



**IHACPA**

# **Advice on Bundling Arrangements for General Use Items on the Prostheses List**

**December 2022**

Version 1.0

## **Advice on Bundling Arrangements for General Use Items on the Prostheses List — December 2022**

© Independent Health and Aged Care Pricing Authority 2022

This publication is available for your use under a Creative Commons BY Attribution 3.0 Australia licence, with the exception of the Independent Health and Aged Care Pricing Authority logo, photographs, images, signatures and where otherwise stated. The full licence terms are available from the Creative Commons website.



Use of Independent Health and Aged Care Pricing Authority material under a Creative Commons BY Attribution 3.0 Australia licence requires you to attribute the work (but not in any way that suggests that the Independent Health and Aged Care Pricing Authority endorses you or your use of the work).

Independent Health and Aged Care Pricing Authority material used 'as supplied'.

Provided you have not modified or transformed Independent Health and Aged Care Pricing Authority material in any way including, for example, by changing Independent Health and Aged Care Pricing Authority text – then the Independent Health and Aged Care Pricing Authority prefers the following attribution:

Source: The Independent Health and Aged Care Pricing Authority

# Contents

<b>Abbreviations .....</b>	<b>5</b>
<b>1. Executive summary .....</b>	<b>6</b>
1.1 Purpose .....	6
1.2 Overview .....	6
1.3 Bundling of General Use Items .....	6
1.4 General Use Item bundle benefits.....	7
1.5 Application of General Use Item bundles .....	8
<b>2. Background.....</b>	<b>10</b>
2.1 Independent Health and Aged Care Pricing Authority .....	10
2.2 Prostheses List reform and the role of IHACPA .....	10
2.3 Removal of General Use Items from the Prostheses List.....	11
2.4 Advice on bundling arrangements for General Use Items .....	11
2.4.1 Consultation process .....	12
2.4.2 Prostheses List Reform Working Group.....	12
<b>3. Bundling of General Use Items .....</b>	<b>13</b>
3.1 Introduction.....	13
3.2 General Use Item bundle variants.....	13
3.2.1 Product bundles.....	13
3.2.2 Facility type bundle variants.....	14
3.2.3 Major Diagnostic Category based bundle variants .....	14
3.3 General Use Item bundled benefits.....	14
3.4 Application of General Use Item bundles .....	15
<b>4. Data sources .....</b>	<b>17</b>
4.1 Introduction.....	17
4.2 Prostheses List .....	17
4.3 Hospital Casemix Protocol data collection .....	17
4.3.1 Implications of data issues and limitations .....	17
4.4 Private Hospital Data Bureau data collection .....	18
4.5 IHACPA Public Hospital Admitted Patient Care Activity data collection.....	19
4.6 Australian Prudential Regulation Authority statistics .....	19

<b>5. Methods</b> .....	<b>20</b>
5.1 Introduction.....	20
5.2 Data preparation.....	20
5.2.1 Mapping HCP Prosthesis data to the March 2023 Protheses List .....	20
5.2.2 Filtering HCP Episode and Prosthesis data for exclusions.....	21
5.3 Definition of GUI bundles.....	21
5.3.1 Defining GUI product classes .....	21
5.3.2 Defining General Use Item product bundles .....	23
5.3.3 Defining Facility type General Use Item bundle variants .....	23
5.3.4 Defining Major Diagnostic Category based General Use Item bundle variants.....	24
5.4 Calculation of General Use Item bundle statistics .....	28
5.4.1 Calculation of General Use Item bundle benefits .....	28
5.4.2 Calculation of GUI bundle variation statistics .....	30
<b>Appendix A – Schedule of General Use Item Bundles</b> .....	<b>32</b>
<b>Appendix B – Feedback to the Consultation Paper</b> .....	<b>51</b>
<b>Appendix C – Supporting analyses</b> .....	<b>71</b>
C.1 Data preparation .....	71
C.1.1 Data preparation procedures .....	71
C.1.2 Results of data preparation .....	72
C.2 Data representativeness .....	77
C.2.1 Results of data representativeness.....	77
C.3 General Use Item statistics .....	80
C.3.1 Overview of General Use Items.....	80
C.3.2 Analysis of GUI benefits per episode by facility type and clinical characteristics.....	81
C.3.3 GUI product bundle statistics by facility type and Major Diagnostic Category .....	84
C.3.4 Analysis of historical changes in GUI product bundle benefits per episode.....	86
<b>Appendix D – General Use Item bundle variation statistics</b> .....	<b>90</b>

# Abbreviations

<b>ACHI</b>	Australian Classification of Health Interventions
<b>AR-DRG</b>	Australian Refined Diagnosis-Related Groups
<b>ADRG</b>	Adjacent Diagnosis Related Groups
<b>APRA</b>	Australian Prudential Regulation Authority
<b>CIRG</b>	Clinical Implementation Reference Group
<b>COVID-19</b>	Coronavirus disease 2019
<b>FY</b>	Financial Year
<b>GUI</b>	General Use Items
<b>HCP</b>	Hospital Casemix Protocol
<b>ICD-10-AM</b>	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification
<b>IHACPA</b>	Independent Health and Aged Care Pricing Authority
<b>IHPA</b>	Independent Hospital Pricing Authority
<b>MBS</b>	Medicare Benefits Schedule
<b>MDC</b>	Major Diagnostic Category
<b>NEP</b>	National Efficient Price
<b>NHR Act</b>	National Health Reform Act 2011
<b>PHDB</b>	Private Hospital Data Bureau
<b>PL</b>	Prostheses List
<b>PLRWG</b>	Prostheses List Reform Working Group

# 1. Executive summary

## 1.1 Purpose

This report details advice on bundling arrangements for General Use Items (GUIs) on the Prostheses List (PL). The purpose of this advice is to support the private health sector in establishing alternative arrangements for the payment of benefits for GUIs that are to be removed from the PL on 1 July 2023.

## 1.2 Overview

In 2021, the Australian Government Department of Health and Aged Care (the Department) commenced four years of reform activity to improve the PL and its arrangements. These reforms include changes aimed at improving the alignment of the PL scheduled benefits with prices paid in the public hospital system, streamlining the administration of the list, and better defining the purpose and scope of the PL.

The PL reforms that are aimed at clarifying the scope of the PL include refining the definition of which prostheses are eligible for inclusion on the PL and removing ineligible items. The items identified for removal from the PL are used in a broad range of surgeries and are referred to as 'General Use Items' (GUIs). Once removed from the PL on 1 July 2023, alternative arrangements will need to be in place between insurers and hospitals to support the purchase and utilisation of GUIs for admitted services provided to privately insured individuals.

The Independent Health and Aged Care Pricing Authority (IHACPA) is an independent government agency established to improve health outcomes for all Australians and support the sustainability of the Australian health system. The Department has requested that IHACPA provide advice on bundling arrangements for GUIs that may inform the establishment of alternative arrangements for the payment of benefits for GUIs that are to be removed from the PL on 1 July 2023.

The contents of this report and its appendices constitute IHACPA's advice on bundling arrangements for GUIs on the PL. The advice includes information on the composition of bundles and their benefits. The advice is evidence-based and has been developed incorporating feedback received from a public consultation process and supported by the Prostheses List Reform Working Group (PLRWG).

## 1.3 Bundling of General Use Items

IHACPA's advice pertains to GUIs defined by Part D of the August 2022 publication of the PL. The bundled benefits of these GUIs are defined using their expected March 2023 PL scheduled benefits, which will be the final PL benefit levels in place before the items transition off the PL from 1 July 2023.

IHACPA's advice sets out a schedule of GUI bundles and their associated benefit levels. The full schedule is included at Appendix A – Schedule of General Use Item Bundles. The GUI bundles

aggregate GUI utilisation and associated PL benefits to the level of an episode of admitted patient care.

IHACPA's advice defines three types of GUI bundle variants across the set of all GUI products. These three variant types capture different sources of variation in the utilisation of GUIs and their associated PL benefits. As described further in Section 1.5, the variant types align at a system level, and are designed to provide flexibility in their application, when used in either negotiated or prescribed arrangements.

The first type of bundle variant is defined by the classification of GUI products into 24 'product classes' based on the existing classification structure of the PL (see Table 3). For each of the 24 GUI product classes, a GUI product bundle variant is defined as the collection of all items from the product class used within an individual admitted episode. For example, an instance of the 'Infusion Pumps, Balloon Based' product bundle would correspond with an admitted episode in which items from the 'Infusion Pumps, Balloon Based' product class were used.

It is possible for multiple bundles to be identified against a single admitted episode. This occurs in cases where items across multiple product classes are used within the same episode.

The second type of GUI bundle variant splits each of the 24 GUI product bundle variants based on the facility in which an episode occurs; that is, a private overnight, private day, or public hospital facility. There are a total of 72 facility-type GUI bundle variants (i.e. 24 product bundles split into three facility types). However, it may be the case that some GUI product classes are limited in their use to only one or two facility types (e.g. a given GUI product bundle may have no observed occurrence within private day facilities).

The third type of GUI bundle variant splits each of the 24 GUI product bundle variants into up to five classes based on the Major Diagnostic Category (MDC) of the episode (see Table A4 of Appendix A). MDCs are a classification of admitted episodes that form a part of the Australian Refined Diagnosis Related Groups (AR-DRG) classification, and IHACPA has used AR-DRG Version 10 in the development of this advice.

The splitting of each GUI product bundle variant into MDC-based variants is dependent on observed variation in GUI utilisation across clinical characteristics. In particular, the more variation that is observed, the greater the number of splits, and where no variation is observed, there is no split, and the resulting MDC-based variant is identical to the product bundle for that GUI product class. There are a total of 54 MDC-based GUI bundle variants across the 24 GUI product classes.

## 1.4 General Use Item bundle benefits

IHACPA has used the Hospital Casemix Protocol (HCP) data collection to represent the utilisation of GUIs within privately insured admitted episodes. Specifically, HCP data has been restricted to admitted episodes that separated in the 2020-21 financial year for this purpose. IHACPA has also undertaken historical analysis of GUI bundles using the preceding three financial years of HCP data, from 2017-18 to 2019-20.

Each individual occurrence of a GUI bundle within the HCP data (i.e. an observed admitted episode) comprises a set of items from a specific GUI product class together with their associated benefits as defined by the March 2023 PL. The mix and number of items can vary across individual bundles of a given GUI bundle variant. This variation may be significant or only slight, depending on the GUI product class and the type of bundle variant.

For a given GUI bundle variant, its ‘bundle benefit’ is defined as the total PL benefits for items of the given GUI product class that occur across all observed bundles of that variant, divided by the number of observed bundles of the variant. This is effectively the average PL benefits per episode associated with usage of items from the given GUI product class and restricted to the episodes specified by the given variant (e.g. those that occur within a given facility type or are classified as belonging to a given collection of MDCs).

To illustrate the bundle variants and their benefits, Table 1 details the complete set of variants associated with the ‘Matrix’ GUI product class. This information is a combined extract from Tables A2, A3 and A5 from Appendix A.

**Table 1: GUI bundle variants and bundle benefits - Matrix GUI product class**

Product class	Variant branch	Bundle variant	Bundle benefit
A45 Matrix	A Product Only	A45A1 Matrix	\$698.62
	B Facility Type	A45B1 Matrix - Private Overnight Facilities	\$700.89
		A45B2 Matrix - Private Day Facilities	\$440.11
		A45B3 Matrix - Public Facilities	\$634.20
	C Major Diagnostic Category Grouping	A45C1 Matrix - Very High MDC Grouping	\$833.05
		A45C2 Matrix - High MDC Grouping	\$750.51
		A45C3 Matrix - Moderate MDC Grouping	\$628.50
		A45C4 Matrix - Low MDC Grouping	\$453.37

## 1.5 Application of General Use Item bundles

The purpose of IHACPA’s advice is to support the private health sector in establishing arrangements for the payment of benefits for GUIs, as an alternative to, and in replacement of, the current PL payment mechanism.

IHACPA has defined GUI bundles so that they may be applied in a way that is consistent with the current practice of raising charges and paying benefits for usage of items listed on the PL.

Specifically, the application of GUI bundles would require providers (i.e. hospitals) to raise a GUI bundle charge against an admitted episode in which one or more items from a particular GUI product class were used. There may be multiple bundle charges raised against an individual episode in cases where items across multiple product classes are used. However, a single episode cannot have multiple bundle charges raised for a single GUI product class.

In response to a raised GUI bundle charge, an insurer would pay a benefit to the provider that is consistent with the agreed bundle benefit of the GUI bundle.



As illustrated in Table 1, each GUI bundle variant is identified using a five-character code (e.g. the 'Matrix - Private Overnight Facilities' bundle variant is identified by the code A45B1). These codes have been designed in this way so that GUI bundle charge and benefit information may be captured within the existing HCP Prosthesis data collection, similar to the capture of PL charge and benefit information using five-character PL billing codes.

Each of the three types of GUI bundle variants, together with their bundle benefits, have been defined so that, when applied across all privately insured admitted episodes, they are estimated to deliver the same total amount of GUI benefits as would be distributed by the current PL payment mechanism using the March 2023 PL scheduled benefits. In this way, the bundle benefit of each variant is defined at a national level.

In contrast, individual providers or insurers will have their own observed mix of GUI utilisation across admitted episodes, resulting in variation in their average PL benefits per episode for GUIs compared with the nationally defined bundle benefit. Their observed variation in average PL benefits per episode is driven by variation in average PL benefit per item (i.e. differences in the types of GUI products used), combined with variation in the average number of items used per episode. Smaller providers or insurers may be susceptible to greater variation in their average PL benefits per episode due to the increased influence of individual episodes with unusual patterns of GUI utilisation.

To provide insurers and providers with the ability to compare their own observed variation against the national profile, IHACPA's advice includes GUI percentile statistics for 'average PL benefits per episode', 'average PL benefits per item' and 'average items per episode' across all bundle variants and for different volumes of episodes (Appendix D – General Use Item bundle variation statistics).

The purpose of this information is to enable insurers and providers to understand how their GUI utilisation compares nationally, and to provide an information base for use in cases where insurers and providers are able to negotiate variations from IHACPA's advice on bundle benefits.

Finally, the GUI bundles have been designed so that different variant types may be adopted across different GUI product classes. However, the three types of variants are not designed for combined use within a single GUI product class.

In cases where providers and insurers are able to negotiate alternative arrangements, bundle variants could be selected to suit circumstances. In cases where there is no opportunity or ability for a negotiated approach, then a possible hierarchical approach to the adoption of GUI bundle variants would be:

1. If a provider's GUI charge data includes sufficient clinical information (i.e. ICD-10-AM diagnosis codes and ACHI intervention codes<sup>1</sup>) to enable episodes to be classified by AR-DRG, then use MDC-based bundle variants
2. Else if the provider's GUI charge data includes facility type, then use facility type bundle variants
3. Otherwise use product bundle variants.

---

<sup>1</sup> [ICD-10-AM/ACHI/ACS classification system](#)

# 2. Background

## 2.1 Independent Health and Aged Care Pricing Authority

The Independent Health and Aged Care Pricing Authority (IHACPA) is an independent government agency established under the *National Health Reform Act 2011* (NHR Act) to improve health outcomes for all Australians and ensure the Australian health system is sustainable. IHACPA was originally established as the Independent Hospital Pricing Authority (IHPA) as part of the National Health Reform Agreement reached by all Australian governments in 2011.<sup>2</sup>

Since its establishment in 2011, IHACPA's primary function has been to determine an annual national efficient price (NEP) for public hospital services. The NEP 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.

Amendments to the NHR Act that came into effect on 12 August 2022 expand IHACPA's role to include provision of costing and pricing advice on aged care services to the Australian Government.

IHACPA also plays a role in reforms to the Prostheses List and its arrangements by providing advice to the Australian Government Department of Health and Aged Care (the Department) to support the implementation of the reforms.

## 2.2 Prostheses List reform and the role of IHACPA

The Prostheses List (PL) is a schedule of medical devices and benefits that defines the minimum amount private health insurers are required to pay hospitals that utilise these devices in the provision of care to privately insured individuals. The PL forms part of the Private Health Insurance (Prostheses) Rules, which is a legislative instrument made under the *Private Health Insurance Act 2007*.

The PL uses billing codes to identify registered medical devices. There are 11,183 billing codes specified in the August 2022 publication of the PL, which are hierarchically categorised into parts, categories, subcategories, groups, subgroups and suffixes.

In 2021, the Department commenced four years of reform activity to improve the PL and its arrangements. These reforms include changes aimed at improving the alignment of the PL scheduled benefits with prices paid in the public hospital system, streamlining the administration of the list, and better defining the purpose and scope of the PL. Revisions to the purpose and scope of the PL aim to provide greater clarity and certainty about which items are eligible for inclusion on the PL.

To support the implementation of the PL reforms, IHACPA has established a public benchmark price for prostheses in Australian public hospitals.<sup>3</sup> This public benchmark price has informed benefit reductions implemented in the July 2022 publication of the PL.

---

<sup>2</sup> [The National Health Reform Agreement](#)

<sup>3</sup> [Benchmark Price for Prostheses in Australian Public Hospitals 2020–21](#)

## 2.3 Removal of General Use Items from the Prostheses List

The PL reforms include changes aimed at clarifying the scope of the PL by refining the definition of which prostheses are eligible for inclusion on the PL and removing ineligible items. The items identified for removal from the PL are used in a broad range of surgeries and are referred to as 'General Use Items' (GUIs). Once removed from the PL on 1 July 2023, alternative arrangements will need to be in place between insurers and hospitals to support the purchase and utilisation of GUIs for services provided to privately insured individuals.

In developing the list of GUIs to be removed from the PL, the Department has sought clinical advice from the Clinical Implementation Reference Group (CIRG) on the GUIs identified for removal. The CIRG confirmed that nearly 500 of these products could be removed from the PL with no clinical implications or adverse outcomes to patients, as long as the products are still available for use by doctors under a different funding agreement.<sup>4,5</sup>

The list of GUIs to be removed from the PL is defined by the creation of Part D in the August 2022 publication of the PL<sup>6</sup> and covers the following item types from the General Miscellaneous, Neurosurgical and Vascular categories:

- **General Miscellaneous:** The items to be removed within this category include infusion pumps (not including insulin pumps), gastrostomy tubes, powder, sponges, pliable patches, select ligating devices and staples and tackers.
- **Neurosurgical:** The items to be removed within this category include liquid sealants and select self-adhesive membrane sealant (not including large types between 50 and 100 cm<sup>2</sup>).
- **Vascular:** The items to be removed within this category include arterial closure devices, and select percutaneous catheters (not including percutaneous catheters, multiple lumen for haemodialysis).

## 2.4 Advice on bundling arrangements for General Use Items

To provide further support to the implementation of PL reforms, the Department has requested that IHACPA provide advice on bundling arrangements for GUIs. The contents of this report combined with its appendices constitute this advice.

The advice on alternative bundling arrangements for GUIs on the PL includes information on the composition of bundles and their benefits, based on the March 2023 PL scheduled benefits.<sup>7</sup> The bundles apply to items used in admitted services provided to privately insured individuals in private overnight facilities, public facilities and private day facilities.

A GUI bundle groups all in-scope items used for an individual hospital admission, recognising that there may be different bundles for different groups of items and types of admissions.

---

<sup>4</sup> [CIRG Outcome Notes](#)

<sup>5</sup> [Department advice on Prostheses List reforms](#)

<sup>6</sup> [Prostheses List publication](#)

<sup>7</sup> [Department advice on March 2023 Prostheses List scheduled benefits for General Use Items](#)

## 2.4.1 Consultation process

IHACPA undertook a public consultation process from 14 September to 12 October 2022, inviting feedback to support the formulation of advice on alternative bundling arrangements for GUIs on the PL. To guide the consultation process, IHACPA released the [Consultation Paper on Bundling Arrangements for General Use Items on the Prostheses List](#) (the Consultation Paper). The release of the Consultation Paper was accompanied by a stakeholder forum on 21 September 2022. The purpose of the stakeholder forum was to introduce the Consultation Paper and invite discussion to clarify the consultation process and the role of IHACPA.

IHACPA received a total of 20 submissions on the Consultation Paper. All submissions will be published on the IHACPA website, except where respondents specifically identified any sections that they believe should be kept confidential for commercial or other reasons.

The development of advice on alternative bundling arrangements for GUIs on the PL has been informed by feedback received to the Consultation Paper. An overview of consultation submissions received and detail on how this feedback has been considered in the formulation of the advice is provided in Appendix B – Feedback to the Consultation Paper.

## 2.4.2 Prostheses List Reform Working Group

IHACPA has formed a Prostheses List Reform Working Group (PLRWG) to support the development and provision of advice that is evidence-based and fit-for-purpose. The PLRWG guides IHACPA on issues of relevance, provides data and other empirical information, and assists IHACPA in the interpretation of information gathered through consultative processes. The following organisations are represented on the PLRWG.

