

Methodology for Determining the Benchmark Price for Prostheses in Australian Public Hospitals

December 2021



IHPA

Methodology for Determining the Benchmark Price for Prostheses in Australian Public Hospitals

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Glossary

ACHI	Australian Classification of Health Interventions
AR-DRG	Australian Refined Diagnosis Related Groups
HCP	Hospital Casemix Protocol
ICD-10-AM	International Classification of Diseases 10th revision Australian Modification
IHPA	Independent Hospital Pricing Authority
LHN	Local hospital network
MTAA	Medical Technology Association of Australia
NHCDC	National Hospital Cost Data Collection
NJRR	National Joint Replacement Registry
NSW	New South Wales
PHDB	Private Hospital Data Bureau
PL	Prostheses List

A large green graphic consisting of two overlapping shapes. The left shape is a rounded rectangle with a white number '1' inside. The right shape is a larger, more complex shape that tapers to a point on the right side, also in a darker shade of green.

1

Introduction

1

Introduction

The Independent Hospital Pricing Authority (IHPA) is an independent government agency established under the *National Health Reform Act* (Cwth) as part of the National Health Reform Agreement.

IHPA's primary function is to calculate and deliver an annual national efficient price. The national efficient price is a major determinant of the level of Australian Government funding for public hospital services and provides a price signal or benchmark for the efficient cost of providing public hospital services. IHPA also undertakes several major areas of work designed to inform the annual determination of the national efficient price, including ongoing consultation with all Australian health departments, expert advisory committees and key stakeholders.

The 2021–22 Federal Budget, released in May 2021, included a measure to modernise and improve the private health insurance Prostheses List (PL).

Under this measure the Australian Government is investing \$22 million over four years to reduce the cost of medical devices used in the private health sector and streamline access to new medical devices, which will improve the affordability and value of private health insurance for Australians.

This measure will better align the price set for medical devices on the PL for private providers with those paid for in competitive markets, such as the public hospital system.

This will be implemented by the Commonwealth Department of Health in conjunction with IHPA and in consultation with key stakeholders.

The prices charged for medical devices in the private health sector, mandated by the current PL in most cases, far outweigh the costs of the same items in other competitive markets including the public hospital system. In 2019–20, some costs were up to 1.5 times higher.

The PL has grown over time in both size and complexity to include more than 11,600 items. This measure will also better define the purpose and scope of the PL to provide greater clarity and certainty about which items are eligible for inclusion, consolidate the grouping scheme, and streamline the administration of the PL to ensure faster patient access to new, high-technology medical devices.

IHPA has been requested to establish the benchmark price that is paid for prostheses in the public sector, in order that the gap between the public sector benchmark price and the prices (also referred to as PL benefits) currently mandated on the PL can be determined. IHPA will provide a report to the Commonwealth Department of Health on this in early 2022.

IHPA released a [Consultation Paper on a Methodology for Determining the Benchmark Price for Prostheses in Australian Public Hospitals](#) (the Consultation Paper) on 6 September 2021.

The Consultation Paper sought feedback on the key issues to assist IHPA in preparing the report to the Commonwealth Department of Health regarding the benchmark price for prostheses in the public sector.

Specifically, it sought feedback on:

- the data sources that could be used
- the proposed methodology for calculating the benchmark price; and
- any factors that should be accounted for to reflect differences between the public and private hospital sectors with respect to prostheses prices.

IHPA received 24 submissions to the Consultation Paper. All submissions have been made available on the [IHPA website](#), unless they were marked confidential due to commercial or other reasons.

Stakeholders provided a range of feedback:

- *on potential data sources, and the limitations associated with that data.* Specifically, there was feedback on the use of sales data, National Hospital Cost

Data Collection (NHCDC), Hospital Casemix Protocol (HCP), Private Hospital Data Bureau (PHDB), National Joint Replacement Registry (NJRR), state and territory procurement data, and international data sources.

