



**IHACPA**

# **Australian Refined Diagnosis Related Groups Version 12.0**

**Final Report**

April 2025

## Australian Refined Diagnosis Related Groups Version 12.0 — Final Report April 2025

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# Acronyms and Abbreviations

ABF	Activity Based Funding
ACHI	Australian Classification of Health Interventions
ACS	Australian Coding Standards
ADRG	Adjacent Diagnosis Related Group
APC	Admitted Patient Care
AR-DRG	Australian Refined Diagnosis Related Groups
AUG	Area Under Gains
CAC	Clinical Advisory Committee
CCAG	Classifications Clinical Advisory Group
CDC	Coherent Diagnosis Class
DCL	Diagnosis Complexity Level
DRG	Diagnosis Related Group
DTG	DRG Technical Group
ECC	Episode Clinical Complexity
ECCS	Episode Clinical Complexity Score
GI	General Intervention
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification
IHACPA	Independent Health and Aged Care Pricing Authority
MDC	Major Diagnostic Category
NMDS	National Minimum Data Set
RID	Reduction in Deviance

# Executive Summary

The Independent Health and Aged Care Pricing Authority (IHACPA) is responsible for the development of the Australian Refined Diagnosis Related Groups (AR-DRG) classification. The AR-DRG classification provides a clinically meaningful way to relate or group the number and type of patients treated in admitted acute episodes of care to the resources required in treatment. The AR-DRG classification is instrumental to activity based funding (ABF) of Australian hospitals, and is also used for other purposes such as benchmarking, service planning, monitoring quality and safety and epidemiological studies.

AR-DRG Version 12.0 (V12.0) was developed using 2018–19 to 2021–22 public hospital admitted patient care activity and cost data provided by all Australian states and territories.

AR-DRG V12.0 was finalised following clinical and statistical analysis and in consultation with clinicians, jurisdictions and other health sector stakeholders.

Changes for AR-DRG V12.0 include:

- 6 new Adjacent Diagnosis Related Groups (ADRGs):
  - ADRG A16 *Posthumous organ procurement*
  - ADRG O67 *Diabetes mellitus and intermediate hyperglycaemia in pregnancy and the puerperium*
  - ADRG O68 *Maternal medical conditions complicating pregnancy and the puerperium*
  - ADRG O69 *Gestational disorders complicating pregnancy and the puerperium*
  - ADRG O70 *Care and screening for other antenatal presentations*
  - ADRG U69 *Mental health and behavioural disorders in the postnatal period*
- new guiding principles to define interventions that inform grouping to the intervention partition, resulting in the amendment of the intervention type of 41 Australian Classification of Health Interventions (ACHI) Thirteenth Edition codes
- enhancement of Diagnosis Complexity Level (DCL) precision for diabetes mellitus
- standard refinements aimed at updating the classification for currency using the most recent activity and cost data and included review of:
  - the ADRG intervention hierarchy
  - episodes with a General Intervention (GI) that group to ADRG 801 *General Intervention unrelated to principal diagnosis* to determine more appropriate grouping where possible
  - ICD-10-AM codes in-scope for contributing to complexity
  - the complexity scoring system
  - the splitting of ADRGs into diagnosis related groups (DRGs) that reflect different

levels of complexity.

The AR-DRG V12.0 Final Report outlines the changes made for AR-DRG V12.0 and details the refinement process, associated analysis and the rationale for changes.

# 1 Introduction

## 1.1 AR-DRG classification

IHACPA has responsibility for the development of the AR-DRG classification, which groups together treatments and services provided for admitted acute care to enable hospitals to be funded for these services using ABF. The AR-DRG classification is underpinned by the following disease and intervention classifications and standards:

- International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM)
- Australian Classification of Health Interventions (ACHI)
- Australian Coding Standards (ACS).

Collectively these classifications are known as ICD-10-AM/ACHI/ACS and are used to classify diseases and interventions for all admitted patient episodes of care.

AR-DRG are used in public and private hospitals in Australia to classify admitted acute care.

ICD-10-AM/ACHI/ACS and AR-DRGs are updated every three years to balance the need for currency against the burden of implementation for stakeholders.

While ICD-10-AM/ACHI/ACS and AR-DRGs are instrumental to ABF, they are also used for many other purposes including performance management, benchmarking, epidemiology and research.

The AR-DRG classification groups admitted acute episodes of care using diagnosis (ICD-10-AM) and intervention (ACHI) codes and other routinely collected data, such as age, mode of separation, length of stay, newborn admission weight and hours of continuous ventilatory support (mechanical ventilation).

## 1.2 Classification process

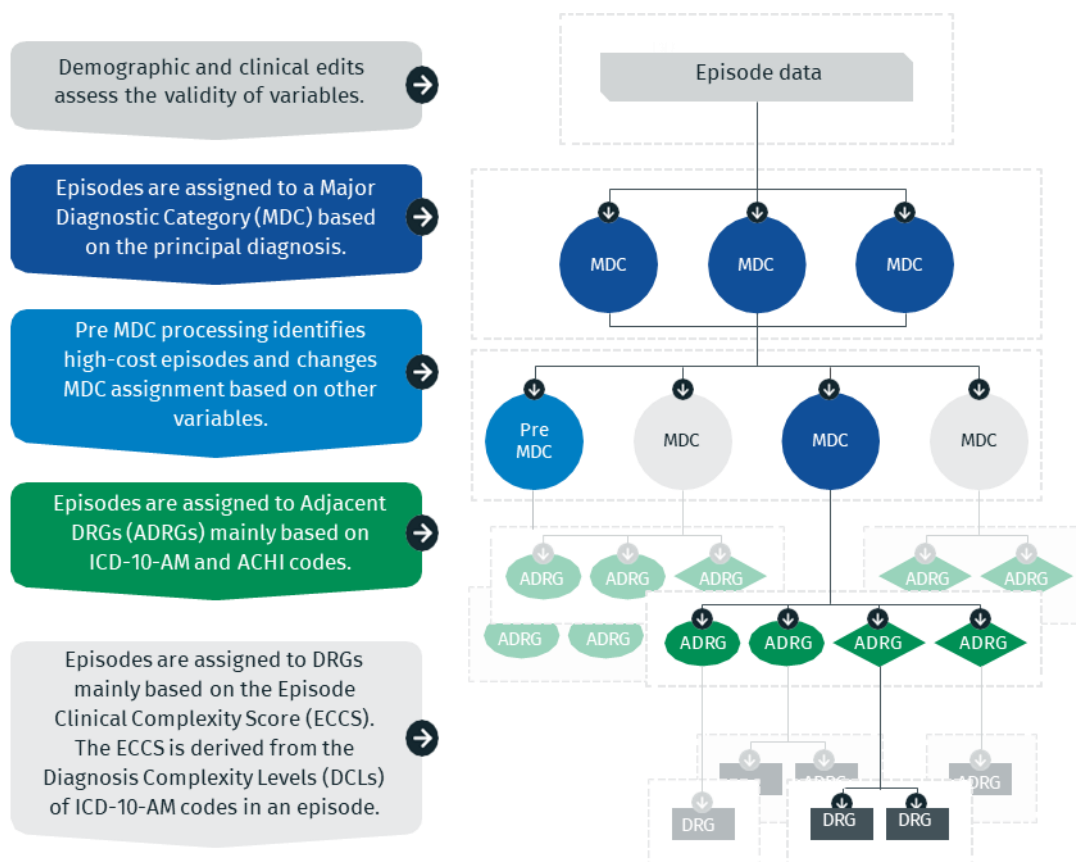
The process of clinical classification, or 'coding', involves the translation of clinical concepts from the health care record into alphanumeric codes within ICD-10-AM and ACHI.

