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# THE ROLE OF PHARMACEUTICALS IN AN AGEING POPULATION

*Issues, Policies and Future Directions*

18 October 2006

*“...we have to understand that with an ageing population and the coming on stream of new drugs and new techniques that a rise in health care costs is unavoidable. And we shouldn't see it as a bad thing. Don't we want the new drugs and the new procedures available for all Australians? I do not want to see life saving drugs and new procedures rationed on the basis of people's wealth and income. This is an egalitarian country and if there is a procedure available, it should be available for all Australians. And we must expect health costs to go on rising because we are ageing as a population and we are finding new and more effective ways of prolonging life and making it more enjoyable. And I would like to see those things available to all Australians.”*

The Hon John Howard MP  
Prime Minister, 30 September 2005  
Extract from Doorstop Interview, Mirrabooka, Perth

## CONTENTS

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<b>Recommendations.....</b>	<b>4</b>
<b>Executive Summary.....</b>	<b>5</b>
<b>Introduction.....</b>	<b>8</b>
<b>Chapter One: The Role of Pharmaceuticals .....</b>	<b>9</b>
<i>1.1 The increasing role of R&amp;D and new medicines in the rise of national health expenditure.....</i>	<i>9</i>
<i>1.2 Pharmaceuticals: a key contributor to healthy and sustainable ageing.....</i>	<i>10</i>
<b>Chapter Two: Ageing and Its Impact on Societies: Competing Perspectives.....</b>	<b>19</b>
<i>2.1 Ageing: the facts.....</i>	<i>19</i>
<i>2.2 Consequences for the future.....</i>	<i>25</i>
<i>2.3 Impact of ageing on health spending.....</i>	<i>26</i>
<i>2.4 Implications for government action.....</i>	<i>31</i>
<b>Chapter Three: Reforming Health Care and Pharmaceutical Policies: Government Approaches .....</b>	<b>32</b>
<i>3.1 Implications of ageing for government policy.....</i>	<i>32</i>
<i>3.2 Government approaches to health policy reform: a taxonomy.....</i>	<i>33</i>
<i>3.3 The role of pharmaceuticals in health spending.....</i>	<i>37</i>
<i>3.4 Reasons for growth in pharmaceutical spending.....</i>	<i>40</i>
<i>3.5 Pharmaceutical policy options used by OECD countries.....</i>	<i>41</i>
<b>Conclusion &amp; Future Direction: how to integrate pharmaceuticals in the healthcare reform?.....</b>	<b>44</b>

## RECOMMENDATIONS

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- Given the importance of the Intergenerational Report (IGR) in framing Government policy deliberations on health and pharmaceuticals policy, the next IGR should explicitly recognise that:
  - health spending can improve workforce participation and productivity, and in doing so increase GDP;
  - new medical technologies, including up-to-date medicines provide positive benefits to an ageing population, including productivity and workforce participation benefits, and
  - spending on new medicines can deliver greater savings in other areas of government spending.
- The next IGR should model the current and future economic benefits of medicines into costing of the PBS and incorporate the impact of growth of pharmaceutical spending on:
  - other areas of the health budget, such as expenditure on hospitals, doctors and nursing homes, and
  - workforce participation and productivity.
- Future considerations of pharmaceutical policy reform should be couched in the context of new medicines being critical to ensuring productive and healthy ageing in Australia.
- Any reforms to Australia's health and pharmaceutical policies, and the economic assessment of these, should be developed with full consultation with relevant stakeholders. Medicines Australia and its members continue to develop and consider policy options and want to work with all parts of Government involved in policy reform to develop a system that ensures access to innovative, new medicines for all Australians into the future.

## EXECUTIVE SUMMARY

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Medicines are a vital tool for ensuring that Australia's population remains healthy and productive as it ages. How the Australian Government manages Australia's use of medicines in the future, and the Pharmaceutical Benefits Scheme, will be a key determinant of Australia's future social and economic prosperity.

One of the major public policy challenges is how to ensure that the well-being of Australians and the Australian economy is enhanced to the maximum extent possible from the technological advances being made with medicines while maintaining an appropriate level of fiscal control.

New medicines offer both valuable new treatments as well as improvements on existing treatments that allow for more appropriate care in response to the needs of individual patients. This can reduce both the incidence of associated downstream treatment issues and the overall cost of care.

While the benefits of spending on medicines are increasingly being understood in the debate about ageing, the key test is translating that understanding into policy action.

While unmanaged spending runs the risk of causing fiscal problems for future generations, too little spending runs the risk of Australia's population being less healthy and less productive as it ages.

Spending on medicines provides social and economic benefits that need to be recognised in any discussion about future policy and spending decisions.

### **Social and economic benefits of medicines**

Medicines provide a range of social and economic benefits to society. At the patient level, obviously, medicines help prevent and cure illness. New technological developments are finding new treatments and cures for conditions that were previously untreatable, and improvements over previous treatments that mean that patients get more effective and appropriate care. In a modern society, having access to such treatments as they become reality is fundamental.

Medicines also provide a range of economic benefits to society that help to lift workplace participation, efficiency and productivity, as well as reducing overall health expenditure. In America, for example, it has been calculated that for every dollar now spent on newer medicines in place of older drugs, total healthcare expenditure drops by US\$6.17<sup>1</sup>.

There is increasing recognition, both domestically and globally, that medicines can help people stay healthy, improve their workforce participation, and reduce costs in other parts of the health system. Moreover, this benefit

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<sup>1</sup> Lichtenberg F. *Benefits and costs of newer drugs: an update*. NBER Reporter, June 2002. Available: <http://www.nber.org/papers/w8996>. [Accessed: 28 August 2006].

improves with each new generation of medicines. The benefits of accessing new medicine therefore include improvements to both individuals' well-being and that of the economy. These impacts will become more valuable and pronounced as Australia's population ages. The continued effect of better technology from newer medicines combined with an ageing population suggests that the benefit of medicine spending will increase with time.

### **Ageing population and impact on public policy**

The issues around an ageing population and the consequent implications for health and medicines spending are not unique to Australia. Most industrialised countries are experiencing population ageing, some much more acutely than Australia. In many ways, population ageing will transform the social, economic and political landscape and have profound implications for public policy in the future.

One of the key areas where ageing will impact on public policy is in the area of spending on health and medicines. However, exactly how it will impact and the extent to which governments should be concerned about this is currently the subject of much debate. While obviously finances need to be managed, there is no clear consensus on whether increased spending on health and medicines as a result of ageing is necessarily a cause for concern. The decision revolves around the appropriate balance between what a country can afford and the benefits that society receives from its spending.

Governments around the world are taking measures to better manage their health and medicines spending, partly in response to an ageing population. There are various principles and policy options being considered and applied that are designed to improve the quality, access, responsiveness, affordability and efficiency of health systems. Because pharmaceuticals have tended to be one of the faster growing components of health spending worldwide, these have been a focus for attention and action.

However, in focussing on the potential growth in the cost of medicines, governments may risk ignoring the benefits of this spending when considering future policy options.

A comprehensive approach to medicines policy would consider the full benefits of medicines for society and the economy alongside the fiscal cost to government. Good public policy requires that such approaches are adopted when considering the framework of future medicines policy and spending. This need has become more pronounced as Australia looks to continue its strong economic performance on the back of previously introduced microeconomic reforms.

The 2007 Intergenerational Report (IGR) represents a real opportunity for a comprehensive and considered examination of future spending on medicines and its role in ensuring a healthy and productive population. Given the IGR's importance in framing the Government's thinking about medicines and other important policy topics, it is critical that the next IGR should substantively account for the benefits of medicines spending on an ageing population to properly reflect their economic value.

By properly considering the economic value of medicines informed policy and resource allocation decisions can be made to achieve a sustainable approach to addressing the long term issues facing Australia.

The risk is that if spending on medicines is constrained, patient access to new medicines will deteriorate, putting at risk the potential for efficiency and productivity improvements to occur as Australia's population ages.

## INTRODUCTION

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Medicines Australia represents research-based pharmaceutical companies who discover, develop and manufacture prescription medicines. Medicines save lives, treat disease and limit government and private sector expenditure on more expensive treatments such as surgery, hospitalisation and the need for increased aged care. They also reduce workplace absenteeism, increase workplace participation and increase labour productivity - all of which are essential stimulants to the economy.

The role of pharmaceuticals in an ageing population is becoming an issue for Australia as a whole and for Australia's pharmaceutical industry.

This report focuses on three important issues in relation to the ageing population:

- what benefits pharmaceuticals bring to the ageing population;
- the issue of the ageing population, and
- what governments are doing in relation to it.

Chapter One looks at the role of pharmaceuticals, including the research and development efforts of the industry, the benefits that pharmaceuticals can provide in relation to the health of Australians and the Australian economy.

The trends of an ageing population both internationally as well as in the Australian context are covered in Chapter Two. The consequences for the future on societies are discussed as is the impact of ageing on health spending and implications for governments around the world.

Chapter Three reviews governments' approaches to reforming healthcare and pharmaceutical policies and how an ageing population can influence these reforms and policies in Australia and around the world. It also looks at health spending, in particular, on pharmaceuticals and the reasons for its growth.

The conclusion of the report highlights the key findings and, in addition, provides recommendations for the Australian Government to consider when developing the 2007 Intergenerational Report.

## 1. THE ROLE OF PHARMACEUTICALS

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Pharmaceuticals have and will continue to have an increasing importance in healthcare. This is because many governments are experiencing a growth in pharmaceuticals' share of general health expenditure, a trend that is subject to controversy as to whether or not this is a negative phenomenon. Pharmaceuticals are a key component, if not the most important component, of promoting 'Healthy Ageing'.

### 1.1. THE INCREASING ROLE OF R&D AND NEW MEDICINES IN THE RISE OF NATIONAL HEALTH EXPENDITURE

The bulk of measures to contain health costs in Australia to date have focussed on reducing spending on medicines. Invariably, ageing of the population accentuates attention on medicines, as in this kind of society, medicines are very likely to be a component of every day lives. However, to focus just on reducing spending on medicines runs the risk of missing the benefits of such spending.

*It is sometimes claimed that governments will automatically constrain future rises in health costs relative to GDP arising from ageing by slowing the acquisition of new technologies below historical rates. While this could be a way of offsetting the impacts of ageing, it would transmute the cost of ageing from a fiscal to a technology deficit.<sup>2</sup>*

The pharmaceutical industry contributes a great deal more to the economy than is generally recognised: it keeps people healthy and productive for longer and often reduces their call on acute care facilities. Pharmaceutical companies make massive investments in new medicines over significant periods of time. Consumers, on balance, get a great deal from the pharmaceutical industry.<sup>3</sup> Indeed, if rising costs of new medicines are one key driver of the growth, the reasons for it are rational.

One of the main reasons for the rising cost of medicines is higher consumption, driven by higher demand from the patient side of the equation and motivated by the reasonable expectation of improved health outcomes.

Moreover, medicines are cost-effective, that is, from the patient perspective they represent "value for money". Frank Lichtenberg from Columbia University has been instrumental in demonstrating that pharmaceuticals actually provide this value. Lichtenberg notes that between 1986 and 2000, the average life expectancy in 52 representative countries included in his study grew by almost 2 years. Using a sophisticated statistical approach, he was able to calculate that of this additional 2 years of life society now enjoys (on average), over 14 weeks is attributable to new medicines introduced during those years.<sup>4</sup>

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<sup>2</sup> Productivity Commission, 2005. *Economic Impacts of an Ageing Australia*. Final Report, Canberra, p. XXX.

<sup>3</sup> Dr Keith Suter, Australian Pharmaceutical Marketing Research Group Seminar. 2005, June 7.

<sup>4</sup> Lichtenberg F. *Impact of new drug launches on longevity*. International Journal of Health Care Finance and Economics 2005; **5**: 47-73.

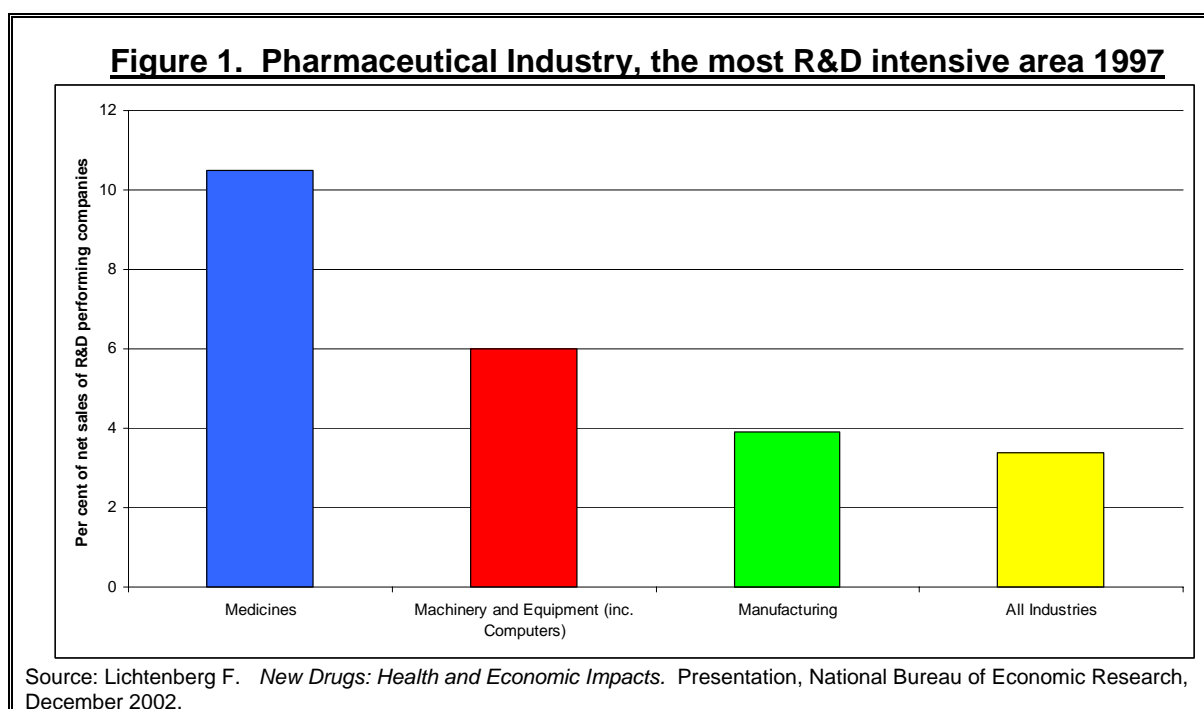
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According to Lichtenberg, the incremental cost benefit ratio (expenditure per person per year on new drugs divided by the increase in life-years per person per year attributable to new drug launches) has been some US\$6750. Even this figure is far lower than most estimates of the value of a statistical life-year.

Overall, the benefits of pharmaceutical R&D on medicines are more than 100 times greater than its costs. For every \$1 that we invest in health and medical research in Australia, there is a \$5 economic spin-off.<sup>5</sup> Lichtenberg stresses that new medicines are, in general, more effective than the older ones.

Investment in research saves lives and money. Benefits linked to research and development include increases in life expectancy, which is an economic gain. New medicines to replace surgery have led to savings of \$600 million a year.<sup>6</sup>

The role of the pharmaceutical industry in R&D is a key one as it is the main investor in this area. In the US in 2000, the government spent US\$7.8 billion on R&D compared to US\$26.4 billion spent by the private sector in 2001. Beyond that, the industry is vital in assuring the strength of the link between research and implementation.



### 1.1. PHARMACEUTICALS: A KEY CONTRIBUTOR TO HEALTHY AND SUSTAINABLE AGEING

Growth in pharmaceutical expenditure is above all a social, political and economic health care choice. Pharmaceuticals' increased share of healthcare expenditure is not a threat to sustainability but actually delivers net economic benefits while enabling progress towards the overarching objective: the improvement of healthcare and healthcare status.