- on approaches for determining the benchmark price. Stakeholders provided a range of considerations and concerns.
- on the factors that may lead to legitimate differences between the public and private hospital sectors. Some stakeholders outlined factors behind differences in prostheses costs between the sectors and others questioned whether there were legitimate reasons for the cost differences.

Development of this document has been informed by stakeholder feedback to the Consultation Paper.

IHPA notes the feedback provided by stakeholders is of high value and critical importance to inform its responsibility in providing PL pricing advice.

The feedback provided through this process will lay the foundation for a knowledge base to be built on over time and serve IHPA as a primary source of information on the important role that the prostheses device sector plays in supporting the health of all Australians.

A large green graphic consisting of two overlapping arrow-like shapes pointing to the right. The number '2' is centered in the leftmost shape.

2

Prostheses purchasing arrangements in the public and private hospital sectors

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Prostheses purchasing arrangements in the public and private hospital sectors

The purchasing arrangements for prostheses in Australian public hospitals are significantly different from the purchasing arrangements in the private hospital sector.

Most states and territories operate some level of tendering arrangement at the state level. This varies from simple 'registration' type arrangements, which allows the suppliers product to be included on the central catalogue of items available for purchase by a hospital or local hospital network (LHN) in that state, through to sophisticated tendering approaches securing discounts to a standard price based either on guaranteed volumes, or achieving market shares within a particular product category. These approaches generally rely on hospitals agreeing to limit the range of products available to those devices that are effective and cost-effective.

In some cases hospitals with large volumes of particular types of surgery may choose to further limit the range of products available for clinicians to choose, and as a result are able to achieve further discounts over and above that available in state based tendering approach.

It is important to note that the narrowing of device choice is generally carried out with extensive clinician engagement, and there are generally mechanisms to access alternative devices when clinically necessary, as requested and justified by the clinicians.

This means that in the public hospital system there is no single price for a given product across the country, and in fact there can be multiple prices for the same product within a single state, depending on the market share discounts applied at different LHNs.

A further confounding factor is that state tenders group items together into product categories, and any market share discount achieved for the category applies to all products within the category. This means that when prices are compared there is not always an obvious price volume relationship, as a product with a lower

volume of sales may be at a lower price because of a market share discount being applied to a larger product category.

A number of prostheses suppliers have also emphasised that, on occasion, products may be supplied to the public system at a price that does not reflect the market price, either on compassionate grounds (where for clinical reasons a patient requires a product that would generally not be available in the public sector due to cost considerations) or for other reasons, such as training and education purposes.

In contrast, prostheses purchasing in the private hospital system is more varied. Device selection is generally the domain of the treating clinician, with hospitals choosing to exercise significantly less control over the range of products available. Devices are often sold to the hospital at (or below) the PL benefit level and the private insurer is compelled to pay the PL this benefit to the hospital.

Some private hospitals may receive a rebate based on the total value of products purchased from a supplier over a period, however the value and nature of these rebates are not publicly available. In the 2017 Senate Committee Inquiry into Price regulation associated with the Prostheses List Framework, Ramsay Healthcare testified that the rebates in this area were in the vicinity of 5 to 10 per cent.



Feedback received

A range of feedback was provided by stakeholders relating to the broader prostheses reform policy and its implementation including considerations on who bears the cost difference between private and public prices, recommendations to conduct annual reviews of the benchmarking process and obtaining clinical input to inform pricing.

3

Data sources

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Data sources

There are a number of data sources which IHPA can utilise in the calculation of the benchmark cost for prostheses in public hospitals.

3.1. National Hospital Cost Data Collection

The National Hospital Cost Data Collection (NHCDC) is an annual collection of public hospital cost data in Australia. The collection matches patient level activity data with the corresponding resources utilised by the hospital in administering care for the patient.

This collection was established in 1996 with the primary aim of providing Australian governments and the health care industry with a nationally consistent method of costing all types of hospital activity related to the care of patients.

The health departments of Australia's states and territories submit their cost data to IHPA. Taken together, the collection represents the primary source of information about the cost of treating patients in Australian hospitals.

