A series of overlapping, wavy lines in various shades of blue and grey, flowing from the left side of the page towards the right, creating a sense of movement and depth.

Independent Hospital Pricing Authority
Australian Emergency Care
Classification

Final report

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Abbreviations and initialisms

AECC	Australian Emergency Care Classification
ECAWG	Emergency Care Advisory Working Group
ECC	Emergency care category
ECDG	Emergency care diagnosis group
ED	Emergency department
HPA	Health Policy Analysis
ICD-10-AM	International Classification of Diseases-10 th Revision-Australian Modification
IHPA	Independent Hospital Pricing Authority
METeOR	Metadata Online Registry
MAE	Mean error square
NAPEDC	Non-Admitted Patient Emergency Department Care
NHCDC	National Hospital Cost Data Collection
NMDS	National Minimum Data Set
RMSE	Root mean square error
UDG	Urgency disposition group
URG	Urgency related group

Executive summary

In 2015, IHPA commissioned a new Australian Emergency Care Classification (AECC) to replace the current Urgency Related Groups (URGs) and the Urgency Disposition Groups (UDGs) to price emergency care. The URGs and UDGs used by the Independent Hospital Pricing Authority (IHPA) to classify emergency care were implemented as an interim measure when activity based funding commenced nationally on 1 July 2012. IHPA subsequently reviewed the utility of these classifications and determined that they were not suitable for use on an ongoing basis.

To establish a new emergency classification, more refined costing data than is available routinely through the National Hospital Cost Data Collection (NHCDC) was needed. Therefore, an initial step was to undertake a costing study—the *Emergency care costing study*. This study was used to identify individual variables contributing to the complexity of patients in emergency care, as reflected in costs, and then to determine how these would be used in combination to define end classes for the classification.

The AECC was developed out of this. It 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 that are not allocated to an end class at Level 1 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 mode (arrival).

The AECC has 181 end classes (including pre-ECDG—Level 1 classes—and error classes). Figure 1 overviews the structure of the AECC version 1.0.

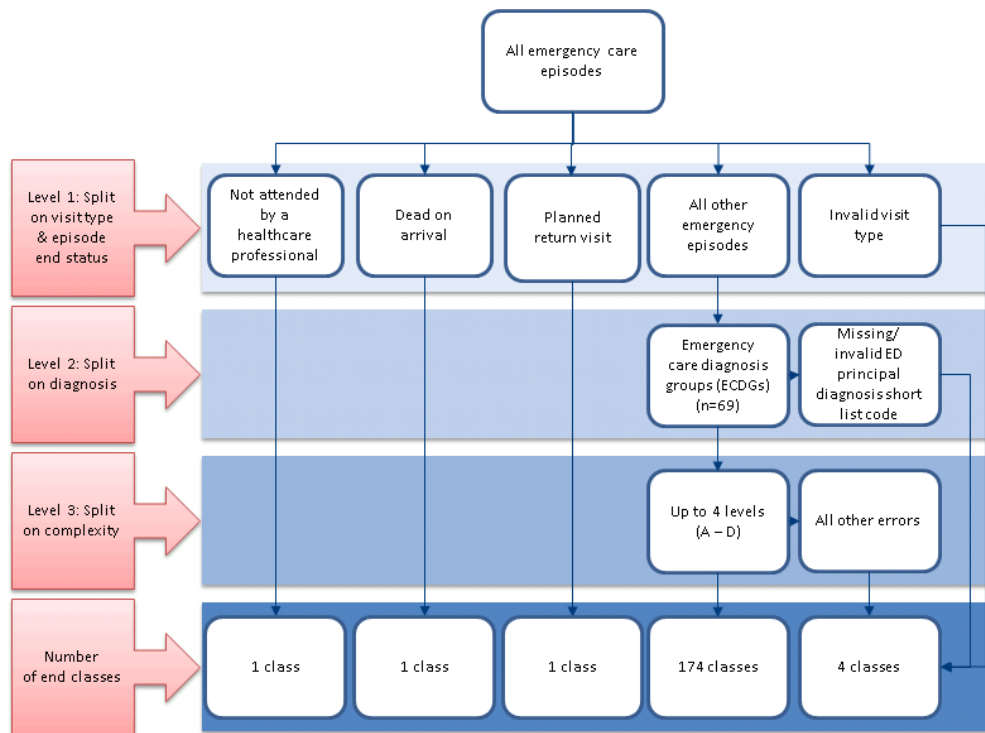


Figure 1 AECC version 1.0 structure

The AECC was developed using a combination of statistical analysis and clinical input: the splits in the classification demonstrate statistical as well as clinical validity. An independent reviewer also reviewed the model outputs, thus providing further assurance of the quality of the resulting classification.

The AECC adopts variables that are currently reported through national minimum data sets—visit type, episode end status, triage category, transport mode (arrival), age group and principal diagnosis short list code. It has also been designed so that improved measures of complexity can be introduced as they become available. Refinement of the AECC relies on good quality costing data. Hospitals will need to continually improve their costing methods and reporting to provide a source to refine the classification.

Introduction and background



The Independent Hospital Pricing Authority (IHPA)

IHPA is an independent government agency established by the Commonwealth as part of the implementation of the National Health Reform Agreement. One of IHPA's functions is to review and update existing classifications and develop new classifications for services provided by public hospitals based on activity. This supports its primary role in determining the National Efficient Price and the National Efficient Cost for public hospital services.

Activity classification systems

Activity based classification systems provide the health sector with nationally consistent methods for grouping patients and other services to provide better management, measurement and funding of high quality and efficient healthcare services.

These types of classifications are comprised of end classes that provide clinically meaningful ways of relating the types of health service activities to the resources required. They can be used for funding, review of performance and quality initiatives.

Background to the development of the AECC

The Urgency Related Groups (URGs) and the Urgency Disposition Groups (UDGs) used by IHPA to classify emergency care were implemented as interim systems when activity based funding commenced nationally on 1 July 2012.

In 2013, IHPA commissioned an *Investigative review of classification systems for emergency care* (the Investigative review) (Health Policy Analysis 2014a) to assess the suitability of the classifications' ongoing use.

The Investigative review concluded that URGs and UDGs are not suitable for use on an ongoing basis. This was mainly due to the reliance on triage, which does not equate to cost in all instances—patients who are not urgent can be costly—and is inconsistently applied to episodes within and across emergency departments. Also, clinicians expressed a strong interest in moving to a classification system that better reflects patients' reasons for seeking emergency care—their principal emergency department diagnosis. The Investigative review recommended that IHPA develop a classification system to replace URGs and UDGs.

Drivers of cost in emergency care

In the development of the AECC and in work undertaken prior, it was assumed that patient complexity is reflected in the costs of providing emergency care. Therefore, the Investigative review explored cost drivers—defined as clinical or other features—type of presentation (i.e. emergency versus other), urgency, transport mode (arrival), diagnoses (principal and comorbidities, and including mobility/ dependency and social factors), demographic factors (age, geographic location, language barriers), investigations and procedures required, and episode end status (e.g. admitted, not admitted, died in the emergency department)—that impact cost.

Some of these cost drivers were already reported in national minimum data sets. Others were not collected or only collected at hospital or state/ territory level, but not reported nationally.

Patient level costing study

To develop a new classification system, IHPA needed data that were additional to that reported in the national minimum data sets. In addition, more refined costing data than that submitted through the National Hospital Cost Data Collection (NHCDC) were required. The Investigative review found that emergency departments reporting cost data to the NHCDC tended to use triage and/ or episode end status to allocate costs to episodes—either directly (e.g. local judgment of relative utilisation of resources based on these data elements), or indirectly (e.g. using URG relativities based on these data elements)—perpetuating these variables as drivers of cost.

In June 2015, IHPA engaged a Health Policy Analysis-led consortium to undertake a one-month costing study in 10 public hospital emergency departments across Australia. Study sites collected activity and cost data between April and June 2016.

The final report for the *Emergency care costing study* was released in October 2017 (Health Policy Analysis 2017). Health Policy Analysis used the data from the study to develop the AECC version 1.0. Figure 2 shows the process for developing the classification and the time line.

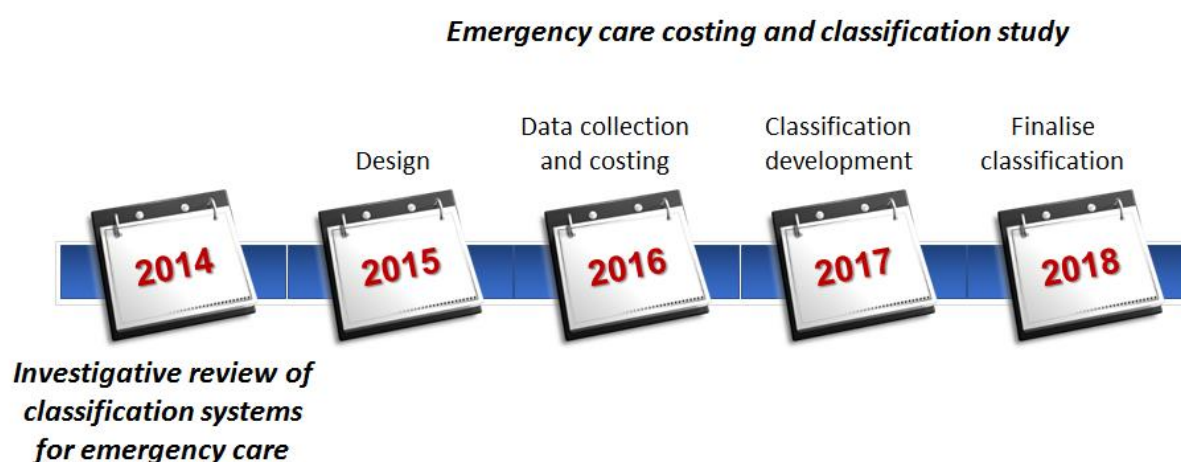


Figure 2 Process and time line for developing the AECC

Governance

IHPA's Emergency Care Advisory Working Group (ECAWG) oversaw the development work program of the AECC and outcomes were reported through the Technical Advisory Committee, the Jurisdictional Advisory Committee's and IHPA's Chief Executive Officer to the Pricing Authority. ECAWG advises IHPA on matters relevant to emergency care and includes representatives from all jurisdictions.

The project was also advised by IHPA's Clinical Advisory Committee and subject matter experts, classification system development experts and data analysis experts in the Health Policy Analysis consortium.

Consultation

In addition to a review of the costing study and the classification by IHPA's governance groups, reports of both the costing study and the classification were published on IHPA's website after receiving feedback via a submission process. Workshops were held for both components with a range of stakeholders attending to advise on the process and validity of findings as the AECC was developed. The classification system presented in this report reflects the feedback received from a wide range of stakeholders.

Related reports

The background of the development of the AECC can be tracked through various reports produced for the project. The Table below lists these.

Table 1 Related project reports

Report title	Year	Description/ link
Investigative review of classification systems for emergency care – Final report	2014	Report of the initial project investigating local and international classification systems for emergency care and drivers of cost, recommending options for classifying public hospital emergency care in Australia. Available at: https://www.ihipa.gov.au/what-we-do/development-new-emergency-care-classification
Emergency care costing and classification project - Cost report	2017	Report of the key outcomes of the study undertaken to develop a better understanding of the costs associated with the delivery of emergency care services in Australia. Ten Australian hospitals collected data towards the study between April to June 2016. Available at: https://www.ihipa.gov.au/what-we-do/development-new-emergency-care-classification
Emergency care clinician time consensus study	2017	Undertaken as part of the Emergency care costing and classification project, the consensus study sought to obtain time estimations for the same set of activities and procedures collected in the costing study. These estimates were provided by clinicians through a Delphi consultation process. The purpose of the study was to validate and supplement the results of the costing study. Available at: https://www.ihipa.gov.au/what-we-do/development-new-emergency-care-classification

Report title	Year	Description/ link
Development of the Australian Emergency Care Classification – Public consultation paper and Technical compendium	2017	<p>This public consultation paper sought stakeholders' views on the proposed structure and data items to be included in the AECC. The paper described the work undertaken to develop a new classification system for emergency care, provided details of the statistical analysis undertaken and consultation processes used. The Technical compendium provided further information on the classification end classes and the grouping logic, to assist stakeholders in the review of the proposed classification.</p> <p>Available at: https://www.iHPA.gov.au/consultation/past-consultations/development-australian-emergency-care-classification</p>

Development of the classification

Principles

The development of the AECC was guided by principles articulated in the Investigative review (Health Policy Analysis 2014a), which are that a classification system for activity based funding should:

- be comprehensive, consistent and contain mutually exclusive categories
- be clinically meaningful
- be resource-homogenous
- be patient-based
- be simple and transparent
- minimise undesirable and inadvertent consequences
- have capacity to be improved over time
- have utility beyond activity based funding
- be administratively and operationally feasible.

Scope

The AECC applies to emergency departments¹. Its application to emergency services² is limited due to data—emergency services report data at an aggregate level, and this does not include the patient-based variables used by the AECC (diagnosis, transport mode (arrival) and age group).

Data preparation

Using data collected through *the Emergency care costing study* (Health Policy Analysis 2017), variables that were considered for inclusion in the classification were analysed individually to estimate how well they predicted cost, which as mentioned previously, was used as a proxy for patient complexity in the context of the AECC. Cross-validation³ was used to give a more realistic estimate of how well the variables predict cost when applied to new data—an important consideration for classification development. Mean absolute error

¹ Emergency departments range from those that have medical staff available in the hospital 24 hours a day to those that can manage all emergencies and provide definitive care, with some with a state-wide referral role and/or major trauma centre.

² Emergency services range from those providing first aid and treatment prior to referral to a higher level of service, to those with 24-hour nursing staff but medical staff available on call within 20 mins, 24 hours a day.

³ In this context, cross-validation means that the study data were randomly partitioned into 'training' and 'validation' data sets, with the training data used to develop the models, and the validation data used to assess performance. Ten-fold cross validation was applied for the analysis shown in this report.

(MAE)⁴, root mean square error (RMSE)⁵ and predictive R-squared⁶ were used to assess the performance of each variable.

Both MAE and RMSE compare predicted and observed values to assess how accurate a model is in its prediction. **Models that result in better predictions have lower MAE and RMSE values.**

The predictive R-squared is an estimate of the proportion of variation that a model predicts when applied to new data. **Models that result in better predictions have a higher predictive R-squared statistic.**

Table 2 shows the results of the predictive performance of individual variables. Singularly, emergency department diagnosis had the best predictive performance. Episode end status was the next best predictor, followed by triage. Transport mode (arrival) and age group also had reasonable predictive performance.

Visit type⁷ had very low predictive performance, largely because most episodes (close to 98%) have a visit type of 'Emergency presentation'.

Table 2 Predictive performance of individual variables

Variable	MAE	RMSE	Predictive R-squared
Emergency department principal diagnosis (using short list)	310	462	0.185
Episode end status	313	459	0.175
Triage category	314	465	0.171
Transport mode (arrival)	316	484	0.157
Age (five-year age groups)	328	482	0.111
Visit type	359	515	0.004

Notes: MAE—Mean absolute value; RMSE—Root mean squared error; Short list—Emergency department ICD-10-AM principal diagnosis short list ('short list') codes. Source: Emergency care costing study (Health Policy Analysis 2017).

⁴ To calculate MAE, the error is first calculated for each observation in the validation data set. The error for each observation is the difference between the predicted value using the model derived from the training data set applied to the validation data set, and the actual value from the validation data set. The absolute value of the error is then calculated—this ensures positive error values do not cancel out negative error values. The mean of the absolute errors is then calculated across the whole validation data set.

⁵ To calculate RMSE, the error is first calculated for each observation in the validation data set. The error for each observation is the difference between the predicted value using the model derived from the training data set applied to the validation data set, and the actual value from the validation data set. The error is then squared (which is an alternative way of ensuring negative errors do not cancel positive errors). The mean of squared errors is then calculated across the whole validation data set. The square root of this mean is then taken to re-scale the metric in a value similar to the predicted value. A key difference between MAE and RMSE is the weight they give to smaller compared with larger errors.

⁶ The predictive R-squared is calculated using the validation data set, rather than the data set used to estimate the model (i.e. the training data set). Because it is calculated on validation data, predictive R-squared statistics can be outside the range of 0-1, but the interpretation is the same as for R-squared values calculated using the training data set (i.e. the proportion of variation that is explained—in this case predicted—by the model).

⁷ Refers to variable *Emergency department stay—type of visit to emergency department* (METeOR identifier 684942), which has the values: 1 'Emergency presentation', 2 'Return visit, planned', 3 'Pre-arranged admission' and 5 'Dead on arrival'.

Modelling approach

Figure 3 shows an overview of the modelling approach to develop the AECC. Each step is then explained following the Figure.

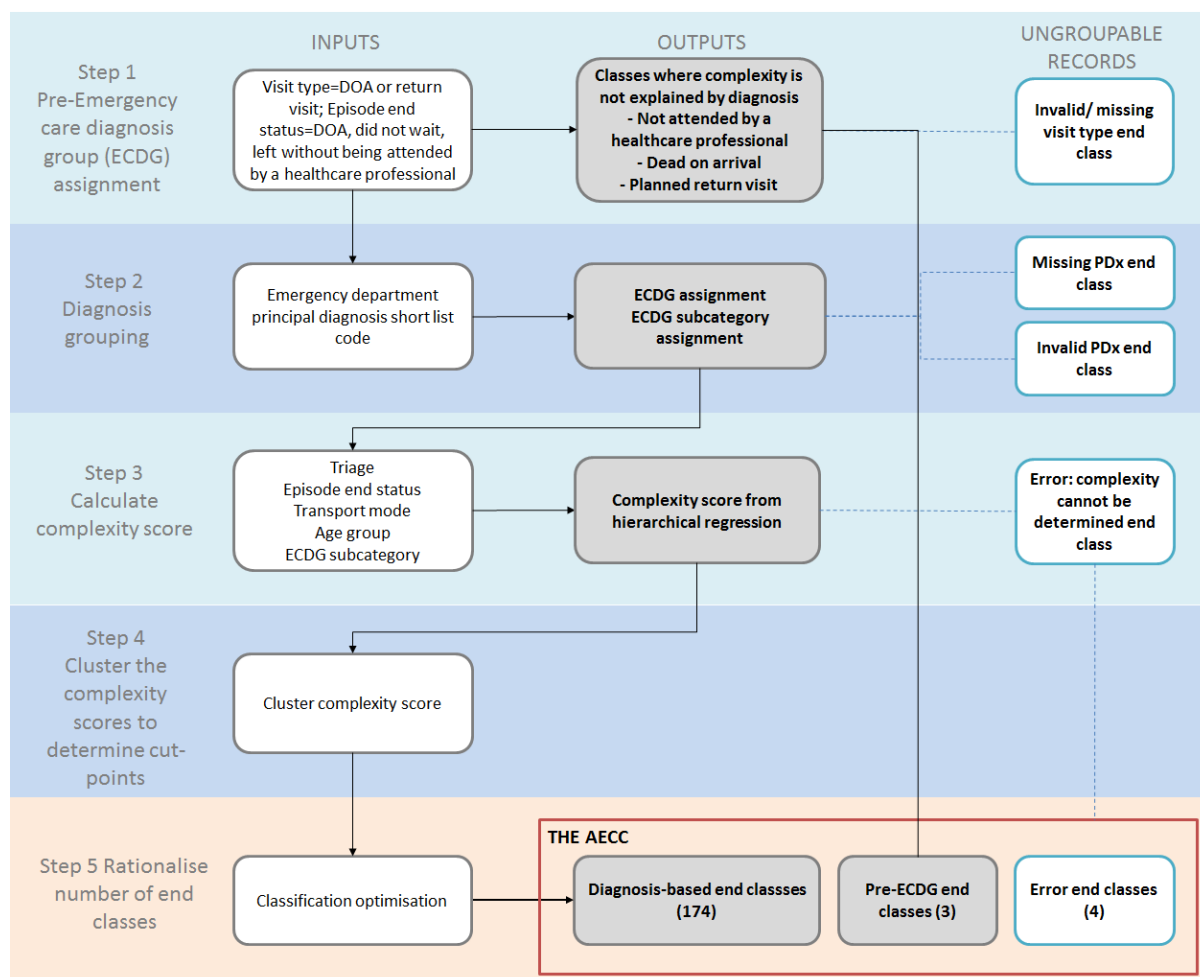


Figure 3 Overview of modelling approach

Step 1 – Partitioning episodes whose complexity is not explained by diagnosis (Level 1 of the AECC)

Table 2 in the previous section showed diagnosis to be the best predictor of cost. However, there are some episodes for which diagnosis is not available or not relevant. These are as follows:

- 'Planned return visit'⁸. The episodes assigned this visit type are not emergency presentations. The return visit may be for planned follow-up treatment, for example, as a consequence of test results becoming available, or as a result of a care plan initiated at discharge. Thus, emergency department diagnosis is not routinely collected for these episodes.

⁸ This is one of the values (2) of the data element *Emergency department stay—type of visit to emergency department* (METeOR identifier 684942).

- 'Did not wait'⁹. Episodes assigned this visit type/ episode end status do not have a diagnosis recorded. In any case, all patients in this category receive a similar service, which is triage, and no further treatment as they left before treatment was initiated.
- 'Dead on arrival'¹⁰. People who die before arriving to an emergency department are managed in a similar way—they are examined and certified by an emergency physician—regardless of the cause of death.

End classes were created out of the above visit types and episode end status categories, with no splitting of these categories in subsequent steps to further describe complexity.

Other features of episodes where it was hypothesised that diagnosis had a lesser role in predicting cost were as follows:

- Died in the emergency department¹¹
- Referred to another hospital¹²
- Left at own risk¹³.

These were tested to determine whether the model that included them as separate end classes performed better than the model where these values were used as complexity splits. The difference between the models was modest, with the latter model (i.e. where these values were used as complexity splits) performing slightly better than the former. Stakeholders consulted preferred the strategy to include these features as complexity splits in the classification rather than as separate end classes.

Therefore, apart from episodes assigned to the three categories from which end classes were created—'Planned return visit', 'Not attended by a healthcare professional' and 'Dead on arrival'—all other episodes were considered in the next step of AECC development.

Step 2 – Grouping based on diagnosis (Level 2 of the AECC)

In this step, all remaining episodes were partitioned into major clinical conditions managed in emergency care settings, termed 'emergency care diagnosis groups' (ECDGs). The ECDGs are similar to adjacent diagnosis related groups (DRGs), whose function is to group episodes into clinically meaningful conditions prior to partitioning them according to complexity (as represented by cost).

The ECDGs were developed from IHPA's Emergency department ICD-10-AM principal diagnosis short list ('short list') codes¹⁴. ECDG categories were initially developed by

⁹ This is made up of two of the values (4, 8) of the data element *Emergency service stay—episode end status* (METeOR identifier 685013).

¹⁰ This is one of the values in both *Emergency department stay—type of visit to emergency department* (METeOR identifier 684942) (5) and *Emergency service stay—episode end status* (METeOR identifier 685013) (7).

¹¹ This is one of the values (6) of the data element *Emergency service stay—episode end status* (METeOR identifier 685013).

¹² This is one of the values (3) of the data element *Emergency service stay—episode end status* (METeOR identifier 685013).

¹³ This is one of the values (5) of the data element *Emergency service stay—episode end status* (METeOR identifier 685013).

¹⁴ The Emergency department ICD-10-AM principal diagnosis short list is a list of codes and medical terms based on ICD-10-AM aiming to provide a nationally consistent approach to principal diagnosis reporting in emergency departments. A 'principal diagnosis' is reported for emergency department attendances within the Non Admitted Patient Emergency Department Care National Minimum Data

emergency clinicians and a health information manager and refined through stakeholder consensus. They were developed by first examining the frequency of each short list diagnosis across all emergency departments represented in the Non Admitted Patient Emergency Department Care National Minimum Data Set (NAPEDC NMDS). From this list, short list diagnoses were clustered to reflect common emergency care clinical pathways or models of care and other clinically meaningful groups of diagnoses encountered in emergency care settings. Examples of ECDGs are:

- *E0110 Dementia and other chronic brain syndromes*
- *E0120 Delirium*
- *E0130 Stroke and other cerebrovascular disorders*
- *E0140 TIA and precerebral occlusion*
- *E0150 Seizures*
- *E0160 Convulsions*
- *E0170 Headaches*
- *E0190 Nervous system and neurological disorders.*

The ECDGs were subsequently organised into higher-level groupings called 'emergency care categories' (ECCs). This is merely for navigating the ECDGs. The ECDGs shown above group to the ECC *E01 Nervous system and neurological*.

Clinically meaningful clusters of short list diagnoses within the ECDG were also created, known as ECDG subcategories. The subcategories further differentiate clinical conditions within ECDGs. As an example, subcategories of ECDG *E0190 Nervous system and neurological disorders* are:

- *E0191 CNS infection and inflammation subcategory*
- *E0192 Cranial and peripheral nerve disorders subcategory*
- *E0193 Degenerative and demyelinating nervous system disorders subcategory*
- *E0194 Stupor and coma subcategory*
- *E0195 Nervous system disorders, other subcategory*
- *E0196 Nervous system signs and symptoms subcategory.*

The subcategories were created in response to feedback from stakeholders about some ECDGs grouping less severe diagnoses (or symptoms) with more complex ones. While clinicians thought that this was clinically relevant (e.g. patients presenting to an emergency department with hemiplegia, dysphasia or speech disturbance are likely to be assessed in a similar way), they thought that those with a confirmed diagnosis might have a higher cost (e.g. due to greater level of investigations within the episode and/ or organisation of follow up care). Therefore, subcategories were created to differentiate costs between different sets of diagnoses or signs and symptoms, so that more complex diagnoses within an ECDG can be assigned a higher coefficient (where justified based on cost data), contributing to the overall complexity score of the episode, and thus assignment to a complexity class. This is explained in the next step.

Set (NAPEDC NMDS). It is defined as the diagnosis established at the conclusion of the patient's attendance in an emergency department to be mainly responsible for occasioning the attendance following consideration of clinical assessment, as represented by a code. Comorbidities and causes of injuries are not intended to be captured as the principal diagnosis and can be captured as secondary data items in other emergency department collections.

Appendix C lists the ECDGs, organised by ECCs, and the mapping of the short list codes to the ECDGs and ECDG subcategories.

Step 3 – Complexity splits (Level 3 of the AECC)

A hierarchical model was specified, in which the ECDG was used as a 'level' in the model. This approach results in the predictors (see below) having both a fixed effect (which is the same across all ECDGs) and an effect specific to each ECDG.

The model was estimated using Bayesian methods, using the Rstan R package (Stan Development Team 2018). The hierarchical nature of the model and Bayesian methods allow information on the impact of predictors to be 'pooled' between ECDGs. A basic explanation of this approach is given by Carpenter, Gabry and Goodrich (2018). In summary, predictors are likely to vary in their impact between different ECDGs and hence modelling should reflect the hierarchical structure of the data. However, this becomes problematic when there only a few observations available within an ECDG or only a few observations across the range of values of the model's predictors. In these circumstance, information may be shared between ECDGs (hence 'pooled') to develop better estimates of the predictor coefficients. In Bayesian approaches, prior information on the distribution of parameters is combined with the observed data to yield a posterior distribution from which estimates can be derived. In this type of hierarchical model, information from other ECDGs form the basis of the prior distribution for estimates within each ECDG. Where there is a high level of information in the observed data within an ECDG (e.g. many observations with low variance), the observed data will dominate the posterior distribution. Where there is less information in the observed data, the prior will be more important in the posterior distribution.

In the model, the logarithm of the costs was used as the response (dependent) variable, to account for the skewed nature of the distribution of costs.

The predictor variables (also called explanatory or independent variables) used were:

- Episode end status ('Admitted', 'Not admitted', 'Referred to another hospital', 'Died in emergency department', 'Left at own risk')
- Triage category (1-5)
- Transport mode (arrival) ('Ambulance, air/helicopter', 'Other')
- Age group (0-4, 5-9, 10-14, 15-69, 70-74, 75-79, 80-84, 85+)
- Subcategories of diagnoses within each ECDG (see definition in Step 2)
- Interactions of age group and episode end status.

The results of the regression model can be represented as an equation with the response variable on the left-hand side and the set of predictor variables and coefficients on the right-hand side:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 \dots$$

In this equation $X_1, X_2 \dots$ are the predictor variables and Y is the response variable. α is the intercept (the value of Y when all the predictors ($X_1, X_2 \dots$) take the value of 0. The coefficients ($\beta_1, \beta_2 \dots$) quantify how the response variable changes for a one unit of change in the predictor variable while holding other predictors in the model constant. The sign (positive/negative) of a coefficient conveys whether a coefficient increases or decreases the predictor value of Y from the intercept.

The equation shown above is a simplified representation of the regression model estimated. The modelling allows the values of coefficients to vary between different ECDGs (using a hierarchical model specification). An example of the equation for ECDG E0490 Respiratory disorders, other is shown in Box 1 below.

**Box 1 Illustration: Predicting the value (complexity score)
for ECDG E0490 Respiratory disorders**

Predicted value = 5.902 + 0.321*depst_1 + 0.168*depst_died - 0.134*depst_left + 0.278*depst_referred + 1.079*triag1 + 0.747*triag2 + 0.520*triag3 + 0.247*triag4 + 0.212*transmodB_1 + 0.023*age0509 + 0.044*age1014 + 0.312*age1569 + 0.354*age7074 + 0.348*age7579 + 0.420*age8084 + 0.392*age85 - 0.039*depst_1:age_0014 - 0.039*depst_1:age_80 - 0.046*depst_1:triag1 - 0.180*depst_1:triag2 - 0.068*depst_1:triag3 + 0.032*depst_1:triag4 - 0.105*E0491 - 0.155*E0492 - 0.155*E0493

Where:

- depst_admitted is a flag for episode end status of 'Admitted'
- depst_died is a flag for episode end status of 'Died in ED'
- depst_left is a flag for episode end status of 'Left at own risk'
- depst_referred is a flag for episode end status of 'Referred to another hospital'
- triag1, triag2, triag3, triag4 are flags for the different triage categories
- transmodeB_1 is a flag for a transport mode (arrival) of 'Ambulance, air, helicopter'
- age0509 to age85 are flags for the different age groups
- triag1: depst_1 (and similar) are flags for the interaction of triage and episode end status of 'Admitted'
- depst_1:age_0014 and depst_1:age_80 are flags for the interaction of selected age groups and episode end status of 'Admitted'
- E0491, E0492, E0493 flags for the presence of ECDG subcategories, in this case: E0491 Pleural conditions, E0492 Respiratory disorders, other, and E0493 Respiratory signs and symptoms.

In the regression equation, the intercept (5.91) represents a base level (or reference) comprising episode end status of 'Not admitted', triage category 5 and age group 0-4.

The predictors in the model are flags (or dummy variables) which take the value of 1 when the relevant variable in an episode applies, and 0 otherwise.

A positive coefficient indicates that a predictor adds to the predicted value compared to the base level (the intercept), and a negative value indicates that it reduces the predicted value. For example, the coefficient for depst_died (episode end status of 'Died in ED') is 0.17, suggesting that these cases have higher costs compared with the reference level for this ECDG. Conversely, the coefficient for depst_left (episode end status of 'Left at own risk') is -0.15, suggesting that these cases have lower costs compared with the reference for the ECDG.

Rescaling the complexity scores

The predicted value of Y using the regression model was re-scaled to ensure the values of the final score covered a range from 0 to around 12. The formula for rescaling the predicted value was:

$$\text{score} = \frac{(\exp(\text{predicted_value}) - 713)}{166} + 3.26$$

Where:

- $\exp(\text{predicted_value})$ is the exponent of the predicted value derived from the regression model (taking an exponent is the 'reverse' of taking a log)
- 713 is around the mean of $\exp(\text{predicted_value})$ based on an initial modelling
- 166 is half the standard deviation of $\exp(\text{score})$ based on an initial modelling
- 3.26 reflects the minimum value of the previous steps, with a small adjustment to ensure new observations are all greater than zero.

Figure 4 shows the distribution of the scaled complexity scores.

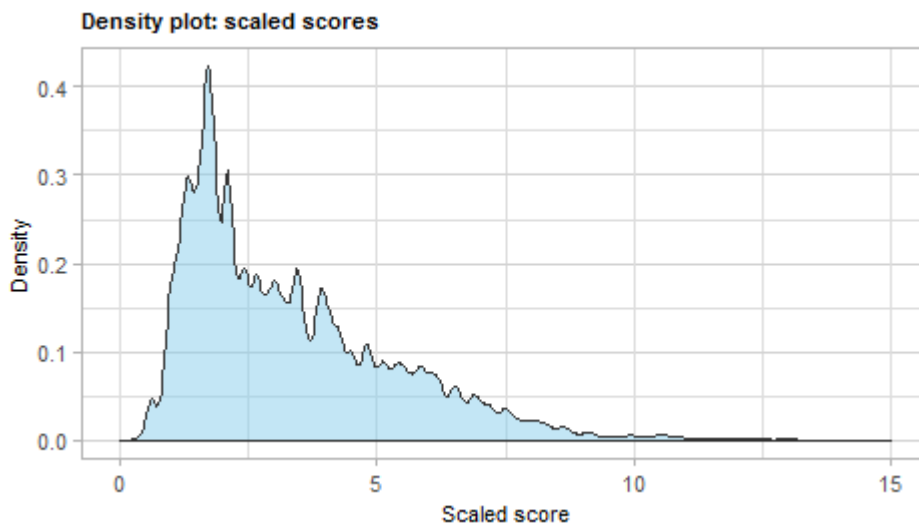


Figure 4 Density plot showing the resulting distribution of the scaled complexity scores. A density plot shows the relative frequency of observations across the range of values in the X-axis, in this case the scaled complexity scores.