<sup>5</sup> The Hon Tony Abbott MP, AAP Newswire, 6 July 2005.

<sup>6</sup> Mary Hendrix, Australian Society for Medical Research Medal recipient, Address to the National Press Club, 2005, June 9.

### 1.1.1. Spending less: medication rather than hospitalisation

While it may be tempting to view the rise of pharmaceuticals share of national health expenditure as a source of concern, such a response ignores the full situation.

Medicines were created with the intent to prevent or alleviate acute care needs. Their use should intuitively reduce demands on hospital and long term care institutions.

The positive impact on health care costs of the wider use of pharmaceuticals has been clearly demonstrated. The Boston Consulting Group reports that medicines save patients and insurers at least US\$224 million a year in the US. Overall, for every dollar spent on newer medicines in place of older drugs, total healthcare expenditure drops by US\$6.17.<sup>7</sup>

Although pharmaceuticals are increasing their share of the total national expenditure on healthcare, this is likely to lead to a decrease of other sources of expenditure and thus to the ultimate goal of minimising our national healthcare expenditures while maximising patient care for the same cost.

For example, the availability of a new generation of medicines to treat depression in the 1990s enabled a sizable decrease of costs (19%) as reported in a US study by reducing the need for hospitalisation.<sup>8</sup>

New medicines for diabetes have been decisive in preventing serious complications that would otherwise have led to hospitalisation and possibly death – causing a drop in the average cost per patient in the US of US\$685-\$950 over two years<sup>9</sup>.

Age-related diseases are among those that can benefit most from medicines. The new pharmaceutical treatments now becoming available are delaying nursing home care for Alzheimer's patients by slowing, the progression of cognitive decline, which allows the patient to remain independent longer. This not only decreases the costs related to hospital and nursing home care but also alleviates the pressure those two institutions endure because of the excessive number of patients relative to available beds. Costs are further reduced by medicines' cost-effectiveness: even though the implied costs per patient rose by US\$1000, the overall medical costs fell from US\$11,947 (for the patients taking older medicines) to US\$8,056 for those taking the new treatment.<sup>10</sup>

The implication is that, whatever their costs may be, more often than not, pharmaceuticals save more than their own value. Schizophrenia medicines,

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<sup>7</sup> Lichtenberg F. *Benefits and costs of newer drugs: an update*. NBER Working Paper 8996, June 2002. Available: <http://papers.nber.org/papers/w8996>. [Accessed: 5 September 2006].

<sup>8</sup> Greenberg P.E *et al.* *The Economic Burden of Depression in the United States: How Did It Change Between 1990 and 2000?* Journal of Clinical Psychiatry 2003; **64**: 1465-1475.

<sup>9</sup> Wagner E.H *et al.* *Effect of Improved Glycemic Control on Health Care Costs and Utilization*. JAMA 2001; **285**(2): 182-189.

<sup>10</sup> Hill J.W *et al.* *The Effect of Donepezil Therapy on Health Costs in a Managed Care Plan*. Managed Care Interface 2002: 63-70.

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which cost \$47,500 per year, save more than \$70,000 in institutional treatment costs.<sup>11</sup> Medicines that treat congestive heart failure increased overall costs by 60% but cut hospitals costs by 78%<sup>12</sup> and as for asthma, a US study found that new asthma medicines decreased emergency room visits by 42%<sup>13</sup>.

The benefits of pharmaceuticals use include reduced acute care hospital costs, a lower proportion of the aged population in long term care and a higher proportion of the working age population in productive employment – all of which are valuable public policy outcomes. These beneficial outcomes can be measured and quantified.

In addition, there are the intangible benefits of pharmaceuticals which also enhance well-being, such as the ability of patients to live with their families rather than spend time in hospital or long term care as well as the human benefit of the lives spared, the years added to life and the life added to the years by new medicines.

Governments should promote incremental innovation that is in the same general “class” of medicines. This is not considered synonymous with “me-too” medicines since although medicines are conceived to cure a given disease, they are general products that are often unable to adapt to the individuality of human bodies. Different patients respond differently to the same medicine and in some cases, that medicine is ineffective, hence the need to produce various treatments for the same pathology in order to respond intelligently to each patient’s needs.<sup>14</sup> Much of the development of new medical technologies happens through incremental rather than breakthrough innovation. It is therefore important that government policies recognise the value of incremental innovation.

As Wertheimer et al from Temple University note:

*Incremental innovation has been an especially important source of progress in the pharmaceutical industry. The vast majority of clinically important drugs developed over the last 50 years have resulted from an evolutionary process, involving multiple, small, successive improvements within a pharmacological class.*<sup>15</sup>

<sup>11</sup> Calfee J.E (2000). *Prices, Markets and the Pharmaceutical Revolution*. American Enterprise Institute, Washington DC.

<sup>12</sup> PhRMA Facts at a glance, June 2000. Study undertaken by Humana Hospitals.

<sup>13</sup> Public Health Policy Advisory Board *Asthma Epidemic Increase*, March 2002. Washington, p4.

<sup>14</sup> See Innovation.org:

- “SSRIs: In patients treated with SSRI agents for depression, 26% of non-responders to fluoxetine did respond to sertraline. Conversely, another study reported that 63% of patients who failed to respond to sertraline did respond to fluoxetine
- Beta-blockers: The currently available beta-blockers offer differences in strength, effects on the nervous system, pharmacokinetic properties (which determine appropriateness for patients with impaired kidney or liver function), potential for interaction with other drugs, efficacy in specific racial groups, complexity of the dosage regimen and side effects profile. The array of differences among these drugs enables doctors to customize treatment to the patient's specific needs.
- Calcium channel blockers: This class is used for treatment of hypertension, chest pain, heart failure, stroke, and other cardiovascular conditions. However, different calcium channel blockers have different benefits and risks. For instance, two different calcium channel blockers may be similar in their effectiveness against hypertension and angina, but differ in the extent of their actions on various aspects of the circulatory system, such as heart rate, blood flow, and electrical conductivity of the heart.”

<sup>15</sup> Wertheimer A, O'Connor T.W & Levy J. *The value of incremental pharmaceutical innovation for older Americans*. Temple University, 2001. Available:

[http://www.npcnow.org/resources/PDFs/valueincremental\\_pharm\\_olderamericans.pdf#search=%22wertheimer%2](http://www.npcnow.org/resources/PDFs/valueincremental_pharm_olderamericans.pdf#search=%22wertheimer%2)

Government and the pharmaceutical industry can work together to help reduce many age-related diseases, particularly those related to mental health. Alzheimer's disease is a critical challenge that could be addressed by pharmaceuticals. For example, there will be 6.5 million Americans suffering from the disease by 2025 and 13.4 million in 2050, as opposed to 4.5 million in 2000, and "without new solutions, Medicare spending on Alzheimer's will triple by 2015"<sup>16</sup>. If a new medicine is found to treat Alzheimer's (there are currently 27 medicines in development<sup>17</sup>) there could be 3 million fewer Americans with the disease and therefore a saving of US\$149 billion by 2025. In other terms, for every dollar spent on R&D into Alzheimer's, potentially US\$10 will be saved by 2015, and US\$25 ten years later. In Australia, there are currently 204 900 people with Alzheimer's and by 2050 the number will exceed 730 000, approximately 2.8% of the projected population<sup>18</sup>.

Following the recent sequencing of the human genome and other significant advances in molecular biology, this is likely to be the century of advanced medicine, especially pharmaceuticals. According to Sidney Taurel, President of Eli Lilly & Co.:

*Medicine is poised for a great leap forward. For all our amazing advances in the last 50 years, we are still working with the tools of the first pharmaceutical revolution. That is, we are mostly using advanced chemistry to treat disease symptoms. In the new age we are now entering, we will increasingly use advanced biology to actually cure or even prevent disease from occurring.*<sup>19</sup>

In the near and mid-term future, biological research programs will produce significant, highly-targeted innovations for a wide range of indications. These biologic medicines mostly aim to modify or rectify actual disease processes and are likely to deliver outcomes above and beyond traditional medicines of the past.

The challenge for Australia, as well as other countries, is to ensure that it encourages the development of new medicines and ensures that Australians will have access to them, with all the resultant productivity benefits.

If the goal of an increasingly active innovation cycle is achieved, economic results could exceed not only the internal costs in healthcare but also generate an external surplus for the economy in general.

It is well known that participation and productivity are heavily influenced by the health status of the workforce. An Advance PCS study has shown that "the average worker in the United States loses 115 productive work hours each

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[OAND%20the%20value%20of%20incremental%20pharmaceutical%20innovation%20for%20older%20americans%22%22](#). [Accessed: 24 August 2006].

<sup>16</sup> Innovation.org. Available: [http://www.innovation.org/index.cfm/FutureOfInnovation/Future\\_of\\_Health\\_Care](http://www.innovation.org/index.cfm/FutureOfInnovation/Future_of_Health_Care). [Accessed: 24 August 2006].

<sup>17</sup> <http://www.innovation.org/index.cfm/FutureOfInnovation/NewMedicinesinDevelopment/Aging>, Dec 2005.

<sup>18</sup> Alzheimers Australia, 2006. Available: <http://www.alzheimers.org.au/>. [Accessed: 24 August 2006].

<sup>19</sup> Innovation.org. Available: [http://www.innovation.org/index.cfm/InnovationToday/KeyIssues/Innovation\\_at\\_a\\_Crossroads](http://www.innovation.org/index.cfm/InnovationToday/KeyIssues/Innovation_at_a_Crossroads). [Accessed: 5 September 2006].

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year due to a health condition, costing employees US\$250 billion or more”<sup>20</sup>. Ageing only reinforces the phenomenon, as older workers are more likely to suffer from health problems. If new medicines succeed in improving our daily health, their impact could be tremendous.

More spending on pharmaceuticals and the introduction of new medicines based on further innovation are essential in improving the health status of the workers and permit healthy ageing. In turn, this will have positive effects on workforce participation and productivity since individuals will work longer, more effectively and with decreased rates of absenteeism.

Various studies have shown the importance of new medicines in increasing productivity and decreasing absenteeism. The Advance PCS study stated that “the top five conditions (headache/pain, cold/flu, fatigue/depression, digestive problems and arthritis) cost employers more than US\$180 billion annually”<sup>21</sup>. Three of them have been decreased by the use of pharmaceuticals:

- Migraines: A new anti-migraine medication led to reduced use of health services by patients, who also missed less work time and were more productive.<sup>22</sup> In the specific case of the triptan injection for a migraine attack, 50% of workers returned to work after 2 hours, as opposed to 9% of those who received a placebo.<sup>23</sup>
- Arthritis: The first new disease-modifying antirheumatic medicine specifically developed for the treatment of rheumatoid arthritis in more than a decade has decreased disability rates, improved physical functioning and increased worker productivity.<sup>24</sup>
- Allergies: Non-sedating antihistamines have greatly increased productivity. Workers taking non-sedating antihistamines had an average 5.2% increase in daily work output three days after starting the treatment, while workers taking sedating antihistamines experienced a 7.8% reduction in work output.<sup>25</sup>

Medicines also play an important role in improving the productivity and workforce participation of carers. Voluntary or “informal” carers provide the bulk of care to aged Australians. The most recently published Australian Bureau of Statistics survey in 1998 showed that over 711 000 people aged over 65 years were living at home supported by unpaid carers, compared to only 127 900 people living in residential aged care.<sup>26</sup>

Pharmaceutical treatments for conditions prevalent in older populations, such as arthritis and Alzheimer’s disease, can allow patients to manage their

<sup>20</sup> Stewart W, Matousek D & Verdon C (2003). *The American productivity audit and the campaign for work and health*. The Centre for Work and Health, Advance PCS.

<sup>21</sup> *Advance PCS study shows top health conditions cost employers \$180 billion in lost productive time*. Corporate Training Monthly, 5 July 2002; **1(9)**.

<sup>22</sup> Cohen J.A et al. *Sumatriptan Treatment for Migraine in a Health Maintenance Organization: Economic, Humanistic, and Clinical Outcomes*. *Clinical Therapeutics* 1999; **21(1)**: 190–204.

<sup>23</sup> Cady R.C et al. *Sumatriptan Injection Reduces Productivity Loss During a Migraine Attack: Results of a Double-blind, Placebo controlled Trial*. *Archives of Internal Medicine* 1998; **158(9)**: 1013–1018.

<sup>24</sup> Strand V, Tugwell P, Bombadier C, Maetzel A, Crawford B, Dorrier C, Thompson A & Wells G. *Function and Health-Related Quality of Life: Results from a Randomized Controlled Trial of Leflunomide versus Methotrexate or Placebo in Patients with Active Rheumatoid Arthritis*. *Arthritis & Rheumatism* 1999; **42(9)**: 1870–1878.

<sup>25</sup> Cockburn I.M et al. *Loss of Work Productivity Due to Illness and Medical Treatment*. *Journal of Occupational and Environmental Medicine* 1999; **41(11)**: 948–953.

<sup>26</sup> NATSEM, 2004. *Who’s going to care? Informal care and an ageing population*. Report prepared for Carers Australia, Canberra. Available: [http://www.bsl.org.au/pdfs/informal\\_care\\_NATSEM.pdf](http://www.bsl.org.au/pdfs/informal_care_NATSEM.pdf). [Accessed: 28 August 2006].

conditions and live more independently, reducing the hidden burden on carers and their productivity. This is important as the Productivity Commission has found that the number of carers will not match the growth of the elderly population.<sup>27</sup>

The pharmaceutical industry itself contributes directly to the economy. Ultimately, new medicines will create high skill, high wage jobs and employ a substantial workforce. The Australian pharmaceuticals cluster, in 2003-03, employed 34 000 people, spent \$520 million on R&D and had a turnover of \$16 billion<sup>28</sup>. The Milken Institute has found that, for each pharmaceutical industry job in the United States, a further 5.7 jobs are created elsewhere across the country, a total of 2.7 million jobs.<sup>29</sup>

### 1.1.2. More efficiency: prevent rather than cure

#### 1.1.2.1. Prevention is better than treatment

Although medication is mainly used against pre-existing diseases, pharmaceuticals such as vaccines, allergy and osteoporosis treatments help to avoid the need for further care, which is both a clear advantage for the patient who suffers less or not at all, and for the healthcare system.

Innovative new medicines aimed at prevention rather than cures make it possible to prevent or slow the progress of many diseases and avoid costly hospitalisation and invasive surgery<sup>30</sup>. While primary prevention remains important, the reality is that many risk factors increase with age, and diet and exercise alone may not be an effective way to address these problems in an ageing population.

Furthermore, although the pace of discovery of new chemical entities slowed from 70 per year in 1980 to 40 in 2000, the “pharmaceutical revolution” described earlier is expected to accelerate the pace to 200 per year by 2022. Three factors that will play a part are: the development in combinatorial chemistry and associated robotic equipment, the Human Genome Project which will increase the potential targets for drugs by five times and more stringent regulation around cost-effectiveness. Together they will “favour the development of health solutions that support a switch to screening and prevention of diseases.”<sup>31</sup>

Heart disease has similarly seen its need for hospitalisation and surgery reduced by one third over five years, thanks to the use of statin therapy.

<sup>27</sup> Productivity Commission, 2005. *Economic Implications of an Ageing Australia*. Final Report, Canberra.

<sup>28</sup> Department of Industry, Tourism and Resource, [www.industry.gov.au](http://www.industry.gov.au), [Accessed March 2006].

<sup>29</sup> Milken Institute on behalf of PhRMA, *Biopharmaceutical Industry Contributions to State and US Economics*, October 2004. Santa Monika, US, p 1, 11, 127.

<sup>30</sup> Innovation.org. Available: [http://www.innovation.org/index.cfm/ImpactOfInnovation/Saving\\_&\\_Improving\\_Lives](http://www.innovation.org/index.cfm/ImpactOfInnovation/Saving_&_Improving_Lives). [Accessed: 24 August 2006].

