# A winter survey of domestic heating among elderly patients

R Morgan BSc MRCP[1] A Blair MB ChB[2] D King MRCP[2]

*J R Soc Med* 1996;**89**:85–86

**Keywords:** *elderly; heating; hospital admissions*

## SUMMARY

**Elderly people have a greater need for domestic heating given the time they spend at home and the decline in the body thermoregulation that occurs with ageing. The use of domestic heating by 200 mentally competent newly admitted elderly in patients was evaluated by means of a questionnaire survey. Most patients (69%) were aware of the addition of value added tax (VAT) to their fuel bill and 31% said they had reduced the amount of heating they use because of this. A third of patients (29.5%) said they had difficulty keeping warm prior to this admission. The majority of patients said they could not manage to keep warm in the winter without financial hardship. In addition, 29% said they had reduced the amount spent on food in order to pay for fuel bills. This study suggests that cold may contribute to hospital admissions in elderly patients. This should have implications for government spending and taxation policy on domestic heating.**

## INTRODUCTION

In some winters in the UK mortality has been as much as 70% higher than in the summer[1]. This winter excess is related to differences in environmental temperature. Older people have a greater need for domestic fuel, given the time they spend at home and the decline in efficiency of body thermoregulation that occurs with ageing[2]. Over a third of elderly households have winter temperatures below 16 °C[3]. In Britain, 75% of pensioners pay no income tax yet virtually all pay value added tax (VAT) of 8.5% on fuel bills[2]. The addition of VAT to domestic fuel may have an adverse effect on the health of elderly people, most of whom are already on a limited budget, and may be responsible for hospital admissions.

We have assessed the type and amount of heating that elderly patients use. We have also enquired what, if any, effect increased bills for domestic heating have had on its use.

## METHODS

We interviewed 200 patients (mean age 82.2 years (standard duration 5.14); 128 women) who were admitted to acute geriatric wards in two hospitals in the North-West (100 from Withington Hospital and 100 from Arrowe Park Hospital) between November 1994 and January 1995. Patients were interviewed by a doctor using a questionnaire (available from the authors). All patients were convalescent and scored at least eight out of 10 on an abbreviated mental test score. The main diagnoses can be seen in Table 1.

[1]Withington Hospital, Nell Lane, West Didsbury, Manchester M20 8LE; [2]Arrowe Park Hospital, Wirral, Merseyside L49 5PE, England

Correspondence to: Dr R Morgan

The majority (135, 68%) of patients lived alone. One hundred and sixteen (58%) also owned their own property, and the rest lived in council property.

## RESULTS

Most patients (138, 69%) were aware of the addition of VAT to their fuel bill and 63 (31%) said they had reduced the amount of heating they use because of this. Only 20 (10%) patients said they had ever claimed for financial assistance to help with the cost of domestic heating.

Approximately one-third of patients (59, 29.5%) said they had experienced difficulty in keeping warm before this admission and there was no significant difference between the two hospitals. Most of those who had difficulty in keeping warm lived alone (46), compared to 13 who lived with someone (nine of whom were with a spouse).

Significantly more home owners (42, 36%) reported they had felt cold prior to admission compared to those in council properties, (17, 20%; $\chi^2=5.23$ $P<0.02$);

The median number of days patients felt cold immediately before admission was 5 days (range 1–36).

Almost a third of patients (58, 29%), said they had reduced the amount spent on food in order to pay for fuel bills and of this group, 32 experienced a problem keeping warm before admission ($\chi^2=24.18$ $P<0.001$).

The majority of patients (127, 64%), said they could not manage to keep warm without financial hardship and 114 (57%) reported that keeping warm in the winter was a major worry. Only a minority (5, 2.5%) thought heating was unimportant to health.

