

# Australian Emergency Care Classification (AECC) Version 1.1

**Grouper Application Version 1.5  
User Guide**

**June 2024**



## **AECC Version 1.1 – Grouper Application Version 1.5 User Guide – June 2024**

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# Background

The Independent Health and Aged Care Pricing Authority (IHACPA) developed the Australian Emergency Care Classification (AECC) as the national classification for emergency departments (ED) for activity based funding, clinical management and other purposes. The AECC Version 1.0 (V1.0) was approved by the IHACPA's board Pricing Authority in July 2019 and was used to first price emergency department presentations from 1 July 2021.

Development of the AECC V1.0 involved a [2016 emergency care costing study](#) and the [emergency care clinician time consensus study](#) that were 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 V1.0 was developed to provide more accurate and consistent data about the services provided across different Australian hospital ED. The AECC is a clinically relevant classification that aims to explain resource consumption (cost) at the patient level.

The AECC Version 1.1 (V1.1) is a modest refinement of AECC Version 1.0 (V1.0) with improved statistical performance in predicting emergency presentation costs. The classification structure and variables remain the same with 6 variables being utilised to determine an end class: visit type, episode end status, principal diagnosis, transport mode (arrival), age and triage category.

The update incorporated the recalculation of thresholds and values used to calculate the complexity score in the classification complexity model, based on the most recently available activity and cost data. The AECC V1.1 was finalised in July 2024.

The new threshold values for complexity score calculation were updated in the AECC V1.1 grouper. The version of the AECC V1.1 grouper described in this document is Version 1.5 (V1.5).

## Purpose

The AECC V1.1 grouper application V1.5 (AECC V1.1 grouper) uses variables defined by data elements in the NAPEDC NMDS and groups them into either an AECC V1.1 end class or an error end class. The grouper provides the following functions:

- the ability to group a Comma Delimited data file interactively
- view results through a user interface
- output results.

## Application requirements

The AECC V1.1 grouper has no specific requirements.

# Input data preparation

The AECC V1.1 grouper requires a single data file to be provided in Comma Separated Values (CSV) format. In addition, some of the variables may require preparation.

## Age

Age should be derived from the patient's date of birth and the clinical care commencement date (service date).

Age should be reported in years.

## Emergency Care ICD-10-AM Principal Diagnosis Short List

The Emergency Care International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM) Principal Diagnosis Short List (EPD Short List) is the classification used for the national reporting of emergency care principal diagnoses. AECC V1.1 requires EPD Short List codes to group episodes into an AECC V1.1 end class. Where emergency care principal diagnoses are collected using ICD-10-AM Twelfth Edition or the Systematized Nomenclature of Medicine – Clinical Terms Australian Extension (SNOMED CT-AU) Emergency Department Reference Set (EDRS) codes, users must ensure the appropriate mapping files are used to convert alternative classifications and terminologies into EPD Short List Twelfth Edition codes before grouping.

## Clinical care commencement date

Clinical care commencement date should be reported using the DDMMYYYY format.

## Input variables

The input file must contain the 8 data items in the following sequence for the AECC V1.1 grouper to work correctly:

Data items	Grouper output name
1. Episode number	Epino
2. Triage category	Triage category
3. Episode end status	Episode end status
4. Type of visit	Type of visit
5. Age	AgeYears
6. Transport mode (arrival)	Transport mode (arrival)
7. EPD Short List Twelfth Edition code	ED Principal Diagnosis
8. Clinical care commencement date	Service date

## Episode number

A unique episode number (Epino) for each episode is required to link the AECC V1.1 grouping result with the complete ED episode.