<sup>31</sup> Lister G (2002). *Hopes and fears for the Future of Health- Scenario for Health and Care in 2022*. Available: <http://www.jbs.cam.ac.uk/research/health/polifutures/pdf/hopes.pdf#search=%22%22Hopes%20and%20fears%20of%20the%20Future%20of%20Health-%20Scenario%20for%20Health%20and%20Care%20in%202022%22%22>. [Accessed: 24 August 2006].

Moreover, the number of days a patient has to spend in hospital has also been reduced as has the need for bypass surgery and angioplasty.<sup>32</sup>

A focus on preventative medicine is especially important given the steady improvement in the available medicines for this purpose and the cost/benefit ratio which they offer in terms of their ability to reduce acute care costs.

*1.1.2.2. Pharmaceuticals are a key contributor to the improvement of health status, especially age-related health*

All those arguments would be far less relevant if the most important one proved untrue. As John Calfee, a pharmaceutical policy analyst at the American Enterprise Institute, states:

*The ability of pharmaceuticals to reduce the total expenditures for health care, as well as business costs is important but secondary. Modern drug therapy means patients and consumers are gaining better health, longer life, reduce pain and discomfort, and other blessings.*<sup>33</sup>

In addition to health-related and economic benefits, medicines contribute to the improvement of our lives by contributing to our general well-being. Asthmatic children who enrol in a comprehensive disease management program that includes appropriate prescriptions, for example, experienced “a greater emotional well-being”<sup>34</sup>. Children suffering from Juvenile Arthritis are now benefiting from “new biotech proteins and antibodies that help control the body's inflammatory response”, which when combined with painkillers, allows them to enjoy a normal childhood.<sup>35</sup>

In developed countries, health spending is a significant component in the general well-being of the population and the improvement of our societies. The good health of the population and rising healthcare costs in government budgets has been a key indicator for the stage of development experienced by countries all over the world. Health is sensitive to national and individual incomes: developed countries spend more per capita and allocate a higher proportion of their GDP to health.<sup>36</sup> Generally, the higher a country's income, the more it spends on medicines.

Health is not a static situation but a process in constant redefinition and evolution, which can only be sustained by technological progress. Twenty years ago, advanced surgery options for the elderly were almost non-existent, whereas today the elderly benefit from major and complex operations. A rise in government health expenditure can be particularly necessary for a society's welfare and wellbeing if demand for healthcare services rises more rapidly than income.

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<sup>32</sup> "Cholesterol Pill Linked to Lower Hospital Costs," *The New York Times*, March 27, 1995.

<sup>33</sup> Calfee J.E (2000). *Prices, Markets and the Pharmaceutical Revolution*. American Enterprise Institute, Washington DC.

<sup>34</sup> Innovation.org. Available:

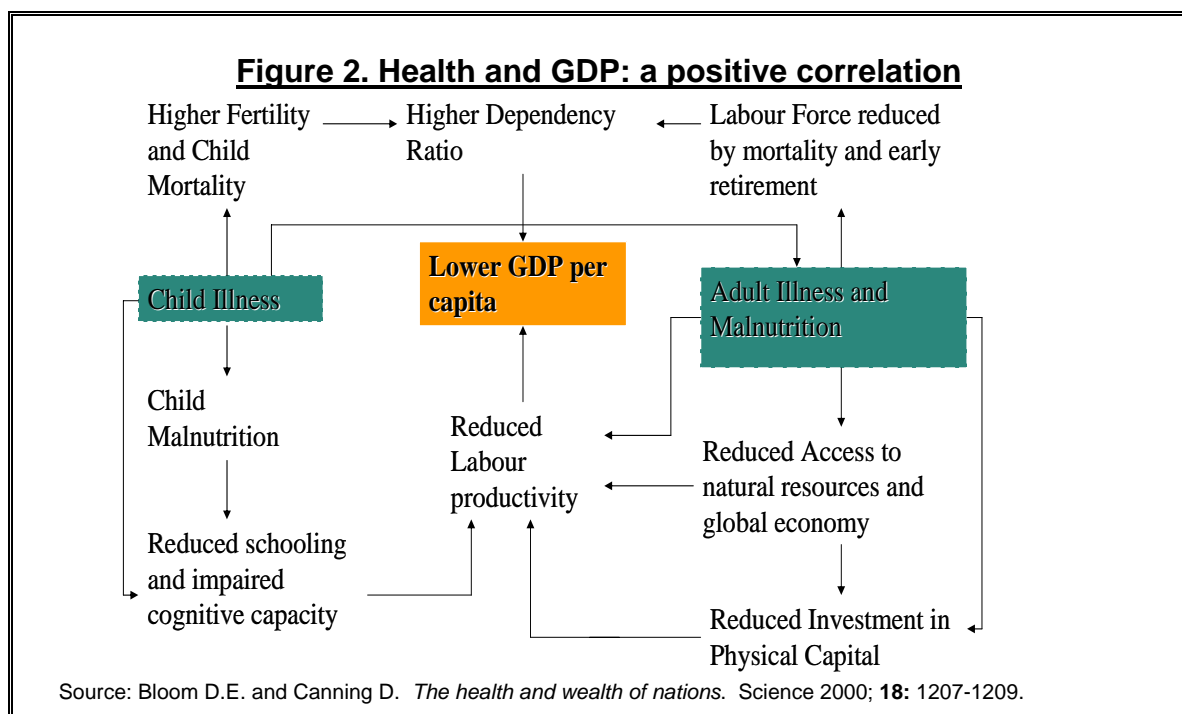
[http://www.innovation.org/index.cfm/ImpactOfInnovation/Saving\\_&\\_Improving\\_Lives](http://www.innovation.org/index.cfm/ImpactOfInnovation/Saving_&_Improving_Lives). [Accessed: 24 August 2006].

<sup>35</sup> Innovation.org. Available: [http://www.innovation.org/index.cfm/InnovationToday/Then\\_&\\_Now](http://www.innovation.org/index.cfm/InnovationToday/Then_&_Now). [Accessed: 24 August 2006].

<sup>36</sup> Productivity Commission, 2005. *Economic Implications of an Ageing Australia*. Final Report, Canberra.

Rising health expenditure is above all a social and political choice in a particular context. US studies have found that “every additional dollar spent on healthcare in the US over the past 20 years has produced health gains worth US\$2.40-\$3.00.”<sup>37</sup> Increasing healthcare expenditure could be a way to receive benefits from the ageing of our society.

The reason that there is a relationship between growth in a country’s income and growth in health spending is open to debate. While initially one might assume that health spending is dependent on income, in fact there is an equally compelling argument that health spending *causes* income growth. According to Bloom and Canning, the well-known positive correlation between health and income *per capita* is not one way<sup>38</sup>. Governments that make health a priority can count on increased productivity since better health corresponds to greater physical energy and stronger mental capacity, while decreasing the probability of lost workdays (Figure 2).



<sup>37</sup> “Controlling Healthcare costs”: [www.Innovation.org](http://www.Innovation.org) (09/12/2004)

<sup>38</sup> Bloom D.E & Canning D. *The health and wealth of nations*. Science 2000; **18**: 1207-1209.

In this way, it can be said that “Health equals Wealth” (Box 1).

**Box 1. “Health equals Wealth”**

“We need to encourage a counter-current in health economics thinking. A new perspective on health as a productive force in economic prosperity needs to take hold in Europe. Based on agreed methodologies and hard data, this new perspective should confirm a few key messages:

- That health is a limited, fragile and invaluable resource.
- That well-managed health systems are positive, forward looking investments.
- That health is a productive economic factor in terms of employment, innovation and economic growth.
- That significant reductions in avoidable and costly ill-health, can be achieved with relatively modest investments.
- That effective health promotion and disease prevention can eventually improve the options available within tight budgets.
- That the health of our politics, will depend on managing the politics of health. For our European citizens, access to affordable high-quality healthcare, is one of the benchmarks of successful modern governance.
- That in many ways, the long term health of the European economy, will depend on the health and longevity of its citizens.

“The message is clear. Health is a driver of economic prosperity. Or to summarise it: **Health equals wealth.**”

Source: David Byrne, EU commissioner for Health – excerpt from speech at the European Health Forum, Bad Gastein, 2003 ([www.healthfirsteurope.org](http://www.healthfirsteurope.org)).

This spending on medicines and on medical research is a constructive way to boost productivity and efficiency in the economy as well as improve the longevity and quality of life of people. Moreover, the invention of newer medicines will help boost income and productivity. This benefit will become even more important in the future as Australia’s population ages. The extent to which ageing is occurring in Australia and worldwide, and how much that is an issue for health policy, is examined in the next section.

## 2. AGEING AND ITS IMPACT ON SOCIETIES: COMPETING PERSPECTIVES

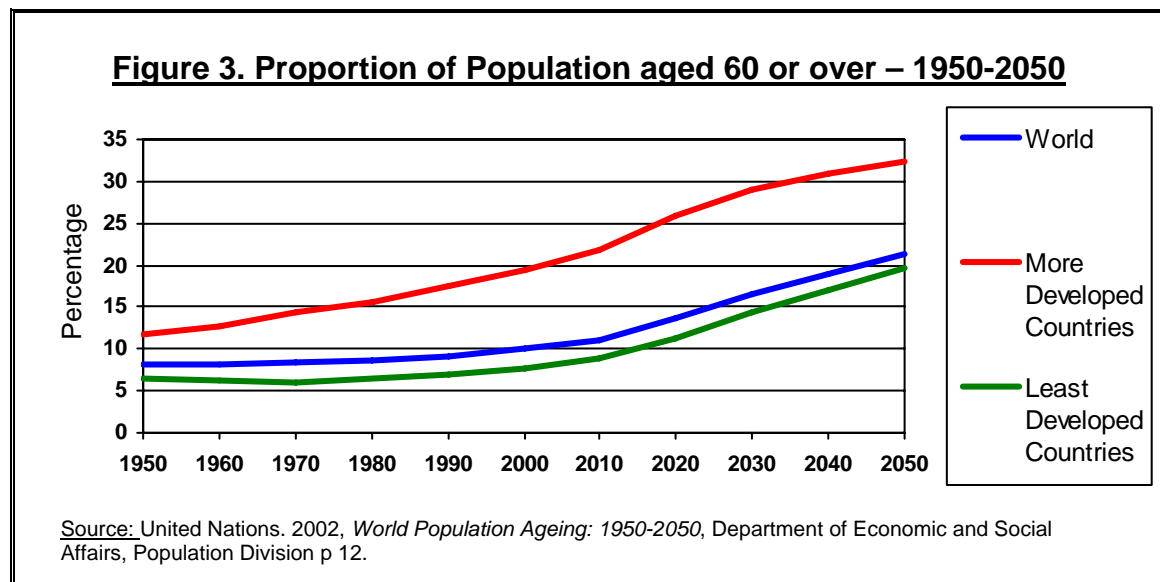
Ageing of the population will have a significant impact on society on a number of levels. However, while the issue is often discussed at length by policy makers there is no agreement on its impact on society.

Some have suggested that an ageing society will be devastating for government budgets and cannot be afforded, while others have suggested that the changes can be managed and will have positive aspects.

### 2.1. AGEING: THE FACTS

In one sense, ageing of the global population is nothing new. With improvements in health and longevity, the world's population has been getting older for some time. According to the United Nations Population Division, the number of persons aged over 60 tripled from 1950 to 2000, moving from 205 million worldwide to 673 million. These figures could treble, reaching 2 billion – one fifth of the world's total population – by 2050.<sup>39</sup>

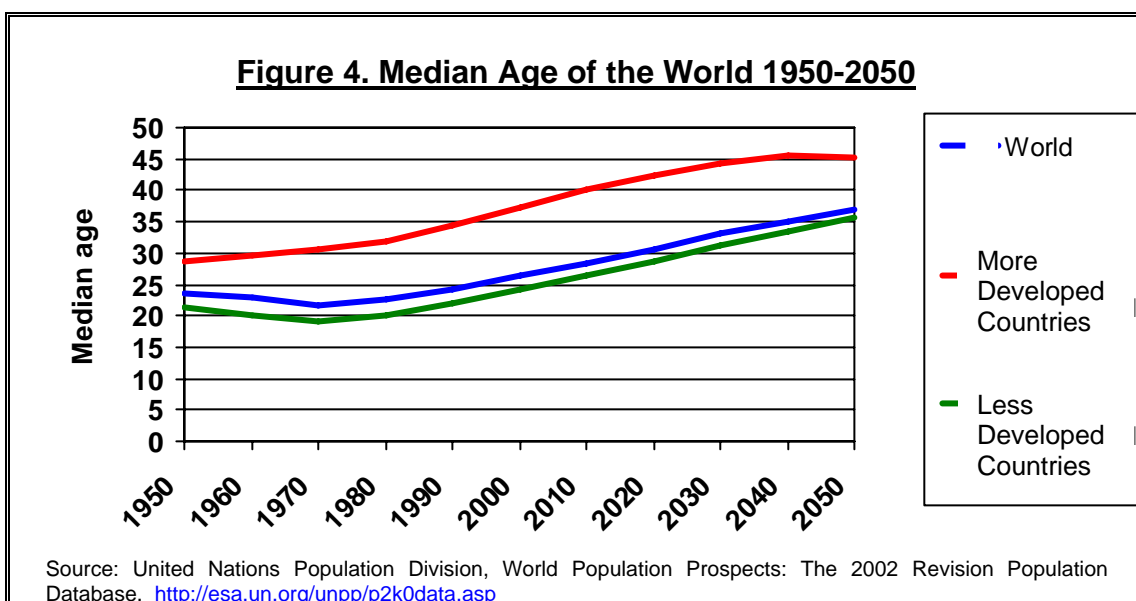
Developed countries are experiencing a more pronounced ageing of the population, although even least developed countries are expected to see an ageing of their population over the next few decades (Figures 3 and 4).



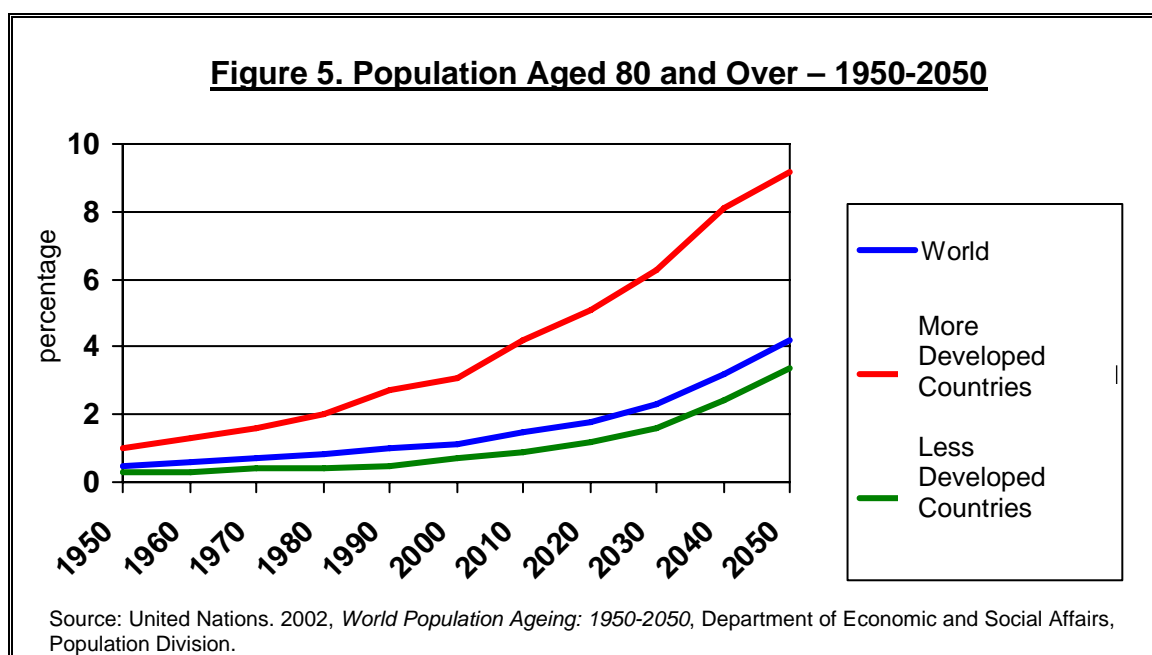
The reason for this is a higher growth rate of the older population, currently at 1.9% versus 1.2% for the total population, which could even grow three times faster than the total by 2030 – 2.8% versus 0.8%<sup>40</sup>. At the same time, the proportion of people under 15 years decreased from 34% to 30% of the world's population over the second half of the twentieth century and is likely to continue to decline until equalling the proportion of older people, around 21% each, by 2050.

