



Private Healthcare Australia
Better Cover. Better Access. Better Care.



Prostheses List usage 2020-2021: product groups with the highest single-year volume growth across Australia

Ben Harris, Julian Lim

First edition, December 2021

Contact:

Ben Harris, Director Policy and Research

(02) 6202 1000

ben.harris@pha.org.au

Introduction

This report aims to highlight the highest growing areas of the Prostheses List between 2019-20 and 2020-21.

The use of medical devices is a vital part of modern medicine, providing significant consumer benefit.

However, many medical devices in Australia are overpriced, some are overused, and for a number of devices, there is little or no evidence that there is a patient benefit.

Prostheses use is the fastest area of private health fund expenditure growth over recent years. Current expenditure by health funds on prostheses is over \$2.2 billion per annum and growing at a higher rate than other parts of the system such as hospital benefits and medical benefits.

The Australian Government sets the price on over 11,000 individual items on the Prostheses List, determined by reference pricing rather than any market mechanism. Health funds are required to pay a set price regardless of quality, efficacy, efficiency or even safety.

As insurers must pay for items on the Prostheses List out of a limited pool of members' funds, the high growth in medical device funding means other areas of the system, such as hospitals and medical costs, are constrained, and/or premiums increase. If premiums increase too much, more people opt out of private health insurance, reducing the funding available to pay for healthcare and putting pressure on the public health system.

Medical practitioners and their professional associations often have little visibility of the use of prostheses or the cost. Private Healthcare Australia will be taking a more active role in providing data to medical associations, so they may provide any advice to their members they consider necessary or useful. Hospitals may also find these data of use.

Private Healthcare Australia supports choice for medical practitioners and their patients when choosing medical devices. This choice should be informed, with data around indications for use, cost-benefit, safety and effectiveness all playing a part in ensuring medical practitioners offer the best options for their patients and the communities they serve.

Context

COVID-19 continued to affect surgery rates throughout the financial year, with periods of higher 'catch up surgeries' for much of the year, and periods in some jurisdictions where elective surgeries were curtailed.

The number of surgeries covered by private health insurance funds in 2020-21 increased from the previous year and was also above 2018-19 levels.

Each major category of spending increased in 2020-21. The previous year, there was a 3.5% decline for medical benefits. Rebates for private hospitals and private patients in public hospitals also declined marginally. However, rebates for prostheses funded through the Prostheses List increased in 2019-20 compared to 2018-19.

In that context, this report highlights the areas of the Prostheses List which have had significant growth over the year but provides limited commentary. Professional medical associations will be better placed to assess these data.

Methodology

There are 442 unique product groups on the Prostheses List from financial year 2019-20 to 2020-21. Prostheses utilisation and benefits data have been sourced from unpublished Hospital Casemix Protocol (HCP) data. The HCP data collection is a legislated data collection for all private health insurance funded admitted patient separations, for which private health insurers have paid benefits. The data are collected by public and private hospitals, including day facilities, and then supplied to private health insurers, who in turn submit the data to the Department of Health. These data are partially incomplete, and the proportion of data available increases during the subsequent financial year.

At the time of analysis (late November 2020), the data set for 2019-20 was 89% complete, and the data set for 2020-21 was 83% complete.

The raw data on prostheses product groups were simply extrapolated to 100% (100/89 for 2019-20 data and 100/83 for 2020-21 data).

As the data are not complete, a generous interpretation of growth was applied. Product groups were then only considered growth areas where the extrapolated year on year growth in volume and expenditure growth both exceeded 10%.

COVID-19 delayed surgeries in 2019-20. Several product groups had significant increases from 2019-20 to 2020-21 following lower levels of surgeries in April-June 2020. For example, the use of cataract lenses increased last financial year, but this followed a fall in 2019-20. The use of lenses in 2020-21 was only slightly above the 2018-19 rate.

To mitigate the effect of delayed surgery catch up in 2020-21, we have introduced a further criterion from last year's report, that the use of the product group in 2020-21 is at least 10% higher than the rate of use in both 2018-19 and 2019-20. See appendix one for a list of product groups that were excluded with this criterion.

As smaller numbers are more prone to extrapolation errors, product groups with small volumes for 2020-21 (<100) were excluded, as were product groups with low expenditure in 2020-21 (<\$100,000).

