Australian Government
Australian Research Council

EI 2018 ENGAGEMENT AND IMPACT

# Engagement and Impact 2018

## The University of Adelaide

## ADE11-PHS (HLS) - Impact

## Overview

**Title**

*(Title of the impact study)*

MBS triage: helping government identify and support only the best medical technologies

**Unit of Assessment**

11 - Medical and Health Sciences

**Additional FoR codes**

*(Identify up to two additional two-digit FoRs that relate to the overall content of the impact study.)*

16 - Studies in Human Society

**Socio-Economic Objective (SEO) Codes**

*(Choose from the list of two-digit SEO codes that are relevant to the impact study.)*

91 - Economic Framework

92 - Health

**Australian and New Zealand Standard Industrial Classification (ANZSIC) Codes**

*(Choose from the list of two-digit ANZSIC codes that are relevant to the impact study.)*

85 - Medical and Other Health Care Services

**Keywords**

*(List up to 10 keywords related to the impact described in Part A.)*

Health technologies

Health policy

Health technology assessment

Economic evaluation

Evidence-based policy

Meta-analysis

**Sensitivities**

Commercially sensitive

No

Culturally sensitive

No

**Sensitivities description**

*(Please describe any sensitivities in relation to the impact study that need to be considered, including any particular instructions for ARC staff or assessors, or for the impact study to be made publicly available after EI 2018.)*

**Aboriginal and Torres Strait Islander research flag**

*(Is this impact study associated with Aboriginal and Torres Strait Islander content?*
*NOTE - institutions may identify impact studies where the impact, associated research and/or approach to impact relates to Aboriginal and Torres Strait Islander peoples, nations, communities, language, place, culture and knowledges and/or is undertaken with Aboriginal and Torres Strait Islander peoples, nations, and/or communities.)*

No

**Science and Research Priorities**

*(Does this impact study fall within one or more of the Science and Research Priorities?)*

Yes

| **Science and Research Priority** | **Practical Research Challenge** |
|---|---|
| Health | Better models of health care and services that improve outcomes, reduce disparities for disadvantaged and vulnerable groups, increase efficiency and provide greater value for a given expenditure. |

# Impact

**Summary of the impact**

*(Briefly describe the specific impact in simple, clear English. This will enable the general community to understand the impact of the research.)*

Adelaide Health Technology Assessment (AHTA) at The University of Adelaide provided 34 reports on medical services (2002-16) to the Federal Government. These supported decision-making by the Medical Services Advisory Committee as to whether listing of these services on the Medicare Benefits Schedule (MBS) was warranted. This research permitted effective stewardship of limited public resources and delivery of improved health outcomes and value for money in the Australian health care system. It ensured timely inclusion of 23 new effective procedures on the MBS and removal of funding for 8 ineffective technologies, thereby reducing morbidity and mortality in the Australian population and increasing value for public funding. The research influenced public funding decisions internationally.

**Beneficiaries**

*(List up to 10 beneficiaries related to the impact study)*

1.The Australian people

2.Australian Government and in particular the Commonwealth Department of Health

3.The independent non-statutory body, the Medical Services Advisory Committee

4.Patients presenting for investigation or treatment for specific conditions including diabetes, heart disease, back pain & ophthalmology disorders.

5.Organisations developing clinical practice guidelines for selected specific conditions

6.Specialist medical craft groups and medical colleges

7.Individual clinicians relying on Medicare subsidy for income (for service delivery)

8.International organisations involved in the assessment of health technologies

9.International governments making decisions about public funding of the specific technologies assessed by AHTA during this period.

**Countries in which the impact occurred**

*(Search the list of countries and add as many as relate to the location of the impact)*

| |
|---|
| Australia |
| New Zealand |
| England |
| Scotland |
| Wales |
| Northern Ireland |
| Canada |
| Sweden |
| Ireland |
| Belgium |
| Germany |
| Lithuania |

**Details of the impact**

*(Provide a narrative that clearly outlines the research impact. The narrative should explain the relationship between the associated research and the impact. It should also identify the contribution the research has made beyond academia, including:*
*- who or what has benefitted from the results of the research (this should identify relevant research end-users, or beneficiaries from industry, the community, government, wider public etc.)*
*- the nature or type of impact and how the research made a social, economic, cultural, and/or environmental impact*
*- the extent of the impact (with specific references to appropriate evidence, such as cost-benefit-analysis, quantity of those affected, reported benefits etc.)*
*- the dates and time period in which the impact occurred.*

*NOTE - the narrative must describe only impact that has occurred within the reference period, and must not make aspirational claims.)*

Health technology assessment involves the systematic review and meta-analysis of evidence on the safety and effectiveness of new technologies in order to create new understandings of the place of these technologies in clinical practice, relative to usual care. It includes economic modelling to determine whether the new technologies are good value for money relative to alternatives. This research supports policy makers' decision-making about public funding of these technologies. Adelaide Health Technology Assessment (AHTA), University of Adelaide, is contracted by the Australian Government to provide this type of research to the Medical Services Advisory Committee which recommends to the Minister of Health the medical services that should be funded by Medicare.