<sup>39</sup> United Nations, New York. *World Population Prospects – The 2004 Revision*. 24 February, 2005 p.3

<sup>40</sup> United Nations, New York. *World Population Ageing, 2002*. 24 February, 2005 p.11



Furthermore, it is not just the total population that is getting older, but the old themselves are getting older. The number of individuals over 80 years old will increase, even more so than the total “older population” (Figure 5). The growth rate of the former is currently twice as high (3.8%) as that of the latter (1.9%). This means that by 2050, people over 80 will constitute 4.1% of the human population, compared to around 1% today.<sup>41</sup>



The ageing of the world’s population is a result of falling fertility rates and increasing life expectancy. The development of society, along with improvements in health brought about by new medical technologies like pharmaceuticals, have led to these trends.

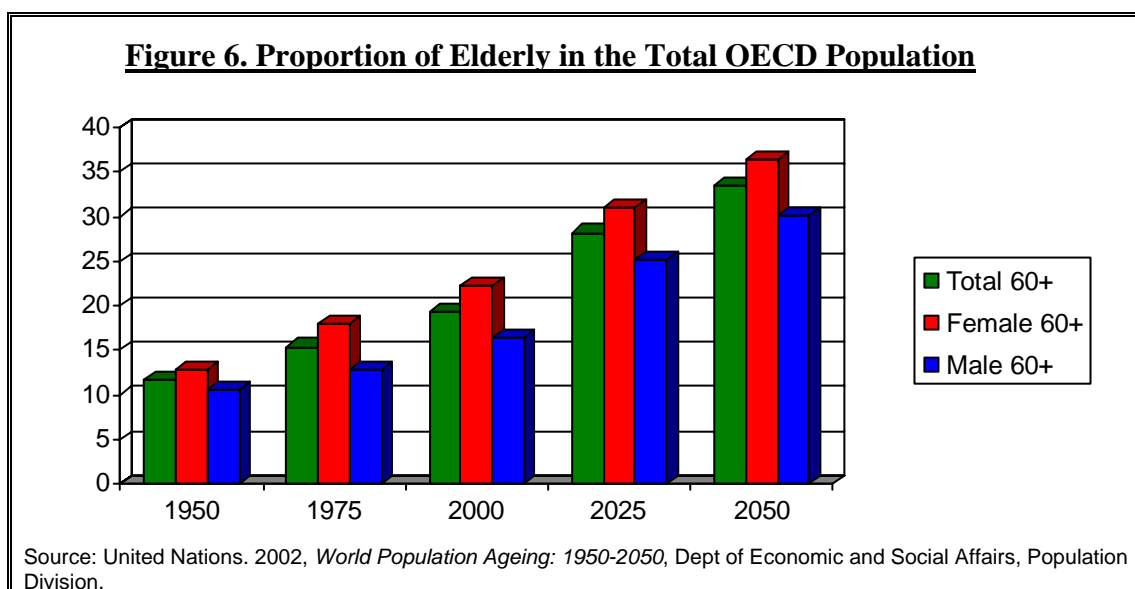
Access to new medicines and vaccines was substantially more important in achieving the dramatic decline in mortality rates throughout the twentieth

<sup>41</sup> United Nations, New York. *World Population Ageing, 2002*. 24 February, 2005 p.23

century than income growth, improved education levels and improvements in nutrition and sanitation.<sup>42</sup>

The global fertility rate is now about 2.7 children per woman, while it was at five children per woman fifty years ago. In another fifty years, it is expected to have dropped to the replacement level – 2.1 children per woman. At the same time, global life expectancy has increased from 46.5 years in 1950-1955 to 66 in 2000-2005 and should increase by another 10 years in the next five decades.

The ageing population trend is more acute in developed countries. In 2000 almost one fifth of developed countries combined population was over 60 years old. By 2050, one in three people in developed countries will be over the age of 60, or one in four will be aged 65 years or more.<sup>43</sup> The proportion of people over 60 years old is already bigger than that of children<sup>44</sup> (19% against 18% in 2000) and while the child share of the population is projected to decrease to 16% in 2050, the older person share will increase to 34%.<sup>45</sup>



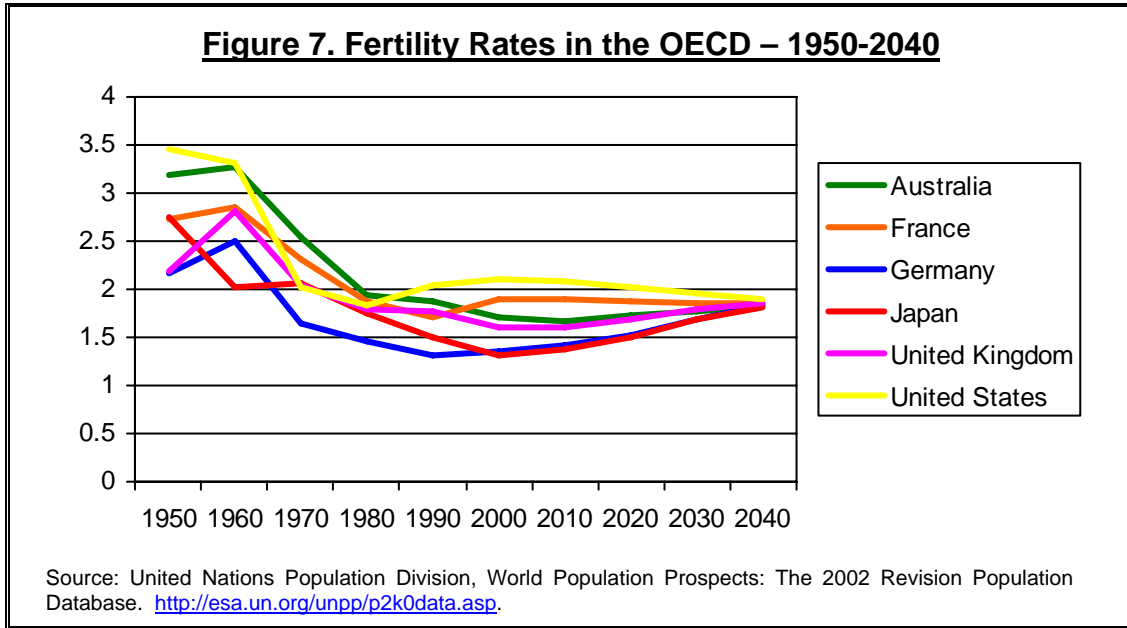
In OECD countries the fertility rate is, on average, well below the replacement level. Currently, the average fertility rate among OECD countries is under 1.5 children per women, compared to a 2.8 rate in the 1950s. This shift can be explained by changes in lifestyles, diet, medical treatments and social change such as the increased proportion of working women. By 2040, fertility rates in OECD countries are expected to stabilise at less than 2.1 – the replacement rate (Figure 6). The expected decline in Australia's fertility rate is expected to be similar to that experienced in other countries.

<sup>42</sup> World Health Organisation, *World Health Report 1999*, p. xxi.

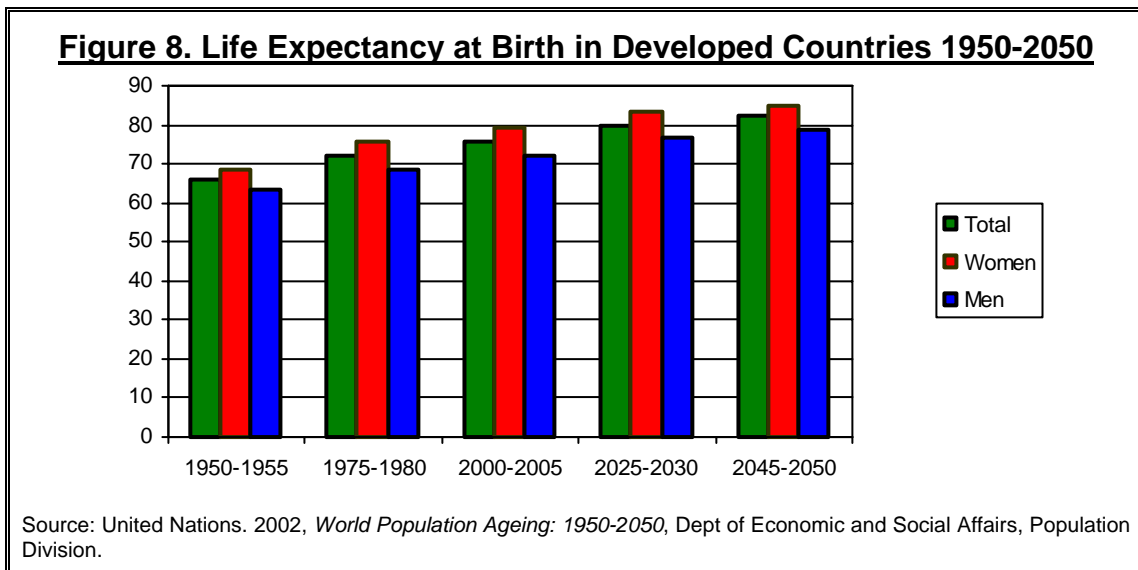
<sup>43</sup> United Nations. 2002, *World Population Ageing: 1950-2050*, Department of Economic and Social Affairs, Population Division p. 12.

<sup>44</sup> Aged 0-14 years.

<sup>45</sup> United Nations. 2002, *World Population Ageing: 1950-2050*, Department of Economic and Social Affairs, Population Division p. 12.



At the same time, mortality rates have dropped, resulting in huge gains in life expectancy at birth. More developed regions now enjoy life expectancy ranging from 71 years (Latvia) to 82 years (Japan).<sup>46</sup> Life expectancy will continue to grow so that by 2045-2050, the average will be 82 years (Figure 7).



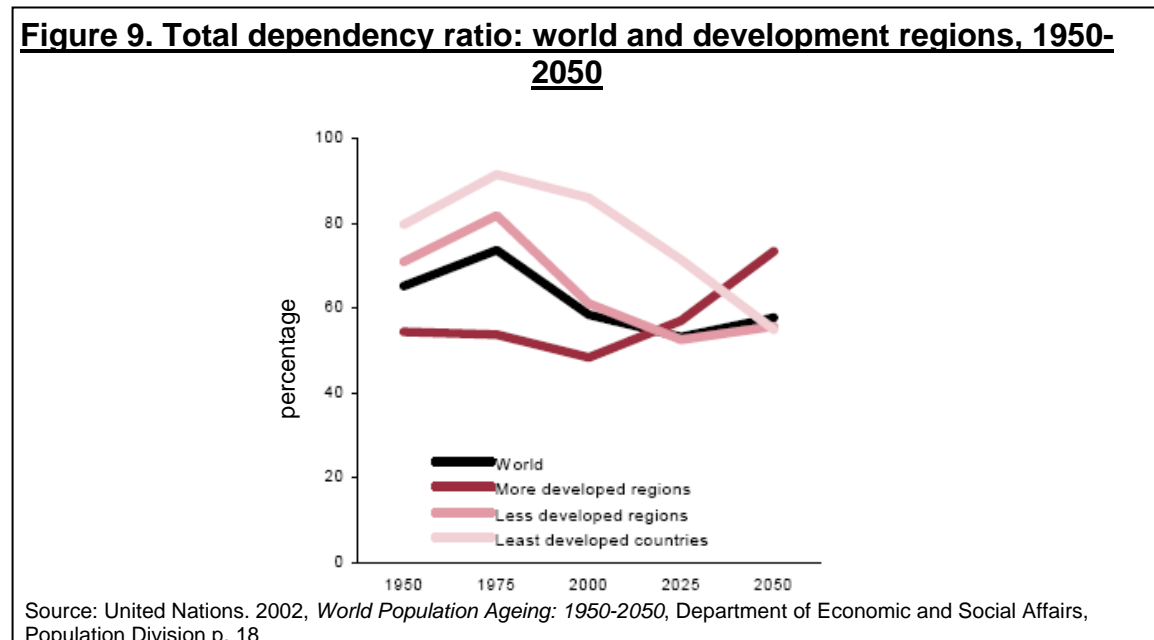
Ageing of the population in developed countries is particularly prevalent in Western Europe and Japan. For example, in seven countries (Austria, Czech Republic, Greece, Italy, Japan, Slovenia and Spain) one in three people will be 65 or older by 2050 according to the UN Population Division.<sup>47</sup> However, developing countries also experience an ageing population. In Africa, for example, the median age will grow from 38 years to 49, i.e. a difference of 11 years.

<sup>46</sup> UN. 2002, *World Population Ageing: 1950-2050*, Dept of Economic and Social Affairs, Population Division p. 6.

<sup>47</sup> UN. 2002, *World Population Ageing: 1950-2050*, Dept of Economic & Social Affairs, Population Division p. 12.

The total dependency ratio, that is all persons under 15 versus those 65 or older, has increased globally from 65 in 1950 to 74 in 1975 (Figure 9). The dependency ratio is expected to decrease until 2050 where it is estimated to return to year 2000 levels of 58.

However, in the more developed regions, the increase in the total dependency ratio is expected to start rising earlier to 57 in 2025 and to 73 in 2050.



The dependency ratio composition is likely to change and explains the ratio's expected variation. The balance between the youth and old age component are set to become more equal which is the result of the decline in fertility and the increase in longevity, as it currently consists largely of the younger population. As the proportion of young people declines, so too does the dependency ratio, with an increasing proportion of older people over 65 years. In the more developed regions the old age component is expected to rise to 63 per cent in 2050, up from 44 per cent in 2000.

Australia, while not in as acute a situation as Western Europe and Japan, is also experiencing an ageing of its population. One-quarter of Australians will be aged 65 years or more by 2044-45, roughly double the present proportion.<sup>48</sup> In every year between 2012 and 2028, the aged share of the Australian population is projected to increase by more than 0.35 percentage points — an increase around four times the long-term average.