Results

144 product groups had an estimated increase in usage from 2019-20 to 2020-21 equal to or greater than 10%.

26 product groups were excluded as the estimated increase in benefits was less than 10%.

A further 34 product groups were excluded as the estimated usage was fewer than 100 units in 2020-21.

Six more product groups were excluded as the estimated cost was less than \$100,000 in 2020-21.

22 further product groups did not meet the criteria of a 10% increase in usage over 2018-19 levels (these are listed in appendix one).

56 product groups met the criteria and are described below.

Discussion

There are wide variety of product groups represented in the high growth product groups. Much of the growth can be explained with reference to the uptake of new products or changes in Medicare Benefits Schedule (MBS) service numbers, while other product groups do not have clear explanations.

Human tissue (part B)

Orthopaedic human tissue (in Part B of the Prostheses List) experienced an estimated 25% growth in volume from 2019-20 to 2020-21. This is the second year of very high growth, following a 31% increase the previous year.

In terms of expenditure, this is the largest increase in the Prostheses List over the year, with an additional estimated \$14.6 million of expenditure (following a \$17 million increase the previous year). Orthopaedic human tissue items are most used for spinal surgery.

Ophthalmic

Two ophthalmic product groups met the criteria:

- 01.03.02 Non-viscous Intraocular Fluids (est. 20% growth)
- 01.05.03 Ab Interno Glaucoma Drainage Device (est. 21% growth)

The growth in non-viscous intraocular fluids is slightly above increases in cataract surgery (up 16% over the year) and an 8% increase in non-cataract eye episodes. There has been an estimated 48% increase in the use of these products over the past five years, well above the growth in eye surgeries over the period.

The Ab Interno Glaucoma Drainage Devices are a reasonably new category on the Prostheses List and has grown from a \$1.2 million category in 2015-16 to over \$12 million five years later.

Ear, nose and throat

No product groups in the ear, nose and throat category met the criteria.

General and miscellaneous

General and miscellaneous items can be used across many types of surgeries and are significant drivers of growth of costs for the Prostheses List. Items in this category have rarely been assessed for cost-effectiveness. Many of these products are due to be removed from the Prostheses List and funded through the normal mechanisms for funding consumable products.

Six general and miscellaneous product groups met the criteria:

- 03.03.03 Jejunostomy tubes (est. 15% growth)
- 03.05.02 Haemostatic devices – powders (est. 40% growth)
- 03.05.05 Haemostatic devices – foam (est. 27% growth)
- 03.06.05 Nerve repair stents (est. 13% growth)
- 03.07.02 Endobronchial valves (est. 39% growth)
- 03.08.01 Adhesion barriers (est. 20% growth)

The use of jejunostomy tubes has been increasing in use over the past five years, with the number used more than doubled off a small base.

The increased use of haemostatic powders follows an increase of 19% last year. Over five years the use of these items has increased by more than an estimated 150%.

Haemostatic foams have grown dramatically over the past five years, from almost zero to over \$2.5 million per annum. The use of adhesion barriers has also increased significantly over the past five years, by an estimated 75%.

The growth of endobronchial valves in 2020-21 is not unusual, as this is a small category that has been quite volatile over recent years.

Neurosurgical

Four neurosurgical product groups met the criteria:

- 04.02.06 Dura repair liquid sealant (>3-6ml) (est. 40% growth)
- 04.06.03 Intrathecal catheter (est. 54% growth)
- 04.08.01 Neuro intervention stents (est. 31% growth)
- 04.08.03 Neuro intervention assist devices (est. 15% growth)

There has been an estimated 40% increase in the use of Liquid Sealant (>3 to 6ml) for Dura Defect Repairs (04.02.06) over the last year, which follows a 20% increase between 2018-19 and 2019-20 and a four-fold increase over the past five years (an estimated 466% increase).

The most common MBS item used with this product group is 31575 (*Sleeve gastrectomy, with or without crural repair taking 45 minutes or less, for a patient with clinically severe obesity*), which is not a neurosurgical item. It is unlikely that the Prostheses List Advisory Committee considered the use of these products in this context to assess cost-effectiveness.

