

Independent Hospital Pricing Authority

# Benchmark Price for Prostheses in Australian Public Hospitals 2020–21

March 2022



IHPA

## Benchmark Price for Prostheses in Australian Public Hospitals 2020–21

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# 1. Overview

## 1.1 Purpose

This report details the benchmark price for prostheses in Australian public hospitals 2020–21, together with information on the data sources and methods used to calculate this price.

## 1.2 Independent Hospital Pricing Authority

The Independent Hospital Pricing Authority (IHPA) is an independent government agency established under the *National Health Reform Act 2011* (Cwlth) as part of the National Health Reform Agreement.

IHPA's primary function is to calculate and deliver an annual national efficient price for public hospital services. 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.

## 1.3 Prostheses List reform and the role of IHPA

The Prostheses List (PL) is a schedule of medical devices and benefits that define the prices that private health insurers are required to pay hospitals that utilise these devices in the provision of care to privately insured individuals.

The prices private health insurers are charged for most medical devices are mandated by the scheduled benefits of the PL. In many cases, these scheduled benefits substantially exceed the prices of the same items in other markets, including the public hospital system.

The 2021–22 Federal Budget, released in May 2021, includes the measure 'Private Health Insurance — building the sustainability of the sector and improving affordability for patients' to modernise and improve the private health insurance PL payment system.

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 is intended to improve alignment of the scheduled benefits of the PL with the prices paid in more competitive markets such as the public hospital system. It will be implemented by the Australian Government Department of Health, with advice provided by IHPA, and in consultation with key stakeholders.

To support the implementation of the 2021–22 Federal Budget measure, IHPA has established a benchmark price for devices listed on the PL that is representative of the price paid for these devices within the public hospital sector.

## 1.4 Public benchmark pricing of prostheses

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

Following the collection of feedback from the Consultation Paper, on 15 December 2021, IHPA released the [Methodology for Determining the Benchmark Price for Prostheses in Australian Public Hospitals](#) (the Methodology Paper). The Methodology Paper outlines the methodology IHPA would use in determining the benchmark price for prostheses in the public sector and incorporates the feedback received on the Consultation Paper.

Over the period July 2021 to November 2021, IHPA undertook data collection activities with the assistance of key stakeholders to establish an empirical information base for quantifying the prices paid for prosthetic devices in the public hospital sector.

Using the collected data sources, IHPA has applied its methodology to establish a 2020–21 public benchmark price for prostheses in Australian public hospitals. The methodology used and the results of this work are detailed within this report.

## 2. Public benchmark price

### 2.1 Introduction

The 2020–21 public benchmark price for prostheses in Australian public hospitals is defined with respect to the structure of scheduled benefits set out in the November 2021 publication of the Prostheses List (PL). The following sections detail this PL scheduled benefit structure and provide the public benchmark price in these terms.

### 2.2 Structure of scheduled benefits on the Prostheses List

The PL uses billing codes to identify registered medical devices. There are 11,366 billing codes specified in the November 2021 publication of the PL, which are hierarchically categorised into parts, categories, subcategories, groups, subgroups and suffixes.

This categorisation does not extend in full granularity to all billing codes, with some billing codes only categorised to the level of subgroup, group, subcategory or category. To account for this, and extend the categorisation to all billing codes, the Independent Hospital Pricing Authority (IHPA) nominally defines ‘no subcategory’, ‘no group’, ‘no subgroup’ and ‘no suffix’ as classes of subcategory, group, subgroup and suffix, respectively. In this way, each level of the PL classification hierarchy applies to all billing codes.

In most cases, billing codes within a given suffix share the same scheduled benefit. However, in some cases scheduled benefits vary within a given suffix or are equal across multiple suffixes. For this reason, IHPA does not use suffixes to identify billing codes to be uniformly priced. Instead, IHPA identifies ‘PL price groups’ as collections of billing codes within the same PL subgroup that share the same scheduled benefit.<sup>1</sup> There are 2,052 identified price groups in the November 2021 publication of the PL.

### 2.3 Benchmark price

IHPA establishes a single public benchmark price for each identified PL price group. Each billing code then receives the public benchmark price of the price group to which it belongs.

IHPA is unable to establish public benchmark prices for Part B of the PL, as public price data is not currently available for any billing code within Part B of the PL.<sup>2</sup>

The 2020–21 public benchmark price for prostheses in Australian public hospitals is detailed in Attachment A. Table A.1 of Attachment A provides a listing of the public benchmark price for each PL price group and billing code.

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<sup>1</sup> A maximum allowable variation of \$2 is used to group billing codes with scheduled benefits that differ only minimally.