At the conclusion of a patient's episode of care, a clinical coder reviews the relevant clinical documentation and abstracts information recorded by clinicians to assign codes for the principal diagnosis, additional diagnoses and interventions performed in accordance with guidelines provided in the ACS and national coding advice.

The AR-DRG classification uses the ICD-10-AM and ACHI codes along with other routinely collected data from the episode of care, to assign an end class – a Diagnosis Related Group (DRG). Software containing the AR-DRG algorithms uses the information from the episode of care and assigns a DRG – this software is known as a 'grouper'.

A schematic of the DRG assignment process is at **Figure 1**.

**Figure 1: Schematic diagram for DRG assignment**



The points below provide explanatory information for the schematic diagram in **Figure 1**:

**Demographic and clinical edits:** These edits check the validity of the data to be used for grouping and include age, mode of separation, length of stay, newborn admission weight, hours of continuous ventilatory support and same-day status. The edits also validate all ICD-10-AM and ACHI codes, combined with a patient's age, sex and length of stay. The principal diagnosis is also checked to validate that it is an acceptable principal diagnosis code.

Potential issues in relation to the validity of the data may result in assignment to one of the following 3 error DRGs:

- 960Z *Ungroupable*
- 961Z *Unacceptable principal diagnosis*
- 963Z *Neonatal diagnosis not consistent with age/weight.*

**Major Diagnostic Category (MDC) assignment:** Episodes are assigned to a Major Diagnostic Category (MDC) according to their principal diagnosis.

**Pre Major Diagnostic Category (Pre MDC) processing:** Episodes are assessed as to whether they meet Pre MDC criterion that identifies very high-cost episodes. If so, this assessment overrides the outcome of the principal diagnosis-based MDC assignment.

**ADRG assignment:** Episodes are assigned to an ADRG mostly according to ICD-10-AM andACHI codes. All MDCs have a hierarchical structure that separates the ADRGs into either the intervention or medical partition.

**DRG assignment:** Episodes are then assigned to a DRG according to a complexity measure that quantifies relative levels of resource utilisation within each ADRG and is used to split ADRGs into different DRGs based on resource homogeneity.

## 1.3 Episode clinical complexity

The AR-DRG classification has a measure for estimating the clinical complexity of an episode of care. The Episode Clinical Complexity (ECC) Model was introduced in AR-DRG Version 8.0 and uses ICD-10-AM codes to measure the clinical complexity of an episode. The ECC Model assigns an Episode Clinical Complexity Score (ECCS) to each episode, quantifying relative levels of resource utilisation within each ADRG. The ECCS is used to split ADRGs into DRGs based on resource use.

The process of deriving an ECCS for each episode begins by assigning a DCL value to each ICD-10-AM code reported for the episode. DCLs are integers that quantify the levels of resource utilisation associated with each code, relative to levels within the ADRG to which the episode belongs. DCL values are assigned to principal diagnosis and additional diagnosis codes and range between zero and 5.

It should be noted that DCLs measure relative resource utilisation within an ADRG. Therefore, the assignment of a DCL of zero to a given code, in a given ADRG, indicates that episodes with this code are not generally more expensive than episodes without this code, in the same ADRG. It does not mean that this code is associated with nil resource use.

In AR-DRG V12.0 there are 11,057 ICD-10-AM Thirteenth Edition codes that are in-scope for receiving a DCL.

Where an ADRG is subdivided, or 'split', using the complexity measure, the ECCS determines the DRG to which an episode is assigned within an ADRG. Occasionally, an ADRG is split using other factors to determine the DRG such as mode of separation, length of stay and age.

For example, an episode assigned to ADRG B70 *Stroke and other cerebrovascular disorders* would require an ECCS greater than or equal to 4.0 to be assigned to DRG B70A *Stroke and other cerebrovascular disorders, major complexity* in AR-DRG V12.0.

DRGs ending in 'A' will be the costliest whereas DRGs ending in 'D' will be the least costly. For example:

- B70A *Stroke and other cerebrovascular disorders, major complexity*
- B70B *Stroke and other cerebrovascular disorders, intermediate complexity*
- B70C *Stroke and other cerebrovascular disorders, minor complexity*
- B70D *Stroke and other cerebrovascular disorders, transferred to acute facility in less than 5 days.*

Refer to the AR-DRG Version 12.0 Definitions Manual for ECCS boundaries of ADRGs and the AR-DRG Version 12.0 Technical Specifications for further information regarding the ECC Model and ECCS derivations.

## **1.4 Additional resources for AR-DRG V12.0**

In addition to the AR-DRG Version 12.0 Final Report, other resources have been developed to support the use and implementation of AR-DRG V12.0.

### **1.4.1 AR-DRG Version 12.0 Technical Specifications**

The AR-DRG Version 12.0 Technical Specifications accompanies the AR-DRG V12.0 Final Report. It can be found on the IHACPA website and details the methodology and technical specifications used in the development of AR-DRG V12.0 including:

- data preparation and modification
- ADRG intervention hierarchy review
- derivation of the ECCS
- ADRG splitting review.

### **1.4.2 AR-DRG Version 12.0 Definitions Manual**

The AR-DRG V12.0 Definitions Manual is a set of reference documents detailing the definition logic for the DRG grouping process performed by the grouper. The manual provides documentation of how particular episodes of care group to DRGs.

While the manual assists with the identification of likely DRG assignments for individual episodes, they are not a substitute for the grouping software that is provided by various vendors under licence from IHACPA.

### **1.4.3 AR-DRG V12.0 Descriptions**

The AR-DRG V12.0 Descriptions can be found on the IHACPA website. This includes a full listing of long and short descriptions for MDCs, ADRGs and DRGs.

### **1.4.4 ICD-10-AM/ACHI/ACS Thirteenth Edition**

AR-DRG V12.0 is underpinned by ICD-10-AM/ACHI/ACS Thirteenth Edition.

# 2 Development Process

## 2.1 Governance and consultation process

AR-DRG V12.0 was developed in accordance with the [Governance Framework for the Development of the Admitted Care Classifications for ICD-10-AM/ACHI/ACS Thirteenth Edition and AR-DRG Version 12.0](#). The governance framework outlines the classification development, approval process, the guiding principles and classification outputs that are the result of the classification development cycle. The governance framework is updated with each new classification development cycle to ensure it, and the classifications that it governs, remain fit for purpose and relevant to the Australian healthcare system.

