receipt of care. Differential non-response is unlikely to account for these findings. Patient function was not assessed in this study for reasons of time and because of the multifactorial origins of reduced function.

The critical importance of controlling for confounding is underlined by the reversal, after adjustment, of the direction of the association with living alone. Previous unadjusted studies reporting that living alone is associated with an increased chance of receiving chiropody⁴ are probably biased by uncontrolled confounding. Though use of many other health services is greater among those who live alone, this might not apply to a low status service like chiropody. Poor access to transport by car in this group provides a possible mechanism. Proposals that domiciliary chiropody be reduced with increased centralised provision carry a risk of further exacerbating this problem.⁵ This mismatch between the capacity to benefit from care and the pattern of provision of that care affects a number of common but low status health problems. Careful consideration should be given in the purchasing process to ways of identifying those with severe foot morbidity and of providing accessible services.

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Conflict of interest: None.

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Factors predicting contact with chiropodist in preceding 12 months: unadjusted and adjusted odds ratios (based on logistic regression analysis)

Variable	Unadjusted odds ratio (95% CI)	P value	Adjusted odds ratio (95% CI)*	P value
Age:				
1 year increase	1.09 (1.06 to 1.12)	<0.00001	1.09 (1.06 to 1.12)	<0.00001
Sex:				
Male	1.0	< 0.0001	1.0	<0.00001
Female	2.6 (1.8 to 3.8)		2.8 (1.8 to 4.4)	
Social class:				
I	1.0	0.21	1.0	0.60
II	1.0 (0.4 to 2.1)		1.1 (0.5 to 2.5)	
III non-manual	1.5 (0.7 to 3.3)		1.6 (0.7 to 3.8)	
III manual	1.3 (0.6 to 2.7)		1.5 (0.7 to 3.4)	
IV	0.8 (0.4 to 1.9)		1.1 (0.4 to 2.6)	
V	2.0 (0.7 to 5.3)		1.6 (0.5 to 4.9)	
Postcode area:				
Other	1.0	0.48	1.0	0.37
Inner city	1.2 (0.8 to 1.8)		1.3 (0.8 to 2.1)	
Marital status:				
Married	1.0	0.00001	1.0	0.41
Divorced or separated	0.8 (0.2 to 2.7)		1.4 (0.7 to 3.8)	
Widowed	2.4 (1.6 to 3.5)		1.6 (0.9 to 3.1)	
Single	2.5 (1.2 to 5.1)		1.8 (0.8 to 4.3)	
Living alone:				
No	1.0	0.04	1.0	0.03
Yes	1.5 (1.0 to 2.2)		0.5 (0.27 to 0.95)	
Foot problems on examination index 1:				
0	1.0	0.02	1.0	0.73
1	0.9 (0.3 to 2.9)		0.8 (0.2 to 2.8)	
2	0.8 (0.3 to 2.4)		0.5 (0.2 to 1.7)	
3	1.7 (0.6 to 4.9)		0.8 (0.2 to 2.4)	
4	1.5 (0.5 to 4.5)		0.6 (0.2 to 2.1)	
5	2.3 (0.5 to 9.7)		0.8 (0.2 to 3.9)	
Foot problems on examination index 2:				
0	1.0	0.006	1.0	0.68
1	1.0 (0.6 to 1.7)		0.8 (0.5 to 1.3)	
2	1.8 (1.1 to 3.0)		0.9 (0.5 to 1.6)†	

*Controlling for all other variables except foot problem index 2, unless otherwise stated.

†Controlling for all other variables except foot problem index 1.

Mortality related to cold weather in elderly people in southeast England, 1979-94

G C Donaldson, W R Keatinge

During the two decades up to 1977 the decreasing excess mortality in winter in England was due largely to the decline in winter epidemics of influenza.^{1 2} We describe subsequent reductions in excess winter mortality.

Methods and results

We analysed the number of deaths of men and women aged 65-74 years in greater London, Hertfordshire, Essex, Kent, Sussex, Hampshire, Surrey, Berkshire, Oxfordshire, Buckinghamshire, and Bedfordshire. This age group was old enough to have substantial mortality, but with less multiple disease than people aged over 74 years, and the use of a restricted age group avoided the need for questionable adjustments for changing age structure. We used the codes of ICD-9

(international classification of diseases, ninth edition) for mortality from ischaemic heart disease (410.0-414.9), cerebrovascular disease (430.0-438.9), respiratory disease (460.0-519.9), and all causes (0-999.9). A mean of 35.3 (SD 8.9) deaths occurred daily from ischaemic heart disease, 12.3 (5.9) from cerebrovascular disease, 11.2 (4.2) from respiratory disease, and 121.1 (21.3) from all causes. The number of deaths per day per million population aged 65-74 was computed from estimates of the daily population, obtained by linear interextrapolation from the 1981 and 1991 censuses, with adjustments for changed coding instructions in 1979 and 1984. Mid-year populations were 1 580 000 in 1977 and 1 420 000 in 1994. Measurements every three hours from the weather centre in central London provided mean daily temperatures.

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Mortality related to cold in people aged 65-74 in southeast England, 1977-94

Regression coefficients of mortality on fall in temperature and baseline mortality at 18°C were calculated for each year by generalised linear modelling for Poisson distribution, over the range 18°C to 0°C, over which death rates rise progressively.³ Influenza epidemics were allowed for by including mean mortality from influenza over the period 10 days before to 10 days after the mortality day in the regression model as an explanatory variable. Mortality was lagged behind temperature in the analysis, by two days for ischaemic heart disease, five days for cerebrovascular disease, 12 days for respiratory disease, and three days for all causes. These delays give highest coefficients of regression of mortality on temperature and are similar to delays of mortality on temperature shown by time series analysis.³ Changes in annual values with time were analysed by ordinary linear regression, with the *F* test for significance.

After allowance for influenza, which had little effect (figure), the annual increase in all cause mortality per °C fall in temperature (excess winter mortality) declined by 32.3% between 1977 and 1994 ($P=0.005$). The corresponding annual increase in mortality from ischaemic heart disease fell by 39.3% ($P=0.002$), cerebrovascular disease by 57.1% ($P<0.001$), and respiratory disease by 36.9% ($P=0.009$). Baseline mortality at 18°C also fell, but only by 16.9% for all causes ($P<0.001$), 24.4% for ischaemic heart disease ($P<0.002$), 38.9% for cerebrovascular disease ($P<0.001$), and 12.6% for respiratory disease ($P=0.038$). A mean of 25.1 (SE 5.1) deaths from influenza were certified each year.

Comment

Substantial declines in excess winter mortality from all causes, ischaemic heart disease, cerebrovascular diseases, and respiratory diseases from 1977 to 1994 were

not due to fewer deaths from influenza. They can be attributed in part to improvement in non-seasonal background factors such as general medical care and diet, since baseline death rates also fell. Assuming that such background factors affected baseline mortality and mortality related to cold proportionately, about half of the decline in excess winter mortality can be explained by such non-seasonal factors. The rest can most easily be attributed to improvements in home heating and to factors such as greater car ownership, which reduce outdoor exposure to cold.

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Endpiece

Alternative definitions

Gravitation: The tendency of all bodies to approach one another with a strength proportional to the quantity of matter they contain—the quantity of matter they contain being ascertained by their tendency to approach one another. This is an illustration of how science, having made A the proof of B, makes B the proof of A.

Ambrose Bierce, *The Cynic's Word Book* (1906), subsequently titled *The Devil's Dictionary*