does not have an official policy on vaccination but considers it important that concerned parents should have access to full information on efficacy and adverse effects so that they can make an informed decision. A detailed search of the many papers published on this subject yields many short term studies but few comparing vaccinated and non-vaccinated populations over the longer term, such as that reported by Odent *et al.*²

The society receives many requests for information on vaccination from members of the public. The article by Moskowitz, an American paediatrician, cited by Simpson and colleagues is one of several listed in a leaflet published recently by the society in response to these requests.³ Among others listed are a booklet published by the Anthroposophical Medical Association⁴ and the Department of Health's *Immunisation against Infectious Disease*.⁵ Copies of the leaflet and the bibliography from which the references were selected may be obtained from the Society of Homoeopaths.

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Book dispelling immunisation myths is available

EDITOR,—Neil Simpson and colleagues report that the rate of non-immunisation among children in their area is 0.33% and describe the reasons why some parents refused immunisation.¹ We wish to describe the situation in New Zealand.

Until recently the childhood immunisation rate in New Zealand was thought to be low relative to that in many other developed countries (New Zealand does not have a national immunisation register to give accurate overall figures). A small study in 1992 showed that less than 60% of children had received the immunisations appropriate for their age by 2 years of age and that 4.2% of parents believed that immunisations were unnecessary if children were healthy.² More recently, the rate of completed immunisation has been shown to have risen to around 80% by 2 years of age.³

Many local health professionals believe incorrectly that the childhood immunisation rate is appreciably affected by a sizeable lobby against immunisation. Although members of this lobby claim not to be against immunisation but, rather, to be in favour of giving parents information so that they can make an informed choice, virtually all their literature is against immunisation. At the age of 6 months, however, only 0.5% of infants in New Zealand's largest national childhood cohort study, of 4000 infants, had not been immunised because their parents were against immunisation.⁴

The flood of letters in the media suggests that some anti-immunisation groups have a disproportionately high profile, but we should not overestimate the size of their lobby. Conversely, we should not underestimate the pernicious effect of their specious arguments. We agree with Simpson and colleagues that health professionals should provide consistent, accurate, and up to date advice on immunisation. This in turn means that they must be given clear and readable information by the appropriate authorities. We have trawled the anti-immunisation literature and written a small book, with references, that attempts to answer the arguments, myths, and misinformation that health professionals are likely to meet.⁵ This has been

distributed to general practitioners, practice nurses, and Plunket nurses (equivalent to health visitors) in New Zealand (available in Britain from Dr C Essex, c/o 35 St Leonard's Court, Alfred Street, Lancaster LA1 1FD; price £2.50 (cheques should be made payable to C Essex)). We have found that many health professionals and parents have been helped by finding answers or explanations to specific claims made by the anti-immunisation lobby.

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Measles and rubella immunisation

EDITOR,—The chief medical officer has stated that the recent measles and rubella immunisation campaign has been a success. Unfortunately, practices have been unable to record these immunisations systematically since no code has been issued for the Read 4 coding system, which most general practice systems use. Therefore, when patients move to another practice in the future there is a high chance that these data will not follow them. This information is important, particularly for rubella immunisation.

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Drug resistant tuberculosis

EDITOR,—P D O Davies highlights concern about drug resistant *Mycobacterium tuberculosis* and proposes a central laboratory for fast tracking molecular diagnostic tests for patients at risk.¹ The concern is shared by many, including the Public Health Laboratory Service, but Davies shows a lack of knowledge of the facilities available and the status of diagnostic methods that use the polymerase chain reaction.

The Public Health Laboratory Service Mycobacterium Reference Unit (currently in Cardiff) has provided a central focus of skill for many years and supports the diagnosis, treatment, and epidemiological monitoring of tuberculosis throughout England and Wales. The Mycobacterium Reference Unit, the network of Public Health Laboratory Service regional tuberculosis centres, and the Communicable Disease Surveillance Centre provide the backbone of the countries' laboratory and epidemiology services for mycobacteriology. It is true that most investi-

gations for *M tuberculosis* are still based on culture, although methods such as the BACTEC system for early detection of growth have reduced the traditional delays of such culture. The molecular approaches that Davies refers to offer exciting possibilities of more rapid primary detection and determination of drug resistance. They are not, however, ready for routine use and still need research and development, which is a high priority of the Public Health Laboratory Service.