### Prostheses List Reform Working Group membership

- Australia Private Hospitals Association
- Australian Government Department of Health and Aged Care
- Australian Health Service Alliance
- Australian Medical Association
- Catholic Health Australia
- Consumers Health Forum of Australia
- Day Hospitals Australia
- Healthscope Operations Pty Ltd
- Medical Technology Association of Australia
- Members Health Fund Alliance
- Private Healthcare Australia

# 3. Bundling of General Use Items

## 3.1 Introduction

The Independent Health and Aged Care Pricing Authority's (IHACPA's) advice on bundling arrangements for General Use Items (GUIs) on the Prostheses List (PL) is defined with respect to GUIs identified by Part D of the August 2022 publication of the Prostheses List (PL). The bundled benefits of these GUIs are defined using their expected March 2023 PL scheduled benefits,<sup>8</sup> which will be the final PL benefit levels in place before the items transition off the PL from 1 July 2023.

IHACPA's advice sets out a schedule of GUI bundles and their associated benefit levels Appendix A – Schedule of General Use Item Bundles). The GUI bundles aggregate GUI utilisation and associated PL benefits to the level of an episode of admitted patient care.<sup>9</sup>

## 3.2 General Use Item bundle variants

IHACPA's advice defines three types of GUI bundle variants across the set of all GUI products. These three variant types capture different sources of variation in the utilisation of GUIs and their associated PL benefits across admitted episodes.

The variant types align at a system level, and can be used interchangeably at a GUI product class level to provide flexibility in their application, when used in either negotiated or prescribed arrangements. The following sections define each of the three types of GUI bundle variants.

### 3.2.1 Product bundles

The PL hierarchically categorises all products on the list into parts, categories, subcategories, groups, subgroups and suffixes. Part D of the August 2022 publication of the PL includes 492 billing codes relating to GUIs, which are divided into 25 distinct PL product groups.

IHACPA has defined 24 'GUI product classes' across the GUIs, which align primarily with PL product groups. Further detail on the definition of GUI product classes is provided in Section 5. A complete listing of billing codes in each GUI product class is provided in Table A1 of Appendix A – Schedule of General Use Item Bundles.

For each of the 24 GUI product classes, a 'GUI product bundle' is defined as the collection of all items from the product class used within an individual admitted episode. For example, an instance of the 'Infusion Pumps, Balloon Based' product bundle would correspond with an admitted episode in which items from the 'Infusion Pumps, Balloon Based' product class were used.

---

<sup>8</sup> [Department advice on March 2023 PL scheduled benefits](#)

<sup>9</sup> [Episode of admitted patient care METEOR registration](#)

### 3.2.2 Facility type bundle variants

The second type of GUI bundle variant splits each of the 24 GUI product bundle variants based on the facility in which an episode occurs; that is, a private overnight, private day, or public hospital facility. GUI facility type bundle variants account for variation in GUI utilisation and associated PL benefits that may occur between facility types.

There are a total of 72 facility-type GUI bundle variants (i.e. 24 product bundles split into three facility types). However, it may be the case that some GUI product classes are limited in their use to only one or two facility types (e.g. a given GUI product bundle may have no observed occurrence within private day facilities).

### 3.2.3 Major Diagnostic Category based bundle variants

Some GUI product classes exhibit significant variation in GUI utilisation and associated PL benefits that can be associated with differences in the clinical characteristics of episodes of admitted patient care. IHACPA has examined the association between characteristics of GUI utilisation and clinical characteristics using the ICD-10-AM/ACHI/ACS disease and intervention classification systems,<sup>10</sup> and the AR-DRG episode classification.<sup>11</sup> Further detail on these analyses is provided in Appendix C – Supporting analyses.

The third type of GUI bundle variant splits each of the 24 GUI product bundle variants into up to five classes based on the Major Diagnostic Category (MDC) of the episode (see Table A4 of Appendix A). MDCs are a classification of admitted episodes of care that form a part of the Australian Refined Diagnosis Related Groups (AR-DRG) classification, and IHACPA has used AR-DRG Version 10 in the development of this advice.

The splitting of each GUI product bundle variant into MDC-based variants is dependent on observed variation in GUI utilisation across clinical characteristics. In particular, the more variation that is observed, the greater the number of splits, and where no variation is observed, there is no split, and the resulting MDC-based variant is identical to the product bundle for that GUI product class. There are a total of 54 MDC-based GUI bundle variants across the 24 GUI product classes. Further detail on the methodology used to define the MDC-based variants is provided in Section 5.

## 3.3 General Use Item bundled benefits

IHACPA has used the Hospital Casemix Protocol (HCP) data collection to represent the utilisation of GUIs within privately insured admitted episodes of care. For the purpose of developing advice on GUI bundling arrangements, HCP data has been restricted to admitted episodes of care that separated in the 2020-21 financial year. IHACPA has also undertaken historical analysis of GUI bundles using the preceding three financial years of HCP data, from 2017-18 to 2019-20.

Each individual occurrence of a GUI bundle within the HCP data comprises a set of items from a specific GUI product class together with their associated benefits as defined by the March 2023 PL. The mix and number of items can vary across individual bundles of a given GUI bundle variant. This variation may be significant or only slight, depending on the GUI product class and the type of bundle variant.

---

<sup>10</sup> [ICD-10-AM/ACHI/ACS classification systems](#)

<sup>11</sup> [AR-DRG classification system](#)

For a given GUI bundle variant, its ‘bundle benefit’ is defined as the total PL benefits for items of the given GUI product class that occur across all observed bundles of that variant, divided by the number of observed bundles of the variant. This is effectively the average PL benefits per episode associated with usage of items from the given GUI product class and restricted to the episodes specified by the given variant (e.g. those that occur within a given facility type or are classified as belonging to a given collection of MDCs).

Table 2 illustrates the calculation of bundle benefits for the ‘Infusion Pumps, Balloon Based’ product bundle variant.

**Table 2: Illustration of GUI bundle benefit calculation - A11A1 Infusion Pumps, Balloon Based product bundle**

Product class	Variant branch	Bundle variant	Episodes	Benefits	Average benefits per episode	Bundle benefit
A1 Drug Delivery	A Product Only	A11A1 Infusion Pumps, Balloon Based	39,190	\$5,206,823	\$132.86	\$132.86

### 3.4 Application of General Use Item bundles

The purpose of IHACPA’s advice is to support the private health sector in establishing arrangements for the payment of benefits for GUIs, as an alternative to, and in replacement of, the current use of the PL as a payment mechanism.

IHACPA has defined GUI bundles so that they may be applied in a way that is consistent with the current practice of raising charges and paying benefits for usage of items listed on the PL.

Specifically, the application of GUI bundles would require providers (i.e. hospitals) to raise a GUI bundle charge against an admitted episode in which one or more items from a particular GUI product class were used. There may be multiple bundle charges raised against an individual episode in cases where items across multiple product classes are used. However, a single episode cannot have multiple bundle charges raised for a single GUI product class.

In response to a raised GUI bundle charge, an insurer would pay a benefit to the provider that is consistent with the agreed bundle benefit of the GUI bundle.

Each GUI bundle variant is identified using a five-character code (e.g. the ‘Infusion Pumps, Balloon Based’ product bundle is identified by the code A11A1). These codes have been designed in this way so that GUI bundle charge and benefit information may be captured within the existing HCP Prosthesis data collection, similar to the capture of PL charge and benefit information using five-character PL billing codes.

Each of the three types of GUI bundle variants, together with their bundle benefits, have been defined so that, when applied across all privately insured admitted episodes, they are estimated to deliver the same total amount of GUI benefits as would be distributed by the current PL payment mechanism using the March 2023 PL scheduled benefits. In this way, the bundle benefit of each variant is defined at a national level, and each type of bundle variant may be used interchangeably at a GUI product class level. That is, for each GUI product class, each of the three sets of bundle

variants for that product class are estimated to deliver back the same amount of benefits at a national level as would be delivered for GUIs in the product class by the current PL payment mechanism.

In contrast, individual providers or insurers will have their own observed mix of GUI utilisation across admitted episodes, resulting in variation in their average PL benefits per episode for GUIs compared with the nationally defined bundle benefit. Their observed variation in average PL benefits per episode is driven by variation in average PL benefit per item (i.e. differences in the types of GUI products used), combined with variation in the average number of items used per episode. Smaller providers or insurers may be susceptible to greater variation in their average PL benefits per episode due to the increased influence of individual episodes with unusual patterns of GUI utilisation.

To provide insurers and providers with the ability to compare their own observed variation against the national profile, IHACPA's advice includes GUI percentile statistics for 'average PL benefits per episode', 'average PL benefits per item' and 'average items per episode' across all bundle variants and for different volumes of episodes (Appendix D – General Use Item bundle variation statistics).

The purpose of this information is to enable insurers and providers to understand how their GUI utilisation compares nationally, and to provide an information base for use in cases where insurers and providers are able to negotiate variations from IHACPA's advice on bundle benefits.

In practice, a stakeholder would calculate their total items, benefits and episodes associated with each (or a specific) GUI bundle variant, then calculate the average benefits per episode, average benefits per item and average items per episode statistics. These statistics can then be compared against the percentile statistics by corresponding bundle variant and episode count that are provided in Appendix D – General Use Item bundle variation statistics. These comparisons would provide the stakeholder with information that may assist them in understanding how their profile of GUI utilisation compares against the national profile.

As described above, GUI bundles have been defined so that the three bundle variants may be interchangeably applied by GUI product class, so that different variant types may be adopted across different GUI product classes. However, the three types of variants are not designed for combined use within a single GUI product class.

In cases where providers and insurers are able to negotiate alternative arrangements, bundle variants could be selected to suit circumstances. In cases where there is no opportunity or ability for a negotiated approach, then a possible hierarchical approach to the adoption of GUI bundle variants would be:

1. If a provider's GUI charge data includes sufficient clinical information (i.e. ICD-10-AM diagnosis codes and ACHI intervention codes) to enable episodes to be classified by AR-DRG, then use MDC-based bundle variants
2. Else if the provider's GUI charge data includes facility type, then use facility type bundle variants
3. Otherwise use product bundle variants.



# 4. Data sources

## 4.1 Introduction

Advice on alternative bundling arrangements is evidence-based to ensure it accurately reflects the usage of General Use Items (GUIs) in admitted services provided to privately insured individuals and the associated PL benefits paid. There are several data sources that are available to the Independent Health and Aged Care Pricing Authority (IHACPA) to develop advice on alternative bundling arrangements. The following datasets are used in the formulation of the advice:

- The Prostheses List (PL)
- The Hospital Casemix Protocol (HCP) data collection
- The Private Hospital Data Bureau (PHDB) data collection
- The IHACPA Public Hospital Admitted Patient Care (APC) Activity data collection
- Australian Prudential Regulation Authority (APRA) statistics.

## 4.2 Prostheses List

Part D of the August 2022 publication of the PL is used to identify GUIs by the billing codes they are registered under. Aspects of the PL product classification are also used within the definition of GUI bundles.

The expected scheduled benefits for the March 2023 PL are used in the calculation of GUI bundle benefits, so that the advice aligns with the benefit levels that will be in place when GUIs transition off the PL on 1 July 2023.

Finally, historical publications of the PL are used to track changes in GUI billing codes over time.

## 4.3 Hospital Casemix Protocol data collection

The HCP data collection includes clinical, demographic and financial information for privately insured admitted patient services in private overnight facilities, public facilities and private day facilities.

HCP data includes detailed information on PL devices used in each episode, including GUIs, as well as information on Medicare Benefits Schedule items billed, and the benefits paid by insurers. The HCP data also includes clinical information on diagnoses and interventions, as well as patient characteristics and administrative information including provider and insurer details.

### 4.3.1 Implications of data issues and limitations

IHACPA has considered the extent to which the issues raised by stakeholders in the consultation submissions regarding HCP data may place limitations on its use in the development of IHACPA's advice. In particular, there are two key areas of concern noted regarding issues or limitations of the HCP data collection. These are:

1. Potential impact of COVID-19 and other variations over time

## 2. Incompleteness of public hospital data

Further to these areas of concern, stakeholders raised issues regarding the extent to which HCP data accurately records GUI utilisation.

These concerns are discussed further in the following sections. Comparative statistics and analyses are also provided in Appendix C – Supporting analyses to assist stakeholders in understanding the extent to which these issues may be of relevance to IHACPA’s advice.

Notwithstanding these potential issues or limitations, IHACPA still considers the HCP data collection as the best available primary data source for the development of its advice. The HCP data collection is the only available source of national data that provides sufficiently detailed information on the usage of GUIs in privately insured admitted episodes.

### **Potential impact of COVID-19 and other variations over time**

Uncertainty around the potential impact of COVID-19 on the utilisation rates and mix of GUIs was raised as a concern by stakeholders around the usage of HCP data. Additionally, there was concern regarding the potential for variation in utilisation of GUIs between years, impacting on the bundle benefit calculations undertaken using the 2020-21 financial year of the HCP Prosthesis data.

IHACPA has undertaken a comparative analysis of GUI bundle benefit statistics calculated across four years of historical HCP data from 2017-18 to 2020-21, to understand the extent and cause of any variation over years. Changes in usage between years were observed across some GUI product classes, however these changes reflected continuations of existing trends and did not appear to be associated with COVID-19 related factors. Further details on this comparative analysis can be found in Appendix C – Supporting analyses.

### **Incompleteness of public hospital data**

The incompleteness of data on privately insured episodes of admitted patient care in public hospitals is a known limitation of the HCP data collection. Additionally, a large proportion of public hospital HCP records are missing clinical information such as principal diagnosis, which limits their usefulness in analyses that require these attributes.

IHACPA observes that, after data preparation including the removal of episodes with missing clinical attributes, there are approximately 60% fewer privately insured public hospital episodes in the HCP data collection than recorded in the IHACPA APC data collection.

Despite the low levels of completeness, further analysis shows that the remaining public hospital episodes within the HCP data exhibit a high degree of similarity in comparison with the complete set of privately insured admitted episodes recorded in the IHACPA APC data collection, when comparing distributions of age, gender and clinical characteristics. Further detail on these comparisons can be found in Appendix C – Supporting analyses.

## **4.4 Private Hospital Data Bureau data collection**

The Private Hospital Data Bureau (PHDB) data collection provides a national representation of all admitted episodes of care provided within private overnight and private day facilities, together with clinical, demographic, and administrative information associated with these episodes. Although the PHDB data collection does not contain detailed information on PL device utilisation or the associated benefits paid for these items, IHACPA has used it to assess representativeness of the

HCP data collection with respect to admitted episodes in private overnight and private day facilities. Further detail on HCP representativeness against PHDB data collection can be found at Appendix C – Supporting analyses.

## **4.5 IHACPA Public Hospital Admitted Patient Care Activity data collection**

IHACPA's national public hospital APC activity data collection includes a representation of all privately insured admitted episodes of care provided in public hospitals. Similar to the use of the PHDB data collection, IHACPA has used the public hospital admitted activity data collection as a source of information to assess the representativeness of the HCP data collection with respect to privately insured admitted episodes in public hospitals (see Appendix C – Supporting analyses).

## **4.6 Australian Prudential Regulation Authority statistics**

The Australian Prudential Regulation Authority (APRA) publishes quarterly statistics on the utilisation and benefits paid for PL devices by PL category, state or territory and facility type. IHACPA has used APRA statistics to undertake a comparative analysis with the HCP data collection with respect to PL device utilisation and benefits paid (see Appendix C – Supporting analyses).

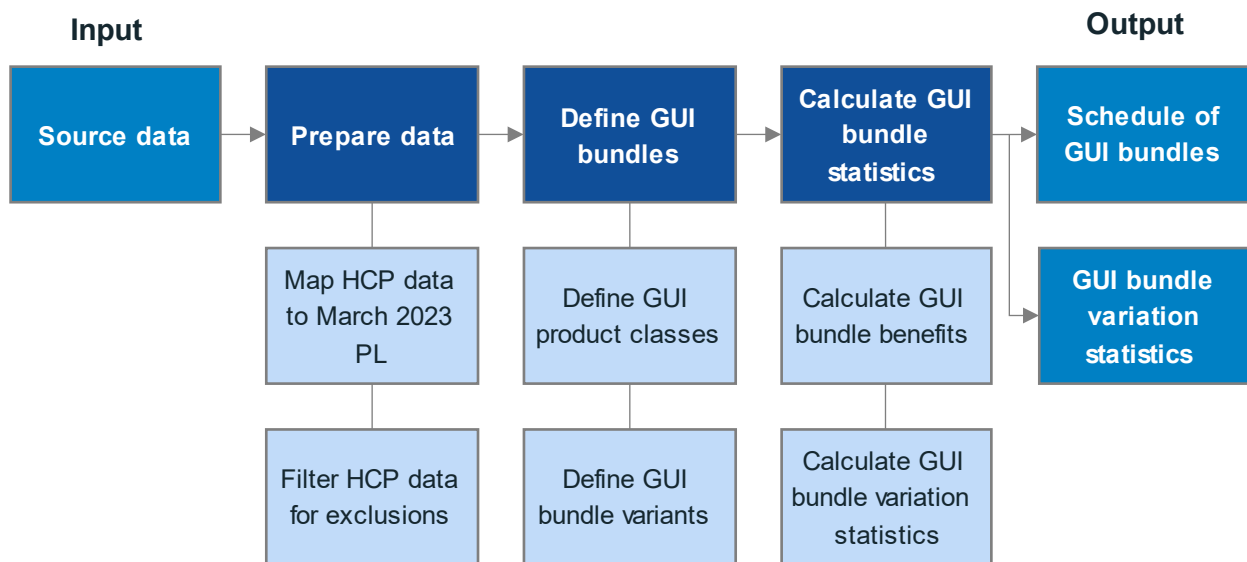
# 5. Methods

## 5.1 Introduction

The following sections detail the methods the Independent Health and Aged Care Pricing Authority (IHACPA) has applied to derive the advice on bundling arrangements for General Use Items (GUIs) on the Prostheses List (PL). These methods include the stages of data preparation, definition of GUI bundles and calculation of GUI bundle benefits.

Figure 1 illustrates the stages of the GUI bundling methodology together with the underlying steps within each stage.

Figure 1: Illustration of the General Use Item bundling methodology



## 5.2 Data preparation

Data preparation is required to ensure that the source data used in the calculation of the GUI bundle benefits is fit for purpose. The data preparation steps are detailed in the following subsections.

### 5.2.1 Mapping HCP Prosthesis data to the March 2023 Prostheses List

The HCP Prosthesis data captures a historical record of charge and benefit information for devices registered under billing codes on historical publications of the PL. Changes are made regularly to the PL over time, as new billing codes are added, and existing billing codes are removed, transferred, duplicated or compressed, and scheduled benefits are adjusted. As part of the data preparation process, such changes need to be accounted for.

Where appropriate, a process of forward mapping is applied to superseded billing codes recorded in historical years of the HCP Prosthesis data to account for PL changes, such as transferred,

compressed or duplicated billing codes. This process aligns the HCP data to the greatest extent possible with PL billing codes from the August 2022 publication of the PL. The expected March 2023 PL scheduled benefits are then assigned to the August 2022 PL billing codes and applied to the mapped billing codes in the HCP Prosthesis data.

## 5.2.2 Filtering HCP Episode and Prosthesis data for exclusions

Several further stages of data preparation are undertaken to ensure the HCP data is fit to undertake analysis and statistical modelling of GUI utilisation and benefits. These stages include:

1. Excluding device records that do not link to an episode record – as they will not have valid episode information for the analysis.
2. Excluding device records that do not link to the August 2022 PL.
3. Excluding episodes that have no benefits paid.
4. Excluding episodes and devices that do not have a valid principal diagnosis.

Finally, the HCP Prosthesis data is restricted to GUI billing codes identified by Part D of the August 2022 publication of the PL. Further information on data preparation processes is provided in Appendix C – Supporting analyses.

## 5.3 Definition of GUI bundles

The next stage in the calculation of the schedule of benefits for GUI bundles is the definition of the GUI bundles themselves. The following steps are taken to define these bundle and related concepts.

### 5.3.1 Defining GUI product classes

The first stage in the development of GUI bundles partitions GUI products into ‘GUI product classes’ based on product characteristics defined by the August 2022 publication of the PL.

The GUI product classes align primarily with PL product groups, with a small number of minor deviations. A total of 24 product classes are defined across all GUIs. Of these, 17 are defined by corresponding PL product groups. A further four GUI product classes are substantively defined by two PL product groups, each with an ‘accessory’ PL product subgroup partitioned off into a separate GUI product class. The final three of the 24 GUI product classes are each defined as an aggregate of two PL product groups. The detailed composition of all 24 GUI product classes is defined in Table A1 of Appendix A – Schedule of General Use Item Bundles.

