AAPP Australian Association Of Pathology Practices Inc.
ABN 41 052 527 634

Impacts of Medical Technology in Australia
AAPP Comments on Productivity Commission Progress Report

1 Introduction

The Australian Association of Pathology Practices Inc. (AAPP) welcomes the opportunity to comment on the Progress Report of the Productivity Commission's inquiry into the Impact of Advances in Medical Technology in Australia.

We have provided some general points as well as specific responses to the preliminary findings in the Report from the perspective of private pathology practice. AAPP looks forward to reviewing the Commission's final report and to participating in the implementation of recommendations from the inquiry that contribute to better health care for all Australians.

2 General comments

- The Report provides a complex economic analysis of costs but is unable to assess the net impact of health technology on health outcomes. AAPP strongly believes that the cost-effectiveness of new technologies must be thoroughly assessed relative to their impact on health outcomes to determine their affordablity by the community.
- "Health outcomes" need to be defined in the context of what the Australian community considers to be "necessary" (as distinct from discretionary) health care, and what it deems to be an appropriate amount of public funding to spend on health care.
- Health care and economic analysis of its benefits are based on value judgements, yet to date in Australia there has been little public discussion about what is the "right" amount of health expenditure.
- Intuitively, elasticity of demand would be lower for treatments that save life or improve quality of life than those that are for cosmetic or other "lifestyle" reasons – the Report does not distinguish between these types of "health" services.
- The Report needs to emphasise more strongly that the key question is not whether technologies increase costs, but what benefits are achieved for the resources consumed.
- Health technology is part of a virtuous cycle – new technology contributes to better health outcomes, which in turn improve productivity; increases in national income (GDP) are used to fund new technologies.
- The Report is focused heavily on the role of technology once disease has been diagnosed (eg. on the use of pharmaceuticals and prostheses). Diagnostic services comprise a signficant proportion of health expenditure and play a considerable role in health outcomes. Pathology services have been subject to stringent regulatory and financing constraints, and are a major contributor to health technology advances, yet they have been given little consideration in the report.
- The Report could also emphasise more strongly how changes in health care related to the use of new technologies such as genomics mean that testing to identify predispositions to certain conditions (whose risk of adding to the burden of disease has been epidemiologically determined) will allow greater prevention and earlier intervention, serving to reduce downstream costs in both monetary and quality of life terms.

PO Box 158 (Unit 6, 2 Phipps Close)
DEAKIN WEST ACT 2600
Tel: (02) 6282 2277 ● Fax: (02) 6282 2953 ● E-mail: aapp@client-solutions.com.au

3 AAPP Comments on Preliminary Findings

Chapter 2 The market for medical technology

2.1 Key drivers of growing demand for advances in medical technology are income growth, community expectations, population ageing and disease prevalence and limits on consumer price signals, combined with the desire of and incentives facing medical practitioners to provide the best-available treatments.

AAPP agrees with the Commission that consumption of, and expenditure on, medical technology is driven by the interaction of *'demand for health services more generally, as well as budgetary, regulatory and other external influences'* (p. 11) and that the supply and distribution of specialists and general practitioners will also affect technology diffusion.

The Report acknowledges that demand for new technologies is driven largely by medical practitioners. In the case of pathology and other diagnostic services, as secondary services provided on referral by a GP or other specialist (which in turn is influenced by recent factors such as the practice of "defensive" medicine), elasticity of patient demand is likely to be similar to that for pharmaceuticals, which the Report notes patients regard as largely non-discretionary. This may in large part be due to the trust that patients put in the recommendations of their doctor: *'Patients typically rely on the knowledge and expertise of medical professionals'.*

As the Report notes, *'Arguably, the overriding objective of clinicians is to do the best for their patients… Indeed, they may consider themselves potentially legally liable if they do not choose the "best" technology on the market'* (p. 30).

The Report also suggests that an individual's decisions about seeking health care are not usually constrained by the patient's ability to pay, noting that *'If arrangements are such that price is not a significant factor for the patient, then clinicians may feel remiss if they do not choose the best available technology, regardless of its cost'* (p. 30). In fact, there is evidence that demand for health services is reduced by the introduction of patient co-payments.[1,2] In addition, patient contributions to the cost of health care in Australia have risen over the past decade, while the number of attendances with GPs and specialists has declined.[3]

Traditionally, Pathology has had consistently high rates of bulk billing and schedule fee observance – respectively at 86 percent and 92 percent of services. Furthermore, the majority of the remaining eight percent of services is covered by no-gap arrangements with private health funds. The Pathology funding agreement with government, moreover, provides for annual bonuses to the agreed level of outlays if patient contributions to the total cost of pathology services in the given year do not exceed a certain level (ranging from 9.5-11%) over the life of the agreement.