Appendix D shows the coefficients for all ECDGs. The coefficients vary by ECDG.

Appendix E provides examples of how the complexity score would be calculated for episodes with different attributes within the example ECDG.

Step 4 – Clustering the complexity scores to determine end classes

Once the episodes had a complexity score assigned, the next step was to cluster the scores within each ECDG to create end classes. Initially, scores were clustered into 39 categories across the whole data set with common cut points between ECDGs. (Originally, 40 categories were identified, and the lowest two categories were combined into one). Frequencies from the 2015-16 NHCDC data were used to determine the 39 clusters, with each cluster representing approximately 2.5% of episodes. The NHCDC was used to ensure that the splits reflect the frequencies of cases across Australia, rather than from the 10 hospitals participating in the costing study.

Each ECDG was then considered in turn, to identify the best way of grouping up the 39 clusters to achieve two, three, four and five end classes. This involved the following steps:

- The best method of splitting ECDGs by two, four and six groups were identified using recursive partitioning (using the Rpart R package) with specified tree depths of one, two or three levels. In this approach the scaled score was specified as the response variable and the 40 complexity groups as the predictors. This approach ensures that any grouping of the complexity scores is based on contiguous (adjacent) scores. The tree depth specifies how 'deep' the tree is and hence the number of final nodes (i.e. resulting groups). Specifying a tree depth of one splits the data into two groups—this is the first level of the tree. Usually, the results of specifying a tree depth of two is to split the data into four groups—this is the second level of the tree—although sometimes three groups will be identified. Usually, the results of specifying a tree depth of three is to split the data into six groups, although sometimes less than six groups will be identified.
- Where six splits were identified there were several ways to combine these to yield five splits¹⁵. To identify the best of these combinations, each combination was compared, and the one with the minimum root mean square error (RMSE) calculated using the scaled score was selected. A similar process was used to find the best way of splitting the ECDG into three end classes by combining four splits.
- Once these steps were completed, the number of episodes in the highest complexity class—A—was compared with the number of episodes in the next highest complexity class—B. If more episodes were identified in the A class, then the cut point of B was shifted up to the next of the 39 complexity groups. The numbers of episodes in A and B were then compared again. If the numbers in A class still exceeded B, the process was repeated until the number of episodes in A was less than the number of episodes in B. This could not be achieved for two the ECDGs—*E0130 Stroke and other cerebrovascular disorders* and *E2020 Pelvic and femoral fractures*—due to the very high complexity scores of most of the cases grouped to these ECDGs.
- In a final step, the options for splitting ECDGs into three groups were again examined, and in some cases the option that minimised RMSE was overridden. The reasons for these changes are outlined in Appendix G. These adjustments were only applied to determining which alternative was selected for splitting ECDGs into three classes.

¹⁵ Splitting any one ECDG into more than five splits results in small classes, which was not useful for improving the classification's performance. Ultimately the maximum number of splits for any ECDG was four. This is discussed in Step 5.

Figure 5 and Figure 6 provide examples of the distribution of scaled score within two ECDGs, using a histogram. The plot also shows how these scores were grouped into separate groups. In the first example—E0490 Respiratory disorders, other—scores were split into four end classes (A, B, C and D). The vertical dashed lines show the thresholds which were used to split the predicted values into the end classes. The X-axis for this plot is the log of cost scale. The Y-axis shows the number (frequency) of episodes. In the second example—ECDG E2020 Pelvic and femoral fractures—the scaled scores were split into two end classes (A and B).

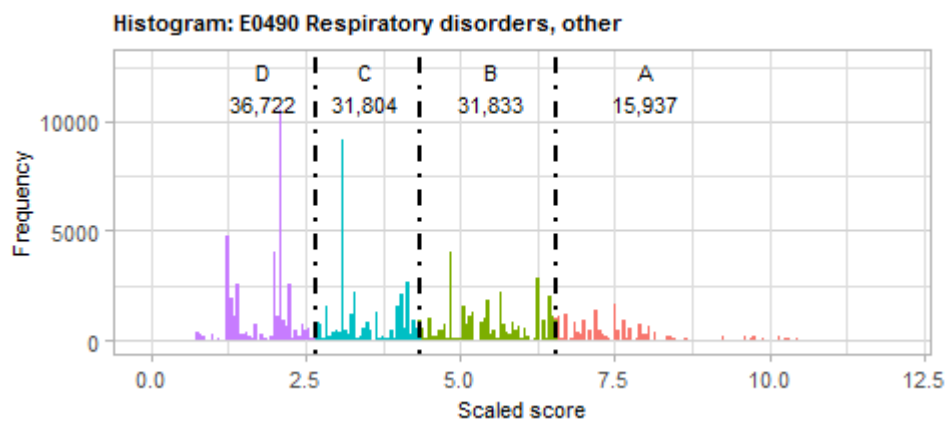


Figure 5 Histogram reflecting frequency of episodes across different levels of the re-scaled score: ECDG E0490. This ECDG was split into four classes. The vertical dashed lines show the score values used to split this ECDG. The coloured 'bars' show the frequency of episodes for different score levels. This ECDG groups all other respiratory disorders not captured by the other respiratory system ECDGs (e.g. asthma, chronic obstructive airways disease). Hence there is a high level of variability in the scores observed.

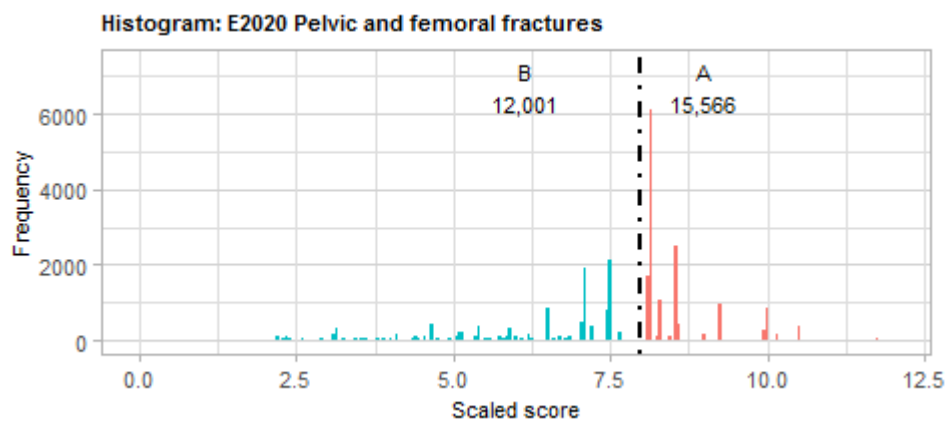


Figure 6 Histogram reflecting frequency of episodes across different levels of the re-scaled score: ECDG E2020. This ECDG was split into two classes. The vertical dashed lines show the score value used to split this ECDG. The coloured 'bars' show the frequency of episodes for different score levels. This ECDG has a narrow range of scores, which are generally high. This was an ECDG in which it was not possible to meaningfully split the A class further. Hence there were more episodes in the A class.

Step 5 – Selecting an appropriate number of end classes for the classification

The final step involved optimising the classification by considering trade-offs between ECDGs in terms of the number of splits within each ECDG, so that the resulting individual end classes are reasonably resource-homogenous, but that the total number of end classes is not excessive—one of the features of classification systems used for pricing.

For a given number of final classes, there are many possible ways in which ECDGs might be split. In selecting these alternatives, some constraints were applied. For most ECDGs, up to three splits were assessed. The exceptions to this were high volume ECDGs, where up to five splits were assessed, and lower volume ECDGs, where only two splits were assessed. In two low volume ECDGs, no splits were considered.

Within these constraints, the best way of minimising total RMSE (i.e. the RMSE times the number of episodes) was determined for each number of final classes. The analysis considered the best set of splits for between 90 to 220 final classes. Another way of describing this approach is: for any given number of final classes—say 150—all the options for splitting ECDGs were considered, and the option that achieved the lowest total RMSE was selected. The analysis suggested that increasing the number of classes resulted in reduced total RMSE up to around 190 classes. Beyond this point, increasing the number of classes has a very small impact on total RMSE. Figure 7 shows the RMSE values calculated across different numbers of classes. It was decided to take 190 classes as a starting point prior to consideration of other issues (discussed below).

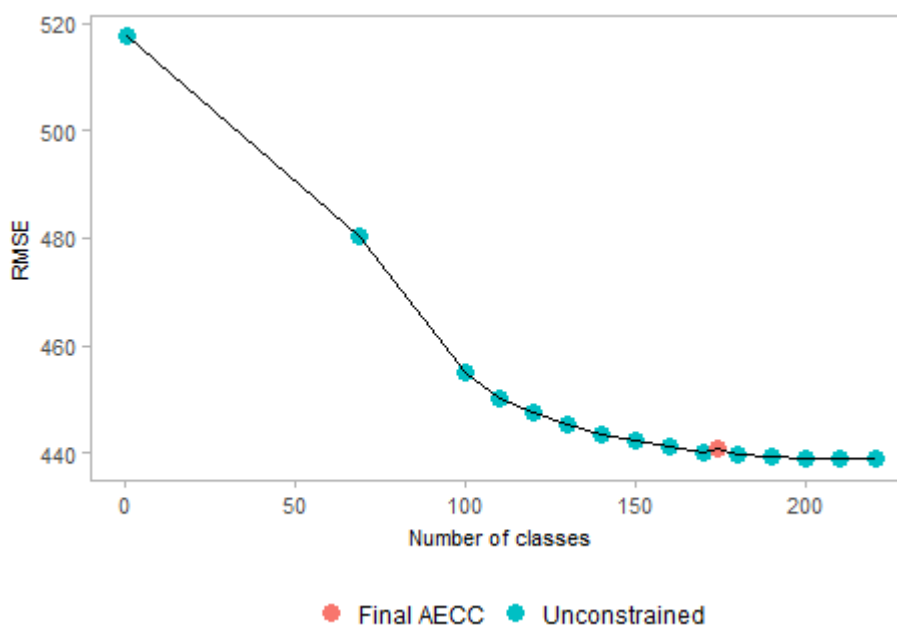


Figure 7 Root mean square error (RMSE) calculated by the number of classes. As the number of classes increases, RMSE decreases, but beyond around 160 classes the decrease is very small. RMSE for the number of final classes (177 including pre-ECDG classes but excluding error classes) is slightly higher as some additional constraints were imposed to avoid classes with small numbers.

The splits within each ECDG associated with 190 classes were then examined to assess whether they achieved an appropriate balance of episodes across the complexity levels

within each ECDG. A set of constraints were identified to set the number of complexity splits applied for each ECDG. The main constraint applied was that the number of splits within any ECDG was limited to three, with the exception of five ECDGs described below. Constraining the number of splits to three impacted 11 ECDG. The other constraints applied included:

- Four splits were allowed only in ECDGs for which a wide range of complexity is expected due to the nature of the diagnoses within the ECDG. The optimising approach yields four splits for three ECDGs (E0490, E0890, E2010) and this was considered appropriate. There were two more ECDGs in which 5 splits resulted from the modelling (E0690 Digestive system disorders, other and E2030 Injuries, other). In these two cases, the best way of achieving four splits was applied.
- There were six ECDGs in which the number of splits was limited to two splits (E0160 Convulsions, E0170 Headaches, E0440 Upper respiratory tract infections, E0520 Arrhythmia and cardiac arrest, E1390 Gynaecological disorders and E6090 Other factors influencing health status). In these cases, two splits were considered sufficient to capture the range of complexity within the ECDG.
- There were a further five ECDGs in which the modelling suggested less than three splits, but on review, it was considered that three splits would be appropriate to reflect the range of complexity that was observed with the ECDG. These include (E0320 Disorders of the teeth and supporting structure, E0410 Major respiratory conditions, E1010 Diabetes, E1110 Kidney failure and E2050 Burns). Within these ECDGs patients may occur with very serious conditions (e.g. respiratory failure, renal failure, diabetic coma and serious burns) alongside patients with relatively minor conditions, and for these at least three complexity splits are required to adequately represent the range of cases.
- There were three ECDGs in which the modelling suggested no splits, but on review, it was considered that three splits would be appropriate to reflect the range of complexity that was observed with the ECDG. These included (E0110 Dementia and other chronic brain syndromes, E0530 Heart failure and shock, E6020 Abuse and neglect)

Overall, 36 ECDG were not impacted by the constraints described above. The number of splits for a further six changed as a result of re-running the optimisation process with the constraints described above.

The additional changes had a minor impact on RMSE but resulted in a classification (see Figure 7) and resulted in more appropriate numbers of episodes within each end class with ECDGs and more appropriate estimated mean costs within the end classes.

The AECC version 1.0 has 181 end classes including the pre-ECDG and error classes. There are 69 ECDGs, with six ECDGs with no split, 26 split into two end classes, 32 split into three end classes, and five split into four end classes (Table 3).

Appendix F shows the complexity score thresholds for AECC classes with a complexity split.

Table 3 Number of splits per ECDG, AECC V1.0

No. of splits	No. of ECDGs	No. of end classes
Excluding pre-ECDG and error classes		
1	6	6
2	26	52
3	32	96
4	5	20
<i>Subtotal</i>	69	174
Pre-ECDG		3
Error classes		4
Total	69	181

Independent quality assurance

Following the development of the classification, an independent review was undertaken. The independent reviewer was able to successfully replicate the model outputs and identified a few small issues that were subsequently addressed.

The Australian emergency care classification

The AECC has a three-level structure, described below.

Level 1: Episode type

At this Level, end classes are created from visit type/ episode end values. They include '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.

Level 2: Emergency care diagnosis group

Episodes proceeding to this level are grouped into 'emergency care diagnosis groups' (ECDGs). ECDGs represent clinical conditions managed in emergency care settings. They are based on the short list codes referenced earlier (see footnote 14, p. 11).

Level 3: Complexity splits

At this level, 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 mode (arrival). Appendix E provides examples of how the complexity score is calculated using episodes with different attributes.

Structure

The AECC has 181 end classes. Figure 8 shows the structure of the AECC version 1.0. Appendix A lists the end classes.

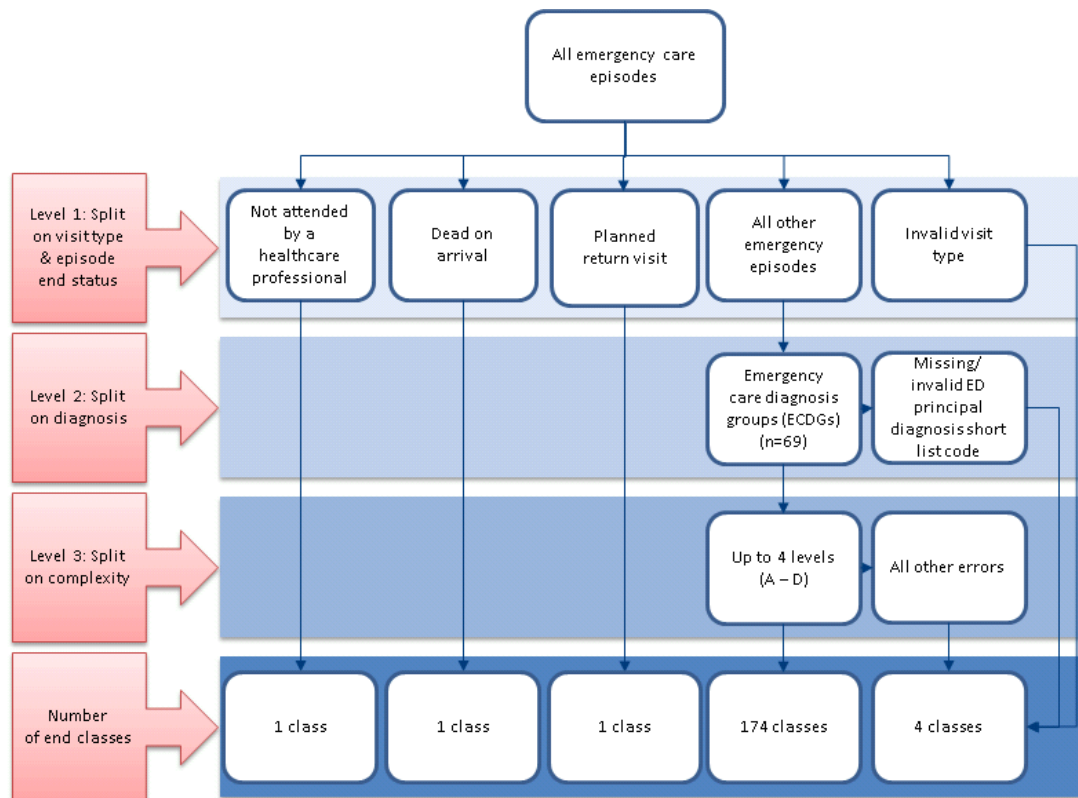


Figure 8 AECC version 1.0 structure

Numbering convention

The AECC adopts a numbering convention that represent the emergency care category, ECDG and the complexity split. The convention is shown in the Figure below, with an example.

Emergency care category

Represents a higher level grouping of the ECDGs. All ECCs are prefixed with E, followed by a number, 2 characters long. There are 24 ECCs, which include categories for pre-ECDG ECCs—'E00' series—used for classes not defined by diagnosis, for example, 'Dead on arrival'.

Emergency care diagnosis group

Represents groupings of short list diagnoses reflecting care pathways or models of care in emergency departments. There are 69 ECDGs. ECDGs are represented by a number, 2 characters long.

Complexity split

The complexity split is represented by a single alphabetic character. Permissible characters are 'A', 'B', 'C', 'D' and 'Z'. 'A' represents the highest complexity level within the ECDG, and each subsequent letter represents the next complexity level, up to 'D'. 'Z' indicates that there was no complexity split for the ECDG.

ENN
E01

Nervous system
and neurology

NN
20

Delirium

A
B

B

**Figure 9 AECC numbering convention showing an example for the end class *E0120B*
*Delirium, Complexity level B***

Performance and clinical validity of the AECC

Statistical performance

As mentioned in Chapter 2, the variables used to build the AECC were selected because of their ability to predict the costs of emergency care episodes, with cost used as a proxy for complexity.

Statistical performance of the AECC was assessed using the three performance measures introduced in Chapter 2: mean absolute error (MAE), root mean square error (RMSE) and predictive R-squared. Better performing models are those with lower MAE and RMSE values, and a higher predictive R-squared value. Note that these statistics assess predictive performance (i.e. how well the classification **predicts** events that were not in the data set used to develop the classification—the training data set) as opposed to explanatory performance (i.e. how well the classification explains the events that were in a reserve data set—the validation data set—not used to develop the classification). In the case of the predictive R-squared, the value is lower than when calculated on training data.

Table 4 shows the performance metrics for the AECC V1.0. Results are shown where all episodes are included, and where outlier episodes¹⁶ are excluded. In addition, performance is shown when excluding episodes for which a diagnosis could not be mapped to a short list code or was missing. The Table also includes a comparison with the URG classification version 1.4, using the Emergency care costing study data (the same as for the AECC).

Including outliers, the AECC achieves a predictive (cross-validated) R-squared value of 0.316. The R-squared value increases to 0.409 when outliers and episodes allocated to error classes are excluded. This means that when applied to new data, the classification is likely to account for between 30% and 40% of variation in cost at the episode level. This will be impacted by the processes used to generate cost data for emergency care. As the reliance on the existing classification (URGs) lessens, improvements in predictive performance are likely to be observed. 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.

¹⁶ Defined using the method currently used by IHPA for pricing, that is, the DFFITS measure of influence.

Table 4 AECC performance metrics

	MAE	RMSE	Predictive R-squared
Including all episodes			
AECC Version 1.0	272.4	428.3	0.316
URG Version 1.4	282.4	436.7	0.277
Excluding outlier episodes and error classes			
AECC Version 1.0	233.0	318.1	0.409
URG Version 1.4	251.3	340.0	0.328

Notes: MAE—Mean absolute error; RMSE—Root mean squared error

Clinical validity

The AECC is based on a combination of statistical analysis and clinical input.

The variables collected for the Emergency care costing study were informed by the Investigative review (Health Policy Analysis 2014a), for which there was extensive consultation. This was followed by further consultation (including a public consultation process managed by IHPA and a national workshop), to select variables collected for the Emergency care costing study and fine-tune their definitions. At the end of the data collection phase of the Emergency care costing study, clinicians participating in the study were asked to reflect on patient complexity. They confirmed that the variables collected as part of the study have an impact on patient complexity. They also identified additional variables impacting patient complexity that could be collected in the future and used to refine the AECC.

Clinicians were also consulted at each stage of the development of the AECC. Notwithstanding room for improvement, the splits in the classification demonstrate clinical validity in addition to statistical validity.

Ongoing development of the AECC

Diagnosis is a key classification variable of the AECC. However, 8-9% of all episodes reported to the Non-admitted emergency department care NMDS are missing a diagnosis or have an invalid diagnosis. Although it is acknowledged that not all episodes will have a definitive diagnosis in the emergency department, sometimes the diagnosis reflects the presenting problem (often a symptom) rather than the diagnosis following further investigation in the emergency department, and thus does not accurately represent the complexity of the episode. Therefore, stakeholders suggested that mechanisms are needed to improve the reporting of diagnoses in emergency care.

In 2017, IHPA released a short list of emergency department principal diagnoses, to be used to improve the consistency of reporting diagnoses in emergency care. Other strategies to improve reporting identified by stakeholders include coding education for clinicians (especially early in their training), and changes to information systems to mandate reporting of principal diagnosis (this already occurs in some systems). Improving the accuracy of emergency care diagnosis can help refine the AECC over time.

The AECC uses variables that are currently reported through national minimum data sets. It has also been designed so that better measures of complexity can be introduced as they become available. For example, the Emergency care costing study collected 'diagnosis modifiers'—conditions or states that contribute to a patient being more complex than expected given their diagnosis. If there is agreement to routinely collect and report the additional data elements from the Emergency care costing study shown to impact cost, they can be used to refine the complexity splits in the classification.

Refinement of the AECC also relies on good quality costing data. The Emergency care costing study moved away from using triage category and episode end status to allocate clinical staff costs to patients, which (as mentioned earlier in this report) has tended to be the approach used in routine costing studies of emergency department care. Hospitals will need to continually improve their costing to provide a data source to refine the classification.

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Appendix A – AECC version 1.0

Emergency care category code and label	AECC code	AECC label
Pre-ECDG	E0001Z	Not attended by a healthcare professional
Pre-ECDG	E0002Z	Planned return visit
Pre-ECDG	E0003Z	Dead on arrival
E01 Nervous system and neurological	E0110A	Dementia and other chronic brain syndromes Complexity level A
E01 Nervous system and neurological	E0110B	Dementia and other chronic brain syndromes Complexity level B
E01 Nervous system and neurological	E0120A	Delirium Complexity level A
E01 Nervous system and neurological	E0120B	Delirium Complexity level B
E01 Nervous system and neurological	E0130A	Stroke and other cerebrovascular disorders Complexity level A
E01 Nervous system and neurological	E0130B	Stroke and other cerebrovascular disorders Complexity level B
E01 Nervous system and neurological	E0140Z	TIA and precerebral occlusion
E01 Nervous system and neurological	E0150A	Seizures Complexity level A
E01 Nervous system and neurological	E0150B	Seizures Complexity level B
E01 Nervous system and neurological	E0150C	Seizures Complexity level C
E01 Nervous system and neurological	E0160A	Convulsions Complexity level A
E01 Nervous system and neurological	E0160B	Convulsions Complexity level B
E01 Nervous system and neurological	E0170A	Headaches Complexity level A
E01 Nervous system and neurological	E0170B	Headaches Complexity level B
E01 Nervous system and neurological	E0190A	Nervous system and neurological disorders Complexity level A
E01 Nervous system and neurological	E0190B	Nervous system and neurological disorders Complexity level B
E01 Nervous system and neurological	E0190C	Nervous system and neurological disorders Complexity level C
E02 Eye	E0290A	Eye disorders Complexity level A
E02 Eye	E0290B	Eye disorders Complexity level B
E02 Eye	E0290C	Eye disorders Complexity level C

Emergency care category code and label	AECC code	AECC label
E03 Ear, nose, mouth and throat	E0310A	Ear, nose, mouth and throat disorders Complexity level A
E03 Ear, nose, mouth and throat	E0310B	Ear, nose, mouth and throat disorders Complexity level B
E03 Ear, nose, mouth and throat	E0310C	Ear, nose, mouth and throat disorders Complexity level C
E03 Ear, nose, mouth and throat	E0320A	Disorders of the teeth and supporting structures Complexity level A
E03 Ear, nose, mouth and throat	E0320B	Disorders of the teeth and supporting structures Complexity level B
E03 Ear, nose, mouth and throat	E0320C	Disorders of the teeth and supporting structures Complexity level C
E04 Respiratory	E0410A	Major respiratory conditions Complexity level A
E04 Respiratory	E0410B	Major respiratory conditions Complexity level B
E04 Respiratory	E0410C	Major respiratory conditions Complexity level C
E04 Respiratory	E0420A	Chronic obstructive airways disease Complexity level A
E04 Respiratory	E0420B	Chronic obstructive airways disease Complexity level B
E04 Respiratory	E0420C	Chronic obstructive airways disease Complexity level C
E04 Respiratory	E0430A	Asthma Complexity level A
E04 Respiratory	E0430B	Asthma Complexity level B
E04 Respiratory	E0430C	Asthma Complexity level C
E04 Respiratory	E0440A	Upper respiratory tract infections Complexity level A
E04 Respiratory	E0440B	Upper respiratory tract infections Complexity level B
E04 Respiratory	E0450A	Lower respiratory tract infections Complexity level A
E04 Respiratory	E0450B	Lower respiratory tract infections Complexity level B
E04 Respiratory	E0450C	Lower respiratory tract infections Complexity level C
E04 Respiratory	E0490A	Respiratory disorders, other Complexity level A
E04 Respiratory	E0490B	Respiratory disorders, other Complexity level B
E04 Respiratory	E0490C	Respiratory disorders, other Complexity level C
E04 Respiratory	E0490D	Respiratory disorders, other Complexity level D
E05 Circulatory	E0510Z	Acute coronary syndromes
E05 Circulatory	E0520A	Arrhythmia and cardiac arrest Complexity level A
E05 Circulatory	E0520B	Arrhythmia and cardiac arrest Complexity level B
E05 Circulatory	E0530A	Heart failure and shock Complexity level A
E05 Circulatory	E0530B	Heart failure and shock Complexity level B
E05 Circulatory	E0540A	Chest pain Complexity level A
E05 Circulatory	E0540B	Chest pain Complexity level B
E05 Circulatory	E0540C	Chest pain Complexity level C
E05 Circulatory	E0590A	Circulatory disorders, other Complexity level A
E05 Circulatory	E0590B	Circulatory disorders, other Complexity level B

Emergency care category code and label	AECC code	AECC label
E05 Circulatory	E0590C	Circulatory disorders, other Complexity level C
E06 Digestive	E0610A	Gastrointestinal haemorrhage Complexity level A
E06 Digestive	E0610B	Gastrointestinal haemorrhage Complexity level B
E06 Digestive	E0620Z	Gastrointestinal obstruction
E06 Digestive	E0630A	Peritonitis and gastrointestinal perforation Complexity level A
E06 Digestive	E0630B	Peritonitis and gastrointestinal perforation Complexity level B
E06 Digestive	E0640A	Oesophagitis and gastroenteritis Complexity level A
E06 Digestive	E0640B	Oesophagitis and gastroenteritis Complexity level B
E06 Digestive	E0640C	Oesophagitis and gastroenteritis Complexity level C
E06 Digestive	E0650A	Abdominal pain Complexity level A
E06 Digestive	E0650B	Abdominal pain Complexity level B
E06 Digestive	E0650C	Abdominal pain Complexity level C
E06 Digestive	E0690A	Digestive system disorders, other Complexity level A
E06 Digestive	E0690B	Digestive system disorders, other Complexity level B
E06 Digestive	E0690C	Digestive system disorders, other Complexity level C
E06 Digestive	E0690D	Digestive system disorders, other Complexity level D
E07 Liver, gall bladder, bile duct and pancreas	E0710A	Liver disorders Complexity level A
E07 Liver, gall bladder, bile duct and pancreas	E0710B	Liver disorders Complexity level B
E07 Liver, gall bladder, bile duct and pancreas	E0720A	Gall bladder, bile duct and pancreas disorders Complexity level A
E07 Liver, gall bladder, bile duct and pancreas	E0720B	Gall bladder, bile duct and pancreas disorders Complexity level B
E07 Liver, gall bladder, bile duct and pancreas	E0720C	Gall bladder, bile duct and pancreas disorders Complexity level C
E08 Musculoskeletal	E0890A	Musculoskeletal and musculetendinous disorders Complexity level A
E08 Musculoskeletal	E0890B	Musculoskeletal and musculetendinous disorders Complexity level B
E08 Musculoskeletal	E0890C	Musculoskeletal and musculetendinous disorders Complexity level C
E08 Musculoskeletal	E0890D	Musculoskeletal and musculetendinous disorders Complexity level D
E09 Skin, subcutaneous and breast tissue	E0910A	Skin and subcutaneous tissue infections Complexity level A

Emergency care category code and label	AECC code	AECC label
E09 Skin, subcutaneous and breast tissue	E0910B	Skin and subcutaneous tissue infections Complexity level B
E09 Skin, subcutaneous and breast tissue	E0910C	Skin and subcutaneous tissue infections Complexity level C
E09 Skin, subcutaneous and breast tissue	E0990A	Skin disorders, other Complexity level A
E09 Skin, subcutaneous and breast tissue	E0990B	Skin disorders, other Complexity level B
E09 Skin, subcutaneous and breast tissue	E0990C	Skin disorders, other Complexity level C
E10 Endocrine, nutritional and metabolic	E1010A	Diabetes Complexity level A
E10 Endocrine, nutritional and metabolic	E1010B	Diabetes Complexity level B
E10 Endocrine, nutritional and metabolic	E1010C	Diabetes Complexity level C
E10 Endocrine, nutritional and metabolic	E1090A	Metabolic and nutritional disorders, other Complexity level A
E10 Endocrine, nutritional and metabolic	E1090B	Metabolic and nutritional disorders, other Complexity level B
E10 Endocrine, nutritional and metabolic	E1090C	Metabolic and nutritional disorders, other Complexity level C
E11 Kidney and urinary tract	E1110A	Kidney failure Complexity level A
E11 Kidney and urinary tract	E1110B	Kidney failure Complexity level B
E11 Kidney and urinary tract	E1110C	Kidney failure Complexity level C
E11 Kidney and urinary tract	E1120A	Urinary stones and obstruction Complexity level A
E11 Kidney and urinary tract	E1120B	Urinary stones and obstruction Complexity level B
E11 Kidney and urinary tract	E1130A	Kidney and urinary tract infections Complexity level A

Emergency care category code and label	AECC code	AECC label
E11 Kidney and urinary tract	E1130B	Kidney and urinary tract infections Complexity level B
E11 Kidney and urinary tract	E1130C	Kidney and urinary tract infections Complexity level C
E11 Kidney and urinary tract	E1190A	Kidney and urinary tract disorders, other Complexity level A
E11 Kidney and urinary tract	E1190B	Kidney and urinary tract disorders, other Complexity level B
E12 Male genitourinary	E1290A	Male genitourinary disorders Complexity level A
E12 Male genitourinary	E1290B	Male genitourinary disorders Complexity level B
E13 Gynaecology	E1390A	Gynaecological disorders Complexity level A
E13 Gynaecology	E1390B	Gynaecological disorders Complexity level B
E14 Obstetrics	E1410A	Postpartum and post abortion conditions Complexity level A
E14 Obstetrics	E1410B	Postpartum and post abortion conditions Complexity level B
E14 Obstetrics	E1420A	Antenatal and other obstetric conditions Complexity level A
E14 Obstetrics	E1420B	Antenatal and other obstetric conditions Complexity level B
E15 Perinatal	E1590Z	Perinatal disorder
E16 Blood and immunology	E1610A	Immune system disorders Complexity level A
E16 Blood and immunology	E1610B	Immune system disorders Complexity level B
E16 Blood and immunology	E1620Z	Red blood cell disorders
E16 Blood and immunology	E1630A	Haemostasis disorders Complexity level A
E16 Blood and immunology	E1630B	Haemostasis disorders Complexity level B
E17 Neoplasms	E1790A	Neoplasms Complexity level A
E17 Neoplasms	E1790B	Neoplasms Complexity level B
E17 Neoplasms	E1790C	Neoplasms Complexity level C
E18 Infectious diseases	E1810Z	Septicaemia
E18 Infectious diseases	E1820A	Viral illnesses Complexity level A
E18 Infectious diseases	E1820B	Viral illnesses Complexity level B
E18 Infectious diseases	E1820C	Viral illnesses Complexity level C
E18 Infectious diseases	E1830A	Fever of unknown origin Complexity level A