During the period 2011-2016, 23 item numbers were added to the Medicare Benefits Schedule as a direct consequence of research conducted by AHTA between 2002 and 2016. As a result Australians received 869,299 services of proven effectiveness in private hospitals, pathology laboratories and GP clinics at a cost to Medicare of $167,966,943 (Medicare Australia), while 8 ineffective services costing approximately $3.39 million were not delivered (based on average services/year). This meant Australians had timely access to a range of safe, effective and cost-effective medical services that otherwise would have been privately funded or not received at all. Three case studies from this body of work are described here.
1.HbA1C test for the diagnosis of Type II diabetes:
AHTA's research (1) supported creation of a new Medicare pathology service item number in 2014 (66841) for a glycated haemoglobin test for the diagnosis of Type II diabetes in asymptomatic patients at high risk. Diabetes is a common chronic disease affecting 8% of Australians aged 25-75 years. The UK prospective diabetes study found that early diagnosis significantly reduces the risk of diabetes-associated complications including blindness, renal failure and peripheral neuropathy. The HbA1C test supports early diagnosis and treatment and identification of individuals in the pre-diabetic state thereby allowing patients to institute lifestyle changes preventing progression to diabetes. The test is particularly useful in 'hard to reach' communities since it requires neither fasting nor use of a glucose load and is generally diagnostic with a single test. Since listing on the MBS uptake of the test has been rapid with 250,000 tests in 2015 and 290,000 in 2016. Use of the alternative glucose tolerance test has steadily decreased since 2014.

2.Multi-slice computed tomography coronary angiography (MSCTCA) for visualising coronary arteries:
Coronary artery disease (CAD) is a leading cause of premature death and disability. In 2011 a health technology assessment using novel meta-analyses and economic modelling generated by AHTA (2) resulted in creation of Medicare item numbers 57360 and 57361. MSCTCA is a non-invasive procedure used for viewing blockages in coronary arteries and can be used to rule out significant CAD in symptomatic patients. Use of MSCTCA avoids the known risks associated with the more invasive alternative diagnostic procedure, coronary angiography. AHTA's research and subsequent peer reviewed paper (3) informed public funding decisions internationally including in HTA reports informing policy makers in Ontario and Sweden and in coronary artery imaging guidelines from the Cardiac Society of Australia and New Zealand. AHTA's modelled analysis has since been supported by a 2016 Scottish randomised controlled trial which showed that symptomatic patients were more accurately diagnosed using MSCTCA thereby reducing unnecessary investigations and improving subsequent treatment. With more than 200,000 tests conducted since 2011 (Medicare data), inclusion of this test greatly improved accuracy and safety of detection of CAD in Australia. AHTA's research enabled early adoption of this procedure when compared with other countries. For example, in the UK, MSCTCA was only funded as a frontline test for CAD in 2016.
3.Vertebroplasty for the treatment of vertebral compression fracture:
In otherwise healthy patients, vertebral fractures will usually heal with time and conservative management. However, in patients with osteoporotic or malignant vertebral fractures, healing may be impaired and recovery slow. Vertebroplasty is a procedure used to stabilise fractured vertebrae with the aim of relieving the associated pain. The procedure involves injection, usually under local anaesthesia, of synthetic bone cement into the fractured vertebra. AHTA's 2006 report (4) led to an interim listing of vertebroplasty on the MBS (items 35400 and 35402) with the proviso of a review five years post-funding. The 2011 report (5) concluded that vertebroplasty was no more effective than placebo and was not as safe as conservative treatment. Cement leakage from vertebrae was common and could potentially cause emboli. This review led to deletion of the items from the MBS in 2011. AHTA's report was referenced in HTA reports used by public funding decision-making bodies internationally including the Health Information and Quality Authority (Ireland), Dec 2013; Belgian Health Care Knowledge Centre (KCE), 2015; NICE (UK) Aug 2012; HealthPACT (Queensland) Dec 2015; and Health Quality Ontario May 2016. The decision to withdraw funding for vertebroplasty meant that approx. 3900 patients who would have received the procedure from 2011-2016 were spared an invasive and potentially risky procedure for which there was no proven benefit. AHTA received the 2018 David Hailey Impact Award from the International Network of Agencies for Health Technology Assessment (INAHTA) for its assessment of vertebroplasty.

AHTA's research has directly affected health policy in Australia and internationally, with consequent improvements in the safety, effectiveness and cost-effectiveness of health care provided to the public.

**Associated research**

*(Briefly describe the research that led to the impact presented for the UoA. The research must meet the definition of research in Section 1.9 of the EI 2018 Submission Guidelines. The description should include details of:*
*- what was researched*
*- when the research occurred*
*- who conducted the research and what is the association with the institution)*

A health technology is an intervention to prevent, diagnose or treat disease; promote health; provide rehabilitation; or organise healthcare delivery. The intervention can be a test, device, drug, procedure, program or system. Health technology assessment is "The systematic evaluation of the properties and effects of a health technology, addressing the direct and intended effects of this technology, as well as its indirect and unintended consequences, and aimed mainly at informing decision making regarding health technologies." (HTA Glossary) It is conducted by interdisciplinary groups that use explicit analytical frameworks drawing on a variety of methods.

