

# HEALTH COST SAVINGS: THE IMPACT OF PETS ON AUSTRALIAN HEALTH BUDGETS

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This paper has been prepared as a contribution to the furthering of discussion and research on the implications of the human companion animal bond

It has been jointly prepared by:

Associate Professor Bruce Headey  
The Centre for Public Policy, University of Melbourne

Professor Warwick Anderson  
Baker Medical Research Institute

The authors acknowledge the research assistance of Dr. Jonica Newby, Veterinary Consultant to the Petcare Information & Advisory Service.

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404/685 Burke Road, Camberwell, Victoria 3124

Telephone: (03) 9827 5344

Facsimile: (03) 9827 5090

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## SUMMARY

The Australian *NATIONAL PEOPLE & PETS SURVEY 1994* ( $N = 1011$ ) showed that dog and cat owners make fewer doctor visits and appear to have better health than non-pet owners. It follows that the presence of pets in a majority of Australian households entails savings in health expenditure.

This paper provides the first preliminary estimates of these savings. Eight per cent of GDP, over \$30 billion, is spent on health care, of which 68% is government expenditure and 32% private. Our calculations indicate that the presence of pets could save between \$790 million and \$1.5 billion, annually, depending on whether it is assumed that only the main carers of pets enjoy health benefits, or whether other family members are assumed to benefit also.

The paper outlines future research requirements which would enable more precise estimates of savings to be calculated.

## INTRODUCTION

In 1992 the Baker Medical Research Institute found that pet owners in its clinic population had lower levels of risk factors for cardiovascular disease and that this was not explicable on the basis of cigarette smoking, diet, body mass index or socio-economic profile or other variables which normally increase risk. (Anderson, Reid & Jennings, 1992). These findings are now being further investigated through the Institute's cardiovascular disease risk clinic.

Australian and American research has also shown that dog and cat owners go to the doctor less often (Headey, 1995; Serpell, 1990a, 1990b). Furthermore, there is strong evidence that the relationship between pet ownership and better health may be causal and not merely correlational; that is, people who acquire a dog or cat subsequently enjoy improved health, perhaps because they are less likely to be lonely and more likely to take exercise (Serpell, 1990a, 1990b).

The Petcare Information & Advisory Service agreed that this last finding indicated that pet ownership may have a beneficial impact on community health costs and that this impact ought to be investigated.

To do so it was decided to combine a number of social and economic research methodologies to explore this possibility further.

## BACKGROUND

The purpose of this paper is, therefore, to make preliminary estimates of the health expenditure savings in Australia, resulting from pet ownership. Health costs are significant - they absorb about 8% of the Australian GDP - and if pet owners enjoy better health, the existence of pets has the clear potential to save substantial sums of government and private money.

The methodology adopted to ascertain whether such savings exist and how significant they may be involved:

- undertaking research on the behaviour of Australians regarding use of doctors and pharmaceuticals;
- establishing whether existing health cost data indicated that the different behaviours could have a measurable economic impact; and
- developing a method which would allow the data to be used to calculate the size of any such savings.

The estimates outlined below are based on data from the 1994 Australian *NATIONAL PEOPLE & PETS SURVEY (N=1011)*, conducted by McHarg, Baldock, Headey and Robinson for the Urban Animal Management Coalition (McHarg et al., 1995). Because this survey obtained information about a representative national sample, it is possible for the first time to estimate national expenditure savings resulting from pet ownership. Because the sample is representative it was possible to check that results relating to health benefits and savings were not spurious when statistical controls were used to net out the effects of age and gender\*.

\* It should be understood that the estimates provided are based on comparing actual Australian health expenditure with a counterfactual situation, namely the expenditure which would be incurred if pets were banned and none existed. The difference between current expenditure and the hypothetical level of expenditure in the absence of pets may be regarded as the savings due to pets. (An alternative means of calculating possible savings would be to postulate various increases or decreases in pet ownership.)

## ASSUMPTIONS AND METHODS

Dog and cat owners make fewer annual doctor visits than non-owners.

In what follows it is assumed that all or part of recurrent national health costs can be divided up *proportionately to the number of doctor visits people make*. We have made this assumption on two grounds. The first entry point to the Australian health system is overwhelmingly through GPs. Thus, the number of doctor visits is probably a reasonably valid indicator of health system usage. We plan other research to throw further light on this relationship. One assumption (one of a range of alternatives considered) is that all the nation's recurrent health expenditure, which amounted to \$32.922 billion in 1992-93, can be apportioned on the basis of doctor visits. In effect, we assume that if some people go to the doctor more than others, they are "responsible" for proportionately more hospital costs, pharmaceutical costs, salary costs, bed costs, etc. throughout the health sector (Note: only recurrent expenditure not capital expenditure is included in our estimates)\*.