Emergency care category code and label	AECC code	AECC label
E18 Infectious diseases	E1830B	Fever of unknown origin Complexity level B
E18 Infectious diseases	E1830C	Fever of unknown origin Complexity level C
E18 Infectious diseases	E1890A	Infectious and parasitic diseases, other Complexity level A
E18 Infectious diseases	E1890B	Infectious and parasitic diseases, other Complexity level B
E19 Mental, behavioural and neurodevelopment	E1910A	Alcohol and drug related mental and behavioural disorders Complexity level A
E19 Mental, behavioural and neurodevelopment	E1910B	Alcohol and drug related mental and behavioural disorders Complexity level B
E19 Mental, behavioural and neurodevelopment	E1910C	Alcohol and drug related mental and behavioural disorders Complexity level C
E19 Mental, behavioural and neurodevelopment	E1920A	Psychoses Complexity level A
E19 Mental, behavioural and neurodevelopment	E1920B	Psychoses Complexity level B
E19 Mental, behavioural and neurodevelopment	E1920C	Psychoses Complexity level C
E19 Mental, behavioural and neurodevelopment	E1990A	Mental, behavioural and neurodevelopment disorders, other Complexity level A
E19 Mental, behavioural and neurodevelopment	E1990B	Mental, behavioural and neurodevelopment disorders, other Complexity level B
E19 Mental, behavioural and neurodevelopment	E1990C	Mental, behavioural and neurodevelopment disorders, other Complexity level C
E20 Injuries and other externally-caused morbidity	E2010A	Head, intracranial, spine, internal organ and other complex injuries Complexity level A
E20 Injuries and other externally-caused morbidity	E2010B	Head, intracranial, spine, internal organ and other complex injuries Complexity level B
E20 Injuries and other externally-caused morbidity	E2010C	Head, intracranial, spine, internal organ and other complex injuries Complexity level C

Emergency care category code and label	AECC code	AECC label
E20 Injuries and other externally-caused morbidity	E2010D	Head, intracranial, spine, internal organ and other complex injuries Complexity level D
E20 Injuries and other externally-caused morbidity	E2020A	Pelvic and femoral fractures Complexity level A
E20 Injuries and other externally-caused morbidity	E2020B	Pelvic and femoral fractures Complexity level B
E20 Injuries and other externally-caused morbidity	E2025A	Fractures, dislocations and ligament injuries Complexity level A
E20 Injuries and other externally-caused morbidity	E2025B	Fractures, dislocations and ligament injuries Complexity level B
E20 Injuries and other externally-caused morbidity	E2025C	Fractures, dislocations and ligament injuries Complexity level C
E20 Injuries and other externally-caused morbidity	E2030A	Injuries, other Complexity level A
E20 Injuries and other externally-caused morbidity	E2030B	Injuries, other Complexity level B
E20 Injuries and other externally-caused morbidity	E2030C	Injuries, other Complexity level C
E20 Injuries and other externally-caused morbidity	E2030D	Injuries, other Complexity level D
E20 Injuries and other externally-caused morbidity	E2040A	Finger, toe and superficial injuries Complexity level A
E20 Injuries and other externally-caused morbidity	E2040B	Finger, toe and superficial injuries Complexity level B
E20 Injuries and other externally-caused morbidity	E2040C	Finger, toe and superficial injuries Complexity level C
E20 Injuries and other externally-caused morbidity	E2050A	Burns Complexity level A
E20 Injuries and other externally-caused morbidity	E2050B	Burns Complexity level B

Emergency care category code and label	AECC code	AECC label
E20 Injuries and other externally-caused morbidity	E2050C	Burns Complexity level C
E20 Injuries and other externally-caused morbidity	E2060A	Poisoning Complexity level A
E20 Injuries and other externally-caused morbidity	E2060B	Poisoning Complexity level B
E20 Injuries and other externally-caused morbidity	E2060C	Poisoning Complexity level C
E20 Injuries and other externally-caused morbidity	E2070A	Allergic reactions Complexity level A
E20 Injuries and other externally-caused morbidity	E2070B	Allergic reactions Complexity level B
E20 Injuries and other externally-caused morbidity	E2080A	Complications of surgical and medical care Complexity level A
E20 Injuries and other externally-caused morbidity	E2080B	Complications of surgical and medical care Complexity level B
E50 General symptoms without diagnosis	E5010A	Pain syndrome Complexity level A
E50 General symptoms without diagnosis	E5010B	Pain syndrome Complexity level B
E50 General symptoms without diagnosis	E5090A	Symptoms, other Complexity level A
E50 General symptoms without diagnosis	E5090B	Symptoms, other Complexity level B
E50 General symptoms without diagnosis	E5090C	Symptoms, other Complexity level C
E60 Other factors influencing health status	E6010A	Forensic examination Complexity level A
E60 Other factors influencing health status	E6010B	Forensic examination Complexity level B

Emergency care category code and label	AECC code	AECC label
E60 Other factors influencing health status	E6010C	Forensic examination Complexity level C
E60 Other factors influencing health status	E6020A	Abuse and neglect Complexity level A
E60 Other factors influencing health status	E6020B	Abuse and neglect Complexity level B
E60 Other factors influencing health status	E6090A	Other factors influencing health status Complexity level A
E60 Other factors influencing health status	E6090B	Other factors influencing health status Complexity level B
Error ECDG	E9901Z	Invalid visit type
Error ECDG	E9902Z	Missing principal ED diagnosis short list code
Error ECDG	E9903Z	Invalid principal ED diagnosis short list code
Error ECDG	E9904Z	Other error

Appendix B – AECC supporting statistics

Notes:

NAPEDC: Non-admitted emergency department care NMDS

NHCDC: National hospital cost data collection

Study: Emergency care costing study

Includes emergency departments only (excludes emergency services).

Error classes are not presented (E9901Z Invalid visit type; E9902Z Missing principal diagnosis short list code; and E9903Z Invalid principal diagnosis short list code).

Final class	n						Cost: mean			Cost: sd		
	NAPEDC (2014-15)	NAPEDC (2015-16)	NAPEDC (2016-17)	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study
E0001 Not attended by a healthcare professional												
E0001Z	267,162	286,071	298,467	352,919	257,862	1,770	248	214	247	285	231	323
E0002 Planned return visit												
E0002Z	173,676	172,337	170,223	107,463	119,304	266	272	375	479	406	407	332
E0003 Dead on arrival												
E0003Z	5,348	4,293	4,352	4,898	3,984	91	185	263	176	297	1,202	226
E0110 Dementia and other chronic brain syndromes												
E0110A	2,478	2,882	3,277	2,175	2,718	20	1,143	1,115	1,320	912	775	753
E0110B	2,719	3,144	3,250	2,264	2,765	15	795	832	843	628	682	415
E0120 Delirium												
E0120A	9,670	11,334	12,365	8,751	10,721	60	1,433	1,402	1,462	946	911	586
E0120B	14,173	15,516	16,567	12,771	14,427	71	1,003	1,025	1,263	698	709	598
E0130 Stroke and other cerebrovascular disorders												
E0130A	24,548	26,413	28,688	22,312	25,256	158	1,591	1,678	1,830	1,218	1,615	1,394
E0130B	8,382	8,924	9,353	7,430	8,310	55	1,218	1,255	1,139	913	1,108	526
E0140 TIA and precerebral occlusion												
E0140Z	19,129	19,046	19,697	16,986	17,703	113	1,114	1,125	1,161	774	734	500
E0150 Seizures												

Final class	n						Cost: mean			Cost: sd		
	NAPEDC (2014-15)	NAPEDC (2015-16)	NAPEDC (2016-17)	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study
E0150A	2,289	2,594	2,703	1,899	2,450	20	1,494	1,667	1,473	1,190	1,243	588
E0150B	6,843	7,425	7,824	5,848	6,925	68	794	877	854	597	703	451
E0150C	2,541	2,685	2,718	2,255	2,430	20	533	605	674	366	565	300
E0160 Convulsions												
E0160A	11,035	12,025	13,286	9,894	11,135	91	1,207	1,177	1,314	901	848	533
E0160B	24,905	26,601	27,547	22,607	24,722	158	649	708	757	469	515	388
E0170 Headaches												
E0170A	34,175	38,279	42,437	30,322	35,732	203	846	857	906	609	577	423
E0170B	60,295	66,171	69,420	54,172	60,148	343	511	564	636	399	397	603
E0190 Nervous system and neurological disorders												
E0190A	10,213	12,250	15,764	9,139	11,390	99	1,416	1,352	1,516	1,043	1,017	642
E0190B	35,276	40,371	46,904	31,640	37,372	240	958	995	1,035	914	749	640
E0190C	16,518	17,530	19,020	14,793	15,983	88	428	499	568	350	348	344
E0290 Eye disorders												
E0290A	8,853	9,652	11,254	7,910	9,154	78	710	721	852	604	567	612
E0290B	34,979	39,396	42,982	33,147	36,452	226	380	417	460	280	273	293
E0290C	84,499	92,378	97,322	78,291	85,096	352	255	300	355	158	177	168
E0310 Ear, nose, mouth and throat disorders												
E0310A	20,689	21,868	23,782	18,993	20,612	97	699	712	728	467	483	391
E0310B	21,176	23,097	25,420	19,677	21,196	95	442	480	509	342	366	215
E0310C	90,463	96,576	105,110	82,592	86,764	372	265	326	350	210	225	172
E0320 Disorders of the teeth and supporting structures												
E0320A	4,996	5,614	6,305	4,432	5,238	48	781	783	947	566	549	487
E0320B	10,750	12,051	13,506	9,699	10,816	70	467	500	519	344	348	252
E0320C	38,026	40,421	43,039	34,600	36,121	203	278	336	335	193	224	150

Final class	n						Cost: mean			Cost: sd		
	NAPEDC (2014-15)	NAPEDC (2015-16)	NAPEDC (2016-17)	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study
E0410 Major respiratory conditions												
E0410A	5,847	6,286	6,966	5,345	5,928	45	1,558	1,565	1,503	1,126	1,277	507
E0410B	5,896	6,282	6,882	5,296	5,860	52	1,291	1,255	1,317	876	893	631
E0410C	4,216	4,709	5,095	3,843	4,375	20	989	1,012	1,010	745	700	613
E0420 Chronic obstructive airways disease												
E0420A	10,363	11,077	12,600	9,465	10,505	99	1,424	1,339	1,320	1,011	897	498
E0420B	27,651	29,021	32,184	24,820	26,851	191	1,070	1,027	1,156	737	703	759
E0420C	5,713	6,165	7,312	5,142	5,439	28	579	643	664	418	490	357
E0430 Asthma												
E0430A	3,865	3,937	4,630	3,441	3,669	33	1,270	1,247	1,233	856	809	546
E0430B	49,457	52,488	59,873	45,157	49,091	317	757	775	742	527	485	284
E0430C	25,566	28,028	30,790	22,925	25,108	179	418	492	523	319	280	242
E0440 Upper respiratory tract infections												
E0440A	42,016	47,426	53,087	37,689	44,150	279	694	714	751	506	522	410
E0440B	186,621	202,515	208,997	171,791	183,250	1,064	354	424	430	233	254	243
E0450 Lower respiratory tract infections												
E0450A	56,714	62,350	69,639	50,969	58,395	357	1,227	1,186	1,186	868	780	538
E0450B	61,884	68,764	72,814	56,078	64,059	398	859	874	829	580	550	416
E0450C	44,654	49,970	50,181	41,653	45,688	297	437	515	512	283	302	249
E0490 Respiratory disorders, other												
E0490A	15,850	16,670	18,688	14,065	15,716	133	1,309	1,269	1,246	928	937	534
E0490B	31,697	34,546	39,846	27,675	31,432	265	1,046	1,038	1,076	764	738	516
E0490C	31,756	35,350	39,585	28,403	31,493	255	654	729	742	472	488	369
E0490D	38,285	42,591	45,847	32,178	36,532	269	354	448	460	262	282	259
E0510 Acute coronary syndromes												

Final class	n						Cost: mean			Cost: sd		
	NAPEDC (2014-15)	NAPEDC (2015-16)	NAPEDC (2016-17)	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study
E0510Z	91,103	95,608	96,338	83,050	90,944	360	1,076	1,054	1,077	738	751	821
E0520 Arrhythmia and cardiac arrest												
E0520A	28,538	29,837	31,624	25,202	28,028	132	1,134	1,122	1,134	875	899	483
E0520B	28,504	30,986	32,497	26,506	28,494	148	700	761	852	531	551	384
E0530 Heart failure and shock												
E0530A	10,192	10,684	11,240	9,212	10,142	81	1,281	1,224	1,359	843	806	544
E0530B	19,949	21,647	22,948	18,133	20,298	120	1,040	986	1,093	761	634	528
E0540 Chest pain												
E0540A	46,225	48,019	53,025	41,042	44,269	401	956	973	1,083	676	648	464
E0540B	140,826	151,709	166,578	126,414	138,901	1,066	806	852	855	515	519	392
E0540C	50,640	54,170	57,535	44,168	49,331	336	530	590	627	335	347	313
E0590 Circulatory disorders, other												
E0590A	12,374	13,256	13,892	10,886	12,457	117	1,327	1,369	1,288	961	1,108	645
E0590B	98,233	104,903	113,752	89,309	97,864	612	855	868	901	611	612	629
E0590C	52,944	58,290	62,014	48,061	53,226	320	484	545	595	328	400	259
E0610 Gastrointestinal haemorrhage												
E0610A	10,759	11,434	12,281	9,366	10,755	81	1,240	1,362	1,246	895	1,059	576
E0610B	12,419	13,841	14,829	10,922	12,640	102	805	854	727	604	857	375
E0620 Gastrointestinal obstruction												
E0620Z	20,286	21,540	22,207	18,199	20,250	119	1,237	1,224	1,168	781	783	515
E0630 Peritonitis and gastrointestinal perforation												
E0630A	3,575	4,052	4,293	3,329	3,825	30	1,149	1,163	1,186	794	844	551
E0630B	22,249	23,701	24,255	20,967	22,619	138	868	828	776	612	563	420
E0640 Oesophagitis and gastroenteritis												
E0640A	22,244	24,392	27,343	19,600	22,929	152	904	895	978	746	688	565

Final class	n						Cost: mean			Cost: sd		
	NAPEDC (2014-15)	NAPEDC (2015-16)	NAPEDC (2016-17)	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study
E0640B	26,692	29,515	32,402	24,391	27,677	141	599	621	683	403	416	343
E0640C	58,600	65,101	64,438	55,155	60,674	301	382	448	471	235	249	258
E0650 Abdominal pain												
E0650A	107,145	117,665	132,101	93,560	108,642	677	1,029	1,011	1,053	690	664	526
E0650B	151,519	168,149	178,429	139,496	155,263	960	684	728	778	437	461	377
E0650C	131,943	140,621	144,517	118,102	129,499	737	436	506	559	305	326	291
E0690 Digestive system disorders, other												
E0690A	20,757	21,973	23,538	18,601	20,600	158	1,122	1,124	1,091	793	838	583
E0690B	39,824	43,691	47,149	35,305	40,389	280	918	914	866	635	619	494
E0690C	52,106	57,084	61,604	47,284	52,119	318	652	678	700	469	468	365
E0690D	80,090	88,759	91,935	70,036	79,490	448	390	456	495	282	323	284
E0710 Liver disorders												
E0710A	6,137	6,553	6,615	5,533	6,278	48	1,282	1,276	1,247	885	1,195	616
E0710B	6,823	7,791	8,186	6,301	7,421	48	719	758	843	585	644	448
E0720 Gall bladder, bile duct and pancreas disorders												
E0720A	17,180	18,709	19,490	15,609	17,726	116	1,157	1,136	1,125	772	824	620
E0720B	19,548	21,166	21,828	17,507	19,563	146	937	922	813	631	583	342
E0720C	9,232	9,945	9,999	8,447	9,085	53	599	634	704	354	399	289
E0890 Musculoskeletal and musculotendinous disorders												
E0890A	29,042	30,608	34,923	25,725	28,252	236	980	974	1,120	736	680	576
E0890B	38,204	40,998	44,615	34,268	37,576	281	732	768	892	601	572	535
E0890C	83,348	90,978	99,784	75,956	82,490	590	566	614	688	430	415	531
E0890D	159,149	171,355	182,683	145,551	155,108	1,028	344	424	438	240	267	267
E0910 Skin and subcutaneous tissue infections												
E0910A	18,046	24,241	28,078	16,457	22,755	141	955	880	961	709	616	501

Final class	n						Cost: mean			Cost: sd		
	NAPEDC (2014-15)	NAPEDC (2015-16)	NAPEDC (2016-17)	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study
E0910B	34,896	43,437	49,224	31,917	40,425	280	614	591	623	458	422	323
E0910C	65,290	79,392	90,077	60,029	70,980	375	307	385	462	207	256	241
E0990 Skin disorders, other												
E0990A	12,247	14,413	16,401	10,753	13,566	96	786	788	851	588	633	438
E0990B	25,628	28,658	31,844	23,457	26,265	203	486	532	587	379	420	326
E0990C	80,949	86,891	93,668	72,955	77,658	380	299	365	367	209	241	204
E1010 Diabetes												
E1010A	3,819	4,134	4,310	3,608	3,927	29	1,216	1,234	1,559	874	859	1,068
E1010B	4,639	5,008	5,324	4,316	4,769	32	1,006	1,018	906	699	801	382
E1010C	2,779	2,982	3,354	2,530	2,743	21	583	629	520	471	541	344
E1090 Metabolic and nutritional disorders, other												
E1090A	14,854	15,539	17,001	13,389	14,589	77	1,145	1,112	1,185	851	749	559
E1090B	16,280	17,907	19,712	14,496	16,519	98	869	885	850	644	622	433
E1090C	12,578	14,453	15,466	11,332	13,003	67	576	640	619	459	437	299
E1110 Kidney failure												
E1110A	6,105	6,474	7,168	5,567	6,212	55	1,274	1,253	1,212	1,016	847	585
E1110B	6,173	6,830	7,537	5,664	6,532	115	1,121	1,096	1,104	831	870	492
E1110C	4,267	4,531	5,071	3,925	4,352	56	907	864	695	756	657	453
E1120 Urinary stones and obstruction												
E1120A	18,451	20,299	21,518	16,709	19,055	110	943	952	1,009	573	581	468
E1120B	31,261	33,501	35,310	28,457	31,194	170	771	781	803	504	531	357
E1130 Kidney and urinary tract infections												
E1130A	26,167	27,342	28,709	23,515	25,667	150	1,064	1,046	1,080	722	646	429
E1130B	28,171	30,299	31,675	25,597	27,901	158	705	734	764	467	456	392
E1130C	42,025	44,942	45,806	38,213	39,629	150	384	460	478	236	272	191

Final class	n						Cost: mean			Cost: sd		
	NAPEDC (2014-15)	NAPEDC (2015-16)	NAPEDC (2016-17)	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study
E1190 Kidney and urinary tract disorders, other												
E1190A	27,364	29,897	32,961	24,356	27,867	175	896	906	941	632	613	509
E1190B	32,724	36,038	37,835	29,796	32,747	190	536	605	615	391	460	376
E1290 Male genitourinary disorders												
E1290A	9,302	10,658	11,664	8,344	10,031	90	751	758	772	519	456	407
E1290B	16,340	17,624	18,359	15,326	16,331	92	438	500	530	304	304	312
E1390 Gynaecological disorders												
E1390A	15,515	16,979	17,795	13,820	15,804	124	848	864	881	523	538	397
E1390B	48,559	52,059	52,424	45,444	48,578	281	494	547	631	315	342	247
E1410 Postpartum and post abortion conditions												
E1410A	5,312	5,867	5,907	4,757	5,505	35	839	839	912	523	469	474
E1410B	17,811	18,383	18,282	17,019	17,632	63	460	498	598	302	312	207
E1420 Antenatal and other obstetric conditions												
E1420A	24,208	26,195	27,209	21,839	24,345	122	617	655	684	402	388	279
E1420B	44,085	46,293	45,913	41,512	43,696	158	392	430	539	290	316	239
E1590 Perinatal disorder												
E1590Z	5,660	6,666	6,811	5,298	6,360	30	542	625	657	826	464	342
E1610 Immune system disorders												
E1610A	6,785	7,368	7,824	6,112	7,004	41	1,282	1,289	1,022	1,114	979	444
E1610B	7,006	7,561	8,404	6,569	7,070	43	542	621	542	523	594	253
E1620 Red blood cell disorders												
E1620Z	18,911	20,657	22,636	17,156	19,427	124	978	1,073	1,124	830	822	571
E1630 Haemostasis disorders												
E1630A	2,149	2,267	2,430	1,996	2,124	9	953	1,418	1,292	737	3,566	1,145
E1630B	3,429	3,777	4,069	3,212	3,530	25	540	624	774	504	623	435

Final class	n						Cost: mean			Cost: sd		
	NAPEDC (2014-15)	NAPEDC (2015-16)	NAPEDC (2016-17)	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study
E1790 Neoplasms												
E1790A	3,804	4,110	4,057	3,505	3,968	18	1,230	1,249	1,311	939	909	803
E1790B	13,195	14,612	15,207	11,813	13,912	86	1,040	1,047	1,006	808	850	487
E1790C	3,394	3,804	3,912	3,089	3,331	12	428	504	534	504	469	279
E1810 Septicaemia												
E1810Z	19,211	21,578	24,386	17,290	20,215	97	1,428	1,405	1,459	1,047	1,034	657
E1820 Viral illnesses												
E1820A	5,933	7,383	8,297	5,448	7,031	45	848	862	829	561	497	315
E1820B	26,197	32,318	35,342	24,282	30,524	177	656	685	690	941	409	255
E1820C	105,421	120,613	119,643	99,223	112,171	608	350	416	426	226	259	206
E1830 Fever of unknown origin												
E1830A	10,939	12,034	14,138	9,611	11,439	81	1,319	1,265	1,275	877	818	657
E1830B	19,759	24,001	25,435	17,631	22,620	171	948	944	899	688	632	407
E1830C	19,974	23,055	23,633	16,639	20,385	127	449	499	575	349	463	730
E1890 Infectious and parasitic diseases, other												
E1890A	3,883	4,359	4,550	3,611	4,068	31	1,136	1,148	1,002	1,058	1,008	431
E1890B	14,401	16,070	17,805	13,511	14,754	85	389	472	574	335	348	342
E1910 Alcohol and drug related mental and behavioural disorders												
E1910A	17,116	19,604	21,266	14,518	18,463	180	1,037	1,064	1,031	958	857	455
E1910B	23,712	26,185	27,888	20,600	24,661	201	708	767	797	669	702	450
E1910C	17,768	20,200	20,171	15,644	17,447	168	480	541	482	513	491	272
E1920 Psychoses												
E1920A	9,588	11,213	12,200	8,189	10,596	72	1,223	1,254	1,250	1,352	1,261	686
E1920B	14,129	15,594	16,044	12,145	14,751	110	982	1,026	803	1,098	951	466
E1920C	8,303	8,648	8,811	7,298	8,049	51	554	642	634	623	643	482

Final class	n						Cost: mean			Cost: sd		
	NAPEDC (2014-15)	NAPEDC (2015-16)	NAPEDC (2016-17)	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study
E1990 Mental, behavioural and neurodevelopment disorders, other												
E1990A	43,929	54,475	62,707	37,209	51,326	418	950	976	950	1,059	932	550
E1990B	53,680	62,279	65,955	48,130	58,416	351	645	716	716	633	676	485
E1990C	51,841	56,864	58,225	46,623	52,045	240	462	510	546	659	1,248	362
E2010 Head, intracranial, spine, internal organ and other complex injuries												
E2010A	7,192	7,559	8,404	6,555	7,310	48	1,850	2,168	1,729	1,263	3,043	821
E2010B	16,959	18,730	20,297	15,755	18,009	72	1,393	1,586	1,353	1,098	1,494	886
E2010C	14,584	15,549	16,164	13,425	14,542	58	787	869	712	659	761	335
E2010D	22,628	24,383	25,312	21,150	22,265	57	394	439	456	328	339	236
E2020 Pelvic and femoral fractures												
E2020A	15,224	15,958	16,800	13,748	15,243	96	1,335	1,378	1,443	859	873	543
E2020B	12,220	12,528	13,046	11,012	11,771	80	1,040	1,063	1,060	759	703	428
E2025 Fractures, dislocations and ligament injuries												
E2025A	30,110	32,199	33,505	27,321	30,685	185	1,215	1,263	1,344	1,496	850	649
E2025B	180,514	192,640	195,535	168,633	180,950	922	665	699	786	950	481	480
E2025C	326,369	349,701	364,474	309,194	325,852	1,681	375	415	467	2,665	245	239
E2030 Injuries, other												
E2030A	28,701	30,434	32,867	25,938	28,705	200	1,121	1,206	1,221	876	1,004	537
E2030B	38,509	41,881	44,939	35,570	38,645	241	722	786	822	553	570	503
E2030C	85,370	92,963	100,984	78,662	84,708	491	496	543	592	391	378	354
E2030D	280,968	311,091	328,595	260,202	281,193	1,382	302	363	403	246	271	268
E2040 Finger, toe and superficial injuries												
E2040A	14,115	14,738	16,327	12,190	13,820	122	1,293	1,331	1,281	971	1,005	623
E2040B	76,497	80,859	86,780	66,714	72,535	531	599	651	697	602	481	417
E2040C	219,409	235,081	248,022	192,671	205,500	1,240	315	386	440	219	235	191

Final class	n						Cost: mean			Cost: sd		
	NAPEDC (2014-15)	NAPEDC (2015-16)	NAPEDC (2016-17)	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study
E2050 Burns												
E2050A	1,026	1,068	1,089	904	1,039	3	1,089	1,375	1,077	893	1,388	47
E2050B	3,023	3,365	3,360	2,736	3,177	19	618	709	761	485	709	256
E2050C	27,266	30,230	32,687	25,065	27,430	129	354	393	446	272	576	284
E2060 Poisoning												
E2060A	13,880	15,858	17,115	12,036	14,927	103	1,307	1,315	1,268	1,160	1,134	621
E2060B	27,715	30,329	32,326	23,633	28,286	165	882	907	925	686	700	475
E2060C	23,224	25,850	26,457	20,234	22,755	107	412	491	488	330	371	215
E2070 Allergic reactions												
E2070A	10,481	11,848	13,294	9,238	10,759	53	683	722	722	523	538	297
E2070B	28,380	30,996	34,147	26,171	27,720	107	393	439	435	296	355	233
E2080 Complications of surgical and medical care												
E2080A	18,548	21,915	23,954	16,703	20,809	127	825	828	774	618	652	351
E2080B	40,097	46,649	50,580	37,620	43,104	211	417	464	470	362	505	268
E5010 Pain syndrome												
E5010A	4,390	4,907	5,925	3,662	4,114	48	819	865	941	597	625	380
E5010B	10,699	11,710	14,028	8,597	9,372	118	394	472	548	410	378	278
E5090 Symptoms, other												
E5090A	13,947	15,228	16,815	12,415	14,147	111	1,236	1,148	1,184	1,159	878	620
E5090B	42,149	47,138	49,711	37,484	43,396	351	849	864	919	665	596	652
E5090C	72,931	80,879	80,096	63,509	72,736	407	435	499	621	378	387	406
E6010 Forensic examination												
E6010A	8,627	10,091	11,643	6,457	8,935	162	877	998	1,243	647	762	618
E6010B	9,158	10,707	11,452	8,121	9,826	74	587	608	792	514	501	366
E6010C	15,206	19,453	20,927	14,229	18,120	34	299	323	313	277	302	183

Final class	n						Cost: mean			Cost: sd		
	NAPEDC (2014-15)	NAPEDC (2015-16)	NAPEDC (2016-17)	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study	NHCDC (2014-15)	NHCDC (2015-16)	Study
E6020 Abuse and neglect												
E6020A	1,081	1,134	1,252	947	1,096	50	1,156	1,148	1,157	771	862	335
E6020B	1,885	2,206	2,164	1,733	2,151	64	600	625	490	539	522	301
E6090 Other factors influencing health status												
E6090A	5,704	5,868	6,101	4,949	5,516	31	792	824	1,097	631	688	885
E6090B	97,674	104,373	120,934	86,122	93,303	436	279	333	351	412	328	252
E9901 Invalid visit type												
E9901Z	5,393	1,596	4,268	2,318	867	5	653	587	769	5,499	829	500
E9902 Missing principal diagnosis short list code												
E9902Z	139,302	51,638	58,049	31,176	24,607	32	499	461	11	551	722	5
E9903 Invalid principal diagnosis short list code												
E9903Z	630,175	653,222	686,793	530,397	561,771	2,463	629	646	650	622	589	532
E9904 Other error												
E9904Z	37	14	46	5	NA	NA	488	NA	NA	305	NA	NA

Appendix C – Emergency Department ICD-10-AM Principal Diagnosis Short List to ECDG mapping

Notes:

* Includes both 9th and 10th edition short list codes. Where different, the 10th edition code is shown in parentheses.

NNDSS refers to National Notifiable Diseases Surveillance Scheme.

