

Australian Emergency Care Classification (AECC) version 1.0

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The Australian Emergency Care Classification (AECC) for activity based funding of Australian public hospital emergency departments. The classification makes greater use of diagnosis, improving the utility for clinicians.

The AECC was developed using a combination of statistical analysis and clinical input. The statistical analysis was of activity and cost data from 10 emergency departments across Australia.

The AECC has a three-level structure:

- Level 1 splits episodes into those where visit type/ episode end status values are used as the main classifying variables, and those where diagnosis is used. Where visit type/ episode end status values are used, three end classes are created—'Not attended by a healthcare professional', 'Dead on arrival' and 'Planned return visit'. Other emergency care episodes proceed to the next level, categorised by diagnosis.
- At Level 2, episodes are clustered into major clinical conditions managed in emergency care settings. The groups of diagnoses are called 'emergency care diagnosis groups' (ECDGs). They are based on the Emergency department ICD-10-AM principal diagnosis short list codes.
- At Level 3, ECDGs are partitioned into end classes of different levels of complexity, reflecting cost. Complexity splits are based on a score assigned to each episode, which is calculated using the patient's age group, episode end status, triage category, and transport (arrival mode) mode.

The AECC has 181 end classes, which includes end classes not classified by diagnosis (pre-ECDG) and end classes used for missing or invalid data (error classes).

Table 1 also shows the distribution of splits amongst the ECDGs and the resulting number of end classes.

Table 1: Number of splits per ECDG, AECC V1.0

No. of splits	No. of ECDGs	No. of end classes
Excluding pre-ECDG and error classes		
No split	6	6
2	26	52
3	32	96
4	5	20
<i>Subtotal</i>	<i>69</i>	<i>174</i>
Pre-ECDG		3
Error classes		4
Total	69	181

The AECC uses variables that are currently reported through national minimum data sets. It has also been designed so that other measures able to estimate complexity can be incorporated as they are introduced to national collections.

Including outliers, the AECC achieves a predictive (cross-validated) R-squared value of 0.301. The predictive R-squared value increases to 0.350 when outliers and episodes where the emergency department diagnosis is missing or not mapped to a short list code are excluded. This means that when applied to new data, the classification is likely to account for 35% of variation in cost at the episode level. This will improve as cost data for emergency care improves. Also, the classification will account for a much higher proportion of variation in costs when measured at the emergency department level (in contrast to the individual episode level).

In 2019, IHPA will work with jurisdictions and clinicians via its committees to consider pricing approaches.