## Triage category

The valid values for the “Triage category” field are:

Value	Description
1	Resuscitation: immediate (within seconds)
2	Emergency: within 10 minutes
3	Urgent: within 30 minutes
4	Semi-urgent: within 60 minutes
5	Non-urgent: within 120 minutes

## Episode end status

The valid values for the “Episode end status” field are:

Value	Description
1	Transferred for admitted patient care in this hospital (either short stay unit, hospital-in-the-home or other admitted patient care unit)
2	Emergency department stay completed - departed without being transferred to a short stay unit, hospital-in-the-home or other admitted patient care unit in this hospital or referred to another hospital
3	Non-admitted patient emergency department service episode completed - referred to another hospital for admission
4	Did not wait to be attended by a health care professional
5	Left at own risk after being attended by a health care professional but before the non-admitted patient emergency department service episode was completed
6	Died in emergency department
7	Dead on arrival
8	Registered, advised of another health care service, and left the emergency department without being attended by a health care professional

## Type of visit

The valid values for the “Type of visit” field are:

Value	Description
1	Emergency presentation
2	Return visit, planned
3	Pre-arranged admission
5	Dead on arrival

## Age

The valid values for the “Age” field are:

Value	Description
0 - 124	Patient’s age (in years) at the time of presentation. Age is unlikely to be over 124.

## Transport mode (arrival)

The valid values for the “Transport mode (arrival)” field are:

Value	Description
1	Ambulance, air ambulance or helicopter rescue service
2	Police/correctional services vehicle
8	Other

## EPD Short List Twelfth Edition

The valid values for the “ED Principal Diagnosis” field are:

Value	Description
	Codes in the EPD Short List Twelfth Edition

# Clinical care commencement date

The valid values for the “Service date” field are:

Value	Description
	The date on which non-admitted patient emergency department clinical care commences, expressed as DDMMYYYY

# Running the grouper

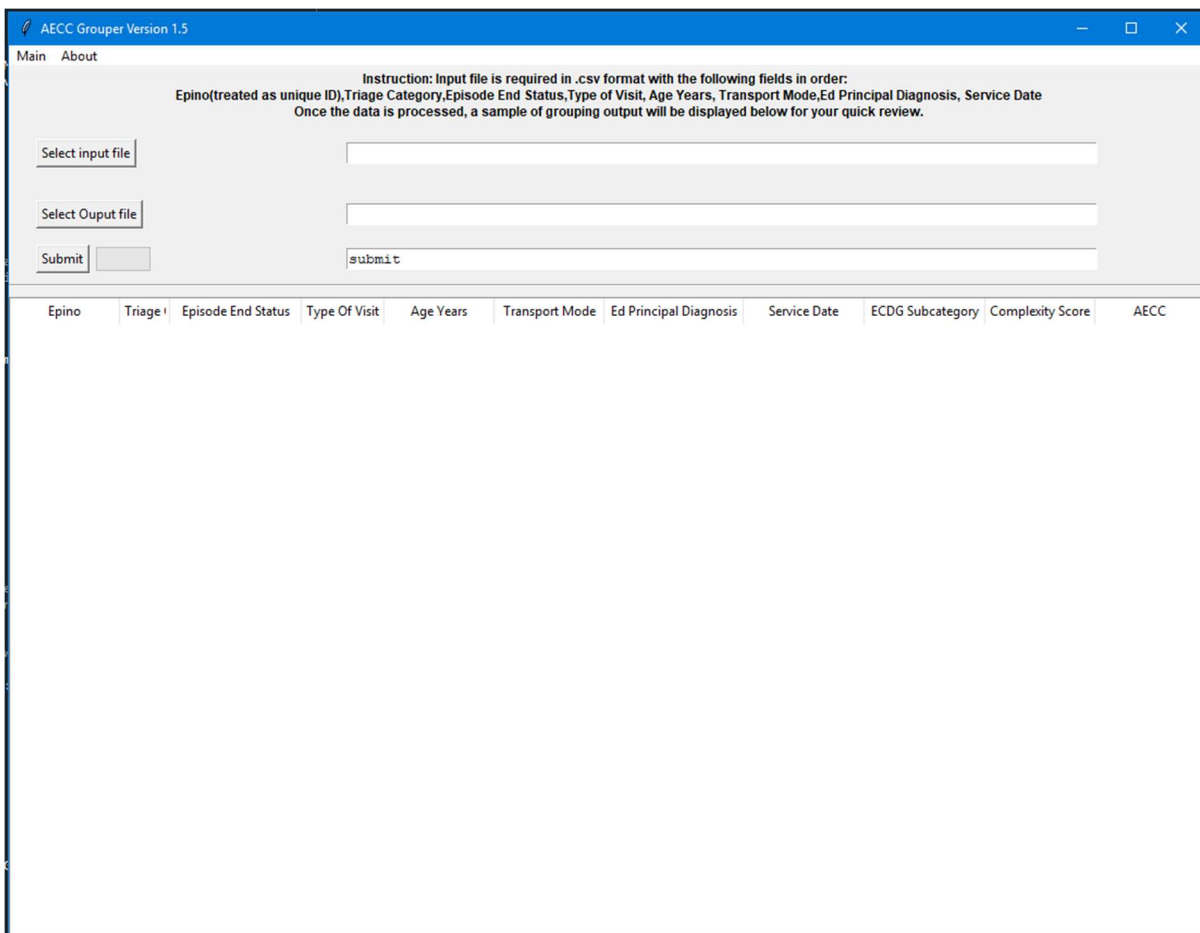
The grouper is run by double clicking the aeccv15.exe file. This will load the main application window shown in Figure 1, which will guide you through the rest of the process.