<sup>2</sup> Part B of the PL relates to human tissue items such as bone or bone fragments, vascular grafts, corneas and heart valves.

## 3. Data sources

### 3.1 Introduction

The Independent Hospital Pricing Authority (IHPA) makes use of a range of data sources to establish the price of prosthetic devices in the public hospital system. These data sources, detailed below, cover information relating to the pricing and utilisation of prosthetic devices in the public hospital system, and the interpretation of this information with regard to the purchasing of Prostheses List (PL) devices for privately insured individuals.

### 3.2 Prostheses List information

The public benchmark prices detailed in this report are defined using the structure of scheduled benefits in the November 2021 publication of the PL. This report sets out the billing codes for eligible devices and their classification into commonly priced groups.

Earlier publications of the PL are also used to identify historical changes to the PL, such as transferred or combined (referred to as ‘compressed’) billing codes. Where appropriate, these historical changes enable superseded billing codes to be mapped forward to current billing codes, which is undertaken on historical pricing and utilisation data (see Section 4.2 for further detail).

An extract of the Prostheses List Management System database is used to identify the device catalogue codes that are registered against each of the PL billing codes. This is particularly important, as device catalogue codes are the primary identifier of medical devices in the public hospital system (see Section 4.2 for further detail).

### 3.3 Public hospital sector prostheses pricing and utilisation information

The pricing of prosthetic devices in the public hospital sector relies on two primary forms of public sector pricing information: device procurement information, such as contract prices, provided by state or territory government agencies or hospital groups; and device sales information, such as revenue and units, provided by device suppliers.

These are the primary sources of information used to calculate national-level public prices by PL billing code (see Section 4.3 for further detail).

### 3.4 Private health sector prostheses utilisation information

As described in Section 2.2, the public benchmark prices are defined by PL price group. IHPA uses PL device utilisation data captured in the Hospital Casemix Protocol national data collection to combine public prices by PL billing code into public benchmark prices by PL price group (see Section 4.4 for further detail).

