IHACPA

Development of IHACPA Classifications

Volume 6 AECC

Version 1.0
November 2026



Acknowledgement of Country

We respect and acknowledge the Traditional Owners and Custodians throughout Australia and recognise their continuing connection to land, sky, waters and culture. We pay our respect to people, communities and Elders today and those who walk in spirit.

Artwork by Chern'ee Sutton

Development of IHACPA Classifications – Volume 6 AECC – Version 1.0

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Abbreviations

Abbreviations	Full term
ACHI	Australian Classification of Health Interventions
ACS	Australian Coding Standards
AECC	Australian Emergency Care Classification
CAC	Clinical Advisory Committee
CCAG	Classifications Clinical Advisory Group
ECAWG	Emergency Care Advisory Working Group
ECDG	Emergency Care Diagnosis Group
EPD Short List	Emergency Care ICD-10-AM Principal Diagnosis Short List
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification
IHACPA	Independent Health and Aged Care Pricing Authority
JAC	Jurisdictional Advisory Committee
SNOMED CT-AU EDRS	Systematized Nomenclature of Medicine – Clinical Terms Australian extension Emergency Department Reference Set
TAC	Technical Advisory Committee
WHO	World Health Organization

1. Purpose

The Australian Emergency Care Classification (AECC) is a classification system that groups patients into categories that are both clinically similar and expected to require similar levels of health care resources. It is used primarily for emergency care.

The **Development of IHACPA Classifications – Volume 1 Governance Framework** provides the overarching structure for creating, maintaining and updating IHACPA classifications, ensuring they remain accurate, clinically relevant and fit for purpose across the healthcare system. It sets out a unified and standardised approach to classification development that aligns with the IHACPA Strategic Plan 2025–30.

The **Development of IHACPA Classifications – Volume 6 AECC** builds on the foundations set in Volume 1 and provides detailed guidance for developing the AECC. It outlines the key development principles, the processes for development and approval, and the classification resources that are produced.



Volume 6 AECC
This volume should be read together with **Volume 1 Governance Framework**. Together, volumes 1 and 6 comprise the full governance framework for the development of the **AECC**.

Volume 2 ICD-10-AM/ACHI/ACS provides additional information about key foundational concepts of the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM) that form part of the Emergency Care ICD-10-AM Principal Diagnosis Short List (EPD Short List) development.

2. AECC

The AECC provides a clinically meaningful way to group together treatments and services provided to patients in emergency care. AECC enables public hospitals to be funded for emergency care presentations. The AECC is also used for service planning, epidemiology and health research.

The classification system is reviewed and updated over a 3-year development cycle to ensure it remains clinically relevant and fit for purpose.

2.1 EPD Short List

The following classification is an essential input to the AECC:

- **International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM)** is based on the World Health Organization's (WHO) International Statistical Classification of Diseases and Related Health Problems, Tenth Revision and classifies diseases, injuries and health related problems.

The **Emergency Care ICD-10-AM Principal Diagnosis Short List** (EPD Short List) is based on a subset of ICD-10-AM and is updated to maintain alignment with ICD-10-AM. The EPD Short List codes form the foundation of the AECC. The AECC uses the EPD Short List coded information with other routinely collected data items to group emergency care presentations into clinically meaningful categories with similar patterns of resource use.

Because the EPD Short List underpins the AECC, both systems are developed in parallel, and finalised and released at the same time. However, the AECC is generally implemented later to allow time for system updates, testing and transition.