Maintaining the affordability of pathology services for patients contributes to health outcomes by ensuring diagnostic accuracy and the appropriateness of treatment options selected by the referring practitioner. Whilst the provision of education and information to referring doctors to increase the appropriateness of test ordering is supported, over-rationing of pathology services may in fact compromise quality care, as noted below.

The use of medical technology will reflect the demand for and supply of medical technology, including the impact of constraints imposed by regulations and rationing mechanisms, such as budget constraints and waiting periods <u>and the availability of skilled labour</u> (underline added).

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[1] Richardson J (1991), Effects of Consumer Copayments in Medical Care, National Health Strategy Background Paper no. 5, National Health Strategy Unit.
[2] Keeler EB (1992), *Effects of Cost Sharing on Use of Medical Services and Health,* RAND Corporation, Health Policy Program. Santa Monica: RAND.
[3] AIHW (2004), *Australia's Health 2004*. Canberra: AIHW.

Lack of access to pathologists has the potential to affect the care provided to patients by other medical specialties that rely on their services. A recent paper by the Royal College of Pathologists of Australia, suggested that this *'may even become the capacity-limiting process for many clinical activities: diagnosis and staging of diseases, screening for disorders, quality control of clinical management, education at undergraduate and postgraduate levels, research on clinico-pathological issues, development of cellular and molecular methods and pathogenesis, and patients may face long waits before hearing a final diagnosis, or they will have to endure uncertainty about the diagnosis, as the expertise needed is not available'*.[4]

Chapter 3 Aggregate impact of medical technology on expenditure

3.1 The Commission's modelling provides support for the proposition that medical technology has been a major driver of the growth in real healthcare expenditure over the past ten years. The mid-range estimate implies that technology has contributed around one-third of the growth in healthcare spending, though estimates range widely depending on the assumed income elasticity. Other important contributors to the increase in health expenditure over the period include population and income growth, and to a lesser extent the limited past ageing of the population.

AAPP strongly agrees with the Commission that *'…it is inappropriate to consider only the potential expenditure effects of medical advances in isolation of their expected benefits, such as the monetary and non-monetary benefits the technologies deliver to patients and their families'.*

It must be acknowledged that Australia has generally performed well in containing the costs of new medical technologies and health care costs overall. The approximately 9% of GDP we currently spend on health care is in the middle range of most OECD countries and well below that of the United States. The Australian system of fee for service for medical practice accompanied by downward pressure in the marketplace is well positioned for the future. There is growing acceptance of some "user-pays" elements for those who can afford it and recognition that our mixed model actually works better than most. It has been suggested, however, that international evidence indicates that health care costs overall, including public expenditure, increase as the proportion derived from private funding increases.[5] Maintaining an appropriate balance between public and private funding of health care, it seems, is vital to ensure government outlays and individual costs continue to be sustainable.

Furthermore, it has been argued that *'technological change leads to physiological improvements and, conversely, health improvements are responsible for significant advances in knowledge and accelerated technical diffusion… Economic prosperity has followed… Governments should strive to get the most out of health care spending, rather than focus on limiting expenditures. Investments in science will have long term payoffs.'*[6]

The Report suggests that the *'…combination of a lack of information and the fact that patients generally do not pay directly for the full cost of the health services they consume, means that they have little incentive, or even ability, to weigh the costs of advances in medical technology against the benefits.'* However, it also acknowledges that *'public consultation is a feature of good regulatory design'* and that a recent OECD report had concluded that *'public consultation appeared to be an important ingredient in community acceptance of recommendations for access to new technologies'* (p. 157).

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[4] Royal College of Pathologists of Australasia (RCPA) (2003), http://www.rcpa.edu.au/applications/documentlibrarymanager2/inc_documentlibrarymanager.asp, accessed 9/5/05.

[5] McAuley I (2004), Stress on public hospitals – why private insurance has made it worse. A discussion paper for the Australian Consumers' Association and the Australian Healthcare Association. January 2004.

[6] OECD (2002), Biotechnology and Ageing: Policy Implications of New Research, Paris: OECD.

Whilst much recent government rhetoric has conveyed concern about the rising costs of health care in Australia, there has been very little public discussion to date regarding what the Australian community considers to be the "right" amount to spend on health. Richardson (2003) has argued that it is *'desireable for government* [in formulating health care policy] *to be informed by evidence concerning the community's values and the strength of their preferences for different value systems'.*[7] Techniques such as citizen juries have been used extensively in other countries, including the USA, UK and Canada, in order for policy makers to gain clearer understanding of the value the community places on health care.[8,9,10] Similar processes have been recently used in specific contexts in Australia.[11]

AAPP believes it is vital that further rationing of health care by government should be made transparent, informed by broad public debate, in combination with comprehensive, independent consumer-focussed information and education about the cost-effectiveness of particular health technologies, and the opportunity costs of increasing (or indeed, decreasing) public expenditure on such technology, and on health care generally.