Table 3 details the alignment of GUI product classes with the PL product classification. The different types of alignment are illustrated as follows:

- The four product classes within the ‘A1 Drug Delivery’ GUI product branch (i.e. A11, A12, A13 and A19) are illustrative of the one-to-one mapping between GUI product classes and PL product groups that exists for 17 of the 24 GUI product classes.
- The A45 and A49 pair of GUI product classes are illustrative of an alignment in which one PL product group is split into two GUI product classes, with one product class (A45) substantively aligning with the PL product group and the second product class (A49) aligning with an ‘accessories’ subgroup of the PL product group. This example represents one of two pairs of GUI product classes defined in this way, the other pair being A52 and A59.

- A31 provides an example of a GUI product class defined as an aggregate of two PL product groups (i.e. 10.09.01 and 10.09.02). This example represents one of three GUI product classes that align in this way.

Table 3: Alignment of GUI product classes and the PL product classification

GUI product branch	GUI product class	PL product classification
A1 Drug Delivery	A11 Infusion Pumps, Balloon Based	03.02.02 - Infusion Pumps, Balloon Based
	A12 Infusion Pumps, Battery Powered	03.02.03 - Infusion Pumps, Battery Powered
	A13 Infusion Pumps, Spring Powered	03.02.04 - Infusion Pumps, Spring Powered
	A19 Drug Delivery Accessories	03.02.05 - Infusion Pump Accessories
A2 Enteral Access	A21 Feeding Tubes	03.03.01 - Feeding Tubes
	A22 Gastrostomy Tubes	03.03.02 - Gastrostomy Tubes
	A23 Jejunostomy Tubes	03.03.03 - Jejunostomy Tubes
	A24 Caecostomy Tubes	03.03.04 - Caecostomy Tubes
A3 Vascular Access	A31 Percutaneous Catheters	10.09.01 - Percutaneous Catheters, Single Lumen
		10.09.02 - Percutaneous Catheters, Multiple Lumen
A4 Haemostatic	A41 Occluder Pins	03.05.01 - Occluder Pin
	A42 Powder	03.05.02 - Powder
	A43 Sponges	03.05.03 - Sponges
	A44 Pliable Patches	03.05.04 - Pliable Patches
	A45 Matrix	03.05.05 - Matrix (excl. 03.05.05.05)
	A46 Foam	03.05.06 - Foam
	A49 Haemostatic Accessories	03.05.05.05 - Matrix Accessory Extender
A5 Closure	A51 Adhesion Barriers	03.08.01 - Adhesion Barriers
	A52 Internal Adhesives	03.08.02 - Internal Adhesives (excl. 03.08.02.04)
	A53 Ligating Items	03.08.03 - Ligating Devices
	A54 Staples and Tackers	03.08.04 - Staples & Tackers
	A55 Dura Repair, Liquid Sealants	04.02.05 - Repair, Liquid Sealant (0 to 3ml)
04.02.06 - Repair, Liquid Sealant (>3 to 6ml)		

GUI product branch	GUI product class	PL product classification
A56	Dura Repair, Membrane Sealants	04.02.07 - Repair, Self-Adhesive Membrane Sealant, Small (=10cm <sup>2</sup> )
		04.02.08 - Repair, Self-Adhesive Membrane Sealant, Medium (>10 to 50cm <sup>2</sup> )
A57	Arterial Closure Items	10.07.01 - Arterial Closure Devices
A59	Closure Accessories	03.08.02.04 - Internal Adhesive Accessory

### 5.3.2 Defining General Use Item product bundles

GUI bundles aggregate GUI utilisation to the level of an episode of admitted patient care. For each GUI product class, a ‘GUI product bundle’ is defined as the collection of all items from the product class used within an individual admitted episode. In other words, given a GUI product class, a GUI product bundle of that class would be identified against an admitted episode if the episode included the use of at least one item from the product class. And the identified product bundle would comprise all items from the product class utilised in the episode.

GUI product bundles are the base type of GUI bundle variant on which other variants are defined.

IHACPA defines two further types of GUI bundle variant. Each type of bundle variant does not alter the number or composition of bundles identified across admitted episodes as GUI product bundles. Instead, the GUI bundle variants divide each GUI product bundle into sub-bundles based on specific characteristics of the episodes in which the bundles occur.

### 5.3.3 Defining Facility type General Use Item bundle variants

The facility type GUI bundle variants split each GUI product bundle into three sub-bundles based on the facility type in which the episode occurred, separating bundles occurring in private overnight facilities, from those occurring in private day facilities and those occurring in public facilities. This facility classification is based on the Commonwealth Hospital Declaration for each facility, which indicates whether a facility is a private or public facility and, for private facilities, whether it is a private overnight or private same day facility.

Table 4 provides an example of the facility type GUI bundle variants for the ‘A11 - Infusion Pumps, Balloon Based’ GUI product class. There are three GUI product bundle variants for this product class – one for each level of the facility type classification.

Table 4: Example facility type GUI bundle variants for ‘Infusion Pumps, Balloon Based’ GUI product class

Product branch	Product class	Variant branch	Bundle variant	Facility type
A1	A11	B	A11B1 Infusion Pumps, Balloon Based - Private Overnight Facilities	Private Overnight Facility

Drug Delivery	Infusion Pumps, Balloon Based	Facility Type	A11B2	Infusion Pumps, Balloon Based - Private Day Facilities	Private Day Facility
			A11B3	Infusion Pumps, Balloon Based - Public Facilities	Public Facility

### 5.3.4 Defining Major Diagnostic Category based General Use Item bundle variants

The third type of GUI bundle variants split GUI product bundles into sub-bundles based on clinical characteristics of the bundle episodes. Specifically, the Major Diagnostic Category (MDC) of each bundled episode is used to split GUI product bundles into 'MDC-based bundle variants'. MDCs are a classification of admitted episodes of care that form a part of the Australian Refined Diagnosis Related Groups (AR-DRG) classification, and IHACPA has used AR-DRG Version 10 in the development of this advice.

MDCs are an aggregation of AR-DRG classes, with each MDC grouping together DRG codes with the same leading character. Table 5 lists the AR-DRG Version 10 MDCs used for the purpose of defining MDC-based GUI bundle variants.

Table 5: List of AR-DRG Version 10 Major Diagnostic Categories

Code	Description	DRG First Character
00	Pre MDC	A
01	Diseases and Disorders of the Nervous System	B
02	Diseases and Disorders of the Eye	C
03	Diseases and Disorders of the Ear, Nose, Mouth and Throat	D
04	Diseases and Disorders of the Respiratory System	E
05	Diseases and Disorders of the Circulatory System	F
06	Diseases and Disorders of the Digestive System	G
07	Diseases and Disorders of the Hepatobiliary System and Pancreas	H
08	Diseases and Disorders of the Musculoskeletal System and Connective Tissue	I
09	Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	J
10	Endocrine, Nutritional and Metabolic Diseases and Disorders	K
11	Diseases and Disorders of the Kidney and Urinary Tract	L



Code	Description	DRG First Character
12	Diseases and Disorders of the Male Reproductive System	M
13	Diseases and Disorders of the Female Reproductive System	N
14	Pregnancy, Childbirth and the Puerperium	O
15	Newborns and Other Neonates	P
16	Diseases and Disorders of the Blood and Blood Forming Organs and Immunological Disorders	Q
17	Neoplastic Disorders (Haematological and Solid Neoplasms)	R
18	Infectious and Parasitic Diseases	T
19	Mental Diseases and Disorders	U
20	Alcohol /Drug Use and Alcohol /Drug Induced Organic Mental Disorder	V
21A	Injuries, Poisoning and Toxic Effects of Drugs: Multiple Trauma	W
21B	Injuries, Poisoning and Toxic Effects of Drugs	X
22	Burns	Y
23	Factors Influencing Health Status and Other Contacts with Health Services	Z
98	GIs unrelated to principal diagnosis	8
99	Error DRG	9

The number of MDC-based bundle variant classes defined for each GUI product class (i.e. the number of sub-bundles of each GUI product bundle) is determined based on the extent of variation in GUI benefits per episode between MDCs together with materiality of the variation in terms of benefits.

Each product bundle is split into a maximum of five MDC-based bundle variants. The more variation that is observed, the greater the number of splits, and where no variation is observed, there is no split, and the resulting MDC-based variant is identical to the product bundle for that GUI product class. The first variant class represents the collection MDCs with the greatest average benefit per episode, decreasing for each subsequent variant. This is illustrated in Table 6 below.

**Table 6: Labelling structure for MDC-based GUI bundle variants**

MDC-based bundle variant code	MDC-based bundle variant labels by number of variants			
	Five variants	Four variants	Three variants	Two variants
C1	Very High	Very High	High	High
C2	High	High	Moderate	Low
C3	Moderate	Moderate	Low	
C4	Low	Low		
C5	Very Low			

The method for determining the MDC-based GUI bundle variants comprehensively assesses all possible variant candidates and applies a set of criteria to shortlist the variant candidates and select a best-performing candidate as the final variant. The method is similar to the approach applied in the splitting of Adjacent DRGs into DRGs within the development of the AR-DRG classification. The following section details the method.

### Method for selecting MDC-based GUI bundle variants

For a given GUI product class, its product bundle episodes are grouped by MDC, with MDCs 21A and 21B combined into a single ‘Injuries, Poisoning and Toxic Effects of Drugs’ group to pool the low sample sizes of 21A. MDC groups with less than 10 episodes for the given product bundle are excluded, and the remaining MDC groups are ranked in descending order of average benefits per episode.

The ordered MDC groups are then split into a ‘high MDC’ collection and a ‘low MDC’ collection. This is done for all possible split points across the ordered MDCs. For each high/low split, the corresponding product bundle episodes are pooled within their respective collections to form a single candidate comprising two MDC bundle variants – a ‘high MDC grouping’ bundle variant and a ‘low MDC grouping’ bundle variant. This process results in a collection of two-variant (high/low) candidates for the selected GUI product class.

The above process is repeated with the ordered MDCs split into further groups to define all possible three-variant and four-variant candidates for each product class. Given the large size of the ‘A54 Staples and Tackers’ GUI product class, the process was extended for this product class to also define all possible five-variant candidates from its set of ordered MDCs.

These processes collectively resulted in a total of 26,490 MDC-based bundle variant candidates defined across the 24 GUI product classes. A range of statistics are then calculated for each candidate, including:

- Total bundle episodes for each variant
- Total bundle benefits for each variant
- Average benefits per episode for each variant
- R-Squared performance statistic associated with the candidate’s prediction of average benefits per episode.

Candidates are then excluded if they do not meet all of the following criteria:

1. Each of the variants must contain at least 100 bundle episodes
2. Each of the variants must contain at least \$100,000 in bundle benefits
3. Each of the variants must contain at least 1 per cent of total bundle episodes of its associated GUI product bundle
4. Each of the variants must contain at least 1 per cent of total benefits of its associated GUI product class
5. The difference in average benefit per episode between ordered variants must be at least \$25
6. If the difference in average benefit per episode between ordered variants is less than \$50, then this difference must represent a relative change of at least 10 per cent
7. If the difference in average benefit per episode between ordered variants is greater than or equal to \$50, then this difference must represent a relative difference of at least 5 per cent
8. The candidate's R-Squared performance statistic must be at least 0.01 (i.e. 1 per cent).

The final MDC-based bundle variants for each GUI product class is defined from the short-listed candidates as the candidate with the greatest R-Squared statistic. In cases where the criteria excludes all candidates associated with a GUI product class, then the final MDC-based bundle variant for that product class is defined to be the product bundle of that product class; that is, in these cases, the product bundle is not split into MDC-based sub-bundles.

Given a final set of MDC-based bundle variants for a GUI product class, there may be MDCs unassigned to a variant due to low sample size (i.e. if there are no bundle episodes for an MDC or the MDC is excluded in the initial stage due to having less than 10 bundle episodes). In these cases, the unassigned MDCs are assigned to the bundle variant with an average benefits per episode closest in value to the average benefit per episode of the overarching product bundle.

Finally, for completeness, the MDC representing error DRGs is assigned to the lowest MDC variant of each GUI product class.

Table 7 provides an illustration of MDC-based GUI bundle variants for the 'A11 - Infusion Pumps, Balloon Based' GUI product class.

The complete definition of MDC groupings across all GUI product classes is provided at Table A4 of Appendix A – Schedule of General Use Item Bundles.

**Table 7: Illustration of MDC-based GUI bundle variants for 'A11 - Infusion Pumps, Balloon Based' GUI product class**

Product branch	Product class	Variant branch	Bundle variant	MDC grouping
A1 Drug Delivery	A11 Infusion Pumps, Balloon Based	C Major Diagnostic Category Grouping	A11C1    Infusion Pumps, Balloon Based - Very High MDC Grouping	05 18 21A 21B
			A11C2    Infusion Pumps, Balloon Based - High MDC Grouping	00 01 09 10 11 12
			A11C3    Infusion Pumps, Balloon Based - Moderate MDC Grouping	03 04 06 07 08 13 14 16 98
			A11C4    Infusion Pumps, Balloon Based - Low MDC Grouping	02 15 17 19 20 22 23 99

## 5.4 Calculation of General Use Item bundle statistics

Following the definition of all GUI bundle variants, a range of bundle statistics are calculated for each variant, with the primary statistic being the GUI bundle benefit. The following sections details the calculations of bundle benefits and related statistics.

### 5.4.1 Calculation of General Use Item bundle benefits

A GUI bundle benefit is defined for each GUI bundle variant using the prepared 2020-21 financial year HCP GUI utilisation data with expected March 2023 PL scheduled benefits applied. Specifically, for each GUI bundle variant, its GUI bundle benefit is defined as the average GUI benefit episode for that particular bundle.

Table 8 illustrates the GUI bundle benefit calculation for all bundle variants within the 'Staples and Tackers' GUI product class.

In cases where an insufficient number of episodes is present for a bundle variant to calculate a statistically accurate estimate of average benefits per episode, an alternative approach is taken to the calculation of bundle benefit. The following sections describe the approach taken in these cases for GUI product bundles and facility type GUI bundle variants, noting that these cases do not arise for MDC-based GUI bundle variants due to the candidate selection criteria applied in the derivation of MDC-based bundle variants (see Section 5.3.4).

Table 8: Illustration of GUI bundle benefit calculation - Staples and Tackers GUI product class

Product class	Variant branch	Bundle variant	Total episodes	Total benefits	Average benefits per episode	Bundle benefit
A54 Staples and Tackers	A Product Only	A54A1 Staples and Tackers	54,688	\$87,370,130	\$1,597.61	\$1,597.61
	B Facility Type	A54B1 Staples and Tackers - Private Overnight Facilities	53,072	\$85,709,442	\$1,614.97	\$1,614.97
		A54B2 Staples and Tackers - Private Day Facilities	168	\$97,351	\$579.47	\$579.47
		A54B3 Staples and Tackers - Public Facilities	1,448	\$1,563,337	\$1,079.65	\$1,079.65
	C Major Diagnostic Category Grouping	A54C1 Staples and Tackers - Very High MDC Grouping	17,395	\$50,331,063	\$2,893.42	\$2,893.42
		A54C2 Staples and Tackers - High MDC Grouping	3,422	\$7,690,276	\$2,247.30	\$2,247.30
		A54C3 Staples and Tackers - Moderate MDC Grouping	1,967	\$2,615,730	\$1,329.81	\$1,329.81

Product class	Variant branch	Bundle variant	Total episodes	Total benefits	Average benefits per episode	Bundle benefit
		A54C4 Staples and Tackers - Low MDC Grouping	29,198	\$25,654,030	\$878.62	\$878.62
		A54C5 Staples and Tackers - Very Low MDC Grouping	2,706	\$1,079,031	\$398.75	\$398.75

### Calculation of bundle benefit for GUI product bundles with insufficient episodes

In cases where a GUI product bundle has less than 50 bundle episodes occurring within the prepared 2020-21 financial year HCP data, then the bundle benefit of the product bundle is defined to be equal to the average (March 2023) PL scheduled benefit across billing codes within the associated GUI product class. That is, the average is a simple average across billing code schedule benefits and does not take GUI utilisation into account.

Table 9 lists the only three instances in which this approach is taken to the calculation of bundle benefit.

Table 9: List of GUI product bundles with alternative approach to calculation of bundle benefit

Product class	Variant branch	Bundle variant	Billing codes	Average PL scheduled benefit	Bundle benefit
A21 Feeding Tubes	A Product Only	A21A1 Feeding Tubes	1	\$161.00	\$161.00
A41 Occluder Pins		A41A1 Occluder Pins	1	\$286.00	\$286.00
A56 Dura Repair, Membrane Sealants		A56A1 Dura Repair, Membrane Sealants	6	\$378.50	\$378.50

### Calculation of bundle benefit for facility type GUI bundle variants with insufficient episodes

For each GUI product class, if all three of its facility type GUI bundle variants (i.e. private overnight, private day and public) satisfy both of the following criteria, then each facility type variant has its bundle benefit calculated as its average benefits per episode.

1. The bundle variant has 50 or more bundle episodes
2. The bundle variant episodes occur across three or more providers.

In cases where at least one facility type variant does not satisfy these two criteria (i.e. at least one facility type has less than 50 episodes for the product class or less than three providers contributing

episodes for the product class), then facility types have their bundle episodes pooled for the purpose of calculating average benefits per episode and assigning bundle benefits. In these cases, the approach to pooling facility type variants and assigning bundle benefits is as follows:

1. If at most one facility type satisfies the two criteria, then all facility type bundle variants are assigned a bundle benefit equal to the bundle benefit of the overarching GUI product bundle
2. Else if the private overnight facility type does not satisfy the criteria (hence the private day and public facility types do satisfy the criteria), then the private overnight and private day facility type variants have their bundle episodes pooled for the purpose of calculating average benefits per episode, and both are assigned a bundle benefit equal to the pooled average benefits per episode
3. Else if the private day facility type does not satisfy the criteria (hence the private overnight and public facility types do satisfy the criteria), then the private overnight and private day facility type variants have their bundle episodes pooled for the purpose of calculating average benefits per episode, and both are assigned a bundle benefit equal to the pooled average benefits per episode
4. Else if the public facility type does not satisfy the criteria (hence the private overnight and private day facility types do satisfy the criteria), then the private overnight and public facility type variants have their bundle episodes pooled for the purpose of calculating average benefits per episode, and both are assigned a bundle benefit equal to the pooled average benefits per episode.

#### 5.4.2 Calculation of GUI bundle variation statistics

Each of the three types of GUI bundle variants, together with their bundle benefits, have been defined so that, when applied across all privately insured admitted episodes of care, they are estimated to deliver the same total amount of GUI benefits as would be distributed by the current PL payment mechanism using the March 2023 PL scheduled benefits. In this way, the bundle benefit of each variant is defined at a national level.

In contrast, individual providers or insurers will have their own observed mix of GUI utilisation across admitted episodes, resulting in variation in their average PL benefits per episode for GUIs compared with the nationally defined bundle benefit.

At both the national level and the level of an individual provider or insurer, the average benefits per episode of each GUI bundle variant can be decomposed as:

$$(\text{Average Benefits per Episode}) = (\text{Average Benefits per Item}) \times (\text{Average Items per Episode})$$

This relationship illustrates how the variation in average benefits per episode that a provider or insurer may observe in comparison to nationally defined bundle benefits can be understood as the product of variation in average PL benefits per item (i.e. differences in the types of GUI products used), combined with variation in the average number of items used per episode.

Furthermore, smaller providers or insurers may be susceptible to greater variation in their average PL benefits per episode due to the increased influence of individual episodes with unusual patterns of GUI utilisation.

Additional bundle variation statistics have been calculated to provide insurers and providers with the ability to compare their own observed variation against the national profile. Specifically, IHACPA's advice includes GUI percentile statistics for 'average PL benefits per episode', 'average PL benefits

per item' and 'average items per episode' across all bundle variants (see Appendix D – General Use Item bundle variation statistics).

The percentile statistics have been calculated for incremental volumes of episodes to illustrate how the observed number of bundle episodes can affect the expected variation in average benefits per episode and so on (i.e. in general, the greater the volume of episodes, the less the expected variation). Providers and insurers can restrict their attention to variation statistics associated with the episode volumes most aligned with their own observed volumes.

The percentile variation statistics are calculated for each GUI bundle variant using a statistical bootstrapping method. This method estimates the national distribution of each of the statistics of average benefits per episode, average benefits per item and average items per episodes, for each selected volume of episodes.