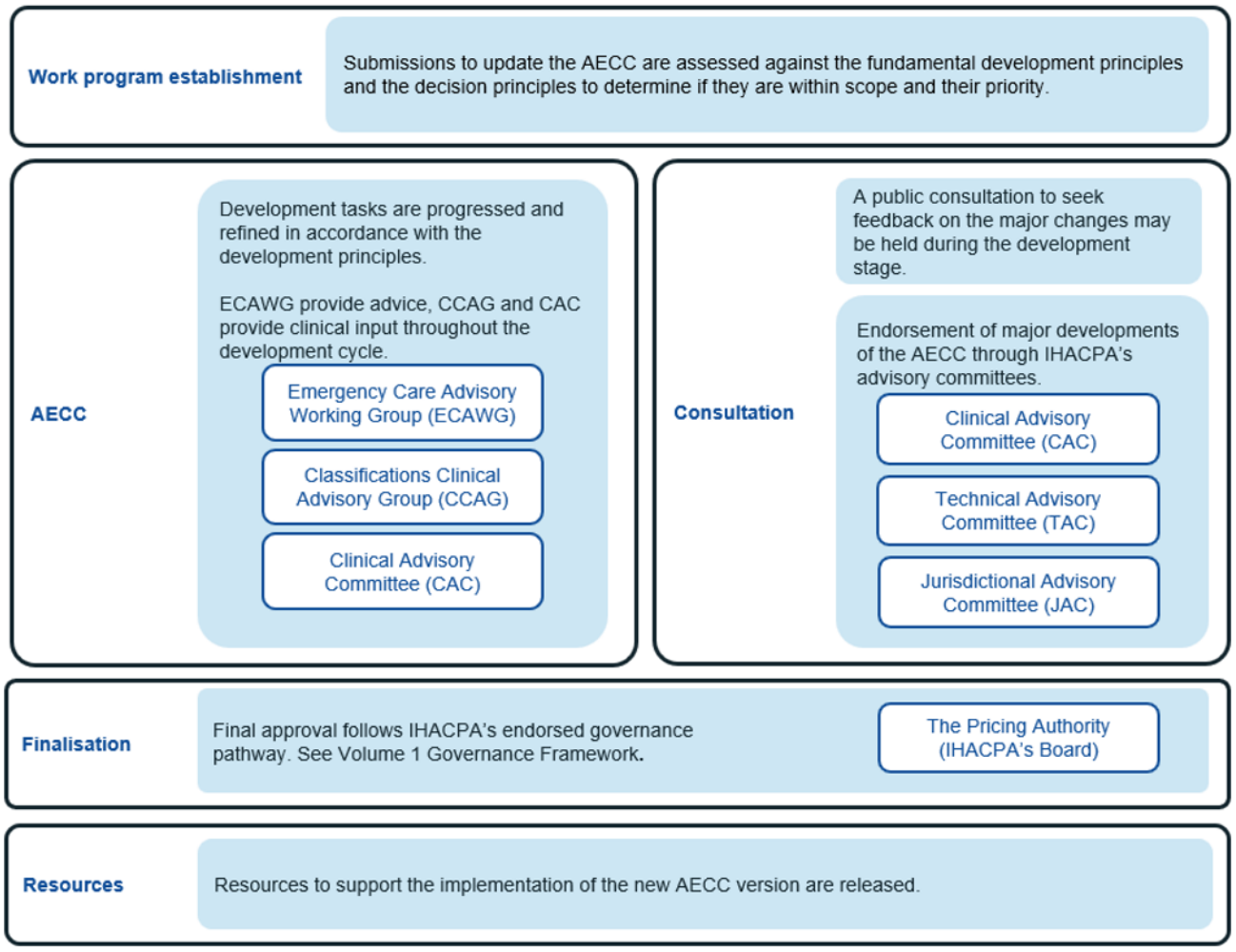
For further information on the development of ICD-10-AM/ACHI/ACS, refer to **Volume 2 ICD-10-AM/ACHI/ACS.**

3. The development process

3.1 Stages of the development cycle

The development of the AECC is a 5-stage process (Figure 1), that aligns with IHACPA's standardised approach to classification development. This approach, outlined in the **Volume 1 Governance Framework,** supports consistent decision making, transparency and accountability and ensures the classifications remain stable and current**.**

Figure 1: The stages of the AECC development cycle



3.1.1 Advisory groups

The Emergency Care Advisory Working Group (ECAWG) and their broader networks provide expert input into AECC, as summarised in Table 1.