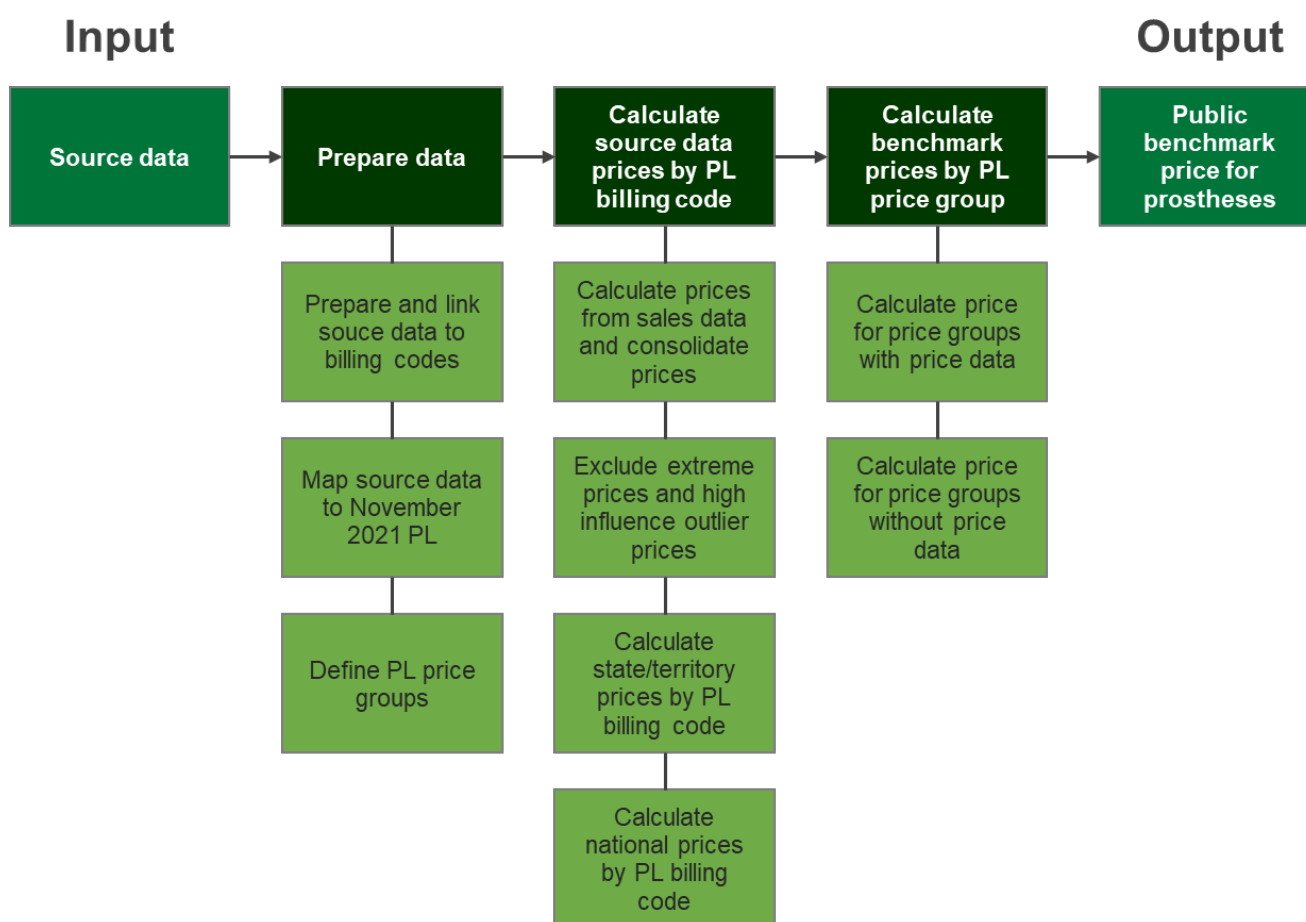
# 4. Methods

## 4.1 Introduction

The following sections detail the methods the Independent Hospital Pricing Authority (IHPA) applies to calculate the public benchmark price for prosthetic devices. These methods include the stages of data preparation, calculation of source data prices by Prostheses List (PL) billing code, and calculation of the benchmark price by PL price group.

Figure 1 illustrates the stages of the public benchmark pricing methodology together with the underlying steps within each stage.

**Figure 1: Illustration of the public benchmark pricing methodology**



Data preparation is required to ensure the source data used in the calculation of public benchmark prices is fit for purpose. The data preparation steps are detailed as follows.

### Preparation and linking of procurement and sales data to PL billing codes

State and territory procurement data includes medical device contract prices, together with attributes such as device catalogue codes, manufacturer and supplier information, and detailed



product descriptions and sizes. These attributes are cleansed and standardised<sup>3</sup> to enable the contract prices to be accurately linked to PL billing codes using the device catalogue codes and product information available within the Prostheses List Management System source data.

Similarly, sales data provided by device suppliers is standardised to enable linking to PL billing codes.

The various prepared source datasets are then linked to PL billing codes and combined to form a collection of prices, revenue and units by PL billing code, data source and state or territory.

### Mapping PL prices to the November 2021 publication of the PL

To account for changes to the PL occurring between the 2020–21 financial year and November 2021, a process of forward mapping is required to align the price and sales source data with the November 2021 publication of the PL.

PL changes, such as transferred or compressed billing codes, are taken from the historical publication series of the PL and used to map the price and sales data of superseded billing codes forward to the November 2021 publication of the PL, where appropriate. This combined price and sales dataset forms the basis of the subsequent price calculations.

Historical PL billing code changes are used to map private health sector prostheses utilisation data forward to align with billing codes present in the November 2021 publication of the PL.

### Defining PL price groups

PL price groups are defined across the November 2021 publication of the PL by partitioning PL subgroups into subsets of billing codes with the same scheduled benefit. A maximum allowable variation in scheduled benefit of \$2 is used to group billing codes with benefits that differ only minimally.<sup>4</sup>

Figure 2 provides an illustrative example of how PL price groups align with the scheduled benefits<sup>5</sup> of billing codes within PL subgroups.

**Figure 2: Illustration of the alignment of PL price groups with scheduled pricing within PL subgroups**

| November 2021 publication of the Prostheses List |           |  |                            |                                    |                         |                 |                   |
|--|-----------|--|----------------------------|------------------------------------|-------------------------|-----------------|-------------------|
| Part   | Category  | Subcategory  | Group                      | Subgroup                           | Number of billing codes | Minimum benefit | PL price group    |
| A  | 12 - Knee | 12.01 - Femoral Component: Total Knee Arthroplasty | 12.01.01 - Cemented, Alloy | 12.01.01.01 - Minimally Stabilised | 37                      | 2877            | A.12.01.01.01.001 |
|  |           |  |                            |                                    | 3                       | 3009            | A.12.01.01.01.002 |
|  |           |  |                            |                                    | 1                       | 3975            | A.12.01.01.01.003 |
|  |           |  |                            |                                    | 4                       | 5276            | A.12.01.01.01.004 |

<sup>3</sup> Cleansing and standardising source data includes processes such as removal of problematic artefacts from source database systems (for example, non-printable ASCII characters), conforming variations in supplier names and product descriptions, and expanding abbreviated notation for ranges of catalogue code into lists of individual catalogue codes.