The statistical bootstrapping method is undertaken as follows for a selected GUI bundle variant and a selected volume of episodes (up to a maximum volume equal to the total number of episodes of that bundle variant):

1. Create 10,000 random samples with replacement from the pool of bundle episodes, with each random sample having a sample size equal to the selected volume
2. For each of the 10,000 samples, calculate the three average statistics (i.e. average benefits per episode, average benefits per item and average items per episode)
3. For each of the three average statistics, calculate percentile statistics across its 10,000 sample estimates.

# Appendix A – Schedule of General Use Item Bundles

Table A1: Definition of General Use Item Product Classes

Product Branch	Product class	August 2022 Prosthesis List billing codes
A1 Drug Delivery	A11 Infusion Pumps, Balloon Based	BB349 BU024 BU025 BX247 BX249 BX281 BX287 BX327 BX328 BX330 CU003 CU004 CU005 RN004 RN006 RN007 SI049 SI050 SI051 SQ035 SQ037 SQ146 TX057 TX058 TX059 TX060 TY001 UX001 UX002 UX003 UX004
	A12 Infusion Pumps, Battery Powered	DE776 DQ002 FK017 FX002 FX003 FX004 RE001 RE002 SI034 SI045 SI052
	A13 Infusion Pumps, Spring Powered	BX326 CU001 CU002 DQ001 LE002
	A19 Drug Delivery Accessories	AN016 BX245 BX286 DE777 FX001 RE003 RX002 RX003 SI024 SI026 SI028 SI040 SI046 SQ069 SQ070 SQ142
A2 Enteral Access	A21 Feeding Tubes	KI010
	A22 Gastrostomy Tubes	BA047 BS141 BS142 DE536 DE541 DE546 DE564 DO020 DO021 DO022 DO023 DO024 FK008 FK011 FK012 FK013 FK018 KI001 KI002 KI004 KI005 KI007 NF001 WC070 WC072 WC185 WC334 WC335
	A23 Jejunostomy Tubes	FK009 FK010 FK014 FK015 FK016 KI014 KI016 KI017 WC098 WC099
	A24 Caecostomy Tubes	WC197



A3 Vascular Access	A31 Percutaneous Catheters	BA049 BA051 BA125 BA126 BA129 BA130 BA183 BA184 BA209 BA212 BA213 BA220 BA268 BA273 BA274 BA282 BA283 BA289 BA290 BA291 BA292 BA293 BA294 BA295 BA296 BA298 BA299 BA300 BA302 BA303 BA308 MS067 MS069 MS071 MS074 MS075 MS076 MS077 MS078 MS080 TX026 TX027 TX028 TX030 TX031 TX032 TX033 TX034 TX035 TX036 TX043 TX056 TX061 TX062 WC111 WC201 WC204 WC205 WC230 WC231 WC279 WC280 WC297 WC321
A4 Haemostatic	A41 Occluder Pins	PV001
	A42 Powder	AB083 AB084 BA260 BA261 BA262 BA284 BA285 BA301 BF024 BX336 BX337 BX345 BX346 BX347 BX348 JJ636 LH408 MN234 SV053 SV054 SV055 VM001 WA004
	A43 Sponges	JJ003 JJ004 JJ005 JJ006 JJ007 JJ015 LH405 LH410 LH411 LH412 LH414 PU059 PU060
	A44 Pliable Patches	BG001 BG002 JJ008 JJ009 JJ012 JJ013 JJ014 JJ023 JJ029 JJ030 JJ432 JJ433 LH423 LH424 LM486 LM487 MN112 MN116 MN117
	A45 Matrix	AN008 AN009 BX258 BX259 FY001 JJ640 MN172 VB002
	A46 Foam	BF021 HW582 ME230 SL081 SL083
	A49 Haemostatic Accessories	FY003 MN154 VB001
A5 Closure	A51 Adhesion Barriers	BX260 BX342 ET051 ET082 FJ001 FJ002 FJ003 FJ004 JJ010 JJ464 LH001 LH534 LM084 MC618
	A52 Internal Adhesives	AB003 AB004 AB075 AS212 AS213 BA265 BB382 BB383 BX214 BX215 BX216 BX252 BX253 BX254 BX283 BX284 BX285 BX334 BX335 DE720 DE721 JI006 KF001 KF002 KF003 LH596 LH597 MI286 MI317 MN204 MN229 MN230
	A53 Ligating Items	AK012 AS074 BB016 BB294 BB297 BB298 BB299 BB300 BB301 BB321 CK001 CK002 CK003 DE606 DE609 DE616 DE617 DE618 DE619 DE698 DE724 DE725 EB136 EB137 EB138 ER279 ER280 ER650 ET065 FQ002 GQ006 GQ007 JJ033 JJ034 JJ035 JJ036 JJ037 JJ038 JJ039 JJ040 JJ186 JJ482 LM042 LV076 LV081 LV086 MH015 MI213 MI217 TX006 TX007 TX008 TX009 TX010 TX011 TX012 TX013 TX023 TX024 TX025 WA011

A54 Staples and Tackers	AS045 AS046 AS075 AS076 AS077 AS081 AS091 AS092 AS095 AS110 AS134 AS179 AS186 AS209 AS227 AS228 AS229 AS246 BA203 BA204 BA269 DE472 DE560 DE610 DE611 DE683 DE726 ET066 GT224 GT228 IJ014 IJ015 IJ016 IJ017 IJ018 IJ019 IJ020 IJ021 JJ050 JJ056 JJ184 JJ443 JJ475 JJ812 JJ903 JJ904 MI212 MI214 MI215 MI216 MI219 MI227 MI281 MI282 MI287 MI303 MI304 MI305 MI455 MI456 MN115 MN175 MN206 MN213 MN214 MN215 MN216 MN217 MN218 MN219 MN220 OB002 OB003 OB004 OB005 OB006 OB007 OB009 OB010 OX031 OX032 OX033 OX034 OX035 OX036 OX037 OX038 OX039 OX040 WL001 ZZ068 ZZ069
A55 Dura Repair, Liquid Sealants	HW659 HW660 IG141 IG142 MN202 MN203
A56 Dura Repair, Membrane Sealants	BX343 BX344 LH719 LH720 LH721 LH723
A57 Arterial Closure Items	DO009 DO012 DO025 SJ451 SJ452 SJ459 SJ463 TU061 TU067
A59 Closure Accessories	AB008 AB009 AB010 AB065 AB076 BA266 BA267 BX261 BX262 BX263 BX264 BX265 BX266 BX267 BX268 BX269 BX270 BX271 BX272 BX273 BX275 BX277 BX279 BX280 BX282 BX340 BX341 DE722 DE723 DE727 FY002 MN041 MN153

Table A2: General Use Item Bundles – Product Bundle Variants

Product Branch	Bundle variant	Bundle benefit
A1 Drug Delivery	A11A1 Infusion Pumps, Balloon Based	\$132.86
	A12A1 Infusion Pumps, Battery Powered	\$513.65
	A13A1 Infusion Pumps, Spring Powered	\$127.54
	A19A1 Drug Delivery Accessories	\$40.35
A2 Enteral Access	A21A1 Feeding Tubes	\$161.00
	A22A1 Gastrostomy Tubes	\$170.22
	A23A1 Jejunostomy Tubes	\$448.05
	A24A1 Caecostomy Tubes	\$336.55
A3 Vascular Access	A31A1 Percutaneous Catheters	\$143.99
A4 Haemostatic	A41A1 Occluder Pins	\$286.00
	A42A1 Powder	\$118.44
	A43A1 Sponges	\$13.04
	A44A1 Pliable Patches	\$61.99
	A45A1 Matrix	\$698.62
	A46A1 Foam	\$146.91
	A49A1 Haemostatic Accessories	\$29.05
A5 Closure	A51A1 Adhesion Barriers	\$462.10

Product Branch	Bundle variant	Bundle benefit
	A52A1 Internal Adhesives	\$280.39
	A53A1 Ligating Items	\$155.59
	A54A1 Staples and Tackers	\$1,597.61
	A55A1 Dura Repair, Liquid Sealants	\$682.18
	A56A1 Dura Repair, Membrane Sealants	\$378.50
	A57A1 Arterial Closure Items	\$412.09
	A59A1 Closure Accessories	\$68.49

Table A3: General Use Item Bundles – Facility Type Variants

Product class	Bundle Variant	Bundle benefit
A11 Infusion Pumps, Balloon Based	A11B1 Infusion Pumps, Balloon Based - Private Overnight Facilities	\$147.78
	A11B2 Infusion Pumps, Balloon Based - Private Day Facilities	\$52.62
	A11B3 Infusion Pumps, Balloon Based - Public Facilities	\$201.49
A12 Infusion Pumps, Battery Powered	A12B1 Infusion Pumps, Battery Powered - Private Overnight Facilities	\$513.65
	A12B2 Infusion Pumps, Battery Powered - Private Day Facilities	\$513.65
	A12B3 Infusion Pumps, Battery Powered - Public Facilities	\$513.65
A13 Infusion Pumps, Spring Powered	A13B1 Infusion Pumps, Spring Powered - Private Overnight Facilities	\$127.54
	A13B2 Infusion Pumps, Spring Powered - Private Day Facilities	\$127.54
	A13B3 Infusion Pumps, Spring Powered - Public Facilities	\$127.54
A19 Drug Delivery Accessories	A19B1 Drug Delivery Accessories - Private Overnight Facilities	\$40.45
	A19B2 Drug Delivery Accessories - Private Day Facilities	\$20.23
	A19B3 Drug Delivery Accessories - Public Facilities	\$61.63
A21 Feeding Tubes	A21B1 Feeding Tubes - Private Overnight Facilities	\$161.00
	A21B2 Feeding Tubes - Private Day Facilities	\$161.00
	A21B3 Feeding Tubes - Public Facilities	\$161.00
A22 Gastrostomy Tubes	A22B1 Gastrostomy Tubes - Private Overnight Facilities	\$172.15
	A22B2 Gastrostomy Tubes - Private Day Facilities	\$172.15

Product class	Bundle Variant	Bundle benefit
	A22B3 Gastrostomy Tubes - Public Facilities	\$162.45
A23 Jejunostomy Tubes	A23B1 Jejunostomy Tubes - Private Overnight Facilities	\$448.05
	A23B2 Jejunostomy Tubes - Private Day Facilities	\$448.05
	A23B3 Jejunostomy Tubes - Public Facilities	\$448.05
A24 Caecostomy Tubes	A24B1 Caecostomy Tubes - Private Overnight Facilities	\$336.55
	A24B2 Caecostomy Tubes - Private Day Facilities	\$336.55
	A24B3 Caecostomy Tubes - Public Facilities	\$336.55
A31 Percutaneous Catheters	A31B1 Percutaneous Catheters - Private Overnight Facilities	\$142.69
	A31B2 Percutaneous Catheters - Private Day Facilities	\$129.97
	A31B3 Percutaneous Catheters - Public Facilities	\$161.34
A41 Occluder Pins	A41B1 Occluder Pins - Private Overnight Facilities	\$286.00
	A41B2 Occluder Pins - Private Day Facilities	\$286.00
	A41B3 Occluder Pins - Public Facilities	\$286.00
A42 Powder	A42B1 Powder - Private Overnight Facilities	\$118.94
	A42B2 Powder - Private Day Facilities	\$118.94
	A42B3 Powder - Public Facilities	\$97.73
A43 Sponges	A43B1 Sponges - Private Overnight Facilities	\$12.88
	A43B2 Sponges - Private Day Facilities	\$14.05

Product class	Bundle Variant	Bundle benefit
	A43B3 Sponges - Public Facilities	\$18.87
A44 Pliable Patches	A44B1 Pliable Patches - Private Overnight Facilities	\$62.47
	A44B2 Pliable Patches - Private Day Facilities	\$36.24
	A44B3 Pliable Patches - Public Facilities	\$63.56
A45 Matrix	A45B1 Matrix - Private Overnight Facilities	\$700.89
	A45B2 Matrix - Private Day Facilities	\$440.11
	A45B3 Matrix - Public Facilities	\$634.20
A46 Foam	A46B1 Foam - Private Overnight Facilities	\$146.52
	A46B2 Foam - Private Day Facilities	\$164.00
	A46B3 Foam - Public Facilities	\$150.99
A49 Haemostatic Accessories	A49B1 Haemostatic Accessories - Private Overnight Facilities	\$29.05
	A49B2 Haemostatic Accessories - Private Day Facilities	\$29.05
	A49B3 Haemostatic Accessories - Public Facilities	\$29.05
A51 Adhesion Barriers	A51B1 Adhesion Barriers - Private Overnight Facilities	\$467.76
	A51B2 Adhesion Barriers - Private Day Facilities	\$223.04
	A51B3 Adhesion Barriers - Public Facilities	\$467.76
A52 Internal Adhesives	A52B1 Internal Adhesives - Private Overnight Facilities	\$280.63
	A52B2 Internal Adhesives - Private Day Facilities	\$245.63

Product class	Bundle Variant	Bundle benefit
	A52B3 Internal Adhesives - Public Facilities	\$318.39
A53 Ligating Items	A53B1 Ligating Items - Private Overnight Facilities	\$155.05
	A53B2 Ligating Items - Private Day Facilities	\$182.70
	A53B3 Ligating Items - Public Facilities	\$166.01
A54 Staples and Tackers	A54B1 Staples and Tackers - Private Overnight Facilities	\$1,614.97
	A54B2 Staples and Tackers - Private Day Facilities	\$579.47
	A54B3 Staples and Tackers - Public Facilities	\$1,079.65
A55 Dura Repair, Liquid Sealants	A55B1 Dura Repair, Liquid Sealants - Private Overnight Facilities	\$683.61
	A55B2 Dura Repair, Liquid Sealants - Private Day Facilities	\$625.54
	A55B3 Dura Repair, Liquid Sealants - Public Facilities	\$683.61
A56 Dura Repair, Membrane Sealants	A56B1 Dura Repair, Membrane Sealants - Private Overnight Facilities	\$378.50
	A56B2 Dura Repair, Membrane Sealants - Private Day Facilities	\$378.50
	A56B3 Dura Repair, Membrane Sealants - Public Facilities	\$378.50
A57 Arterial Closure Items	A57B1 Arterial Closure Items - Private Overnight Facilities	\$414.66
	A57B2 Arterial Closure Items - Private Day Facilities	\$370.87
	A57B3 Arterial Closure Items - Public Facilities	\$371.44
A59 Closure Accessories	A59B1 Closure Accessories - Private Overnight Facilities	\$68.51
	A59B2 Closure Accessories - Private Day Facilities	\$68.51



Product class	Bundle Variant	Bundle benefit
	A59B3 Closure Accessories - Public Facilities	\$64.56

Table A4: Definition of Major Diagnostic Category Groupings for General Use Item Bundles

Product class	Bundle variant	Grouping of MDCs	Grouping of DRG first characters
A11 Infusion Pumps, Balloon Based	A11C1 Infusion Pumps, Balloon Based - Very High MDC Grouping	05 18 21A 21B	F T W X
	A11C2 Infusion Pumps, Balloon Based - High MDC Grouping	00 01 09 10 11 12	A B J K L M
	A11C3 Infusion Pumps, Balloon Based - Moderate MDC Grouping	03 04 06 07 08 13 14 16 98	D E G H I N O Q 8
	A11C4 Infusion Pumps, Balloon Based - Low MDC Grouping	02 15 17 19 20 22 23 99	C P R U V Y Z 9
A12 Infusion Pumps, Battery Powered	A12C1 Infusion Pumps, Battery Powered - Very High MDC Grouping	01 05 16 17	B F Q R
	A12C2 Infusion Pumps, Battery Powered - High MDC Grouping	04 18	E T
	A12C3 Infusion Pumps, Battery Powered - Moderate MDC Grouping	03 06 07 09 11 13	D G H J L N
	A12C4 Infusion Pumps, Battery Powered - Low MDC Grouping	00 02 08 10 12 14 15 19 20 21A 21B 22 23 98 99	A C I K M O P U V W X Y Z 8 9
A13 Infusion Pumps, Spring Powered	A13C1 Infusion Pumps, Spring Powered - No MDC Grouping	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21A 21B 22 23 98 99	A B C D E F G H I J K L M N O P Q R T U V W X Y Z 8 9
A19 Drug Delivery Accessories	A19C1 Drug Delivery Accessories - No MDC Grouping	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21A 21B 22 23 98 99	A B C D E F G H I J K L M N O P Q R T U V W X Y Z 8 9

Product class	Bundle variant	Grouping of MDCs	Grouping of DRG first characters
A21 Feeding Tubes	A21C1 Feeding Tubes - No MDC Grouping	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21A 21B 22 23 98 99	A B C D E F G H I J K L M N O P Q R T U V W X Y Z 8 9
A22 Gastrostomy Tubes	A22C1 Gastrostomy Tubes - No MDC Grouping	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21A 21B 22 23 98 99	A B C D E F G H I J K L M N O P Q R T U V W X Y Z 8 9
A23 Jejunostomy Tubes	A23C1 Jejunostomy Tubes - No MDC Grouping	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21A 21B 22 23 98 99	A B C D E F G H I J K L M N O P Q R T U V W X Y Z 8 9
A24 Caecostomy Tubes	A24C1 Caecostomy Tubes - No MDC Grouping	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21A 21B 22 23 98 99	A B C D E F G H I J K L M N O P Q R T U V W X Y Z 8 9
A31 Percutaneous Catheters	A31C1 Percutaneous Catheters - High MDC Grouping	00 17	A R
	A31C2 Percutaneous Catheters - Low MDC Grouping	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 18 19 20 21A 21B 22 23 98 99	B C D E F G H I J K L M N O P Q T U V W X Y Z 8 9
A41 Occluder Pins	A41C1 Occluder Pins - No MDC Grouping	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21A 21B 22 23 98 99	A B C D E F G H I J K L M N O P Q R T U V W X Y Z 8 9
A42 Powder	A42C1 Powder - High MDC Grouping	06 07 13 16 21A 21B	G H N Q W X
	A42C2 Powder - Moderate MDC Grouping	04 09 11 12 14 15 17 23 98	E J L M O P R Z 8
	A42C3 Powder - Low MDC Grouping	00 01 02 03 05 08 10 18 19 20 22 99	A B C D F I K T U V Y 9
A43 Sponges	A43C1 Sponges - No MDC Grouping	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21A 21B 22 23 98 99	A B C D E F G H I J K L M N O P Q R T U V W X Y Z 8 9

Product class	Bundle variant	Grouping of MDCs	Grouping of DRG first characters
A44 Pliable Patches	A44C1 Pliable Patches - High MDC Grouping	00 04 05 06 07 08 11 12 13 14 15 19 20 21A 21B 22	A E F G H I L M N O P U V W X Y
	A44C2 Pliable Patches - Low MDC Grouping	01 02 03 09 10 16 17 18 23 98 99	B C D J K Q R T Z 8 9
A45 Matrix	A45C1 Matrix - Very High MDC Grouping	00 10 19 98	A K U 8
	A45C2 Matrix - High MDC Grouping	01 05 06 07 08 15 16 17 18 20 22	B F G H I P Q R T V Y
	A45C3 Matrix - Moderate MDC Grouping	02 04 09 11 12 13 14 21A 21B 23	C E J L M N O W X Z
	A45C4 Matrix - Low MDC Grouping	03 99	D 9
A46 Foam	A46C1 Foam - No MDC Grouping	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21A 21B 22 23 98 99	A B C D E F G H I J K L M N O P Q R T U V W X Y Z 8 9
A49 Haemostatic Accessories	A49C1 Haemostatic Accessories - No MDC Grouping	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21A 21B 22 23 98 99	A B C D E F G H I J K L M N O P Q R T U V W X Y Z 8 9
A51 Adhesion Barriers	A51C1 Adhesion Barriers - Very High MDC Grouping	08	I
	A51C2 Adhesion Barriers - High MDC Grouping	01 07 98	B H 8
	A51C3 Adhesion Barriers - Moderate MDC Grouping	00 06 09 10 11 12 13 16 17 19 20 21A 21B 22 23	A G J K L M N Q R U V W X Y Z
	A51C4 Adhesion Barriers - Low MDC Grouping	02 03 04 05 14 15 18 99	C D E F O P T 9
A52 Internal Adhesives	A52C1 Internal Adhesives - Very High MDC Grouping	00 04 10	A E K
	A52C2 Internal Adhesives - High MDC Grouping	01 02 05 06 07 16 17 98	B C F G H Q R 8