Table 1: Role of advisory groups

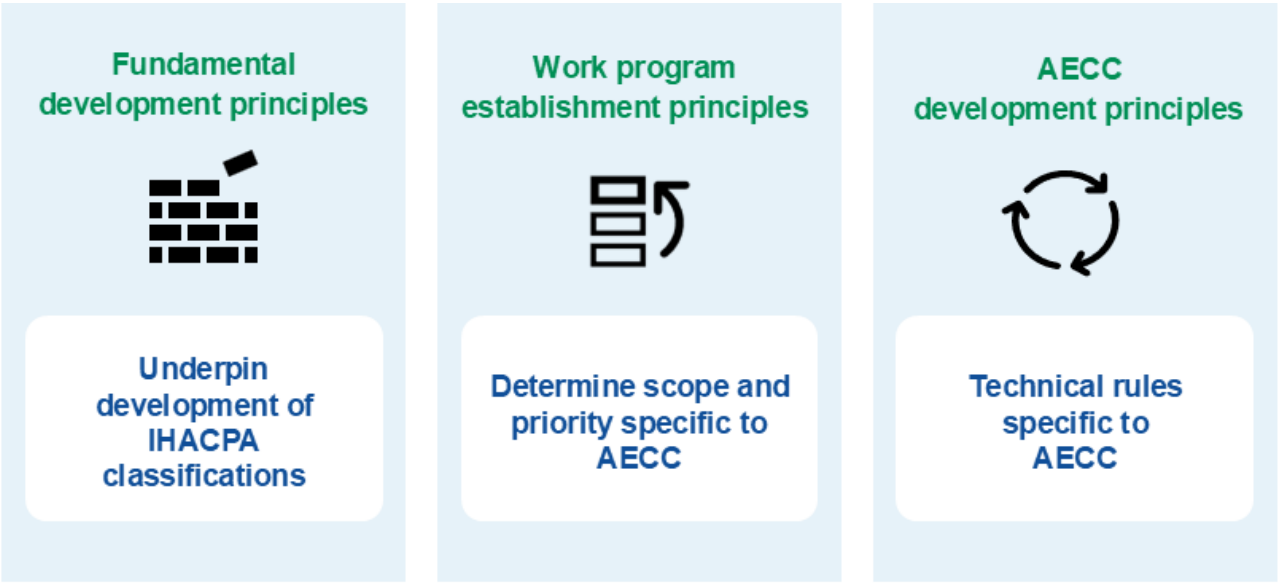
Group	Description
Emergency Care Advisory Working Group (ECAWG)	• Provides advice and input on the development and refinement of AECC. • Membership includes representatives from all jurisdictions, emergency physicians, and representatives from the Australasian College for Emergency Medicine and the College of Emergency Nursing Australasia.
Classifications Clinical Advisory Group (CCAG)	• Provide expert classification and technical advice. • Membership includes representatives from all jurisdictions, public and private healthcare organisations, and key Australian health sector organisations and peak bodies.
Clinical Advisory Committee (CAC)	• Provide clinical advice on the classification development. • Membership is drawn from a range of clinical specialities and backgrounds.

IHACPA may consult other relevant clinical bodies to seek further advice on outstanding issues that require clinical input.

3.2 Principle based development

The AECC is developed using a principle-based approach, with these principles applied throughout the development cycle to ensure the classification system remains fit for purpose. These principles are organised into 3 categories, as shown in Figure 2.