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label	
E01 Nervous system and neurological			
E0110 Dementia and other chronic brain syndromes	F03	Dementia (except in Alzheimer's disease)	E0111 Dementia and other chronic brain syndromes subcategory
	F09	Mental, personality and behavioural disorders due to brain damage or physical disease, other	E0111 Dementia and other chronic brain syndromes subcategory
	G30.9	Alzheimer's disease or sclerosis	E0111 Dementia and other chronic brain syndromes subcategory
E0120 Delirium	F05.1	Delirium due to dementia	E0121 Delirium subcategory
	F05.9	Delirium due to disease or infection	E0121 Delirium subcategory
	R41.0	Disorientation or confusion	E0121 Delirium subcategory
	R41.8	Symptoms involving cognition and awareness, other	E0121 Delirium subcategory
E0130 Stroke and other cerebrovascular disorders	I60.9	Haemorrhage, subarachnoid (SAH), nontraumatic	E0131 Stroke and other cerebrovascular disorders subcategory
	I61.9	Haemorrhage, intracerebral (ICH), nontraumatic	E0131 Stroke and other cerebrovascular disorders subcategory
	I62.0	Haemorrhage, subdural (SDH), nontraumatic	E0131 Stroke and other cerebrovascular disorders subcategory
	I62.9	Haemorrhage, intracranial, nontraumatic, other	E0131 Stroke and other cerebrovascular disorders subcategory
	I63.9	Infarction, cerebral, nontraumatic	E0131 Stroke and other cerebrovascular disorders subcategory
	I64	Stroke, cerebrovascular accident (CVA)	E0131 Stroke and other cerebrovascular disorders subcategory
	I66.9	Occlusion, stenosis of cerebral artery (cerebral embolism)	E0131 Stroke and other cerebrovascular disorders subcategory
I67.9	Cerebrovascular disease, other	E0131 Stroke and other cerebrovascular disorders subcategory	
E0140 TIA and precerebral occlusion	G45.0	Transient vertebro-basilar artery syndrome (insufficiency)(VBI)	E0141 TIA and precerebral occlusion subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
E0150 Seizures	G45.9 Transient cerebral ischaemic attack (TIA)	E0141 TIA and precerebral occlusion subcategory
	G40.10 Epilepsy, focal or partial seizures	E0151 Seizures subcategory
	G40.30 Epilepsy, generalised seizures (includes grand mal and petit mal seizures)	E0151 Seizures subcategory
E0160 Convulsions	G40.90 Epilepsy, other or unidentified seizure	E0151 Seizures subcategory
	G41.9 Epilepsy with status epilepticus	E0151 Seizures subcategory
	P90 Convulsions, newborn (except familial epilepsy)	E0161 Convulsions subcategory
	R56.0 Convulsions, febrile	E0161 Convulsions subcategory
E0170 Headaches	R56.8 Convulsions, other	E0161 Convulsions subcategory
	G43.9 Migraine	E0171 Headaches subcategory
	G44.0 Headache, cluster	E0171 Headaches subcategory
	G44.2 Headache, tension-type	E0171 Headaches subcategory
	G44.8 Headache syndrome, other	E0171 Headaches subcategory
E0190 Nervous system and neurological disorders	G97.1 (G97.19) Postprocedural disorder, post spinal and lumbar puncture	E0171 Headaches subcategory
	R51 Headache, unspecified	E0171 Headaches subcategory
	A80.9 Poliomyelitis, acute ^{NNDSS}	E0191 CNS infection and inflammation subcategory
	A81.0 Creutzfeldt-Jakob disease (CJD) ^{NNDSS} or variant CJD ^{NNDSS}	E0191 CNS infection and inflammation subcategory
	A82.9 Rabies ^{NNDSS} or bat lyssavirus ^{NNDSS}	E0191 CNS infection and inflammation subcategory
	A83.0 Encephalitis, Japanese ^{NNDSS}	E0191 CNS infection and inflammation subcategory
	A83.4 Encephalitis, Australian (Murray Valley) ^{NNDSS}	E0191 CNS infection and inflammation subcategory
	A87.9 Meningitis, viral	E0191 CNS infection and inflammation subcategory
	A89 Viral infection of central nervous system, other	E0191 CNS infection and inflammation subcategory
	G00.9 Meningitis, bacterial	E0191 CNS infection and inflammation subcategory
G03.9 Meningitis (except viral or bacterial)	E0191 CNS infection and inflammation subcategory	
G04.9 Encephalitis, encephalomyelitis or myelitis, other	E0191 CNS infection and inflammation subcategory	
G06.2 Abscess or granuloma of brain or spinal cord	E0191 CNS infection and inflammation subcategory	
G12.9 Spinal muscular ataxia and systemic atrophies (includes motor neuron disease)	E0193 Degenerative and demyelinating nervous system disorders subcategory	
G20 Parkinson's disease	E0193 Degenerative and demyelinating nervous system disorders subcategory	
G24.9 Dystonia	E0195 Nervous system disorders, other subcategory	
G25.9 Abnormal movement disorder, other	E0193 Degenerative and demyelinating nervous system disorders subcategory	
G35 Multiple sclerosis	E0193 Degenerative and demyelinating nervous system disorders subcategory	
G37.9 Nervous system demyelinating disorder, other	E0193 Degenerative and demyelinating nervous system disorders subcategory	
G50.0 Nerve disorder, trigeminal neuralgia	E0192 Cranial and peripheral nerve disorders subcategory	
G51.0 Bell's palsy and other facial nerve disorder	E0192 Cranial and peripheral nerve disorders subcategory	

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	G52.9 Nerve disorder, cranial (except facial and trigeminal nerve)	E0192 Cranial and peripheral nerve disorders subcategory
	G54.9 Nerve root and plexus disorder	E0192 Cranial and peripheral nerve disorders subcategory
	G56.0 Carpal tunnel syndrome	E0192 Cranial and peripheral nerve disorders subcategory
	G58.9 Mononeuropathy, other	E0192 Cranial and peripheral nerve disorders subcategory
	G61.0 Guillain-Barre syndrome	E0192 Cranial and peripheral nerve disorders subcategory
	G62.9 Polyneuropathy (except Guillain-Barre)	E0192 Cranial and peripheral nerve disorders subcategory
	G64 Peripheral nervous system disorder, other	E0192 Cranial and peripheral nerve disorders subcategory
	G70.0 Myasthenia gravis	E0192 Cranial and peripheral nerve disorders subcategory
	G72.9 Myopathy, other	E0192 Cranial and peripheral nerve disorders subcategory
	G80.9 Cerebral palsy	E0192 Cranial and peripheral nerve disorders subcategory
	G81.9 Hemiplegia	E0195 Nervous system disorders, other subcategory
	G83.4 Cauda equina syndrome	E0195 Nervous system disorders, other subcategory
	G83.9 Paralysis, other (includes paraplegia, tetraplegia)	E0195 Nervous system disorders, other subcategory
	G91.9 Hydrocephalus, acquired	E0193 Degenerative and demyelinating nervous system disorders subcategory
	G93.2 Hypertension, benign intracranial (except hypertensive encephalopathy)	E0195 Nervous system disorders, other subcategory
	G93.9 Encephalopathy and other brain disorder	E0195 Nervous system disorders, other subcategory
	G95.9 Spinal cord disease (includes cord compression)	E0195 Nervous system disorders, other subcategory
	G98 Nervous system disorder, other	E0195 Nervous system disorders, other subcategory
	I67.4 Encephalopathy, hypertensive	E0195 Nervous system disorders, other subcategory
	R20.8 Anaesthesia of skin	E0196 Nervous system signs and symptoms subcategory
	R26.8 Abnormal gait or mobility	E0196 Nervous system signs and symptoms subcategory
	R29.89 Symptoms of musculoskeletal and nervous systems, other	E0196 Nervous system signs and symptoms subcategory
	R40.0 Drowsiness, altered loss of consciousness	E0194 Stupor and coma subcategory
	R40.2 Coma (except in diabetes)	E0194 Stupor and coma subcategory
	R41.3 Amnesia, post traumatic	E0196 Nervous system signs and symptoms subcategory
	R47.0 Dysphasia or aphasia	E0196 Nervous system signs and symptoms subcategory
	R47.8 Symptoms of speech (and voice) disturbance, other (dysarthria)	E0196 Nervous system signs and symptoms subcategory
E02 Eye		
E0290 Eye disorders	B00.5 Herpesviral simplex ocular disease	E0291 Acute and major eye conditions subcategory
	B30.9 Conjunctivitis, viral ^{INNDSS}	E0299 Eye disorders, other subcategory
	H00.0 Inflammation of eyelid, sty, abscess, furuncle (boil), carbuncle or cellulitis	E0299 Eye disorders, other subcategory
	H00.1 Chalazion	E0299 Eye disorders, other subcategory
	H01.9 Inflammation of eyelid, dermatitis, blepharitis, other	E0299 Eye disorders, other subcategory
	H02.9 Eyelid disorder, other	E0299 Eye disorders, other subcategory
	H04.9 Inflammation or disorder of lacrimal system of eye (tear duct)	E0299 Eye disorders, other subcategory
	H05.0 Inflammation, infection of orbital or periorbital tissue, acute	E0291 Acute and major eye conditions subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	H05.9 Orbital tissue disorder, other	E0299 Eye disorders, other subcategory
	H10.1 Conjunctivitis, acute atopic (allergic)	E0299 Eye disorders, other subcategory
	H10.9 Conjunctivitis, other	E0299 Eye disorders, other subcategory
	H11.0 Pterygium	E0299 Eye disorders, other subcategory
	H11.3 Conjunctival haemorrhage, nontraumatic	E0291 Acute and major eye conditions subcategory
	H11.9 Conjunctiva disorder, other	E0299 Eye disorders, other subcategory
	H16.0 Corneal ulcer	E0291 Acute and major eye conditions subcategory
	H16.9 Keratitis	E0299 Eye disorders, other subcategory
	H18.9 Corneal disorder (keratopathy), other	E0299 Eye disorders, other subcategory
	H20.9 Iridocyclitis	E0299 Eye disorders, other subcategory
	H21.9 Hyphaema and other disorders of iris and ciliary body	E0299 Eye disorders, other subcategory
	H26.9 Cataract	E0299 Eye disorders, other subcategory
	H27.9 Eye lens disorder, other	E0299 Eye disorders, other subcategory
	H33.5 Retinal detachment	E0291 Acute and major eye conditions subcategory
	H35.6 Retinal haemorrhage	E0291 Acute and major eye conditions subcategory
	H35.9 Retinal disorders (retinopathy, choroidopathy), other	E0299 Eye disorders, other subcategory
	H40.9 Glaucoma	E0299 Eye disorders, other subcategory
	H43.9 Vitreous body disorder	E0299 Eye disorders, other subcategory
	H44.9 Eye globe disorder	E0299 Eye disorders, other subcategory
	H46 Optic neuritis	E0299 Eye disorders, other subcategory
	H47.7 Optic nerve and visual pathway disorders (includes papilloedema), other	E0299 Eye disorders, other subcategory
	H53.1 Visual disturbance, subjective	E0299 Eye disorders, other subcategory
	H53.2 Diplopia	E0299 Eye disorders, other subcategory
	H53.9 Visual disturbance, other	E0299 Eye disorders, other subcategory
	H54.0 Blindness, binocular	E0299 Eye disorders, other subcategory
	H54.4 Blindness, monocular	E0299 Eye disorders, other subcategory
	H54.9 Visual loss, other	E0299 Eye disorders, other subcategory
	H57.1 Pain in eye (ocular pain)	E0299 Eye disorders, other subcategory
	H57.9 Eye or adnexa disorder, other	E0299 Eye disorders, other subcategory
	T15.0 Foreign body in cornea	E0299 Eye disorders, other subcategory
	T15.1 Foreign body in conjunctival sac	E0299 Eye disorders, other subcategory
	T15.9 Foreign body in external eye, other	E0299 Eye disorders, other subcategory
E03 Ear, nose, mouth and throat		
E0310 Ear, nose, mouth and throat disorders	H60.3 Otitis externa, infective	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H60.9 Otitis externa, non-infective	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H61.2 Impacted cerumen, external ear	E0319 Ear, nose, mouth and throat disorders, other subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	H61.9 Ear disease, external ear, other	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H65.9 Otitis media, nonsuppurative	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H66.4 Otitis media, suppurative	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H66.9 Otitis media, other	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H69.9 Eustachian tube disorder	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H70.9 Mastoiditis	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H72.9 Perforation of tympanic membrane	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H74.9 Ear disease, middle ear and mastoid diseases, other	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H81.0 Meniere's disease	E0311 Disequilibrium subcategory
	H81.1 Vertigo, benign paroxysmal	E0311 Disequilibrium subcategory
	H81.2 Vestibular neuronitis	E0311 Disequilibrium subcategory
	H81.9 Vestibular function disorder	E0311 Disequilibrium subcategory
	H83.0 Labyrinthitis	E0311 Disequilibrium subcategory
	H83.9 Ear disease, inner ear, other	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H91.9 Hearing loss (deafness)	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H92.0 Otagia (earache)	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H92.1 Otorrhoea (discharge from ear)	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H93.1 Tinnitus	E0319 Ear, nose, mouth and throat disorders, other subcategory
	H93.9 Ear disorders, unspecified as external, middle or inner ear, other	E0319 Ear, nose, mouth and throat disorders, other subcategory
	J35.1 Tonsillar hypertrophy	E0319 Ear, nose, mouth and throat disorders, other subcategory
	K11.2 Sialoadenitis	E0319 Ear, nose, mouth and throat disorders, other subcategory
	K11.5 Sialolithiasis (calculus of salivary gland or duct)	E0319 Ear, nose, mouth and throat disorders, other subcategory
	K11.9 Salivary gland disease, other	E0319 Ear, nose, mouth and throat disorders, other subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	R04.0 Epistaxis	E0312 Epistaxis subcategory
	T16 Foreign body in ear	E0319 Ear, nose, mouth and throat disorders, other subcategory
	T17.0 Foreign body in nasal sinus	E0319 Ear, nose, mouth and throat disorders, other subcategory
	T17.1 Foreign body in nostril	E0319 Ear, nose, mouth and throat disorders, other subcategory
E0320 Disorders of the teeth and supporting structures	B00.2 Herpesviral simplex gingivostomatitis or pharyngotonsillitis	E0329 Disorders of the teeth and supporting structures subcategory
	B37.0 Candidal stomatitis (oral thrush)	E0329 Disorders of the teeth and supporting structures subcategory
	K00.7 Teething	E0329 Disorders of the teeth and supporting structures subcategory
	K02.9 Dental caries	E0329 Disorders of the teeth and supporting structures subcategory
	K04.4 Periodontitis	E0329 Disorders of the teeth and supporting structures subcategory
	K04.7 Abscess, dental, apical or periapical tissue	E0329 Disorders of the teeth and supporting structures subcategory
	K05.0 Gingivitis, acute	E0329 Disorders of the teeth and supporting structures subcategory
	K05.1 Gingivitis, chronic	E0329 Disorders of the teeth and supporting structures subcategory
	K06.9 Gingiva, periodontal or alveolar ridge disorder, other	E0329 Disorders of the teeth and supporting structures subcategory
	K07.6 Temporomandibular joint disorder (except dislocation or strain)	E0329 Disorders of the teeth and supporting structures subcategory
	K08.9 Teeth and supporting structures disorders, other	E0329 Disorders of the teeth and supporting structures subcategory
	K10.9 Jaw disease (mandible or maxilla)	E0329 Disorders of the teeth and supporting structures subcategory
	K12.0 Stomatitis, aphthae, recurrent	E0329 Disorders of the teeth and supporting structures subcategory
	K12.1 Stomatitis, other	E0329 Disorders of the teeth and supporting structures subcategory
	K12.2 Abscess or cellulitis of mouth	E0329 Disorders of the teeth and supporting structures subcategory
	K13.7 Lesion of oral mucosa, other	E0329 Disorders of the teeth and supporting structures subcategory
	K14.9 Tongue disease	E0329 Disorders of the teeth and supporting structures subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term		ECDG subcategory code and label
	S02.5	Fracture of tooth	E0329 Disorders of the teeth and supporting structures subcategory
E04 Respiratory			
E0410 Major respiratory conditions	I26.9	Embolism, pulmonary (PE)	E0413 Pulmonary embolism subcategory
	J80	Respiratory distress syndrome, adult	E0411 Respiratory arrest, distress and failure subcategory
	J81	Oedema, lung (pulmonary oedema)	E0412 Pulmonary oedema subcategory
	J96.99	Respiratory failure, acute or chronic	E0411 Respiratory arrest, distress and failure subcategory
	P28.40	Apnoea in newborn	E0411 Respiratory arrest, distress and failure subcategory
	R09.2	Respiratory arrest	E0411 Respiratory arrest, distress and failure subcategory
E0420 Chronic obstructive airways disease	J42	Bronchitis, chronic	E0421 Chronic obstructive airways disease subcategory
	J43.9	Emphysema	E0421 Chronic obstructive airways disease subcategory
	J44.0	Chronic obstructive pulmonary disease (COPD), with acute lower respiratory infection	E0421 Chronic obstructive airways disease subcategory
	J44.1	Chronic obstructive pulmonary disease (COPD), with acute exacerbation	E0421 Chronic obstructive airways disease subcategory
	J44.9	Chronic obstructive pulmonary disease (COPD), other	E0421 Chronic obstructive airways disease subcategory
E0430 Asthma	J45.9	Asthma	E0431 Asthma subcategory
	J46	Asthma, severe, acute (status asthmaticus)	E0431 Asthma subcategory
	R06.2	Wheezing	E0431 Asthma subcategory
E0440 Upper respiratory tract infections	A37.9	Pertussis ^{NNDSS} (whooping cough)	E0441 Upper respiratory tract infections subcategory
	J00	Nasopharyngitis (common cold), acute	E0441 Upper respiratory tract infections subcategory
	J01.9	Sinusitis, acute	E0441 Upper respiratory tract infections subcategory
	J02.9	Pharyngitis, acute	E0441 Upper respiratory tract infections subcategory
	J03.9	Tonsillitis, acute	E0441 Upper respiratory tract infections subcategory
	J04.0	Laryngitis, acute	E0441 Upper respiratory tract infections subcategory
	J04.1	Tracheitis, acute	E0441 Upper respiratory tract infections subcategory
	J05.0	Croup (acute obstructive laryngitis)	E0441 Upper respiratory tract infections subcategory
	J05.1	Epiglottitis, acute	E0441 Upper respiratory tract infections subcategory
	J06.9	Upper respiratory tract infection (URTI), acute	E0441 Upper respiratory tract infections subcategory
	J09	Influenza A/H5N1 (avian influenza) ^{NNDSS}	E0441 Upper respiratory tract infections subcategory
	J10.1	Influenza, virus identified ^{NNDSS} (except influenza A/H5N1 (avian influenza))	E0441 Upper respiratory tract infections subcategory
	J11.1	Influenza, virus not identified	E0441 Upper respiratory tract infections subcategory
	J30.4	Rhinitis, allergic	E0441 Upper respiratory tract infections subcategory
	J32.9	Sinusitis, chronic	E0441 Upper respiratory tract infections subcategory
	J34.8	Sinus disorder, other	E0441 Upper respiratory tract infections subcategory
	J35.0	Tonsillitis, chronic	E0441 Upper respiratory tract infections subcategory
	J36	Abscess, tonsillar (includes peritonsillar)	E0441 Upper respiratory tract infections subcategory
	J39.9	Upper respiratory tract disease, other	E0441 Upper respiratory tract infections subcategory
E0450 Lower respiratory tract infections	J12.9	Pneumonia, viral	E0451 Pneumonia subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	J15.9 Pneumonia, bacterial	E0451 Pneumonia subcategory
	J18.0 Bronchopneumonia, organism not identified	E0451 Pneumonia subcategory
	J18.1 Pneumonia, lobar, organism not identified	E0451 Pneumonia subcategory
	J18.9 Pneumonia, organism not identified	E0451 Pneumonia subcategory
	J20.9 Bronchitis, acute	E0452 Acute bronchitis and bronchiolitis subcategory
	J21.9 Bronchiolitis, acute	E0452 Acute bronchitis and bronchiolitis subcategory
	J22 Lower respiratory tract infection (LRTI), acute	E0459 Lower respiratory tract infections, other subcategory
	J40 Bronchitis, not identified as acute or chronic	E0459 Lower respiratory tract infections, other subcategory
	J47 Bronchiectasis (except bronchiectasis in cystic fibrosis)	E0459 Lower respiratory tract infections, other subcategory
E0490 Respiratory disorders, other	A16.9 Respiratory tuberculosis ^{NNDSS}	E0492 Respiratory disorders, other subcategory
	A48.1 Legionellosis ^{NNDSS} (Legionnaires' disease, Pontiac fever)	E0492 Respiratory disorders, other subcategory
	E84 Cystic fibrosis	E0492 Respiratory disorders, other subcategory
	G47.30 Sleep apnoea	E0492 Respiratory disorders, other subcategory
	J69.0 Pneumonia, aspiration due to food and vomit	E0492 Respiratory disorders, other subcategory
	J70.9 Respiratory conditions due to external agents, other	E0492 Respiratory disorders, other subcategory
	J84.9 Respiratory disease, interstitial, other	E0492 Respiratory disorders, other subcategory
	J90 Pleural effusion	E0491 Pleural conditions subcategory
	J93.9 Pneumothorax, spontaneous, nontraumatic	E0491 Pleural conditions subcategory
	J95.0 Postprocedural malfunction of tracheostomy (J95.09)	E0492 Respiratory disorders, other subcategory
	J98.4 Lung disorder, other	E0492 Respiratory disorders, other subcategory
	J98.9 Respiratory disorder, upper or lower tract, other	E0492 Respiratory disorders, other subcategory
	R04.2 Haemoptysis	E0493 Respiratory signs and symptoms subcategory
	R05 Cough	E0493 Respiratory signs and symptoms subcategory
	R06.0 Dyspnoea (shortness of breath)	E0493 Respiratory signs and symptoms subcategory
	R06.1 Stridor (harsh, high-pitched breathing sound)	E0493 Respiratory signs and symptoms subcategory
	R06.4 Hyperventilation	E0493 Respiratory signs and symptoms subcategory
	R06.8 Breathing abnormalities, other	E0493 Respiratory signs and symptoms subcategory
	R07.0 Pain in throat	E0493 Respiratory signs and symptoms subcategory
	R09.1 Pleurisy (except with effusion)	E0493 Respiratory signs and symptoms subcategory
	R09.89 Symptoms of circulatory and respiratory systems	E0493 Respiratory signs and symptoms subcategory
	T17.2 Foreign body in pharynx	E0492 Respiratory disorders, other subcategory
	T17.9 Foreign body in respiratory tract, other	E0492 Respiratory disorders, other subcategory
E05 Circulatory		
E0510 Acute coronary syndromes	I20.0 Angina pectoris, unstable	E0512 Unstable angina subcategory
	I20.9 Angina pectoris, stable or unspecified	E0513 Coronary atherosclerosis subcategory
	I21.3 Myocardial infarction, transmural, acute (STEMI)	E0511 Acute myocardial infarction subcategory
	I21.4 Myocardial infarction, subendocardial, acute (NSTEMI)	E0511 Acute myocardial infarction subcategory
	I21.9 Myocardial infarction, acute, other	E0511 Acute myocardial infarction subcategory
	I24.9 Ischaemic heart disease, acute	E0512 Unstable angina subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label		
E0520 Arrhythmia and cardiac arrest	I25.9	Ischaemic heart disease, chronic (atherosclerotic)	E0513 Coronary atherosclerosis subcategory	
	I44.2	Atrioventricular block, complete	E0521 Arrhythmia and cardiac arrest subcategory	
	I45.9	Conduction disorder (except complete atrioventricular block)	E0521 Arrhythmia and cardiac arrest subcategory	
	I46.9	Cardiac arrest	E0521 Arrhythmia and cardiac arrest subcategory	
	I47.1	Tachycardia, supraventricular	E0521 Arrhythmia and cardiac arrest subcategory	
	I47.2	Tachycardia, ventricular	E0521 Arrhythmia and cardiac arrest subcategory	
	I47.9	Tachycardia, paroxysmal other	E0521 Arrhythmia and cardiac arrest subcategory	
	I48.9	Atrial fibrillation or atrial flutter	E0521 Arrhythmia and cardiac arrest subcategory	
	I49.0	Ventricular fibrillation or flutter	E0521 Arrhythmia and cardiac arrest subcategory	
	I49.5	Sick sinus syndrome	E0521 Arrhythmia and cardiac arrest subcategory	
	I49.9	Cardiac arrhythmia, other	E0521 Arrhythmia and cardiac arrest subcategory	
	R00.0	Tachycardia	E0521 Arrhythmia and cardiac arrest subcategory	
	R00.1	Bradycardia	E0521 Arrhythmia and cardiac arrest subcategory	
	E0530 Heart failure and shock	I50.0	Congestive cardiac failure (CCF)	E0531 Heart failure and shock subcategory
		I50.1	Left ventricular failure (LVF)	E0531 Heart failure and shock subcategory
I50.9		Heart failure, other	E0531 Heart failure and shock subcategory	
R57.1		Shock, hypovolaemic	E0531 Heart failure and shock subcategory	
E0540 Chest pain	R07.1	Pain in chest on breathing	E0541 Chest pain subcategory	
	R07.4	Pain in chest, other	E0541 Chest pain subcategory	
E0590 Circulatory disorders, other	I09.9	Rheumatic heart disease	E0599 Circulatory disorders, other subcategory	
	I10	Hypertension, essential, primary (high blood pressure)	E0594 Hypertension subcategory	
	I13.9	Hypertensive heart or kidney disease	E0594 Hypertension subcategory	
	I15.9	Hypertension, secondary	E0594 Hypertension subcategory	
	I28.9	Pulmonary vessel disease, other	E0599 Circulatory disorders, other subcategory	
	I30.9	Pericarditis, acute	E0599 Circulatory disorders, other subcategory	
	I31.3	Pericardial effusion, noninflammatory	E0599 Circulatory disorders, other subcategory	
	I31.9	Pericardial disease, other	E0599 Circulatory disorders, other subcategory	
	I33.9	Endocarditis, acute (except valve disorders)	E0599 Circulatory disorders, other subcategory	
	I38	Endocarditis, valve insufficiency, or stenosis	E0599 Circulatory disorders, other subcategory	
	I40.9	Myocarditis, acute	E0599 Circulatory disorders, other subcategory	
	I42.9	Cardiomyopathy	E0599 Circulatory disorders, other subcategory	
	I51.9	Heart disease, other	E0595 Heart disease, other subcategory	
	I71.1	Aneurysm, dissecting, thoracic aorta, rupture	E0599 Circulatory disorders, other subcategory	
	I71.2	Aneurysm, dissecting, thoracic aorta, without rupture	E0599 Circulatory disorders, other subcategory	
I71.3	Aneurysm, dissecting, abdominal aorta, rupture	E0599 Circulatory disorders, other subcategory		
I71.4	Aneurysm, dissecting, abdominal aorta, without rupture	E0599 Circulatory disorders, other subcategory		
I71.9	Aneurysm, dissecting, aorta, site not specified, with or without rupture	E0599 Circulatory disorders, other subcategory		

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	172.9 Aneurysm, dissecting, arteries (except aorta and cerebral), with or without rupture	E0599 Circulatory disorders, other subcategory
	173.9 Peripheral vascular disease (except embolism and thrombosis)	E0599 Circulatory disorders, other subcategory
	174.9 Embolism or thrombosis of artery, other	E0599 Circulatory disorders, other subcategory
	177.9 Artery disorders, other	E0599 Circulatory disorders, other subcategory
	180.0 Phlebitis or thrombophlebitism of superficial vessels, lower extremities	E0591 Venous thrombosis subcategory
	180.2 Phlebitis or thrombophlebitis of deep vessels, lower extremities (deep venous thrombosis) (DVT)	E0591 Venous thrombosis subcategory
	180.9 Phlebitis or thrombophlebitis, other	E0591 Venous thrombosis subcategory
	182.9 Embolism or thrombosis of vein (except veins of lower extremity)	E0591 Venous thrombosis subcategory
	183.9 Varicose veins of lower extremities	E0599 Circulatory disorders, other subcategory
	187.9 Vein disorder, other	E0599 Circulatory disorders, other subcategory
	195.1 Hypotension, postural	E0593 Syncope and collapse subcategory
	(195.10)	
	195.9 Hypotension, other	E0599 Circulatory disorders, other subcategory
	I99 Circulatory system disorder, other	E0599 Circulatory disorders, other subcategory
	Q24.9 Malformation, deformation of heart, congenital	E0599 Circulatory disorders, other subcategory
	R00.2 Palpitations	E0592 Palpitations subcategory
	R02 Gangrene	E0599 Circulatory disorders, other subcategory
	R55 Syncope or collapse (except heat syncope)	E0593 Syncope and collapse subcategory
E06 Digestive		
E0610 Gastrointestinal haemorrhage	K22.6 Mallory-Weiss tear (gastro-oesophageal laceration-haemorrhage syndrome)	E0611 Gastrointestinal haemorrhage subcategory
	K92.0 Haematemesis	E0611 Gastrointestinal haemorrhage subcategory
	K92.1 Melaena	E0611 Gastrointestinal haemorrhage subcategory
	K92.2 Haemorrhage, gastrointestinal (includes per rectal bleeding)	E0611 Gastrointestinal haemorrhage subcategory
E0620 Gastrointestinal obstruction	K56.1 Intussusception of intestine (except appendix)	E0621 Gastrointestinal obstruction subcategory
	K56.2 Volvulus of intestine	E0621 Gastrointestinal obstruction subcategory
	K56.6 Obstruction of intestine (bowel, ileus)	E0621 Gastrointestinal obstruction subcategory
E0630 Peritonitis and gastrointestinal perforation	K27.4 Peptic ulcer with haemorrhage or perforation, acute or chronic	E0631 Peritonitis and gastrointestinal perforation subcategory
	K27.9 Peptic ulcer without haemorrhage or perforation, acute or chronic	E0631 Peritonitis and gastrointestinal perforation subcategory
	K35.8 Appendicitis, acute	E0631 Peritonitis and gastrointestinal perforation subcategory
	K37 Appendicitis, nonacute or not specified	E0631 Peritonitis and gastrointestinal perforation subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	K57.80 Diverticulosis, with perforation or abscess	E0631 Peritonitis and gastrointestinal perforation subcategory
	K57.82 Diverticulitis, with perforation or abscess	E0631 Peritonitis and gastrointestinal perforation subcategory
	K65.9 Peritonitis	E0631 Peritonitis and gastrointestinal perforation subcategory
E0640 Oesophagitis and gastroenteritis	A00.9 Cholera ^{NNDSS}	E0641 Oesophagitis and gastroenteritis subcategory
	A03.9 Shigellosis ^{NNDSS}	E0641 Oesophagitis and gastroenteritis subcategory
	A04.5 Campylobacteriosis ^{NNDSS} (Campylobacter enteritis)	E0641 Oesophagitis and gastroenteritis subcategory
	A05.9 Bacterial food-borne infection, intoxication	E0641 Oesophagitis and gastroenteritis subcategory
	A07.1 Giardiasis (lambliasis)	E0641 Oesophagitis and gastroenteritis subcategory
	A07.2 Cryptosporidiosis ^{NNDSS}	E0641 Oesophagitis and gastroenteritis subcategory
	A08.1 Noroviral enteritis	E0641 Oesophagitis and gastroenteritis subcategory
	A08.4 Intestinal infection, viral, other	E0641 Oesophagitis and gastroenteritis subcategory
	A08.5 Intestinal infection, non viral	E0641 Oesophagitis and gastroenteritis subcategory
	A09.9 Colitis, gastroenteritis, diarrhoea, not known if bacterial, protozoal or viral	E0641 Oesophagitis and gastroenteritis subcategory
	K20 Oesophagitis, with or without gastro-oesophageal reflux disease (GORD)	E0641 Oesophagitis and gastroenteritis subcategory
E0650 Abdominal pain	I88.0 Lymphadenitis, mesenteric	E0651 Abdominal pain with known underlying cause subcategory
	K21.9 Gastro-oesophageal reflux disease (GORD), without oesophagitis	E0651 Abdominal pain with known underlying cause subcategory
	K29.1 Gastritis, acute	E0651 Abdominal pain with known underlying cause subcategory
	K29.20 Gastritis, alcoholic	E0651 Abdominal pain with known underlying cause subcategory
	K29.70 Gastritis, other	E0651 Abdominal pain with known underlying cause subcategory
	K30 Dyspepsia, functional	E0651 Abdominal pain with known underlying cause subcategory
	K38.9 Appendix disease, other	E0651 Abdominal pain with known underlying cause subcategory
	K50.9 Crohn's disease	E0651 Abdominal pain with known underlying cause subcategory
	K58.9 Irritable bowel syndrome (IBS)	E0651 Abdominal pain with known underlying cause subcategory
	K59.0 Constipation	E0652 Abdominal pain underlying cause unknown subcategory
	R10.0 Pain in abdomen, acute (acute abdomen)	E0652 Abdominal pain underlying cause unknown subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	R10.1 Pain in abdomen, upper	E0652 Abdominal pain underlying cause unknown subcategory
	R10.3 Pain in abdomen, lower (includes groin)	E0652 Abdominal pain underlying cause unknown subcategory
	R10.4 Pain in abdomen, other (includes colic)	E0652 Abdominal pain underlying cause unknown subcategory
E0690 Digestive system disorders, other	K22.2 Obstruction (stricture) of oesophagus	E0699 Digestive system disorders, other subcategory
	K22.4 Dyskinesia of oesophagus	E0699 Digestive system disorders, other subcategory
	K22.9 Oesophageal disease, other	E0699 Digestive system disorders, other subcategory
	K31.9 Stomach and duodenum disease, other	E0699 Digestive system disorders, other subcategory
	K40.90 Hernia, inguinal	E0691 Hernia subcategory
	K41.9 Hernia, femoral	E0691 Hernia subcategory
	K42.9 Hernia, umbilical	E0691 Hernia subcategory
	K43.9 Hernia, ventral (incisional)	E0691 Hernia subcategory
	K44.9 Hernia, diaphragmatic	E0691 Hernia subcategory
	K46.9 Hernia, abdominal, other	E0691 Hernia subcategory
	K51.9 Colitis, ulcerative	E0699 Digestive system disorders, other subcategory
	K52.9 Colitis, gastroenteritis, noninfectious	E0699 Digestive system disorders, other subcategory
	K55.9 Vascular disorder of intestine	E0699 Digestive system disorders, other subcategory
	K57.90 Diverticulosis, without perforation or abscess	E0699 Digestive system disorders, other subcategory
	K57.92 Diverticulitis, without perforation or abscess	E0699 Digestive system disorders, other subcategory
	K60.2 Fissure, anal	E0699 Digestive system disorders, other subcategory
	K61.0 Abscess or cellulitis, anal or anorectal	E0699 Digestive system disorders, other subcategory
	K62.3 Prolapse, rectum	E0699 Digestive system disorders, other subcategory
	K62.5 Haemorrhage, anus or rectum (except per-rectal bleeding)	E0699 Digestive system disorders, other subcategory
	K62.9 Anal and rectal disease, other	E0699 Digestive system disorders, other subcategory
	K63.1 Perforation of intestine, nontraumatic	E0699 Digestive system disorders, other subcategory
	K63.9 Intestinal disease, other	E0699 Digestive system disorders, other subcategory
	K64.9 Haemorrhoids	E0699 Digestive system disorders, other subcategory
	K91.4 Colostomy or enterostomy malfunction (K91.49)	E0699 Digestive system disorders, other subcategory
	K91.9 Postprocedural disorder of digestive system	E0699 Digestive system disorders, other subcategory
	K92.9 Digestive system disease, other	E0699 Digestive system disorders, other subcategory
	Q40.0 Pyloric stenosis, hypertrophic, infantile (congenital)	E0699 Digestive system disorders, other subcategory
	R11 Nausea and vomiting (except in pregnancy or postprocedural)	E0699 Digestive system disorders, other subcategory
	R13 Dysphagia	E0699 Digestive system disorders, other subcategory
	R19.0 Lump, mass or swelling in intra-abdominal or pelvic region	E0699 Digestive system disorders, other subcategory
	R19.8 Symptoms of digestive system or abdomen, other (R19.89)	E0699 Digestive system disorders, other subcategory
	T18.1 Foreign body in oesophagus	E0699 Digestive system disorders, other subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	T18.2 Foreign body in stomach	E0699 Digestive system disorders, other subcategory
	T18.9 Foreign body in alimentary tract, other	E0699 Digestive system disorders, other subcategory
E07 Liver, gall bladder, bile duct and pancreas		
E0710 Liver disorders	B15.9 Hepatitis A, acute ^{NNDSS}	E0719 Liver disorders, other subcategory
	B16.1 Hepatitis D, acute ^{NNDSS} (acute hepatitis B with delta agent)	E0719 Liver disorders, other subcategory
	B16.9 Hepatitis B, acute ^{NNDSS} (without delta agent)	E0719 Liver disorders, other subcategory
	B17.1 Hepatitis C, acute ^{NNDSS}	E0719 Liver disorders, other subcategory
	B17.2 Hepatitis E, acute ^{NNDSS}	E0719 Liver disorders, other subcategory
	B19.9 Hepatitis, viral ^{NNDSS} (unspecified as to A, B, C, D or E)	E0719 Liver disorders, other subcategory
	I85.0 Varices, oesophageal	E0719 Liver disorders, other subcategory
	K70.9 Alcoholic liver disease	E0719 Liver disorders, other subcategory
	K72.0 Hepatic failure, acute	E0719 Liver disorders, other subcategory
	K72.9 Hepatic failure, other	E0719 Liver disorders, other subcategory
	K75.9 Hepatic disease, inflammatory (except viral hepatitis)	E0719 Liver disorders, other subcategory
	K76.9 Hepatic disease, other	E0719 Liver disorders, other subcategory
	P59.9 Jaundice in newborn	E0711 Jaundice subcategory
	R17 Jaundice (except in newborn)	E0711 Jaundice subcategory
E0720 Gall bladder, bile duct and pancreas disorders	K80.10 Cholelithiasis with cholecystitis	E0721 Gall bladder, bile duct and pancreas disorders subcategory
	K80.20 Cholelithiasis without cholecystitis	E0721 Gall bladder, bile duct and pancreas disorders subcategory
	K80.50 Choledocholithiasis (biliary colic)	E0721 Gall bladder, bile duct and pancreas disorders subcategory
	K80.80 Cholelithiasis, other	E0721 Gall bladder, bile duct and pancreas disorders subcategory
	K81.0 Cholecystitis, acute, without calculus	E0721 Gall bladder, bile duct and pancreas disorders subcategory
	K81.9 Cholecystitis, other	E0721 Gall bladder, bile duct and pancreas disorders subcategory
	K82.9 Gallbladder disease, other	E0721 Gall bladder, bile duct and pancreas disorders subcategory
	K83.0 Cholangitis, without calculus	E0721 Gall bladder, bile duct and pancreas disorders subcategory
	K83.9 Biliary tract disease, other	E0721 Gall bladder, bile duct and pancreas disorders subcategory
	K85.9 Pancreatitis, acute	E0721 Gall bladder, bile duct and pancreas disorders subcategory
	K86.1 Pancreatitis, chronic	E0721 Gall bladder, bile duct and pancreas disorders subcategory
E08 Musculoskeletal		