IHACPA has two advisory groups that provide clinical and technical advice regarding the development and refinement of the AR-DRG classification to ensure broad consultation on major updates:

- Classifications Clinical Advisory Group (CCAG) – provides expert clinical advice on development proposals across the admitted care classifications. CCAG is composed of clinicians with medical, surgical, emergency, nursing and allied health backgrounds, that facilitates broad canvassing of clinicians to ensure that there is likely to be general acceptance of the developed proposals. The group has two representatives from IHACPA's Clinical Advisory Committee (CAC).
- Diagnosis Related Groups Technical Group (DTG) – provides technical input on AR-DRG development. DTG includes representatives from state and territory health departments, the Commonwealth, private hospitals, private health insurers and the New Zealand Ministry of Health.

CCAG and DTG were consulted on all proposals for AR-DRG V12.0.

Consultation and endorsement of refinements to the AR-DRG classification also occurs through the following IHACPA committees:

- Technical Advisory Committee (TAC) – provides technical input on classifications and data standards that underpin classification development; reviews and endorses the classification.
- Jurisdictional Advisory Committee (JAC) – reviews and endorses the classification.
- Clinical Advisory Committee (CAC) – gives clinical input on classifications and data standards that underpin the development of the classifications; reviews and endorses the classification.

IHACPA also undertook a public consultation in November 2023 on major refinements proposed for the Development of ICD-10-AM/ACHI/ACS Thirteenth Edition and AR-DRG V12.0 to ensure the broadest possible consultation. Fifteen submissions were received. All submissions are published on [IHACPA's website](#) (except if specified as commercial in confidence).

The Pricing Authority is the governing body of IHACPA. It oversees IHACPA's functions and is responsible for approving the AR-DRG classification for implementation under the National Health Reform Agreement.

## 2.2 Development of work program

In 2022, IHACPA developed and implemented a work program for AR-DRG V12.0 in accordance with the governance framework and in consultation with its clinical and technical working groups. The work program was informed by:

- feedback from stakeholders on IHACPA's annual Consultation Paper on the Pricing Framework for Australian Public Hospital Services, public submissions and other stakeholder feedback
- issues held over from previous development of ICD-10-AM/ACHI/ACS and AR-DRGs
- areas for improvement identified by internal review.

To maintain the clinical currency and robustness of the AR-DRG classification, each new version includes a standard set of refinements. These standard refinements follow principles set out in the governance framework as noted in the Section 2.1. For AR-DRG V12.0, standard refinements included review of:

- the ADRG intervention hierarchy
- episodes that group to ADRG 801 *General Intervention unrelated to principal diagnosis* to determine more appropriate grouping where possible
- diagnosis codes in-scope for contributing to complexity
- the complexity scoring system
- the splitting of ADRGs into DRGs that reflect different levels of complexity.

The AR-DRG V12.0 work program was finalised in consultation with IHACPA's clinical and technical working groups.

## 2.3 Data used for AR-DRG V12.0

Development of AR-DRG V12.0 used 2018–19 to 2021–22 costed public hospital activity data provided by the jurisdictions and included data from public hospital services contracted out to private hospitals.

Data from 2018–19 to 2021–22 was initially coded in ICD-10-AM/ACHI/ACS Tenth and Eleventh Editions. For development purposes, this data was mapped forward to ICD-10-AM/ACHI/ACS Twelfth Edition. Once AR-DRG V12.0 was developed, its supporting ICD-10-AM (diagnosis) and ACHI (intervention) codes were mapped from Twelfth Edition to Thirteenth Edition. Consequently, AR-DRG V12.0 is designed to be used in conjunction with ICD-10-AM/ACHI/ACS Thirteenth Edition.

# 3 AR-DRG V12.0

## Refinements

### 3.1 MDC 14 *Pregnancy, childbirth and the puerperium*

During AR-DRG V12.0 development, IHACPA conducted a review of poorly performing MDCs. MDC 14 *Pregnancy, childbirth and the puerperium* was selected for investigation as the review indicated that it was a good candidate for improved performance in AR-DRG V12.0.

The following changes were implemented in MDC 14 *Pregnancy, childbirth and the puerperium*.

#### 3.1.1 New ADRG for mental health and behavioural disorders in the postnatal period

In ICD-10-AM Twelfth Edition, episodes with postnatal depression are assigned a code from category F32 *Depressive episode* (arising in the postnatal period), while episodes with other postnatal mental or behavioural disorders are assigned a code from category F53 *Mental and behavioural disorders associated with the puerperium, not elsewhere classified* (the codes in categories F32 and F53 are listed in **Appendix A1**).

In AR-DRG V11.0, episodes with a principal diagnosis from category F32 group to MDC 19 *Mental health conditions and behavioural and neurodevelopmental disorders*, while those with a principal diagnosis from category F53 group to MDC 14 *Pregnancy, childbirth and the puerperium*.

Analysis showed episodes with a principal diagnosis from category F53 are more expensive than other episodes in the same ADRG in MDC 14 *Pregnancy, childbirth and the puerperium*. In addition, their costs are mainly driven by cost centres relating to mental health care rather than obstetric care.

For AR-DRG V12.0, ADRG U69 *Mental health and behavioural disorders in the postnatal period* was created in MDC 19 *Mental, behavioural and neurodevelopmental disorders* to capture episodes with a principal diagnosis from categories F32 and F53.

The ADRG splitting review selected one complexity split for ADRG U69, resulting in 2 new DRGs.

Among the public hospital admitted patient care activity data from 2018–19 to 2022–23, an average of 868 episodes per year move into ADRG U69 *Mental health and behavioural disorders in the postnatal period*.

### 3.1.2 Disaggregation of ADRG O66 *Antenatal and other admissions related to pregnancy, childbirth and the puerperium*

In AR-DRG V11.0, ADRG O66 *Antenatal and other admissions related to pregnancy, childbirth and the puerperium* is a residual (catch-all) ADRG in MDC 14 *Pregnancy, childbirth and the puerperium*. It is defined by the presence of one of 303 principal diagnosis codes for episodes of care related to pregnancy, childbirth or the puerperium.

A submission to the Consultation Paper on the Pricing Framework for Australian Public Hospital Services 2023–24 requested a review of ADRG O66 *Antenatal and other admissions related to pregnancy, childbirth and the puerperium*. The submission identified considerable variation in volume and average cost within this ADRG at tertiary maternity services. The submission noted that maternity services across Australia have a wide range of admission criteria for antenatal care and that some episodes grouping to ADRG O66 *Antenatal and other admissions related to pregnancy, childbirth and the puerperium* tended to have significantly higher volume, shorter length of stay and lower episode complexity than those at peer services.