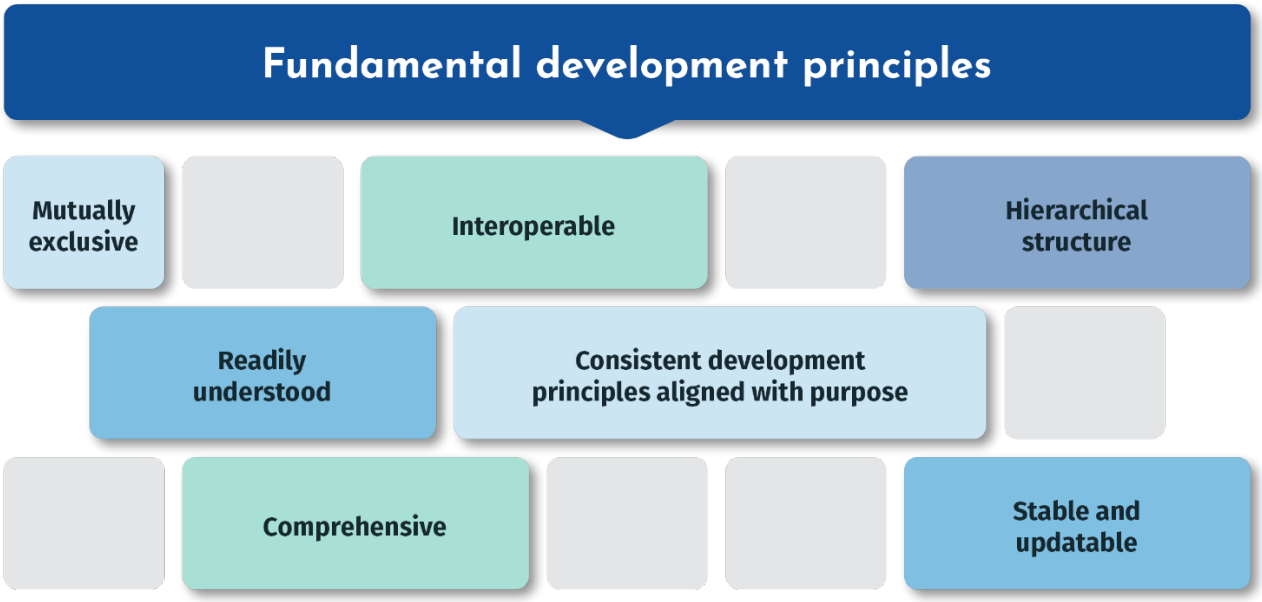
Figure 2: The 3 categories of principle based development



3.2.1 Fundamental development principles

The fundamental development principles are listed in the **Volume 1 Governance Framework** and shown in Figure 3. Their practical application is described in Section 4.1 Work program establishment principles and Section 5.1 AECC development principles.

Figure 3: Fundamental development principles



4. Work program establishment

Stakeholder submissions to update the AECC are assessed against the work program establishment principles to determine whether they are within scope and, if so, their priority. Higher priority submissions inform the work program. However, not all high priority submissions can be progressed in each development cycle, and some may need to be deferred for future consideration.

4.1 Work program establishment principles

The work program establishment principles are informed by, and build on, the fundamental development principles (Figure 3). They include:

- **Stable and updatable** – balance need for updates to incorporate new clinical knowledge, technology, service models and activity patterns, while maintaining conceptual consistency and stakeholder understanding over time
- **Consistent development principles aligned with purpose** – the rules and decision criteria are applied systematically and transparently.

4.1.1 Scope principles

The decision principles define which submissions are considered in scope for AECC development.

Out of scope submissions include those that:

- are not clinically relevant
- are based on service provider characteristics rather than clinical characteristics
- cannot be evaluated using datasets accessible by IHACPA.

Concepts identified as out of scope may be better addressed by other IHACPA classifications, through policy development, education, enhancements to data collection systems, improved costing practice, or through pricing adjustments.

4.1.2 Prioritisation principles

All submissions deemed in scope are then assessed against the prioritisation principles.

A submission will be assigned a priority level if it meets at least one of the criteria defined within that priority level (Table 2). If a submission meets criteria across multiple levels, it is assigned the highest applicable priority level.