The NHCDC data is reported across a number of cost components (known as cost buckets), including a specific cost bucket for prostheses.

Significantly, costs are reported at the episode level, not at the device level, so the NHCDC data for prostheses is a summation of the costs of all of the devices implanted in the episode of care. Episodes of care are classified using the Australian Refined Diagnosis Related Groups classification (AR-DRGs), which assigns episodes of care into clinically meaningful and resource homogenous groups to enable meaningful comparisons to be made across different casemix groups.

The most recently available data held by IHPA is for the 2019–20 financial year.

More information on the NHCDC is available on IHPA's [website](#).

3.2. Hospital Casemix Protocol

The Hospital Casemix Protocol (HCP) data set is

a valuable source of information for the private health sector. The collection includes clinical, demographic and financial information for privately insured admitted patient services.

The collection has episodic, benefit and charge data for privately insured admitted patient episodes nationally. It also includes information on which PL devices were used in each episode of care. More information on the HCP can be found on the Commonwealth Department of Health [website](#).

3.3. Sale price data from industry

The Medical Technology Association of Australia's (MTAA) response to the December 2020 consultation paper released by the Commonwealth Department of Health proposed that the public benchmark price should be calculated using data collected from suppliers, either by an independent third party, or by the MTAA.

IHPA has requested that MTAA coordinate the supply of data to IHPA. Data relating to the actual price of sales (not, for example, nominal book price or recommended retail price) will need to be provided by each supplier at the billing code level, disaggregated by state and cover the 2020–21 financial year. This data was requested to be provided to IHPA no later than 31 October 2021, otherwise it cannot be used to inform IHPA's first benchmarking report.

MTAA has also agreed to coordinate the collection of data from non-members.

In the Consultation Paper, IHPA proposed the most easily achieved approach would be the adoption of a benchmark price based on NHCDC data, at the AR-DRG level.

3.4. Purchase price data from states and territories

Most state and territories in Australia have some form of centralised purchasing arrangements including for many consumables used in public

hospitals. For example, in New South Wales (NSW), HealthShare NSW Procurement is NSW Health's central point for goods and services tendering and contracting. It creates a central hub for procurement activity and helps lower purchasing costs...'

On 3 June 2021, the Minister for Health, the Hon Greg Hunt MP, wrote to state and territory health ministers seeking their assistance in the PL reforms by providing access to prostheses purchase prices for the public sector. A number of states have agreed to assist where they are able to, subject to confidentiality clauses that may be included in contracts with prostheses suppliers.



Consultation questions

- Which data source should IHPA utilise as the primary data source for determining the public sector benchmark price?
- Are there any other sources of data IHPA should consider for determining the public sector benchmark price?
- What risks should IHPA consider if DRG level information were to be utilised? Are there alternative approaches IHPA should consider?



Feedback received

Some stakeholders supported the use of the NHCDC, with most of these proponents suggesting its use as a secondary dataset to supplement purchase price data. Two stakeholders were opposed to the use of the NHCDC claiming this dataset lacks the granularity required for the purposes of pricing.

IHPA notes that if device information is made available by manufacturers, then the NHCDC will not be the primary data source to support the development of the benchmark price.

Five stakeholders supported the use of the HCP dataset claiming it provides a comparison between public and private system costs. One private hospital provider was opposed to the use of the HCP dataset as it only includes activity paid for by private health insurers, and therefore represents a subset of relevant privately funded hospital services data.

There was broad support from stakeholders for the use of sales price data from industry. Most stakeholders noted that sales price data, particularly at a billing code level, enables accurate matching from the public system to the PL and, unlike some other sources, is not restricted by confidentiality agreements. Some stakeholders who did not support the use of sales price data noted that this data does not reflect health outcomes and may lack transparency due to vested interests of device sponsors.

IHPA notes stakeholders' concerns regarding the perceived lack of transparency for sales price data and inability to carry out independent verification of its accuracy. However, as this dataset is comprehensive and sufficiently granular, IHPA expects that it will be acceptable for use as a primary source for the development of the benchmark price, when supported by secondary data sources.