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
E0890 Musculoskeletal and musculotendinous disorders	I00 Rheumatic fever, acute, without heart involvement	E0899 Musculoskeletal disorders, other subcategory
	M00.99 Arthritis, infective (pyogenic)	E0893 Septic arthritis subcategory
	M06.99 Arthritis, rheumatoid	E0893 Septic arthritis subcategory
	M10.99 Gout	E0894 Bone diseases and arthropathies subcategory
	M13.99 Arthritis, other (except infective or rheumatoid)	E0894 Bone diseases and arthropathies subcategory
	M19.99 Osteoarthritis (arthrosis, degenerative joint disease)	E0894 Bone diseases and arthropathies subcategory
	M20.0 Malformation, deformation of finger (mallet finger), acquired	E0899 Musculoskeletal disorders, other subcategory
	M22.0 Dislocation or subluxation of patella, recurrent, nontraumatic	E0899 Musculoskeletal disorders, other subcategory
	M23.99 Derangement of ligament or meniscus of knee	E0899 Musculoskeletal disorders, other subcategory
	M24.85 Derangement of joint of pelvic region and thigh	E0899 Musculoskeletal disorders, other subcategory
	M25.09 Haemarthrosis of joint	E0894 Bone diseases and arthropathies subcategory
	M25.49 Effusion of joint	E0899 Musculoskeletal disorders, other subcategory
	M25.51 Pain in joint, shoulder region	E0899 Musculoskeletal disorders, other subcategory
	M25.52 Pain in joint, upper arm	E0899 Musculoskeletal disorders, other subcategory
	M25.53 Pain in joint, forearm	E0899 Musculoskeletal disorders, other subcategory
	M25.54 Pain in joint, hand	E0899 Musculoskeletal disorders, other subcategory
	M25.55 Pain in joint, pelvis and thigh	E0899 Musculoskeletal disorders, other subcategory
	M25.56 Pain in joint, lower leg	E0899 Musculoskeletal disorders, other subcategory
	M25.57 Pain in joint, ankle and foot	E0899 Musculoskeletal disorders, other subcategory
	M25.59 Pain in joint, other sites	E0899 Musculoskeletal disorders, other subcategory
	M25.99 Joint disorder, other	E0899 Musculoskeletal disorders, other subcategory
	M35.9 Systemic (diffuse) connective tissue and autoimmune disorder	E0899 Musculoskeletal disorders, other subcategory
	M43.6 Torticollis	E0899 Musculoskeletal disorders, other subcategory
	M48.99 Spondylopathy	E0891 Spinal disorders subcategory
	M51.9 Intervertebral disc disorder, degenerative, with or without radiculopathy or sciatica	E0891 Spinal disorders subcategory
	M53.3 Sacrococcygeal disorders	E0891 Spinal disorders subcategory
	M53.99 Spinal column disorders (dorsopathies)	E0891 Spinal disorders subcategory
	M54.19 Radiculopathy (except in intervertebral disc disorder)	E0891 Spinal disorders subcategory
	M54.2 Pain in neck region, cervicalgia (except in intervertebral disc disorder)	E0895 Musculotendinous disorders subcategory
	M54.3 Sciatica (except in radiculopathy or intervertebral disc disorder)	E0895 Musculotendinous disorders subcategory
	M54.5 Pain in back, lumbar region (except in intervertebral disc disorder)	E0895 Musculotendinous disorders subcategory
	M54.6 Pain in back, thoracic region (except in intervertebral disc disorder)	E0895 Musculotendinous disorders subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	M54.99 Pain in back, generalised (dorsalgia)	E0895 Musculotendinous disorders subcategory
	M62.99 Muscle disorder (except myalgia, myopathy or muscular dystrophy)	E0895 Musculotendinous disorders subcategory
	M65.99 Tenosynovitis or synovitis	E0895 Musculotendinous disorders subcategory
	M66.59 Tendon rupture, spontaneous, nontraumatic	E0895 Musculotendinous disorders subcategory
	M67.49 Ganglion	E0895 Musculotendinous disorders subcategory
	M70.2 Bursitis, olecranon	E0895 Musculotendinous disorders subcategory
	M70.4 Bursitis, prepatellar	E0895 Musculotendinous disorders subcategory
	M71.2 Cyst, Bakers (synovial cyst of popliteal space)	E0895 Musculotendinous disorders subcategory
	M71.99 Bursitis, other	E0895 Musculotendinous disorders subcategory
	M75.0 Capsulitis, adhesive (frozen shoulder)	E0895 Musculotendinous disorders subcategory
	M75.1 Rotator cuff syndrome (spontaneous supraspinatus tear or rupture)	E0895 Musculotendinous disorders subcategory
	M75.9 Lesion of shoulder, other	E0895 Musculotendinous disorders subcategory
	M76.6 Tendinitis, Achilles	E0895 Musculotendinous disorders subcategory
	M77.9 Enthesopathy, other	E0895 Musculotendinous disorders subcategory
	M79.19 Myalgia	E0895 Musculotendinous disorders subcategory
	M79.29 Neuralgia or neuritis (except cranial nerve pain)	E0895 Musculotendinous disorders subcategory
	M79.69 Pain in limb, any site (except joint)	E0895 Musculotendinous disorders subcategory
	M79.99 Soft tissue disorder of musculoskeletal system	E0895 Musculotendinous disorders subcategory
	M86.99 Osteomyelitis (includes osteitis, periostitis, infective)	E0892 Osteomyelitis subcategory
	M89.99 Bone disorder, other	E0895 Musculotendinous disorders subcategory
	M94.0 Costochondritis (Tietze syndrome)	E0895 Musculotendinous disorders subcategory
	M94.99 Cartilage disorder, other	E0895 Musculotendinous disorders subcategory
	M95.9 Malformation, deformation of musculoskeletal and connective tissue, other (acquired)	E0895 Musculotendinous disorders subcategory
	R25.2 Cramp or spasm	E0899 Musculoskeletal disorders, other subcategory
E09 Skin, subcutaneous and breast tissue		
E0910 Skin and subcutaneous tissue infections	A46 Erysipelas	E0911 Skin and subcutaneous tissue infections subcategory
	A63.00 Human papillomavirus (HPV) infection of genitalia (anogenital warts)	E0911 Skin and subcutaneous tissue infections subcategory
	B00.0 Eczema herpeticum (Kaposi's varicelliform eruption)	E0911 Skin and subcutaneous tissue infections subcategory
	B00.9 Herpesviral simplex infection (except sexually transmitted HSV-2)	E0911 Skin and subcutaneous tissue infections subcategory
	B02.9 Herpes zoster (shingles) ^{NNDSS}	E0911 Skin and subcutaneous tissue infections subcategory
	B07 Viral warts (except anogenital)	E0911 Skin and subcutaneous tissue infections subcategory
	B08.1 Molluscum contagiosum	E0911 Skin and subcutaneous tissue infections subcategory
	B35.3 Tinea pedis	E0911 Skin and subcutaneous tissue infections subcategory
	H60.1 Cellulitis, external ear	E0911 Skin and subcutaneous tissue infections subcategory
	L01.0 Impetigo	E0911 Skin and subcutaneous tissue infections subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	L02.0 Abscess, furuncle or carbuncle of face (boil)	E0911 Skin and subcutaneous tissue infections subcategory
	L02.1 Abscess, furuncle or carbuncle of neck (boil)	E0911 Skin and subcutaneous tissue infections subcategory
	L02.2 Abscess, furuncle or carbuncle of trunk (boil)	E0911 Skin and subcutaneous tissue infections subcategory
	L02.3 Abscess, furuncle or carbuncle of buttock (boil)	E0911 Skin and subcutaneous tissue infections subcategory
	L02.40 Abscess, furuncle or carbuncle of upper or lower limb (boil)	E0911 Skin and subcutaneous tissue infections subcategory
	L02.9 Abscess, furuncle or carbuncle of other site (boil)	E0911 Skin and subcutaneous tissue infections subcategory
	L03.01 Cellulitis of finger	E0911 Skin and subcutaneous tissue infections subcategory
	L03.02 Cellulitis of toe	E0911 Skin and subcutaneous tissue infections subcategory
	L03.12 Cellulitis of upper limb	E0911 Skin and subcutaneous tissue infections subcategory
	L03.13 Cellulitis of lower limb	E0911 Skin and subcutaneous tissue infections subcategory
	L03.2 Cellulitis of face	E0911 Skin and subcutaneous tissue infections subcategory
	L03.3 Cellulitis of trunk	E0911 Skin and subcutaneous tissue infections subcategory
	L03.9 Cellulitis of other site	E0911 Skin and subcutaneous tissue infections subcategory
	L05.0 Cyst, pilonidal with abscess	E0911 Skin and subcutaneous tissue infections subcategory
	L05.9 Cyst, pilonidal without abscess	E0911 Skin and subcutaneous tissue infections subcategory
	L08.9 Infection of skin and subcutaneous tissue, local (except viral)	E0911 Skin and subcutaneous tissue infections subcategory
E0990 Skin disorders, other	B35.9 Dermatophytosis, other	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	B37.9 Candidiasis, other	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	B86 Scabies	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L20.9 Dermatitis, atopic	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L21.9 Dermatitis, seborrhoeic	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L22 Dermatitis, due to nappy (nappy rash)	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L23.9 Dermatitis, allergic contact (except eyelid and external ear)	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L27.0 Dermatitis or rash due to drugs or medicaments	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L29.9 Pruritus	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L30.9 Dermatitis, other	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L40.9 Psoriasis	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L44.9 Papulosquamous disorders (pityriasis rosea)	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label	
	L50.0	Urticaria, allergic	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L50.1	Urticaria, idiopathic	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L50.9	Urticaria, other	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L51.9	Erythema, multiforme	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L53.9	Erythema, other (except burn or sunburn)	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L60.0	Ingrowing (ingrown) nail	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L60.9	Nail disorder, other	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L72.1	Cyst, sebaceous, trichilemmal or pilar	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L73.9	Folliculitis	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L74.0	Heat rash (miliaria rubra)	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	L89.90	Ulcer (injury), pressure (decubitus ulcer, bed sore)	E0992 Skin ulcers subcategory
	L97.9	Ulcer of lower limb (except pressure ulcer)	E0992 Skin ulcers subcategory
	L98.4	Ulcer of skin (except lower limb)	E0992 Skin ulcers subcategory
	L98.9	Skin and subcutaneous tissue disorder, other	E0993 Skin, subcutaneous and breast tissue disorders, other subcategory
	N61	Breast inflammatory disorder (mastitis), not associated with childbirth	E0991 Breast tissue disorders subcategory
	N63	Breast lump, morphology unknown	E0991 Breast tissue disorders subcategory
	N64.4	Breast pain (mastodynia), not associated with childbirth	E0991 Breast tissue disorders subcategory
	N64.9	Breast disorder, other	E0991 Breast tissue disorders subcategory
	O91.20	Mastitis, nonpurulent	E0991 Breast tissue disorders subcategory
	R21	Rash	E0994 Skin and subcutaneous signs and symptoms subcategory
	R22.9	Lump, mass in skin and subcutaneous tissue, other	E0994 Skin and subcutaneous signs and symptoms subcategory
	R23.8	Symptoms involving skin and subcutaneous tissue, other	E0994 Skin and subcutaneous signs and symptoms subcategory
E10 Endocrine, nutritional and metabolic			
E1010 Diabetes	E10.11	Diabetes mellitus type 1, with ketoacidosis, with or without coma	E1011 Diabetes subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	E10.65 Diabetes mellitus type 1 with poor glycaemic control, unstable	E1011 Diabetes subcategory
	E10.8 Diabetes mellitus type 1, with complication (except poor glycaemic control)	E1011 Diabetes subcategory
	E10.9 Diabetes mellitus type 1, without complication	E1011 Diabetes subcategory
	E11.11 Diabetes mellitus type 2, with ketoacidosis, with or without coma	E1011 Diabetes subcategory
	E11.65 Diabetes mellitus type 2 with poor glycaemic control, unstable	E1011 Diabetes subcategory
	E11.8 Diabetes mellitus type 2, with other complication (except poor glycaemic control)	E1011 Diabetes subcategory
	E11.9 Diabetes mellitus type 2, without complication	E1011 Diabetes subcategory
	E14.11 Diabetes mellitus, type not specified, with ketoacidosis, with or without coma	E1011 Diabetes subcategory
	E14.65 Diabetes mellitus, type not specified with poor glycaemic control, unstable	E1011 Diabetes subcategory
	E14.8 Diabetes mellitus, type not specified, with other complication (except poor glycaemic control)	E1011 Diabetes subcategory
	E14.9 Diabetes mellitus, type not specified, without complication	E1011 Diabetes subcategory
E1090 Metabolic and nutritional disorders, other	E03.9 Hypothyroidism	E1099 Metabolic and nutritional disorders, other subcategory
	E05.9 Thyrotoxicosis (hyperthyroidism)	E1099 Metabolic and nutritional disorders, other subcategory
	E07.9 Thyroid disorders, other	E1099 Metabolic and nutritional disorders, other subcategory
	E16.2 Hypoglycaemia	E1091 Hypoglycaemia subcategory
	E27.2 Addisonian crisis	E1099 Metabolic and nutritional disorders, other subcategory
	E27.9 Adrenocortical insufficiency and adrenal gland disorders, other	E1099 Metabolic and nutritional disorders, other subcategory
	E29.9 Testicular dysfunction	E1099 Metabolic and nutritional disorders, other subcategory
	E34.9 Endocrine disorders, other	E1099 Metabolic and nutritional disorders, other subcategory
	E46 Malnutrition from protein-energy deficiency	E1099 Metabolic and nutritional disorders, other subcategory
	E63.9 Vitamin and nutrient element deficiencies	E1099 Metabolic and nutritional disorders, other subcategory
	E83.5 Hypercalcaemia	E1099 Metabolic and nutritional disorders, other subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	E83.9 Metabolism disorders, mineral metabolism, other	E1099 Metabolic and nutritional disorders, other subcategory
	E86 Dehydration and other volume depletion	E1093 Dehydration subcategory
	E87.0 Hyperosmolality (except with diabetes mellitus) and hypernatraemia	E1092 Hyperosmolality subcategory
	E87.1 Hypo-osmolality and hyponatraemia	E1092 Hyperosmolality subcategory
	E87.5 Hyperkalaemia	E1099 Metabolic and nutritional disorders, other subcategory
	E87.6 Hypokalaemia	E1099 Metabolic and nutritional disorders, other subcategory
	E87.8 Electrolyte or fluid imbalance, other	E1099 Metabolic and nutritional disorders, other subcategory
	E88.9 Metabolic disorders, obesity and hyperalimentation disorders, other	E1099 Metabolic and nutritional disorders, other subcategory
	R62.8 Delayed development or milestones	E1099 Metabolic and nutritional disorders, other subcategory
	R63.0 Anorexia (except anorexia nervosa)	E1099 Metabolic and nutritional disorders, other subcategory
	R63.4 Abnormal weight loss	E1099 Metabolic and nutritional disorders, other subcategory
E11 Kidney and urinary tract		
E1110 Kidney failure	D59.3 Haemolytic-uraemic syndrome (HUS) ^{NNDS}	E1111 Kidney failure subcategory
	E87.7 Fluid overload (except with oedema)	E1111 Kidney failure subcategory
	N17.9 Kidney failure, acute	E1111 Kidney failure subcategory
	N18.9 Kidney failure, chronic kidney disease stage 5	E1111 Kidney failure subcategory
	N19 Kidney failure, other	E1111 Kidney failure subcategory
E1120 Urinary stones and obstruction	N13.3 Hydronephrosis	E1121 Urinary stones and obstruction subcategory
	N20.0 Calculus, kidney	E1121 Urinary stones and obstruction subcategory
	N20.1 Calculus, ureter	E1121 Urinary stones and obstruction subcategory
	N20.9 Calculus, urinary, other	E1121 Urinary stones and obstruction subcategory
	N23 Colic, renal, other	E1121 Urinary stones and obstruction subcategory
E1130 Kidney and urinary tract infections	N30.9 Cystitis	E1131 Kidney and urinary tract infections subcategory
	N34.2 Urethritis	E1131 Kidney and urinary tract infections subcategory
	N39.0 Urinary tract infection (UTI)	E1131 Kidney and urinary tract infections subcategory
E1190 Kidney and urinary tract disorders, other	N04.9 Nephrosis (nephrotic syndrome)	E1193 Kidney and urinary tract disorders, other subcategory
	N05.9 Nephritis, glomeruli (nephritic syndrome, glomerulonephritis)	E1193 Kidney and urinary tract disorders, other subcategory
	N12 Nephritis, tubulo-interstitial (pyelonephritis)	E1193 Kidney and urinary tract disorders, other subcategory
	N13.9 Uropathy, reflux, obstructive (urinary tract obstruction)	E1193 Kidney and urinary tract disorders, other subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	N28.9 Kidney or ureter disease, other (nephropathy or ureteropathy)	E1193 Kidney and urinary tract disorders, other subcategory
	N39.9 Urinary system disorder, other	E1193 Kidney and urinary tract disorders, other subcategory
	N99.9 Postprocedural disorder of genitourinary system	E1193 Kidney and urinary tract disorders, other subcategory
	R30.0 Dysuria	E1194 Kidney and urinary tract signs and symptoms subcategory
	R31 Haematuria	E1194 Kidney and urinary tract signs and symptoms subcategory
	R33 Urinary retention	E1194 Kidney and urinary tract signs and symptoms subcategory
	R39.8 Symptoms of urinary system, other	E1194 Kidney and urinary tract signs and symptoms subcategory
E12 Male genitourinary		
E1290 Male genitourinary disorders	N40 Hyperplasia of prostate	E1291 Male genitourinary disorders subcategory
	N41.9 Prostatitis (inflammatory disease of prostate)	E1291 Male genitourinary disorders subcategory
	N43.3 Hydrocele	E1291 Male genitourinary disorders subcategory
	N44 Torsion of testis	E1291 Male genitourinary disorders subcategory
	N45.9 Orchitis, epididymitis, or epididymo-orchitis	E1291 Male genitourinary disorders subcategory
	N47 Phimosis and paraphimosis, redundant prepuce	E1291 Male genitourinary disorders subcategory
	N48.1 Balanitis (balanoposthitis)	E1291 Male genitourinary disorders subcategory
	N48.9 Penis disorder, other	E1291 Male genitourinary disorders subcategory
	N50.9 Genital organ disorder, male, other	E1291 Male genitourinary disorders subcategory
	T19.9 Foreign body in genitourinary tract, other	E1291 Male genitourinary disorders subcategory
E13 Gynaecology		
E1390 Gynaecological disorders	B37.3 Candidiasis of vulva or vagina	E1391 Gynaecological disorders subcategory
	E28.2 Polycystic ovarian syndrome	E1391 Gynaecological disorders subcategory
	E28.9 Ovarian dysfunction, other	E1391 Gynaecological disorders subcategory
	N71.9 Inflammatory disease of uterus (endometritis)	E1391 Gynaecological disorders subcategory
	N73.9 Pelvic inflammatory disease, female	E1391 Gynaecological disorders subcategory
	N75.0 Cyst, Bartholin's gland	E1391 Gynaecological disorders subcategory
	N75.1 Abscess, Bartholin's gland	E1391 Gynaecological disorders subcategory
	N76.0 Vaginitis (vulvovaginitis), acute	E1391 Gynaecological disorders subcategory
	N76.8 Vaginal or vulval inflammation, other	E1391 Gynaecological disorders subcategory
	N80.9 Endometriosis	E1391 Gynaecological disorders subcategory
	N81.9 Prolapse of genital organs, female	E1391 Gynaecological disorders subcategory
	N83.2 Cyst, ovary	E1391 Gynaecological disorders subcategory
	N89.9 Vaginal noninflammatory disorder	E1391 Gynaecological disorders subcategory
	N92.0 Menorrhagia	E1391 Gynaecological disorders subcategory
	N92.6 Menstruation, irregular	E1391 Gynaecological disorders subcategory
	N93.0 Bleeding, postcoital and contact	E1391 Gynaecological disorders subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	N93.9 Bleeding, vaginal or uterine, abnormal (except postmenopausal bleeding)	E1391 Gynaecological disorders subcategory
	N94.0 Ovulation pain (Mittelschmerz)	E1391 Gynaecological disorders subcategory
	N94.6 Dysmenorrhoea	E1391 Gynaecological disorders subcategory
	N94.9 Genital organ disorder, female, noninflammatory, other	E1391 Gynaecological disorders subcategory
	N95.9 Menopausal, perimenopausal and postmenopausal disorder (includes bleeding)	E1391 Gynaecological disorders subcategory
	T19.2 Foreign body in vulva or vagina	E1391 Gynaecological disorders subcategory
E14 Obstetrics		
E1410 Postpartum and post abortion conditions	O02.1 Abortion, missed	E1411 Postpartum and post abortion conditions subcategory
	O03.4 Abortion, spontaneous, incomplete, without complication	E1411 Postpartum and post abortion conditions subcategory
	O03.9 Abortion, spontaneous, complete or unspecified, without complication	E1411 Postpartum and post abortion conditions subcategory
	O08.9 Abortion with other complication, ectopic or molar pregnancy	E1411 Postpartum and post abortion conditions subcategory
	O72.1 Haemorrhage, postpartum, immediate	E1411 Postpartum and post abortion conditions subcategory
	O72.2 Haemorrhage, postpartum, delayed or secondary	E1411 Postpartum and post abortion conditions subcategory
	O86.0 Infection of obstetric surgical wound	E1411 Postpartum and post abortion conditions subcategory
	O90.0 Disruption (dehiscence) of caesarean section wound	E1411 Postpartum and post abortion conditions subcategory
	O90.1 Disruption (dehiscence) of perineal obstetric wound	E1411 Postpartum and post abortion conditions subcategory
	O90.9 Complication of the puerperium (up to 42 days following birth), other	E1411 Postpartum and post abortion conditions subcategory
E1420 Antenatal and other obstetric conditions	O00.9 Ectopic pregnancy, ruptured ectopic pregnancy	E1429 Antenatal and obstetric conditions, other subcategory
	O14.9 Pre-eclampsia or eclampsia	E1429 Antenatal and obstetric conditions, other subcategory
	O16 Hypertension, maternal (except pre-eclampsia or eclampsia)	E1429 Antenatal and obstetric conditions, other subcategory
	O20.0 Abortion, threatened	E1421 Abortion, threatened subcategory
	O21.0 Hyperemesis gravidarum	E1422 Vomiting during pregnancy subcategory
	O21.9 Vomiting during pregnancy, other	E1422 Vomiting during pregnancy subcategory
	O26.9 Obstetric (maternal) condition, other	E1429 Antenatal and obstetric conditions, other subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	O36.9 Maternal care for fetal problem	E1429 Antenatal and obstetric conditions, other subcategory
	O42.9 Premature rupture of membranes (PROM)	E1429 Antenatal and obstetric conditions, other subcategory
	O46.9 Haemorrhage, antepartum	E1429 Antenatal and obstetric conditions, other subcategory
	O47.9 False labour	E1429 Antenatal and obstetric conditions, other subcategory
	O60.0 Preterm labour without delivery	E1429 Antenatal and obstetric conditions, other subcategory
	O60.1 Preterm labour with delivery	E1429 Antenatal and obstetric conditions, other subcategory
	O75.9 Delivery or labour with complication	E1429 Antenatal and obstetric conditions, other subcategory
	O80 Delivery, single spontaneous, fullterm	E1429 Antenatal and obstetric conditions, other subcategory
	O86.4 Pyrexia of unknown origin following delivery	E1429 Antenatal and obstetric conditions, other subcategory
	O99.8 Obstetric condition, other (includes obstetric death)	E1429 Antenatal and obstetric conditions, other subcategory
E15 Perinatal		
E1590 Perinatal disorder	P92.9 Feeding problem in newborn	E1591 Perinatal disorder subcategory
	P96.9 Perinatal disorder in the fetus or newborn, other	E1591 Perinatal disorder subcategory
E16 Blood and immunology		
E1610 Immune system disorders	D70 Agranulocytosis (includes neutropenia)	E1611 Immune system disorders subcategory
	D75.9 Blood and blood forming organ diseases, other	E1611 Immune system disorders subcategory
	D89.9 Immune mechanism disorder (except systemic autoimmune and HIV disease)	E1611 Immune system disorders subcategory
	I89.9 Lymphatic vessel or lymph node disorder, noninfective	E1611 Immune system disorders subcategory
	L04.9 Lymphadenitis, acute (except mesenteric lymphadenitis)	E1611 Immune system disorders subcategory
	R59.9 Lymphadenopathy	E1611 Immune system disorders subcategory
E1620 Red blood cell disorders	D50.9 Anaemia, iron deficient	E1621 Red blood cell disorders subcategory
	D57.8 Anaemia, sickle-cell, with or without crisis	E1621 Red blood cell disorders subcategory
	D59.9 Anaemia, acquired haemolytic	E1621 Red blood cell disorders subcategory
	D61.9 Anaemia, aplastic	E1621 Red blood cell disorders subcategory
	D64.9 Anaemia, nutritional, hereditary haemolytic, other	E1621 Red blood cell disorders subcategory
E1630 Haemostasis disorders	D66 Haemophilia (hereditary factor VIII, IX and XI)	E1631 Haemostasis disorders subcategory
	D68.9 Coagulation factor defect, other	E1631 Haemostasis disorders subcategory
	D69.0 Purpura, allergic	E1631 Haemostasis disorders subcategory
	D69.3 Thrombocytopenic purpura, idiopathic	E1631 Haemostasis disorders subcategory
	D69.6 Thrombocytopenia, other	E1631 Haemostasis disorders subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
E17 Neoplasms		
E1790 Neoplasms	C18.9 Neoplasm, malignant, primary site of colon	E1791 Neoplasm, malignant subcategory
	C25.9 Neoplasm, malignant, primary site of pancreas	E1791 Neoplasm, malignant subcategory
	C26.9 Neoplasm, malignant, primary site of digestive system or hepatobiliary system, other	E1791 Neoplasm, malignant subcategory
	C34.9 Neoplasm, malignant, primary site of bronchus or lung (includes mesothelioma)	E1791 Neoplasm, malignant subcategory
	C39.9 Neoplasm, malignant, primary site of respiratory system or intrathoracic organs, other	E1791 Neoplasm, malignant subcategory
	C43.9 Neoplasm, malignant, melanoma of skin	E1791 Neoplasm, malignant subcategory
	C44.9 Neoplasm, malignant, primary site of skin (except melanoma)	E1791 Neoplasm, malignant subcategory
	C50.9 Neoplasm, malignant, primary site of breast	E1791 Neoplasm, malignant subcategory
	C57.9 Neoplasm, malignant, primary site of female genital organ	E1791 Neoplasm, malignant subcategory
	C61 Neoplasm, malignant, primary site of prostate	E1791 Neoplasm, malignant subcategory
	C63.9 Neoplasm, malignant, primary site of other male genital organ	E1791 Neoplasm, malignant subcategory
	C71.9 Neoplasm, malignant, primary site of brain	E1791 Neoplasm, malignant subcategory
	C78.3 Neoplasm, malignant, secondary site of lung and other respiratory organs	E1791 Neoplasm, malignant subcategory
	C78.8 Neoplasm, malignant, secondary site of liver, intrahepatic bile duct and other digestive organs	E1791 Neoplasm, malignant subcategory
	C79.3 Neoplasm, malignant, secondary site of brain and cerebral meninges	E1791 Neoplasm, malignant subcategory
	C79.9 Neoplasm, malignant, secondary site, other or unknown site	E1791 Neoplasm, malignant subcategory
	C80.9 Neoplasm, malignant, primary site, other or unknown site	E1791 Neoplasm, malignant subcategory
	C85.9 Neoplasm, malignant, non-Hodgkin lymphoma	E1791 Neoplasm, malignant subcategory
	C90.00 Neoplasm, malignant, multiple myeloma without mention of remission (includes plasma cell neoplasms)	E1791 Neoplasm, malignant subcategory
	C92.90 Neoplasm, malignant, myeloid leukaemia	E1791 Neoplasm, malignant subcategory
	C95.90 Neoplasm, malignant, leukaemia, unspecified cell type	E1791 Neoplasm, malignant subcategory
	C96.9 Neoplasm, malignant, lymphoid, haematopoietic and related tissue, other	E1791 Neoplasm, malignant subcategory
	D09.9 Carcinoma in situ, any site	E1799 Neoplasm, other subcategory
	D17.9 Neoplasm, benign lipoma (lipomatous neoplasm)	E1799 Neoplasm, other subcategory
	D25.9 Neoplasm, benign lipoma (lipomatous neoplasm)	E1799 Neoplasm, other subcategory
	D30.9 Neoplasm, benign of urinary system	E1799 Neoplasm, other subcategory
	D36.9 Neoplasm, benign, of other site	E1799 Neoplasm, other subcategory
	D37.9 Neoplasm, unknown whether malignant or benign of digestive organ	E1799 Neoplasm, other subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	D38.6 Neoplasm, unknown whether malignant or benign of respiratory organ	E1799 Neoplasm, other subcategory
	D41.9 Neoplasm, unknown whether malignant or benign of urinary organ	E1799 Neoplasm, other subcategory
	D43.9 Neoplasm, unknown whether malignant or benign of brain or central nervous system	E1799 Neoplasm, other subcategory
	D48.9 Neoplasm, unknown whether malignant or benign of other or unknown site	E1799 Neoplasm, other subcategory
E18 Infectious diseases		
E1810 Septicaemia	A39.9 Meningococcal infection, invasive ^{NNDSS}	E1811 Septicaemia subcategory
	A41.9 Sepsis (except with notifiable agent)	E1811 Septicaemia subcategory
	O85 Sepsis, puerperal	E1811 Septicaemia subcategory
	R57.2 Severe sepsis or septic shock (infectious or noninfectious origin)	E1811 Septicaemia subcategory
E1820 Viral illnesses	A92.0 Chikungunya fever ^{NNDSS}	E1821 Viral illnesses subcategory
	A92.3 West Nile (Kunjin) fever ^{NNDSS}	E1821 Viral illnesses subcategory
	A92.8 Mosquito-borne viral fevers (Barmah forest fever) ^{NNDSS}	E1821 Viral illnesses subcategory
	A92.9 Flavivirus (Zika virus) ^{NNDSS}	E1821 Viral illnesses subcategory
	A94 Arthropod-borne, non-notifiable viral fever, other	E1821 Viral illnesses subcategory
	A95.9 Yellow fever ^{NNDSS}	E1821 Viral illnesses subcategory
	A96.2 Lassa fever, quarantinable ^{NNDSS}	E1821 Viral illnesses subcategory
	A97.9 Dengue fever ^{NNDSS}	E1821 Viral illnesses subcategory
	A98.0 Crimean-Congo haemorrhagic fever, quarantinable ^{NNDSS}	E1821 Viral illnesses subcategory
	A98.3 Marburg virus, quarantinable ^{NNDSS}	E1821 Viral illnesses subcategory
	A98.4 Ebola virus, quarantinable ^{NNDSS}	E1821 Viral illnesses subcategory
	A99 Haemorrhagic fever, viral, non-quarantinable	E1821 Viral illnesses subcategory
	B00.1 Herpesviral simplex vesicular dermatitis	E1821 Viral illnesses subcategory
	B01.9 Varicella zoster (chickenpox) ^{NNDSS}	E1821 Viral illnesses subcategory
	B03 Smallpox ^{NNDSS}	E1821 Viral illnesses subcategory
	B05.9 Measles ^{NNDSS}	E1821 Viral illnesses subcategory
	B06.9 Measles, German (rubella) ^{NNDSS} or congenital rubella ^{NNDSS}	E1821 Viral illnesses subcategory
	B08.2 Roseola infantum (exanthema subitum, sixth disease)	E1821 Viral illnesses subcategory
	B08.3 Erythema infectiosum (fifth disease)	E1821 Viral illnesses subcategory
	B08.4 Enteroviral vesicular stomatitis with exanthem (hand, foot and mouth disease HFMD)	E1821 Viral illnesses subcategory
	B09 Infection of skin, viral, with skin or mucous membrane lesions, other	E1821 Viral illnesses subcategory
	B26.9 Mumps ^{NNDSS}	E1821 Viral illnesses subcategory
	B27.9 Infectious mononucleosis (glandular fever)	E1821 Viral illnesses subcategory
	B33.1 Ross River virus infection ^{NNDSS}	E1821 Viral illnesses subcategory
	B33.8 Viral infection, specified virus	E1821 Viral illnesses subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	B34.9 Viral infection, unspecified virus, other	E1821 Viral illnesses subcategory
	B97.2 Middle East Respiratory Syndrome, coronavirus (MERS-CoV) ^{NNDSS} or severe acute respiratory syndrome (SARS) ^{NNDSS}	E1821 Viral illnesses subcategory
E1830 Fever of unknown origin	R50.9 Fever	E1831 Fever of unknown origin subcategory
E1890 Infectious and parasitic diseases, other	A01.0 Typhoid fever ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A01.4 Paratyphoid fever ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A02.9 Salmonellosis ^{NNDSS} (Salmonella infection except Salmonella typhi or Salmonella Paratyphi)	E1899 Infectious and parasitic diseases, other subcategory
	A05.1 Botulism ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A18.8 Tuberculosis ^{NNDSS} (except respiratory)	E1899 Infectious and parasitic diseases, other subcategory
	A20.9 Plague ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A21.9 Tularaemia ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A22.9 Anthrax ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A23.9 Brucellosis ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A27.9 Leptospirosis ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A28.9 Bacterial zoonotic diseases, other	E1899 Infectious and parasitic diseases, other subcategory
	A30.9 Leprosy ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A32.9 Listeriosis ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A35 Tetanus ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A36.9 Diphtheria ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A38 Scarletina (scarlet fever)	E1899 Infectious and parasitic diseases, other subcategory
	A49.00 Staphylococcal infection (except Methicillin-resistant)	E1899 Infectious and parasitic diseases, other subcategory
	A49.01 Staphylococcus aureus infection, Methicillin-resistant	E1899 Infectious and parasitic diseases, other subcategory
	A49.2 Haemophilus influenzae infection ^{NNDSS} (except Avian flu)	E1899 Infectious and parasitic diseases, other subcategory
	A49.9 Bacterial infection, other	E1899 Infectious and parasitic diseases, other subcategory
	A50.9 Syphilis, congenital ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A53.9 Syphilis, primary, secondary, early latent or latent ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A54.9 Gonococcal infection ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A56.8 Chlamydial infection, sexually transmitted ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A58 Donovanosis ^{NNDSS} (granuloma inguinale)	E1899 Infectious and parasitic diseases, other subcategory
	A60.0 Herpesviral simplex (HSV) infection of genitalia or urogenital tract (genital herpes)	E1899 Infectious and parasitic diseases, other subcategory
	A64 Sexually transmitted disease (STD), other	E1899 Infectious and parasitic diseases, other subcategory
	A70 Chlamydia psittaci infection (ornithosis and psittacosis) ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A74.9 Chlamydial infection, other	E1899 Infectious and parasitic diseases, other subcategory
	A78 Q fever ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	A79.9 Rickettsiosis, other	E1899 Infectious and parasitic diseases, other subcategory
	B24 Human immunodeficiency virus (HIV) ^{NNDSS} infection or acquired immunodeficiency syndrome (AIDS) ^{NNDSS}	E1899 Infectious and parasitic diseases, other subcategory
	B49 Mycosis (fungus) related infections, other	E1899 Infectious and parasitic diseases, other subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	B54 Malaria ^{NNDS}	E1899 Infectious and parasitic diseases, other subcategory
	B83.9 Helminthiasis (worm) infection	E1899 Infectious and parasitic diseases, other subcategory
	B89 Parasitic disease, other (includes head lice)	E1899 Infectious and parasitic diseases, other subcategory
	B95.3 Pneumococcal disease ^{NNDS} (Streptococcus pneumoniae)	E1899 Infectious and parasitic diseases, other subcategory
	B99 Infectious disease, other	E1899 Infectious and parasitic diseases, other subcategory
	Z20.9 Contact or exposure to communicable disease (includes suspected exposure)	E1899 Infectious and parasitic diseases, other subcategory
E19 Mental, behavioural and neurodevelopment		
E1910 Alcohol and drug related mental and behavioural disorders	F10.0 Intoxication from alcohol, acute (except poisoning)	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F10.3 Withdrawal from alcohol (except poisoning)	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F10.9 Mental and behavioural disorders due to alcohol (except intoxication, withdrawal or poisoning)	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F11.9 Mental and behavioural disorders due to opioids	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F12.9 Mental and behavioural disorders due to cannabinoids	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F13.90 Mental and behavioural disorders due to sedatives or hypnotics	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F14.9 Mental and behavioural disorders due to cocaine	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F15.90 Mental and behavioural disorders due to other stimulants (includes caffeine)	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F16.90 Mental and behavioural disorders due to hallucinogens	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F17.9 Mental and behavioural disorders due to tobacco	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F18.9 Mental and behavioural disorders due to volatile solvents	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F19.0 Intoxication from multiple psychoactive substance use (except poisoning)	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F19.3 Withdrawal from multiple psychoactive substance use (except poisoning)	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F19.9 Mental and behavioural disorders due to multiple psychoactive substance use (except acute intoxication, withdrawal or poisoning)	E1911 Alcohol and drug related mental and behavioural disorders subcategory
	F55.9 Harmful use of non-dependence producing substances	E1911 Alcohol and drug related mental and behavioural disorders subcategory
E1920 Psychoses	F20.9 Schizophrenia	E1921 Schizophrenia subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	F22.9 Persistent delusional disorder and paranoia (except in schizophrenia)	E1929 Psychosis, other subcategory
	F23.90 Psychosis, acute, transient	E1929 Psychosis, other subcategory
	F25.9 Schizoaffective disorder, with or without psychotic episode	E1921 Schizophrenia subcategory
	F29 Psychosis, other	E1929 Psychosis, other subcategory
	F30.9 Manic episode, single	E1929 Psychosis, other subcategory
	R44.3 Hallucinations (except with underlying mental or behavioural disorder)	E1929 Psychosis, other subcategory
E1990 Mental, behavioural and neurodevelopment disorders, other	F31.9 Bipolar affective disorder	E1993 Affective disorders subcategory
	F32.90 Depressive episode, single (except postnatal depression)	E1993 Affective disorders subcategory
	F33.9 Depressive disorder, recurrent (except in bipolar or postnatal depression)	E1993 Affective disorders subcategory
	F39 Mood affective disorder, other	E1993 Affective disorders subcategory
	F41.0 Panic disorder	E1993 Affective disorders subcategory
	F41.2 Anxiety disorder with mixed depressive disorder	E1993 Affective disorders subcategory
	F41.9 Anxiety disorder, generalised or phobic	E1993 Affective disorders subcategory
	F43.0 Stress reaction, acute, transient	E1992 Acute reactions subcategory
	F43.1 Post traumatic stress disorder (PTSD)	E1992 Acute reactions subcategory
	F43.2 Adjustment disorders, other	E1992 Acute reactions subcategory
	F43.9 Stress reaction, other	E1992 Acute reactions subcategory
	F44.9 Dissociative or conversion disorder	E1993 Affective disorders subcategory
	F45.9 Somatoform disorder	E1993 Affective disorders subcategory
	F48.9 Neurotic disorders, other	E1993 Affective disorders subcategory
	F50.0 Anorexia nervosa	E1999 Mental, behavioural and neurodevelopment disorders, other subcategory
	F50.9 Eating disorders, bulimia, other	E1999 Mental, behavioural and neurodevelopment disorders, other subcategory
	F53.9 Post natal depression and other mental disorders in puerperium	E1999 Mental, behavioural and neurodevelopment disorders, other subcategory
	F60.9 Personality disorder, specified	E1999 Mental, behavioural and neurodevelopment disorders, other subcategory
	F69 Behavioural disorder, adult	E1999 Mental, behavioural and neurodevelopment disorders, other subcategory
	F89 Neurodevelopment disorders (includes autism, Asperger's)	E1999 Mental, behavioural and neurodevelopment disorders, other subcategory
	F91.9 Conduct disorder, child or adolescent onset	E1999 Mental, behavioural and neurodevelopment disorders, other subcategory
	F93.9 Emotional disorder, child or adolescent onset	E1999 Mental, behavioural and neurodevelopment disorders, other subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	F98.9 Behavioural and emotional disorders, child or adolescent onset, other or mixed disorders	E1999 Mental, behavioural and neurodevelopment disorders, other subcategory
	F99 Mental disorders or mental illness, other	E1999 Mental, behavioural and neurodevelopment disorders, other subcategory
	R45.81 Suicidal ideation (except with underlying mental or behavioural disorder)	E1991 Suicidal ideation and attempted self-injury subcategory
	R45.89 Attempted self-injury (harm) or symptoms involving emotional state, other	E1991 Suicidal ideation and attempted self-injury subcategory
E20 Injuries and other externally-caused morbidity		
E2010 Head, intracranial, spine, internal organ and other complex injuries	S02.0 Fracture of skull vault	E2011 Cranial injuries subcategory
	S02.1 Fracture of skull base	E2011 Cranial injuries subcategory
	S02.9 Fracture of skull and facial bones, other or multiple parts	E2011 Cranial injuries subcategory
	S06.03 Concussive injury with loss of consciousness of moderate duration, 30 minutes to 24 hours	E2012 Intracranial injuries subcategory
	S06.05 Concussive injury with loss of consciousness of prolonged duration, >24 hours	E2012 Intracranial injuries subcategory
	S06.4 Haemorrhage, extradural (epidural)(EDH), traumatic	E2012 Intracranial injuries subcategory
	S06.5 Haemorrhage, subdural (SDH), traumatic	E2012 Intracranial injuries subcategory
	S06.6 Haemorrhage, subarachnoid (SAH), traumatic	E2012 Intracranial injuries subcategory
	S06.9 Injury, internal, intracranial, other	E2012 Intracranial injuries subcategory
	S07.9 Crushing injury of head	E2011 Cranial injuries subcategory
	S12.9 Fracture of vertebra, cervical or other parts of neck	E2013 Spinal injuries subcategory
	S13.2 Dislocation of vertebra, cervical, or other parts of neck	E2013 Spinal injuries subcategory
	S14.10 Spinal cord injury, traumatic, cervical cord	E2013 Spinal injuries subcategory
	S15.9 Vessel injury of neck	E2019 Other complex injuries subcategory
	S17.9 Crushing injury of neck	E2019 Other complex injuries subcategory
	S18 Amputation, traumatic at neck (decapitation)	E2019 Other complex injuries subcategory
	S22.00 Fracture of vertebra, thoracic, or other parts of bony thorax	E2013 Spinal injuries subcategory
	S23.2 Dislocation of thoracic vertebra and other parts of thorax (costochondral)	E2013 Spinal injuries subcategory
	S24.10 Spinal cord injury, traumatic, thoracic cord	E2013 Spinal injuries subcategory
	S25.9 Vessel injury of thorax (chest)	E2019 Other complex injuries subcategory
	S27.1 Haemothorax, traumatic (haemopneumothorax)	E2014 Internal organ injuries subcategory
	S27.9 Injury, internal of intrathoracic organ, other	E2014 Internal organ injuries subcategory
	S28.0 Crushing injury of thorax (chest)	E2019 Other complex injuries subcategory
	S28.1 Amputation, traumatic of part of thorax (chest)	E2019 Other complex injuries subcategory
	S32.00 Fracture of vertebra, lumbar	E2013 Spinal injuries subcategory
	S32.82 Fracture of vertebra, lumbosacral	E2013 Spinal injuries subcategory
	S34.1 Spinal cord injury, traumatic, lumbar cord, conus medullaris or cauda equina	E2013 Spinal injuries subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	S35.9 Vessel injury of abdomen	E2019 Other complex injuries subcategory
	S36.00 Injury, internal of spleen	E2014 Internal organ injuries subcategory
	S36.10 Injury, internal of liver	E2014 Internal organ injuries subcategory
	S36.9 Injury, internal of other intra-abdominal organ	E2014 Internal organ injuries subcategory
	S37.00 Injury, internal of kidney	E2014 Internal organ injuries subcategory
	S38.1 Crushing injury of abdomen, lower back and pelvis	E2019 Other complex injuries subcategory
	S38.3 Amputation, traumatic of external genital organs or other parts of abdomen, lower back or pelvis	E2019 Other complex injuries subcategory
	S47 Crushing injury of shoulder and upper arm	E2019 Other complex injuries subcategory
	S48.9 Amputation, traumatic at shoulder level or upper arm	E2019 Other complex injuries subcategory
	S57.9 Crushing injury of elbow and forearm	E2019 Other complex injuries subcategory
	S58.9 Amputation, traumatic at elbow level or forearm	E2019 Other complex injuries subcategory
	S67.8 Crushing injury of wrist and hand (finger)	E2019 Other complex injuries subcategory
	S68.9 Amputation, traumatic at wrist level or hand	E2019 Other complex injuries subcategory
	S75.9 Vessel injury of hip or thigh	E2019 Other complex injuries subcategory
	S78.9 Amputation, traumatic at hip level or thigh	E2019 Other complex injuries subcategory
	S87.8 Crushing injury of knee and lower leg	E2019 Other complex injuries subcategory
	S88.9 Amputation, traumatic at knee level or lower leg	E2019 Other complex injuries subcategory
	T01.9 Wound, open of multiple anatomical regions, widespread	E2019 Other complex injuries subcategory
	T02.90 Fracture of multiple anatomical regions, in significant multi-trauma	E2019 Other complex injuries subcategory
	T07 Injury, multiple, in significant multi-trauma	E2019 Other complex injuries subcategory
	T09.3 Spinal cord injury, traumatic, level unspecified	E2013 Spinal injuries subcategory
	T71 Asphyxiation	E2019 Other complex injuries subcategory
	T75.1 Drowning or near drowning	E2019 Other complex injuries subcategory
E2020 Pelvic and femoral fractures	S32.83 Fracture of pelvic ring and acetabulum, single or multiple fractures	E2021 Pelvic and femoral fractures subcategory
	S72.00 Fracture of femur, neck or head (proximal)	E2021 Pelvic and femoral fractures subcategory
	S72.10 Fracture of femur, trochanter	E2021 Pelvic and femoral fractures subcategory
	S72.3 Fracture of femur, shaft	E2021 Pelvic and femoral fractures subcategory
	S72.40 Fracture of femur, lower end (distal)	E2021 Pelvic and femoral fractures subcategory
	S72.9 Fracture of femur, other or multiple parts	E2021 Pelvic and femoral fractures subcategory
E2025 Fractures, dislocations and ligament injuries	M84.49 Fracture, pathological (includes osteitis, periostitis)	E2026 Fractures subcategory
	S02.2 Fracture of nasal bones	E2026 Fractures subcategory
	S02.3 Fracture of orbital floor	E2026 Fractures subcategory
	S02.4 Fracture of malar or maxillary bones	E2026 Fractures subcategory
	S02.60 Fracture of mandible	E2026 Fractures subcategory
	S03.0 Dislocation of jaw (temporomandibular)	E2027 Dislocations subcategory
	S03.3 Dislocation of other parts of head (includes tooth)	E2027 Dislocations subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	S03.5 Sprain, strain, rupture or tear of ligaments, muscles or tendons of jaw or other parts of head	E2028 Sprains subcategory
	S13.4 Sprain or strain of cervical spine (whiplash)	E2028 Sprains subcategory
	S13.6 Sprain, strain, rupture or tear of ligaments, muscles or tendons of neck (except cervical spine)	E2028 Sprains subcategory
	S22.2 Fracture of sternum	E2026 Fractures subcategory
	S22.32 Fracture of rib, single	E2026 Fractures subcategory
	S22.40 Fracture of ribs, multiple	E2026 Fractures subcategory
	S23.3 Sprain or strain of thoracic spine	E2028 Sprains subcategory
	S23.5 Sprain, strain, rupture or tear of ligaments, muscles or tendons of thorax (except thoracic spine)	E2028 Sprains subcategory
	S33.3 Dislocation of lumbar vertebra, sacrum and coccyx (lumbosacral or sacroiliac)	E2027 Dislocations subcategory
	S33.7 Sprain, strain, rupture or tear of ligaments muscles or tendons of lumbar spine (lumbosacral or sacroiliac)	E2028 Sprains subcategory
	S42.00 Fracture of clavicle (collar bone)	E2026 Fractures subcategory
	S42.10 Fracture of scapula	E2026 Fractures subcategory
	S42.20 Fracture of humerus, upper end (proximal)	E2026 Fractures subcategory
	S42.3 Fracture of humerus, shaft	E2026 Fractures subcategory
	S42.40 Fracture of humerus, lower end (distal)	E2026 Fractures subcategory
	S42.9 Fracture of upper arm and shoulder, other or multiple parts	E2026 Fractures subcategory
	S43.00 Dislocation of shoulder (glenohumeral)	E2027 Dislocations subcategory
	S43.1 Dislocation of acromioclavicular joint	E2027 Dislocations subcategory
	S43.7 Sprain or rupture of ligaments of shoulder girdle	E2028 Sprains subcategory
	S52.20 Fracture of ulna, proximal, shaft or distal end	E2026 Fractures subcategory
	S52.30 Fracture of radius, proximal, shaft or distal end	E2026 Fractures subcategory
	S52.9 Fracture of forearm, other or multiple parts	E2026 Fractures subcategory
	S53.10 Dislocation of elbow	E2027 Dislocations subcategory
	S53.40 Sprain or rupture of ligaments of elbow	E2028 Sprains subcategory
	S62.10 Fracture of carpal bone	E2026 Fractures subcategory
	S62.30 Fracture of metacarpal bone(s)	E2026 Fractures subcategory
	S62.8 Fracture of wrist and hand (finger), other or multiple parts	E2026 Fractures subcategory
	S63.00 Dislocation of wrist (carpal or carpometacarpal joint)	E2027 Dislocations subcategory
	S63.58 Sprain or rupture of ligaments of wrist (carpal)	E2028 Sprains subcategory
	S63.7 Sprain or rupture of ligaments of hand	E2028 Sprains subcategory
	S73.00 Dislocation of hip (acetabulum and proximal femur)	E2027 Dislocations subcategory
	S73.10 Sprain or rupture of ligaments of hip	E2028 Sprains subcategory
	S82.0 Fracture of patella (knee cap)	E2026 Fractures subcategory
	S82.18 Fracture of tibia, upper end, with or without fibula involvement	E2026 Fractures subcategory
	S82.28 Fracture of tibia, shaft, with or without fibula involvement	E2026 Fractures subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	S82.38 Fracture of tibia, lower end (except medial malleolus)	E2026 Fractures subcategory
	S82.40 Fracture of fibula, alone	E2026 Fractures subcategory
	S82.5 Fracture of malleolus, medial (tibia involving ankle)	E2026 Fractures subcategory
	S82.6 Fracture of malleolus, lateral (fibula involving malleolus)	E2026 Fractures subcategory
	S82.81 Fracture of malleoli, bimalleolar ankle fracture	E2026 Fractures subcategory
	S82.82 Fracture of malleoli, trimalleolar ankle fracture	E2026 Fractures subcategory
	S82.9 Fracture of lower leg, other or multiple parts (except bimalleolar, trimalleolar fractures)	E2026 Fractures subcategory
	S83.10 Dislocation of knee	E2027 Dislocations subcategory
	S83.6 Sprain or rupture of ligaments of knee	E2028 Sprains subcategory
	S92.0 Fracture of foot, calcaneus (heel bone)	E2026 Fractures subcategory
	S92.20 Fracture of foot, tarsal bone	E2026 Fractures subcategory
	S92.3 Fracture of foot, metatarsal bone	E2026 Fractures subcategory
	S92.9 Fracture of foot, other or multiple parts	E2026 Fractures subcategory
	S93.0 Dislocation of ankle (tarsal or tarsometatarsal joint)	E2027 Dislocations subcategory
	S93.40 Sprain or rupture of ligaments of ankle	E2028 Sprains subcategory
	S93.6 Sprain or rupture of ligaments of foot	E2028 Sprains subcategory
E2030 Injuries, other	F07.2 Postconcussional syndrome	E2032 Concussion, without loss of consciousness subcategory
	S01.0 Wound, open of scalp	E2033 Open wounds subcategory
	S01.1 Wound, open of eyelid or periocular area	E2033 Open wounds subcategory
	S01.30 Wound, open of external ear or auditory structures	E2033 Open wounds subcategory
	S01.41 Wound, open of cheek	E2033 Open wounds subcategory
	S01.43 Wound, open of mandibular region	E2033 Open wounds subcategory
	S01.50 Wound, open of mouth or tongue	E2033 Open wounds subcategory
	S01.9 Wound, open of other parts of head	E2033 Open wounds subcategory
	S04.9 Nerve injury, cranial nerve (CNI-CNXII)	E2039 Injuries, other subcategory
	S05.0 Injury, internal of conjunctiva or cornea	E2039 Injuries, other subcategory
	S05.9 Injury, internal, other parts of eye or orbital tissue	E2039 Injuries, other subcategory
	S06.00 Concussion, cerebral, without loss of consciousness	E2032 Concussion, without loss of consciousness subcategory
	S06.01 Concussive injury with loss of consciousness of unspecified duration	E2031 Concussion, with loss of consciousness subcategory
	S06.02 Concussive injury with loss of consciousness of brief duration, less than 30 minutes	E2031 Concussion, with loss of consciousness subcategory
	S08.9 Amputation, traumatic of ear or other parts of head	E2033 Open wounds subcategory
	S09.2 Injury, internal of ear drum, traumatic rupture	E2039 Injuries, other subcategory
	S09.9 Injury, unspecified or suspected of head	E2039 Injuries, other subcategory
	S11.9 Wound, open of neck	E2033 Open wounds subcategory
	S14.6 Nerve injury in neck, brachial plexus	E2039 Injuries, other subcategory
	S19.9 Injury, unspecified or suspected of neck	E2039 Injuries, other subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	S21.9 Wound, open of thorax (chest)	E2033 Open wounds subcategory
	S24.6 Nerve injury in thorax (chest)	E2039 Injuries, other subcategory
	S27.0 Pneumothorax, traumatic	E2039 Injuries, other subcategory
	S29.9 Injury, unspecified or suspected of thorax (chest)	E2039 Injuries, other subcategory
	S31.0 Wound, open of lower back or pelvis	E2033 Open wounds subcategory
	S31.1 Wound, open of abdomen	E2033 Open wounds subcategory
	S31.2 Wound, open of penis	E2033 Open wounds subcategory
	S31.3 Wound, open of scrotum or testes	E2033 Open wounds subcategory
	S31.4 Wound, open of vagina or vulva	E2033 Open wounds subcategory
	S34.8 Nerve injury at abdomen, lower back or pelvis level	E2039 Injuries, other subcategory
	S39.9 Injury, unspecified or suspected of abdomen, lower back or pelvis	E2039 Injuries, other subcategory
	S41.0 Wound, open of shoulder	E2033 Open wounds subcategory
	S41.1 Wound, open of upper arm	E2033 Open wounds subcategory
	S44.9 Nerve injury in shoulder or upper arm	E2039 Injuries, other subcategory
	S45.9 Vessel injury of shoulder and upper arm	E2039 Injuries, other subcategory
	S46.9 Strain or tear of muscle and tendon of shoulder or upper arm	E2039 Injuries, other subcategory
	S49.9 Injury, unspecified or suspected of shoulder or upper arm	E2039 Injuries, other subcategory
	S51.0 Wound, open, of elbow	E2033 Open wounds subcategory
	S51.9 Wound, open of forearm	E2033 Open wounds subcategory
	S54.9 Nerve injury in forearm	E2039 Injuries, other subcategory
	S55.9 Vessel injury of forearm	E2039 Injuries, other subcategory
	S56.8 Strain or tear of muscle or tendon of elbow or forearm	E2039 Injuries, other subcategory
	S59.9 Injury, unspecified or suspected of elbow or forearm	E2039 Injuries, other subcategory
	S61.9 Wound, open of wrist or hand (except finger)	E2033 Open wounds subcategory
	S64.9 Nerve injury in wrist or hand (finger)	E2039 Injuries, other subcategory
	S65.9 Vessel injury of wrist or hand (finger)	E2039 Injuries, other subcategory
	S66.9 Strain or tear of muscle and tendon, wrist or hand (finger)	E2039 Injuries, other subcategory
	S68.1 Amputation, traumatic of finger(s)	E2039 Injuries, other subcategory
	S69.9 Injury, unspecified or suspected of wrist or hand	E2039 Injuries, other subcategory
	S71.0 Wound, open of hip	E2033 Open wounds subcategory
	S71.1 Wound, open of thigh	E2033 Open wounds subcategory
	S74.9 Nerve injury in hip or thigh	E2039 Injuries, other subcategory
	S76.7 Strain or tear of muscle and tendon of hip or thigh	E2039 Injuries, other subcategory
	S77.2 Crushing injury of hip (acetabulum and proximal femur) and thigh	E2039 Injuries, other subcategory
	S79.9 Injury, unspecified or suspected of hip or thigh	E2039 Injuries, other subcategory
	S81.0 Wound, open of knee	E2033 Open wounds subcategory
	S81.9 Wound, open of lower leg	E2033 Open wounds subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	S84.9 Nerve injury in knee or lower leg	E2039 Injuries, other subcategory
	S85.9 Vessel injury of knee or lower leg	E2039 Injuries, other subcategory
	S86.9 Strain or tear of muscle and tendon of knee or lower leg	E2039 Injuries, other subcategory
	S89.9 Injury, unspecified or suspected of knee or lower leg	E2039 Injuries, other subcategory
	S91.0 Wound, open of ankle	E2033 Open wounds subcategory
	S91.3 Wound, open of foot (except toe)	E2033 Open wounds subcategory
	S94.9 Nerve injury in ankle or foot (toe)	E2039 Injuries, other subcategory
	S95.9 Vessel injury of ankle or foot	E2039 Injuries, other subcategory
	S96.9 Strain or tear of muscle and tendon of ankle or foot (toe)	E2039 Injuries, other subcategory
	S97.8 Crushing injury of ankle and foot (toes)	E2039 Injuries, other subcategory
	S98.1 Amputation, traumatic of toe(s)	E2039 Injuries, other subcategory
	S98.4 Amputation, traumatic at ankle level or foot	E2039 Injuries, other subcategory
	S99.9 Injury, unspecified or suspected of ankle or foot	E2039 Injuries, other subcategory
	T35.7 Frostbite	E2039 Injuries, other subcategory
	T67.0 Heatstroke or sunstroke (hyperthermia)	E2039 Injuries, other subcategory
	T67.1 Heat syncope	E2039 Injuries, other subcategory
	T68 Hypothermia	E2039 Injuries, other subcategory
	T75.4 Electrocutation	E2039 Injuries, other subcategory
	T78.9 Adverse effect from other external cause, radiation exposure, or decompression illness	E2039 Injuries, other subcategory
	T79.3 Complication secondary to trauma, wound infection	E2039 Injuries, other subcategory
	T79.9 Complication secondary to trauma, other	E2039 Injuries, other subcategory
E2040 Finger, toe and superficial injuries	S00.00 Superficial injury of scalp	E2049 Superficial injuries subcategory
	S00.20 Superficial injury of eyelid or periorcular area	E2049 Superficial injuries subcategory
	S00.30 Superficial injury of nose	E2049 Superficial injuries subcategory
	S00.40 Superficial injury of ear (auricle and auditory canal)	E2049 Superficial injuries subcategory
	S00.50 Superficial injury of lip or oral cavity	E2049 Superficial injuries subcategory
	S00.90 Superficial injury of other parts of head (cheek, chin, face, forehead, temple)	E2049 Superficial injuries subcategory
	S01.20 Wound, open of nose	E2041 Open wounds subcategory
	S01.51 Wound, open of lip	E2041 Open wounds subcategory
	S10.90 Superficial injury of neck	E2049 Superficial injuries subcategory
	S20.80 Superficial injury of thorax (chest)	E2049 Superficial injuries subcategory
	S30.90 Superficial injury, abdomen, lower back and pelvis (anus, buttocks, external genitalia, flank or groin)	E2049 Superficial injuries subcategory
	S40.9 Superficial injury of shoulder or upper arm	E2049 Superficial injuries subcategory
	S50.9 Superficial injury of elbow or forearm	E2049 Superficial injuries subcategory
	S60.9 Superficial injury of wrist or hand (finger)	E2049 Superficial injuries subcategory
	S61.0 Wound, open of finger, with or without nail involvement	E2041 Open wounds subcategory
	S62.50 Fracture of thumb	E2042 Fractures, dislocations and sprains subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	S62.60 Fracture of finger (except thumb)	E2042 Fractures, dislocations and sprains subcategory
	S63.10 Dislocation of finger(s) (metacarpophalangeal or interphalangeal joint)	E2042 Fractures, dislocations and sprains subcategory
	S63.68 Sprain or rupture of ligaments of finger(s) (metacarpophalangeal or interphalangeal)	E2042 Fractures, dislocations and sprains subcategory
	S70.9 Superficial injury of hip or thigh	E2049 Superficial injuries subcategory
	S80.9 Superficial injury of knee or lower leg	E2049 Superficial injuries subcategory
	S90.9 Superficial injury of ankle or foot (toe)	E2049 Superficial injuries subcategory
	S91.1 Wound, open of toe(s)	E2041 Open wounds subcategory
	S92.4 Fracture of great toe	E2042 Fractures, dislocations and sprains subcategory
	S92.5 Fracture of toe (except great toe)	E2042 Fractures, dislocations and sprains subcategory
	S93.10 Dislocation of toe(s) (metatarsophalangeal or interphalangeal joint)	E2042 Fractures, dislocations and sprains subcategory
	S93.5 Sprain or rupture of ligaments of toe(s)	E2042 Fractures, dislocations and sprains subcategory
	T00.9 Superficial injuries, across multiple anatomical regions, widespread	E2049 Superficial injuries subcategory
	T14.9 Injury, unspecified or suspected of other region	E2049 Superficial injuries subcategory
E2050 Burns	T20.0 Burn of head or neck (except isolated burn to eye and adnexa), unspecified thickness	E2059 Burns, other subcategory
	T20.1 Burn of head or neck (except isolated burn to eye and adnexa), superficial (erythema, sunburn, first degree)	E2059 Burns, other subcategory
	T20.2 Burn of head or neck (except isolated burn to eye and adnexa), partial or deep partial thickness (sunburn with blisters, second degree)	E2059 Burns, other subcategory
	T20.3 Burn of head or neck (except isolated burn to eye and adnexa), full thickness (third degree, fourth degree, complex)	E2051 Severe burns subcategory
	T21.09 Burn of trunk, unspecified thickness	E2059 Burns, other subcategory
	T21.19 Burn of trunk, superficial (erythema, sunburn, first degree)	E2059 Burns, other subcategory
	T21.29 Burn of trunk, partial or deep partial thickness (sunburn with blisters, second degree)	E2059 Burns, other subcategory
	T21.39 Burn of trunk, full thickness (third degree, fourth degree, complex)	E2051 Severe burns subcategory
	T22.00 Burn of shoulder or upper limb (wrist and hand if affected), unspecified thickness	E2059 Burns, other subcategory
	T22.10 Burn of shoulder or upper limb (wrist and hand if affected), superficial (erythema, sunburn, first degree)	E2059 Burns, other subcategory
	T22.20 Burn of shoulder or upper limb (wrist and hand if affected), partial or deep partial thickness (sunburn with blisters, second degree)	E2059 Burns, other subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	T22.30 Burn of shoulder or upper limb (wrist and hand if affected), full thickness (third degree, fourth degree, complex)	E2051 Severe burns subcategory
	T23.0 Burn of wrist, hand, or fingers, unspecified thickness	E2059 Burns, other subcategory
	T23.1 Burn of wrist, hand, or fingers, superficial (erythema, sunburn, first degree)	E2059 Burns, other subcategory
	T23.2 Burn of wrist, hand, or fingers, partial or deep partial thickness (sunburn with blisters, second degree)	E2059 Burns, other subcategory
	T23.3 Burn of wrist, hand, or fingers, full thickness (third degree, fourth degree, complex)	E2051 Severe burns subcategory
	T24.0 Burn of hip or lower limb (ankle and foot if affected), unspecified thickness	E2059 Burns, other subcategory
	T24.1 Burn of hip or lower limb (ankle and foot if affected), superficial (erythema, sunburn, first degree)	E2059 Burns, other subcategory
	T24.2 Burn of hip or lower limb (ankle and foot if affected), partial or deep partial thickness (sunburn with blisters, second degree)	E2059 Burns, other subcategory
	T24.3 Burn of hip or lower limb (ankle and foot if affected), full thickness (third degree, fourth degree, complex)	E2051 Severe burns subcategory
	T25.0 Burn of ankle or foot, unspecified thickness	E2059 Burns, other subcategory
	T25.1 Burn of ankle or foot, superficial (erythema, sunburn, first degree)	E2059 Burns, other subcategory
	T25.2 Burn of ankle or foot, partial or deep partial thickness (sunburn with blisters, second degree)	E2059 Burns, other subcategory
	T25.3 Burn of ankle or foot, full thickness (third degree, fourth degree, complex)	E2051 Severe burns subcategory
	T26.4 Burn of eye or adnexa (except with head and neck burns)	E2051 Severe burns subcategory
	T28.4 Burn of internal organs	E2051 Severe burns subcategory
	T29.0 Burns of multiple regions, unspecified thickness	E2059 Burns, other subcategory
	T29.1 Burns of multiple regions, superficial (erythema, sunburn, first degree)	E2059 Burns, other subcategory
	T29.2 Burns of multiple regions, partial or deep partial thickness (sunburn with blisters, second degree)	E2059 Burns, other subcategory
	T29.3 Burns of multiple regions, full thickness level (third degree, fourth degree, complex)	E2051 Severe burns subcategory
E2060 Poisoning	T36.9 Poisoning or exposure to antibiotics	E2061 Poisoning subcategory
	T37.9 Poisoning or exposure to anti-infective and antiparasitic drugs	E2061 Poisoning subcategory
	T38.9 Poisoning or exposure to hormone antagonists	E2061 Poisoning subcategory
	T39.0 Poisoning or exposure to salicylates	E2061 Poisoning subcategory
	T39.1 Poisoning or exposure to paracetamol (4-Aminophenol derivatives)	E2061 Poisoning subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	T39.9 Poisoning or exposure to other nonopioid analgesic, antipyretic and antirheumatic	E2061 Poisoning subcategory
	T40.1 Poisoning or exposure to heroin	E2061 Poisoning subcategory
	T40.2 Poisoning or exposure to codeine or morphine, or other opioids	E2061 Poisoning subcategory
	T40.9 Poisoning or exposure to psychodysleptics (hallucinogens)	E2061 Poisoning subcategory
	T41.21 Poisoning or exposure to gamma hydroxybutyrate (GHB)	E2061 Poisoning subcategory
	T41.22 Poisoning or exposure to ketamine	E2061 Poisoning subcategory
	T41.4 Poisoning or exposure to other anaesthetic	E2061 Poisoning subcategory
	T42.3 Poisoning or exposure to barbiturates	E2061 Poisoning subcategory
	T42.4 Poisoning or exposure to benzodiazepines	E2061 Poisoning subcategory
	T42.7 Poisoning or exposure to other antiepileptic and sedative-hypnotic drugs	E2061 Poisoning subcategory
	T43.0 Poisoning or exposure to tricyclic and tetracyclic antidepressants (TCA)	E2061 Poisoning subcategory
	T43.2 Poisoning or exposure to other antidepressants	E2061 Poisoning subcategory
	T43.9 Poisoning or exposure to other psychotropic drug	E2061 Poisoning subcategory
	T44.9 Poisoning or exposure to drugs affecting the autonomic nervous system	E2061 Poisoning subcategory
	T45.1 Poisoning or exposure to immunosuppressive and antineoplastic drugs	E2061 Poisoning subcategory
	T45.4 Poisoning or exposure to iron	E2061 Poisoning subcategory
	T45.5 Poisoning or exposure to anticoagulants	E2061 Poisoning subcategory
	T45.9 Poisoning or exposure to primarily systemic and haematological agent, antiallergic drugs, vitamins, or enzymes	E2061 Poisoning subcategory
	T46.9 Poisoning or exposure to agent primarily affecting the cardiovascular system (CVS)	E2061 Poisoning subcategory
	T47.9 Poisoning or exposure to agent primarily affecting the gastrointestinal system (GIT)	E2061 Poisoning subcategory
	T48.7 Poisoning or exposure to agent primarily affecting the smooth and skeletal muscles or respiratory system	E2061 Poisoning subcategory
	T49.9 Poisoning or exposure to topical agent	E2061 Poisoning subcategory
	T50.9 Poisoning or exposure to other drugs, medicaments and biological substances	E2061 Poisoning subcategory
	T51.0 Poisoning or exposure to ethanol (ethyl alcohol)	E2061 Poisoning subcategory
	T51.9 Poisoning or exposure to other alcohol	E2061 Poisoning subcategory
	T52.9 Poisoning or exposure to organic solvent	E2061 Poisoning subcategory
	T58 Poisoning or exposure to carbon monoxide	E2061 Poisoning subcategory
	T59.9 Poisoning or exposure to other gases, fumes and vapours (includes smoke inhalation)	E2061 Poisoning subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label
	T62.9 Poisoning or exposure to noxious substance eaten as food	E2061 Poisoning subcategory
	T63.0 Poisoning or exposure to snake venom, land and sea snakes	E2061 Poisoning subcategory
	T63.3 Poisoning or exposure to spider venom	E2061 Poisoning subcategory
	T63.4 Poisoning or exposure to other arthropods	E2061 Poisoning subcategory
	T63.6 Poisoning or exposure to marine animals	E2061 Poisoning subcategory
	T63.9 Poisoning or exposure to other venomous animal	E2061 Poisoning subcategory
	T65.9 Poisoning or exposure to other non-medical substances	E2061 Poisoning subcategory
E2070 Allergic reactions	T78.0 Anaphylaxis due to adverse food reaction	E2071 Anaphylactic shock subcategory
	T78.1 Allergy to food (except anaphylaxis)	E2079 Allergic reactions, other subcategory
	T78.2 Anaphylaxis, other (except with envenomation, drug or noxious poisoning)	E2071 Anaphylactic shock subcategory
	T78.3 Oedema, skin, subcutaneous tissue, muscle	E2079 Allergic reactions, other subcategory
	T78.4 Allergy, other (except anaphylaxis)	E2079 Allergic reactions, other subcategory
E2080 Complications of surgical and medical care	T80.9 Complication, postprocedural, following infusion, transfusion or therapeutic injection	E2089 Complications of surgical and medical care, other subcategory
	T81.0 Complication, postprocedural, haemorrhage or haematoma	E2089 Complications of surgical and medical care, other subcategory
	T81.3 Complication, postprocedural, wound dehiscence	E2089 Complications of surgical and medical care, other subcategory
	T81.4 Complication, postprocedural, wound infection (except infection from devices)	E2081 Postoperative infections subcategory
	T81.9 Complication, postprocedural, other	E2089 Complications of surgical and medical care, other subcategory
	T82.9 Complication, postprocedural, of cardiac or vascular prosthetic device, implant, or graft	E2089 Complications of surgical and medical care, other subcategory
	T83.0 Complication, postprocedural, of urinary indwelling catheter, mechanical	E2089 Complications of surgical and medical care, other subcategory
	T83.9 Complication, postprocedural, of prosthetic device or implant or graft, genitourinary	E2089 Complications of surgical and medical care, other subcategory
	T84.9 Complication, postprocedural, of internal prosthetic device or implant or graft, orthopaedic	E2089 Complications of surgical and medical care, other subcategory
	T85.5 Complication, postprocedural, of prosthetic device or implant or graft, gastrointestinal, mechanical	E2089 Complications of surgical and medical care, other subcategory
	T85.9 Complication, postprocedural, of prosthetic device or implant or graft (internal), other prosthetic device	E2089 Complications of surgical and medical care, other subcategory
	T88.7 Complication, adverse effect from drug or medicament in therapeutic care (anaphylaxis)	E2089 Complications of surgical and medical care, other subcategory
	T88.9 Complication following other medical care	E2089 Complications of surgical and medical care, other subcategory
E50 General symptoms without diagnosis		
E5010 Pain syndrome	R52.9 Pain, not referable to a site	E5011 Pain syndrome subcategory