Population growth is expected to fall from 1.2% in 2000 to 0.2% in 2042, and those aged 55 to 64 will constitute more than 50% of total growth.<sup>49</sup> The median age will increase, according to the Australian Bureau of Statistics, from 35.9 years to between 46 and 49.9 years by 2051.<sup>50</sup>

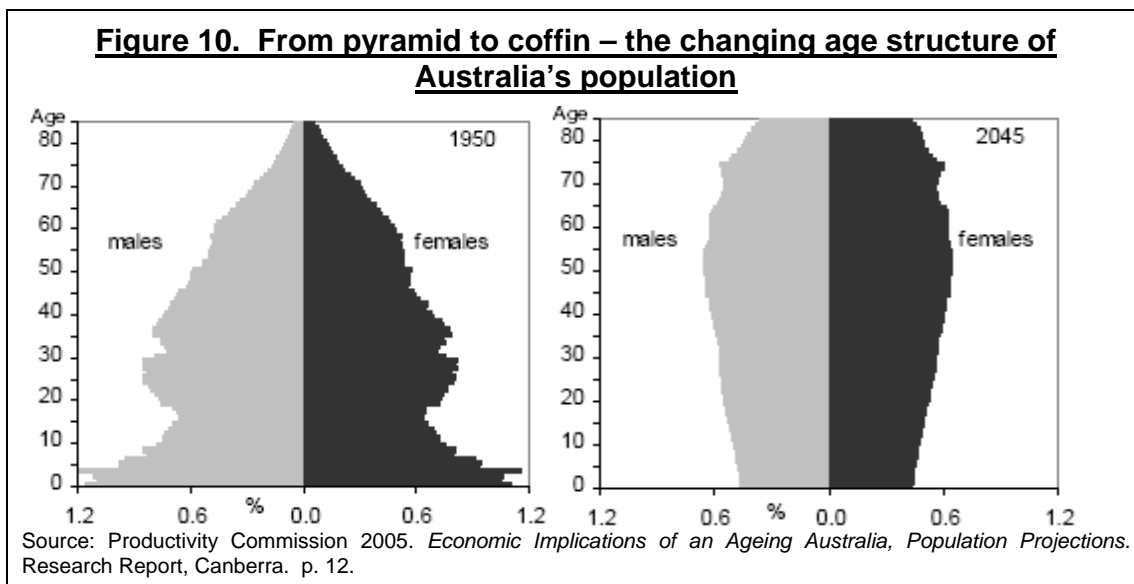
Population ageing is really about the age structure of the population — the ratio of the old to other ages. Any given number of older peoples' needs can be met as long as there are sufficient numbers of younger people to drive the

<sup>48</sup> Productivity Commission, 2005, *Economic Implications of an Ageing Australia*, Research Report, Canberra p1.

<sup>49</sup> Intergenerational Report 2002-03, Canberra, May 2002. p. 22.

<sup>50</sup> ABS, 1301.0 - Year Book Australia, 2004.

economy and provide the needed services. It is the changing balance between older and younger Australians that is leading to the debate over the ageing of the population. The Intergenerational Report projects that the fertility rate in Australia will fall from 1.75 children per woman to 1.6 in 2042, having reached a peak of 3.5 children per woman in 1961.



Most recently, the Productivity Commission has estimated that Australia’s dependency ratio, that is the proportion of dependent persons to those in the workforce, will increase from 19% in 2005 to 41% in 2044-45.<sup>51</sup> It also states that population ageing “should not be seen as a problem, but it will give rise to economic and fiscal impacts that pose significant policy challenges”.<sup>52</sup>

A major source of budgetary pressure facing Australia is health care costs. The Productivity Commission notes that ageing accounts for around 2.2% of the projected rise in total health spending of 4.5% of GDP by 2044-45<sup>53</sup>. Of course, not all of the projected increase in health spending in coming years is attributable to ageing. However, Banks demonstrates that if non-age related demand/technology pressures and population changes are kept constant, while preserving the age structure of 2000-01, the separate effects of ageing relative to this imaginary ‘forever young’ world are still significant, leading to health costs in 2050-51 that are about one third higher than without the ageing effect (Figure 11)<sup>54</sup>.

Over the entire period to 2050-51, it has been predicted that ageing of the population will account for an additional \$1.2 trillion in government-funded spending.<sup>55</sup>

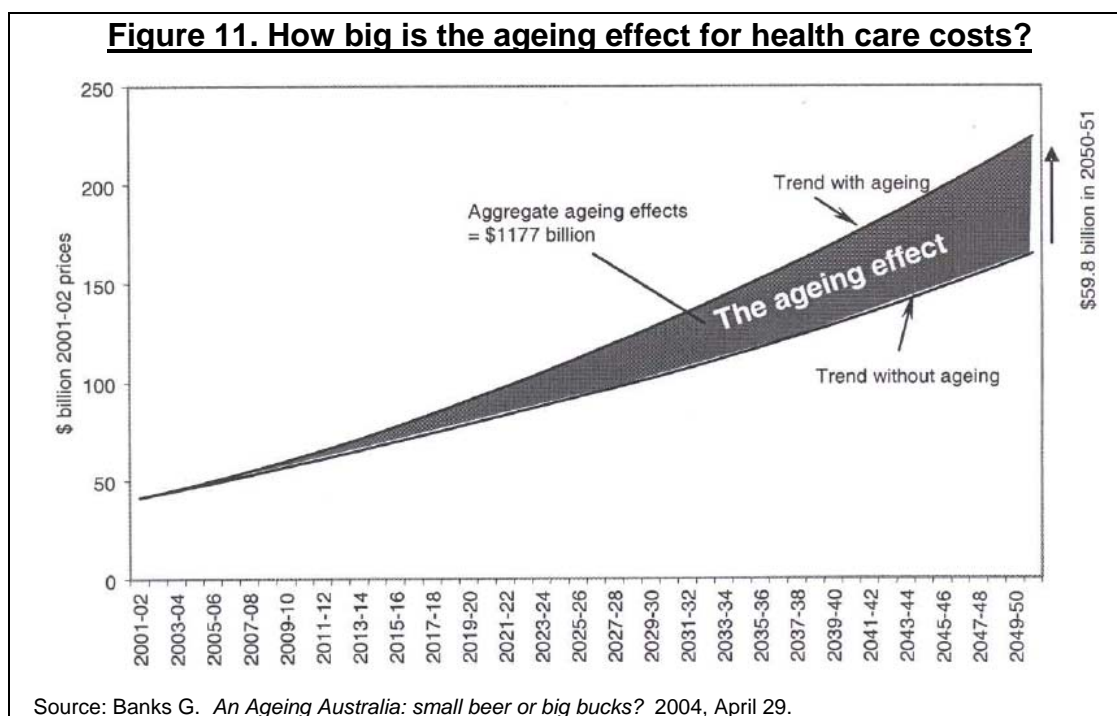
<sup>51</sup> Productivity Commission, 2005, *Economic Implications of an Ageing Australia*. Research Report, Canberra p. 5.

<sup>52</sup> Productivity Commission, 2005, *Economic Implications of an Ageing Australia*. Research Report, Canberra.

<sup>53</sup> Productivity Commission, 2005. *Economic Implications of an Ageing Australia*. Research Report, Canberra, p. 172.

<sup>54</sup> Banks G. *An ageing Australia: small beer or big bucks?* 29 April 2004, p. 23.

<sup>55</sup> Banks G. *An ageing Australia: small beer or big bucks?* 29 April 2004, p. 24.



However, conclusions about the impact of ageing on health spending risk ignoring the productivity improvements in an older population as a result of that health spending.

## 2.2. CONSEQUENCES FOR THE FUTURE

The ageing of the population will have a range of impacts across society including on labour structure, productivity and workforce participation, economic growth, fiscal sustainability, pensions and social security, and health spending.

In its report on the economic impacts of an ageing Australia, the Productivity Commission examined the ageing of Australia's population including labour markets, productivity, economic growth implications and health expenditure. It also looked at aged care expenditure and carer payments, personal benefit payments, education expenditure and ageing as well as other expenditure and revenue. Local government and regional impacts were also examined as was the implications of the ageing population.

The report concluded that greater life expectancy for Australians can be attributed to the economy, political decisions and technology available. In addition, the change in the age structure can be attributed to lower fertility rates due to female reproductive control, education and labour force participation along with lower infant mortality. The demographic transition of the population in Australia will be large, but at the same time it will be a gradual process. Workforce participation is currently at its highest, and leading into 2050 the ratio of employees to population will be higher than at any time since the 1990's, even though there is a projected decline in participation. The report also states that trends in spending and revenue will increase the fiscal pressure for the Government but conclude that this is not a crisis if it is dealt with appropriately. Governments are responsible for many areas impacted by the ageing population, in particular health and aged care,

economic growth and population policies. Finally, the Productivity Commission argues that population ageing can only be conceived as a crisis if society leaves it become one.<sup>56</sup>

For example, one major aspect of society and the economy to be affected will be in the supply of labour, which is heavily related to the proportion of those aged 15-64 years in the total population, since that age bracket encompasses the majority of the working-age population. Although the labour force will continue to increase over the next five decades in countries like Australia – from 13.2 million in 2002 to 17.7 million in 2051, as a proportion of the population it will decline from 67% to between 57 and 59%.<sup>57</sup> As a result, economic growth is expected to slow.

Federal Treasurer, Peter Costello, made the very critical point that work force participation among older Australians will have a much more immediate and direct impact on GDP per capita than rising fertility rates.<sup>58</sup> Participation rates have increased in the last four decades (from 58% in 1960-1961 to 64% in 2000-2001) following the strong rise of female participation, but these trends are unlikely to continue<sup>59</sup>. While a shrinking labour force relative to the population could lead to a reduction in unemployment, it could also lead to labour shortages in some sectors.

Another impact on society of ageing is in the retirement or social security system and its sustainability. It can only remain sustainable if the working population is numerous enough to support the young and the elderly. Ageing is a serious issue for this universal system, most notably because of its fiscal implications. The 2002 Intergenerational Report forecasts that the total number of age pensioners in Australia, which between 1980 and 2001 passed from 300,000 to 1.8 million, will double in proportion to the total population.<sup>60</sup> The Chairman of the Productivity Commission, for example, predicts that in Australia, the 5.25 working people caring for every person over 65 years today will only number 2.2 by 2050-2051<sup>61</sup>.

### 2.3. IMPACT OF AGEING ON HEALTH SPENDING

The impact on health spending is one of the most contentious issues associated with ageing. The extent to which ageing is likely to be a problem for many countries, including Australia, is hotly debated. While a range of differing perspectives exist, the debate can be characterised into two schools of thought that have been described as the 'Doomsday' school and the 'Panglossian' school<sup>62</sup>.

The Doomsday perspective argues that the ageing of the population witnessed by countries like Australia will lead to large, unsustainable

<sup>56</sup> Productivity Commission 2005, *Economic Implications of an Ageing Australia*, Research Report, Canberra.

<sup>57</sup> Australian Bureau of Statistics, 3222.0 Population projection Australia 2002-2101, 2005 November 29.

<sup>58</sup> Peter Costello, Address to the AFR Leaders Luncheon, The paths to increasing Australian prosperity, Sydney, 7 Aug 2002.

<sup>59</sup> From 64% of aggregate labour force today to 54% in 2050-2051. (Banks 2004 p.9) as people aged 55 and over have a lower participation rate (Intergenerational Report, 2002).

<sup>60</sup> Intergenerational Report 2002-03, Canberra, May 2002. p. 42.

<sup>61</sup> Banks, G. 2004. *An Ageing Australia: Small Beer or Big Bucks?* Available <http://www.adelaide.edu.au/saces/publications/issues/EIPI1AgeingSociety.pdf>.

<sup>62</sup> Banks G. *An ageing Australia: small beer or big bucks?* 29 April 2004, p. 4.

increases in health spending. This perspective argues that healthcare spending relies heavily on demographic trends, and because older people consume more health care resources, spending is going to increase.

One of the problems with this perspective is that it tends to focus only on the cost of older generations. However, it is not a forgone conclusion that an ageing population automatically switches into a less productive society or that ageing automatically leads to increased costs. One of the factors that influence this is the level and type of health care delivered in a country.

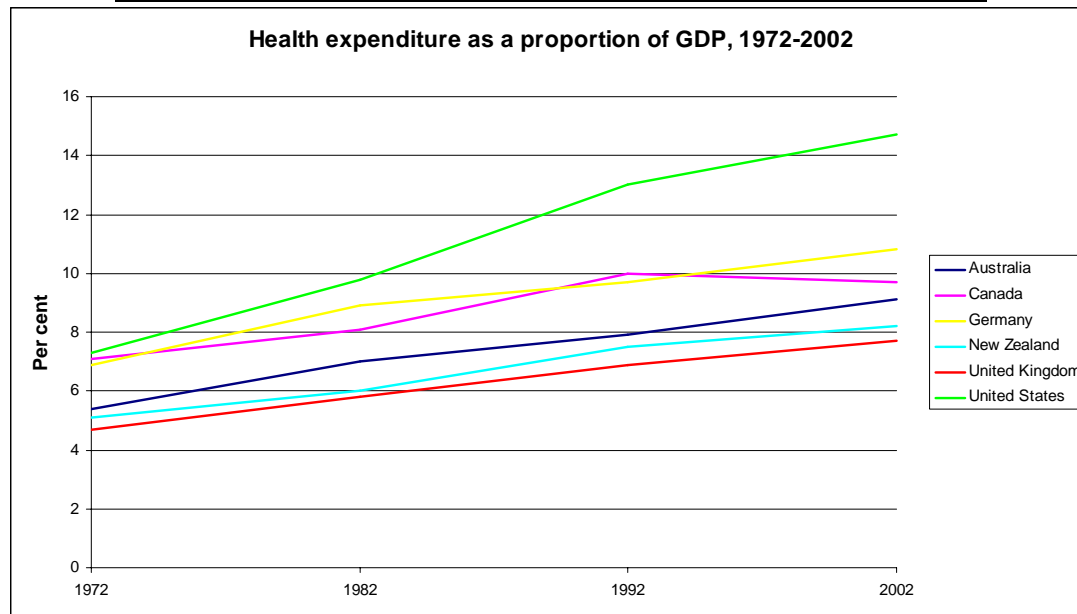
The Productivity Commission suggests that the total government health expenditure in Australia is projected to increase from 5.7% in 2002-03 to around 10.3% of GDP in 2044–45. Projections using a non-demographic growth rate show that hospital, Medicare and other expenses will have a growth rate of 0.6% above the projected GDP growth per capita. Small variations in the non-demographic growth rate still show that spending on health will grow faster than GDP growth. The Productivity Commission estimates that if health costs per person increased at 0.3 percentage points above the growth in GDP per capita, total government expenditure is projected to be around 9.0% in 2044-45. Furthermore, at a growth rate of 0.9% above GDP per capita, expenditure is estimated to reach over 11.5% of GDP.<sup>63</sup>

Australia is not the only country in this situation. The OECD reports that health spending in most OECD countries rises due to a simultaneous increase of health expenditure and a decrease of economic growth. On average in 2002, health spending represented 8.5% of GDP in OECD countries, versus 7.8% in 1997. In the US, “health expenditure grew 2.3 times faster than GDP, rising from 13% in 1997 to 14.6% in 2002”<sup>64</sup>. The rest of the OECD experienced a health spending rise 1.7 times faster than GDP. Australia’s health spending as a percentage of GDP had increased to 9.1% by 2002 (Figure 12).

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<sup>63</sup> Productivity Commission 2005, *Economic Implications of an Ageing Australia*, Research Report, Canberra. P168

<sup>64</sup> OECD, 2004. *Health spending in most OECD countries rises, with the US far outstripping all others*. Available [http://www.oecd.org/document/36/0,2340,en\\_2649\\_201185\\_31938380\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/36/0,2340,en_2649_201185_31938380_1_1_1_1,00.html).

**Figure 12. Health Expenditure as a Proportion of GDP (%)**

Source: OECD Health Data, 2006.

Certainly health spending is increasing for a combination of reasons, including the ageing population, consumer expectations and the availability of new medical technologies, including pharmaceuticals. People over 65 years old do tend to consume more health resources than other age groups in society. For example, males aged between 65-74 years old cost 18 times that of 15-24 year old males.<sup>65</sup>

As people live longer, conditions associated with ageing will be a big driver of healthcare expenditure. For example, dementia costs are projected to grow from 1% of GDP in 2004 to 3% in 2050.<sup>66</sup>

On the other hand, commentators have warned against excessive pessimism and mis-diagnosing the issue. The so-called Panglossian school, named after the fanatically optimistic character in Voltaire's *Candide*, has questioned the negative predictions about ageing and health expenditure from the 'Doomsday' school. Although the reality of the ageing phenomenon and its effects on general growth and labour issues cannot be denied, this alternative view does not expect ageing populations to have such a detrimental impact on health spending and budgets.

Firstly, as Kinnear states, the statistics are against the doomsday supporters' view<sup>67</sup>. In many countries that have, or will have, the highest proportion of older people, the ageing trend has *not* been associated with rising health expenditure. Public health expenditure has increased slightly in some countries (Italy and Switzerland) but has remained virtually unchanged

<sup>65</sup> Productivity Commission 2005, *Economic Implications of an Ageing Australia* .p 147.