Product class	Bundle variant	Grouping of MDCs	Grouping of DRG first characters
	A52C3 Internal Adhesives - Moderate MDC Grouping	03 11 12 13 18 20 21A 21B	D L M N T V W X
	A52C4 Internal Adhesives - Low MDC Grouping	08 09 14 15 19 22 23 99	I J O P U Y Z 9
A53 Ligating Items	A53C1 Ligating Items - Very High MDC Grouping	00 12 19	A M U
	A53C2 Ligating Items - High MDC Grouping	05 06 07 11 17 18 21A 21B	F G H L R T W X
	A53C3 Ligating Items - Moderate MDC Grouping	03 09 10 13 14 20 22 98	D J K N O V Y 8
	A53C4 Ligating Items - Low MDC Grouping	01 02 04 08 15 16 23 99	B C E I P Q Z 9
A54 Staples and Tackers	A54C1 Staples and Tackers - Very High MDC Grouping	10	K
	A54C2 Staples and Tackers - High MDC Grouping	04 07	E H
	A54C3 Staples and Tackers - Moderate MDC Grouping	00 02 11 16 17 18 19 20 21A 21B 22 23 98	A C L Q R T U V W X Y Z 8
	A54C4 Staples and Tackers - Low MDC Grouping	03 05 06 08 13	D F G I N
	A54C5 Staples and Tackers - Very Low MDC Grouping	01 09 12 14 15 99	B J M O P 9
A55 Dura Repair, Liquid Sealants	A55C1 Dura Repair, Liquid Sealants - High MDC Grouping	10	K
	A55C2 Dura Repair, Liquid Sealants - Moderate MDC Grouping	00 06 07 09 11 12 14 15 16 18 19 20 21A 21B 22 23 98	A G H J L M O P Q T U V W X Y Z 8
	A55C3 Dura Repair, Liquid Sealants - Low MDC Grouping	01 02 03 04 05 08 13 17 99	B C D E F I N R 9

Product class	Bundle variant	Grouping of MDCs	Grouping of DRG first characters
A56 Dura Repair, Membrane Sealants	A56C1 Dura Repair, Membrane Sealants - No MDC Grouping	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21A 21B 22 23 98 99	A B C D E F G H I J K L M N O P Q R T U V W X Y Z 8 9
A57 Arterial Closure Items	A57C1 Arterial Closure Items - High MDC Grouping	00 02 05 14 15 19 20 22 98	A C F O P U V Y 8
	A57C2 Arterial Closure Items - Moderate MDC Grouping	01 03 06 08 09 10 16 17 18 21A 21B	B D G I J K Q R T W X
	A57C3 Arterial Closure Items - Low MDC Grouping	04 07 11 12 13 23 99	E H L M N Z 9
A59 Closure Accessories	A59C1 Closure Accessories - No MDC Grouping	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21A 21B 22 23 98 99	A B C D E F G H I J K L M N O P Q R T U V W X Y Z 8 9

Table A5: General Use Item Bundles – Major Diagnostic Category Grouping Variants

Product class	Bundle variant	Bundle benefit
A11 Infusion Pumps, Balloon Based	A11C1 Infusion Pumps, Balloon Based - Very High MDC Grouping	\$410.32
	A11C2 Infusion Pumps, Balloon Based - High MDC Grouping	\$295.89
	A11C3 Infusion Pumps, Balloon Based - Moderate MDC Grouping	\$204.12
	A11C4 Infusion Pumps, Balloon Based - Low MDC Grouping	\$67.04
A12 Infusion Pumps, Battery Powered	A12C1 Infusion Pumps, Battery Powered - Very High MDC Grouping	\$1,261.83
	A12C2 Infusion Pumps, Battery Powered - High MDC Grouping	\$959.32
	A12C3 Infusion Pumps, Battery Powered - Moderate MDC Grouping	\$712.25
	A12C4 Infusion Pumps, Battery Powered - Low MDC Grouping	\$473.99
A13 Infusion Pumps, Spring Powered	A13C1 Infusion Pumps, Spring Powered - No MDC Grouping	\$127.54
A19 Drug Delivery Accessories	A19C1 Drug Delivery Accessories - No MDC Grouping	\$40.35
A21 Feeding Tubes	A21C1 Feeding Tubes - No MDC Grouping	\$161.00
A22 Gastrostomy Tubes	A22C1 Gastrostomy Tubes - No MDC Grouping	\$170.22

Product class	Bundle variant	Bundle benefit
A23 Jejunostomy Tubes	A23C1 Jejunostomy Tubes - No MDC Grouping	\$448.05
A24 Caecostomy Tubes	A24C1 Caecostomy Tubes - No MDC Grouping	\$336.55
A31 Percutaneous Catheters	A31C1 Percutaneous Catheters - High MDC Grouping	\$170.65
	A31C2 Percutaneous Catheters - Low MDC Grouping	\$140.93
A41 Occluder Pins	A41C1 Occluder Pins - No MDC Grouping	\$286.00
A42 Powder	A42C1 Powder - High MDC Grouping	\$175.79
	A42C2 Powder - Moderate MDC Grouping	\$144.96
	A42C3 Powder - Low MDC Grouping	\$94.84
A43 Sponges	A43C1 Sponges - No MDC Grouping	\$13.04
A44 Pliable Patches	A44C1 Pliable Patches - High MDC Grouping	\$72.73
	A44C2 Pliable Patches - Low MDC Grouping	\$47.45
A45 Matrix	A45C1 Matrix - Very High MDC Grouping	\$833.05
	A45C2 Matrix - High MDC Grouping	\$750.51
	A45C3 Matrix - Moderate MDC Grouping	\$628.50



Product class	Bundle variant	Bundle benefit
	A45C4 Matrix - Low MDC Grouping	\$453.37
A46 Foam	A46C1 Foam - No MDC Grouping	\$146.91
A49 Haemostatic Accessories	A49C1 Haemostatic Accessories - No MDC Grouping	\$29.05
A51 Adhesion Barriers	A51C1 Adhesion Barriers - Very High MDC Grouping	\$1,520.36
	A51C2 Adhesion Barriers - High MDC Grouping	\$1,123.32
	A51C3 Adhesion Barriers - Moderate MDC Grouping	\$414.19
	A51C4 Adhesion Barriers - Low MDC Grouping	\$142.68
A52 Internal Adhesives	A52C1 Internal Adhesives - Very High MDC Grouping	\$611.15
	A52C2 Internal Adhesives - High MDC Grouping	\$346.84
	A52C3 Internal Adhesives - Moderate MDC Grouping	\$250.98
	A52C4 Internal Adhesives - Low MDC Grouping	\$214.78
A53 Ligating Items	A53C1 Ligating Items - Very High MDC Grouping	\$202.42
	A53C2 Ligating Items - High MDC Grouping	\$174.19
	A53C3 Ligating Items - Moderate MDC Grouping	\$129.55
	A53C4 Ligating Items - Low MDC Grouping	\$78.17
A54	A54C1 Staples and Tackers - Very High MDC Grouping	\$2,893.42

Product class	Bundle variant	Bundle benefit
Staples and Tackers	A54C2 Staples and Tackers - High MDC Grouping	\$2,247.30
	A54C3 Staples and Tackers - Moderate MDC Grouping	\$1,329.81
	A54C4 Staples and Tackers - Low MDC Grouping	\$878.62
	A54C5 Staples and Tackers - Very Low MDC Grouping	\$398.75
A55 Dura Repair, Liquid Sealants	A55C1 Dura Repair, Liquid Sealants - High MDC Grouping	\$831.46
	A55C2 Dura Repair, Liquid Sealants - Moderate MDC Grouping	\$688.25
	A55C3 Dura Repair, Liquid Sealants - Low MDC Grouping	\$617.69
A56 Dura Repair, Membrane Sealants	A56C1 Dura Repair, Membrane Sealants - No MDC Grouping	\$378.50
A57 Arterial Closure Items	A57C1 Arterial Closure Items - High MDC Grouping	\$423.76
	A57C2 Arterial Closure Items - Moderate MDC Grouping	\$338.03
	A57C3 Arterial Closure Items - Low MDC Grouping	\$307.15
A59 Closure Accessories	A59C1 Closure Accessories - No MDC Grouping	\$68.49

# Appendix B – Feedback to the Consultation Paper

This paper summarises stakeholder feedback provided to the Consultation Paper on Bundling Arrangements for General Use Items (GUIs) on the Protheses List (PL).

Table 10: Stakeholders providing feedback to the Consultation Paper

Stakeholder	Stakeholder type (Private hospital / device manufacturer / private insurer / Commonwealth government / state government / other)
Australian Health Service Alliance / Members Health Funding Alliance ( <i>Joint submission</i> )	Peak body (Private insurer) / Peak body (Private insurer)
Australian Medical Association	Peak body (Clinicians)
Australian Private Hospitals Australia	Peak body (Private hospital)
Australian Unity	Private insurer
Baxter Healthcare	Device distributor/supplier
BUPA	Private insurer
Catholic Health Australia	Peak body (Hospital)
Day Hospitals Australia	Peak body (Private hospital)

Stakeholder	Stakeholder type (Private hospital / device manufacturer / private insurer / Commonwealth government / state government / other)
Defence Health	Private insurer
HBF	Private insurer
HCF	Private insurer
Healthscope	Private hospital
Johnson & Johnson MedTech	Device distributor/supplier
Medibank	Private insurer
Medical Technology Association of Australia	Peak body (Device distributor/supplier)
Medtronic	Device distributor/supplier
Opunake	Consultant
PrecisionMed	Device distributor/supplier
Private Healthcare Australia	Peak body (Private insurer)
Royal Australasian College of Surgeons	Peak body (Clinicians)

Table 11: Summary of feedback to Consultation Paper

#	Question	Stakeholder feedback	IHACPA response
1	Are you aware of any issues with the Hospital Casemix Protocol (HCP) data collection that may impact on the	<b>HCP incompleteness and reliability issues</b> 12 stakeholders identified issues around the completeness and reliability of HCP data, particularly in the collection of public hospital data and prostheses data. Feedback included:	The Independent Health and Aged Care Pricing Authority (IHACPA) notes stakeholders' concerns regarding the incompleteness of the HCP. IHACPA's advice on bundling of GUIs has included analysis on

#	Question	Stakeholder feedback	IHACPA response
	<p>way it captures utilisation of General Use Items for private patient services? Please provide detailed examples that illustrate these issues where possible.</p>	<ul style="list-style-type: none"> <li>• HCP data is noted to be incomplete, with about 10% of private health insurance spend unaccounted for, and hence HCP data is not aligned with Australian Prudential Regulation Authority (APRA)'s statistics.</li> <li>• Some public hospitals are not required to submit all HCP data to private health insurers.</li> <li>• There are instances of HCP data submissions with no clinical, demographic and Medicare Benefits Schedule (MBS) item information.</li> <li>• HCP data does not capture activity funded by other means, such as self-funded activity and compensation schemes that use the PL, including Department of Veteran Affairs, the Australian Defence Force, Worksafe Victoria, and the Transport Accident Commission.</li> <li>• Gaps in the submission of HCP data from private hospitals can occur due to the interpretation of HCP rules, where the insurer is not obligated to provide HCP data unless they have received data from the hospital.</li> <li>• Some hospitals do not itemise GUIs on their invoices due to contractual arrangements, including bundling under a case payment model and caps on the number of items being paid for by funds.</li> <li>• Prostheses utilisation data reflects what is charged by the hospital to the insurer, not actual utilisation at the hospital site. There is variability in the ability for hospitals to accurately bill the actual number and range of devices used in a procedure. Instances where the prostheses charge is \$0 is not included in the HCP.</li> <li>• HCP data does not capture detail regarding non-PL-listed alternatives or substitutes used for PL-listed items.</li> <li>• The HCP data collection does not provide detail on wastage of some types of GUIs, such as items with</li> </ul>	<p>the representativeness of the HCP data (see Section C.2 Data representativeness).</p> <p>IHACPA considers the HCP data collection as the best available primary data source for the development of its advice. The HCP data collection is the only available source of national data that provides sufficiently detailed information on the usage of GUIs in privately insured admitted episodes.</p> <p>With regard to stakeholder feedback on analysing a longer time series of HCP data, IHACPA undertook analysis the preceding three financial years of data to examine variation in the bundles (see Section C.3.4 Analysis of historical changes in GUI product bundle benefits per episode). This analysis showed that the 2020-21 HCP data was fit-for-purpose.</p> <p>Refer to Section 4.3 - Hospital Casemix Protocol data collection for further discussion on data issues and limitations.</p>

#	Question	Stakeholder feedback	IHACPA response
		<p>different volume or weight formulations, and items that are regularly used as multiples. The use of multi-pack type items could lead to billing code data underrepresenting actual usage.</p> <hr/> <p><b>Problematic volume and price growth</b></p> <p>One stakeholder recommended analysing a longer time series to examine variation in item utilisation rates within the bundles.</p>	
2	<p>Do you have any comments on the quality and utility of the proposed data sources for the development of advice on bundling arrangements for General Use Items? Please provide details.</p>	<p><b>Supporting use of all proposed data sources</b></p> <p>Seven stakeholders supported the use of all the proposed data sources (PL, Hospital Casemix Protocol (HCP), Private Hospital Data Bureau (PHDB), Public Hospital Admitted Activity Data Collection and APRA statistics) in defining bundling arrangements for GUIs.</p> <p>Of these stakeholders, one stakeholder noted that data sources providing claim information at an episodic level, such as the Public Hospital Admitted Activity Data Collection and HCP are better sources.</p> <hr/> <p><b>Other considerations in the use of proposed data sources</b></p> <p>One stakeholder noted that differences in data sources should be identified prior to use, e.g. HCP data is reported based on date of service, whilst APRA data is based on date of assessment.</p> <hr/> <p><b>PHDB quality and utility</b></p> <p>Two stakeholders had concerns regarding the quality and utility of PHDB in the development of the Authority's advice. The key concern noted was that the PHDB data set for the day hospital sector is incomplete, as advised by the Department of Health and Aged Care.</p>	<p>IHACPA notes the support for and limitations of the proposed data sources. IHACPA has used the HCP and the PL as the primary data sources for the development of advice. IHACPA has used the PHDB, Public Hospital Admitted Activity Data Collection, and APRA statistics as data sources for comparative analysis to support an understanding of the representativeness of the primary data sources (see C.2 Data representativeness).</p>

#	Question	Stakeholder feedback	IHACPA response
		<p><b>Public Hospital Admitted Activity Data Collection quality and utility</b></p> <p>One stakeholder had concerns regarding the quality and utility of Public Hospital Admitted Activity Data Collection in the development of the Authority’s advice.</p> <p>Another stakeholder supported the use of public hospital admitted activity data with respect to privately insured admitted episodes in public hospitals.</p> <hr/> <p><b>APRA data quality and utility</b></p> <p>Three stakeholders had concerns regarding the quality and utility of the APRA statistics in the development of the Authority’s advice. Concerns include:</p> <ul style="list-style-type: none"> <li>• APRA data on PL usage is understated when it comes to the general miscellaneous volume data.</li> <li>• There is a lack of clarity around the “Other” category in APRA statistics.</li> </ul> <hr/> <p><b>Limitations in quality and utility of proposed data sources</b></p> <p>Two stakeholders did not believe there is sufficiently robust data to support the development of advice on bundling arrangements for GUIs, and that each proposed data source is being used for a purpose for which it was never intended.</p> <p>One of these stakeholders supported the collection of a fit-for-purpose dataset to inform this work.</p>	
3	Are there any other sources of data or empirical information that may be useful in defining alternative bundling arrangements	<p><b>Supporting comparison in utilisation between public and private sector</b></p> <p>Six stakeholders highlighted the importance of comparing utilisation of GUIs between the public and private sector. Feedback received include:</p>	IHACPA acknowledges stakeholders’ recommendations about alternative data sources, such as public sector data, international sources and registry data. IHACPA notes that the data sources used to

#	Question	Stakeholder feedback	IHACPA response
	<p>for General Use Items? If so, please identify the specific information and describe the way in which the information could be utilised.</p>	<ul style="list-style-type: none"> <li>• Examining data on private patient episodes in public hospitals where the use of consumables would be less incentivised.</li> <li>• Comparing utilisation of GUIs for public patients in public hospitals to examine any observed variance in utilisation rates in the HCP data.</li> <li>• Using the Public Hospital Admitted Activity Data Collection and National Hospital Cost Data Collection to assist with this comparison.</li> </ul> <hr/> <p><b>Supporting international sources for benchmarking</b></p> <p>Four stakeholders recommended using international or global data sources for the purpose of benchmarking and examining differences in cost and utilisation. These include comparisons in UK, US and/or OECD countries.</p> <p>One of these stakeholders provided global comparative cost information for IHACPA's consideration.</p> <hr/> <p><b>Supporting use of registry data</b></p> <p>Another recommendation made by a stakeholder was registry data, which could be utilised to explain usage patterns of certain GUIs by examining patient characteristics that drive procedural complications. Some registries that were mentioned include: NJJR, Bariatrics, Cardiac Surgery, Colorectal Surgery, and Gynae-Oncology Registries.</p> <hr/> <p><b>Other data sources</b></p> <p>One stakeholder suggested that industry-supplied data provided to IHACPA to determine public sector benchmark prices could be used to verify data from other sources.</p>	<p>define bundling arrangements should align to the scope of the intended application of advice. Specifically, the bundling advice relates to utilisation of GUIs for services provided to privately insured patients in both public and private hospitals. Furthermore, the bundling advice is intended to support alternative arrangements to the current use of the PL as a payment mechanism for GUIs.</p> <p>IHACPA acknowledges that alternative data sources may be useful to supplement gaps in primary data sources, such as low volumes of activity data for privately insured patients. In these cases, the identification of alternative data sources, such as international sources, would need to be undertaken with careful consideration to ensure conditions are comparable with the Australian context. IHACPA has not undertaken this process within the development of its advice.</p> <p>Registry data was noted by a stakeholder as a valuable source, including data on patient characteristics that drive procedural complications. IHACPA understands that clinical characteristics drive patterns in GUI usage and has developed MDC-based bundle variants for this purpose. For further discussion on the association of GUI utilisation and clinical characteristics, see C.3 General Use Item statistics.</p> <p>With regard to stakeholder feedback on the use of comparative cost data, IHACPA does not consider cost information as an appropriate primary data source for the purposes of defining bundling arrangements</p>



#	Question	Stakeholder feedback	IHACPA response
			<p>for GUIs. IHACPA previously undertook a benchmarking exercise where devices on the PL were benchmarked against devices in the public hospital system. In the scope of this current advice IHACPA has applied the expected March 2023 PL scheduled benefits to GUIs to ensure that the bundle benefits align to the benefits paid for these items prior to their removal from the PL.</p> <p>With regard to the use of industry-supplied data, IHACPA notes that the data provided for determining public sector benchmark prices does not contain a sufficient level of detail showing usage at an episode-level and associated episode characteristics to be useful in the development of this advice.</p>
4	<p>Do you support or oppose the use of the PL product classification within the design of General Use Item bundles? Please provide details in terms of the specific features of the PL classification.</p>	<p><b>Supporting use of the PL product classification</b></p> <p>10 stakeholders supported the use of the PL product classification within the design of the GUI bundles.</p> <p>However, of these stakeholders, there are differing views as to the features of the PL classification to use.</p> <ul style="list-style-type: none"> <li>• One stakeholder noted that grouping must be carefully done to ensure an appropriate level of granularity to identify variations in utilisation across the sector.</li> <li>• Three stakeholders noted that the utility of the technology, including clinical and economic benefits, should be considered when selecting the level of granularity used in the PL classification.</li> <li>• Three stakeholders specified the use of the PL product classification at the suffix level.</li> </ul>	<p>IHACPA notes the support for use of the PL product classification. IHACPA has used the PL product classification as a foundation for the classification of GUI products within the development of bundling advice.</p> <p>IHACPA notes stakeholders' concerns around the level of granularity within the PL classification. IHACPA has primarily chosen the PL product group level of classification to differentiate items in the definition of bundles, with a few exceptions (see Section 5.3.1 - Defining GUI product classes).</p> <p>Additional granularity in the definition of bundles to better identify variations in</p>

#	Question	Stakeholder feedback	IHACPA response
		<p><b>Opposing use of the PL product classification</b></p> <p>Whilst one stakeholder did not voice a clear opposition to the use of the PL product classification, they noted that it is the mix, cost and variability of items to be bundled that is of interest, rather than their current or previous PL product classification.</p> <hr/> <p><b>Concerns regarding use of PL product classification</b></p> <p>Four stakeholders were unclear in their position regarding the PL product classification, mentioning a number of concerns related to its use:</p> <ul style="list-style-type: none"> <li>• One stakeholder suggested that bundling should retain flexibility for clinicians to use the devices most suitable.</li> <li>• One stakeholder suggested that the PL product classification should be approached with caution due to issues and anomalies in product classifications, for example items being inappropriately categorised, and unjustified differentials in benefit amounts.</li> <li>• One stakeholder noted that it may be necessary to explore correlations at category or sub-category level. However, at this level, there may be low levels of utilisation that limits the analysis.</li> </ul> <p>Additional concerns from other stakeholders regarding the use of PL product classification include:</p> <ul style="list-style-type: none"> <li>• Care should be exercised for items with high variation of utilisation that may indicate inefficiencies in utilisation, such as sponges, glues and adhesion barriers.</li> <li>• One stakeholder suggested adjustments be put in place for items that have previously been denied access to the PL due to the reform.</li> </ul>	<p>utilisation has been defined within the facility type and MDC-based bundle variants.</p>