There has been an estimated 31% increase in neurological intervention stents (04.08.03) between 2019-20 and 2020-21, with an estimated 13% increase in assist devices (this product group contains microcatheters, coil detachment devices and vascular embolisation balloons). There has been uneven growth in these categories over the past five years, but on average ahead of annual average growth rate of neurosurgical operations over the last five years of 4.7%.

Urogenital

The use of prostatic retractors (05.03.02) has increased by an estimated 13% between 2019-20 and 2020-21, consistent with the growth in use of the MBS item most used with this device (36811, *Cystoscopy, with insertion of one or more urethral or prostatic prostheses*).

Specialist orthopaedic

Specialist orthopaedic is the largest category by volume and expenditure on the Prostheses List. Six product groups experienced high growth between 2019-20 and 2020-21 and met the criteria:

- 06.01.01 Ankle joint component (est. 25% growth)
- 06.01.03 Ankle joint (est. 14% growth)
- 06.03.08 Shoulder - glenoid (est. 15% growth)
- 06.03.08 Shoulder - accessories (est. 18% growth)
- 06.03.14 Bone cement (est. 13% growth)
- 06.03.16 Meshes (est. 25% growth)

Both ankle joints and ankle joint components have increased markedly for the second year in a row and have doubled in use over the past five years. The reason for the very large increase in the number of total ankle joint replacements is unclear.

The increase in shoulder joint reconstructions is consistent with MBS data, but over the last five years the rate of increase of accessory usage is double that of glenoid components.

Plastic and reconstructive

Seven product groups in this category experienced high growth.

- 07.01.04 Non-mesh Craniomaxillofacial Reconstruction & Fixation (est 18% growth)
- 07.01.06 Screws Craniomaxillofacial Reconstruction & Fixation (est 17% growth)
- 07.02.05 Mandible, Maxilla and Temporomandibular Joint (TMJ) (est. 78% growth)
- 07.02.09 Anatomical biomodel (est. 79% growth)
- 07.03.01 Dental implants – abutment (est. 82% growth)
- 07.03.01 Dental implants – endosseous implants (est. 56% growth)
- 07.05.03 Artificial Skin (est. 48% growth)

The use of anatomical biomodels have been increasing significantly, utilised in ways not envisaged when they were placed on the Prostheses List. Multiple biomodels are being used per implant, and biomodels are also being used where there is no other prosthesis. These uses have driven an estimated 78% growth in the product group. Biomodels are also used extensively outside of the plastic and reconstructive MBS items. Over the past five years there has been an estimated increase of over 6500% in the use of these items, leading to more than \$5 million in additional expenditure.

The estimated 79% growth in Mandible, Maxilla and Temporomandibular Joint (TMJ) items was primarily driven by an increase in surgical guides, another item which is not implanted in the body. This significant growth added more than \$9 million in expenditure in a single year. This is another product group which is used extensively outside the indications for which it was assessed.

The use of dental implants – abutment items in a hospital setting continue to increase out of proportion to the most common MBS item used, 45841 (*ALVEOLAR RIDGE AUGMENTATION with bone or alloplast or both – unilateral*), which increased by 21% over the past year in hospital settings.

Artificial skin products have increased significantly for the second year in a row, following a 47% increase last year. PHA has been advised this is likely due to a change in clinical guidelines.

Cardiac

Each of the three high growth product groups in the cardiac product category are new to the Prostheses List, and the high growth is most likely the result of accelerated implementation.

Cardiac Ablation devices (08.18) and Catheter Delivery devices (08.17) are new sub-categories on the Prostheses List. Cardiac Ablation devices (08.18) were introduced in 2018-19, and devices growth for Radio frequency (RF) Ablation) increased by an estimated 33% over the past 12 months. Transcatheter Aortic Valve Implantation (TAVI) devices (08.17.01) were introduced in 2017/18, and usage last year increased by an estimated 16%.

Another new product group in the cardiac product category are antibacterial envelopes in the pacemaker lead and accessories sub-category (08.11.02). This group is four years old and had an estimated growth of 41% in 2020-21.

Cardiothoracic

Tissue patches (09.05.01) have increased by an estimated 24% between 2019-20 and 2020-21. Tissue patches are commonly used with MBS item 38553 – *Repair or replacement of ascending thoracic aorta (not including implantation of coronary arteries)*, which increased by a similar amount over the past year. Usage has doubled in the last five years.