<sup>66</sup> "Ageing and Health Costs: managing the future", in CEDA. 2004, *Australia's Ageing Population – Fiscal, Labour Market and Social Implications*, Growth, March.

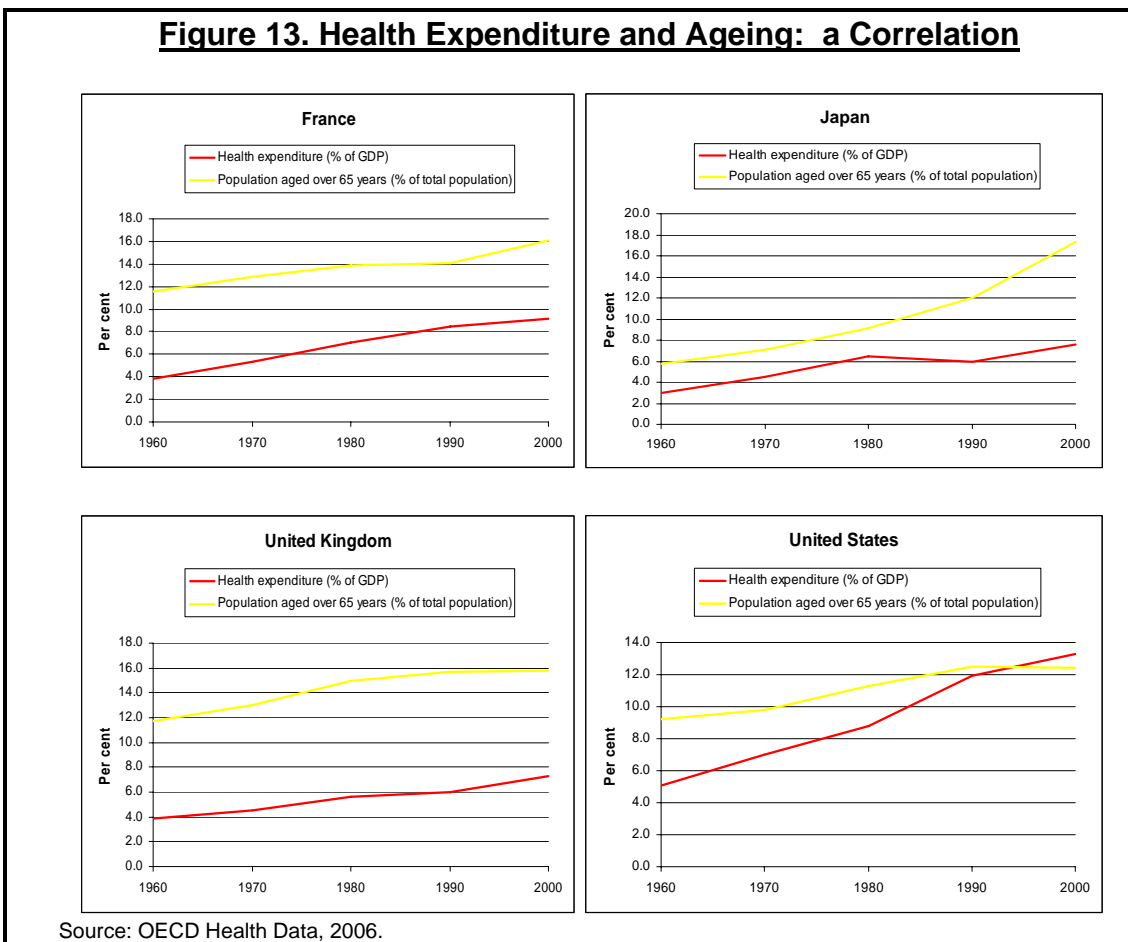
<sup>67</sup> Kinnear P, 2001. *Population Ageing: Crisis or transition?* Discussion Paper 45. The Australia Institute, Canberra.

everywhere else: total health spending has remained almost constant between 1997 (72.3%) and 2002 (73.1%)<sup>68</sup>.

In Japan, where in 2002 people aged over 65 constituted 18.5% of the total population, health spending as a proportion of GDP was only of 7.9%<sup>69</sup>. Finland and Germany too have relatively low levels of health expenditure (respectively 7.2% and 10.8%) yet both have ageing populations representing 15.2% and 18.1% of their populations respectively<sup>70</sup>.

Conversely, the United States had healthcare spending of 13.6% of their GDP but an older population of only 12.4% in 2002<sup>71</sup>. The observation is that a high proportion of the population that is older does not automatically lead to higher health spending.

**Figure 13. Health Expenditure and Ageing: a Correlation**



Professor Jeff Richardson, from Monash University's Centre for Health Economics calls the assumption of rising health costs due to ageing trends "a total beat-up", stating that, as in Japan and Northern Europe, economic growth "would far exceed the relatively small increases on the public health system that ageing by itself will generate"<sup>72</sup>. He adds that "the ageing of the

<sup>68</sup> OECD. 2004, *Health Spending in Most OECD Countries Rises, with the U.S. far Outstripping all Others*. Available: [http://www.oecd.org/document/12/0,2340,fr\\_2649\\_33929\\_31938380\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/12/0,2340,fr_2649_33929_31938380_1_1_1_1,00.html). [Accessed: 18 November 2004].

<sup>69</sup> OECD Health Data, 2006.

<sup>70</sup> OECD Health Data, 2006.

<sup>71</sup> OECD Health Data, 2006.

<sup>72</sup> Allen L (2004) 'Effects of Ageing on economy overstated', *The Australian Financial Review*, October 29.

population in Northern Europe, Japan and the UK was not accompanied by serious economics problems of the sort foreshadowed"<sup>73</sup>.

The "Panglossians" argue that this is linked to reasons other than ageing, such as the increasing use and cost of medical technology and pharmaceuticals, the availability of new treatments, increasing consumer demand and expectations, a rising per capita income, population growth and private and public choices about spending more on health.

The Productivity Commission recently estimated that ageing would account for around 50% of the increase in health spending over the next 40 years<sup>74</sup>.

Rather than a person's age being the determinant of their consumption of health resources, the Panglossian perspective suggests that a person's proximity to death is the major explanation for their consumption of health resources. Their argument is that it is less important that the population's life expectancy is increasing, as this is just pushing out the costs of mortality into later life<sup>75</sup>.

Reports in the US, Canada and UK have found that patients in the last year of life cost up to six times more than other patients. Gray established that the "proximity to death strongly increased probability of hospitalisation" - nothing so definitive can be said about ageing.<sup>76</sup>

In summary, more people now live long enough to grow old before they die but the principal cause of their increased cost of care is their death not their age. The availability of high cost medical treatment in the last year of life is the most relevant factor not their absolute age at death.

Another issue the Panglossians raise is to question the legitimacy of criticising the rise of healthcare expenditure. Although increases in spending need to be appropriately funded and managed, health, like education, is an important area of spending.

As Health Minister, Tony Abbott MP has stated "Intelligent health spending produces a more productive, healthier [population]".<sup>77</sup>

The OECD has argued:

*Spending more is not necessarily a problem, particularly if the added benefits exceed the extra costs. The new drugs, devices and procedures that are responsible for much of the cost growth have also been responsible for better health and reduced disability. But since three-quarters of OECD health spending is publicly financed, rising costs*

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<sup>73</sup> Allen L (2004) 'Effects of Ageing on economy overstated', *The Australian Financial Review*, October 29.

<sup>74</sup> Productivity Commission, 2005. *Economic Implications of an Ageing Australia*. Available <http://www.pc.gov.au/study/ageing/finalreport/ageing3.pdf>.

<sup>75</sup> Spillman and Lubitz 2000; Cutler and Sheiner 1998; Freund and Smeeding 2002, p. 10.

<sup>76</sup> Seshamani and Gray. *Health care expenditure and ageing: an international comparison*. App 1 Health Econ Health Policy 2003; 2(1): 9-16.

<sup>77</sup> The Hon Tony Abbott MP, *Australian Financial Review*, p1. 2005, April 8.

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*increase the pressure on governments to contain costs or force them to divert resources from other priorities.*<sup>78</sup>

Most recently the OECD has noted, in comments on Australian spending on medicines that:

*While growth in PBS outlays has recently slowed, historically strong growth in PBS outlays, as well as their projected growth in both the Intergenerational Report and Productivity Commission fiscal projections suggests options to constrain expenditure by increasing co-payments should be considered. A difficulty with any such increase is that the heaviest burden will be on low income earners, and there is also a risk that if patients go without necessary medication then other medical costs, such as for hospital care, may increase by more than any savings on pharmaceuticals.*<sup>79</sup> (emphasis added)

## 2.4. IMPLICATIONS FOR GOVERNMENT ACTION

Whatever the merits of the debate, the ageing population is a key factor causing governments around the world to reform their health systems. Even if ageing is not the only factor explaining growing health budgets, the fact that there will be more older people drawing on health resources in the future as the population ages is putting pressure on governments to reform their health systems. The next section of this paper looks at what measures governments are undertaking to reform their health systems.

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<sup>78</sup> OECD 2004, "Health Systems Must Seek Better Value for Money, OECD Concludes in Report to Health Ministers", May. Available: [http://www.oecd.org/home/0,2987,en\\_2649\\_201185\\_1\\_1\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/home/0,2987,en_2649_201185_1_1_1_1_1_1,00.html). [Accessed: 9 December 2004].

<sup>79</sup> OECD, 2006. *Economic Survey Australia*. Available: [http://www.oecd.org/document/28/0,2340,en\\_2649\\_201185\\_37147228\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/28/0,2340,en_2649_201185_37147228_1_1_1_1,00.html). [Accessed: 28 August 2006].

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### **3. REFORMING HEALTH CARE AND PHARMACEUTICAL POLICIES: GOVERNMENT APPROACHES**

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Whether ageing of the population is a crisis or just an issue to be recognised, governments around the world are reforming their health policies in response to an ageing population, and pharmaceutical reimbursement policies are one of the key areas of focus.

Governments are adopting a variety of policy responses to drive greater efficiency in the health system and ensure financial sustainability into the future. It is not necessarily the case that systems such as Australia's should be changed solely to decrease health expenditure. Rather, systems should be reviewed to extract savings where possible while providing incentives for the introduction of new prevention and care options that offer improved overall outcomes. This will promote the most efficient spending of the health dollar. The concern is that governments are focussing excessively on cost containment without ensuring that access to new medical technologies, like medicines, is maintained.

Just as there are a range of opinions about whether population ageing is a crisis or not, so too there are a range of approaches to health care and pharmaceuticals reform that countries are adopting.

#### **3.1. IMPLICATIONS OF AGEING FOR GOVERNMENT POLICY**

Population ageing will have significant impacts on a range of areas of government policy. Areas such as superannuation, education, labour market policy, fiscal policy, family policy and taxation all have the potential to be affected by population ageing. A broad overview of the debate related to ageing is beyond the scope of this report. General approaches to ageing include preparing for greater call on public resources in some areas, trying to rebalance population growth by encouraging fertility and maintaining the contribution of the older population to the economy and society.

Seven principles have been suggested<sup>80</sup> to guide reforms aimed at ensuring that the way societies transfer resources to a rapidly growing number of retired people creates neither major economic nor social strains:

1. Public pension systems, taxation systems and social transfer programs should be reformed to remove financial incentives to early retirement, and financial disincentives to later retirement.
2. A variety of reforms will be needed to ensure that more job opportunities together with the necessary training are available for older workers.

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<sup>80</sup> Carey D, 1999. *Coping with population ageing in Australia*. Available [http://www.oecd.org/LongAbstract/0,2546,en\\_2649\\_37435\\_1879123\\_1\\_1\\_1\\_37435,00.html](http://www.oecd.org/LongAbstract/0,2546,en_2649_37435_1879123_1_1_1_37435,00.html).

3. Fiscal consolidation should be pursued and public debt burdens should be reduced. This could involve phased reductions in public pension benefits and anticipatory increases in contribution rates.
4. Retirement income should be provided by a mix of tax-and-transfer systems, funded systems, private savings and earnings. The objective is risk diversification, a better balance of burden-sharing between generations, and to give individuals more flexibility over their retirement savings options.
5. In health and long-term care, there should be a greater focus on cost-effectiveness. Medical expenditure and research should be increasingly directed to ways of reducing physical dependence and explicit policies for providing care to frail older people should be developed.
6. The development of advance-funded pension systems should go hand-in-hand with that of a strengthening of the financial market infrastructure, including the establishment of a modern and effective regulatory framework.
7. Strategic frameworks should be put in place at the national level now in order to harmonise these ageing reforms over time, and to ensure adequate attention to implementation and the build-up of public understanding and support.

In Australia, there is increasing recognition that health systems and health policy need to be reformed to prepare for the ageing of Australia's population. As Gary Banks, Chair of the Productivity Commission, has noted: "The actions of governments today will determine how well Australia copes with ageing pressures in the future. The earlier governments act, the less risk of crisis measures in the future."<sup>81</sup> The Commission says that the economic pressures of an ageing population do not yet constitute a crisis and would only become one if the country allows that to happen but recommends immediate action to avoid costly or inequitable drastic interventions in the long term - such as excessive taxes or service rationing<sup>82</sup>.

Treasurer Peter Costello has also noted that the ageing population represents a potential mismatch between revenue and expenses and is a long-term structural challenge for Australia: "This mismatch will either be filled by massive increase in taxes or by putting our expenditures on a sustainable basis and growing our economy so that we can meet that challenge."<sup>83</sup>

### **3.2. GOVERNMENT APPROACHES TO HEALTH POLICY REFORM: A TAXONOMY**

At the first ever Meeting of OECD Health Ministers held in May 2004, health ministers from the industrialised world agreed that OECD countries had

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<sup>81</sup> Productivity Commission, 2005. *Economic Implications of an Ageing Australia – Media Release*. Available <http://www.pc.gov.au/study/ageing/finalreport/mediarelease.html>.

<sup>82</sup> Productivity Commission 2005 *Economic Implications of an Ageing Australia*. Final Report, Canberra.

<sup>83</sup> The Adelaide Advertiser 2005, *Health costs blow out must be reined in*. Page 009, 2005, 13 April.

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experienced improvements in health. However, the Ministers agreed that health systems are under increasing pressure to provide high quality health care while ensuring financial sustainability and efficiency.

The Health Ministers recommended that, subject to national differences, OECD countries should:

- “a) build upon current success in improving life expectancy and health status, by using the most cost-effective means to provide the highest quality of health care to their citizens;*
- b) attach priority to illness prevention and promotion of healthy lifestyles in the face of rising threats to health, such as obesity, tobacco, alcohol and drug abuse, mental disorders and traffic accidents;*
- c) reduce the lingering disparities in health and access to healthcare in OECD countries;*
- d) continue to secure the financial sustainability of their health care systems; if private health insurance plays a role in this task, it requires a well-designed regulatory framework to support its development;*
- e) strive to achieve the gains in productivity that are required to contribute to financial sustainability and to improve quality of care;*
- f) do more to encourage industry to develop innovations which meet health needs in an affordable way;*
- g) ensure that long-term care offers quality and choice, and is affordable; and*
- h) make sufficient investment in human resources and their professional development to meet the future demand for health care.”<sup>84</sup>*

Health policy reform is therefore a balancing act of sorts. On the one hand, governments are concerned to ensure long-term financial sustainability by allocating money more efficiently to our healthcare systems in order to make savings whenever it is possible. On the other hand, governments need to ensure that they provide for a healthy, productive population by ensuring access to a high standard of health care including access to the newest treatments, which are more efficient than those they replace.

In its recent studies into health policy<sup>85</sup>, the OECD has identified five areas where OECD governments are undertaking reform:

- Quality;
- Access;
- Responsiveness;
- Affordability, and
- Efficiency.