Table 2: Priority criteria for AECC development tasks

Priority	Criteria for priority level
High priority (standard refinements for each new AECC version)	• Performance monitoring of the existing classification to identify areas for review • Review and refinement of the AECC complexity model to maintain clinical currency and cost homogeneity, including: - review of ICD-10-AM and EPD Short List codes aggregated within Emergency Care Diagnosis Groups (ECDGs) - recalibration of the AECC complexity model using the latest cost and activity data - review of splitting thresholds for end classes. • Integration of changes emanating from the underpinning EPD Short List classification system and variables used in the AECC complexity model.
Medium priority	• Issues that demonstrate significant material impact on the classification as measured by emergency care presentations affected or costs involved[1] • Issues that affect a wide range of ECDGs • Issues related to changes in clinical practice and technology that can be assessed using sufficient and available data • Known limitations of the classification that warrant review due to the length of elapsed time from previous review and a review is timely due to clinical advances • Issues that arise from observed changes in activity and cost data (for example, where a new data item is collected that may indicate the need for a new ECDG) • Issues that relate to alignment of IHACPA classifications (for example, opportunities for harmonisation and improving consistency across IHACPA classifications).
Low priority	• A submission is assigned as low priority if it does not meet any of the principles in high or medium priority • Grouping anomalies that affect a limited number of presentations and are immaterial.

[1] IHACPA will rank and select submissions based on their material impact on the classification and progress classification development accordingly.

Table 3: Priority criteria for EPD Short List development tasks

Priority	Criteria for priority level
High priority	• Review of activated ICD-10-AM placeholder codes for: – new diseases of uncertain aetiology or emergency use (U00–U49) – disease of national significance (U75–U77). • Refinements that correct issues relating to all levels of ECDG mapping from ICD-10-AM.
Medium priority	• Minor updates in the EPD Short List that support refinement of mapping from the Systematized Nomenclature of Medicine – Clinical Terms Australian extension (SNOMED CT-AU) Emergency Department Reference Set (EDRS) and ICD-10-AM.
Low priority	• A proposal is assigned as low priority if it does not meet any of the principles in high or medium priority.

5. AECC development

AECC updates are developed in accordance with the established classification development principles. Throughout this stage, expert technical and clinical advice is sought from advisory groups to ensure the updates are appropriate, reflect the intended classification logic and are fit for purpose.

5.1 AECC development principles

The AECC development principles outline the rules applied during the refinement and development process and are informed by the fundamental development principles (Figure 3). They include:

- **Comprehensive, mutually exclusive categories that are readily understood** – to ensure each concept is classifiable to only one well defined category
- **Hierarchical and interoperable** – to support multiple and diverse uses and consistent data capture
- **Consistent development principles aligned with purpose** – the rules and decision criteria are applied systematically and transparently.

Development is informed by the most recently available activity and cost data at the start of the development cycle.

Each development task will be analysed individually prior to integration of all proposed changes into the complexity model. Following incorporation, we will use different statistical models to conduct comparative analysis of the complexity model performance between the latest and proposed new AECC versions.

Principles governing the development of the AECC are outlined in Tables 4 to 10.

Table 4: Primary AECC development principles

Primary AECC development principles	
Clinical coherence	• Presentations within a class must share similar characteristics, including principal diagnosis and treatment.
Resource homogeneity	• Presentations within a class must have a similar pattern of resource utilisation, while variation in resource use between classes should be substantial.
Statistical validity	• The cost pattern within each AECC class and the differences between classes, must be reliably explained by the clinical and demographic variables used in the grouping logic.
Evidence-based development	• Development will be informed by international best practice, specialist advice and data analysis. All changes to the AECC must be supported by hospital activity and cost data that can be accessed by IHACPA.

Primary AECC development principles	
Integration with underpinning disease classification	• The AECC classification must align with the underpinning edition of EPD Short List.
Stability	• The stability principle in the Volume 1 Governance Framework recognises the need for classifications to remain stable over time while enabling updates in response to changes in clinical practice, coding systems, and the prevalence or cost of services. In the context of the AECC, this principle is interpreted as: – presentations may group to different end classes across AECC versions, and the profile of an end class may change over time. However, such changes should arise only from: ○ improved adherence to the AECC development principles in more recent AECC versions ○ updates to EPD Short List ○ changes in the underlying patterns of emergency care activity and cost data. • The AECC development is undertaken with a view to minimising change due to other factors, to preserve longitudinal comparability and system stability.