Emergency care category (ECC) and Emergency care diagnosis group (ECDG) code and label	Short list code* and term	ECDG subcategory code and label	
E5090 Symptoms, other	G47.0	Insomnia	E5099 Symptoms, other subcategory
	G47.9	Sleep disorder	E5099 Symptoms, other subcategory
	R18	Ascites	E5099 Symptoms, other subcategory
	R42	Dizziness	E5091 Dizziness subcategory
	R53	Fatigue and weakness	E5092 Fatigue and weakness subcategory
	R57.9	Shock, other (includes traumatic)	E5099 Symptoms, other subcategory
	R58	Haemorrhage, other	E5099 Symptoms, other subcategory
	R60.9	Oedema	E5099 Symptoms, other subcategory
	R68.1	Symptoms of infancy (excessive crying, irritability)	E5099 Symptoms, other subcategory
	R69	Symptoms without diagnosis, other	E5099 Symptoms, other subcategory
	R73	Hyperglycaemia	E5099 Symptoms, other subcategory
	R79.9	Abnormal blood test result	E5093 Abnormal test result subcategory
	R82.9	Abnormal test result, other	E5093 Abnormal test result subcategory
	R93.8	Abnormal findings on diagnostic imaging	E5093 Abnormal test result subcategory
	E60 Other factors influencing health status		
E6010 Forensic examination	Z04.0	Forensic blood-alcohol or blood-drug test	E6011 Forensic examination or observation subcategory
	Z04.9	Forensic examination or observation	E6011 Forensic examination or observation subcategory
E6020 Abuse and neglect	T74.1	Abuse, physical, child or adult (except sexual assault)	E6021 Abuse and neglect subcategory
	T74.2	Abuse, sexual (assault, rape), child or adult	E6021 Abuse and neglect subcategory
	T74.3	Abuse, psychological, child or adult	E6021 Abuse and neglect subcategory
	T74.9	Abuse, maltreatment, neglect or abandonment, child or adult	E6021 Abuse and neglect subcategory
E6090 Other factors influencing health status	Q89.9	Malformation, deformation, congenital, other	E6099 Other factors influencing health status subcategory
	Q99.9	Abnormality, chromosomal	E6099 Other factors influencing health status subcategory
	R99	Death of unknown cause (includes SIDS and cardiac death)	E6099 Other factors influencing health status subcategory
	Z02.7	Death certificate only	E6099 Other factors influencing health status subcategory
	Z09.9	Follow-up examination, care, other	E6099 Other factors influencing health status subcategory
	Z29.9	Prophylactic measures (includes immunisation)	E6099 Other factors influencing health status subcategory
	Z30.9	Contraceptive management	E6099 Other factors influencing health status subcategory
	Z38.0	Newborn, born in hospital	E6099 Other factors influencing health status subcategory
	Z38.1	Newborn, born outside hospital	E6099 Other factors influencing health status subcategory
	Z43.9	Attention to unspecified artificial opening	E6099 Other factors influencing health status subcategory
	Z47.9	Follow-up examination, care, orthopaedic	E6099 Other factors influencing health status subcategory
	Z48.0	Follow-up examination, care, treatment of wound dressings and sutures	E6099 Other factors influencing health status subcategory
	Z60.9	Social or psychosocial problems	E6099 Other factors influencing health status subcategory
Z76.0	Prescription repeat from emergency pharmacy	E6099 Other factors influencing health status subcategory	