Of 33 patients using a coal fire as the main source of heating 16 said they had experienced a problem keeping

*Table 1.* **Diagnosis of elderly patients versus problem in keeping warm prior to admission and the total number of hours domestic heating on for during the day in the winter**

| Diagnosis | No. | Problem in keeping warm | Heating on | | |
|---|---|---|---|---|---|
| | | | 1–6 h | 7–12 h | 13–24 h |
| COAD | 35 | 15 | 5 | 11 | 19 |
| Ischaemic heart disease | 22 | 7 | 3 | 4 | 15 |
| Cardiac failure | 21 | 4 | 5 | 5 | 11 |
| Pneumonia | 27 | 9 | 4 | 9 | 14 |
| Hypothermia | 1 | 1 | | 1 | |
| Stroke | 21 | 4 | 2 | 6 | 13 |
| Other | 73 | 19 | 16 | 20 | 37 |
| Total | 200 | 59 | 35 | 56 | 109 |

COAD=Chronic obstructive airways disease

warm before admission compared to 43 of 167 who did not use coal ($\chi^2=5.8$ $P<0.02$).

The type of heating used by patients who had experienced a problem keeping warm before admission included: gas central heating (31), electric fires (24), coal fires (16). Some patients with coal fires also had electric fires. Additional things done to keep warm included: extra clothing (172), extra hot drinks (69), hot water bottles (65), 'others' (59) included electric blankets, hot toddies and even jogging.

## DISCUSSION

The introduction of VAT on fuel bills would appear to have had a significant effect on the amount of fuel used by elderly patients, most of whom (64%) said they had experienced financial hardship in keeping warm. Factors likely to cause a problem in keeping warm before admission included living alone, owning the property and using coal as the main fuel.

Excess mortality in winter is due to cardiovascular disease[1]. We found no relationship between disease and those who had a problem keeping warm (see Table 1). Since a third of the patients in this study said they felt cold to be a problem before admission and cold is associated with lowered resistance to infection, poor morale and efficiency[4], this study suggests that cold may contribute to hospital admissions in elderly patients.

Although the methodology in this study was simple and based upon self-reported data, it suggests that there is a need to undertake a more formal study on the adverse affect of VAT on heating in the elderly and their admission rates to hospital.

Elderly individuals on a state pension do not automatically receive Income Support. They have to apply for Income Support which is means tested. In order to apply they have to know that it is available and fill out appropriate forms. It is possible that some elderly individuals on a state pension alone who would be eligible for Income Support are not on it because they do not know they are entitled to it or have difficulty obtaining or filling out the appropriate forms. Income Support consists of a set amount of money with fixed increments adjusted for age, family responsibilities, long-term sick and chronic disability. The increments are rigid and do not take into account the type of heating used which may be more or less expensive.

Low-income groups tend to use dearer fuel because of their lack of access to gas central heating and greater reliance on electricity[5]. The Government has increased benefit payments to pensioners that defray but do not fully compensate for the addition of VAT to fuel costs. There is a special cold weather payment that anyone on Income Support can claim provided there are seven consecutive days during which the average temperature is 0 °C or less.

The finding that only 10% of patients said they had claimed for assistance with the cost of heating is disturbing and suggests that the methods available for reimbursement are inadequate. This needs to be addressed but also all doctors need to be aware of financial hardships amongst older people so that they can be encouraged to claim benefits. The losses produced by alleviating the burden of VAT on fuel for older people may be offset by a reduction in the numbers of hospital admissions. This may mean not only a cost saving, but more importantly a reduction in morbidity and mortality caused by low environmental temperatures in older people.

*Acknowledgment* The authors are grateful to Ms Alison Wynn-Davies BSc MSc, Department of Medical Statistics, Research and Training Unit, Withington Hospital, Manchester, for her assistance.

## REFERENCES

1 Curwen M. Excess winter mortality: a British phenomenon? *Hlth Trends* 1990/91;**4**:169–75

2 Watt GCM. Health implications of putting value added tax on fuel. *BMJ* 1994;**309**:1030–1

3 Salvage AV. *Cold Comfort: A National Survey of Elderly People In Winter.* London: Age Concern, 1993

4 War Office. *Manual Of Army Health.* London: HMSO, 1959:85–8

5 Sheldrick B. Energy and fuel consumption. In; Fyfe G, ed. *Poor and Paying For It.* Edinburgh: HMSO, 1993:34–53

*(Accepted 21 June 1995)*