The use of modified tube aorta and side branch grafts (09.09.01) increased by an estimated 28% over the year, after being virtually flat over the previous four years. The MBS item most commonly used with this device is 38556 - *Repair or replacement of ascending thoracic aorta (including implantation of coronary arteries)*, which increased by 59% over the past year.

Sternum fixation devices (09.10.01) increased by 18% over the year, with the growth driven by one manufacturer billing multiple times for each procedure for different components of the system. Private health funds have now been advised to consider not paying for multiple claims for these systems.

Vascular

Two product groups in the vascular category experienced high growth between 2019-20 and 2020-21:

- 10.06.02 Arterial embolic protection devices (est. 20% growth)
- 10.08.03 Polymer occlusion devices (est. 20% growth)

The use of devices in both product groups have grown consistent with increases in MBS services provided (commonly used with items 38495 and 35410 respectively).

Hip

There have been significant increases in a range of prostheses for hip replacements from 2019-20 to 2020-21, with nine product groups meeting the criteria:

- 11.01.02 Cemented, long length femoral components (est. 20% growth)
- 11.01.03 Uncemented femoral components (est. 33% growth)
- 11.02.02 Conventional femoral heads over 32mm (est. 17% growth)
- 11.02.06 Bipolar/multipolar femoral heads over 32mm (est. 12% growth)
- 11.03.02 Uncemented shells (est. 18% growth)
- 11.03.03 Uncemented shells, HA (est. 13% growth)
- 11.03.04 Insert/liners (est. 19% growth)
- 11.03.04 Bonded shells/liners (est. 40% growth)
- 11.04.01 Neck adaptor (est. 24% growth)

These increases are roughly in line with a 14% increase in MBS services for hip replacements, except for a larger increase in three product groups – Uncemented femoral components, bonded shells/liners, and neck adaptors.

Knee

There has been a very large increase in the number of knee reconstructions and revisions performed in 2020-21, with an increase of almost 17% over the year for MBS items 49517, 49518 and 49527. Knee replacements had experienced a 4.7-5.7% decline from the previous financial year due to the pausing of elective surgery in April and May 2020.

Eleven product groups experienced high growth:

- 12.01.01 Cemented alloy femoral components (est. 17% growth)
- 12.01.04 Uncemented alloy femoral components (est. 38% growth)
- 12.01.05 Uncemented alloy, HA coating femoral components (est. 21% growth)
- 12.03.05 Uncemented alloy, HA coating tibial tray components (est. 45% growth)
- 12.03.07 Uncemented alloy, mobile insert tibial tray components (est. 119% growth)
- 12.05.01 Minimally stabilised tibial inserts (est. 22% growth)
- 12.07.01 Alloy patella femoral replacement (est. 39% growth)
- 12.08.01 Cemented, all polyethylene patellar components (est. 20% growth)
- 12.09.03 Diaphyseal extension pieces, tumour products (est. 19% growth)
- 12.11.03 Knee accessories – bolts (est. 18% growth)

Most of these increases are consistent with large increases in knee surgeries. However, the use of uncemented alloy femoral components, uncemented alloy tibial tray components (HA coated) and alloy patella femoral replacements all increased by more than double the increase in surgery rates.

Spinal

There are three product groups in the spinal category with high growth between 2019-20 and 2020-21 which met the criteria:

- 13.02.03 Accessories: Cap/Cover Plate (est. 21% growth)
- 13.02.04 Accessories: Cap/Cover Plate, complex (est. 31% growth)
- 13.14.01 Sacroiliac Joint Fixation Device (est. 16% growth)

The cap/cover plate product groups have experienced very high growth for each of the last two years.

In addition to these high growth product groups in the spinal category, spinal surgery is the most common MBS item used with orthopaedic human tissue and haemostatic powders (see above).

Conclusion

Changes to MBS service levels are the most common reason for a Prostheses List product group to experience high growth, as expected. However, there are several product groups where the correlation between the number of surgical episodes and the increasing use of medical devices is weak. These are the areas where individual doctors and their clinical societies may wish to consider reasons for the changes in practice to ensure patients' needs are being met. There is a role for hospitals, funders and regulators to consider the feedback from the medical profession and adjust settings as required. This may include amending rules of service, adjusting prices for devices to modify the incentives, or promulgating and promoting best practice standards.