Recognising the re-emergence of tuberculosis as a serious public health problem, the Public Health Laboratory Service initiated a review of its mycobacteriology services in 1991. As a result, the Mycobacterium Reference Unit will move to new facilities at Dulwich Public Health Laboratory/King's College Hospital this year and the post of director has been advertised. One principal area for development will be molecular approaches to diagnosis. The network of regional tuberculosis centres has also been streamlined, with Cardiff, Birmingham, and Newcastle Public Health Laboratories and the Dulwich Mycobacterium Reference Unit serving the south west and Wales, the midlands, the north, and the south east respectively. Molecular typing by restriction fragment length polymorphism has also been pioneered by the Central Public Health Laboratory, which, with the Communicable Disease Surveillance Centre, is using it to study the epidemiology of *M tuberculosis*.

It is disappointing that Davies does not recognise the priority that the Public Health Laboratory Service gives to mycobacteriology services. The laboratories that Davies desires already exist and will offer the methods Davies commends as soon as they become sufficiently reliable for routine application.

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1 Davies PDO. Drug resistant tuberculosis. *BMJ* 1995;310:400-1. (11 February.)

Asthma care in general practice

EDITOR,—Simon A Evans and colleagues surveyed general practitioners in the North West Regional Health Authority and used the drugs and equipment they carried as surrogate measures of their preparedness to manage acute severe asthma.¹ In early 1994 we repeated a study originally performed in 1989² to assess the change in use of peak flow measurements by general practitioners in Northern Ireland. Two questionnaire items are of interest, one asking whether general practitioners had a nebuliser available in their practice and the other asking whether they usually carried a peak flow meter on house calls.

The original study population was a 1 in 4 random sample of general practitioners in Northern Ireland. The same practitioners were surveyed in 1994, with replacements for those who had left the list being drawn randomly from doctors still practising at the same address. Of 232 doctors, 199 (86%) and 192 (83%) responded in 1989 and 1994 respectively. In 1994, 157 respondents were male and 173 were working full time. A maximum of 176 pairs of responses was possible, of which 84% were obtained. The table shows the proportions of general practitioners who had a nebuliser in their practice and took peak flow meters on house calls together with the change in behaviour of the general practitioners for whom paired responses were available. It is apparent that, in Northern Ireland, nebulisers are almost universally available in practices yet the proportion of general practitioners who carry peak flow meters on house calls is low and unchanged.

	All respondents						
					Paired comparison between 1989 and 1994		
	1989		1994		No of pairs	Median change (interquartile range)*	P†
	No	% (95% Confidence intervals)	No	% (95% Confidence intervals)			
Nebuliser in practice	198	91.4 (87.5 to 95.3)	189	98.4 (96.6 to 100.2)	146	0 (0 to 1)	0.03
Takes meter on house calls	198	31.8 (25.3 to 38.3)	191	34.6 (27.8 to 41.4)	148	0 (0 to 2)	0.9

*Positive values indicate increase. †Signed rank statistic.

In Evans and colleagues' study 44% of the practitioners either carried a nebuliser or said that one was available in their surgery. The difference in proportions of practices with a nebuliser is 54% (95% confidence interval 45% to 62%) between their study and ours. Similarly, 54% of the practitioners in Evans and colleagues' study carried a peak flow meter and the difference in proportions is 19% (9% to 29%). The differences in the proportions are therefore significant, with more practices having nebulisers yet fewer practitioners usually taking meters on house calls in Northern Ireland. Although this may reflect the different methods and emphases of the two surveys, it suggests that important inter-regional differences in asthma care by general practitioners may exist. This has important implications for research into asthma care by general practitioners because we cannot assume that care in one geographical region is representative; any attempt to draw generalisable conclusions will require a national sample.

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The study in 1989 was conducted while R K McKinley held a research fellowship from the Department of Health and Social Security (Northern Ireland) in the department of general practice at the Queen's University of Belfast, and the study in 1994 was financed by a grant from the National Asthma Campaign.