Chapter 4 Individual technology expenditure impacts

4.1 Technological advances have played an important role in increasing expenditure on pharmaceuticals and inpatient care:

- ***For pharmaceuticals, direct expenditure has increased due to the higher unit cost of new drugs and increases in the number of patients treated.***
- ***For inpatient care, the increase in expenditure has been fuelled in part by increasingly expensive technologies such as prostheses.***
- ***New technologies have had offsetting effects on hospital separations:***
  - ***for some diseases, improved pharmaceuticals have reduced the need for hospitalisation; and***
  - ***less invasive and more effective procedures have led to increased separations for some conditions, but have reduced the length of hospital stays.***

4.2 Most major medical technological breakthroughs of the past decade have increased net health expenditure:

- ***For some, the impact has been unambiguous because they have higher unit costs; complement or add to the existing mix of technologies; or treat an entirely new disease.***
- ***Others have reduced unit treatment costs or have generated offsetting savings elsewhere in the health system, but have often been accompanied by significant increases in the volume of treatment.***

This may be so, however it is important to acknowledge that the changing burden of disease, with preventable chronic and co-morbid illnesses comprising a greater proportion of health needs and costs, has meant an increasing emphasis on addressing the common risk factors for disease and intervening earlier in the disease path. Yet for the most part, funding arrangements are yet to catch up with this shift in health care delivery.

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[7] Richardson J (2003), Priorities of Health Policy: Cost Shifting or Population Health. Paper presented to the Australian Health Care Summit, Canberra 17-19 August 2003.

[8] Canadian Policy Research Network (2002), Report on the Citizens' Dialogue on the Future of Health Care in Canada, http://www.cprn.org/en/doc.cfm?doc=32, accessed 20/6/05.

[9] Maxwell J, Rosell S, Forest PG (2003), Giving citizens a voice in healthcare policy in Canada, *British Medical Journal* 2003; 326:1031-1033 (10 May).

[10] Jacobs L, Marmor T, Oberlander J (1999) Report from the Field: The Oregon Health Plan and the Political Paradox of Rationing, *Journal of Health Politics, Policy and Law*, Vol. 24 No. 1, February 1999.

[11] Mooney GH, Blackwell SH (2004), Whose health service is it anyway? Community values in healthcare, *Medical Journal of Australia* 2004; 180(2): 76-78.

With an ageing population and higher health care costs in the elderly, early detection of the genetic and other risk factors for disease, allowing intervention before disease onset, becomes an even greater imperative, particularly as the role of modern medical technology will be increasingly to meet consumer demand for *'furnishing quality of life at older ages and even extension of life at older ages rather than preventing mortality at younger ages'*.[12]

Furthermore, as the OECD report on ageing and technology notes: *'Genomics and genetics are… changing medical practice by identifying risk factors and shifting practice towards prevention instead of diagnosis and reactive therapy'*.[13] A recent Lancet article, for example, highlighted Australian research on a new DNA test that can detect a genetic predisposition to haemochromatosis, a potentially fatal disease that can cause heart problems and organ failure. Screening for the disease, which affects about one in 250 Australians and can be treated if diagnosed early, could save hundreds of lives.[14]

There is also renewed focus on the efficacy of non-pharmacological and low technology interventions (such as diet and exercise) in the prevention and treatment of many chronic illnesses: the cost burden to society could be greatly reduced by accurate early detection of predisposing factors for certain diseases, which could lead to individuals making necessary lifestyle changes, reducing the need for more expensive treatments or invasive therapies due to the unchecked progression of disease.

AAPP would note that pathologists have a critical role in the identification of early disease and ongoing monitoring of treatment regimes, including drug therapies, in order to prevent the progression of disease, avoid unnecessary hospitalisations, and improve quality of life for patients.

4.3 The division of funding responsibilities in the health sector influences expenditure on new technologies:

- ***The technology choices of individual agencies and institutions are often constrained by budget caps and, hence, they have little incentive to take into account impacts of their choices on their own future spending or on other parts of the health system.***
- ***This creates a bias toward technologies which produce short-term cost savings in particular parts of the health system, possibly at the expense of more cost effective, but higher cost, technologies.***

The Report notes that *'Increasingly, guidelines and regulations attempting to control budget outlays are affecting technology choices and the rate of technology diffusion throughout the community. In addition, many technology choices will also be made directly by governments and/or hospital administrators'*.

