



AR-DRG Version 8.0

Education Tutorial

Consortium Partners



NCCH
PO Box 170
Lidcombe NSW 1825
Australia

t: +61 2 9351 9772
f: +61 2 9351 9603
e: enquiries@accd.net.au
w: accd.net.au

Background of AR-DRG Version 8.0

- The Australian Refined Diagnosis Related Groups (AR-DRG) Version 8.0 (V8.0) was released on 1 July 2015 and will be used for pricing for admitted acute care from July 2016, superseding Version 7.0 (V7.0)
- V8.0 was developed by the Australian Consortium for Classification Development (ACCD) under contract from the Independent Hospital Pricing Authority (IHPA), with advice from the ACCD's DRG Technical Group (DTG) and the Classifications Clinical Advisory Group (CCAG) in conjunction with various specialist clinicians.
- V8.0 incorporates the Ninth Edition of the ICD-10-AM/ACHI Classifications (the diagnoses and interventions codes)



Background of AR-DRG Version 8.0

- The AR-DRG Definitions Manual Version 8.0 is available for purchase through the IHPA Sales website (<http://ar-drg.laneprint.com.au>)



- AR-DRG Version 8.0 grouper software can be purchased from various vendors licensed by IHPA - as listed on the IHPA website



Changes in AR-DRG Version 8.0

- **Major changes:**
 - Revision of the case complexity system (Phase 1)
 - Revision of Adjacent DRG (ADRG) splitting (Phase 2)
- **Minor changes:**
 - Modifications proposed through the public submission process
 - One surgical ADRG hierarchical adjustment - moving ADRG I27 ahead of I30 in MDC 08



Revision of the case complexity model (Phase 1)

Major review of the existing Complication and Comorbidity (CC) system

- The Complication and Comorbidity (CC) system was developed in the 1990s using constrained data and computing capacity
- Analysis of recent years' patient and cost data indicated that the CC system demonstrated little relationship to episode cost variations
- Need for non-clinical variables, such as length of stay, to explain cost variations due to episode clinical complexity
- New model would be conceptually based, formally derived and data driven



Revision of the case complexity model (Phase 1)

Development of a new case complexity model – the Episode Clinical Complexity (ECC) Model

- **Episode clinical complexity** is the element of AR-DRGs that recognises and allows for cost variation within ADRGs in V8.0
- The majority of disease codes are in-scope to receive a nonzero case complexity weight (Diagnosis Complexity Level)
- Principal diagnosis (PDx) is included in the complexity calculation
- Terminology has been modified to reflect changes in concept



Revision of the case complexity model (Phase 1)

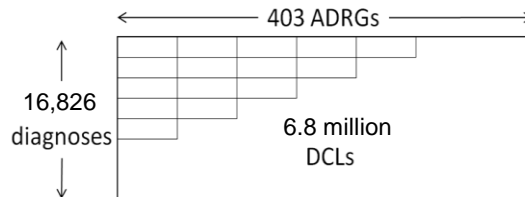
Terminology comparison table

AR-DRG V7.0 – CC Model	AR-DRG V8.0 – ECC Model
Complication and/or Comorbidity (CC) codes are the diagnoses that may affect the calculation of episode level complexity	Complex Diagnoses (CDs) in a particular ADRG are the set (or list) of diagnoses that have a non-zero DCL within an ADRG. CDs differ across ADRGs.
Complication and Comorbidity Levels (CCLs) are values assigned to diagnosis codes as complexity weights, specific to the ADRG of the episode.	Diagnosis Complexity Levels (DCLs) are values assigned to diagnosis codes as complexity weights, specific to the ADRG of the episode.
Patient Clinical Complexity Level (PCCL) is a value assigned to episodes as the measure of the cumulative effect of a patient's CCs.	Episode Clinical Complexity Score (ECCS) is the measure of the cumulative effect of DCLs for a specific episode.
Mild, Moderate, Severe and Catastrophic CCs are descriptive terms used in the naming of DRGs where PCCL has been used as a splitting variable.	Minor, Intermediate, Major and Extreme Complexity are descriptive terms used in the naming of DRGs where ECCS has been used as a splitting variable.



Episode Clinical Complexity Model

DCL array – all possible combinations of ADRGs and DCLs (including out of scope diagnoses)



- DCL values range from 0 to 5
- Diagnoses identified as out of scope for the ECC Model are assigned a DCL of zero across all ADRGs (unconditional exclusions)
- Conditional exclusions are also used to set the DCL of particular diagnosis codes to zero conditional to the presence of other diagnoses codes



Episode Clinical Complexity Model

Codes that are out of scope:

- Unconditional exclusions: assigned a DCL of zero across all ADRGs, including:
 - external cause, place of occurrence, and activity codes
 - the majority of unacceptable principal diagnosis (PDx) , signs and symptoms, and 'Z' codes (some selected as appropriate for inclusion)
 - special case exclusions, including sequelae (late effect) codes and full-time dagger (aetiology) codes



Episode Clinical Complexity Model

Codes that are out of scope (cont'd):

- Conditional exclusions: the dagger (aetiology) codes in particular dagger and asterisk (aetiology and manifestation) pairs of DCL in-scope codes
- Refer to the AR-DRG Definitions Manual Version 8.0, Appendix C for full details on the unconditional and conditional exclusions.