Following analysis and consultation, ADRG O66 *Antenatal and other admissions related to pregnancy, childbirth and the puerperium* has been replaced by 4 new medical ADRGs in MDC 14 *Pregnancy, childbirth and the puerperium* in AR-DRG V12.0, as described in **Table 1**.

**Table 1: New medical ADRGs replacing ADRG O66 *Antenatal and other admissions related to pregnancy, childbirth and the puerperium***

New ADRG	Contents
O67 <i>Diabetes mellitus and intermediate hyperglycaemia in pregnancy and the puerperium</i>	Episodes with a principal diagnosis that indicates diabetes mellitus or intermediate hyperglycaemia in pregnancy or the puerperium.
O68 <i>Maternal medical conditions complicating pregnancy and the puerperium</i>	Episodes with a principal diagnosis that indicates a medical condition: <ul style="list-style-type: none"> <li>• complicating pregnancy or the puerperium; and</li> <li>• that can occur in any patient; and</li> <li>• is generally classifiable outside ICD-10-AM Chapter 15 <i>Pregnancy, childbirth and the puerperium</i>.</li> </ul>
O69 <i>Gestational disorders complicating pregnancy and the puerperium</i>	Episodes with a principal diagnosis that indicates a medical condition: <ul style="list-style-type: none"> <li>• complicating pregnancy or the puerperium; and</li> <li>• exclusively or predominantly of gestational onset; and</li> <li>• is generally not classifiable outside ICD-10-AM Chapter 15 <i>Pregnancy, childbirth and the puerperium</i>.</li> </ul>
O70 <i>Care and screening for other antenatal presentations</i>	Episodes with a principal diagnosis that indicates antenatal screening, care of abnormal presentations or monitoring and supervision of pregnancy.

The principal diagnosis codes that inform grouping of episodes to the 4 new medical ADRGs in MDC 14 in AR-DRG V12.0 are listed in **Appendix A2**.

The ADRG splitting review selected one complexity split for each of the 4 new medical ADRGs O67 to O70, resulting in 8 new DRGs.

Among the public hospital admitted patient care activity data from 2018–19 to 2022–23, an approximate average of 140,000 episodes per year move into new ADRGs O67 to O70.

### 3.1.3 Relocation of episodes for conditions related to lactation

ACS 1548 *Puerperal/postpartum condition or complication* provides guidance on the assignment of codes from the following categories that are assigned when a patient has a condition relating to lactation:

- O91 *Infections of breast associated with childbirth*
- O92 *Other disorders of breast and lactation associated with childbirth*

In AR-DRG V11.0, episodes with a code in categories O91 and O92, when assigned as principal or additional diagnosis, are mostly grouped to one of the following ADRGs:

- ADRG O04 *Postpartum and post abortion with General Intervention*
- ADRG O61 *Postpartum and post abortion without General Intervention*<sup>1</sup>.

However, the following subset of the codes in categories O91 and O92, when coded as principal diagnosis, group to ADRG O66 *Antenatal and other admissions related to pregnancy, childbirth and the puerperium*:

- O91.00 *Infection of nipple associated with childbirth, **without** mention of attachment difficulty*
- O91.10 *Abscess of breast associated with childbirth, **without** mention of attachment difficulty*
- O91.20 *Nonpurulent mastitis associated with childbirth, **without** mention of attachment difficulty*
- O92.00 *Retracted nipple associated with childbirth, **without** mention of attachment difficulty*
- O92.10 *Cracked nipple associated with childbirth, **without** mention of attachment difficulty*
- O92.20 *Other and unspecified disorders of breast associated with childbirth, **without** mention of attachment difficulty.*

Codes in categories O91 and O92 capture clinically similar conditions, irrespective of whether there is attachment difficulty. In AR-DRG V12.0 all codes in categories O91 and O92 group to ADRGs O04 *Postpartum and post abortion with General Intervention* or O61 *Postpartum and post abortion without General Intervention*.

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<sup>1</sup> The ADRG assignment criteria for ADRGs O04 and O61 are informed by an identical list of ICD-10-AM codes, with the exception that ADRG O04 requires the presence of a General Intervention and ADRG O61 does not.

Among the public hospital admitted patient care activity data from 2018–19 to 2022–23, an average of 381 episodes per year move from ADRG O66 *Antenatal and other admissions related to pregnancy, childbirth and the puerperium* to ADRGs O04 *Postpartum and post abortion without General Intervention* or O61 *Postpartum and post abortion with General Intervention* due to this change.

## 3.2 Guiding principles for intervention type (General Intervention review)

The AR-DRG classification is categorised into 23 MDCs, most of which are divided into 2 partitions, the intervention and medical partitions. ADRGs in the intervention partition are defined by interventions, while those in the medical partition are defined mainly by principal diagnosis.

Historically, the only guidance on whether an intervention informed the grouping of an episode to the intervention partition was that the intervention was ‘significant’ within an episode’s MDC. However, the term ‘significant’ has never been precisely defined or consistently applied. Similarly, a General Intervention has historically been defined as an intervention that is ‘significant’ to each MDC. In addition to informing the grouping of episodes to the intervention partition, a GI informs grouping of episodes to ADRG 801 *General Intervention unrelated to principal diagnosis*. This means that, in most cases, an episode with a GI cannot group to the medical partition.

For AR-DRG V12.0 guiding principles have been developed to determine interventions that inform grouping to an ADRG in the intervention partition; and of these, which should be GIs. The aim was to improve the clinical coherence of the AR-DRG classification through greater consistency as to which interventions are used to define ADRGs.

The guiding principles define 3 intervention types for ACHI codes:

1. An intervention does not inform grouping to the intervention partition if it meets one of the following criteria:
  - the intervention is routinely performed as a component of another intervention
  - the intervention is an assessment, evaluation, examination, or radiological imaging
  - the intervention is a non-incisional insertion, removal or replacement of an implant or device
  - the intervention is pharmacotherapy or dialysis – ADRGs informed by these procedures are defined by ICD-10-AM codes
  - the intervention is represented by an ACHI placeholder code<sup>2</sup>.

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<sup>2</sup> ACHI codes in blocks [8888] – [8889] are reserved as ‘placeholders’ to identify specific new or emerging health technologies or specific interventions requiring immediate collection to be used immediately upon instruction via National Coding Advice.

2. An intervention informs grouping to the intervention partition but is not a GI, if it meets one of the following criteria:

- the intervention is suitable to be performed in a specialist procedure suite whether or not such a suite is available
- the intervention is one of the following, that define existing intervention ADRGs:
  - continuous ventilatory support (CVS)
  - extracorporeal membrane oxygenation (ECMO)
  - cardiopulmonary bypass (CPB) in open-heart surgery.

For the purposes of this definition, a specialist procedure suite is defined in accordance with IHACPA's costing standards<sup>3</sup>:

*Specialist procedure suites are dedicated suites where specific procedures are performed, some of which are invasive and some are non-invasive in nature.*

*With the advancements in technology, most specialist procedure suites are day procedure centres and the patient is usually discharged on the same day.*

Examples of specialist procedure suites as defined in the costing standards that meet the definition used in the principles include:

- cardiac catheter suites (for example, ADRG F41 *Circulatory disorders, admitted for AMI with invasive cardiac investigative interventions*)
- general procedure suites (for example, ADRG D40 *Dental extractions and restorations*).