Eleven stakeholders supported the use of purchase price data from states and territories to calculate the benchmark cost, but expressed some concern around the variability arising from volume purchasing arrangements, contractual confidentiality arrangements limiting data sharing, variance in data collection between jurisdictions and data limitations for low volume devices.

Other data sources recommended by stakeholders included international benchmarking pricing data, the National Joint Replacement Registry (NJRR) and the Private Hospital Data Bureau (PHDB).

International benchmarking can be used to validate and compare overall relative performance against other comparable countries and engage in best practice sharing. Where possible, IHPA may use data or information on international markets to provide further context to decisions relating to PL pricing advice.

The NJRR was noted by a number of stakeholders as a valuable source of health outcomes data, which is useful in determining the optimal mix of devices for treating patients and moving the system to a more value-based pricing approach. The NJRR contains information on the performance of joint replacement prostheses, which is useful in comparing device outcomes across grouped population cohorts. However, the relative effectiveness and pricing between different devices with similar intended use on the PL is a consideration for the prostheses reform more broadly and is beyond the scope in establishing public sector benchmark prices for items on the PL.

Therefore, the NJRR would only be considered as a secondary source for this analysis. IHPA will continue to work towards expanding the data sources it uses to inform PL pricing advice over time, with consideration for NJRR data.

One private hospital provider recommended that PHDB data can be used to gain a broader perspective of private hospital market usage compared to the HCP dataset.

IHPA notes that while the PHDB collects information on activity provided in private hospitals, it does not contain the prosthetic item-level data that is available in the HCP dataset. IHPA will use the PHDB as a secondary data source to supplement the HCP dataset.

A number of stakeholders supported the use of AR-DRG level information, noting this classification as an important benchmark to determine pricing as it is a clinically meaningful way to relate number and type of patients to resources required by the hospital.

However, a number of stakeholders, mainly from the device manufacturing industry, were opposed to the use of AR-DRG level information, stating that the codes are too generalised for benchmarking purposes.

Regardless of their stance, there was general consensus that there are important risks, considerations and limitations associated with the use of AR-DRG level information. For example:

- The classification of an episode can be influenced by patient characteristics or length of stay, thus changing the AR-DRG allocation for the episode of care; and
- Admission rules may be different between states and territories as well as public and private sectors, creating challenges in benchmarking price.

IHPA acknowledges the shortcomings of episode-level data for pricing individual prostheses. However, IHPA views AR-DRG level information as useful for validating and informing assumptions, particularly where there are gaps or inconsistencies between other data sources.



IHPA's decision

IHPA will use a combination of sales data provided by manufacturers and state and territory procurement data as the primary sources of information to support the development of the benchmark price.

IHPA will also use a range of other data collections, including the HCP, PHDB and the public sector NHCDC to further support and inform the PL pricing advice.



4

Methodology for calculating the benchmark price

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Methodology for calculating the benchmark price

4.1. Data cleansing

It is important that the benchmarking methodology uses representative data. Where there are device costs that are exceptionally low or high compared to the average price, these would be removed through an outlier trimming process, where possible. The amount of data cleansing required, and possible, will depend on the data source utilised.

4.2. Calculation methodology

Determining the approach for establishing the benchmark price for prostheses in the public sector, there are a number of options that could be adopted:

Volume weighted average price

This approach aligns most closely to IHPA's approach to determining the national efficient price each year.

In undertaking pricing work for public hospitals, IHPA has adopted the volume weighted average price as the basis for determining the National Efficient Price. Using this approach ensures that the National Efficient Price is not unduly influenced by small numbers of high or low cost episodes of care.

As the name suggests, this method weights each price according to the volume of sales. This means that a price with a higher volume of sales will have more influence on the result than a price with a low-volume of sales.

This method is arguably more representative of the public price as it ensures that the full range of prices in the public sector are considered.

In the Consultation Paper, IHPA proposed a volume weighted average price as the preferred approach.