AHTA uses methods such as systematic literature review, meta-analysis, economic modelling, ethical analysis and qualitative analysis of patient experience and public preferences to assess the risks and benefits and implementation issues associated with allowing a health technology into the health system.

During 2002-2016, AHTA provided 34 HTA reports to the Australian Government on a range of medical services. Apart from the case studies described above, assessments included molecular testing for myeloproliferative disease (6), staging of colorectal cancer with MRI (7), endovenous laser treatment for varicose veins (8), retinal photography to diagnose diabetic retinopathy, thermal ablation for liver tumours, wireless oesophageal pH monitoring (9) and use of an artificial bowel sphincter for faecal incontinence (10).

**FoR of associated research**

*(Up to three two-digit FoRs that best describe the associated research)*

| |
|---|
| 11 - Medical and Health Sciences |
| 16 - Studies in Human Society |

**References (up to 10 references, 350 characters per reference)**

*(This section should include a list of up to 10 of the most relevant research outputs associated with the impact)*


1.Parsons J, Vogan A, Morona J, Schubert C & Merlin T (2014). HbA1c testing in the diagnosis of diabetes mellitus. MSAC Application 1267, Assessment Report. Canberra: Commonwealth of Australia. ISBN (online) 978-1-74186-142-6; ISSN (online) 1443-7139.

2.Ivan M, Kreisz F, Merlin T, Buckley L, Newton S, et al. (2007) Multi-slice computed tomography coronary angiography in the visualisation of coronary arteries. MSAC application 1105 Assessment Report. Canberra: Commonwealth of Australia. ISBN (print) 1-74186-594-8; ISBN (online) 1-74186-595-6; ISSN (print) 1443-7120; ISSN (online) 1443-7139.

3.Kreisz F, Merlin T, Moss J, Atherton J, Hiller J et. al. (2009). The pre-test risk stratified cost-effectiveness of 64-slice computed tomography coronary angiography in the detection of significant obstructive coronary artery disease in patients otherwise referred to invasive coronary angiography. Heart, Lung & Circulation (print) 18,3: 200-7.

4.Merlin T, Newton S, Hedayati H, McCaffrey N, Moss J, Hiller J. (2006) Vertebroplasty and kyphoplasty for the treatment of vertebral compression fracture. MSAC Application 27 Assessment Report. Canberra ACT: Commonwealth of Australia. ISBN (Print) 0 642 82935 7; ISSN (print) 1443-7120.

5.Doidge J, Merlin T, Liufu Z, Tamblyn D, Jia L, Hiller J. (2011) Review of Interim Funded Service: Vertebroplasty and new Review of Kyphoplasty. MSAC Application 27.1 Assessment Report. Canberra, ACT: Commonwealth of Australia. ISBN (online) 978-1-74241-456-0; ISSN (online) 1443-7139.

6.Buckley E, Wang S & Merlin T (2009). Molecular testing for myeloproliferative disease. MSAC Application 1125, Assessment Report. Canberra: Commonwealth of Australia.

7.Newton S, Merlin T, Hedayati H, Sullivan T, Street J, Hiller JE (2008). MRI for staging of rectal carcinoma. MSAC Application 1110, Assessment Report. Canberra: Commonwealth of Australia. ISBN (print) 1-74186-749-5; ISBN (online) 1-74186-750-9; ISSN (print) 1443-7120; ISSN (online) 1443-7139.

8.Mundy, L, Merlin, TL, Fitridge, RA & Hiller JE, 2005. Systematic review of endovenous laser treatment for varicose veins. British Journal of Surgery, vol. 92, no. 10, pp. 1189-1194.

9.Kessels S, Schubert C, Newton S & Merlin T (2014). Catheter-free (wireless) ambulatory oesophageal pH monitoring for gastro-oesophageal reflux disease (GORD). MSAC Application 1203, Assessment Report. Canberra: Commonwealth of Australia. ISBN (online) 978 1741861419; ISSN (online) 14437139.

10.Mundy, L, Merlin, TL, Maddern, GJ & Hiller, JE, 2004. Systematic review of safety and effectiveness of an artificial bowel sphincter for faecal incontinence. British Journal of Surgery, vol. 91, pp. 665-672.

# Additional impact indicator information

**Additional impact indicator information**

*(Provide information about any indicators not captured above that are relevant to the impact study, for example return on investment, jobs created, improvements in quality of life years (QALYs). Additional indicators should be quantitative in nature and include:*
*- name of indicator (100 characters)*
*- data for indicator (200 characters)*
*- brief description of indicator and how it is calculated (300 characters).)*

Name

AHTA's provision of jobs for graduate staff

Indicator Data

Employment to over 90 research staff during the period 2001-2016 including academic teaching staff employed in the School of Public Health.

Indicator Description

Count of research staff employed over the period. Data demonstrates that the employment and research opportunities provided by AHTA have helped stabilise the research and teaching environment of the School of Public Health and provided employment for health and medicine graduates in South Australia.