Table 5: ECDG and ECDG subcategory principles

Emergency Care Diagnosis Group (ECDG) and ECDG subcategory principles
ECDGs and ECDG subcategories are clinically meaningful groups that are generally defined by similar emergency care principal diagnosis codes. The principles include: • an ECDG and ECDG subcategory must demonstrate clinical coherence • an ECDG and ECDG subcategory must contain enough presentations to allow for the assessment of statistical homogeneity, and a sufficient volume to support reliable benchmarking and performance management • for development submissions requesting new ECDGs, placement within an existing ECDG must be considered in the first instance • diagnosis codes for conditions that require similar clinical management and have comparable resource use may be grouped to the same ECDG subcategories and ECDG, even when the underlying aetiology differs. For example, wheezing is assigned to the same ECDG subcategory and ECDG as asthma.

Table 6: AECC end class principles

AECC end class principles
AECC end class principles inform how each ECDG is split into AECC end classes following consideration of resource homogeneity. An AECC end class must meet all the following criteria: • contains at least 1,000 presentations per year • the average cost of complexity groups increases as the complexity level increases • the number of presentations within each complexity group decreases as the complexity level increases • the number of presentations in each complexity group is at least 10% of the total presentations in the ECDG.

Table 7: Threshold selection principles

	Threshold selection principles
The AECC complexity score thresholds for ECDG end classes are selected using these criteria	• AECC complexity score thresholds are selected when they meet AECC end class principles and perform comparably to the best available simulation • Where more than one complexity score threshold satisfies all AECC end class principles, the threshold that achieves the greatest reduction in mean squared error (MSE) is generally selected as the optimal split threshold for that ECDG, as this provides the best statistical fit among the eligible thresholds • Where AECC complexity score thresholds do not meet these requirements a simulation with the same number of AECC end classes as the previous version is selected • If an AECC end class is affected by a development task, then the number of splits is revised based on the optimum statistical performance • If an AECC end class split is recommended in 2 consecutive versions, then the number of splits is revised based on optimum statistical performance.

Table 8: Mapping principles

	Mapping principles
Historical mapping	• Historical mapping is the process of identifying equivalent EPD Short List codes across different editions to support data analysis and ECDG grouping when data is coded using different editions • When a new EPD Short List code is introduced, it is mapped backward to a corresponding code in the previous edition • When a code is deleted, it is mapped forward to a relevant code in the new edition.
ECDG mapping	• ECDG mapping allocates new or revised EPD Short List codes to an appropriate ECDG • Although the ECDG map usually matches the historical map, a different mapping may be selected where it results in more appropriate grouping outcomes.
SNOMED CT-AU EDRS to ICD-10-AM mapping	• Mapping principles from SNOMED CT-AU EDRS to ICD-10-AM for use in emergency care setting will be developed in consultation with the Emergency Care Advisory Working Group (ECAWG).

Table 9: Principles for new diagnosis codes used in the AECC complexity model

Principles for new edition diagnosis codes used in the AECC complexity model
• New EPD Short List codes will be assigned to the most appropriate ECDGs. The intercept and coefficient numerical values for these ECDGs will be used to calculate the AECC complexity score.