Appendix D – Coefficients for calculating the complexity score

Table D1 Coefficients for the intercept and ECDG subcategories

ECDG code	ECDG subcategory	Coefficient for intercept	Coefficient for intercept ECDG subgroup
E0110	E0111 Dementia and other chronic brain syndromes	5.902	0.012
E0120	E0121 Delirium	5.902	0.402
E0130	E0131 Stroke and other cerebrovascular disorders	5.902	-0.021
E0140	E0141 TIA and precerebral occlusion	5.902	-0.011
E0150	E0151 Seizures	5.902	-0.140
E0160	E0161 Convulsions	5.902	-0.010
E0170	E0171 Headaches	5.902	-0.130
E0190	E0191 CNS infection and inflammation	5.902	0.136
E0190	E0192 Cranial and peripheral nerve disorders	5.902	-0.237
E0190	E0193 Degenerative and demyelinating nervous system disorders	5.902	0.009
E0190	E0194 Stupor and coma	5.902	-0.070
E0190	E0195 Nervous system disorders, other	5.902	0.017
E0190	E0196 Nervous system signs and symptoms	5.902	-0.066
E0290	E0291 Acute and major eye conditions	5.902	-0.332
E0290	E0299 Eye disorders, other	5.902	-0.247
E0310	E0311 Disequilibrium	5.902	-0.128
E0310	E0312 Epistaxis	5.902	-0.306
E0310	E0319 Ear, nose, mouth and throat disorders, other	5.902	-0.277
E0320	E0329 Disorders of the teeth and supporting structures	5.902	-0.390
E0410	E0411 Respiratory arrest, distress and failure	5.902	0.284
E0410	E0412 Pulmonary oedema	5.902	0.198
E0410	E0413 Pulmonary embolism	5.902	0.228
E0420	E0421 Chronic obstructive airways disease	5.902	-0.029
E0430	E0431 Asthma	5.902	-0.111
E0440	E0441 Upper respiratory tract infections	5.902	-0.310
E0450	E0451 Pneumonia	5.902	-0.010
E0450	E0452 Acute bronchitis and bronchiolitis	5.902	-0.191
E0450	E0459 Lower respiratory tract infections, other	5.902	-0.003
E0490	E0491 Pleural conditions	5.902	-0.105
E0490	E0492 Respiratory disorders, other	5.902	-0.155

ECDG code	ECDG subcategory	Coefficient for intercept	Coefficient for intercept ECDG subgroup
E0490	E0493 Respiratory signs and symptoms	5.902	-0.205
E0510	E0511 Acute myocardial infarction	5.902	-0.176
E0510	E0512 Unstable angina	5.902	-0.139
E0510	E0513 Coronary atherosclerosis	5.902	-0.297
E0520	E0521 Arrhythmia and cardiac arrest	5.902	-0.331
E0530	E0531 Heart failure and shock	5.902	-0.023
E0540	E0541 Chest pain	5.902	-0.117
E0590	E0591 Venous thrombosis	5.902	-0.037
E0590	E0592 Palpitations	5.902	-0.098
E0590	E0593 Syncope and collapse	5.902	-0.036
E0590	E0594 Hypertension	5.902	-0.156
E0590	E0595 Heart disease, other	5.902	-0.239
E0590	E0599 Circulatory disorders, other	5.902	-0.014
E0610	E0611 Gastrointestinal haemorrhage	5.902	-0.086
E0620	E0621 Gastrointestinal obstruction	5.902	0.064
E0630	E0631 Peritonitis and gastrointestinal perforation	5.902	0.077
E0640	E0641 Oesophagitis and gastroenteritis	5.902	-0.129
E0650	E0651 Abdominal pain with known underlying cause	5.902	-0.048
E0650	E0652 Abdominal pain underlying cause unknown	5.902	0.032
E0690	E0691 Hernia	5.902	-0.263
E0690	E0699 Digestive system disorders, other	5.902	-0.046
E0710	E0711 Jaundice	5.902	0.155
E0710	E0719 Liver disorders, other	5.902	0.406
E0720	E0721 Gall bladder, bile duct and pancreas disorders	5.902	0.055
E0890	E0891 Spinal disorders	5.902	-0.042
E0890	E0892 Osteomyelitis	5.902	0.031
E0890	E0893 Septic arthritis	5.902	0.094
E0890	E0894 Bone diseases and arthropathies	5.902	-0.018
E0890	E0895 Musculotendinous disorders	5.902	-0.078
E0890	E0899 Musculoskeletal disorders, other	5.902	-0.034
E0910	E0911 Skin and subcutaneous tissue infections	5.902	-0.047
E0990	E0991 Breast tissue disorders	5.902	-0.023
E0990	E0992 Skin ulcers	5.902	0.237
E0990	E0993 Skin, subcutaneous and breast tissue disorders, other	5.902	-0.289
E0990	E0994 Skin and subcutaneous signs and symptoms	5.902	-0.217
E1010	E1011 Diabetes	5.902	-0.211

ECDG code	ECDG subcategory	Coefficient for intercept	Coefficient for intercept ECDG subgroup
E1090	E1091 Hypoglycaemia	5.902	-0.101
E1090	E1092 Hyperosmolality	5.902	0.079
E1090	E1093 Dehydration	5.902	0.050
E1090	E1099 Metabolic and nutritional disorders, other	5.902	0.056
E1110	E1111 Kidney failure	5.902	0.212
E1120	E1121 Urinary stones and obstruction	5.902	0.234
E1130	E1131 Kidney and urinary tract infections	5.902	-0.087
E1190	E1193 Kidney and urinary tract disorders, other	5.902	0.015
E1190	E1194 Kidney and urinary tract signs and symptoms	5.902	-0.024
E1290	E1291 Male genitourinary disorders	5.902	-0.114
E1390	E1391 Gynaecological disorders	5.902	-0.003
E1410	E1411 Postpartum and post abortion conditions	5.902	-0.084
E1420	E1421 Abortion, threatened	5.902	-0.148
E1420	E1422 Vomiting during pregnancy	5.902	-0.088
E1420	E1429 Antenatal and obstetric conditions, other	5.902	-0.343
E1590	E1591 Perinatal disorder	5.902	-0.123
E1610	E1611 Immune system disorders	5.902	-0.142
E1620	E1621 Red blood cell disorders	5.902	0.093
E1630	E1631 Haemostasis disorders	5.902	0.165
E1790	E1791 Neoplasm, malignant	5.902	-0.148
E1790	E1799 Neoplasm, other	5.902	0.000
E1810	E1811 Septicaemia	5.902	0.219
E1820	E1821 Viral illnesses	5.902	-0.152
E1830	E1831 Fever of unknown origin	5.902	-0.005
E1890	E1899 Infectious and parasitic diseases, other	5.902	-0.026
E1910	E1911 Alcohol and drug related mental and behavioural disorders	5.902	-0.202
E1920	E1921 Schizophrenia	5.902	-0.003
E1920	E1929 Psychosis, other	5.902	0.058
E1990	E1991 Suicidal ideation and attempted self-injury	5.902	-0.044
E1990	E1992 Acute reactions	5.902	0.030
E1990	E1993 Affective disorders	5.902	-0.130
E1990	E1999 Mental, behavioural and neurodevelopment disorders, other	5.902	-0.122
E2010	E2011 Cranial injuries	5.902	0.016
E2010	E2012 Intracranial injuries	5.902	-0.124

ECDG code	ECDG subcategory	Coefficient for intercept	Coefficient for intercept ECDG subgroup
E2010	E2013 Spinal injuries	5.902	0.019
E2010	E2014 Internal organ injuries	5.902	0.164
E2010	E2019 Other complex injuries	5.902	-0.254
E2020	E2021 Pelvic and femoral fractures	5.902	0.181
E2025	E2026 Fractures	5.902	0.047
E2025	E2027 Dislocations	5.902	-0.137
E2025	E2028 Sprains	5.902	-0.069
E2030	E2031 Concussion, with loss of consciousness	5.902	-0.111
E2030	E2032 Concussion, without loss of consciousness	5.902	-0.130
E2030	E2033 Open wounds	5.902	-0.192
E2030	E2039 Injuries, other	5.902	-0.241
E2040	E2041 Open wounds	5.902	-0.157
E2040	E2042 Fractures, dislocations and sprains	5.902	-0.042
E2040	E2049 Superficial injuries	5.902	-0.151
E2050	E2051 Severe burns	5.902	-0.423
E2050	E2059 Burns, other	5.902	-0.372
E2060	E2061 Poisoning	5.902	-0.211
E2070	E2071 Anaphylactic shock	5.902	-0.102
E2070	E2079 Allergic reactions, other	5.902	-0.325
E2080	E2081 Postoperative infections	5.902	-0.122
E2080	E2089 Complications of surgical and medical care, other	5.902	-0.307
E5010	E5011 Pain syndrome	5.902	-0.171
E5090	E5091 Dizziness	5.902	-0.115
E5090	E5092 Fatigue and weakness	5.902	-0.177
E5090	E5093 Abnormal test result	5.902	-0.128
E5090	E5099 Symptoms, other	5.902	-0.123
E6010	E6011 Forensic examination or observation	5.902	-0.287
E6020	E6021 Abuse and neglect	5.902	-0.151
E6090	E6099 Other factors influencing health status	5.902	-0.447

Table D2 Coefficients for transport mode (arrival), episode end status, and triage category

ECDG code	Episode end status (reference = non-admitted)				Transport mode (arrival)	Triage category (reference = category 5)			
	Admitted	Died in ED	Left at own risk after being attended	Referred to another hospital	Arrival by ambulance	1	2	3	4
E0110	0.278	0.178	-0.119	0.293	0.253	1.061	0.580	0.361	0.196
E0120	0.237	0.186	-0.292	0.246	0.086	0.988	0.624	0.383	0.202
E0130	0.244	0.186	-0.090	0.260	0.212	1.082	1.035	0.689	0.220
E0140	0.277	0.173	-0.123	0.254	0.126	1.061	0.862	0.589	0.221
E0150	0.259	0.180	-0.129	0.292	0.251	1.048	0.751	0.457	0.206
E0160	0.229	0.174	-0.168	0.278	0.233	1.056	0.752	0.469	0.212
E0170	0.230	0.179	-0.037	0.300	0.323	1.048	0.766	0.463	0.212
E0190	0.307	0.173	-0.132	0.309	0.263	1.044	0.798	0.608	0.279
E0290	0.430	0.177	-0.098	0.339	0.401	1.022	0.481	0.339	0.164
E0310	0.311	0.178	-0.140	0.274	0.328	1.011	0.634	0.367	0.160
E0320	0.330	0.177	-0.057	0.450	0.510	1.060	0.826	0.564	0.221
E0410	0.190	0.174	-0.151	0.248	0.184	1.037	0.697	0.450	0.197
E0420	0.262	0.177	-0.090	0.285	0.252	1.027	0.665	0.442	0.201
E0430	0.247	0.183	-0.191	0.336	0.184	1.096	0.675	0.458	0.190
E0440	0.304	0.185	-0.107	0.397	0.330	1.040	0.742	0.503	0.226
E0450	0.284	0.175	0.017	0.330	0.225	1.023	0.636	0.442	0.185
E0490	0.321	0.168	-0.134	0.278	0.212	1.079	0.747	0.520	0.247
E0510	0.177	0.171	-0.159	0.214	0.145	0.962	0.804	0.618	0.237
E0520	0.358	0.076	-0.141	0.196	0.091	1.015	0.929	0.718	0.267
E0530	0.267	0.175	-0.072	0.251	0.250	1.010	0.678	0.477	0.211
E0540	0.167	0.188	-0.236	0.255	0.259	0.990	0.664	0.520	0.207
E0590	0.238	0.245	-0.318	0.276	0.202	0.947	0.602	0.424	0.218
E0610	0.283	0.175	-0.106	0.250	0.264	1.039	0.709	0.480	0.207
E0620	0.226	0.177	-0.088	0.281	0.239	1.042	0.765	0.527	0.210
E0630	0.201	0.182	-0.121	0.287	0.277	1.004	0.648	0.345	0.170
E0640	0.199	0.182	-0.113	0.309	0.333	1.024	0.711	0.461	0.208
E0650	0.228	0.180	-0.206	0.279	0.213	0.989	0.612	0.397	0.200
E0690	0.275	0.185	-0.176	0.305	0.256	1.010	0.602	0.385	0.169
E0710	0.133	0.187	-0.090	0.241	0.243	1.026	0.556	0.315	0.168
E0720	0.194	0.177	-0.141	0.211	0.237	1.037	0.635	0.388	0.195
E0890	0.267	0.182	-0.077	0.267	0.398	0.910	0.619	0.374	0.126

ECDG code	Episode end status (reference = non-admitted)				Transport mode (arrival)	Triage category (reference = category 5)			
	Admitted	Died in ED	Left at own risk after being attended	Referred to another hospital	Arrival by ambulance	1	2	3	4
E0910	0.245	0.182	0.074	0.340	0.422	0.996	0.605	0.353	0.098
E0990	0.284	0.188	-0.106	0.351	0.456	1.005	0.651	0.426	0.185
E1010	0.259	0.175	-0.032	0.322	0.440	1.113	0.888	0.574	0.238
E1090	0.214	0.190	-0.091	0.273	0.375	1.013	0.490	0.320	0.201
E1110	0.092	0.215	-0.120	0.309	0.427	0.998	0.446	0.309	0.205
E1120	0.104	0.189	-0.185	0.263	0.186	1.019	0.504	0.295	0.171
E1130	0.234	0.178	-0.031	0.253	0.364	0.985	0.636	0.432	0.209
E1190	0.239	0.181	-0.109	0.303	0.265	1.017	0.538	0.312	0.158
E1290	0.185	0.185	-0.188	0.256	0.208	1.041	0.484	0.384	0.228
E1390	0.176	0.181	-0.071	0.303	0.243	1.013	0.574	0.400	0.184
E1410	0.217	0.179	-0.099	0.297	0.355	1.043	0.769	0.473	0.210
E1420	0.163	0.183	-0.123	0.231	0.301	1.059	0.685	0.430	0.252
E1590	0.270	0.179	-0.093	0.305	0.332	1.015	0.625	0.453	0.214
E1610	0.248	0.175	-0.102	0.324	0.264	1.049	0.808	0.542	0.215
E1620	0.218	0.178	-0.115	0.260	0.275	1.032	0.701	0.466	0.193
E1630	0.214	0.184	-0.090	0.316	0.332	1.035	0.701	0.437	0.196
E1790	0.213	0.173	-0.104	0.292	0.200	1.046	0.828	0.624	0.280
E1810	0.237	0.178	-0.202	0.275	0.144	1.016	0.733	0.523	0.223
E1820	0.241	0.181	-0.012	0.293	0.368	1.016	0.662	0.386	0.152
E1830	0.283	0.172	-0.175	0.243	0.213	1.010	0.709	0.456	0.210
E1890	0.267	0.179	-0.081	0.283	0.299	1.010	0.590	0.390	0.141
E1910	0.182	0.186	-0.104	0.343	0.409	1.087	0.737	0.438	0.217
E1920	0.185	0.195	-0.127	0.407	0.395	1.003	0.466	0.288	0.159
E1990	0.257	0.180	-0.091	0.268	0.281	1.009	0.541	0.391	0.219
E2010	0.271	0.178	-0.124	0.223	0.312	1.024	0.775	0.465	0.212
E2020	0.216	0.177	-0.134	0.247	0.282	1.051	0.675	0.393	0.196
E2025	0.303	0.173	0.019	0.272	0.385	1.006	0.658	0.379	0.122
E2030	0.309	0.178	-0.082	0.264	0.392	1.072	0.671	0.328	0.143
E2040	0.237	0.180	-0.103	0.255	0.417	1.001	0.771	0.399	0.159
E2050	0.229	0.182	-0.085	0.354	0.423	1.030	0.732	0.448	0.213
E2060	0.273	0.175	-0.059	0.314	0.328	1.155	0.763	0.427	0.163
E2070	0.198	0.193	-0.228	0.289	0.265	1.037	0.531	0.292	0.186
E2080	0.242	0.177	-0.011	0.295	0.342	1.010	0.572	0.364	0.159

ECDG code	Episode end status (reference = non-admitted)				Transport mode (arrival)	Triage category (reference = category 5)			
	Admitted	Died in ED	Left at own risk after being attended	Referred to another hospital	Arrival by ambulance	1	2	3	4
E5010	0.181	0.181	-0.158	0.189	0.215	1.020	0.719	0.512	0.214
E5090	0.252	0.183	-0.242	0.366	0.222	1.065	0.735	0.495	0.258
E6010	0.207	0.184	-0.094	0.306	0.589	1.076	0.832	0.579	0.326
E6020	0.228	0.191	0.058	0.341	0.696	1.046	0.626	0.323	0.215
E6090	0.170	0.172	-0.030	0.352	0.635	1.101	0.819	0.513	0.282

Table D3 Coefficients for age group (reference 00-04 years)

ECDG code	Age (reference 0 to 4 years)						
	05 to 09	10 to 14	15 to 69	70 to 74	75 to 79	80 to 84	85+
E0110	0.019	0.062	0.263	0.344	0.343	0.409	0.370
E0120	-0.011	0.055	0.248	0.367	0.360	0.409	0.371
E0130	0.080	0.078	0.332	0.299	0.333	0.402	0.361
E0140	0.049	0.073	0.348	0.313	0.325	0.404	0.395
E0150	0.038	0.070	0.266	0.335	0.342	0.401	0.381
E0160	0.070	0.099	0.263	0.341	0.350	0.403	0.391
E0170	0.043	0.062	0.267	0.343	0.335	0.395	0.379
E0190	0.075	0.097	0.187	0.318	0.356	0.396	0.338
E0290	0.071	0.071	0.136	0.314	0.341	0.412	0.326
E0310	0.023	0.054	0.176	0.309	0.331	0.400	0.341
E0320	0.092	0.092	0.172	0.281	0.332	0.403	0.389
E0410	0.020	0.070	0.281	0.350	0.346	0.408	0.382
E0420	0.029	0.069	0.292	0.329	0.340	0.399	0.374
E0430	0.035	0.034	0.260	0.339	0.341	0.398	0.370
E0440	0.044	0.061	0.213	0.330	0.337	0.401	0.398
E0450	0.024	0.065	0.300	0.314	0.349	0.388	0.317
E0490	0.023	0.044	0.312	0.354	0.348	0.420	0.392
E0510	0.019	0.066	0.289	0.349	0.351	0.386	0.397
E0520	0.060	0.079	0.316	0.318	0.335	0.415	0.360
E0530	0.031	0.073	0.290	0.332	0.342	0.396	0.362
E0540	0.001	0.051	0.259	0.369	0.354	0.392	0.363
E0590	0.005	0.039	0.226	0.360	0.348	0.408	0.375
E0610	0.039	0.071	0.269	0.331	0.338	0.404	0.354
E0620	0.040	0.072	0.266	0.338	0.339	0.399	0.388

ECDG code	Age (reference 0 to 4 years)						
	05 to 09	10 to 14	15 to 69	70 to 74	75 to 79	80 to 84	85+
E0630	0.008	0.034	0.223	0.347	0.341	0.405	0.381
E0640	0.014	0.017	0.265	0.361	0.345	0.413	0.386
E0650	-0.025	0.074	0.277	0.385	0.365	0.420	0.407
E0690	0.044	0.082	0.226	0.339	0.352	0.401	0.407
E0710	0.005	0.067	0.283	0.363	0.338	0.406	0.394
E0720	0.012	0.062	0.239	0.346	0.337	0.409	0.401
E0890	0.031	0.052	0.151	0.298	0.318	0.405	0.412
E0910	0.029	0.067	0.238	0.305	0.338	0.377	0.402
E0990	0.009	0.052	0.141	0.320	0.332	0.401	0.375
E1010	0.103	0.075	0.231	0.295	0.330	0.397	0.388
E1090	0.006	0.060	0.216	0.376	0.334	0.383	0.387
E1110	-0.005	0.053	0.205	0.366	0.343	0.393	0.397
E1120	-0.024	0.051	0.238	0.388	0.354	0.396	0.381
E1130	0.023	0.060	0.226	0.321	0.332	0.391	0.351
E1190	0.037	0.067	0.272	0.329	0.325	0.404	0.386
E1290	-0.025	0.039	0.227	0.379	0.351	0.409	0.375
E1390	0.010	0.065	0.274	0.357	0.338	0.397	0.367
E1410	0.049	0.068	0.237	0.327	0.338	0.401	0.385
E1420	0.022	0.060	0.232	0.355	0.343	0.403	0.382
E1590	0.032	0.065	0.234	0.334	0.341	0.403	0.378
E1610	0.058	0.078	0.282	0.315	0.338	0.399	0.382
E1620	0.036	0.063	0.263	0.319	0.340	0.417	0.370
E1630	0.042	0.070	0.269	0.328	0.333	0.400	0.372
E1790	0.051	0.066	0.278	0.336	0.345	0.393	0.368
E1810	0.018	0.062	0.277	0.340	0.339	0.401	0.389
E1820	0.031	0.061	0.292	0.336	0.339	0.402	0.390
E1830	-0.012	0.096	0.338	0.344	0.340	0.415	0.378
E1890	0.020	0.058	0.308	0.334	0.339	0.401	0.377
E1910	0.049	0.052	0.232	0.333	0.340	0.403	0.384
E1920	0.005	0.050	0.194	0.368	0.341	0.405	0.375
E1990	0.011	0.088	0.177	0.338	0.346	0.406	0.377
E2010	0.041	0.055	0.247	0.336	0.346	0.402	0.411
E2020	0.041	0.056	0.269	0.355	0.336	0.413	0.371
E2025	0.050	0.102	0.208	0.320	0.339	0.392	0.369
E2030	0.040	0.120	0.258	0.319	0.348	0.395	0.439
E2040	0.066	0.096	0.215	0.313	0.323	0.412	0.361
E2050	0.060	0.082	0.196	0.321	0.340	0.403	0.375