The main window includes the following three buttons:

- Select Input File, which is used to select the CSV data file to be grouped.
- Select Output File, which is used to select the folder for the grouper output file and
- Submit, which runs the AECC V1.1 grouper.

Note: the input file requires data preparation outlined in the Input Data Preparation section.

**Figure 1.** AECC Grouper Main Window





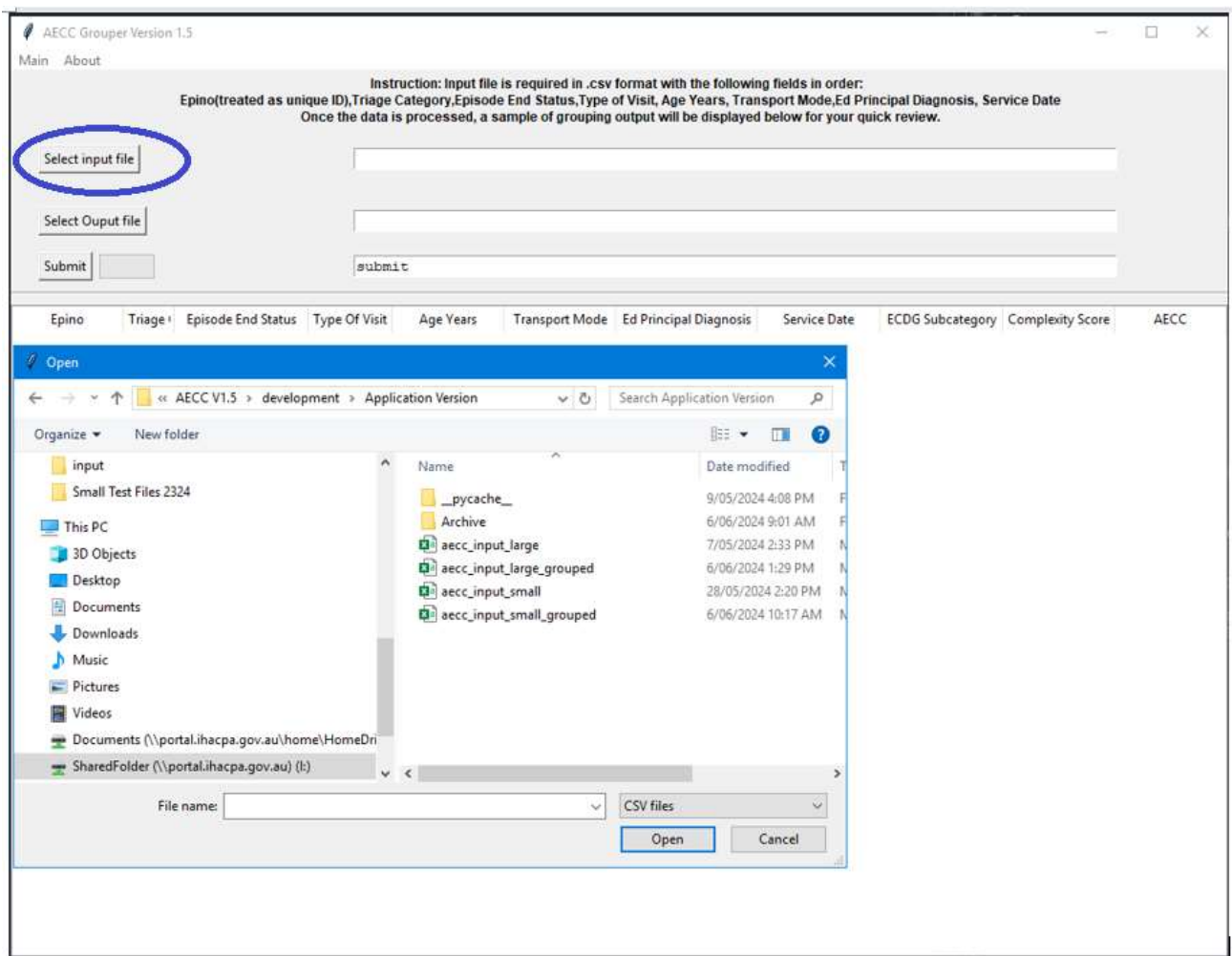
The main window also includes a table which displays a sample of the episodes being processed while the grouper is running and displays the location of the output file when the grouper is complete.

