoke on Trent.

The major indication for referral to these laboratories is unexplained daytime sleepiness, and anyone who falls asleep in an unplanned way once a day when not in bed should be referred for investigation. Subsidiary reasons for referral would include witnessed apnoeas, unrefreshing nocturnal sleep, and nocturnal choking.

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1 Oswald I. Any questions. *Br Med J* 1990;**301**:286. (4 August.)
2 Working Party of the British Thoracic Society. Facilities for the diagnosis and treatment of abnormal breathing during sleep. *BTS News* 1990;5(Summer):7-10.

Impact of HIV on tuberculosis in Zambia

SIR,—Dr Alison M Elliot and colleagues conclude that public health priorities should be directed towards tuberculosis.[1] During my elective in Malawi I studied the incidence of HIV among patients being treated for tuberculosis in a local hospital.

In 1985 Malawi set up a national programme to control tuberculosis, but the incidence of tuberculosis rose from 5334 cases in 1985 to 9450 in 1989. This increase occurred despite an excellent uptake rate for BCG vaccine. Admittedly, this increase could be attributed to better reporting of cases, but there has also been an interesting shift in demographics.

Previously most patients with tuberculosis were aged over 45, whereas now the peak is among those aged 25-45 (Annual report of the national tuberculosis programme, Malawi, 1990.) My study reflected the national trend for the incidence of tuberculosis, and one half to two thirds of patients aged 25-45 were positive for antibodies to HIV.

It is admirable that Malawi is investing in a national control programme, and this is the strategy recommended by Dr Elliot and colleagues. I would suggest, however, that future health investment should be targeted towards control of AIDS and education to prevent it, which may indirectly decrease the need for increased investment in tuberculosis.

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1 Elliot AM, Luo N, Tembo G, *et al.* Impact of HIV on tuberculosis in Zambia: a cross sectional study. *Br Med J* 1990;**301**:412-5. (1 September.)

Is antenatal selection for spina bifida possible?

SIR,—Dr Mary J Seller presents a case for developing an antenatal selection policy that will identify babies with spina bifida who will have a good prognosis.[1] Hunt reviewed the outcome at age 16-20 for 117 consecutive children with open spina bifida and found that 7% can be expected to have reasonable lives with little or no disability.[2] In Belfast during 1964-8 Elwood and Nevin followed up a cohort of 185 consecutive children with spina bifida who had been born between one and five years previously.[3] Seventy one them were found to be alive. In 1987 we attempted to trace these survivors, who would now be aged 18 to 23. Of the 71 survivors, 49 were alive, three were dead, and 19 could not be traced. Information was collected on 41 of the 49 known to be alive. Twenty one had minimal or no disability—that is, 30% of known or possible survivors or 11% of the original cohort. Thirteen survivors were dependent on wheelchairs, 13 were incontinent, nine had shunts for associated hydrocephalus, one had epilepsy, and only two were mentally handicapped. Twelve patients required long term care. Although the overall survival rate of our cohort was less than that in Hunt's study, more of them were able to lead a "reasonable" life.

But who is to judge whether a person's life is reasonable? We interviewed 114 people aged 16-23 years with spina bifida, of whom 48% were dependent on wheelchairs. When asked if they would want antenatal screening for spina bifida for themselves or their partners 75 said that they would. Only nine, however, were prepared to terminate the pregnancy if the tests indicated spina bifida. Of the nine, four were in wheelchairs. In many cases the decision not to terminate the pregnancy was on religious grounds. The findings suggest that these people, despite their disabilities, considered their lives to be worth while. Our study emphasises the important ethical problem regarding decisions to terminate pregnancy because of predicted disability. It is obviously preferable, where possible, to avoid the environmental factors that cause spina bifida rather than to have to face the dilemma of antenatal selection.

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1 Seller MJ. Is antenatal selection for spina bifida possible? *Br Med J* 1990;**301**:251-2. (4 August.)
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The Black report

SIR,—Ten years after the publication of the Black report Dr George Davey Smith and colleagues show that the social class differences in mortality and morbidity in Britain are still widening.[1]

They suggest that the materialistic explanation for health inequalities is of far greater importance and relevance than the cultural or behavioural influence. A recent survey of 587 residents (mainly social class IV and V) on our large council housing estate in South Bristol organised by the Hartcliffe Health Project showed that the residents had a similar perception. Residents were asked, "What do you think would improve your own health or the health of those you live with?" The commonest reply was better housing (30%) followed by a better environment (15%), more money (10%), less smoking (8%), and, lastly, less stress (5%). These answers introduce issues to the health agenda that would be ignored by the health planning system in its current state. They confirm that people have a clear idea of the complexity of the relation between the way they live and their health. The survey's results mirror those of Coulter, who found that the working class groups identified socioeconomic and environmental inequalities as pivotal to their health rather than the lifestyle issues that the middle classes believed were more important.[2]

As Dr Tony Smith observes one of Sir Douglas Black's solutions was to abolish child poverty.[4] The importance of this is reflected in a recent survey of health need factors done by health visitors on families with children under 5. Families registered with our health centre were compared with those registered with another health centre in South Bristol serving an area where most of the families owned their house (table).

Social factors influencing health in families registered with two health centres in Bristol

	Hartcliffe Health Centre (n=978)	Another health centre (n=1030)
One parent families	48%	7%
One or both parents under 21 at birth of first child	70%	3%
One or both parents have literacy problems	23%	1%
Main wage earner unemployed	66%	8%
"Poor" housing	46%	2%
One or both parents smoke	82%	15%
Violence in family	19%	2%
Parents separated or divorced in past year	19%	2%
Family on low income or Department of Social Security benefit	76%	Not known
One or both parents in care or abused as a child	15%	Not known

Local information on social factors may be of help in deciding where precious resources should be allocated by district health authorities as the scoring indices used by Jarman and Townsend are known to be less than ideal.[4]

Once again, we submit that the issue of health inequalities must be addressed by the medical profession and, more particularly, by the government. It is probably the most important issue in health in Britain today.

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SIR,—Dr George Davey Smith and colleagues confirm that social class differences in mortality in England and Wales became wider between the early 1970s and the early 1980s.[1,2] They also speculate that this widening has continued through the late 1980s.

Without data on mortality by social class for the late 1980s it is worth considering whether there has been any increase in the north-south difference in mortality, which the authors suggest is largely due to socioeconomic factors.[1] A recent comparison of the standardised mortality ratios for the English health regions north and south of the line between the Severn estuary and the Wash indicated that the ratio between these ratios did not change during the 1970s, but increased significantly, although not greatly, during 1982-5.[3] Data have since become available for 1986-8.[4] The north-south gap was no wider in this period than in the 1970s (table).

It could be speculated that the north-south difference in standardised mortality ratios was largest in 1982-5 because of the peak in unemploy-

Standardised mortality ratios for northern and southern England

Years	Standardised mortality ratio		Ratio between north and south
	North	South	
1966-9	107·08	93·71	1·14
1970-3	107·07	93·73	1·14
1974-7*	107·12	93·70	1·14
1978-81*	107·07	93·75	1·14
1982-5	107·62	93·32	1·15
1986-8	107·16	93·75	1·14

*Standardised mortality ratios corrected for errors in population estimates.[1]