Notes on Ageing and its affect upon Health Expenditures

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The notes below summarise my concerns about the analysis of ageing and health costs. The comments are not specifically about the PC report which does not draw strong conclusions and is cautious in its statement of the implications of the study. Rather, the comments which I have made publicly on a number of occasions are directed at those who might conclude from the various projections that ageing will create unacceptable cost pressures and that their control should be a major task of government policy.

In Summary: At the aggregate level the link between ageing and cost is at best problematical and at worst unknown. The 'naïve needs model' – as Evans describes the assumption of fixed needs and fixed treatment regimes – is contradicted by almost all the evidence to date. (It is strikingly different from the usual economic model with its emphasis upon flexibility and substitution opportunities.) Consequently, to focus attention upon the results of rigid need based projections without the clearest possible disclaimers may well mislead the focus of policy

Does Ageing Increase Health Care Costs

My conclusions are as follows:

(i) Ageing need not increase health care costs. It is misleading to cite the *point in time distribution* of total costs between age cohorts. (PC page 6.1 dot 4)

(ii) Ageing has probably been unimportant to date.

(iii) Its impact in the future is very hard to assess.

In the two figures below the average cost per age cohort – the age cohort profile – is represented for four time periods, $t_1 \ldots t_4$. The bold line represents average national health spending. $A(t_1) \ldots A(t_4)$ are the ages of the cohorts which have average national expenditure.

Figure 1 illustrates a logical point. Average national expenditures may be unrelated to the age of the population. In this figure they are constant. As the population ages the cohort spending profile adjusts downwards. Figure 2 is the more realistic case. Total and average national costs increase and the cohort spending profile rises by an amount determined by the magnitude of national expenditures and the extent of the ageing of the population.

In both of these cases the budget may have been set autonomously and the age profile of the population determines how resources will be *distributed* between cohorts. In the second case – Figure 2 – the critical issue is whether or not the budget *has varied because of the ageing of the population*. The answer to this question could be yes or no but the observed relationship between age and spending could be the same with either

