way. Analysis of mortality data over long periods of time is fraught with difficulty due to various changes in statistical and medical practice. Over the span of time studied, 1921 to 1968, there have been five revisions of the International Statistical Classification and a number of changes in coding practices. The authors' inability to explain the drop in mortality assigned to paralysis agitans in 1940 shows that they made no attempt to correct for these changes. That particular discontinuity reflects the suspension of the "joint cause" rules for coding death certificates at the time the fifth (1938) revision of the International Statistical Classification was put into effect in 1940.[8] Before 1940, when more than one condition was entered on a death certificate, selection of the underlying cause to which death was to be assigned was based on arbitrary rules which gave preference to chronic conditions. In general, priority was given to that condition which the deceased had experienced for the longest time, while after 1940 priority was assigned to that condition which initiated the terminal episode, relying on the judgment of the certifier. Fortunately, the General Register Office tabulated the entire list of causes of death for the year 1939 by both systems, and did the same for a sample of causes, including paralysis agitans, for the years 1936–38. These data, plus similar analyses accompanying subsequent revisions, make it possible to assess the effect of these changes in statistical practices and to construct age-specific mortality-rates for men and women.[9] Careful analysis of this mortality data properly adjusted fails to show a "general increase between 1921 and 1968". Only among the elderly (age 75 and above) has there been a significant increase. There was a slight rise in the 65–74-year group between 1921 and 1940. It is difficult to assign the rise in mortality attributed to paralysis agitans in the period 1921–39 directly to encephalitis lethargica even if one assumes a very considerable confusion regarding the diagnosis of parkinsonism among certifying physicians, because the increased paralysis-agitans mortality occurred among persons aged 65 and above, while encephalitis lethargica chiefly affected persons under 30.

The conclusion of Mr. Brown and Professor Knox carries important implications as to the ætiology of parkinsonism. It is, therefore, of some concern to those deeply involved in investigating the cause of parkinsonism that the record be set straight.

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DISCREPANCIES IN HOSPITAL DATA

SIR,—Comparison of the total number of deaths reported in the Hospital In-patient Enquiry with the numbers recorded in the Registrar General's Statistical Review (part I, table H4) as dying in non-psychiatric N.H.S. hospitals for the corresponding year suggests that the experience recorded by Dr. Rosser (May 13, p. 1070) is not representative of other hospitals in the Enquiry. This aspect of the validity of the sample derived for the Enquiry has been taken up by Dr. Ashley in his forthcoming paper[10] on the present state of statistics from hospital inpatient data and their uses. Over a number of years the overall discrepancy has never been more than 9% and was usually nearer 6%. A number of definitional problems, some of which Dr. Rosser envisaged in her letter, may account for much of this. The immediate conclusion is that the sampling procedure at the hospital in question requires urgent examination.

8. General Register Office: Manual of the International List of Causes of Death; pp. 7–8. London, 1940.
9. Duvoisin, R. C., Schweitzer, M. D. *Br. J. prev. soc. Med.* 1966, **20**, 27.
10. Ashley, J. *Br. J. prev. soc. Med.* (in the press).

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ASCORBIC ACID AND THE COMMON COLD

SIR,—Most of the earlier reports[1,2] claiming that supplementary ascorbic acid has little or no effect on the incidence and severity of the common cold have been based on dosages of the order of 200 mg. per day. Pauling[3] lately publicised other work which indicated that higher intakes of ascorbic acid might be beneficial in cold prevention. We wish to report a survey carried out between November, 1971, and March, 1972 (climatically, not a severe winter in Glasgow), amongst some of the staff and students of the University of Strathclyde.

The test group (47 out of the original 50 people completed the experiment) were supplied with 4×250 mg. ascorbic-acid tablets to be swallowed every day after breakfast, and the control group (43 out of the original 45 completed the experiment) were given a placebo similar in appearance but containing lactose and 5% citric acid. Every week any symptoms of cold, and their duration, were recorded; only the operator of the survey (S. S. C.) knew the identity of the subjects in the two groups.

INCIDENCE AND DURATION OF COLDS DURING 15 WEEKS IN WINTER

—	Ascorbic acid 1 g./day	Placebo
No. of persons in group	47	43
No. of persons having: 0 cold(s)	16	6
1 ,,	19	11
2 ,,	11	14
3 ,,	1	7
4 ,,	0	5
Total no. of colds	44	80
Average no. of colds per person	0·94	1·86
No. of colds of: 2 days' duration	12	2
3 ,, ,,	13	11
4 ,, ,,	12	38
5 ,, ,,	5	26
6 ,, ,,	1	3
14 ,, ,,	1	0
Average duration of cold (days)	3·5	4·2

Symptoms during the first week of the survey were negligible and are not included in the accompanying table, which is based on 15 weeks of observations; it was known that up to 7 days might be required for the test group to approach saturation. The tabulated results show that the incidence of colds was reduced by 49% in the group receiving 1 g. ascorbic acid supplement a day compared with the control group. On the basis of a one-tailed statistical test (it was not necessary to consider the possibility of the placebo influencing cold symptoms) it can be shown that 1 g. ascorbic acid a day is effective in reducing the incidence of colds at the 0·002 level of significance. For the subjects taking ascorbic acid, statistical analysis showed that the duration of colds was less at the 0·05 level of significance, and narrowly missed the 0·01 significance level because of one prolonged 14-day cold.