#	Question	Stakeholder feedback	IHACPA response
		<p><b>Alternative classification system</b></p> <p>One stakeholder noted that, if a new classification system is considered for the PL delisting and bundling process, this would need to reflect hospital or case-mix level.</p>	
5	<p>Do you support or oppose the use of the ICD-10-AM/ACHI/ACS classifications within the design of General Use Item bundles? Please provide details of any perceived issues or benefits regarding the use of these classifications.</p>	<p><b>Supporting use of the ICD-10-AM/ACHI/ACS classifications</b></p> <p>14 stakeholders supported the use of the ICD-10-AM/ACHI/ACS classifications, with a common reason being that these classifications are used widely and are well understood. Feedback received in the use of these classifications include:</p> <ul style="list-style-type: none"> <li>• The design of GUI bundles using the ICD-10-AM/ACHI/ACS system should outline potential aggregation at the AR-DRG level, or used in combination with AR-DRG.</li> <li>• There may be patterns of GUI utilisation with the same MBS item and ICD-10-AM classification. One stakeholder noted that the mapping of ICD-10 to MBS utilisation would be useful information for all stakeholders.</li> <li>• Utilisation at a procedure-level should be examined, as episode-level calculations may be impacted in instances where there are multiple procedures per episode.</li> <li>• It may be necessary to validate and maintain bundles in a range of AR-DRG versions if AR-DRGs are used as a component in the design.</li> </ul> <p><b>Opposing use of the ICD-10-AM/ACHI/ACS classifications</b></p> <p>One stakeholder believed that the ICD-10-AM/ACHI/ACS classifications should not be used when designing the GUI bundles due to being insufficiently granular.</p>	<p>IHACPA acknowledges stakeholders' support for the ICD-10-AM/ACHI/ACS and AR-DRG classifications. IHACPA has used the ICD-10-AM/ACHI/ACS and AR-DRG classifications to support the design of MDC-based GUI bundle variants.</p>

#	Question	Stakeholder feedback	IHACPA response
		<p><b>Other considerations regarding use of ICD-10-AM/ACHI/ACS classifications</b></p> <p>Other considerations raised by stakeholders regarding the use of the ICD-10-AM/ACHI/ACS classifications include:</p> <ul style="list-style-type: none"> <li>• One stakeholder suggested that there may be issues with bundling using specific conditions when it comes to high-risk patients, as it may lead to fragmentation in disease specialties and cause difficulties where patients are experiencing multi-morbidity and high complexity. They have advocated for bundles that are also risk-adjusted and include outlier payments.</li> <li>• One stakeholder recommended the provision of different options on the unit of measure (e.g. ICD-10, AR-DRG and hospital level) to allow funds and hospitals enough transparent information to make decisions about GUIs.</li> </ul>	
6	<p>Do you support or oppose the use of hospital characteristics within the design of General Use Item bundles? Please provide details of any perceived issues or benefits regarding the use of hospital characteristics.</p>	<p><b>Supporting use of hospital characteristics</b></p> <p>Eight stakeholders supported the use of hospital characteristics such as hospital type and number of beds in the design of the GUI bundles, providing reasons such as:</p> <ul style="list-style-type: none"> <li>• Bundling arrangements are unlikely to look the same for day facilities and overnight hospitals.</li> <li>• There are differences in funding models between hospitals, for example per diem versus Australian Refined Diagnosis Related Group (AR-DRG)</li> <li>• There is greater expenditure hardship for hospitals in rural and regional areas.</li> <li>• Day hospitals have a lower capacity to absorb increased costs due to the lower price paid for any given procedure to day hospitals.</li> <li>• There are differences in case-mix between hospital types.</li> </ul>	<p>IHACPA notes the lack of consensus in the use of hospital characteristics within the design of GUI bundles. IHACPA has defined facility type GUI bundle variants but has provided flexibility with regard to their application. In particular, facility type GUI bundle variants may be selectively applied where they are seen as appropriate and offering value in alternative arrangements.</p>

#	Question	Stakeholder feedback	IHACPA response
		<ul style="list-style-type: none"> <li>• There needs to be considerations for smaller hospitals and newer hospitals to ensure their viability.</li> <li>• There are differences in workflow and management of patient treatment between public and private sectors.</li> </ul> <hr/> <p><b>Opposing use of hospital characteristics</b></p> <p>Seven stakeholders opposed the idea of using hospital characteristics, with stakeholders suggesting that it is unclear as to why similar procedures should use different items depending on hospital type.</p> <ul style="list-style-type: none"> <li>• Two stakeholders suggested that varying utilisation of bundles by clinical complexity and case mix can be accounted for by using clinical classification systems.</li> <li>• One stakeholder mentioned that surgeon choice and preference are more significant drivers of GUI utilisation when compared to hospital characteristics.</li> <li>• One stakeholder suggested that low variation in GUI utilisation between the public and private sector should be used as a proxy of appropriate utilisation as opposed to using hospital characteristics or a simple averaging of benefits.</li> </ul> <hr/> <p><b>AIHW peer grouping</b></p> <p>Two stakeholders recommended the use of the Australian Institute of Health and Welfare (AIHW) peer grouping for private hospitals as a starting point for categorising different facilities based on their size, capabilities and case mix.</p>	
7	Are there any other classification systems that IHACPA should incorporate in the design of General Use	<p><b>Supporting use of other classification systems</b></p> <p>Several stakeholders made recommendations in relation to other classification systems that could assist in the bundling design process:</p>	IHACPA acknowledges stakeholders' recommendations regarding other classification systems.

#	Question	Stakeholder feedback	IHACPA response
	<p>Item bundles? If so, please provide details of these classifications and a rationale for their use.</p>	<ul style="list-style-type: none"> <li>• Five stakeholders recommended the use of the AR-DRG classification alongside the ICD-10-AM/ACHI/ACS system, given that it is at a higher, more appropriate level of aggregation of item use and would provide guidance to the sector regarding the appropriate use of GUIs.</li> <li>• Six stakeholders recommended the use of the MBS classification in the design and validation of the bundles.</li> <li>• Two stakeholders recommended IHACPA to review and/or use the banding infrastructure defined by the National Procedure Banding Committee.</li> </ul> <hr/> <p><b>No further suggestions for other classification systems</b>  Five stakeholders had no other suggestions on other classification systems that IHACPA should incorporate in the design of GUI bundles.</p> <p>One stakeholder opposed the use of other classification systems as they would add unnecessary complexity.</p> <hr/> <p><b>Other characteristics</b></p> <p>One stakeholder suggested the consideration of a number of characteristics and whether they are drivers for variation in utilisation of GUIs. These include:</p> <ul style="list-style-type: none"> <li>• Patient characteristics, i.e. gender, age and comorbidity</li> <li>• Procedural/theatre admission characteristics, i.e. bilateral or multiple procedures, and,</li> <li>• Separation characteristics, i.e. intensive care unit status, admission transfer status or multiple admissions to theatre, day-only separation, separations involving hospital in the home.</li> </ul>	<p>With regard to the use of MBS codes and procedure bands defined by the National Procedure Banding Committee, IHACPA notes that issues with data completeness of MBS item codes within the HCP limit the incorporation of these classification systems in the design of GUI bundles. IHACPA has defined MDC-based bundle variants that differentiate GUI bundles by clinical characteristics.</p>

#	Question	Stakeholder feedback	IHACPA response
8	<p>Are you aware of any short-term changes, brought on by the impact of COVID-19, to the utilisation of General Use Items among episodes in which these items are used? If so, please provide details that enable the changes to be examined using the 2020–21 HCP data collection.</p>	<p><b>Impact of COVID-19 unclear</b></p> <p>11 stakeholders noted that the impact of COVID-19 on GUIs was unclear in terms of changes in utilisation, suggesting that the only impact was on utilisation volume. Furthermore, one such stakeholder observed that the number of claims in the general miscellaneous category remained relatively consistent from 2018-19 to 2021-22.</p> <hr/> <p><b>Significant COVID-19 impact on utilisation</b></p> <p>One stakeholder noted that their experience over the past 2 years was that volume and range of products used during this period had been significantly impacted, with a decline in activity in 2019-20 and an upswing in 2020-21.</p> <hr/> <p><b>Other impacts from COVID-19</b></p> <p>Three stakeholders made references to other impacts of COVID-19 on GUI utilisation:</p> <ul style="list-style-type: none"> <li>• One stakeholder observed there were impacts on procedural volumes and item utilisation that varied by state/territory, by locality and by patients of different clinical acuity level.</li> <li>• Two stakeholders anticipate the utilisation of GUIs to increase above pre-COVID levels as restrictions ease and elective surgery returns.</li> <li>• One stakeholder suggested for IHACPA to look into the impact of COVID-19 on supply chains and consequently patterns in utilisation.</li> <li>• One stakeholder observed that higher bleeding rates among previously COVID-infected patients may be a factor in recent usage characteristics of haemostats.</li> <li>• Four stakeholders suggested comparing pre-COVID utilisation rates to COVID rates to examine the enduring</li> </ul>	<p>IHACPA notes stakeholders' views that the impact of COVID-19 is unclear. With regard to stakeholders' feedback on analysis of pre-COVID utilisation data, whilst IHACPA primarily used FY 2020-21 HCP data to derive the bundles, the preceding three financial years of data were also analysed to examine variation in the bundles. Refer to C.3.4 Analysis of historical changes in GUI product bundle benefits per episode for further details. Also refer to Section 4.3 - Hospital Casemix Protocol data collection for further discussion on COVID-19 impacts.</p>

#	Question	Stakeholder feedback	IHACPA response
		<p>impact of COVID-19 on GUI utilisation. One stakeholder recommended the use of pre-COVID HCP data as a primary basis for the design of the GUI bundles.</p>	
9	<p>Are you aware of any existing contracting arrangements between hospitals and insurers that might be considered relevant in the formulation of advice on alternative bundling arrangements? If so, please provide details of the arrangements, noting that IHACPA will ensure confidentiality of this information wherever necessary.</p>	<p><b>Awareness of existing contracting arrangements</b></p> <p>Several stakeholders provided information on the different contracting arrangements between hospitals and insurers. Contracts are structured by per diem, MBS, procedure bands defined by the National Procedure Banding Committee, and by AR-DRG.</p> <p>The relevance of these existing contracting arrangements to the formulation of advice on alternative bundling arrangements include:</p> <ul style="list-style-type: none"> <li>• Five stakeholders suggested that there are instances of consumables that are funded through the PL and through arrangements originally in place prior to their listing. Some stakeholders have noted that this may result in double funding in these cases.</li> <li>• One of these stakeholders suggested that select sub-categories of GUIs should be modified or removed prior to the development of bundles, as their current arrangements includes: GUIs as cost elements of</li> </ul>	<p>IHACPA notes stakeholders' concerns about the impact of existing contracting arrangements on the bundling process, in particular the potential for double counting of consumables that are funded through existing arrangements prior to listing. IHACPA notes that the primary purpose of its advice is to support alternative arrangements for GUIs currently funded through PL arrangements. IHACPA has provided comprehensive detail on the defined GUI bundles to ensure stakeholders can make informed and measured decisions regarding their application or use.</p>



#	Question	Stakeholder feedback	IHACPA response
		<p>procedure bands defined by the National Procedure Banding Committee, other contract arrangements that bundle GUIs, GUIs that have substituted for prior procedure cost elements, and items that are inappropriately claimed.</p> <ul style="list-style-type: none"> <li>• Two stakeholders have highlighted arrangements where prostheses costs were absorbed by private hospitals and were not reflected in the data. Items of concern include cardiac ablation catheters and robotic consumables.</li> <li>• Two stakeholders noted that non-PL-listed alternatives exist for most, if not all, GUIs, and are funded under existing contract arrangements.</li> <li>• One stakeholder noted the complexities of funding arrangements in the private health sector, and changes to the PL need to consider the impact on these complex funding arrangements.</li> <li>• One stakeholder noted the existence of volume-based discounts and rebates to private hospitals under commercial-in-confidence arrangements, making it unclear what the real price being paid per device is.</li> <li>• One stakeholder noted that there should be consideration of hospitals that do not have a contractual arrangement with PHIs, or whose contract does not allow billing of all devices used.</li> </ul>	
10	Are you aware of any instances where a General Use Item charge is raised against an individual episode but where the item is used across multiple episodes, such	<p><b>Not aware of usage of GUIs across multiple episodes but raised against an individual episode</b></p> <p>Seven stakeholders noted they were unaware of usage of GUIs across multiple episodes or suggested that such activities do not occur. A number of stakeholders noted that, if this were to occur, hospitals would be breaching their lawful obligations.</p>	IHACPA notes stakeholders' feedback on instances where GUI charges are raised against an individual episode but where the item is used across multiple episodes. IHACPA acknowledges the challenges in obtaining definitive evidence and details of these occurrences. As such, no adjustments

#	Question	Stakeholder feedback	IHACPA response
	as might occur for multi-pack or multi-use type items? If so, please provide details.	<p><b>Aware of usage of GUIs across multiple episodes but raised against an individual episode</b></p> <p>Seven stakeholders suggested that there have been instances where a GUI is used across multiple episodes and highlighted the following items as examples: Battery-powered and spring-powered infusion pumps, Screws (kits with multiples), Nasal dressing, Drug delivery items. Some of these stakeholders noted that this is not easily identified, and noted the lack of definitive evidence.</p>	have been made by IHACPA in the formulation of advice to account for this.
11	Are there any other issues of relevance to the formulation of advice on alternative bundling arrangements? If so, please provide details on these issues and their materiality with regard to the formulation of advice.	<p><b>Use of the National Efficient Price Framework and median approach to usage</b></p> <p>Eight stakeholders recommended that the calculation of bundled benefits be based on a framework similar to the one IHACPA applies in the calculation of the National Efficient Price for public hospital services, as this would help determine what items are routinely used within a procedure.</p> <p>In addition, four of these stakeholders proposed the use of median statistics rather than averages, as this would remove the influence of inappropriately used PL-listed GUIs when determining bundling arrangements, with one example being high-cost consumables that have low levels of utilisation for certain procedures.</p> <p><b>Transparency, data sharing and information asymmetry</b></p> <p>Four stakeholders have brought up the issue of information asymmetry between IHACPA and insurers and hospitals when it comes to the development of advice on alternative bundling, and the lack of transparency around the decision-making process when it comes to both bundling and removal of GUIs from the PL.</p>	<p>IHACPA notes stakeholders' concerns surrounding the transparency around the decision-making process. IHACPA's advice has been designed as an aid that helps reduce information asymmetry to support the sector in establishing alternative arrangements for the payment of benefits for these items.</p> <p>IHACPA also notes stakeholders' concerns around issues of policy, operationalisation and implementation. IHACPA has attempted to provide advice that is amenable to different implementation approaches. However, IHACPA notes that decisions regarding issues such as mandating alternative bundling arrangements, governance arrangements, or adjusting for clinically appropriate use of GUIs are beyond the scope of IHACPA's advice.</p> <p>IHACPA notes stakeholders' feedback that the bundles should be designed so that they can be updated over time to remain fit-for-</p>

#	Question	Stakeholder feedback	IHACPA response
		<p><b>Mandating of bundles and prices</b></p> <p>A number of stakeholders noted views on the mandating of the alternative bundling arrangements, including the prices. Feedback received include:</p> <ul style="list-style-type: none"> <li>• One stakeholder requested that IHACPA’s advice should be mandated.</li> <li>• One stakeholder requested for the construct of bundles to be mandated, and the price to be negotiated between parties.</li> <li>• One stakeholder requested for the bundled prices to be made mandatory and not left up to negotiations, suggesting that, if insurers do not compensate or adequately compensate private hospitals for the cost of the bundles, this would lead to the hospitals passing these costs to patients. This may lead to clinical care and choice being compromised for private patients, and clinical decision making inappropriately influenced by financial considerations based on what funders will pay for or not. The stakeholder also suggested that non-mandatory prices could lead to hospitals encouraging lower cost procedures, which would direct more expensive prostheses cases towards public hospitals increasing financial burden and waiting times.</li> <li>• One stakeholder was concerned about the non-mandatory nature of the bundles in reducing access to items that clinicians believe are most appropriate for their patients.</li> </ul>	<p>purpose. The GUI product classification that IHACPA has used as a basis for defining GUI bundles can be expanded or refined over time if the GUI products changes. Furthermore, IHACPA has provided a comprehensive range of statistics, such as average benefits per episode, average benefits per item, and average items per episode, that may be adjusted over time to account for changes in GUI product mix or use.</p>

#	Question	Stakeholder feedback	IHACPA response
		<p><b>Clinically appropriate practice</b></p> <p>Three stakeholders suggested that IHACPA should consider clinically appropriate use of GUIs. The key points raised are:</p> <ul style="list-style-type: none"> <li>• Prosthesis utilisation not in line with clinical best practice should not be factored into bundles.</li> <li>• Suggested analyses include understanding utilisation of items prior to listing on the PL, and assessing the utilisation trends of GUIs over time, especially whether there are changes in utilisation patterns since the PL reforms were announced.</li> <li>• In its current form, the PL allows hospitals to bill insurers for inappropriate and off-label use of devices.</li> </ul> <hr/> <p><b>Governance</b></p> <p>Two stakeholders emphasised the necessity for the involvement and provision of clinical oversight from the Clinical Implementation Reference Group (CIRG) and other relevant medical bodies.</p> <hr/> <p><b>Timelines</b></p> <p>There was some commentary around timing of the advice:</p> <ul style="list-style-type: none"> <li>• One stakeholder emphasised the importance of announcing the bundled arrangements without delay, suggesting that this would provide hospitals ample time to undertake renegotiations with insurers and work through necessary changes before the proposed implementation date of 1 July 2023.</li> <li>• One stakeholder suggested that timelines and implementation could be impacted by non-adoption of IHACPA's advice and that IHACPA's advice should be mandated for adoption and implementation.</li> </ul>	

#	Question	Stakeholder feedback	IHACPA response
		<p><b>Other operationalisation/implementation issues and recommendations</b></p> <p>A range of other issues were raised by stakeholders regarding the removal of GUIs from the PL:</p> <ul style="list-style-type: none"> <li>• One stakeholder recommended that IHACPA consider how multiple procedures in the same episode are managed when it comes to item utilisation and the definition of bundles.</li> <li>• One stakeholder recommended for the GUI bundles to be shadow priced to ensure the reforms have the desired positive impact on patients without any unintended consequences.</li> <li>• One stakeholder noted the need for an ongoing methodology that updates the inputs to the bundled arrangements to ensure that the bundles remain fit-for-purpose.</li> <li>• One stakeholder noted that, given the bundling exercise uses the expected schedule benefits for these items as of March 2023, there is a risk that these prices are not achieved, and it is important to adjust the bundled fees accordingly.</li> <li>• In regard to actions post-implementation, two stakeholders recommended that IHACPA review and monitor the utilisation of GUIs removed from the PL in order to examine any unintended consequences surrounding the bundling of GUIs.</li> </ul>	
		<p><b>Policy issues</b></p> <p>Other policy issues noted by stakeholders include:</p>	

#	Question	Stakeholder feedback	IHACPA response
---	----------	----------------------	-----------------

- Two stakeholders noted that there are products that were previously denied access to the PL, which should be considered in the bundling.
- One stakeholder noted that the alternative bundled arrangements should be accessed by patients using hospital substitution services.
- One stakeholder raised a concern regarding certain GUIs that have been identified for removal but are not included in development of bundling arrangements, as this will result in these items not being appropriately funded.
- One stakeholder still considered the PL as the most appropriate funding mechanism for a number of products slated for removal.

---

#### **Structure of IHACPA's advice**

Stakeholder feedback on the structure and nature of IHACPA's advice include:

- One stakeholder suggested that including measures of dispersion (such as deciles or quartiles of GUI utilisation) for any given treatment will assist insurers and hospitals when making transitional arrangements for future funding arrangements.
- One stakeholder suggested that detail is included in the bundle definitions to address standard (or minimum requirements) and complex (or maximum requirements) utilisation.