3. An intervention is a GI if it meets each of the following criteria:

- the intervention is invasive in nature
- the intervention requires general anaesthesia or regional anaesthesia (for example, spinal or epidural anaesthesia). Excluding where a patient's age or medical condition necessitates or prevents the use of a particular type of anaesthesia
- the intervention requires specialised surgical training and skills.

For the purposes of these principles, the term 'invasive' refers to interventions which involve the introduction of instruments or other objects into the body or body cavities.

Interventions which do not meet the criteria of the proposed principles may require clinical advice to determine an appropriate intervention type.

Conversely, while an intervention may meet the criteria of one of the principles, clinical judgement may also be required to determine whether the intervention or principal diagnosis is a better explanation of the resources required in an episode of care.

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<sup>3</sup> Independent Health and Aged Care Pricing Authority (2023). Australian Hospital Patient Costing Standards Version 4.2.

For AR-DRG V12.0 the intervention type of all ACHI Twelfth Edition codes were reviewed against the new guiding principles. This identified a large number of ACHI codes that contravened the guiding principles.

These codes are broadly assigned into 4 categories:

- interventions performed as a component of another intervention
- diagnostic interventions, for example biopsy or sampling
- interventions performed endoscopically or percutaneously
- other specific examples, such as internal or external fixation, telemetric electroencephalography (EEG) monitoring and percutaneous neurotomy.

A staged approach has been adopted to remediate the intervention type of these ACHI codes to understand the impact and allow for consultation before changes are implemented.

In the first stage of implementation, for AR-DRG V12.0, the intervention type was remediated for 41 ACHI Thirteenth Edition codes<sup>4</sup> (listed in **Appendix A3**) that are, diagnostic interventions, endoscopies of the digestive system, internal or external fixations, or components of a different, more resource-intensive, intervention. In the 2018–19 to 2021–22 data used for AR-DRG development, this resulted in 69,621 episodes grouping to different ADRGs.

In future AR-DRG versions, the intervention type of the ACHI codes for the remaining endoscopic and percutaneous intervention and diagnostic procedures, notably percutaneous needle biopsies and telemetric EEG monitoring will be remediated.

### 3.3 Enhancement of Diagnosis Complexity Level (DCL) precision for diabetes mellitus

The ECC Model is used to calculate a complexity score for each episode by determining a DCL for each in-scope ICD-10-AM (diagnosis) code assigned to that episode. ECCS are used to distinguish different DRGs within the same ADRG. Episodes with the highest ECCS are assigned to the highest-complexity DRG within their ADRG; similarly, episodes with the lowest ECCS are assigned to the lowest-complexity DRG within their ADRG.

The DCL of a code assigned to a given episode is calculated using:

- the episode's ADRG
- the first 3 characters of the ICD-10-AM code

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<sup>4</sup> In the public consultation paper on the Development of ICD-10-AM/ACHI/ACS Thirteenth Edition and AR-DRG Version 12.0, IHACPA proposed to amend the intervention type of 42 ACHI Twelfth Edition codes in the first stage of implementation. After applying mapping from Twelfth Edition codes to Thirteenth Edition codes, IHACPA amended intervention type of 41 ACHI Thirteenth Edition codes as ACHI Twelfth Edition codes 47726-00 *Procurement of bone for graft via separate incision* and 47732-00 *Procurement of vascularised pedicle of bone for graft* are mapped to the same ACHI Thirteenth Edition code 96275-17 *Procurement of bone for transplantation, living donor*.

- the ICD-10-AM code's Coherent Diagnosis Category (CDC). A CDC is a group of clinically similar diagnosis codes.<sup>5</sup>

This grouping of code assignments that share common information for the purposes of DCL calculation has been adopted to balance the need for robust sample sizes, against the need to ensure that only clinically similar diagnosis codes receive the same DCL. This reduces volatility of DCLs over time. However, it also reduces capacity to distinguish between different codes, especially where clinically similar diagnosis codes reflect differing levels of severity.

Diagnosis codes for diabetes mellitus were identified as candidates for incorporating more granularity because:

- diabetes is one of few conditions coded without needing to meet ACS 0002 *Additional diagnoses*, which means robust samples are obtained at the fourth character code level.
- the code categories for diabetes mellitus contain codes at the fourth character level that indicate the presence of diabetes mellitus without complication:
  - E10.9 *Type 1 diabetes without complication*
  - E11.9 *Type 2 diabetes mellitus without complication*
  - E13.9 *Other specified diabetes mellitus without complication.*

The fourth character level diagnosis codes for 'without complication' are assigned more often than the other fourth character level codes for diabetes mellitus and so have greater influence on the DCL value assigned.

Incorporating these codes (at the fourth character level) improves homogeneity among these codes that share the same DCL by allowing the complexity model to distinguish between diabetes mellitus with and without complication.

For AR-DRG V12.0, DCL values have been calculated using 25 codes at the fourth character level within the diabetes mellitus code categories:

The 25 selected codes were selected based on the following criteria and are listed in **Appendix A4**:

- each code at the fourth character level must have a sample size of at least 1,000 episodes per year in the data used for AR-DRG V12.0 development
- the code at the fourth character level must have a distinct cost profile to that at the third character code category level to which it belongs
- the code shares the same CDC as codes specifying 'without complication', therefore is commonly assigned the same DCL as codes specifying 'without complication'.

To further enhance the clinical coherence of the classification and to reduce the potential for volatility, this change has only been implemented when it results in a DCL higher than that which would be obtained by considering the codes at the third character category level only. This ensures

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<sup>5</sup> Each CDC contains the diagnosis codes that inform grouping to a unique medical ADRG, with the possible addition of some diagnosis codes which are not valid as a principal diagnosis but are used in the complexity model.

that a code for diabetes mellitus without complication cannot have a higher DCL than diabetes mellitus with a complication.

Consequently, the enhancement of DCL precision for the 25 ICD-10-AM codes, impacts approximately 61,967 episodes across 182 ADRGs between 2018–19 and 2021–22.

### 3.4 Posthumous organ procurement

In AR-DRG V12.0 there is a new ADRG for posthumous organ procurement, ADRG A16 *Posthumous organ procurement*. The creation of this ADRG aims to more accurately capture posthumous organ procurement activity.

Activity pertaining to posthumous organ procurement is submitted via the Admitted Patient Care (APC) National Minimum Data Set (NMDS) on a 'best endeavours basis'. Nonetheless, in the data used for AR-DRG V12.0 development (public hospital admitted patient care activity 2018–19 to 2021–22), all jurisdictions submitted some posthumous organ procurement activity in each year. Moreover, 6 jurisdictions submitted cost data linked to posthumous organ procurement for these years.