An alternative, but perhaps less justified assumption, is that only costs that can be more directly associated with general practitioner (GP) visits should be calculated. These costs comprise (1) the cost of the GP visit itself; (2) the cost of pharmaceuticals prescribed by the GP; and (3) the cost of hospitalisation based on the probability of being hospitalised following a GP visit. The main reason for this being less justified is that the question asked in The *NATIONAL PEOPLE & PETS SURVEY* related to visits to all types of doctors and not just GPs.

| Doctor visits in the last year by type of pet ownership (a)                           |        |       |
|---|--------|-------|
| Ownership   | Visits |       |
|   | MEAN   | (N)   |
| Owns no dog or cat (b)  | 5.00   | (459) |
| Owns dog or cat or both   | 4.41   | (540) |
| Owns dog only   | 4.55   | (269) |
| Owns cat only   | 4.16   | (127) |
| a) N-99   |        |       |
| b) People who owned no dog or cat but some other pet (e.g. a horse) are included here |        |       |

In our calculations we also needed to make assumptions about (1) which pet owners (dog owners or cat owners as well?) enjoy better health; and (2) which members of the family benefit and by how much from the presence of a pet. The *NATIONAL PEOPLE & PETS SURVEY* was based on interviews with main carers of pets in those families which had pets, and a representative sample of Australian residents aged 16 and over in families which did not have pets (more detail below).

All calculations in the paper use as their base the difference in doctor visits between people who own a dog or a cat or both (4.41 visits per year) and people who have no cat or dog in the home (5.00 visits per year). However, the figures in the last two rows of Table 1 also require comment.

The difference in doctor visits between dog owners and non-dog owners was statistically significant at the 95% confidence level. The question of cat ownership is more difficult. The figures in Table 1 suggest that cat ownership may be even more beneficial to health than dog ownership, but due to smaller numbers the difference in doctor visits between cat owners and non-owners was not quite significant at the 95% confidence level. However, in the calculations presented below, we have combined the dog-cat figures, taking the view that our best available current estimate (point estimate) is that these two most common household pets both confer health benefits.

A final issue is whether all the health benefits due to pets flow to the main carer, or whether other members of the family also benefit. Plainly our survey data only relates to main carers. However, it seems likely that some benefits also flow to other family members who are likely to interact, to a greater or lesser extent, with the pets.

The calculations below show results assuming (1) that only main carers benefit and; (2) that other family members benefit to half the extent of the main carer. In effect, we assume that other family members interact with the pet \*.

The *NATIONAL PEOPLE & PETS SURVEY* and Other Data Sources The *NATIONAL PEOPLE & PETS SURVEY* (N=1011) was conducted in November 1994. Telephone interviewing was carried out by The Roy Morgan Research Centre and was commissioned by the Urban Animal Management Coalition. The Roy Morgan Research Centre, which has an excellent reputation for accurate representative sampling, was asked to obtain samples of pet owning and non-pet owning households. In pet owning households, the main carer of the "principal" pet was interviewed. This was assumed to be the dog (or dogs) in dog owning households and the first pet mentioned by the respondent in non-dog owning households.

## HEALTH EXPENDITURE

Data on health expenditure was primarily supplied by the Australian Institute of Health and Welfare and relates to 1992/93. In that year recurrent health expenditure was \$32.922 billion or about 8% of GDP. Of this, 68% was government expenditure and 32% private. The sheer size of this expenditure means that even small differences in health system utilisation between pet owners and non-owners can yield large savings.

Information about the cost of doctor visits, pharmaceutical benefits and hospitalisation comes from *Department of Human Services and Health: Statistical Overview, 1993-94*.

For consistency (since 1992-1993 expenditure data is used) population figures for December 1992 are used in our calculations. At that date the population was 17.6 million living in 6.08 million households.

\* It should be noted that the paper focuses only on health cost savings. It leaves out all other costs and benefits of pet ownership. For instance, we have excluded costs incurred by pet owners in terms of feeding and maintaining their pets. Feeding and maintaining has a tax impact through the sales tax on pet food; the decision to have a pet is voluntary; there are non-economic benefits experienced by pet owners in return for their expenditure; and health costs are qualitatively different because of their impact on government spending.

## RESULTS - ESTIMATES OF HEALTH SAVINGS

We first give results for Method I which involves apportioning all recurrent health expenditure in 1992-93 among pet owners and non-owners. Method II, for which results are presented later, is based on a more conservative, but in our view less justified approach, in which only costs more directly deriving from GP visits are calculated.

### Method I - All Recurrent Expenditure Apportioned

As a worked example, results are given in detail for savings due to main carers of dogs and cats. The assumption here is one of zero benefits to other family members.

#### A. Savings Due to Health Benefits for Main Carers Only

##### Step 1 - Population Estimates

In 1992-1993, 58% of Australia's 6.08 million households owned a dog, or cat (or both)\*. Therefore, there were 3.538 million main carers, i.e. 20.1% of the total population of 17.6 million. 79.9% of the population are assumed not to gain health benefits from being main carers of pets for the purpose of this calculation.