# Appendix C – Supporting analyses

## C.1 Data preparation

The Independent Health and Aged Care Pricing Authority (IHACPA) primarily makes use of the Hospital Casemix Protocol 1 (HCP) national data collection to develop the advice on bundling arrangements for General Use Items (GUIs) on the Prostheses List (PL). Preliminary preparation of the HCP data is an important component of developing the advice. This section sets out further detail on the key steps performed in the data preparation process and summarises the results of these procedures.

### C.1.1 Data preparation procedures

Several stage of data preparation are undertaken on the HCP dataset to ensure that GUI utilisation can most accurately represented within it for the purpose of developing advice on GUI bundling arrangements. These steps are:

#### **Stage 1: Linking of HCP Prosthesis (PL device) records to HCP Episode records and exclusion of PL device records that do not link to an episode record**

Only records of prosthesis device usage that can be linked to an episode record are considered for the development of the advice. Device records without a linked episode are incomplete and missing critical information on the admitted services they are associated with and are therefore excluded.

#### **Stage 2: Mapping of historical billing codes to August 2022 PL billing codes, where possible, and exclusion of HCP Prosthesis device records with historical billing codes that do not map to August 2022 PL billing codes**

The HCP Prosthesis data captures a historical record of charge and benefit information for devices registered under billing codes on historical publications of the PL. Changes to the PL are made regularly over time, as new billing codes are added, existing billing codes are removed, transferred, duplicated or compressed, and scheduled benefits are adjusted. As part of the data preparation process, such changes need to be accounted for.

Where appropriate, a process of forward mapping is applied to superseded billing codes recorded in historical years of the HCP Prosthesis data to account for PL changes, such as transferred, compressed or duplicated billing codes. This process aligns the HCP data to the greatest extent possible with PL billing codes from the August 2022 publication of the PL.

Device records with historical billing codes not present in the August 2022 PL and unable to be appropriately mapped forward billing codes present in the August 2022 PL are excluded.

#### **Stage 3: Exclusion of episode records with no benefits**

Episode records are excluded if they do not have any non-PL benefits nor any remaining PL benefits. These exclusions are primarily episode records that originally had only PL benefits (i.e. no non-PL benefits) and these benefits were all excluded at Stage 2 due to being associated with discontinued billing codes unable to be mapped to the August 2022 PL.

#### **Stage 4: Exclusion of episode records with invalid or missing principal diagnosis and exclusion of any corresponding linked device records**

Episodes of care with a missing or invalid principal diagnosis are missing a key element of clinical information being considered in the development of advice on bundling arrangements. These are identified as episodes that are grouped to an error class in the Australian Refined Diagnosis Group (AR-DRG) classification and are excluded from the analysis. All device records linked to these excluded episodes are also removed.

Collectively, these four stages ensure that a complete set of relevant information is available for each episode and its related device usage, and that the GUs and their related benefits being considered are relevant to the version of the PL that is expected to be in effect prior to their removal from the PL.

### **C.1.2 Results of data preparation**

Table 12 summarises the number of 2020-21 HCP Episode records remaining after each stage of data preparation and Table 13 summarises the remaining benefits paid on 2020-21 HCP Prosthesis device records after each stage of data preparation.

**Table 12: Number of privately insured admitted patient episodes by data preparation step in 2020-21 HCP**

Preparation step	Number of privately insured admitted episodes			
	Private overnight	Private day facilities	Public hospitals	Total
Initial	2,970,744 (100.0%)	673,907 (100.0%)	595,887 (100.0%)	4,240,538 (100.0%)
Step 1	Not applicable			Not applicable
Step 2	Not applicable			Not applicable
Step 3	2,963,876 (99.8%)	672,470 (99.8%)	586,618 (98.4%)	4,222,964 (99.6%)
Step 4	2,958,100 (99.6%)	671,521 (99.6%)	321,851 (54.0%)	3,951,472 (93.2%)

**Table 13: PL benefits paid by data preparation step in 2020-21 HCP**

Preparation step	PL benefits paid			
	Private overnight	Private day facilities	Public hospitals	Total
Initial	\$1,875m (100.0%)	\$76m (100.0%)	\$83m (100.0%)	\$2,034m (100.0%)



Preparation step	PL benefits paid			
	Private overnight	Private day facilities	Public hospitals	Total
Step 1*	\$1,875m (100.0%)	\$76m (100.0%)	\$83m (100.0%)	\$2,034m (100.0%)
Step 2	\$1,854m (98.9%)	\$76m (99.8%)	\$82m (99.1%)	\$2,012m (98.9%)
Step 3	Not applicable			Not applicable
Step 4	\$1,854m (98.9%)	\$76m (99.8%)	\$48m (57.5%)	\$1,977m (97.2%)

\* There is no impact for this step in financial year 2020-21. However, prior financial years are impacted.

The data preparation procedures have a minimal impact on the total number of episodes and prostheses benefits recorded in HCP for private overnight hospitals and private day facilities. A larger impact is noted for privately insured patients in public hospitals, with 46% of episodes excluded (or 43% of benefits). This is due to missing principal diagnosis information for a large proportion of public hospital records.

Despite the large number of exclusions for public hospital episodes, there is no material impact detected on the composition of GUI usage and benefits. This is discussed further in Section C.2 Data representativeness.

Finally, the HCP Prosthesis device records are restricted to GUIs as identified by Part D of the August 2022 PL, and the items are assigned their expected March 2023 PL scheduled benefit. No episodes are excluded in this step.

Table 14 summarises the final 2020-21 HCP GUI characteristics, including items, episodes and March 2023 PL benefits.

Table 15 lists all GUI billing codes by their expected March 2023 PL scheduled benefit.

**Table 14: Summary of 2020-21 HCP GUI characteristics**

Data preparation	Private overnight	Private day facilities	Public hospitals	Total
Number of General Use Items used	1,019,524	14,769	26,483	1,060,776
Episodes with General Use Items	367,734	12,987	9,069	389,790
Benefits paid for General Use Items	\$200m	\$2m	\$4m	\$206m

**Table 15: GUI billing codes by expected March 2023 PL scheduled benefit**

Benefit	Billing codes	Benefit	Billing codes	Benefit	Billing codes
\$2	LM042	\$104	TX031 TX032 TX033 TX034 WC230 WC231 WC321	\$357	AS046 AS134 IJ020 JJ903 JJ904 MN206 OX031 ZZ068

Benefit	Billing codes	Benefit	Billing codes	Benefit	Billing codes
\$7	RX003 SI026 SI028 SI040	\$107	BX336	\$367	BU025 BX249 BX330 CU005 RN007 SQ037 TX059
\$8	AN016 JJ003 JJ005 JJ015 LH405 LH410 LH411 LH412 LH414 LH424 LM487 RX002	\$122	AN009	\$374	AS045 BA203
\$9	DE618 EB138	\$125	AK012 LV081 WA011	\$394	BX258 FY001
\$10	BB294 BB297 BB299 BB300 DE724 JJ033 JJ034	\$128	BX252 DE720 JJ037 JJ038 JJ039 LH597 MI217 MN229 MN230	\$407	DQ002 FX003 FX004
\$11	DE616 TX006 TX008 TX010 TX012	\$129	JJ006	\$411	FJ003
\$15	JJ006 JJ007 PU059	\$130	BA184 BA212 BA220 BA268 BA273 BA282 BA302 BA308 MS067 MS069 MS074 MS075 MS078 TX036 TX061 WC279	\$412	AS213 KF002
\$19	BG002 JJ013 JJ014	\$131	BA183 BA213 BA274 BA283 BA298 BA299 BA300 BA303 MS071 MS076 MS077 MS080 TX035 TX043 TX056 TX062 WC280 WC297	\$417	BX343 LH719 LH720 LH721 LH723
\$22	AB008 BA267 BX266 BX270 DE722	\$132	BA261 BF024 BX345 BX347 MN234	\$447	DE683 MI227 MN215
\$23	BB382 BB383 DE721 LH596 MI286 MI317	\$142	RN004 SI051 TX060	\$451	FK009 FK010 FK014 FK015 FK016 KI014 KI016 KI017
\$25	AB009 AB010 AB076 BX261 BX262 BX263 BX264 BX269 BX271 BX272 BX275 BX282 DE619 DE723	\$146	BA049 BA125 BA129 BA291 BA292 BA296	\$463	WL001
\$26	BX245 DE777 FX001 LH423 LM486 RE003 SI024	\$154	VM001 WC098 WC099	\$473	AS075 AS077 AS246 BA204 BA269 JJ184 MN115 MN175
\$27	JJ004	\$158	BX337 JJ010 JJ464	\$497	WA004
\$28	BB349 FY003 MN154 RN006 SI049 SI050 TX057 TX058 TY001 VB001	\$161	KI010	\$516	BX253
\$29	EB137	\$162	AS228 MI304	\$521	AS209 MI287
\$30	JJ035	\$180	AS074 CK003 JJ186 JJ482 LV076 LV086 MH015 MI213 TX024	\$559	JJ812
\$33	BG001 JJ023 JJ432	\$185	BA047 BS141 DE536 DE541 DE546 DE564 DO020 DO022 DO023 FK008 FK011 FK013 FK018 KI001 KI002 KI004 WC072 WC185	\$580	HW659 HW660 IG141 MN203
\$34	JJ009 JJ012 MN112	\$186	BX344	\$588	AB003 BX215 BX284
\$39	JJ008	\$198	GT224 GT228	\$595	LH534
\$40	DE698 EB136 TX023 TX025	\$208	KF003	\$608	SJ451

Benefit	Billing codes	Benefit	Billing codes	Benefit	Billing codes
\$41	BB298 DE617 DE725 TX007 TX009 TX011 TX013	\$210	AS076 AS081 AS092 IJ017 IJ019 MI215 MI216 MI455 MN213 MN218 MN220 OB003 OB006 OB010 OX038 OX039 OX040	\$629	IG142 MN202
\$45	BA260 BA301 BX346 JJ636 LH408 SI046 SQ069 SV053	\$211	DE726 ER280	\$640	BX259 MN172
\$46	BA284 BA285	\$217	AB083 BA262 BX348 SV055	\$648	AS179 IJ014 IJ016 JJ443 OB004 OB007 OX035 OX036
\$50	DE610	\$226	BX260 JJ475	\$653	AS227 MI303
\$52	AS212 BB016 BB301 BB321 CK001 CK002 GQ006 GQ007 JJ040 KF001	\$233	CU001 CU002 DQ001 LE002	\$662	JJ056
\$53	AB065 BX268 BX277 BX279 BX280	\$234	AS091 AS095	\$671	MI219 MI281 MN216
\$64	PU060	\$249	DE606 DE609	\$680	FQ002
\$68	BA266 BX265 BX267 BX273 BX340 BX341 DE727 ET065 FY002 MN041 MN153	\$258	MI305	\$718	BA265
\$69	JJ030 MN116 MN214	\$260	UX003	\$903	VB002
\$71	TX030	\$277	AN008	\$963	BX254
\$72	BX286 SQ070 SQ142	\$286	PV001	\$1,173	ET051 FJ001 FJ002 FJ004 LH001 LM084 MC618
\$76	BX326	\$290	DO009 DO012 DO025 SJ452 SJ459 SJ463 TU061 TU067	\$1,177	AB004 BX216 BX285 MN204
\$81	JJ036	\$292	AS110 ET066 IJ015 IJ018 JJ050 MI212 MI214 MI456 MN217 OB002 OB005 OB009 OX032 OX033 OX034	\$1,473	ER279
\$82	BS142 DO021 DO024 FK012 KI005 KI007 NF001 WC070 WC334	\$293	BA051 BA126 BA209 BA289 BA290 BA293 BA294 BA295	\$2,283	ER650
\$90	AB084 SV054	\$301	BX334 BX335	\$2,805	DE776 FK017 FX002 RE001 RE002 SI034 SI045 SI052
\$91	JJ433	\$308	DE611		
\$92	BU024 BX247 BX281 BX287 BX327 BX328 CU003 SQ146 UX001 UX002	\$312	BX342		
\$93	BF021 HW582 ME230 SL081 SL083	\$318	AS186 DE472 DE560 IJ021 MI282 MN219 OX037 ZZ069		
\$94	ET082	\$319	CU004 SQ035 UX004		
\$96	BA130 TX026 TX027 TX028 WC111 WC201 WC204 WC205	\$320	WC197		

Benefit	Billing codes	Benefit	Billing codes	Benefit	Billing codes
\$98	JJ029 MN117	\$323	AB075 AS229 BX214 BX283		
\$99	WC335	\$343	JJ640		

## C.2 Data representativeness

The Stage 4 prepared HCP data is compared against alternative sources of information to examine the extent to which it is representative of the population of privately insured admitted episodes and associated PL device utilisation and benefits paid. The following alternative data sources are used for this purpose:

- The Private Hospital Data Bureau (PHDB) data collection
- The IHACPA Admitted Patient Care (APC) activity data collection
- The Australian Prudential Regulatory Authority (APRA) Quarterly Private Health Insurance Statistics report.

A number of checks were performed on the prepared HCP data to estimate the extent to which the data was representative of the profile of PL device utilisation in privately insured episodes in financial year 2020-21, as observed from the alternative data sources.

### C.2.1 Results of data representativeness

Table 16 and Table 17 below show the completeness of the prepared HCP data for the count of privately insured episodes (measured against PHDB and IHACPA APC data) and prosthesis devices (measured against APRA data).

Table 16: Admitted episode comparison - Prepared 2020-21 HCP to PHDB and IHACPA APC

Hospital Type	Comparison source	HCP episodes	Comparison episodes	Completeness
Private overnight	PHDB	2,956,035	2,994,162	99%
Private day	PHDB	671,514	691,848	97%
Public hospital	IHACPA APC	321,482	809,764	40%

Table 17: Device usage and benefit comparison - Prepared 2020-21 HCP to APRA

Hospital type	HCP totals relative to APRA		Average benefits per item		
	Items	Benefits	HCP	APRA	Difference
Private overnight and day hospitals	93%	92%	\$677	\$684	-1%
Public hospitals	37%	35%	\$520	\$547	-5%
Totals	89%	88%	\$672	\$673	0%

High levels of completeness are seen for the number of episodes and prostheses benefits in private overnight hospital and private day facilities, and high degree of similarity in average benefits paid per device.

Significantly lower completeness is seen for public hospitals, due to both the exclusion of episodes through the data preparation process and known limitations of the HCP collection. In particular, privately insured episodes in public hospitals are known to be systematically underreported in HCP.

Table 17 above shows that the average benefits paid per device is still relatively similar to that reported by APRA. However, there is a greater degree of difference seen between the HCP data and that reported in APRA's statistics when drilling down further by category of prosthesis, even for Private overnight and day hospitals. In particular, there are offsetting effects observed where the HCP data reports a higher number of episodes than APRA for some categories and the opposite for others, with a varying degree of correspondence in average benefits.

It appears that there may be misalignment between the categorisation of items and benefits within the APRA data and the HCP data, potentially limiting the comparability of statistics between two data sources. Limitations in the APRA data were also raised through submission to the consultation paper, in particular that APRA data understates volumes of General Miscellaneous usage. As General Miscellaneous makes up 95% of all GUI usage, this is by far the most important category of interest.

**Table 18: Completeness and difference of average benefits by category and hospital type (PL categories containing GUIs highlighted blue)**

PL product category	Private overnight and day hospitals			Public hospitals		
	Completeness		Difference average benefits	Completeness		Difference average benefits
	Items	Benefits		Items	Benefits	
Ophthalmic	92%	97%	5%	36%	37%	5%
Ear, Nose & Throat	105%	78%	-26%	44%	27%	-38%
General Miscellaneous	106%	94%	-12%	40%	37%	-6%
Neurosurgical	108%	113%	4%	34%	31%	-8%
Urogenital	108%	108%	1%	41%	35%	-14%
Specialist Orthopaedic	106%	98%	-8%	44%	42%	-5%
Plastic and Reconstructive	109%	112%	3%	42%	37%	-10%
Cardiac	118%	115%	-2%	45%	42%	-7%
Cardiothoracic	122%	119%	-2%	55%	44%	-20%
Vascular	106%	106%	0%	37%	37%	1%

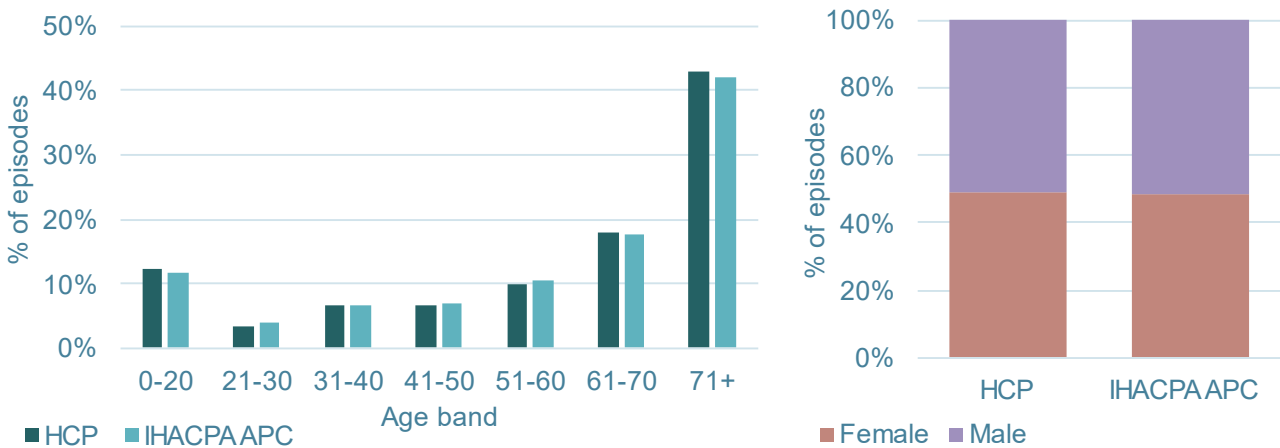
PL product category	Private overnight and day hospitals			Public hospitals		
	Completeness		Difference average benefits	Completeness		Difference average benefits
	Items	Benefits		Items	Benefits	
Hip	109%	109%	0%	38%	38%	0%
Knee	107%	108%	1%	32%	33%	2%
Spinal	70%	88%	25%	16%	24%	53%
Other	6%	21%	249%	1%	4%	254%

### Representativeness of public hospital episodes

Despite the low level of completeness seen for public hospitals, there is little evidence of material concern for the representativeness of those episodes. To demonstrate this, further comparisons of public hospital episodes within the prepared HCP data were made against those recorded in the IHACPA APC data collection.

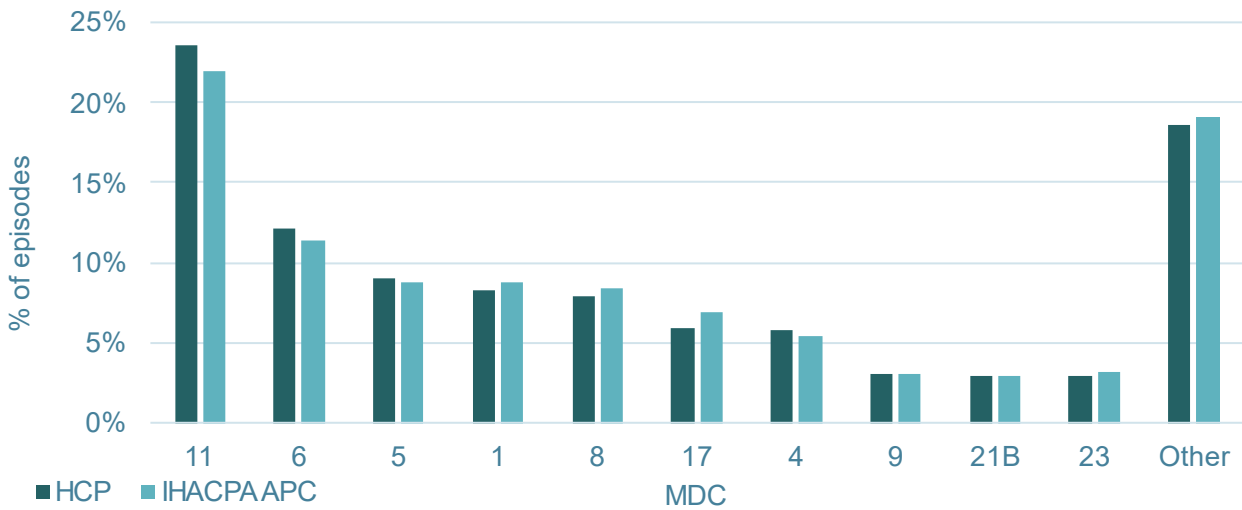
Figure 2 highlights that the public hospitals episodes that are captured in HCP follow a highly similar distribution of age and sex to the full set observed in the IHACPA APC data collection.