In AR-DRG V12.0, ADRG A16 *Posthumous organ procurement* belongs in MDC 00 *Pre Major Diagnostic Category*. This is in accordance with the defining principles for Pre Major Diagnostic Category ADRGs listed in the governance framework, that an ADRG should belong to MDC 00 *Pre Major Diagnostic Category* if it contains episodes that:

- have inherent high cost
- are more appropriately classified by intervention than diagnosis.

In AR-DRG V12.0, an episode may group to ADRG A16 *Posthumous organ procurement* if it contains either anACHI Thirteenth Edition code related to posthumous organ procurement or the ICD-10-AM Thirteenth Edition code Z53.32 *Posthumous organ procurement attempted but not completed*. TheseACHI and ICD-10-AM codes are listed in **Appendix A5**.

The ADRG splitting review did not select a complexity split for ADRG A16, resulting in one new DRG.

Among the public hospital admitted patient care activity data from 2022–23, a total of 402 episodes were grouped to ADRG A16 *Posthumous organ procurement*. This is similar to the average of 405 episodes per year between 2018–19 and 2021–22. Activity in this ADRG may fluctuate over time because posthumous organ procurement episodes are submitted on a best endeavours basis.

## 3.5 Standard AR-DRG refinements

### 3.5.1 ADRG intervention hierarchy review

Within each MDC, episodes are allocated to an ADRG in a specific hierarchical order. The hierarchy of the intervention partition is important given episodes have the potential to meet multiple intervention ADRG criteria. When an episode meets multiple intervention ADRG criteria, the episode is allocated to the first ADRG where it meets the intervention criterion in the ADRG intervention hierarchy.

For example, when an episode is assigned to MDC 01 *Diseases and disorders of the nervous system* and meets intervention ADRG criteria for both ADRGs B02 *Cranial interventions* and B08 *Endovascular clot retrieval*, the episode will be allocated to ADRG B02 *Cranial interventions*. This is because ADRG B02 *Cranial interventions* is ranked higher than ADRG B08 *Endovascular clot retrieval* in the ADRG intervention hierarchy.

The ADRG intervention hierarchy is generally based on cost, with high cost ADRGs higher in the hierarchy. However, cost is not the only determinant. Other factors are also considered such as specific ADRGs being positioned higher than non-specific ADRGs and treatment intervention ADRGs being positioned higher than diagnostic intervention ADRGs.

An ADRG intervention hierarchy review was undertaken for AR-DRG V12.0 according to the ADRG hierarchy principles specified in the governance framework.

The review resulted in a change to the ADRG intervention hierarchy in MDC 02 *Diseases and disorders of the eye*. ADRG C01 *Interventions for penetrating eye injury* has moved to the top of the ADRG intervention hierarchy in MDC 02 as illustrated in **Table 2**. This arose from the change in cost profile in MDC 02 and to align with the specificity principle in the governance framework, on the understanding that ADRG C01 is highly specific as it is defined in terms of both diagnoses and interventions.

**Table 2: Changed positions in ADRG intervention hierarchy in MDC 02 *Diseases and disorders of the eye***

Major Diagnostic Category	ADRG	Hierarchy position in AR-DRG V11.0	Hierarchy position in AR-DRG V12.0
<b>MDC 02 <i>Diseases and disorders of the eye</i></b>	C01 <i>Interventions for penetrating eye injury</i>	3	1
	C02 <i>Enucleations and orbital interventions</i>	1	2
	C04 <i>Major corneal, scleral and conjunctival interventions</i>	2	3

The new intervention ADRG A16 *Posthumous organ procurement* was placed in the lowest position in the MDC 00 *Pre Major Diagnostic Category* intervention hierarchy due to its lower cost relative to the other ADRGs in the same MDC.

The *AR-DRG Version 12.0 Technical Specifications* provides further details as to the methodology and outcomes of the ADRG intervention hierarchy review for AR-DRG V12.0.

### 3.5.2 Review of ADRG 801 *General Intervention unrelated to principal diagnosis*

ADRG 801 *General Intervention unrelated to principal diagnosis* is valid for circumstances where the principal diagnosis does not relate to a GI performed during the episode. For example, when patients are admitted for medical treatment and subsequently have treatment for an unrelated complication.

For AR-DRG V12.0, episodes grouping to ADRG 801 *General Intervention unrelated to principal diagnosis* were reviewed where the principal diagnosis and GI were considered related. This was in response to several public submissions and internally identified instances where this grouping occurred.

Consequently, the ADRG groupings for several ACHI codes have been remediated. These ACHI codes, the principal diagnosis codes which commonly occur in the same episode, and their ADRG groupings are listed in **Appendix A6**.

### 3.5.3 Diagnosis codes in-scope for receiving a Diagnosis Complexity Level

To maintain clinical currency and robustness of the AR-DRG classification, a review of ICD-10-AM (diagnosis) codes that are in-scope for episode complexity is conducted for every new version of the AR-DRG classification.

For AR-DRG V12.0, the diagnosis codes assigned in admitted acute episodes in public hospitals over the six-year period from 2016–17 to 2021–22 were reviewed. This is consistent with the diagnosis exclusion review performed for AR-DRG V11.0.

All valid diagnosis codes in ICD-10-AM Twelfth Edition were eligible for review. Following statistical analysis, diagnosis codes warranting individual assessment were identified. An analysis of the changing prevalence of each diagnosis code over time resulted in a review of 17 codes to ensure they were still fit-for-purpose for inclusion in the complexity model.

Each of these diagnosis codes was assessed independently against the guiding principles for diagnosis exclusions from the complexity model specified in the governance framework. Following this assessment and in consultation with IHACPA's clinical and technical working groups, all 17 of these codes were retained as in-scope within the complexity model.

In AR-DRG V11.0 development, code U07.11 *Coronavirus disease 2019 [COVID-19], virus identified, asymptomatic*, was identified as a candidate for exclusion on the basis that it represents an asymptomatic condition. In October 2021, CCAG recommended that this code be retained in the complexity model for AR-DRG V11.0 but that the decision be revisited once COVID-19 treatment had normalised. Consequently, in consultation with IHACPA's clinical and technical working groups, U07.11 *Coronavirus disease 2019 [COVID-19], virus identified, asymptomatic* is not in scope within the complexity model in AR-DRG V12.0 based on the guiding principles for exclusion.

The 122 codes created in ICD-10-AM Thirteenth Edition were assessed against the guiding principles for exclusion from the complexity model. In consultation with IHACPA's clinical and technical working groups, 107 of the new ICD-10-AM Thirteenth Edition codes were consequently excluded from the complexity model. A list of the codes assessed and their status for receiving a DCL in AR-DRG V12.0 are listed in **Appendix A7**.

In total, 11,057 ICD-10-AM Thirteenth Edition codes are in-scope for receiving a DCL in AR-DRG V12.0, as compared to 11,065 ICD-10-AM Twelfth Edition codes in AR-DRG V11.0.