Table 10: EPD Short List development principles

Convention	Principles
Code	• Between 3 and 5 characters long • A valid diagnosis code from the latest ICD-10-AM edition • ICD-10-AM diagnosis codes that are not valid reporting codes, as per admitted diagnosis coding rules, will only be considered if determined to be clinically appropriate within the emergency care setting • Rather than using a 3-character code which is not considered valid for the purposes of reporting, the corresponding fourth character 'unspecified' code will be included where there is no clinical differentiation between the 3-character description and the fourth character 'unspecified' description (for example, ICD-10-AM code J18.9 *Pneumonia, unspecified* would be included opposed to J18 *Pneumonia, organism unspecified*) • If no block residual category 'unspecified' code is appropriate, the diagnosis code within the block will be grouped to a chapter residual category code • External causes of morbidity and mortality codes (U50 – U73, V00 – Y98) from ICD-10-AM are excluded • Only a limited range of Z00 – Z99 *Factors influencing health status and contact with health services* codes will be included to account for those presentations where there is insufficient clinical information recorded to determine a diagnosis • Should contain 250 presentations across jurisdictions. Required codes that do not have a sufficient number of presentations will still be considered for inclusion if determined necessary for clinical reasons • Should be used consistently across jurisdictions. However, it is recognised certain codes will need to be included to account for specific conditions which may be geographically isolated. These codes will be considered for inclusion if determined necessary for clinical reasons.
Term	• Terminology to align with ICD-10-AM wherever possible, except: – when language of a term is considered out-of-date in ICD-10-AM, it will either be updated in the EPD Short List, or the legacy terminology will be included as a synonym in the parentheses – 'other' are added to some terms using commas for comprehensiveness – concepts categorised to 'other specified' and 'unspecified' categories in ICD-10-AM are combined to represent residual categories – 'and' in the ICD-10-AM descriptors will be replaced by 'or' if concepts do not require to meet the scope of the term. • Terms are arranged by a particular convention to enable ease of navigation – disease, severity, synonyms or exclusions (for example, *Cholelithiasis, acute (without calculus)*) – disease site, type, severity (for example, *Liver failure, acute*).
Unacceptable diagnosis	• Unacceptable principal diagnosis concepts that align with the Australian Coding Standards (ACS) 0050 *Unacceptable principal diagnosis codes* and ACS 0049 *Disease codes that must never be assigned* in ICD-10-AM will not be used in the aggregation of clinical conditions in the EPD Short List codes.
***Included* conditions terms**	• Uses the same principles as Term, which may use terminology from the ICD-10-AM descriptors.

Convention	Principles
Special signs/Annotations	• Asterisk symbol applied next to the code of a manifestation concept, subject to dagger/asterisk dual classification in the ICD-10-AM • Mapping of the aetiology and manifestation (dagger and asterisk) codes in ICD-10-AM are undertaken with preference given to the manifestation of a disease (asterisk code) • National Notifiable Disease Surveillance System (NNDSS)[2] reportable conditions are flagged with NNDSS in superscript next to the term.

[2] Australian Centre for Disease Control (CDC) (2026) *National Notifiable Diseases Surveillance System (NNDSS),* CDC website, accessed 12 October 2026.

6. Resources

When finalising a new version of the AECC and EPD Short List, we provide a range of resources to support implementation.

Licensing

ICD-10-AM is a licensed classification system. Classification resources are available for access in Australia. However, an ICD-10-AM licence arrangement must be in place to use relevant EPD Short List materials.

6.1 Classification resources

AECC definitions manual	Provides a high-level understanding of ECDG grouping logic and assists with the identification of likely ECDG assignments for individual emergency care presentations. The appendices will also be provided in Excel format on the IHACPA website.
AECC final report	Details the refinement process, including the changes made and the rationale for those changes.
AECC grouper software and user manual	Assists in grouping emergency care data to the AECC.
EPD Short List Tabular List	Contains the disease classification provided in Excel format.
Mapping tables	Demonstrates the relationship between different diagnosis reference sets, including: • SNOMED CT-AU EDRS[3] to ICD-10-AM (licensed material) • ICD-10-AM to EPD Short List (licensed material). Mapping table is also available for: • EPD Short List to ECDG which demonstrates clustering of EPD Short List codes to ECDGs.
EPD Short List user guide	Details the components and conventions of the EPD Short List and summary of changes for that edition.