An interesting observation from the present survey is that the reduction in the incidence of colds when taking pro-

1. Cowan, D. W., Diehl, H. S., Baker, A. B. *J. Am. med. Ass.* 1942, **120**, 1267.
2. Glazebrook, A. J., Thomson, S. *J. Hyg., Camb.* 1942, **42**, 1.
3. Pauling, L. Vitamin C and the Common Cold. San Francisco, 1970.

longed supplementary doses of vitamin C was more significant than the reduction in duration of cold symptoms. Some of the previous findings [4] in favour of ascorbic acid as an ameliorator for the common cold have tended to emphasise the reduced severity of the cold rather than the number of colds during the experimental period.

We are aware that criticism can be levelled at this survey (in common with most surveys) on the grounds that it should have been of a double-blind design, should have run for longer, should have had larger groups, and should have investigated even higher levels of ascorbic acid, but most of these factors were outwith our resources and facilities. However, the results obtained are so clearcut in favour of vitamin C as a positive agent in reducing the incidence and duration of the common cold when ingested in higher amounts than could be achieved on a normal dietary regimen or with low supplementation, that we suggest further investigations are needed.

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LEUCOCYTE LOSS IN HÆMODIALYSIS

SIR,—During hæmodialysis a remarkable sedimentation of leucocytes occurs on the membranes of the Kiil kidney; these cells are lost at the end of dialysis.

Staining with May-Grünwald/Giemsa of fragments of membrane from different sectors of the dialyser at the end of hæmodialysis reveals dark and light regularly alternating bands. Microscopic observation of this preparation shows that the dark bands consist in accumulations of leucocytes, sometimes monostratified but more often pluristratified.

The cells are preponderantly granulocytes; a small proportion (1–2%) are monocytes; lymphocytes are absent. The leucocytes are poorly conserved.

If the membrane surface (a little more than 1 sq.m.) is completely covered by only one layer of leucocytes, the number of lost cells will be 10×10^9.

The washing of membranes with 0·9% sodium-chloride solution at the end of dialysis has not proved a suitable way to recover cells: more than half of the collected material sediments irreversibly. Even so, by this technique the value obtained for lost leucocytes is 5×10^9.

This phenomenon seems to be a function of time: after 15 minutes' dialysis the amount of leucocytes on the membranes is very small (thus we can exclude any connection of this phenomenon with the transient neutropenia observed early in hæmodialysis [5,6]); after 60 minutes it increases. Naturally, we cannot find significant differences between the number of leucocytes in samples drawn at the arterial and venous pole of dialyser at the same time.

The amount of leucocytes lost, though remarkable, does not seem particularly significant compared with the turnover of leucocytes in health. But in uræmia the bone-marrow is depressed. Moreover the leucocytes sequestrated in the kidney cannot be regarded as a static pool: these cells, having circulated and been damaged during dialysis, will be rapidly destroyed when they enter the circulation once again. Thus it is likely that the loss of leucocytes in hæmodialysis is much more important than is suggested by the estimate of 10×10^9.

The phenomenon may have many practical implications.

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4. Franz, W. L., Sands, G. W., Heyl, H. L. *J. Am. med. Ass.* 1956, **162**, 1224.
5. Kaplow, L. S. *ibid.* 1968, **203**, 1135.
6. Smith, E. K. M., Jobbins, K. *Br. med. J.* 1969, iv, 70.

MARLBOROUGH DAY HOSPITAL

SIR,—We wish to contradict widespread rumours that the Marlborough Day Hospital is going to close down.

In December, 1971, the North-west Metropolitan Regional Board decided that the establishment should continue as a day hospital and outpatient clinic supported by 12 inpatient beds; that permanent consultant appointments should be made in consultation with the Middlesex Hospital; that the activities for autistic and maladjusted children should be continued; and that provision of special facilities for admission of families in crisis should be explored further.

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Parliament

Vasectomy Bill

The Lords amendments to the National Health Service (Family Planning) Amendment Bill were considered in the House of Commons on June 16, but the debate was automatically adjourned at 4 o'clock when one amendment had still to be approved. Several members, who were opposed to the Bill, argued at length against the amendments on the ground that they introduced new principles, while it was contended by Mr. PHILLIP WHITEHEAD, moving agreement with the amendments, that they were in the main drafting amendments. The first amendment would permit local health authorities in England and Wales, with the approval of the Secretary of State, to give advice on voluntary vasectomy, and to make arrangements for the examination of people seeking vasectomy. Provision under this amendment would also allow local health authorities, with the permission of the Secretary of State, to recover, where reasonable, charges from people for advice and treatment. The Under-Secretary of State for Health and Social Security, Mr. MICHAEL ALISON, said that the changes effected by the Lords amendments would have no practical effect on the character of the Bill. A carefully worded circular of advice on the operation of the Bill would be sent to local authorities when it became law; the Secretary of State would hesitate long and earnestly before approval was ever given for charges to be made. The measure would operate for only a year, because in 1974 local authorities would lose their health power. The second amendment, which was discussed with the third, concerned the reports on vasectomy operations to be made by local authorities to the Secretary of State, and was said by Mr. Whitehead to be a great improvement to the Bill. This amendment was eventually agreed to, but there was no time for the third amendment to be put to the House.

QUESTION TIME

Women Doctors

A new scheme to enable women doctors bringing up children to continue to practise was announced in the House of Commons on June 12. In answer to a written question, Sir KEITH JOSEPH, Secretary of State for Social Services, said that the new scheme would make it possible for any doctor under 55 years of age, who could not practise because of domestic commitments, but intended to resume a full medical career in the National Health Service when these commitments lightened, to do a small number of specially arranged clinical sessions and to attend some postgraduate medical education sessions each year. Members of the scheme would receive an annual retainer of