### *Quality*

In recent years OECD countries have become more focussed on ensuring that the quality of services provided by the health system are appropriate. Countries are introducing benchmarking indicators to measure the performances of health systems against other countries. Governments are also reviewing the current arrangements for regulating standards of health services, such as the medical profession and nursing homes, to ensure that

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<sup>84</sup> OECD, 2004. “Final News Release - Meeting of Health Ministers, Paris, 13-14 May, 2004 - Towards High-Performing Health Systems”. Available: [http://www.oecd.org/document/50/0,2340,en\\_21571361\\_30968861\\_31752498\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/50/0,2340,en_21571361_30968861_31752498_1_1_1_1,00.html), [Accessed 9 January 2006].

<sup>85</sup> OECD, 2005. *Towards High-Performing Health Systems: the OECD Health Project*. Paris.

standards are being improved and an appropriate level of quality maintained. Funding systems are also being reformed to introduce financial incentives to reward quality improvements, be it public hospitals or private insurers.

#### *Access*

Ensuring citizens' access to health services is another area of concern for countries around the world. OECD governments are introducing measures to ensure that all their populations are covered by health care, either through reforming public funding of health services or introducing initiatives to encourage the use of private health insurance. Such policies include measures to ensure that lower income and disadvantaged groups can afford health care. In addition to affordability, governments around the world are also looking to redress other barriers to access such as ensuring a sufficient supply of doctors and nurses, the availability of long-term care for the aged, introducing assessment processes to ensure appropriate access to new medical technologies, and developing new techniques to introduce new medical technologies in the context of uncertainty about final cost and uptake.

#### *Responsiveness*

The responsiveness of health services to patient need is another area of policy reform. Using demand and supply side policies to manage waiting lists in hospitals, measures to improve hospital productivity and raising clinical thresholds, and introducing models of aged care that meet the needs and expectations of patients are examples of the types of initiatives used to develop a more responsive health system. Increasing the options available to consumers for health treatment and encourage private health insurance have also been introduced to encourage greater responsiveness to patient need.

#### *Affordability*

Affordability, both for the patient and for government, is another key area of policy attention. This is particularly the case in countries with ageing populations and where funding for the health system relies on contributions from the working population. Governments have introduced cost-containment policies to ensure financial sustainability. This includes initiatives such as the regulation of prices, controls on the supply of medical purchases and budgetary caps on health spending. Governments have also sought to encourage greater private funding of health care, either by introducing patient contributions, private health insurance or encouraging private saving for long-term care in old age.

#### *Efficiency*

Finally, governments are also reviewing the efficiency of their health systems to ensure that countries are obtaining the best value for money from the expenditure on health. The use of cost-effectiveness analysis in health technology assessment is increasing around the world, although sometimes this can be difficult due to a lack of data. On the demand side, measures being examined include encourage personal or medical savings accounts to give consumers greater incentive to efficiently utilise health services, communicating the latest evidence on best practice health to patients, and the use of second opinions or demand managers before expensive treatments are used. On the supply side, the introduction of purchaser-provider arrangements, decentralisation, fraud control, deploying human resources more efficiently and reviewing payment structures for visits to general

practitioners have all been examined by OECD governments. Measures to improve efficiency in hospitals and long-term care institutions, such as improving accountability and restructuring payments to encourage productivity have also been introduced. Greater use of techniques of health technology assessment and cost-effectiveness evaluation, reference pricing and cost and volume agreements have all been used to try to improve the efficiency of health systems. Equally, greater competition amongst health insurance providers has been encouraged to drive efficiencies.

*Policies to improve health system efficiency in practice – overseas examples*

One of the biggest priorities, controlling spending and improving cost efficiency, has been addressed by three main policies:

- regulation of prices and volumes of health care and its inputs;
- general or sectorial caps on healthcare spending; and
- increased cost-sharing with the private sector.

The first policy has been followed by the majority of the OECD for prices, volumes or both. Public-integrated systems have focused on wage controls (Denmark, Finland, Ireland, Spain, Sweden, and the UK), others have set fees after negotiations with healthcare providers (Australia, Belgium, France, Japan, Luxembourg and Canada). Others have adjusted the prices to the volumes of care in order to prevent costs exceeding the fixed budget ceiling (Germany for ambulatory care, Austria for hospital care, Hungary for outpatient care and Belgium). Price-setting policies are popular for pharmaceuticals in a number of countries.

Budgetary Caps have been widely implemented, initially in hospitals and now in general. Some countries (Belgium, France, Luxembourg and the Netherlands) have established indicative budgets or targets.

Greater cost sharing has mainly concerned pharmaceuticals. The number of medicines not reimbursed has increased at the same time as flat rate payments per prescription were established. In Portugal, for example, a new price reference system has been established whereby payments for a medicine cannot be higher than payment for the most expensive generic equivalent available.

The use of generics has consequently been promoted in many countries in the expectation of derived savings in the off-patent market. In Portugal again, medicines with a generic equivalent have been prescribed since January 2003. However, doctors still have the right to add a brand name and refuse substitution.

Other reforms have tried to simplify and standardise prescription forms to facilitate electronic prescribing and establish rules regarding the authorised amounts of prescription.<sup>86</sup> In Sweden, co-payments for prescription medicines have also been implemented with costs transferred from the National Board to the country councils, which means the end of the open-ended insurance scheme.

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<sup>86</sup> Stephanie Guichard. 2004, *The reform of the healthcare system in Portugal*, OECD Economics Dept working papers no.405, Oct.

The improvement of cost-efficiency at the micro level has not been uniform. An initial approach has been to enhance the role of healthcare purchasers so that they are responsible to the budgetary authorities for cost control and to the patients for quality and accessibility of care. Australia, the UK, New Zealand, Sweden, Italy, Portugal, the US and Greece have followed this approach.

Some public-contract countries like Germany or Belgium have been more active. The form of the purchaser has also varied, with the UK (in 1997) and New Zealand both trying to use primary care doctors as purchasers. In France, purchasers have taken on the role of reorganisation and rationalisation of care institutions, with the establishment of the Agences régionales d'hospitalisation (ARH) in 1996.

Finally, some countries have adopted the approach of increasing the competition between providers such as hospitals (the US, the UK, Sweden, the Czech Republic and New Zealand) to improve quality, efficiency and responsiveness by creating quasi-markets.

Through all of these types of policies, governments are reforming their health systems in order to deliver greater performance for their populations although an equally powerful motivation is to reduce cost pressures on budgets given the large fiscal demands on OECD governments. In this climate, choices need to be made and it is essential they are made on the best available evidence in order to maximise social benefit in the form of the greatest gain in health outcomes for the least cost to the Budget.

### 3.3. THE ROLE OF PHARMACEUTICALS IN HEALTH SPENDING

A key trend common to OECD countries has been the increasing importance of spending on pharmaceuticals as a proportion of total health expenditure. Australia has seen significant growth in its spending on pharmaceuticals, although this growth has varied and currently remains at historically low levels.

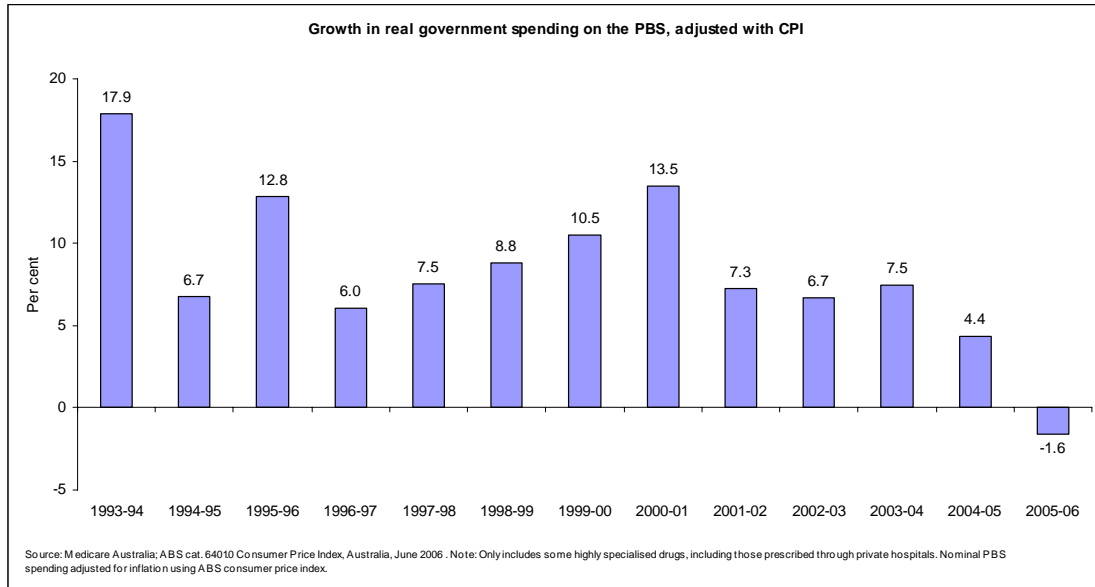
By 2004-05, Government spending on the PBS had reached \$5,305.3 million including all highly specialised medicines<sup>87</sup>. The annual growth rate of the PBS (including highly specialised medicines delivered through private hospitals only) after adjusting for inflation, has trended downwards since a high of 13.5% in 2000-01 (Figure 14). Growth in the PBS is below the current inflation rate of 4.0%<sup>88</sup> and, after adjusting for inflation using the ABS Consumer Price Index (CPI) as a deflator, Government spending on the PBS fell by 1.6% in 2005-06 (Figure 14).

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<sup>87</sup> Dept of Health and Ageing 2005 *Expenditure and Prescriptions Twelve Months to 30 June 2005*, Canberra, p. i.

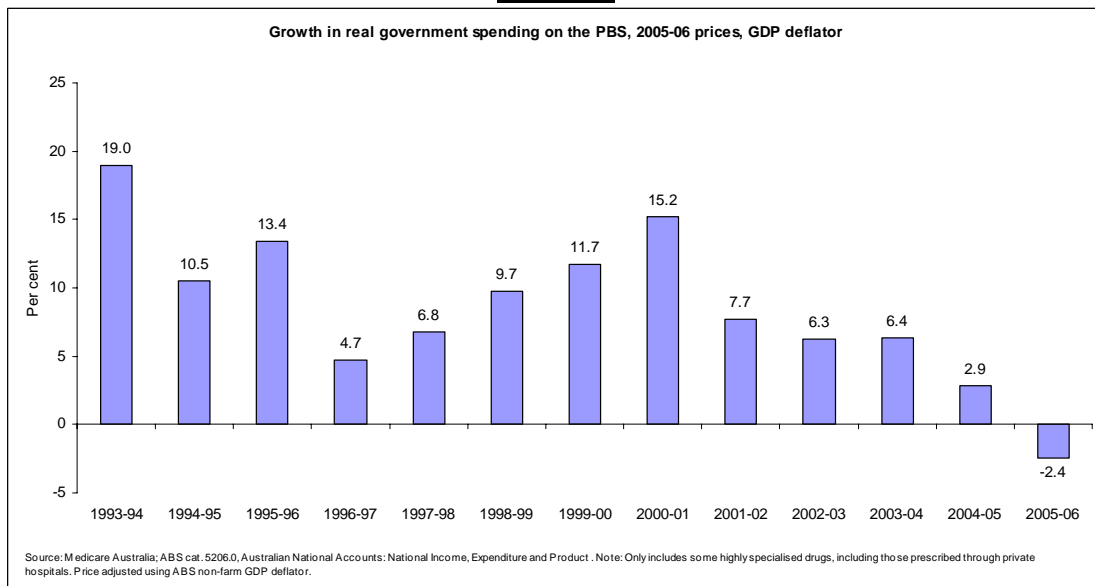
<sup>88</sup> Reserve Bank of Australia, 2006. Available: <http://www.rba.gov.au/>. [Accessed: 7 August 2006].

**Figure 14. Real growth in government spending on PBS, CPI deflator**



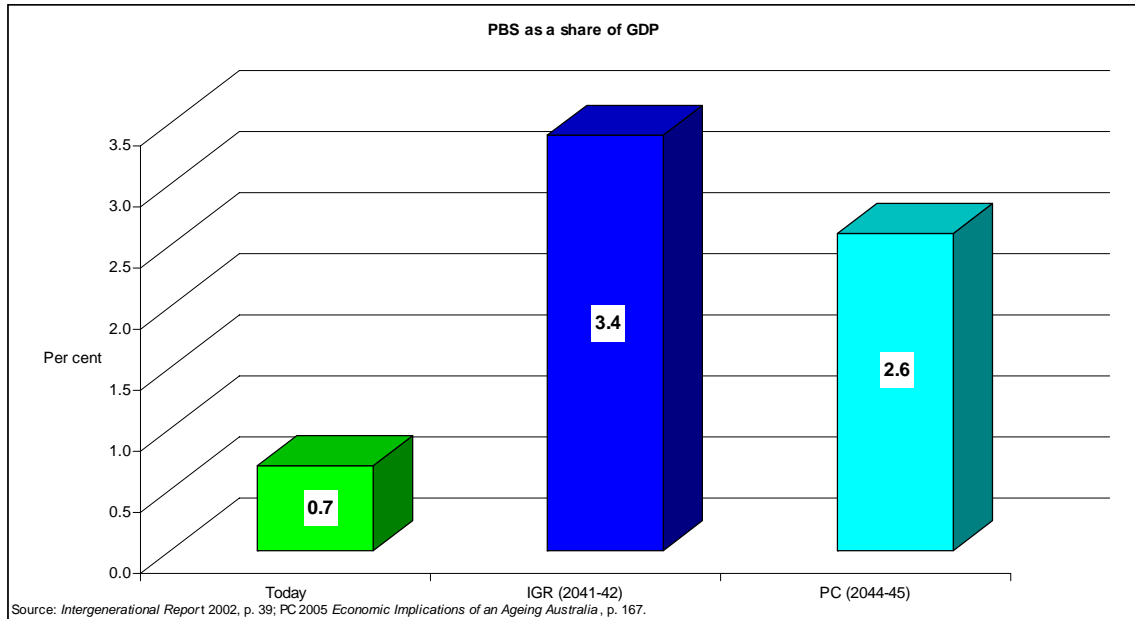
The same analysis, using the ABS non-farm GDP deflator, rather than Consumer Price Index, shows that real growth in Government spending on the PBS fell by 2.4% in 2005-06 (Figure 15).

**Figure 15. Real growth in government spending on PBS, non-farm GDP deflator**



In the longer term, Government estimates of the growth of the PBS suggest that it will represent a larger share of the nation's income in the future. The Treasurer's 2002 *Intergenerational Report* and the Productivity Commission's 2005 *Economic Implications of an Ageing Australia* report suggest that the PBS will increase from 0.7 per cent of GDP today to between 2.5 and 3.4 per cent of GDP by the 2040s (Figure 16). The Productivity Commission adopted more conservative assumptions and suggested that the projections contained in the *Intergenerational Report* are too high.

**Figure 16. PBS as a share of GDP**



However, the growing importance of pharmaceuticals in the health budget is not unique to Australia. Most OECD governments have seen their spending on pharmaceuticals become a progressively larger component of their total health budget (Table 1). While the Australian public sector has seen an increase in the proportion of its health budget accounted for by pharmaceuticals, this level is still not high relative to other OECD countries and is below the OECD average.

In fact, in spite of the growth in the PBS in Australia over the last decade or so, the proportion of the health budget devoted to pharmaceuticals is still below average.

**Table 1: Public sector pharmaceutical spending as a share of public health spending, per cent**

	<b>1992</b>	<b>2002</b>
Australia	7.0	10.9
Canada	5.7	9.0
Czech Republic	19.7	19.0
Denmark	5.0	5.8
Finland	6.2	11.2
France	13.8	16.8
Greece	20.0	22.6
Hungary	21.4	24.6
Iceland	12.0	10.3
Ireland	11.1	12.3
Italy	15.0	15.6
Japan	18.0	15.3
Korea	11.7	24.2
Luxembourg	14.2	9.5
Netherlands	13.2	10.5
Poland	18.1	15.3
Portugal	25.5	18.2
Spain	17.2	22.6
Sweden	7.9	10.7
United States	3.0	5.9
<b>OECD-20 average*</b>	<b>13.3</b>	<b>14.5</b>

Source: OECD Health Data 2006.