answer. That is, an increase in health spending between age cohorts plus an increase in the national health budget plus the ageing of the population does not indicate causation.
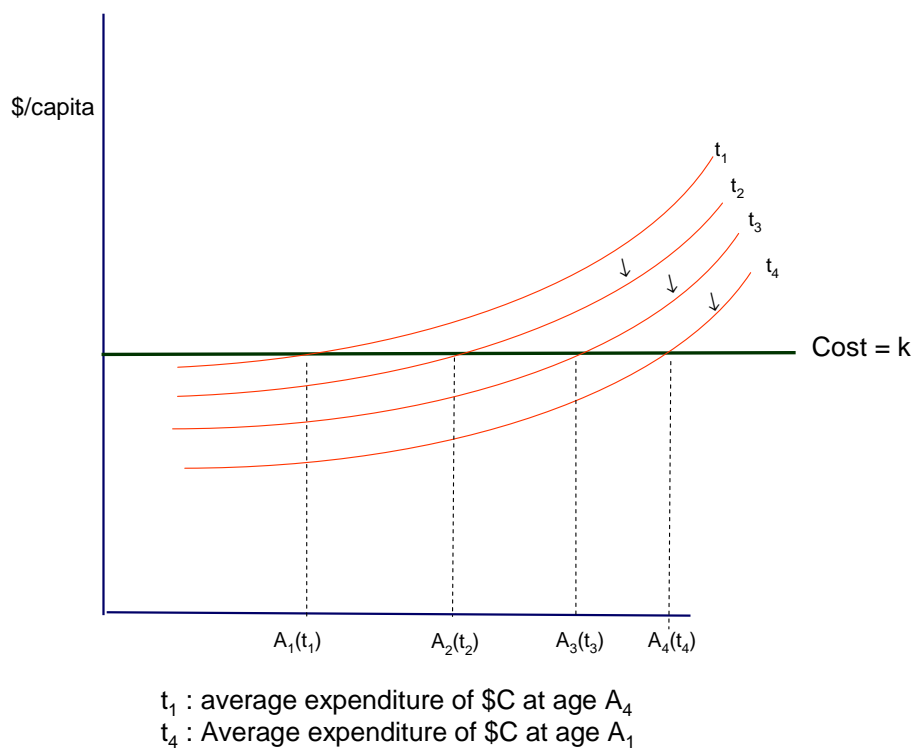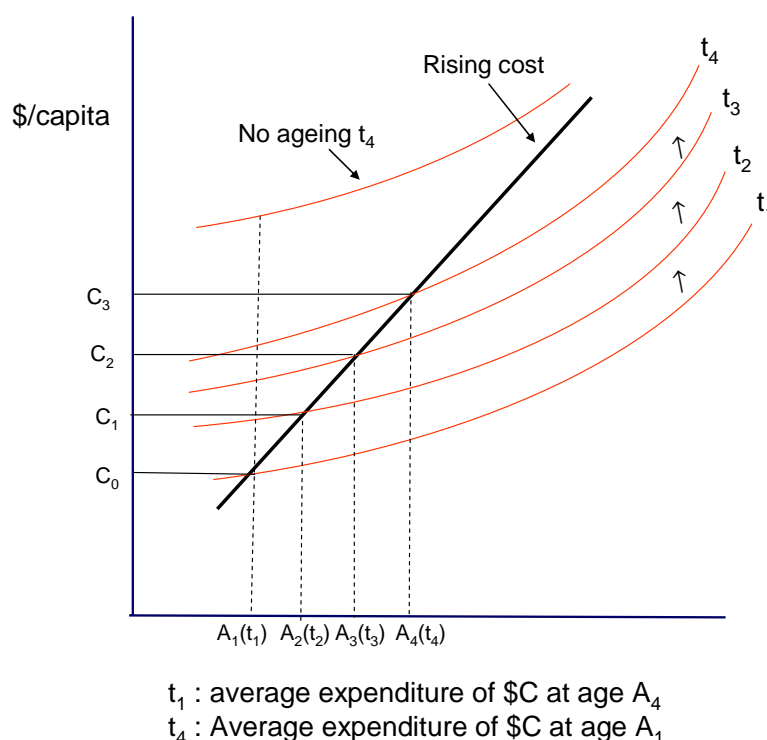
Figure 1

t_1 : average expenditure of $C at age A_4
t_4 : Average expenditure of $C at age A_1

Figure 2

t_1 : average expenditure of \$C at age A_4
t_4 : Average expenditure of \$C at age A_1

If there is a causal relationship it is not necessarily true that each dollar increase in age related 'need' causes an increase of \$1 in the budget. Some part of the \$1 might be absorbed into trend spending. In principle, anxious policy makers could react to ageing by increasing the budget by more than \$1. However when the ageing effect is spread over many years, as has occurred and will occur, the small annual effect is more likely to be fully absorbed and have no causal influence.

The Need for Evidence

For the reasons above the causal relationship between ageing and health costs must be regarded as an empirical unknown which requires empirical testing. Evidence presented in my submissions does not support the hypothesis that, to date, there has been a systematic relationship between ageing and health expenditures either across Australia, between western nations some of which have a demographic profile which is much older than Australia, or for western nations through time.

An additional observation is relevant here. Health spending across developed countries is determined overwhelmingly by GDP and GDP appears to be the exogenous determinant of health budgets. In all western countries GDP and hence the health budget have grown sufficiently to absorb ageing effects. Hence the lack of relationship between health spending and ageing.

I have reproduced two small extracts from articles by Reinhardt who reaches similar conclusions to me in the USA.

What Policies are Implied by Ageing

If the incentives and organisation of the health sector are left unchanged and it was decided that average spending per cohort *should* remain the same (despite the fact that average spending per cohort in different parts of the country is quite different) then, of course, projections using rigid cohort expenditures would describe 'needed' health expenditure and government might sensibly plan for this.