Decisions made by individual agencies or sectors will obviously impact on the cost of the health system as a whole. AAPP has noted previously that 'the funding of clinical and laboratory genetic services across Australia has been provided by State governments without any mechanism for national coordination. Hence there have been marked differences in the resources to employ or train appropriate staff in different states and territories.'[15]

AAPP strongly agrees with the Commission that there *'…appears to be scope for a more coordinated and systematic approach across the public and private sectors and across levels of government… this "silo" approach may inhibit efficient assessment of emerging converging technologies, such as those that combine diagnosis, treatment and/or pharmaceuticals.'*

Better integration of expenditure is needed that focusses on patients' needs and care

[12] OECD (2002) op cit. p. 49
[13] OECD, ibid. p. 68
[14] Pirani C (2005), DNA screening could rescue hundreds from chronic ills. The Australian. 7/5/05.
[15] AAPP (2005), Impact of Advances in Medical Technology on Healthcare Expenditure in Australia: Submission to the Productivity Commission, Canberra: AAPP.

coordination, moving away from the current siloed funding approaches that currently lead to massive waste and cost shifting.

Chapter 5 Benefits of advances in medical technology

5.1 Although it is not possible to quantify and attribute benefits in overall terms, the available evidence suggests that specific advances in medical technology have delivered benefits across a range of areas in the past decade. They appear to have contributed to improved health status, observed increases in longevity and improved living standards.

AAPP agrees with this finding. Although the development and implementation of new medical technologies is a significant cost driver in health care, AAPP believes it is inevitable and, on balance, overwhelmingly beneficial to patients and the community at large. For example, recent technological advances in diagnostic testing have resulted in a decrease in the incidence of cervical cancer by around 50 percent due to the success of screening programs, and the performance of PSA testing on men over 50 years of age is already showing positive results in the early detection and cure of prostate cancer.

5.2 There is Australian and international evidence that those in more disadvantaged groups — lower income groups, those residing in rural and remote areas, Indigenous populations — are less likely to receive some types of services, encompassing both old and new technological interventions. Unequal access may be accentuated, at least initially, as new higher cost technologies are introduced.

Access to health services is an important determinant of health outcomes, with bulk billing a key factor in health seeking behaviour among Indigenous Australians. As noted earlier, Pathology stands out within the medical profession in maintaining patient affordability through bulk billing and schedule fee observance, and through negotiated arrangements for increasing outlays under the MoU.

Further, AAPP believes that maintaining equitable access to new technologies, particularly in rural and remote areas where service volume is constrained by demographic factors, will require alternative strategies such as targeted incentives for private sector providers, and more widespread use of e-health and tele-health technologies.

Chapter 6 Cost effectiveness of advances in medical technology

6.1 Cost effectiveness analysis is a useful technique for comparing technologies in a health technology assessment context. However, it is not possible to estimate the net impact of advances in medical technologies on the overall cost effectiveness of healthcare delivery since:

- ***overall benefits cannot be measured accurately or appropriately attributed;***
- ***not all have been assessed for cost effectiveness; and***
- ***those that have been assessed can reveal a wide variation in cost effectiveness.***

While cost effectiveness may be difficult to measure, as discussed earlier AAPP believes that decision makers have a responsibility to the Australian community to base decisions about rationing expenditure or restricting access to particular technologies on evidence of their longer term and broader economic and social impacts: they cannot be based on cost decisions alone. Standards of evidentiary validity may need to become more flexible to ensure this occurs.

In this context it is also becoming increasingly important to define “health outcomes” and make distinctions between “necessary” and “discretionary” health care: for example not

all "health" services improve quality of life, or reduce morbidity and mortality (eg. cosmetic surgery). Governments therefore need to engage the public in a discussion about which services are a public good and should be paid for (at least substantially) by the community (either through public or private insurance) and which are discretionary based on a individual's choice and constrained solely by their individual ability to pay.