The full list of unconditionally and conditionally excluded codes<sup>6</sup> can be found in Appendix C of the AR-DRG Version 12.0 Definitions Manual and on the IHACPA website.

### 3.5.4 ADRG splitting review

An episode of care is initially assigned to an ADRG, which broadly groups episodes with the same diagnosis and intervention profiles. The final stage is to subdivide (or 'split') each ADRG into individual DRGs based on the ECCS and occasionally other factors such as mode of separation, length of stay and age.

An ADRG splitting review was undertaken for AR-DRG V12.0 according to the DRG principles specified in the governance framework. The outcome of the review is summarised in **Table 3**.

**Table 3: Comparison of ADRG splitting profile between AR-DRG V11.0 and V12.0 by number of complexity splits**

Number of complexity splits		AR-DRG V11.0				New ADRG	Total ADRGs in V12.0
		0	1	2	3		
AR-DRG V12.0	0	86	0	0	0	1	87
	1	1	229	0	0	5	235
	2	0	1	77	0	0	78
	3	0	0	0	5	0	5
ADRG removed		0	0	1	0	-	405
Total ADRGs in V11.0		87	230	78	5	400	

Of the 405 ADRGs in AR-DRG V12.0, 235 ADRGs have one split (A, B).

Of the 405 ADRGs in AR-DRG V12.0, 399 ADRGs are directly comparable to AR-DRG V11.0. In AR-DRG V12.0, there are 6 new ADRGs and one ADRG was removed.

Of the 399 ADRGs that are in both AR-DRG V11.0 and V12.0:

<sup>6</sup> Unconditional exclusion codes are diagnosis codes that have been excluded from consideration in the ECC Model. Conditional exclusion codes are diagnosis codes that are excluded conditionally, depending on other diagnoses assigned in the episode.

- 397 ADRGs have the same number of complexity splits as in V11.0
- one ADRG (ADRG C01 *Interventions for penetrating eye injury*) has changed from having no split in V11.0 to one split (A, B) in V12.0
- one ADRG (ADRG C61 *Neurological and vascular disorders of the eye*) had one split in V11.0 but has 2 splits (A, B, C) in V12.0.

The *AR-DRG Version 12.0 Technical Specifications* provides further details as to the methodology and outcomes of the ADRG splitting refinements for AR-DRG V12.0.

### 3.5.5 ICD-10-AM/ACHI/ACS Thirteenth Edition amendments

ICD-10-AM/ACHI/ACS Thirteenth Edition amendments were assessed, including:

#### 3.5.5.1 Expansion of R10.2 *Pelvic and perineal pain*

For AR-DRG V12.0, the expanded codes R10.21 *Pelvic and perineal pain associated with male pelvis* and R10.22 *Pelvic and perineal pain associated with female pelvis* are grouped to their respective ADRGs in MDC 12 *Diseases and disorders of the male reproductive system* and MDC 13 *Diseases and disorders of the female reproductive system*. Accordingly, AR-DRG V12.0 eliminates the use of sex as a classification variable, completing the work commenced in AR-DRG V11.0.

#### 3.5.5.2 Procedural complications

The classification of procedural complications has been revised. This included the removal of residual (other and unspecified) procedural complication codes from specific body system chapters, that lacked granularity and duplicated concepts classifiable elsewhere.

Episodes impacted by the removal of the procedural complication codes as principal diagnosis will either group to another ADRG in their original MDC or an ADRG in MDC 21B *Injuries, poisoning and toxic effects of drugs* in AR-DRG V12.0.

#### 3.5.5.3 Cluster coding

ICD-10-AM/ACHI/ACS Thirteenth Edition includes the implementation of cluster coding with a change of practice to allow double coding of certain codes when clustering is applied. The AR-DRG grouper ignores duplicate ICD-10-AM codes, therefore clustering has no impact on AR-DRG assignment.

## 3.6 Potential refinements assessed and not progressed for AR-DRG V12.0

Other potential refinements were assessed for AR-DRG V12.0. However, following analysis and consultation through IHACPA's clinical and technical advisory working groups and the public consultation, they have not been progressed for inclusion in AR-DRG V12.0. These refinements may be considered for a future version in consultation with stakeholders.

### 3.6.1 Continuous ventilatory support

Hours of continuous ventilatory support (mechanical ventilation) is used as a classification variable for some ADRGs. In AR-DRG V11.0, there are 2 ways to identify hours of continuous ventilatory support in the AR-DRG classification grouping logic:

- duration of continuous ventilatory support value as recorded in the APC NMDS<sup>7</sup>
- ACHI codes:
  - 13882-01 *Management of continuous ventilatory support, more than 24 hours but less than 96 hours*
  - 13882-02 *Management of continuous ventilatory support, 96 hours or more.*

Consequently, inconsistency is possible between the use of the duration of continuous ventilatory support value as recorded in the APC NMDS data item as opposed to the less granular duration of continuous ventilatory support information obtained from the ACHI codes.

There is also an opportunity to improve the resource homogeneity of the classification by using the more granular information obtained from the APC NMDS data item. The ACHI codes can only identify instances in which continuous ventilatory support is required for more than 24 hours or more than 96 hours. However, there may be different thresholds that could be used that improve the resource homogeneity of the classification in future.

IHACPA investigated whether there was consistency between the 2 modes of identification using the 2018–19 to 2021–22 data used for classification development. Analysis showed only minimal inconsistency. Nonetheless, due to the potential improvements in granularity the use of ACHI codes to inform duration of continuous ventilatory support in several ADRGs may be reconsidered in the future.

### 3.6.2 Analysis of gestational age for neonates

In AR-DRG V11.0, the main variable for assigning an ADRG to episodes in MDC 15 *Newborns and other neonates* is admission weight. A public submission from the Australian and New Zealand Neonatal Network (ANZNN) purported that for MDC 15 *Newborns and other neonates*, gestational age is a better predictor of clinical complexity than admission weight. Two submissions in response to the *Consultation Paper on the Pricing Framework for Australian Public Hospital Services 2021–22* also requested consideration be given to using gestational age in the AR-DRG classification to estimate patient complexity rather than neonatal admission weight.

Gestational age is not collected as part of the APC NMDS, however limited gestational age information can be inferred from some ICD-10-AM Eleventh Edition codes. The code set for gestational age was significantly expanded in ICD-10-AM Twelfth Edition (implemented 1 July 2022), providing more granular information. However, costed data that has been coded using ICD-10-AM Twelfth Edition will not be available until AR-DRG V13.0 development.

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<sup>7</sup> AIHW Metadata Online Registry (METEOR), 'Episode of admitted patient care—duration of continuous ventilatory support, total hours NNNNN', METEOR identifier 746676, accessed 11 December 2024.

IHACPA will consider using gestational age in MDC 15 *Newborns and other neonates* in the AR-DRG V13.0 development when costed activity data using ICD-10-AM Twelfth Edition is available. This data will contain more granular information about gestational age and allow more robust analysis.