There is, however, a distinct risk that this type of analysis and policy conclusion may become self fulfilling. Neglecting alternative and better ways of providing health services will certainly make the rigid cost of cohort assumption more plausible. The concern here is not so much the analysis per se but the take home message bureaucrats and politicians may obtain from the headline summaries of rigid needs based projections and the impact of this take home message upon policy priorities. A possible analogy is the relative emphasis in the last decade upon privatisation and adverse events. Enthusiasm for the former – for which there was no systematic evidence of benefit in the health literature – may well have crowded out reform energy and interest in the evidence that over 10,000 Australians may be dieing annually from adverse events.

I suspect there are probably no policies that should be different in kind because of the ageing population. Of course the scale of the optimal provision of services for the elderly will be greater if there are more elderly, but the emphasis should be upon determining the optimal service mix. Once this has been determined then the number of services and their cost are a residual or consequence of the policy. There are huge challenges in getting this policy right. There is a need to increase flexibility and, I believe, this should be the major focus of health policy. This would imply an overhaul of incentives and program boundaries; the development of primary care units and step down facilities to provide integrated care with hospitals. Primary care should engage professionals other than GPs. There should be incentives for innovation. There is an urgent need for incentives and regulation to achieve better quality care. Most importantly, health funding and financial incentives should facilitate all of these changes.

Conclusion

My concern with the mechanistic health cost projections to date is that they focus attention upon cost per se rather than the structural changes listed above. The concern is not primarily about the magnitudes of the expenditures which drop out of these calculations but with the likelihood that in Health Departments and at the political level the take home message will be that health policy should be focused upon the 'cost juggernaut' implied in these studies and the need to control costs. The focus upon this rather than upon cost effectiveness at the service level incentives and optimal substitution at the system level could be very harmful. In the long run costs should be the residual of an optimal system and not the primary policy target.

Reinhardt, UW 2002, 'Cross-National comparisons of health systems using OECD Data, 1999', *Health Affairs*, vol 21 no 3, pp172,3.

> '**Ageing and health spending**. It is well known that after the onset of middle age, per capita health spending rises sharply with age. Therefore, it seems natural to conclude that a nation's per capita health spending will rise significantly as the average age of its population rises and that cross-national variations in health

spending per capita are driven significantly by cross-national variations in the percentage of the population that is age sixty-five and older. However, neither hypothesis is supported by the data…

More sophisticated, multivariate analyses of cross-national data that can control for the influence of other variables on health spending (including GDP per capita) also have consistently failed to reveal a statistically significant effect of demographic factors on per capita health spending…

Sally Burner and colleagues calculated what the United States would have spent on personal health care in 1990 if it had had the population age structure that was being projected for 2030. That number turned out to be $728 billion, or 24 percent more than was actually spent in 1990 ($585 billion). Although that may seem like a large increase, it represents compound growth of only 0.54 percent per year. At the same time, however, the authors projected that total personal health spending in 2030 would be $14.8 trillion, which implies a compound growth rate of 8.4 percent per year over the forty-year period. It follows that aging itself was estimated to contribute only one-sixteenth of the projected annual growth rate in actual spending. The forecasters attributed the bulk of that 8.4 percent growth rate to factors other than aging.'

Reinhardt, UW, 2003, 'Does the aging of the population really drive the demand for health care?', *Health Affairs*, vol 22 no 6, p27.

Abstract:

'In the debate on health policy, it is widely believed that the aging of the US population is a major driver of the annual growth in the demand for health care and in national health spending. This essay draws on the research literature and on data from the Medical Expenditure Panel Surveys (MEPS) to debunk that myth. Although in any year per capita health spending for people age sixty-five or older tends to average three to five times that for younger Americans, the aging of the population is too gradual a process to rank as a major cost driver in health care.'