The steps to run the AECC V1.1 grouper are outlined below.

## Step 1: Select the Input File

To select a data file to be grouped, click the *Select Input File* button (circled in blue below), and select the .CSV data file from the Open window, as shown in Figure 2, and click Open.

**Figure 2.** Selecting Data to be grouped

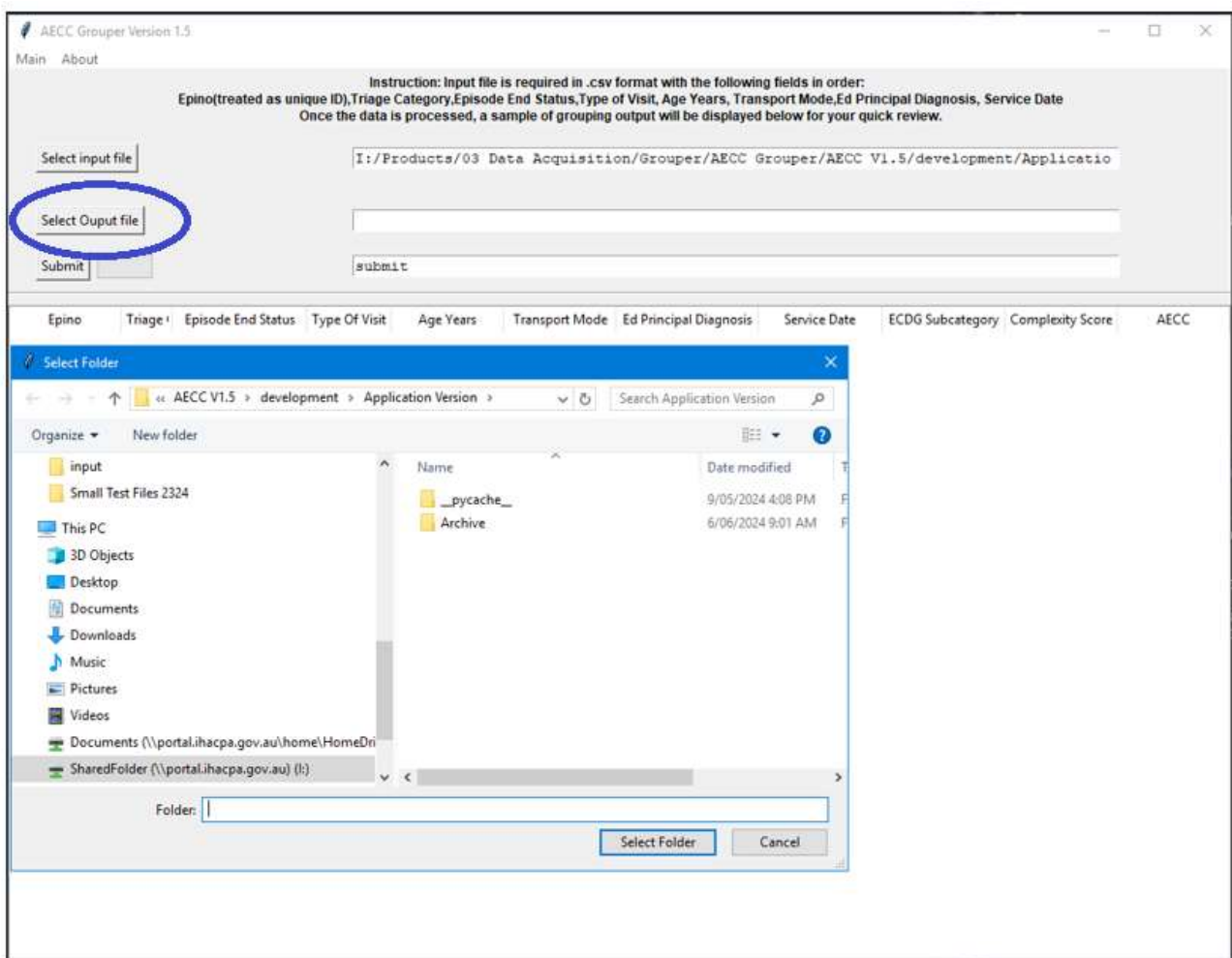


On completion of this step, the filename and path of the file populates the text field to the right of the *Select Input File* button. This will allow the running of the grouper on the selected file.

## Step 2: Select Output File

Select an output folder by using *Select Output file* button as shown in Figure 3.