All Australians have a responsibility to ensure our health system is safe, high quality, effective and efficient. The data in this report should help inform the decisions of clinicians, hospitals, funders and regulators on the use of medical devices on the Prostheses List.

Appendix one

Product groups increasing in 2020-21 but not more than 10% higher than 2019-20

COVID-19 delayed surgeries in 2019-20. Several product groups had significant increases from 2019-20 to 2020-21 following lower levels of surgeries in April-June 2020.

To mitigate the effect of delayed surgeries caught up in 2020-21, we have introduced a further criterion from last year's report, that the use of the product group in 2020-21 is at least 10% higher than the rate of use in both 2018-19 and 2019-20.

Below is the list of product groups that increased in 2019-20 by over 10% but did not meet the additional criterion of usage being 10% higher than 2018-19.

- 01.02.02 – Foldable Posterior Chamber Intraocular Lenses
- 02.01.01 - Cochlear Implants
- 02.01.04 - Implantable Bone Conduction Hearing System
- 02.01.05 - Ossicle/Middle Ear Prosthesis
- 03.04.02 - Gastric Band without Port
- 03.06.05 - Enteral Stents
- 04.02.05 – Dura Defect Repair, Liquid Sealant (0 to 3ml)
- 04.03.03 – Hydrocephalus Catheter
- 04.04.02 - Deep Brain Stimulation (DBS) External Components
- 04.04.03 – Deep Brain Stimulation (DBS) Leads
- 04.04.05 - Deep Brain Stimulation (DBS) Accessories
- 04.05.05 - Neurostimulation Therapies for Pain Management Accessories
- 04.06.01 - Intrathecal Drug Delivery System - Implantable Infusion Pump
- 05.01.04 - Injectable, Synthetic Incontinence Prostheses
- 06.02.01 – Wrist
- 06.02.04 - Shoulder – Humeral
- 11.01.04 - Uncemented, HA Coated Femoral Components – Hip
- 11.01.07 - Uncemented, Modular Femoral Components – Hip
- 11.02.01 - Conventional Femoral Heads, ≤32mm – Hip
- 12.11.10 - Stems - straight or offset - Knee Accessories
- 13.05.02 - No Integral Fixation Spinal Plate

Appendix two

Product groups that experienced significant decline in 2020-21

107 product groups experienced a decline in usage of 10% or more from 2019-20 levels.

Three of these product groups did not experience a decline in benefits over 10%

76 product groups were excluded with estimated volumes less than 100 units and/or benefits of less than \$100,000 in 2020-21.

28 product groups had significant declines in usage while meeting the volume and benefits criteria.

- 02.01.06 Ventilation tube/grommet
- 03.01.01 Hepatic, Yltrium 90, standard dose
- 03.01.01 Prostatic I-125
- 03.02.04 Infusion pumps, spring powered
- 03.04.01 Adjustable gastric band with port
- 03.08.09 Plugs
- 04.05.04 Lead extension
- 05.01.03 Sling
- 05.04.01 Reconstructive Material, Synthetic
- 06.01.02 Sinus Tarsi Implant
- 06.03.11 External Fixateurs
- 06.03.17 Tumour/Limb deficiency
- 07.05.02 Tissue expanders
- 08.01.02 Features of 8.1.1 plus auto test sensing parameters, auto capture threshold test, lead impedance test, wireless remote analysis
- 09.02.02 Stented, non anatomical
- 09.02.04 Rapid deployment aortic valve with dedicated single use tools
- 09.04.04 Atrio-Ventricular Ring or Band, standard
- 09.09.06 Straight tube
- 10.03.01 Tube
- 11.01.10 Uncemented, Modular, HA Coated, Long Lengths (Stem \geq 200mm; Body \geq 75mm; Cone \geq 70mm; Spacer/Sleeve \geq 50mm)
- 11.02.03 Metal on Metal Heads
- 12. 01.02 Cemented, Alloy, PMMA Coating
- 12. 03.06 Uncemented, Alloy, Moulded Polyethylene
- 12.09.07 Stems
- 13.03.02 Offset
- 13.04.01 Hook
- 13.12.01 Telescoping cage
- 13.13.01 Interspinous fixation device