Episode Clinical Complexity Model

Calculating the ECCS:

- Diagnoses are added in descending order of their DCL values
- Multiple DCLs make diminishing contributions to the ECCS by using a decay component (0.84)
- ECCS values range between 0 and 32
- The large majority of episodes will have an ECCS of 5 or less, with only around 0.5% having an ECCS of > 10



Episode Clinical Complexity Model

DCL/ECCS Calculator:

- Range of diagnoses in scope for a nonzero complexity score in the ECC Model is much larger than the limited list of CC codes
- Not practicable to provide a table of the codes in the AR-DRG Definitions Manual (as previously done for the CC codes)
- DCL/ECCS calculator has been provided on the ACCD website to assist in finding the DCLs and computing the ECCS for an individual episode of care



Revision of ADRG splitting (Phase 2)

Implementation of the ECC Model into the AR-DRG classification and revision of ADRG splitting

Principles for Construction of AR-DRGs:

- Clinically coherent
- Reasonably homogenous in resource use
- Classification soundness
- Operationally acceptable and robust



Revision of ADRG splitting (Phase 2)

- Comparison of four ADRG splitting models against each other and against AR-DRG V7.0 to identify a recommended split
- Models were evaluated using splitting criteria and thresholds (maintained from V7.0)
- Use of ECCS as the only splitting variable was selected in 315 of the 321 ADRGs that have a split
- Splits on administrative (non-complexity) variables have been significantly minimised



Revision of ADRG splitting (Phase 2)

Total number of DRGs has increased from 771 in V7.0 to 807 in V8.0 (primarily due to the creation of a split based on ECCS)

ADRG splitting	No. DRGs
No split (Z) (including 3 error ADRGs)	85
One split (A,B)	246
Two splits (A,B,C)	70
Three splits (A,B,C,D)	5
TOTAL DRGs	807



Revision of ADRG splitting (Phase 2)

Number of ADRGs by splitting variables

Splitting variables	No. ADRGs
Nil – no split (including 3 error ADRGs)	85
ECCS only	315
ECCS with other/s	5
Other/s only	1
TOTAL ADRGs	406



Revision of ADRG splitting (Phase 2)

The number of non-complexity splitting variables used has decreased from seven variables in V7.0 to two variables in V8.0 in six ADRGs as follows:

- **Age (and ECCS):**
 - A07 *Allogeneic Bone Marrow Transplant*
 - A09 *Kidney Transplant*
- **Transfer (and ECCS):**
 - B70 *Stroke and Other Cerebrovascular Disorders*
 - B78 *Intracranial Injuries*
 - F62 *Heart Failure and Shock*
- **Transfer (only):**
 - F60 *Circulatory Disorders, Admitted for AMI W/O Invasive Cardiac Investigative Procs*

ECC Model has replaced the major problem, other problem and complicating procedure lists in MDC 15 *Newborns and other Neonates*



Summary of changes for AR-DRG Version 8.0

- Implementation of Episode Clinical Complexity (ECC) Model
- Significantly higher correlation with costs within ADRGs exhibited using the ECC Model
- Less reliance on non-complexity splitting variables
- AR-DRG classification structure is largely the same as in AR-DRG V7.0, retaining 403 non-error ADRGs and 3 error ADRGs
- V8.0 is planned for implementation for pricing in July 2016



AR-DRG Version 8.0

Additional resources:

- **AR-DRG Definitions Manual Version 8.0** (available for purchase from IHPA)
- **AR-DRG Version 8.0 Descriptions and Diagnosis/Procedure Code Index** (ACCD website)
- **DCL/ECCS Calculator** (ACCD website)
- **Review of the AR-DRG Classification Complexity Process: Final Report August 2014 and Development of the Australian Refined Diagnosis Related Groups V8.0 Final Report October 2014** (IHPA website)
- **Classification Information Portal (CLIP)** (ACCD website)
- **code it! newsletter** (emailed to CLIP registrants and available on the ACCD website)
- **Additional AR-DRG Classification information on both the IHPA and ACCD websites**

IHPA:

<http://www.ihoa.gov.au>

ACCD:

<https://www.accd.net.au>

<https://www.accd.net.au/Clip/>

Contact: enquiries@accd.net.au



ACCD © Copyright Independent Hospital Pricing Authority 2015, AR-DRG V8.0.

19

Copyright

© Copyright Independent Hospital Pricing Authority 2015, AR-DRG Version 8.0.

This work is copyright. It may be reproduced in whole or in part for study and training purposes subject to the inclusion of an acknowledgment of the source and no commercial usage or sale.

Reproduction for purposes other than those stated above requires the written permission of the IHPA (enquiries.ihoa@ihoa.gov.au).



ACCD © Copyright Independent Hospital Pricing Authority 2015, AR-DRG V8.0.

20