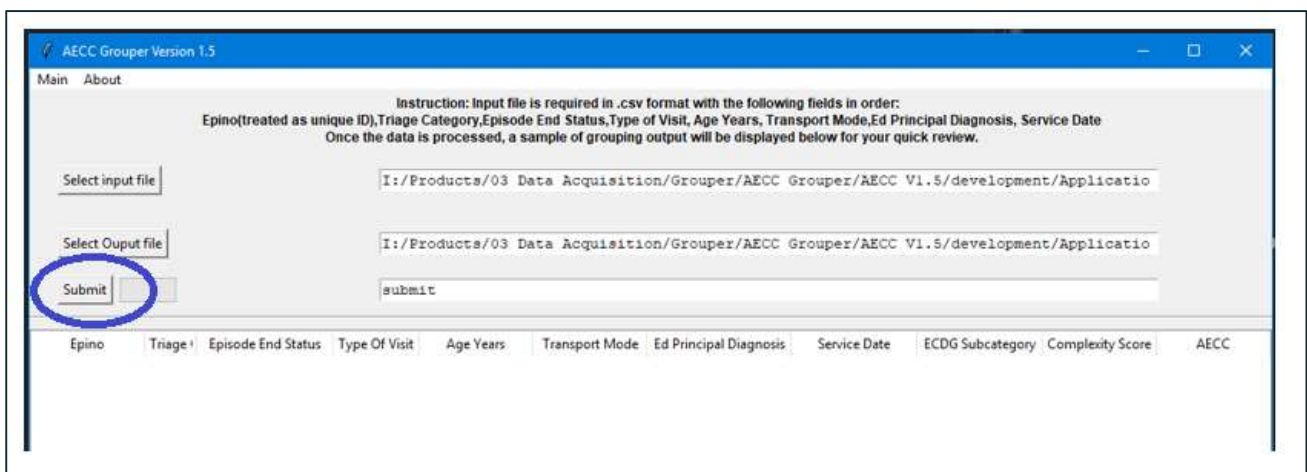
**Figure 3.** Selecting output folder



### Step 3: Running the AECC V1.1 grouper

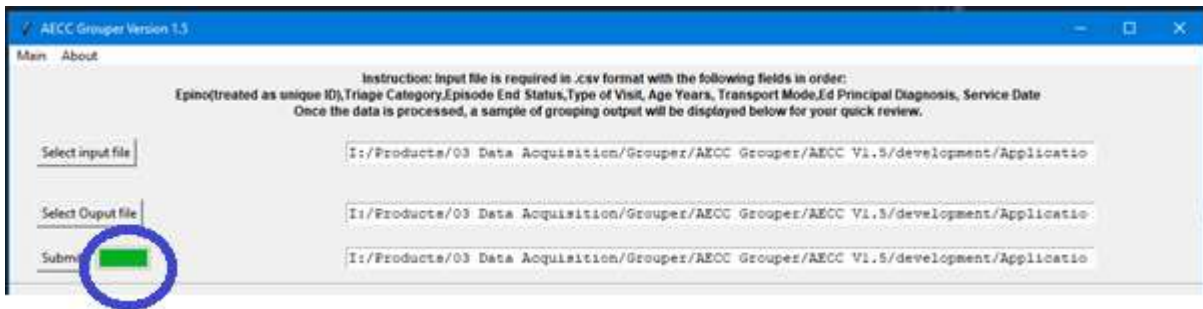
To run the AECC V1.1 grouper, select the *Submit* button as shown in Figure 4.

**Figure 4.** Submitting Data to be grouped



During the running time, a status bar demonstrates the progress of grouping in green, as shown in Figure 5.

**Figure 5.** Status bar for showing grouping progress



## Step 4: Output of the Grouper

The final output of the grouper will merge the results of the AECC output data with the original data that was provided. Additional columns will be appended to the input data file:

- ECDG Subcategory v1.5 (ECDG15sub)
- Complexity Score v1.5 (CSRAW15)
- AECC end class v1.5 (AECC15)

An example of this output can be seen by scrolling to the right on the table as shown in Figure 6 below.

**Figure 6. Grouper output preview**

The screenshot shows the AECC Grouper Version 1.5 application window. At the top, there is a blue title bar with the text "AECC Grouper Version 1.5". Below the title bar, there are menu options "Main" and "About". The main area contains an instruction: "Instruction: Input file is required in .csv format with the following fields in order: Epino(treated as unique ID),Triage Category,Episode End Status,Type of Visit, Age Years, Transport Mode,Ed Principal Diagnosis, Service Date. Once the data is processed, a sample of grouping output will be displayed below for your quick review." Below the instruction, there are three input fields for "Select input file", "Select Output file", and "Submit", each containing the same file path: "I:/Products/03 Data Acquisition/Grouper/AECC Grouper/AECC V1.5/development/Applicatio". A green "Submit" button is visible next to the third field.