### 3.6.3 Care types used in development

Episodes are considered for inclusion in AR-DRG development if they have a care type of Acute care, Newborn care, Posthumous organ procurement or Mental health care. Episodes with a subacute or non-acute care type, that is Rehabilitation care, Palliative care, Geriatric evaluation and management, Psychogeriatric care or Maintenance care, are excluded. Episodes with a care type of Mental health care are classified using the Australian Mental Health Care Classification (AMHCC) and those with a care type of subacute or non-acute care are classified using the Australian National Subacute and Non-acute Patient (AN-SNAP) classification. Therefore, the impact of either including or excluding episodes of both mental health and subacute and non-acute care types was investigated to determine whether a consistent approach to both sets of episodes would be beneficial.

Implementing changes to include mental health care or subacute and non-acute care was found to introduce volatility with little measurable benefit in the overall statistical performance of the classification.

The removal of mental health care records resulted in a decrease in the volume of episodes in MDC 19 *Mental, behavioural and neurodevelopmental disorders* with no substantial improvement in performance in other areas.

When subacute and non-acute care episodes were introduced, the ECC model no longer effectively distinguished between different levels of severity of acute care episodes. Instead, the ECC model began distinguishing between acute and subacute and non-acute episodes because the latter were higher cost.

Therefore, episodes of mental health care were retained, and episodes of subacute and non-acute care continue to be excluded from the data set used in AR-DRG development. This maintains the status quo as used in the development of AR-DRG V8.0–V11.0.

### 3.6.4 The impact of coronavirus disease 2019 (COVID-19)

AR-DRG V12.0 development uses data from 2018–19 to 2021–22. A large portion of this data was impacted by changes to hospital service delivery and costs during the COVID-19 pandemic. Modifications to the data used in development were considered to accommodate these changes but were not progressed because these modifications did not improve the performance of the AR-DRG classification.

Two major risks were identified in relation to data obtained during the COVID-19 pandemic. The first risk was that fluctuations in the volume and cost of hospital activity, most prominently a sharp decrease in separations in early 2020, would make it more difficult to identify a relationship between an episode's diagnoses and cost, which is a necessary part of the ECC model. The second risk was that episodes with COVID-19 may have an inconsistent cost profile because of the changing care

modalities employed at different times during the pandemic. This could have introduced instability into ADRGs which contained other infectious diseases.

Alternative data preparation methods were explored to accommodate these risks. These included filtering data impacted by low-volume national activity and modifying the way in which the classification accounts for indexation. Applying these changes did not result in a material improvement in the AR-DRG classification. Therefore, it was determined that no specific modification needed to be applied to account for the impact of the COVID-19 pandemic.

# 4 AR-DRG V12.0 Overview

## 4.1 Overall Summary

In AR-DRG V12.0, there are a total of 405 ADRGs and 811 DRGs. **Table 4** provides a breakdown of ADRGs compared to ADRGs in AR-DRG V11.0.

**Table 4: AR-DRG V12.0 ADRG breakdown**

Categories	Number of ADRGs
<b>New ADRGs</b>	<b>6</b>
<b>Comparable ADRGs</b>	<b>399</b>
<i>ADRGs with same number of splits as V11.0</i>	397
Error ADRGs (960, 961 and 963)	3
ADRG 801 <i>General Intervention unrelated to principal diagnosis</i>	1
ADRGs split using administrative variables	6
ADRGs with manual splits to support stability	11
ADRGs with manual splits due to failure to select a candidate threshold	18
Other ADRGs with same number of splits as V11.0	358
<i>ADRGs with different number of splits to V11.0</i>	2
<b>Total</b>	<b>405</b>

The 6 new ADRGs are detailed in **Table 5**.

**Table 5: New ADRGs in AR-DRG V12.0**

ADRG	Description
A16	<i>Posthumous organ procurement</i>
O67	<i>Diabetes mellitus and intermediate hyperglycaemia in pregnancy and the puerperium</i>
O68	<i>Maternal medical conditions complicating pregnancy and the puerperium</i>
O69	<i>Gestational disorders complicating pregnancy and the puerperium</i>
O70	<i>Care and screening for other antenatal presentations</i>
U69	<i>Mental health and behavioural disorders in the postnatal period</i>

ADRG O66 *Antenatal and other admissions related to pregnancy, childbirth and the puerperium* was removed in AR-DRG V12.0.

Refer to the AR-DRG Version 12.0 Technical Specifications Table 12: *ADRG splitting methodology steps* for further information regarding candidate threshold.

## 4.2 Statistical Performance

The statistical performance of the AR-DRG V12.0 classification was assessed using a suite of measures and compared to the AR-DRG V11.0 on admitted acute and posthumous organ procurement data submitted in the 2022–23 activity and cost submissions. The measures used were:

- Reduction in Deviance (RID): RID measures how much of the variability in cost is explained dividing episodes into their DRGs. The higher the RID value, the higher percentage of cost variation is explained by the classification. RID does not measure the magnitude of cost variability remaining in the classified data.
- Weighted Area Under Gains (AUG) ratio: This figure assesses the degree to which the ECC Model ranks episodes from least to most cost. The AUG ratio is large for ADRGs in which the ECC Model effectively ranks episodes from least to most cost. The weighted AUG ratio in Table 6 is the average AUG ratio of each ADRG, weighted by the number of episodes in each ADRG.

The performance of AR-DRG V12.0 compared to AR-DRG V11.0 is provided in **Table 6**.

**Table 6: Comparison of statistical performance between AR-DRG V11.0 and V12.0 on 2022–23 admitted acute activity and cost data**

RID		Weighted AUG	
AR-DRG V11.0	AR-DRG V12.0	AR-DRG V11.0	AR-DRG V12.0
65.95%	66.09%	86.08%	86.17%

The overall statistical performance of AR-DRG V12.0 is a RID of 66.09% and AUG ratio of 86.17%, which is comparable to the AR-DRG V11.0 RID of 65.95% and AUG ratio of 86.08%.

# Appendix A: ICD-10-AM and ACHI code references

Appendix A contains the following worksheets:

- A1. ICD-10-AM code references for Section 3.1.1 New ADRG to distinguish mental health and behavioural disorders in the postnatal period
- A2. ICD-10-AM code references for Section 3.1.2 Disaggregation of ADRG O66 *Antenatal and other admissions related to pregnancy, childbirth and the puerperium*
- A3. ACHI code references for Section 3.2 General Interventions review - Guiding principles that inform grouping to the intervention partition
- A4. ICD-10-AM code references for Section 3.3 Enhancement of Diagnosis Complexity Level (DCL) precision for diabetes mellitus
- A5. ICD-10-AM and ACHI code references for Section 3.4 Posthumous organ procurement
- A6. ACHI code references for Section 3.5.2 Review of ADRG 801 *General Intervention unrelated to principal diagnosis*
- A7. ICD-10-AM code references for Section 3.5.3 ICD-10-AM codes in-scope for receiving a Diagnosis Complexity Level



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