Lowest available public sector price

Another possible option would be to utilise the lowest available public sector price at the state level regardless of the volume of product sold.

This approach would result in a lower public benchmark price being established and would lead to larger reductions in the PL prices compared to the volume weighted public sector price described above.

However, it could be argued that the lowest available public sector price is not a fair comparator, as the lowest public sector prices arise when significant market share guarantees are achieved — often in the vicinity of 80 to 90 per cent market share at the hospital or local hospital network level.

For this reason, IHPA noted in the Consultation Paper it did not propose to adopt this approach.

AR-DRG Price

In the Consultation Paper, IHPA noted that if suppliers are unwilling or unable to provide data to IHPA, then an alternative approach to determining the benchmark cost of prostheses in the public sector would need to be adopted. The most easily achieved approach would be the adoption of a benchmark price based on NHCDC data, at the AR-DRG level.



Consultation questions

- Do you support IHPA's proposal to establish the public sector benchmark price using a volume weighted average approach? Please provide rationale.
- Are there any alternative approaches that IHPA should consider? Please provide rationale.



Feedback received

Nineteen stakeholders supported the use of volume weighted average price approach as it controls for any extreme price variations arising from specialised and bundled agreements, is not unduly influenced by high or low-cost episodes of care, is consistent with other Australian public sector procurement methodologies and ensures that benchmarking between public and private systems remains consistent.

One medical devices supplier expressed concerns that, as this approach is biased towards products with the highest market share, it will lead to a reduction in the supply of low volume, high clinical value products. Another supplier also noted that the lack of competition for some items may artificially increase the public price to the level of the private PL benefit.

A peak industry body noted their support for IHPA's data cleansing approach to trimming outlier costs. Another peak body recommended that prices above the existing PL price for an item or category from calculations should be excluded or brought down to the PL price, as any above will distort the national average price to the detriment of consumers.

Other considerations outlined by stakeholders for using a volume weighted average approach include adjustments to the weighted public pricing by the private volume mix within any proposed final PL grouping such that the private system is appropriately represented, accounting for variances in pricing between jurisdictions, inclusion of state and territory rate schedules that have been negotiated with the relevant health department to reduce the impact of local hospital arrangements, and applying greater scrutiny to high value prostheses categories and novel or improved clinically- and cost-effective prostheses devices with initial low volume.

Six stakeholders agreed with IHPA in opposing the use of the lowest available public sector price approach as this would undermine the value proposition of private health insurance, create market inefficiencies such as potential discontinuation of several products, discourage entry to niche small to medium enterprises, and lead to out-of-pocket costs borne by patients.

Three stakeholders supported the use of the lowest available public sector price, stating that it may demonstrate prices where sponsors can remain profitable and provides a price signal that lower prices are available.

In terms of alternative approaches suggested by stakeholders:

- Several stakeholders noted international benchmarking as an alternative approach.
- A private hospital provider suggested the use of a percentile approach, such as a benchmark based on the weighted average price of the bottom 25th percentile or calculating the weighted average over specific market segments not influenced by market competitive factors like monopolies.
- Another suggestion by the private hospital provider is to analyse regional variation in benchmark prices within the same state, and benchmark based on the most affordable regions.
- One of the medical device suppliers proposed calculating the average selling price by billing code, then averaging all billing code average selling prices to set a public reference price for their respective benefit group, so that the price is not duly influenced by volume and encourages competition by giving equal consideration to all suppliers in the market.

IHPA notes that the use of an average approach to pricing, rather than a volume-weighted approach, will lead to equal weighting allocated to outlying price points, which could significantly influence the results. If prices from similar items are used to inform the price of an item with limited data then, without weighting, an overpriced low volume item might have undue influence. Whilst manual adjustments may be used to minimise these impacts, this is unlikely to be feasible given the number of prostheses on the PL, the context required to make the adjustment, and the level of subjectivity associated with the adjustments.

Stakeholders also expressed challenges to be considered in the methodology should NHCDC and AR-DRG level data be used. This has been summarised in Chapter 3.