<sup>4</sup> Part B of the PL is treated differently, with distinct PL price groups for every distinct scheduled benefit, rather than applying a \$2 variation threshold. However, as stated in Section 2.3, no public prices are established for Part B of the PL due to unavailability of price data.

<sup>5</sup> The PL publication refers to the scheduled benefit as the minimum benefit.

### 4.3 Calculation of source data prices by PL billing code

The next stage in the calculation of public benchmark prices produces a reference dataset of prices by PL billing code. The following steps are undertaken to derive this dataset.

#### Calculation of prices from sales data and combining of identical prices

The combined price and sales dataset described in Section 4.2 includes sales data in the form of revenue and units, provided by device suppliers. For each record of sales data, the revenue is divided by the units to calculate a unit price for that record.

In cases where multiple records in the combined dataset share an identical price for the same PL billing code and state or territory, these records are collapsed into a single price record. The most common instance of this is in state or territory procurement data, where multiple products may have an identical contract price and are linked to the same PL billing code. However, identical prices may also occur within the sales data of a device supplier, or across data sources, such as cases where both the device supplier and the purchaser report the same price. In all cases, any associated sales units are combined additively to preserve these quantities.

#### Exclusion of extreme prices and high influence outlier prices

To ensure the benchmark price is representative, records identified as having an extreme price or high influence outlier price are excluded from the dataset. The approach taken to identify and exclude extreme and high influence outlier price observations uses standard methods that are consistent with those applied in other IHPA processes, such as in the determination of the national efficient price for public hospital services.

The number of records removed in this step represents less than 0.8 per cent of all price observations.

#### Calculation of prices by PL billing code and state or territory

Prices are then averaged to calculate a single price by PL billing code and state or territory. In cases where units of sales exist for each price, the weighted average is taken using these units as relative weights. In cases where there is at least one price with no associated units, such as contract prices, the unweighted average of the prices is taken. Similar to the previous step, any associated sales units are combined additively to preserve these quantities.

#### Calculation of a national price by PL billing code

The resultant dataset from the previous step contains a single price by PL billing code and state or territory. The final step in this stage takes the weighted average of these prices across state or territory to calculate a national price by PL billing code, where the weights are calculated using relative quantities of sales units. In cases where a state or territory price has no associated sales units, that price receives a weight that is equivalent to the total sales units of the state or territory as a proportion of the national total sales units.

This process results in a dataset containing a single national public price by PL billing code.

### 4.4 Calculation of public benchmark prices by PL price group

The final stage in the calculation of the public benchmark price for prosthetic devices uses the dataset of prices by PL billing code derived in the previous stage and calculates a single price for each PL price group. As the coverage of price data across billing codes is incomplete, the

method for calculating the price of each PL price group is dependent on the presence of underlying billing code prices.

### **Coverage of billing code prices**

There are 2,052 PL price groups in the November 2021 publication of the PL. Of these price groups, a total of 1,248 contain billing code price data, leaving 804 price groups with no underlying price data.

The entirety of Part B of the PL has no price data available and makes up 387 of these 804 price groups. The remaining 417 price groups without price data are from Part A and Part C of the PL, and the large majority of these groups cover billing codes that were inactive or had very low utilisation in the 2020–21 financial year.

### **Price groups with billing code price data**

For price groups containing at least one billing code with price data, the price of the group is calculated as the weighted average of its billing code prices, where the weights are defined using private health sector prostheses utilisation. In cases where the entire price group has no utilisation, the price is calculated as the unweighted average of its billing code prices.

### **Price groups without billing code price data**

For price groups without billing code price data, the public benchmark price is calculated in two steps. First the price group is assigned a 'price relativity' that is calculated from the ratio of public price to scheduled benefit of adjacent price groups with price data. The benchmark price is then calculated as the scheduled benefit of the price group multiplied by its assigned price relativity.

The calculation and assignment of price relativities occurs iteratively as follows. First the price relativities are calculated for each price group with price data as the ratio of public benchmark price to scheduled benefit. Price relativities are then progressively calculated at each level of the PL classification hierarchy by taking weighted averages of the relativities at the previous level. For example, price relativities for subgroups are calculated from the price relativities of price groups, then price relativities for groups are calculated from the price relativities of subgroups, and so on.

Each price group without price data is then assigned the price relativity of the most granular level of hierarchy to which it belongs and for which a price relativity has been calculated. The public benchmark price of the price group is then calculated as the scheduled benefit of the price group multiplied by its assigned price relativity.

The dataset resulting from this final stage contains a single national public benchmark price for each of the 1,665 price groups in Part A and Part C of the PL. These prices are detailed in Attachment A.

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