ECDG code	Age (reference 0 to 4 years)						
	05 to 09	10 to 14	15 to 69	70 to 74	75 to 79	80 to 84	85+
E2060	0.072	0.087	0.262	0.308	0.333	0.396	0.377
E2070	0.003	0.045	0.185	0.365	0.344	0.406	0.375
E2080	0.022	0.066	0.295	0.324	0.329	0.405	0.368
E5010	0.005	0.063	0.270	0.355	0.334	0.401	0.411
E5090	0.059	0.079	0.191	0.329	0.378	0.417	0.377
E6010	0.086	0.083	0.148	0.308	0.339	0.403	0.428
E6020	0.067	0.075	0.161	0.314	0.331	0.398	0.386
E6090	0.113	0.062	0.141	0.276	0.324	0.396	0.355

Table D4 Coefficients for interactions between predictors

ECDG code	Episode end status = admitted					
	Age 0 to 14	Age 80+	Triage cat 1	Triage cat 2	Triage cat 3	Triage cat 4
E0110	-0.031	-0.039	-0.156	-0.075	0.025	0.077
E0120	-0.068	-0.051	-0.175	-0.063	0.009	0.116
E0130	0.005	-0.040	-0.133	-0.139	-0.002	0.206
E0140	-0.017	-0.039	-0.147	-0.088	-0.016	0.174
E0150	-0.090	-0.037	-0.143	-0.072	-0.002	0.115
E0160	-0.202	-0.041	-0.152	-0.067	0.011	0.063
E0170	0.028	-0.044	-0.154	-0.079	0.002	0.110
E0190	0.083	-0.047	-0.133	-0.077	0.013	0.198
E0290	-0.077	-0.062	-0.162	-0.073	0.084	0.143
E0310	0.017	-0.053	-0.157	-0.070	0.017	0.169
E0320	0.063	-0.048	-0.133	-0.110	0.048	0.161
E0410	-0.094	-0.034	-0.159	-0.091	0.011	0.087
E0420	-0.001	-0.055	-0.169	-0.088	0.016	0.119
E0430	-0.049	-0.046	-0.151	-0.070	0.002	0.118
E0440	0.044	-0.040	-0.154	-0.072	0.004	0.196
E0450	0.072	-0.057	-0.179	-0.080	0.010	0.129
E0490	-0.039	-0.046	-0.180	-0.069	0.032	0.148
E0510	0.018	-0.039	-0.191	-0.107	0.004	0.182
E0520	-0.008	-0.028	-0.137	-0.091	-0.009	0.252
E0530	0.010	-0.051	-0.179	-0.104	0.028	0.148
E0540	0.051	-0.041	-0.174	-0.096	-0.006	0.192
E0590	-0.004	-0.051	-0.160	-0.007	-0.044	0.133
E0610	0.005	-0.041	-0.168	-0.082	0.022	0.134
E0620	-0.026	-0.037	-0.157	-0.110	0.019	0.139

ECDG code	Episode end status = admitted					
	Age 0 to 14	Age 80+	Triage cat 1	Triage cat 2	Triage cat 3	Triage cat 4
E0630	0.012	-0.046	-0.168	-0.043	-0.003	0.033
E0640	0.106	-0.041	-0.164	-0.060	-0.005	0.103
E0650	0.038	-0.032	-0.182	-0.087	0.041	0.099
E0690	-0.112	-0.040	-0.165	-0.071	0.005	0.072
E0710	-0.207	-0.037	-0.175	-0.065	-0.011	0.045
E0720	-0.045	-0.030	-0.161	-0.062	-0.006	0.081
E0890	0.079	-0.068	-0.177	-0.074	0.000	0.150
E0910	0.094	-0.056	-0.169	-0.100	0.008	0.045
E0990	0.096	-0.055	-0.156	-0.077	0.032	0.167
E1010	0.070	-0.044	-0.118	-0.097	0.012	0.109
E1090	0.003	-0.048	-0.178	-0.042	-0.013	0.092
E1110	0.026	-0.030	-0.184	-0.054	-0.014	0.076
E1120	-0.041	-0.041	-0.183	-0.064	-0.002	0.042
E1130	0.124	-0.052	-0.178	-0.076	0.011	0.130
E1190	-0.009	-0.048	-0.173	-0.061	0.011	0.056
E1290	-0.041	-0.038	-0.187	-0.057	0.017	0.085
E1390	0.037	-0.045	-0.177	-0.085	0.004	0.084
E1410	-0.005	-0.043	-0.150	-0.075	-0.004	0.114
E1420	-0.027	-0.040	-0.154	-0.053	-0.014	0.066
E1590	0.069	-0.046	-0.169	-0.070	0.021	0.114
E1610	0.018	-0.042	-0.148	-0.105	0.004	0.173
E1620	-0.046	-0.037	-0.160	-0.080	0.006	0.096
E1630	0.049	-0.043	-0.159	-0.089	0.001	0.130
E1790	0.058	-0.041	-0.154	-0.088	-0.006	0.197
E1810	0.041	-0.042	-0.174	-0.086	0.010	0.153
E1820	0.116	-0.045	-0.165	-0.081	0.012	0.075
E1830	0.002	-0.040	-0.166	-0.098	0.042	0.090
E1890	0.012	-0.046	-0.174	-0.111	0.016	0.161
E1910	-0.008	-0.042	-0.142	-0.085	0.026	0.067
E1920	0.011	-0.044	-0.175	-0.065	0.021	0.059
E1990	0.020	-0.048	-0.159	-0.042	0.019	0.023
E2010	-0.113	-0.056	-0.161	-0.090	0.010	0.169
E2020	-0.180	-0.030	-0.157	-0.083	0.015	0.087
E2025	-0.078	-0.054	-0.137	-0.103	0.027	0.078
E2030	-0.075	-0.061	-0.163	-0.102	0.017	0.126
E2040	-0.081	-0.045	-0.140	-0.126	0.053	0.061
E2050	-0.027	-0.044	-0.155	-0.084	0.024	0.101

ECDG code	Episode end status = admitted					
	Age 0 to 14	Age 80+	Triage cat 1	Triage cat 2	Triage cat 3	Triage cat 4
E2060	-0.111	-0.047	-0.122	-0.097	0.005	0.108
E2070	-0.057	-0.047	-0.163	-0.049	-0.002	0.094
E2080	0.010	-0.049	-0.177	-0.115	0.066	0.031
E5010	-0.042	-0.039	-0.162	-0.078	-0.006	0.112
E5090	-0.096	-0.045	-0.140	-0.030	-0.005	0.089
E6010	-0.002	-0.052	-0.131	-0.080	0.010	0.116
E6020	0.028	-0.050	-0.158	-0.084	0.030	0.081
E6090	0.032	-0.043	-0.133	-0.071	0.028	0.162

Appendix E – Example of calculation of complexity score

The Table below illustrates how the complexity score is calculated for episodes within the ECDG E0490 Respiratory disorders, other, with different characteristics.

Case	Intercept	ECDG subcategory	Episode end status		Triage category		Transport mode (arrival) ^a		Age group		Interaction 1 ^b		Interaction 2 ^c		Predicted value	Scaled complexity score ¹	
	A	Category	Coef B	Category	Coef C	Cat. D	Category	Coef E	Cat. F	Coef G	Category	Coef H	Category	Coef	A+B+C+D +E+F+G+H		
1	5.902	E0493 Respiratory signs and symptoms	-0.205	Not admitted	0.000	5	0.000	Other	0.000	15-69	0.312	Not admitted	0.000	Not admitted	0.000	6.010	1.420
2	5.902	E0492 Respiratory disorders, other	-0.155	Not admitted	0.000	5	0.000	Other	0.000	75-79	0.348	Not admitted	0.000	Not admitted	0.000	6.095	1.638
3	5.902	E0491 Pleural conditions	-0.105	Admitted	0.321	4	0.247	Ambulance	0.212	80-84	0.420	80+	-0.046	Cat 4	0.148	7.098	6.254
4	5.902	E0491 Pleural conditions	-0.105	Referred to another hospital	0.278	2	0.747	Ambulance	0.212	15-69	0.312	Not admitted	0.000	Not admitted	0.000	7.346	8.300
5	5.902	E0491 Pleural conditions	-0.105	Admitted	0.321	1	1.079	Ambulance	0.212	80-84	0.420	80+	-0.046	Cat 1	-0.180	7.603	11.034

¹ Scale complexity score is derived using the follow formula:

$$\text{Scaled score} = \frac{(\exp(\text{predicted_value}) - 713)}{166} + 3.26$$

Appendix F – Complexity score thresholds for allocating episodes within ECDGs to final classes

Emergency care diagnosis group (ECDG)	AECC class	Complexity score threshold	
		Minimum score	Maximum score
E0110 Dementia and other chronic brain syndromes	E0110A	5.476	Infinity
E0110 Dementia and other chronic brain syndromes	E0110B	0.000	5.476
E0120 Delirium	E0120A	8.007	Infinity
E0120 Delirium	E0120B	0.000	8.007
E0130 Stroke and other cerebrovascular disorders	E0130A	8.007	Infinity
E0130 Stroke and other cerebrovascular disorders	E0130B	0.000	8.007
E0140 TIA and precerebral occlusion	E0140Z	0.000	Infinity
E0150 Seizures	E0150A	5.826	Infinity
E0150 Seizures	E0150B	3.302	5.826
E0150 Seizures	E0150C	0.000	3.302
E0160 Convulsions	E0160A	5.476	Infinity
E0160 Convulsions	E0160B	0.000	5.476
E0170 Headaches	E0170A	3.831	Infinity
E0170 Headaches	E0170B	0.000	3.831
E0190 Nervous system and neurological disorders	E0190A	8.007	Infinity
E0190 Nervous system and neurological disorders	E0190B	3.302	8.007
E0190 Nervous system and neurological disorders	E0190C	0.000	3.302
E0290 Eye disorders	E0290A	2.559	Infinity
E0290 Eye disorders	E0290B	1.457	2.559
E0290 Eye disorders	E0290C	0.000	1.457
E0310 Ear, nose, mouth and throat disorders	E0310A	2.676	Infinity
E0310 Ear, nose, mouth and throat disorders	E0310B	1.537	2.676
E0310 Ear, nose, mouth and throat disorders	E0310C	0.000	1.537
E0320 Disorders of the teeth and supporting structures	E0320A	2.842	Infinity
E0320 Disorders of the teeth and supporting structures	E0320B	1.639	2.842
E0320 Disorders of the teeth and supporting structures	E0320C	0.000	1.639

Emergency care diagnosis group (ECDG)	AECC class	Complexity score threshold	
		Minimum score	Maximum score
E0410 Major respiratory conditions	E0410A	8.007	Infinity
E0410 Major respiratory conditions	E0410B	6.145	8.007
E0410 Major respiratory conditions	E0410C	0.000	6.145
E0420 Chronic obstructive airways disease	E0420A	7.131	Infinity
E0420 Chronic obstructive airways disease	E0420B	4.121	7.131
E0420 Chronic obstructive airways disease	E0420C	0.000	4.121
E0430 Asthma	E0430A	5.476	Infinity
E0430 Asthma	E0430B	2.559	5.476
E0430 Asthma	E0430C	0.000	2.559
E0440 Upper respiratory tract infections	E0440A	2.559	Infinity
E0440 Upper respiratory tract infections	E0440B	0.000	2.559
E0450 Lower respiratory tract infections	E0450A	5.165	Infinity
E0450 Lower respiratory tract infections	E0450B	2.842	5.165
E0450 Lower respiratory tract infections	E0450C	0.000	2.842
E0490 Respiratory disorders, other	E0490A	6.551	Infinity
E0490 Respiratory disorders, other	E0490B	4.349	6.551
E0490 Respiratory disorders, other	E0490C	2.676	4.349
E0490 Respiratory disorders, other	E0490D	0.000	2.676
E0510 Acute coronary syndromes	E0510Z	0.000	Infinity
E0520 Arrhythmia and cardiac arrest	E0520A	5.476	Infinity
E0520 Arrhythmia and cardiac arrest	E0520B	0.000	5.476
E0530 Heart failure and shock	E0530A	7.131	Infinity
E0530 Heart failure and shock	E0530B	0.000	7.131
E0540 Chest pain	E0540A	5.476	Infinity
E0540 Chest pain	E0540B	3.434	5.476
E0540 Chest pain	E0540C	0.000	3.434
E0590 Circulatory disorders, other	E0590A	6.145	Infinity
E0590 Circulatory disorders, other	E0590B	3.144	6.145
E0590 Circulatory disorders, other	E0590C	0.000	3.144
E0610 Gastrointestinal haemorrhage	E0610A	5.476	Infinity
E0610 Gastrointestinal haemorrhage	E0610B	0.000	5.476
E0620 Gastrointestinal obstruction	E0620Z	0.000	Infinity
E0630 Peritonitis and gastrointestinal perforation	E0630A	4.871	Infinity
E0630 Peritonitis and gastrointestinal perforation	E0630B	0.000	4.871
E0640 Oesophagitis and gastroenteritis	E0640A	3.597	Infinity

Emergency care diagnosis group (ECDG)	AECC class	Complexity score threshold	
		Minimum score	Maximum score
E0640 Oesophagitis and gastroenteritis	E0640B	2.413	3.597
E0640 Oesophagitis and gastroenteritis	E0640C	0.000	2.413
E0650 Abdominal pain	E0650A	4.619	Infinity
E0650 Abdominal pain	E0650B	2.842	4.619
E0650 Abdominal pain	E0650C	0.000	2.842
E0690 Digestive system disorders, other	E0690A	5.165	Infinity
E0690 Digestive system disorders, other	E0690B	3.597	5.165
E0690 Digestive system disorders, other	E0690C	2.413	3.597
E0690 Digestive system disorders, other	E0690D	0.000	2.413
E0710 Liver disorders	E0710A	5.476	Infinity
E0710 Liver disorders	E0710B	0.000	5.476
E0720 Gall bladder, bile duct and pancreas disorders	E0720A	4.871	Infinity
E0720 Gall bladder, bile duct and pancreas disorders	E0720B	3.597	4.871
E0720 Gall bladder, bile duct and pancreas disorders	E0720C	0.000	3.597
E0890 Musculoskeletal and musculetendinous disorders	E0890A	5.476	Infinity
E0890 Musculoskeletal and musculetendinous disorders	E0890B	3.597	5.476
E0890 Musculoskeletal and musculetendinous disorders	E0890C	2.273	3.597
E0890 Musculoskeletal and musculetendinous disorders	E0890D	0.000	2.273
E0910 Skin and subcutaneous tissue infections	E0910A	3.597	Infinity
E0910 Skin and subcutaneous tissue infections	E0910B	2.273	3.597
E0910 Skin and subcutaneous tissue infections	E0910C	0.000	2.273
E0990 Skin disorders, other	E0990A	3.144	Infinity
E0990 Skin disorders, other	E0990B	1.808	3.144
E0990 Skin disorders, other	E0990C	0.000	1.808
E1010 Diabetes	E1010A	6.145	Infinity
E1010 Diabetes	E1010B	3.597	6.145
E1010 Diabetes	E1010C	0.000	3.597
E1090 Metabolic and nutritional disorders, other	E1090A	5.165	Infinity
E1090 Metabolic and nutritional disorders, other	E1090B	3.434	5.165
E1090 Metabolic and nutritional disorders, other	E1090C	0.000	3.434
E1110 Kidney failure	E1110A	6.551	Infinity
E1110 Kidney failure	E1110B	4.121	6.551
E1110 Kidney failure	E1110C	0.000	4.121
E1120 Urinary stones and obstruction	E1120A	4.619	Infinity
E1120 Urinary stones and obstruction	E1120B	0.000	4.619

Emergency care diagnosis group (ECDG)	AECC class	Complexity score threshold	
		Minimum score	Maximum score
E1130 Kidney and urinary tract infections	E1130A	4.349	Infinity
E1130 Kidney and urinary tract infections	E1130B	2.676	4.349
E1130 Kidney and urinary tract infections	E1130C	0.000	2.676
E1190 Kidney and urinary tract disorders, other	E1190A	3.831	Infinity
E1190 Kidney and urinary tract disorders, other	E1190B	0.000	3.831
E1290 Male genitourinary disorders	E1290A	2.842	Infinity
E1290 Male genitourinary disorders	E1290B	0.000	2.842
E1390 Gynaecological disorders	E1390A	3.597	Infinity
E1390 Gynaecological disorders	E1390B	0.000	3.597
E1410 Postpartum and post abortion conditions	E1410A	3.597	Infinity
E1410 Postpartum and post abortion conditions	E1410B	0.000	3.597
E1420 Antenatal and other obstetric conditions	E1420A	2.559	Infinity
E1420 Antenatal and other obstetric conditions	E1420B	0.000	2.559
E1590 Perinatal disorder	E1590Z	0.000	Infinity
E1610 Immune system disorders	E1610A	4.121	Infinity
E1610 Immune system disorders	E1610B	0.000	4.121
E1620 Red blood cell disorders	E1620Z	0.000	Infinity
E1630 Haemostasis disorders	E1630A	5.165	Infinity
E1630 Haemostasis disorders	E1630B	0.000	5.165
E1790 Neoplasms	E1790A	6.551	Infinity
E1790 Neoplasms	E1790B	3.434	6.551
E1790 Neoplasms	E1790C	0.000	3.434
E1810 Septicaemia	E1810Z	0.000	Infinity
E1820 Viral illnesses	E1820A	4.121	Infinity
E1820 Viral illnesses	E1820B	2.559	4.121
E1820 Viral illnesses	E1820C	0.000	2.559
E1830 Fever of unknown origin	E1830A	5.826	Infinity
E1830 Fever of unknown origin	E1830B	2.984	5.826
E1830 Fever of unknown origin	E1830C	0.000	2.984
E1890 Infectious and parasitic diseases, other	E1890A	3.831	Infinity
E1890 Infectious and parasitic diseases, other	E1890B	0.000	3.831
E1910 Alcohol and drug related mental and behavioural disorders	E1910A	4.349	Infinity
E1910 Alcohol and drug related mental and behavioural disorders	E1910B	2.676	4.349
E1910 Alcohol and drug related mental and behavioural disorders	E1910C	0.000	2.676
E1920 Psychoses	E1920A	4.871	Infinity

Emergency care diagnosis group (ECDG)	AECC class	Complexity score threshold	
		Minimum score	Maximum score
E1920 Psychoses	E1920B	3.144	4.871
E1920 Psychoses	E1920C	0.000	3.144
E1990 Mental, behavioural and neurodevelopment disorders, other	E1990A	3.597	Infinity
E1990 Mental, behavioural and neurodevelopment disorders, other	E1990B	2.559	3.597
E1990 Mental, behavioural and neurodevelopment disorders, other	E1990C	0.000	2.559
E2010 Head, intracranial, spine, internal organ and other complex injuries	E2010A	8.007	Infinity
E2010 Head, intracranial, spine, internal organ and other complex injuries	E2010B	4.871	8.007
E2010 Head, intracranial, spine, internal organ and other complex injuries	E2010C	2.676	4.871
E2010 Head, intracranial, spine, internal organ and other complex injuries	E2010D	0.000	2.676
E2020 Pelvic and femoral fractures	E2020A	8.007	Infinity
E2020 Pelvic and femoral fractures	E2020B	0.000	8.007
E2025 Fractures, dislocations and ligament injuries	E2025A	6.551	Infinity
E2025 Fractures, dislocations and ligament injuries	E2025B	2.413	6.551
E2025 Fractures, dislocations and ligament injuries	E2025C	0.000	2.413
E2030 Injuries, other	E2030A	5.165	Infinity
E2030 Injuries, other	E2030B	3.302	5.165
E2030 Injuries, other	E2030C	1.999	3.302
E2030 Injuries, other	E2030D	0.000	1.999
E2040 Finger, toe and superficial injuries	E2040A	5.826	Infinity
E2040 Finger, toe and superficial injuries	E2040B	2.145	5.826
E2040 Finger, toe and superficial injuries	E2040C	0.000	2.145
E2050 Burns	E2050A	5.165	Infinity
E2050 Burns	E2050B	2.984	5.165
E2050 Burns	E2050C	0.000	2.984
E2060 Poisoning	E2060A	5.826	Infinity
E2060 Poisoning	E2060B	2.842	5.826
E2060 Poisoning	E2060C	0.000	2.842
E2070 Allergic reactions	E2070A	2.559	Infinity
E2070 Allergic reactions	E2070B	0.000	2.559
E2080 Complications of surgical and medical care	E2080A	2.842	Infinity
E2080 Complications of surgical and medical care	E2080B	0.000	2.842
E5010 Pain syndrome	E5010A	3.144	Infinity

Emergency care diagnosis group (ECDG)	AECC class	Complexity score threshold	
		Minimum score	Maximum score
E5010 Pain syndrome	E5010B	0.000	3.144
E5090 Symptoms, other	E5090A	5.476	Infinity
E5090 Symptoms, other	E5090B	3.597	5.476
E5090 Symptoms, other	E5090C	0.000	3.597
E6010 Forensic examination	E6010A	4.349	Infinity
E6010 Forensic examination	E6010B	2.079	4.349
E6010 Forensic examination	E6010C	0.000	2.079
E6020 Abuse and neglect	E6020A	4.121	Infinity
E6020 Abuse and neglect	E6020B	0.000	4.121
E6090 Other factors influencing health status	E6090A	3.144	Infinity
E6090 Other factors influencing health status	E6090B	0.000	3.144

Appendix G – Adjustments related to splitting ECDGs into three classes

In considering options for splitting ECDGs into three groups, in some cases the option that minimised RMSE was overridden. The reasons for these changes were as follows:

- In some ECDGs the option with the minimum RMSE yields estimated numbers of cases that were less than 2,000 when applied to the NHCDC data for 2015-16. While this was acceptable for one ECDG (E2050 Burns), it was not considered appropriate more generally. In these circumstances, another of the options for splitting the ECDG into three classes was selected. The ECDGs affected were: E0150 Seizures, E0320 Disorders of the teeth and supporting structures, E0420 Chronic obstructive airways disease, E1110 Kidney failure.
- When less than 10% of episodes in an ECDG were allocated to one class. This applied to: E0310 Ear, nose, mouth and throat disorders, E0640 Oesophagitis and gastroenteritis, E0910 Skin and subcutaneous tissue infections, E0990 Skin disorders, other, E2060 Poisoning.
- When more than 80% of episodes in an ECDG were allocated to one class. This applied to: E2025 Fractures, dislocations and ligament injuries, E2040 Finger, toe and superficial injuries.
- In some ECDGs, the resulting average cost for each class within the ECDG did not reflect what was considered reasonable, either because the costs for the A class were too low for the complexity of cases expected in the class, or the average costs for the C class were too high given the complexity of episodes expected within the class. The ECDGs where overrides were applied for these reasons included: E0430 Asthma, E0590 Circulatory disorders, other, E1910 Alcohol and drug related mental and behavioural disorders and E2050 Burns.

Appendix H – Glossary of selected terms

Term	Definition
Australian Emergency Care Classification (AECC)	Classification system developed for Australia primarily for activity based funding of emergency care.
Bayesian (analysis)	An approach to statistical modelling that involves estimating the parameters that underlie the distribution of a (response) variable , using prior information in addition to observed data. For the AECC , the regression model used to create the complexity scores was estimated using Bayesian analysis. This allowed pooling of information across ECDGs . That is, for any single ECDG, where there was less information available in the observed data, information from other ECDGs contributed to the estimated parameters.
Complexity	In clinical contexts, complexity refers to comorbidity as well as other (bio-psycho-social) characteristics of individuals indicating the level of care required during a specific clinical encounter. For the AECC , clinical complexity is represented by cost.
Complexity score	A value calculated for each emergency care episode, which determines the AECC end class (where the end classes have a complexity split). The complexity score is calculated by applying a coefficient related to the reported values for an episode for selected variables (age group, transport mode (arrival), triage category, episode end status and ECDG subcategory).
Complexity split	Splitting of ECDGs into end classes that represent different levels of complexity . End classes that end in 'A' represent the highest complexity within the ECDG, and each subsequent letter represents the next complexity level, up to 'D'. 'Z' indicates that the ECDG does not have a complexity split.
Cross validation	A method commonly used to assess performance of models, to avoid over-fitting. It involves using one partition of the available data to develop a model (the training data) and holding some data on which to calculate the performance of the model (i.e. out-of-sample, hold-out or validation data). Cross validation provides a more realistic and accurate assessment of the performance of models when applied to new data. This process can be repeated many times, with different training and validation partitions of the data. Ten-fold cross validation was used in the development of the AECC .
End class	Refers to each individual class of the AECC . End classes are differentiated from interim classes, to which further logic is applied to derive the end classes. The ECDGs are interim classes. Applying the complexity splits to the ECDGs derives the end classes of the classification based on diagnosis. The AECC has 181 end classes.

Emergency care categories (ECC)	High level grouping of ECDGs, mainly used for navigating the ECDGs . Examples are:
	<ul style="list-style-type: none"> • <i>E01 Nervous system and neurological</i> • <i>E02 Eye</i> • <i>E03 Ear, nose, mouth and throat</i> • <i>E04 Respiratory.</i>
Costing study	The <i>Emergency care costing study</i> , a component of the <i>Emergency care costing and classification project</i> . The costing study involved 10 public hospital emergency departments across Australia. It identified variables indicating complexity of patients in emergency care, as reflected in cost. The classification component determined how these variables would be used in combination to develop the AECC .
Emergency care diagnosis groups (ECDG)	Groupings of short list diagnoses reflecting care pathways or models of care in emergency departments. Examples of ECDGs in the ECC E01 Nervous system and neurological are:
	<ul style="list-style-type: none"> • <i>E0110 Dementia and other chronic brain syndromes</i> • <i>E0120 Delirium</i> • <i>E0130 Stroke and other cerebrovascular disorders</i> • <i>E0140 TIA and precerebral occlusion</i> • <i>E0150 Seizures</i> • <i>E0160 Convulsions</i> • <i>E0170 Headaches</i> • <i>E0190 Nervous system and neurological disorders.</i>
Emergency care diagnosis (ECDG) subcategory	Clinically meaningful clusters of short list diagnoses within ECDGs . As an example, subcategories for the ECDG <i>E0190 Nervous system and neurological disorders</i> are as follows:
	<ul style="list-style-type: none"> • <i>E0191 CNS infection and inflammation subcategory</i> • <i>E0192 Cranial and peripheral nerve disorders subcategory</i> • <i>E0193 Degenerative and demyelinating nervous system disorders subcategory</i> • <i>E0194 Stupor and coma subcategory</i> • <i>E0195 Nervous system disorders, other subcategory</i> • <i>E0196 Nervous system signs and symptoms subcategory.</i>
	<p>ECDG subcategories were created in response to feedback from stakeholders about some ECDGs grouping less severe diagnoses (or symptoms) with more complex ones. The ECDG subcategories are used in the complexity splits, where more complex diagnoses within an ECDG have a higher coefficient (where it was shown that there were differences in cost of the subcategories), contributing to the overall complexity score of the episode (and thus assignment to an end class reflecting complexity).</p>

Emergency department (ED) principal diagnosis short list	<p>List of codes and medical terms based on ICD-10-AM aiming to provide a nationally consistent approach to principal diagnosis reporting in emergency departments. A 'principal diagnosis' is reported for emergency department attendances within the Non Admitted Patient Emergency Department Care National Minimum Data Set (NAPEDC NMDS). It is defined as the diagnosis established at the end of the patient's attendance in an emergency department to be mainly responsible for occasioning the attendance following consideration of clinical assessment, as represented by a code. Comorbidities and causes of injuries are not intended to be captured as the principal diagnosis and can be captured as secondary data items in other emergency department collections.</p>
Error (statistical)	<p>The difference between the predicted value of a response variable and the actual value. One of the steps in developing the AECC was to compare the predicted costs of emergency care episodes using statistical techniques with the actual costs (derived from the Costing study). The following measures were then used to estimate how well the models used were performing:</p> <ul style="list-style-type: none"> • Mean absolute error (MAE) • Root mean square error (RMSE) • R-squared.
Error class	<p>End classes reserved for missing or invalid information for an emergency care episode. The AECC has four error end classes:</p> <ul style="list-style-type: none"> • <i>E9901Z Invalid visit type</i> • <i>E9902Z Missing principal ED diagnosis short list code</i> • <i>E9903Z Invalid principal ED diagnosis short list code</i> • <i>E9904Z Other error.</i>
Mean error square (MAE)	<p>A measure of how well a statistical model is performing. To calculate MAE, the error is first calculated for each observation in the validation data set. The error for each observation is the difference between the predicted value using the model derived from the training data set applied to the validation data set, and the actual value from the validation data set (see Cross validation). The absolute value of the error is then calculated—this ensures positive error values do not cancel out negative error values. The mean of the absolute errors is then calculated across the whole validation data set. Models that result in better predictions have lower MAE values.</p>
Predicted value	<p>Values generated using statistical modelling. To develop the AECC, the response variable – cost – was modelled, as was complexity score. Predicted values were compared with actual (observed) values, to assess the performance of the various modelling approaches used (see Error (statistical)).</p>

Predictive R-squared	A measure of how well a statistical model is performing. Calculated using the validation data set, rather than the data set used to estimate the model (i.e. the training data set – see Cross validation). Because it is calculated on validation data, predictive R-squared statistics can be outside the range of 0-1, but the interpretation is the same as for R-squared values calculated using the training data set (i.e. the proportion of variation that is explained—in this case predicted—by the model). Models that result in better predictions have higher R-squared values.
Predictor variables/predictors	The variables used in a model to predict another (response/dependent) variable. Sometimes referred to as independent variables, or, in the context of classification systems, classification variables.
Recursive partitioning	A statistical method used to partition data into categories by splitting into subgroups based on several dichotomous predictor variables . The method is recursive as each subgroup may in turn be split an indefinite number of times until the splitting process ends when a pre-defined stopping rule is met. This method was used for grouping complexity scores to create appropriate splits for each ECDG for the AECC , using the Rpart package.
Regression modelling	A statistical method used to estimate the relationship between a response variable and one or more predictor variables . This method was used to create complexity scores for emergency care episodes which were then used to assign episodes to an AECC class. For the AECC, a hierarchical model was specified, in which the ECDG was a 'level' in the model, resulting in the predictor variables having both a fixed effect (which is the same across all ECDGs) and an effect specific to each ECDG. The models were estimated using Bayesian methods (using Rstan).
Response variable	The variable that a model seeks to predict. Sometimes referred to as the dependent variable. In the development of the AECC , the response variable was 'cost'. In some models this variable was transformed, for example, by taking the logarithm of cost.
Root mean square error (RMSE)	A measure of how well a statistical model is performing. To calculate RMSE, the error is first calculated for each observation in the validation data set. The error for each observation is the difference between the predicted value using the model derived from the training data applied to the validation data set, and the actual value from the validation data set (see Cross validation). The error is then squared (which is an alternative way of ensuring negative errors do not cancel positive errors). The mean of squared errors is then calculated across the whole validation data set. The square root of this mean is then taken to re-scale the metric in a value similar to the predicted value. Models that result in better predictions have lower RMSE values. A key difference between MAE and RMSE is the weight they give to smaller compared with larger errors.
Rpart	A package available within the R statistical programming environment for recursive partitioning . In this project, Rpart was used for grouping complexity scores to create appropriate splits for each ECDG for the AECC .

Rstan

A package available within the R statistical programming environment, which can be used to specify **Bayesian** statistical models within Stan. Stan (Stan Development Team 2018) is a platform for statistical modelling and statistical computation, which includes Bayesian statistical inference capabilities. In this project, Rstan was used to model complexity to create the **AECC end classes**.