\*Morgan Research Data

##### Step 2 - Doctor Visits per year

Dog and cat owners (20.1%) - 4.41

All others (79.9%) - 5.00

Using these figures, straightforward multiplication indicates that 79.9% of the population makes 81.8% of doctor visits.

##### Step 3 - Apportioning Health Expenditure

It follows that in our counterfactual situation, annual recurrent health expenditure in 1992-1993 would have been:  $81.8/79.9 \times \$32.922 \text{ billion} = \$33.712 \text{ billion}$

Therefore, savings due to the health benefits flowing to main carers were:

$\$33.712 \text{ billion} - \$32.922 \text{ billion}$

Savings = \$790 million

## B. Savings Due to Health Benefits for Main Carers of Dogs and Cats and Their Families

Making an alternative assumption that other family members receive half the health benefits of main carers, the additional savings were:

1.895 million additional family members x 0.5 health benefits x \$790 million benefits to main carers = \$749 million.

Total savings due to main carers and other family members = \$1.539 billion.

## Method II - Savings Derived More Directly from Fewer Doctors Visits by Pet Owners

Our alternative method involves conservative but also perhaps less realistic assumptions. First, this method assumes that when survey respondents told us how many doctor visits they had made in the last year, they reported only GP visits. It should be noted, however, that the relevant survey question asked about visits to "any sort of doctor, your family doctor or specialist". Following from this assumption, the method next involves directly calculating three sets of savings:

1. Savings from fewer GP visits by pet owners;
2. Savings due to assumed lower consumption of pharmaceuticals (prescribed by GPs) on the part of pet owners;
3. Savings due to assumed lower rates of hospitalisation among pet owners.

In making calculations, we assume that the probability of receiving a prescription for pharmaceuticals following a GP visit is 0.9\*\*. The probability of being hospitalised is one in thirty or 0.033\*\*\*. The probability of these events happening is of course assumed to be the same for pet owners and non-owners.

\*\*Estimated from Dept. of Human Services and Health Statistical Overview, 1993-1994 (1995) Chap 8

\*\*\* Estimated from Australian Institute of Health and Welfare data - personal communication

## A. Savings for Main Carers Only

Savings for main carers will again be shown in some detail by way of example. Recalling that there are 3.538 million main carers of dogs and cats, we get the following results.

Savings from GP visits: 3.538 million x 0.59 fewer GP visits x \$21.44 per visit\* = \$44.754 million.

\*Estimated from Health Insurance Commissioner, Annual Report 1992-1993 (1994). This figure is an underestimate of total costs, since it is the Medicare reimbursement level. In fact only about 60% of GP services are bulk-billed. The remaining 40% of services attract higher charges.

Savings on pharmaceuticals: 3.538 million x 0.59 x 0.9 probability of getting a prescription x \$16.73 per script = \$31.430 million.

Savings on hospitalisation: 3.538 million x 0.59 x 0.033 probability of being hospitalised x \$2,700 cost of the average stay in hospital\* = \$186.3 million.

Health Insurance Commission Annual Report, 1992-1993(1994)

Total savings: \$262.484 million

## **B. Savings Due to Main Carers Plus Other Members of Their Families**

If we assume that others besides the main carer receive half the health benefits flowing to the main carer, then additional savings were:

1.895 additional family members x 0.5 health benefits x \$262.484 million benefits to main carers = \$248.704 million.

Total savings due to main carer plus other family members = \$511.188 million.

## CONCLUSIONS

Our main conclusion is that the savings in annual health expenditure due to pets are very large. Small differences in health system usage between pet owners and non-owners translate into huge savings, simply because national health expenditure absorbs 8% of GDP.

Based on the method of disaggregating the nation's recurrent health expenditure, annual savings may range from \$790 million (if it is assumed that only main carers of cats and dogs receive health benefits) to \$1.5 billion (if it is assumed other family members also enjoy better health to a lesser extent). 68% of these savings accrue to government and 32% to private households. We contend that it would be appropriate to make an estimate in excess of \$790 million because it seems highly likely that other members of the family besides the main carer receive at least some benefit.

It should be remembered that the counterfactual situation used for all calculations has been an Australia in which there are no pets. We have answered a classic economic "what if?" question. From a public policy standpoint, an alternative way of viewing the results is to ask how much saving there would be if dog and cat ownership were increased due to a campaign to promote the benefits of the human companion animal bond.

The results given in the paper provide a good starting point to estimate health benefits and savings, but a great deal of further research is needed before more precise estimates are available; estimates which would narrow down the wide range presented here. Larger or repeated national sample surveys are required to confirm, among other issues, that cat ownership confers health benefits. Also needed are more direct estimates of savings in hospital costs due to pets. Finally, longitudinal and prospective studies are essential both to confirm that there really is a causal (and not just a correlational) link between pet ownership and better health, and also to estimate the medium, longer term and even lifetime benefits.

What is clear is that there is a link between pet ownership and better health and that this link may have profound implications for health policy and practice.

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