Figure 2: Breakdown of episodes by age band and sex, 2020-21 HCP compared to IHACPA APC



Further, there were no material deviations in the distribution of clinical characteristics detected when comparing the two sources. Figure 3 shows the breakdown of episodes by the top 10 Major Diagnostic Categories (MDC), with a high level of similarity apparent between the two sources.

Figure 3: Breakdown of episodes by MDC, 2020-21 HCP compared to IHACPA APC



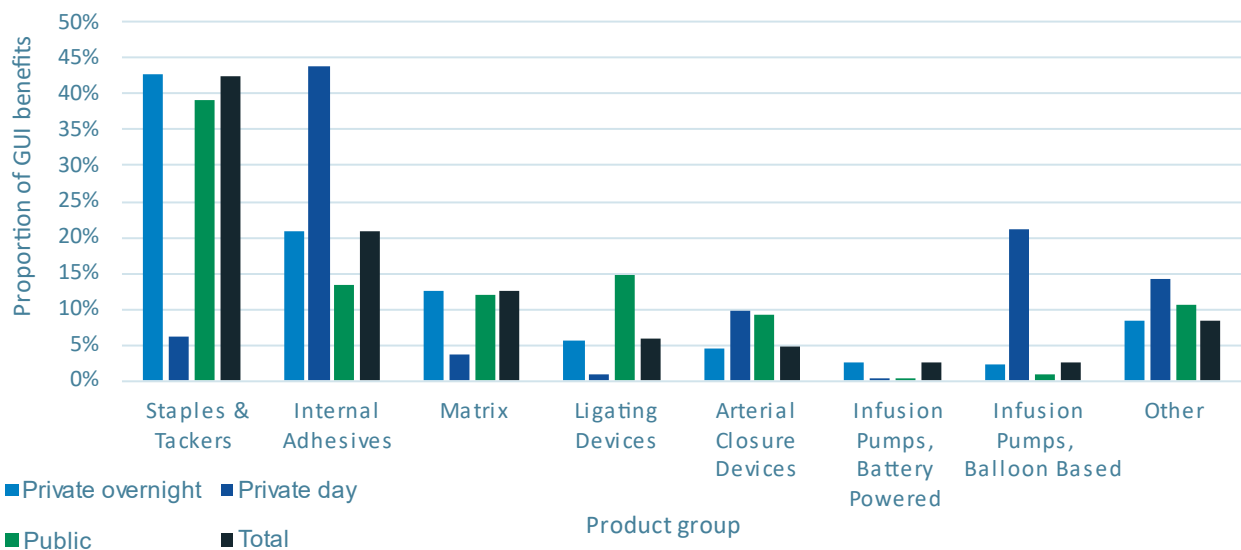
### C.3 General Use Item statistics

#### C.3.1 Overview of General Use Items

GUIs are defined as those items included on Part D of the August 2022 publication of the PL, with 492 total billing codes across 25 PL product groups.

Using the prepared 2020-21 HCP with March 2023 PL scheduled benefits applied, GUIs account for \$205.7m in benefits. Figure 4 shows the breakdown of GUI benefits across the top seven PL product groups, with the remaining 18 GUI product groups combined in the ‘other’ category for presentation purposes.

Figure 4: Proportion of GUI benefits by PL product group and facility type for 2020-21 HCP





Overall, GUI benefits are highly concentrated across a small number of product groups with the top three groups accounting for 76 per cent of all GUI benefits: Staples and Tackers (42 per cent), Internal Adhesives (21 per cent), and Matrix (12 per cent).

The breakdown of GUI benefits by product group varies considerably by hospital type. The top three product groups by hospital type are as follows:

- Private overnight facilities – Staples and Tackers (43 per cent), Internal Adhesives (21 per cent), and Matrix (13 per cent)
- Private day facilities – Internal Adhesives (44 per cent), Infusion Pumps, Balloon Based (21 per cent), and Arterial Closure Devices (10 per cent)
- Public facilities – Staples and Tackers (39 per cent), Ligating Devices (15 per cent), and Internal Adhesives (13 per cent).

### C.3.2 Analysis of GUI benefits per episode by facility type and clinical characteristics

#### GUI usage and benefits by facility type

Table 19 summarises GUI usage and benefits per episode across each hospital type, where episodes using a GUI are identified as those against which at least one charge is raised with a GUI billing code.

Table 19: Summary of GUI episodes and benefits by facility type

Facility type	Proportion of episodes with GUIs charged	Proportion of providers that charged at least one GUI	Average GUI benefits per episode		
			All episodes	All episodes from providers that charged at least one GUI	Episodes with GUIs charged
Private overnight	12%	82%	\$67.65	\$69.50	\$544.17
Private day	2%	47%	\$2.32	\$3.36	\$120.14
Public	3%	26%	\$12.46	\$14.43	\$442.10
<b>Overall</b>	<b>10%</b>	<b>46%</b>	<b>\$52.05</b>	<b>\$56.78</b>	<b>\$527.67</b>

Overall, 10 per cent of episodes make use of at least one GUI. This breaks down to 12 per cent of episodes from private overnight facilities, 2 per cent of episodes from private day facility and 3 per cent of episodes from public facilities.

Less than half (46 per cent) of all providers are identified as using GUIs, however these providers account for 92 per cent of all privately insured admitted episodes. GUI usage varies significantly across the 46 per cent of providers identified as using GUIs, with proportions of provider episodes

using GUIs ranging widely from 1 per cent of episodes for some providers to over 30 per cent of episodes for other providers.

Of those episodes identified as using GUIs, the average GUI benefits per episode is \$527.67, with averages varying by facility type as \$544.17 for private overnight facilities, \$120.14 for private day facilities, and \$442.10 for public facilities.

### GUI usage and benefits by Adjacent DRG

Some of the variation in GUI usage between episodes can be explained by differences in clinical characteristics, such as those described by diagnoses encoded within HCP data using the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM) and interventions encoded in the data using the Australian Classification of Health Interventions (ACHI). This variation can also be observed across classes of the Australian Refined Diagnosis Related Group (AR-DRG) classification.

For example, examining GUI usage and benefits across the 394 (non-error) Adjacent DRG (ADRG) classes of AR-DRG Version 10, there are 11 ADRGs for which GUI usage occurs in over 90 per cent of each ADRG's episodes. These 11 ADRGs account for 39 per cent of all GUI benefits, but only 9 per cent of all GUI episodes.

Table 20 provides the top 5 ADRGs by total GUI benefits. In particular, 96 per cent of 'Major Laparoscopic Bariatric Interventions' (ADRG K11) episodes have GUI usage and account for 26 per cent of all GUI benefits and 52 per cent of all Staples and Tackers benefits.

Table 20: Summary of GUIs for top 5 ADRGs by total GUI benefits

ADRG	Total GUI benefits	Total GUI episodes	Proportion of episodes with GUIs charged	Proportion of providers that charged at least one GUI	Average GUI benefits per episode	
					All episodes	Episodes with GUIs charged
Major Laparoscopic Bariatric Interventions (K11)	\$53.5m	15,558	96%	98%	\$3,297	\$3,431
Knee Replacement (I04)	\$8.2m	22,974	64%	78%	\$230	\$358
Hernia Interventions (G10)	\$7.9m	14,767	46%	66%	\$246	\$535
Spinal Fusion (I09)	\$7.5m	9,057	89%	93%	\$734	\$823

ADRG	Total GUI benefits	Total GUI episodes	Proportion of episodes with GUIs charged	Proportion of providers that charged at least one GUI	Average GUI benefits per episode	
					All episodes	Episodes with GUIs charged
Major Small and Large Bowel Interventions (G02)	\$7.0m	6,578	72%	78%	\$764	\$1,062

Despite the high proportional GUI usage across these small number of ADRGs, the remaining benefits are spread widely across almost all other ADRGs. For example, there are many ADRGs where less than half of episodes have any GUI usage at all – accounting for 55 per cent of all episodes with GUI charges and 20 per cent of GUI benefits. Examples of some of these ADRGs are shown in Table 21.

Table 21: Summary of GUIs for additional ADRG examples

ADRG	Total GUI benefits	Total GUI episodes	Proportion of episodes with GUIs charged	Proportion of providers that charged at least one GUI	Average GUI benefits per episode	
					All episodes	Episodes with GUIs charged
Other Uterus and Adnexa Interventions for Non-Malignancy (N07)	\$2.5m	6,349	12%	50%	\$45	\$387
Circulatory Disorders, Not Admitted for AMI W Invasive Cardiac Investigative Interventions (F42)	\$1.7m	5,743	14%	64%	\$41	\$304
Plastic GIs for Skin, Subcutaneous Tissue and Breast Disorders (J10)	\$1.0m	2,788	12%	42%	\$41	\$345

### GUI usage and benefits by ACHI codes

Similar characteristics are observed when considering individual ACHI codes, with some ACHI codes exhibiting a high association by episode with particular GUI usage. However, there are significant amounts of GUI benefits with very low associations with ACHI codes.

Table 22 shows the top three significant interventions associated with the largest amount of GUI benefits in financial year 2020-21. However, the majority of GUI episodes have much weaker associations with ACHI codes. For example, there are a large number of ACHI codes that account for a large proportion of GUI benefits but have generally low predictive association with GUI utilisation.

**Table 22: Top 3 ACHI significant intervention codes by total GUI benefits – private overnight facilities**

ACHI code	Total GUI benefits	Total GUI episodes	Proportion of episodes with GUIs charged	Average GUI benefits per episode	
				All episodes	Episodes with GUIs charged
30511-09 Laparoscopic sleeve gastrectomy	\$41.8m	12,270	96%	\$3,272	\$3,405
30512-03 Laparoscopic gastric bypass	\$16.3m	4,858	96%	\$3,232	\$3,365
30393-00 Laparoscopic division of abdominal adhesions	\$7.7m	15,465	73%	\$366	\$499

### C.3.3 GUI product bundle statistics by facility type and Major Diagnostic Category

#### GUI product bundle variant statistics by facility type

A large amount of variation in GUI characteristics remains across episodes within some GUI product bundles. Part of this variation is able to be explained by differences between each of the various facility types (i.e. private overnight facilities, private day facilities and public facilities).

Table 23 illustrates how a substantial range of variation may occur between facility types using the five largest GUI product bundles as examples. In particular, some GUI product bundles such as A54 – Staples and Tackers have a large difference in average benefits per episode between all three facility types, driven both by differences in average items per episode and in the average amount of benefits per item. In contrast, some exhibit more limited variation by facility type (e.g. A57 – Arterial Closure Devices).

**Table 23: GUI statistics by GUI product class and facility type**

GUI product class	Average benefits per episode			Average items per episode			Average benefits per item		
	Private overnight	Private day	Public	Private overnight	Private day	Public	Private overnight	Private day	Public
A54 - Staples and Tackers	\$1,615	\$579	\$1,080	4.84	1.10	3.48	334	526	310

GUI product class	Average benefits per episode			Average items per episode			Average benefits per item		
	Private overnight	Private day	Public	Private overnight	Private day	Public	Private overnight	Private day	Public
A52 - Internal Adhesives	\$281	\$246	\$318	1.25	1.05	1.38	224	235	231
A45 - Matrix	\$701	\$440	\$634	1.27	1.09	1.41	550	405	449
A53 - Ligating Devices	\$155	\$183	\$166	2.78	2.23	2.98	56	82	56
A57 - Arterial Closure Devices	\$415	\$371	\$371	1.43	1.28	1.28	291	290	291

### GUI product bundle variant statistics by Major Diagnostic Category

There is also a substantial amount of variation in benefits per episode that is able to be explained by the differences in clinical characteristics between episodes, such as differences in diagnoses and in the procedures performed as part of an episode.

Table 24 provides a breakdown of average benefits per episode, average items per episode and average benefits per item for the top 3 and bottom 3 MDCs (by average benefits per episode) for the A54 – Staples and Tackers product class. This illustrates how there is a large variation in benefits per episode by MDC for this product class. In particular, the majority of this variation is driven by differences in the average number of items used in each episode by MDC, rather than the average benefits per item (which exhibits a lot lower variation).

**Table 24: Average March 2023 GUI benefits per episode with GUI benefits by MDC, Staples and Tackers, 2020-21 HCP**

Major Diagnostic Category	Average benefits per episode	Average items per episode	Average benefits per item
10 Endocrine, Nutritional and Metabolic System	\$2,893	8.85	\$327
04 Respiratory System	\$2,410	7.23	\$333
07 Hepatobiliary System and Pancreas	\$1,918	5.88	\$326
...			
09 Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	\$529	1.69	\$314
15 Newborn and other Neonates	\$317	1.12	\$284

Major Diagnostic Category	Average benefits per episode	Average items per episode	Average benefits per item
14 Pregnancy, Childbirth and Puerperium	\$305	1.04	\$293

### C.3.4 Analysis of historical changes in GUI product bundle benefits per episode

Table 25 details the relative change in PL benefits per episode from 2019-20 to 2020-21, across the 20 GUI product bundles with 100 or more episodes in 2020-21. This excludes GUI product bundles A21A1 (Feeding Tubes), A24A1 (Caecostomy Tubes), A41A1 (Occluder Pins), and A56A1 (Dura Repair, Membrane Sealants), which each have fewer than 100 episodes in 2020-21.

Table 25 GUI product bundle relative change in PL benefits per episode from 2019-2020 to 2020-2021

GUI product bundle		Relative change in PL benefits per episode from 2019-20 to 2020-21
A13A1	Infusion Pumps, Spring Powered	-36.9%
A51A1	Adhesion Barriers	-12.2%
A43A1	Sponges	-9.4%
A22A1	Gastrostomy Tubes	-1.9%
A46A1	Foam	-1.8%
A52A1	Internal Adhesives	-1.2%
A53A1	Ligating Items	-1.1%
A44A1	Pliable Patches	-0.5%
A19A1	Drug Delivery Accessories	0.7%
A49A1	Haemostatic Accessories	0.8%
A57A1	Arterial Closure Items	1.3%
A45A1	Matrix	1.3%
A31A1	Percutaneous Catheters	3.3%
A11A1	Infusion Pumps, Balloon Based	3.3%

GUI product bundle		Relative change in PL benefits per episode from 2019-20 to 2020-21
A55A1	Dura Repair, Liquid Sealants	3.5%
A59A1	Closure Accessories	3.5%
A54A1	Staples and Tackers	4.3%
A12A1	Infusion Pumps, Battery Powered	4.8%
A42A1	Powder	8.1%
A23A1	Jejunostomy Tubes	9.8%

The top five decreases in PL benefits per episode from 2019-20 to 2020-21 occurred for the following GUI bundles.

#### **Infusion Pumps, Spring Powered (A13A1)**

Of all GUI product bundles, A13A1 saw the largest relative decrease (36.9 per cent) in average PL benefits per episode from 2019-20 to 2020-21. This change in average benefit per episode was the result of significant reduction in the use of particular products from the A13 (Infusion Pumps, Spring Powered) product class, which changed the product mix within the GUI product bundle and lowered the average PL benefits per episode of the bundle.

The decrease in usage of particular products from the A13 product class was also reflected in a decrease in the number of A13A1 bundles, from 3,017 episodes in 2019-20 to 1,989 episodes in 2020-21. Furthermore, the decrease in usage of products from the A13 product class coincided with an increase in usage of products from the A11 (Infusion Pumps, Balloon Based) product class. This change in product usage was observed across a broad range of providers and occurred progressively over the four-year period from 2017-18 to 2020-21.

#### **Adhesion Barriers (A51A1)**

The average PL benefits per episode for the A51A1 product bundle decreased 12.2 per cent from 2019-20 to 2020-21. This decrease was driven by significant increases in usage of particular products within the A51 (Adhesion Barriers) product class. The products that saw significant growth in usage also had relatively lower PL scheduled benefits among products in the A51 product class, which resulted in the decrease in average PL benefits per episode for the product bundle. The increase in usage of particular products within the A51 product episodes in 2019-20 to 9,690 episodes in 2020-21. The upward trend in A51A1 bundles and the downward trend in A51A1 average PL benefits per episode was consistent across the four years from 2017-18 to 2020-21.

#### **Sponges (A43A1)**

The average PL benefits per episode for the A43A1 product bundle decreased by 9.4 per cent from 2019-20 to 2020-21. This change was driven by a relative decrease of 6.6 per cent in average PL benefits per item for the bundle combined with a relative decrease of 3.0 per cent in average items

per episode for the bundle. The decrease in average PL benefits per item of the bundle was the result of an increase in usage of a particular product with relatively lower PL scheduled benefit among the A43 (Sponges) product class, combined with a decrease in the usage of another product with relatively high PL scheduled benefit within A43. However, overall the number of A43A1 bundles increased from 36,184 in 2019-20 to 38,004 in 2020-21. The downward trend in A43A1 average PL benefits per episode was consistent across all four years from 2017-2018 to 2020-21.

### **Gastrostomy Tubes (A22A1)**

The A22A1 product bundle saw a decrease in average PL benefits per episode of 1.9 per cent from 2019-20 to 2020-21. However, this change is not reflective of a trend over the four year period from 2017-18 to 2020-21, with the average PL benefits per episode for the A22A1 bundle over the four-year period remaining steady around the 2020-21 level.

### **Foam (A46A1)**

The A46A1 product bundle saw a 1.8 per cent decrease in average PL benefits per episode from 2019-20 to 2020-21. With only one PL benefit level among the products of the A46 (Foam) product class, this decrease is solely driven by a decrease in average items per episode. However, the decrease from 2019-20 to 2020-21 is not reflective of a trend over the longer term, with average PL benefits per episode for the A46A1 product bundle remaining with 1.8 per cent of the 2020-21 level across all four years.

The top five increases in PL benefits per episode from 2019-20 to 2020-21 occurred for the following GUI product bundles.

### **Jejunostomy Tubes (A23A1)**

The average PL benefits per episode of the A23A1 product bundle increased by 9.8 per cent from 2019-20 to 2020-21. This change was driven by an increase in usage of products with relatively high PL scheduled benefit among the A23 (Jejunostomy Tubes) product class. This increase in usage of particular products coincided with an overall increase in the number of A23A1 bundles, from 182 episodes in 2019-20 to 220 episodes in 2020-21.

### **Powder (A42A1)**

The average PL benefits per episode of the A42A1 product bundle increased by 8.1 per cent from 2019-20 to 2020-21. This increase was the combined effect of a 4.8 per cent increase in the average PL benefits per item of the bundle and a 3.2 per cent increase in the average items per episode of the bundle. The growth in average PL benefits per item of the bundle was driven by significant increases in usage of products from the A42 (Powder) product class with relatively high PL scheduled benefit within the class. Growth in A42A1 PL benefits per item has been consistent over the four years from 2017-18 to 2020-21, with growth in A42A1 items per episode being consistent over the three years since 2018-19.

### **Infusion Pumps, Battery Powered (A12A1)**

The average PL benefits per episode of the A12A1 product bundle increased by 4.8 per cent from 2019-20 to 2020-21. There are two PL scheduled benefit levels within the A12 product class (i.e. \$407 and \$2,805), and while there was substantially more growth in usage of products from the lower PL schedule benefit compared with growth in usage of products from the higher PL scheduled



benefit level, the large difference in PL scheduled benefit levels resulted in an overall increase in average PL benefits per item for A12A1 bundles. There was no historical trend in this change, with A12A1 average PL benefits per episode keeping within the 2019-20 to 2020-21 range across all four years from 2017-18 to 2020-21.

### **Staples and Tackers (A54A1)**

The A54A1 product bundle saw a 4.3 per cent increase in average PL benefits per episode from 2019-20 to 2020-21. This change was the combined effect of a 1.2 per cent increase in average benefits per item for the bundle and a 3.0 per cent increase in items per episode for the bundle. These annual increases were not consistent across the four years, with benefits per episode increasing 1.5 per cent per annum on average, benefits per item increasing 0.5 per cent per annum on average, and items per episode increasing 0.9 per cent per annum on average.

### **Closure Accessories (A59A1)**

The A59A1 product bundle had a 3.5 per cent increase in average PL benefits per episode from 2019-20 to 2020-21. This change was the combined effect of a 1.9 per cent growth in average PL benefits per item for the bundle and a 1.6 per cent growth in items per episode. The four-year trend for A59A1 PL benefits per episode was 2.4 per cent per annum.

# Appendix D – General Use Item bundle variation statistics

Table D1: General Use Item variation statistics

Provided as a supplementary table in MS Excel Workbook format.



Independent Health and Aged Care Pricing Authority

Eora Nation, Level 12, 1 Oxford Street  
Sydney NSW 2000

Phone 02 8215 1100

Email [enquiries.ihacpa@ihacpa.gov.au](mailto:enquiries.ihacpa@ihacpa.gov.au)

Twitter [@IHACPA](https://twitter.com/IHACPA)

[www.ihacpa.gov.au](http://www.ihacpa.gov.au)