IHPA's decision

IHPA will use a volume weighted method with consideration for different approaches in cases where volume is low, or data is not available. These approaches may consist of volume weighting different prices across similar items where an item has low volume or where the data is not available.

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5

Appropriate adjustments to account for legitimate differences between the public and private hospital sectors

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Appropriate adjustments to account for legitimate differences between the public and private hospital sectors

A number of stakeholders, including device suppliers and private hospitals have asserted that there are legitimate differences between the public and private sector with respect to the supply of prostheses, which mean that the gap between prostheses prices should not reasonably be eliminated.

In undertaking public hospital pricing work, the IHPA refers to these as legitimate and unavoidable cost differences. These are defined in the National Health Reform Agreement and include factors such as:

- hospital type and size;
- hospital location, including regional and remote status; and
- patient complexity, including Indigenous status.

Whilst the PL is only intended to cover the cost of the device that is implanted, the manufacturers of some cardiac implanted electronic devices claim that the current PL benefit has also included the cost of technical support during the implantation of the device, as well as ongoing technical advice and servicing for the life of the device.

It is widely accepted that these ongoing services are critical to patient outcomes, but there is a range of views on how these should be funded in the future, given that the PL was not intended to cover the costs of ongoing services related to technical support for devices.

IHPA sought advice from stakeholders on what, if any, allowance should be made, to account for any legitimate and unavoidable cost difference between the public and private hospital sectors with respect to prostheses pricing.



Consultation questions

- What factors, if any, should be considered as legitimate and unavoidable difference between the private and public hospital systems with respect to prostheses pricing?
- How should the extent of any such differences be quantified?



Feedback received

Several stakeholders, mainly from the device manufacturing industry, highlighted the value of clinician choice as the main factor for differences in pricing between the private and public hospital system.

Other reasons included:

- variation in prices due to bulk purchase agreements in the public system compared to the purchasing of items on a case-by-case basis in the private system;
- lower storage and freight costs in the public system due to bulk discounts and less frequent orders;
- additional services offered by the private system such as the provision of tools, training, clinical support, post-implant services and technical services by allied professionals and technicians;

- the additional service burden within the private health system due to the absence of paid support service and multidisciplinary teams that exist in the public system;
- higher servicing costs for the private sector due to dispersed and disaggregated hospital provider sites;
- the existence of a liability guarantee in the public system;
- the additional cost for sponsors to enter and participate in the private hospital system; and
- other factors such as hospital size and type, patient complexity and rurality.

However, other stakeholders, including some from private health funds, argued that there should be no unavoidable or legitimate differences in the costs of prostheses between the public and private system. Reasons given included that:

- freight costs, representatives and loan fees are not paid for separately in the public system;
- there are no obvious reasons for variances in supply and technical support costs between the systems;
- efficiency is generally lower in the public system compared to the private system and the cost of doing business is arguably higher in the public system;
- quality differences are not driving differentials in pricing; and
- the impact of one-off purchases versus bulk tenders are not material due to stable utilisation in both systems.

Some stakeholders recommended approaches to quantifying these differences, including:

- applying an additional adjustment, for example through a percentage adjustment, to public prices to allow for differences between the system;
- using an “a priori” threshold price difference, where price differentials below the threshold will be excluded from price reductions; and
- the use of a price reduction cap until a robust evaluation of economic and clinical models in the private system is completed.



IHPA’s decision

IHPA notes the significant feedback provided by stakeholders, acknowledging that there are many factors that have been raised as potential legitimate and unavoidable differences between the two systems. IHPA also notes that there were common factors outlined by stakeholders with opposing views of whether the factors were ‘legitimate and unavoidable’.

IHPA will work with the Commonwealth Department of Health to consider the nature of the differences between the systems and whether they are ‘legitimate and unavoidable’ with regard to the role of the PL.

The Commonwealth Department of Health has stated its intended timelines and magnitudes for implementing reductions in the gaps between the PL price and public system prices.



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