\*Average of the 20 OECD countries for which data is available for 1992 and 2002.

As with other countries, Australia's spending on pharmaceuticals has been one of the faster growing areas of health expenditure. The Productivity Commission recently found that after adjusting for population growth and inflation, spending on the PBS between 1984-85 and 2002-03 grew by 7.3 per cent each year, compared with 3.2 per cent for Medicare, 2.2 per cent for hospitals and 5.3 per cent for other health care spending<sup>89</sup>.

However, as will be discussed later, it is not necessarily axiomatic that this is a public policy problem that needs to be 'fixed'. Given the potential benefits that new technologies can bring to health care, increased spending on pharmaceuticals may result in spending reductions elsewhere in the health system and social benefits such as reduced time in hospital and lower proportions of the population required to enter nursing homes. Moreover, such growth in pharmaceuticals is, as with other areas of growth in health spending, not unusual over the OECD.

### **3.4. REASONS FOR THE GROWTH IN PHARMACEUTICAL SPENDING**

The factors that influence growth in pharmaceutical spending are varied. The ageing population is obviously one of them, although as already discussed there is some debate over the actual impact ageing will have on health spending.

A range of factors have been identified that contribute to spending on medical technologies like pharmaceuticals. Australians have developed an expectation that they will receive the most up to date and most effective treatments that

<sup>89</sup> Productivity Commission, 2005. *Economic Impacts of an Ageing Australia*. Final Report, Canberra, p. 149.

are available. Drivers of demand include consumer expectations influenced by consumer preferences, the prevalence of disease, co-payment levels, the diffusion and awareness of new technologies and population growth<sup>90</sup>.

As discussed earlier, this spending should not simply be thought of as a cost. New medicines bring a range of benefits to patients, the community, the economy and the health budget.

Estimates of cost effectiveness of individual technologies, where they are available, suggest that many advances in medical technologies used in Australia are likely to have been cost effective relative to alternative treatments. Technologies that deliver both cost savings and additional health benefits clearly provide value for money.<sup>91</sup> In spite of these benefits and indeed, notwithstanding such benefits, governments around the world have sought to ensure that growth in spending is contained for fiscal reasons and to ensure efficiency and value for money.

This otherwise apparently contradictory behaviour arises in part from the fact that such cost benefit analysis and the interaction between pharmaceuticals and other sections of the health system is only now becoming clearer with the availability of long term mortality and morbidity studies.

### **3.5. PHARMACEUTICAL POLICY OPTIONS USED BY OECD GOVERNMENTS**

Given the worldwide phenomenon of growing spending on pharmaceuticals, governments have a variety of pharmaceutical policy measures to ensure value for money, efficiency, financial sustainability and the appropriate use of medicines. The measures include, encouraging the prescribing of generics, introducing or reforming reference pricing, co-payments, budgetary caps, cost-effectiveness evaluation and general practitioner fund holding.

The rapid rise of health expenditure in the last four decades has convinced most OECD governments of the necessity to reform their healthcare systems in order to preserve their financial sustainability. As noted by Elizabeth Docteur and Howard Oxley<sup>92</sup>, the health care market is subject to several deficiencies:

- The ability of insurance to pool financial risk is weakened in voluntary insurance markets because those with greater risks are more likely to ask for an insurance, an “adverse selection” that limits access to affordable insurance for those individuals;
- The “moral hazard” implied by such insurance implies a propensity to consume beyond the social optimum;
- There is an asymmetry of information between the providers of health and the insurers; and
- The relative inelasticity of patient demand implies that the use of price signals can only be limited.

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<sup>90</sup> Productivity Commission, 2005. *Impacts of Advances in Medical Technology in Australia*, Research Report, August, Melbourne, pp. 11-16.

<sup>91</sup> Productivity Commission, 2005. *Impacts of Advances in Medical Technology in Australia*, Research Report, August, Melbourne, pp. 11-16.

<sup>92</sup> Elizabeth Docteur and Howard Oxley, “Health-care systems: lessons from the reform experience”. Economic Department Working Papers NO.374, OECD, 2003.

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Jacobzone<sup>93</sup> provides a taxonomy of pharmaceutical policies used in OECD countries:

- Regulation of demand
  - Listing systems and formularies – lists specifying which medicines are eligible for public reimbursement, such as PHARMAC in New Zealand or the Pharmaceutical Benefits Advisory Council (PBAC) in Australia
  - Influencing demand of patients – through patient financial contribution via co-payments, for example, the NHS in the United Kingdom, originally had very few or very low co-payments for drugs. However, co-payments were gradually introduced and significantly increased between 1978 and 1986. Although they are relatively high now, they only finally "bite" on a rather small number of customers. Monopsony power of government agencies is a key determinant of the level of pharmaceutical consumption and has been efficient in the United Kingdom, Australia and Scandinavia for example.
  - Policies and guidelines to influence prescriber behaviour – such as auditing prescriber behaviour, developing prescribing guidelines, fixed budgets.
  
- Regulation of supply
  - Product price fixing – determined by a medicine's therapeutic value, reference to existing products, reference to international comparisons, the contribution of pharmaceuticals to the economy, or a combination of these. Price fixing has been used in Australia, Austria, Belgium, Finland, France, Greece, Hungary, Japan, Italy, Korea, Mexico, Norway, Spain, Sweden and Switzerland. At times, some control over prices has been exerted in Canada, Germany and the United Kingdom and most OECD countries, except the United States. Countries have transformed their systems over time, particularly restructuring and reforming reference pricing and different variants of referencing pricing exist. For example, several countries such as Canada, Spain, Belgium, Italy, Portugal and France, have different pricing systems for patented and off-patent medicines while other countries, such as Australia and Germany, reference price patented and off-patent medicines together.
  - Profit controls - the profitability of companies is regulated, instead of, or in addition to, price controls. For example, the Pharmaceutical Price Regulation Scheme in the United Kingdom has specified a permitted rate of return on capital, with an admitted rate around 17-21% with a 25% margin of tolerance, when companies submit new products.
  
- Public strategies for fiscal consolidation
  - Unilateral price cuts and price freezes. For example, in Germany a significant decline in drug expenditures in 1993 was due to several factors, including the price freeze for drugs not subject to reference pricing (price reduction by 5% and or 2%

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<sup>93</sup> Jacobzone, S. 2000 *Pharmaceutical Policies in OECD Countries: Reconciling Social and Industrial Goals*, Labour Market and Social Policy Occasional Paper No. 40, OECD: Paris, pp. 27-48.

and prohibition on price increases for 1993 and 1994) and the introduction of a prescription budget.

- De-listing of medicines off formularies
  - Pharmaceutical taxes
  - Target total pharmaceutical budgets.
- Information-based and outcome-oriented strategies
    - Changes in distribution systems to restructure demand such as the introduction of managed care organisations.
    - Reference pricing
    - Fostering the use of generic medicines
    - Sharing the costs of R&D and promoting future innovation
    - Improving the cost-effectiveness of prescription medicines and educating patients.

All of these policies have been used by OECD governments to regulate the pharmaceuticals market.

The balance of policies to encourage cost containment compared to policies to provide new medicines is a fine one. Too much of a focus on cost containment measures risks undermining access to newer innovative medical treatments.

## **CONCLUSION & FUTURE DIRECTION: HOW TO INTEGRATE PHARMACEUTICALS IN HEALTHCARE REFORM**

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### **Pharmaceuticals: a key tool for an Ageing Australia**

Pharmaceuticals can play a critically important role in the future health care of an ageing Australia. Whether they are seen as something to be avoided or embraced depends on whether decision makers recognise the evidence that is available.

If pharmaceuticals are simply viewed as a financial cost, then the growing importance of new medical technologies like pharmaceuticals will be a concern. However, if pharmaceuticals are recognised as a technology that helps improve productivity in the economy through better health outcomes for individuals, workforce participation and health sector efficiency, then pharmaceuticals will be viewed as an integral part of ensuring a healthy ageing Australia and both new and incremental benefits of new medicines will be recognised.

The statistical evidence from the developed world is clear – populations are slowly increasing and so is the average age of the population. Between 1950 and 2050 it is expected that the percentage of the population of the developed world over 80 years of age will increase from 1% to over 9%.

This change has an obvious potential impact on the economies of the developed world and on the allocation of health care resources. Given the productivity of the young in the workforce and the consumption of health care by the aged, such a demographic trend could spell significant change in the traditional economic balance of the developed world's economies.

While there have been concerns that these trends will lead to an unsustainable financial burden, in fact whether or not ageing in the context of our healthcare system is a 'time bomb' is a question where there is no agreed answer. There is much debate here and internationally about the extent to which governments need to be concerned about the ageing population.

Governments around the world are all looking at their health budgets, pharmaceuticals included, in an effort to control spending. However, as the evidence reviewed in this paper suggests, it is important that governments consider the benefits of their health spending, not just the costs.

### **Policy challenges facing Australia**

It is important that future policy consideration takes into account the benefits of spending on new medicines as well as the costs and recognise that such spending can be a part of the solution and not the problem.

The Prime Minister has recently highlighted the ageing population issue and the importance of medicines as part of the solution:

*“...we have to understand that with an ageing population and the coming on stream of new drugs and new techniques that a rise in health care costs is unavoidable. And we shouldn't see it as a bad thing. Don't we want the new drugs and the new procedures available for all Australians? I do not want to see life saving drugs and new procedures rationed on the basis of people's wealth and income. This is an egalitarian country and if there is a procedure available, it should be available for all Australians. And we must expect health costs to go on rising because we are ageing as a population and we are finding new and more effective ways of prolonging life and making it more enjoyable. And I would like to see those things available to all Australians.”<sup>94</sup>*

At the policy level therefore, rather than simply focussing on the cost of future spending on medicines, future consideration of long term health spending and intergenerational policy should also take into account the fact that new medicines are part of the solution to achieving a healthy ageing Australia.

As the Productivity Commission recently identified, it will be important to ensure that future health policies do not try to solve a perceived fiscal deficit by creating a technology deficit, such as a lack of new medicines in Australia compared with other countries:

*It is sometimes claimed that governments will automatically constrain future rises in health costs relative to GDP arising from ageing by slowing the acquisition of technologies below historical rates. While this could be a way of offsetting the impacts of ageing, it would transmute the cost of ageing from a fiscal to a technology deficit.<sup>95</sup>*

In this case, a 'technology deficit' is a lack of new medical technologies, such as the latest pharmaceuticals, to treat disease. It will be important to recognise that the latest pharmaceuticals may be either completely new treatments or improvements on old ones that are more suited to individuals' needs than those they replace. Both offer valuable improvements.

It is a fine but important balance to achieve if the Australian community is to enjoy a healthy and productive lifestyle for decades to come.

The 2002 *Intergenerational Report* focussed on the costs of the PBS and their potential growth over the coming 40 years. It is important that the impact of higher PBS spending be modelled to show the benefits on participation, productivity, GDP and the budget deficit. Otherwise long term Budget decisions will be based on invalid assumptions. The result will be that the financial costs to taxpayers, health costs to patients and economic costs to society will be far greater than they need otherwise have been.

One problem with the 2002 *Intergenerational Report* was that it did not take into account 'feedback loops' where variables in the model may interact with each other. One such feedback loop that deserves further consideration in the modelling is the impact of higher PBS spending on participation and

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<sup>94</sup> The Hon John Howard MP, Prime Minister, 30 Sept 2005, Extract from Doorstop Interview, Mirrabooka, Perth

<sup>95</sup> Productivity Commission 2005 *Economic Implications of an Ageing Australia*, Research Report: Canberra, p. xxx.

productivity. For example, as well as the main forecasts in the Intergenerational Report, there are alternative modelling scenarios contained in the report based on different assumptions about labour productivity and workforce participation of older workers.

Changing these assumptions gives significantly different economic and fiscal outcomes to those suggested in the main modelling in the Intergenerational Report. Higher labour productivity or greater participation in the workforce by older Australians leads to higher economic growth and helps reduce the budget deficit in the longer term.

It is likely that one factor that causes an increase in workforce productivity and participation may actually be an improvement in Australians' health, attributable in part to access to innovative medicines via the PBS. This improvement in health then has all the flow-on benefits of greater GDP growth, lower budget deficits and so on. In this case, an improvement in productivity and participation is not due to an 'exogenous' influence external to the model, but actually due to an 'endogenous' factor contained elsewhere in the model, namely PBS spending.

This is a feedback loop that should ideally be included in modelling the impact of the projected growth in PBS spending on productivity, GDP and the budget deficit. The fact that higher PBS spending could lead to greater economic growth deserves more detailed consideration in future analysis of the impact of an ageing population.

There is also merit in taking into account the indirect benefits of medicines when assessing individual medicines for PBS listing, in addition to such issues being taken into consideration at the broad policy level. Exactly how to better account for the indirect productivity benefits of medicines in submissions for listing on the PBS is the subject of debate at the moment. As well as being an important discussion in its own right, the debate highlights the need to incorporate such considerations at a broader policy level.

## RECOMMENDATIONS

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Given the issues raised in this paper, Medicines Australia makes several recommendations to the Federal Government as it develops its next *Intergenerational Report* for the 2007-08 Federal Budget.

- Given the importance of the Intergenerational Report (IGR) in framing Government policy deliberations on health and pharmaceuticals policy, the next IGR should explicitly recognise that:
  - health spending can improve workforce participation and productivity, and in doing so increase GDP;
  - new medical technologies, including up-to-date medicines provide positive benefits to an ageing population, including productivity and workforce participation benefits, and
  - spending on new medicines can deliver greater savings in other areas of government spending.
- The next IGR should model the current and future economic benefits of medicines into costing of the PBS and incorporate the impact of growth of pharmaceutical spending on:
  - other areas of the health budget, such as expenditure on hospitals, doctors and nursing homes, and
  - workforce participation and productivity.
- Future considerations of pharmaceutical policy reform should be couched in the context of new medicines being critical to ensuring productive and healthy ageing in Australia.
- Any reforms to Australia's health and pharmaceutical policies, and the economic assessment of these, should be developed with full consultation with relevant stakeholders. Medicines Australia and its members continue to develop and consider policy options and want to work with all parts of Government involved in policy reform to develop a system that ensures access to innovative, new medicines for all Australians into the future.

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## TABLES AND FIGURES

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### FIGURES

- Figure 1. Pharmaceutical Industry, the most R&D intensive area p.10  
Figure 2. Health and GDP: a positive correlation p.18  
Figure 3. Proportion of population aged 60 or over – 1950-2050 p.20  
Figure 4. Median age of the world 1950-2050 p.21  
Figure 5. Population aged 80 and over – 1950-2050 p.21  
Figure 6. Proportion of elderly in the total OECD population p.22  
Figure 7. Fertility rates in the OECD – 1950-2050 p.23  
Figure 8. Life expectancy at birth in developed countries 1950-2050 p.23  
Figure 9. Total dependency ratio: world and development regions 1950-2050 p.24  
Figure 10. From pyramid to coffin – the changing age structure of Australia’s population p.25  
Figure 11. How big is the ageing effect for health care costs? p.26  
Figure 12. Health expenditure in proportion to the GDP (%) 1971-2001 p.29  
Figure 13. Health expenditure and ageing: a correlation p.30  
Figure 14. Government spending on the PBS, 1993-2006 p.39  
Figure 15. PBS as a share of GDP p.40

### BOXES

- Box 1. “Health equals Wealth” – David Byrne, EU Commissioner for Health p.18

### TABLES

- Table 1. Public sector pharmaceutical spending as a share of public health spending, per cent p.41