Chapter 8 Health technology assessment: procedures, devices and ICT

8.1 Assessment of medical procedures and devices is less developed than for pharmaceuticals, with more substantial gaps in coverage:

- ***Because of the often incremental nature of past technological changes, some new technologies deemed to fit under existing MBS codes may not have been assessed.***
- ***Existing MBS procedures are not subject to systematic re-assessment for clinical or cost effectiveness. While MSAC can undertake such re-assessments, its ability to do so is limited by its resources and the type of references its receives.***
- ***Prior to the introduction of the Prostheses Act, medical devices and prostheses were subject to little if any assessment or re-assessment of their clinical or cost effectiveness.***
- ***Unlike the PBAC and MSAC, a major focus of the new Prostheses and Devices Committee will be relative clinical efficacy rather than cost effectiveness.***

8.2 The MSAC assessment process:

- ***appears lengthy, taking 13–15 months on average to complete evaluations, thus delaying access to new procedures and some devices; and***
- ***like the PBAC process, allows little opportunity for consultation with patient groups or the general public.***

As noted in our submission to the review, the pathology profession has never felt entirely comfortable with the ambiguous relationship between the PSTC and MSAC, believing that in many cases it would have been preferable to have the PSTC review particular technologies rather than the cumbersome process of MSAC. AAPP considers that Medicare funding for new testing technologies should be restricted to relevant clinical pre-conditions and that the PCC/PSTC should have a role in their evaluation and introduction.

8.3 Feasibility studies and trials used to evaluate HealthConnect appear to be deficient:

- ***costs have been assessed in isolation from the assessment of benefits;***
- ***the examination of benefits has been limited in scope;***
- ***trials have been uncoordinated; and***
- ***implementation has preceded successful completion of trials.***

AAPP's submission also noted that, 'the development of national electronic health records (EHR) in Australia, whilst resulting in huge benefits for patients, medical practitioners and the Government in terms of both health outcomes and funding in the long term, will only be achieved successfully with siginicant input of funds. These funds will not only be required to enable and ensure the uptake of the necessary technology based and interoperability across all sectors of health, but will also require significant input by Government to address the legal and policy issues arising as EHR become a reality.'[16]

Pathology has led the way in adopting the benefits of information technology; through

[16] AAPP, ibid.

the MoU, pathology providers have agreed to participate in HealthConnect to achieve greater integration and flow of information among health care providers. This will, however, have little effect unless all parts of the health system are supported in the adoption of an effective information management network.

Chapter 9 Future advances in medical technology

9.1 ICT developments have significant capacity to improve health outcomes in their own right, or by providing architecture for the development and diffusion of other medical technologies and more efficient and safer delivery of health services through greater connectivity. Harnessing this potential will require planning, coordination and investment.

As noted in our previous submission, 'the ability, with the development of large scale computational bioinformatics, to analyse increasingly complex DNA microarrays to produce expression profiles has the potential to dramatically improve knowledge of cancer genomics leading to early diagnosis and predisposition profiling, especially in such diseases as ovarian and breast cancer.'[17]

AAPP agrees that there is an urgent need for better planning and integration of advances in health ICT. Coordination of care must be supported by comprehensive information and communications technology and management systems that provide all health practitioners and care givers with access to accurate and timely information about an individual's treatment.

As White (2003) notes*: 'Despite changing laboratory practices, communication between clinical users and pathology laboratories continues to be by the test request and the report, be it paper or electronic. Thoughtfully used, these avenues can efficiently provide patient-focused information at the moment of need… Working together through improved patient-oriented communication, doctors and their laboratory colleagues create the opportunity to maximise the contribution pathology tests can make to safe, effective patient care.'*[18]

9.2 New medical technologies in the pipeline have the potential to revolutionise the practice of medicine over the next 10 to 20 years. Many of these are likely to deliver significant benefits but, when combined with the pressures of an ageing population and increasing community expectations, will do so at significant cost to governments, insurers and the wider community.

The Commission notes the *'…broad themes emerging from current research and development including:*

- *Genetic testing, gene therapy and pharmacogenomics: the study of genomics is likely to provide a revolutionary set of tools and approaches for tackling disease — testing allows identification of genetic susceptibility to diseases and more effective use of pharmaceuticals (pharmacogenetics); gene therapy could represent a revolution in medicine because therapy could be aimed at correcting the genetic cause of the disease rather than treating the symptoms.*
- *Imaging and diagnostic advances: continued blurring of the distinction between techniques traditionally used for diagnosis and for delivering treatment — will likely expand the range of diseases that can be detected using imaging techniques. Advances in miniaturisation of imaging devices could improve portability. There may be a reduced need for surgery to examine the structure and function of organs.'*

AAPP strongly agrees that both the monetary and non-monetary benefits that these technologies deliver to patients and their families must be factored into any consideration

[17] AAPP, ibid.
[18] White GH (2002), Trusting numbers. Uncertainty and the pathology laboratory. Medical Journal of Australia 2002; 177 (3): 153-155.

of the effects of medical advances. Whilst these advances may have high up front costs, it is incumbent on decision makers to determine what the community thinks is an appropriate amount to spend on better health care, given the flow on effects that are likely to emerge from the adoption of new technologies.