Chickenpox in the tropics

EDITOR,—In their editorial on immunisation against chickenpox Lainie Friedman Ross and John D Lantos fail to recognise that chickenpox is more severe in the tropics than in temperate climes.¹ The reason for this lies in the differences in the age specific incidence of chickenpox between the regions.

In Singapore the peak incidence of chickenpox occurs in adolescence and young adulthood² and is associated with low herd immunity to chickenpox in the young adult population.³ In recent times this trend has also been observed in populations living in temperate regions.^{4,5} Although chickenpox is benign in childhood, in adults it is associated with more severe disease. In pregnant women it is also associated with the risk of chickenpox in the unborn fetus and newborn infant. The social costs of the disease would also be expected to be higher than those estimated for populations in which chickenpox occurs mainly in childhood. It is

therefore erroneous to assume that chickenpox is benign in all populations.

Since vaccination against chickenpox is most efficacious in childhood, a universal immunisation programme should be targeted at young children. The epidemiology of chickenpox and its age specific incidence should be taken into consideration when the issue of mass chickenpox in a particular population is addressed. In this regard, universal immunisation of populations living in the tropics may be justified.

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Differences in progression of HIV infection between men and women

EDITOR,—Alessandro Cozzi Lepri and colleagues report little difference in progression of HIV infection between men and women in the Italian seroconversion study.¹ We have examined this issue in the Swiss HIV cohort study, one of the largest continuing studies of a seroprevalent cohort (a cohort of people with HIV infection in whom the date of seroconversion is not known). The study has enrolled over 6000 participants from all transmission groups, including nearly 2000 women.² In the Swiss survey there was no evidence for differences between the sexes in either progression to different degrees of CD4 lymphocytopenia or progression to death when differences in CD4 cell counts at entry were taken into account in the analysis.³

The authors emphasise the importance of incident cohorts (cohorts in which the date of seroconversion is known) for analysis of differences in the progression of HIV infection. The similar results that we obtained from a seroprevalent cohort indicate, however, that time since infection may have no independent prognostic importance when CD4 cell counts are considered in the analysis. Indeed, this conclusion was reached in analyses of several incident cohorts, including the Italian seroconversion study.^{4,5} Therefore, while incident cohorts are indispensable for answering several important questions, seroprevalent cohorts may offer advantages in other situations. One advantage is the generally larger sample size, and therefore greater statistical

power; this is needed to detect or exclude smaller differences in the progression of disease. For example, the study by Cozzi Lepri and colleagues, based on 854 patients and 42 deaths, could not exclude the possibility of a 79% increase in mortality from AIDS among women compared with men. Conversely, an analysis of the Swiss HIV cohort study based on 2871 patients and 761 deaths showed that such substantial differences can be excluded with confidence.³

The only difference between the sexes found by Cozzi Lepri and colleagues related to AIDS defining cytomegalovirus infection. The authors conclude, on the basis of four cases among women and none among men ($P=0.01$), that this infection may be a more common AIDS defining event among women. We have examined this supposition in the Swiss study by analysing the incidence of disseminated cytomegalovirus infection in participants who were infected either by injecting drugs or heterosexually and who were free of AIDS at registration. Both univariate and multivariate analyses indicate that there is no significant difference between women and men in the occurrence of disseminated cytomegalovirus infection over a mean follow up of three years—if anything, there was a trend in the opposite direction (table). This analysis thus fails to confirm the results of Cozzi Lepri and colleagues. Because of the large number of AIDS-defining conditions tested, their finding may be a false positive result due to a type 1 error. Indeed, applying a Bonferroni-type correction renders their P value non-significant.

In conclusion, the examples presented here show how analyses of incident and seroprevalent cohorts can sensibly complement each other.

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Heart muscle disease related to HIV infection

EDITOR,—We agree with Peter F Currie and colleagues that the aetiology of heart muscle disease in HIV infection is unknown.¹ Given that most HIV infection occurs in the developing world, conditions such as rheumatic heart disease may contribute to cardiac complications in HIV infection even though a significant interaction has not yet been noted.² We report a case of rheumatic heart disease characterised by atypical clinical and laboratory features in a man positive for HIV.

A 28 year old African immigrant presented with