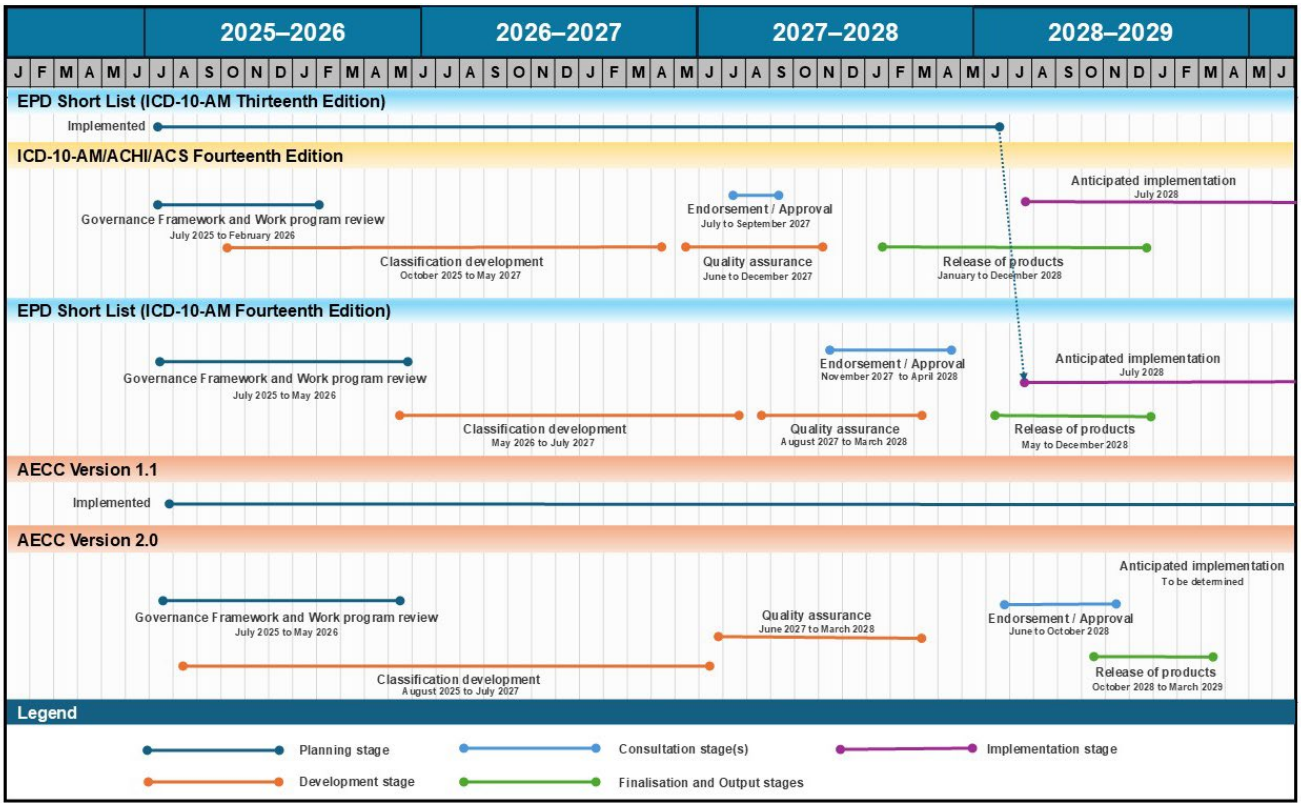
Access current version classification resources

[3] Systematized Nomenclature of Medicine – Clinical Terms Australian extension Emergency Department Reference Set is maintained by the National Clinical Terminology Service, a subgroup of the Australian Digital Health Agency

7. AECC Version 2.0 timelines and milestones

The AECC is developed on a 3-year cycle. This approach maintains alignment with ICD-10-AM development cycle, balances clinical currency with data stability, while minimising the administrative burden of implementing new AECC versions. Figure 4 illustrates the 3-year development cycle for AECC V2.0 and EPD Short List (ICD-10-AM Fourteenth Edition).

Figure 4: Anticipated timelines for AECC V2.0 and EPD Short List (ICD-10-AM Fourteenth Edition)



There are key dependencies between ICD-10-AM, EPD Short List and AECC classifications. To maintain alignment across these interrelated classifications, their development and updates occur concurrently throughout the cycle.



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