Epino	Triage	Episode End Status	Type Of Visit	Age Years	Transport Mode	Ed Principal Diagnosis	Service Date	ECDG Subcategory	Complexity Score	AECC
1	5	4	1	51	8	Z60.9			0.0	E0001Z
2	2	1	1	78	1	I64	16/08/2023	E0131	9.02024349060827	E0130A
3	2	1	1	10	1	G03.9	19/10/2023	E0191	7.80150785882956	E0190A
4	4	2	1	59	8	G54.9	12/12/2023	E0192	1.70524206773117	E0190C
5	5	2	1	9	8	G25.9	14/07/2023	E0193	0.79462941492413	E0190C
6	2	2	1	75	8	R40.0	27/12/2023	E0194	5.67356637312300	E0190B
7	1	1	1	29	1	G24.9	16/08/2023	E0195	10.1962056263637	E0190A
8	2	1	1	49	8	R26.8	26/08/2023	E0196	6.15353266919410	E0190A
9	2	1	1	16	1	R07.4	05/10/2023	E0541	4.60667032499180	E0540A
10	3	2	1	42	8		30/08/2023		0.0	E9902Z
11		1	1	37	8	R00.2	24/11/2023		0.0	E9904Z
12	3	1	1	20	1	R55	12/10/2023	E0593	4.46957398785915	E0590B
13	3	1	1	79	8	I10	16/07/2023	E0594	3.89912614955913	E0590B
14	3	1	1	78	1	I51.9	09/12/2023	E0595	4.84161819319266	E0590A
15	3	1	1	62	8	I73.9	21/08/2023	E0599	4.44321447867981	E0590B
16	2	1	1	75	1	K21.9	22/12/2023	E0651	6.62482102275335	E0650A
17	3	1	1	23	8	R10.4	13/09/2023	E0652	4.27174236754812	E0650A
18	3	2	1	17	8	M51.9	26/10/2023	E0891	2.30061821293009	E0890C
19	4	2	1	39	8	M86.99	16/08/2023	E0892	2.18749573254434	E0890C
20	3	%	1	39	1	M00.99	14/09/2023		0.0	E9904Z
21	4	2	1	66	.	M10.99	11/12/2023		0.0	E9904Z
22	3	2	1	49	8	M54.5	21/07/2023	E0895	2.46324198364136	E0890C
23	4	2	1	59	8	M25.51	19/10/2023	E0899	1.74888461604800	E0890D
24	3	2	1	27	8	O91.20	10/09/2023	E0991	2.20753839461719	E0990B
25	4	2	1	78	8	L97.9	23/09/2023	E0992	1.91749626280377	E0990B
26	4	2	1	20	8	L73.9	22/09/2023	E0993	1.21387896336088	E0990C
27	5	2	1	47	8	R23.8	22/10/2023	E0994	0.90564247453448	E0990C
28	2	1	1	34	8	C96.9	20/10/2023	E1791	6.82502053657547	E1790A

On completion of this step, a new file with the name <input file name>+\_Grouped.csv” will be created in the output folder.

# Glossary

Term	Definition
<b>Australian Emergency Care Classification (AECC)</b>	Classification system developed for Australia primarily for activity based funding of emergency care.
<b>Error class</b>	Classes which are reserved for missing or invalid information for an emergency care episode. The AECC has four error classes.
<b>Emergency Care Categories (ECC)</b>	High level grouping of ECDGs, mainly used for navigating the ECDGs.
<b>Emergency Care Diagnosis Groups (ECDG)</b>	Groupings of EPD Short List diagnoses reflecting care pathways or models of care in emergency departments.
<b>Emergency Care Diagnosis Groups (ECDG) subcategory</b>	Clinically meaningful clusters of short list diagnoses within ECDGs. The ECDG subcategories are used in the complexity splits, where more complex diagnoses within an ECDG contribute to the overall complexity score of the episode.
<b>Emergency Care ICD-10-AM Principal Diagnosis Short List (EPD Short List)</b>	List of codes and medical terms based on ICD-10-AM aiming to provide a nationally consistent approach to principal diagnosis reporting for emergency care. 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.
<b>International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM)</b>	The International Statistical Classification of Diseases and Related Health Problems (ICD) is the foundation of health statistics, developed by the World Health Organization. The Tenth Revision, Australian modification (ICD-10-AM) is an alphanumeric classification and contains codes used to classify diseases, injuries, and related health problems within Australia.
<b>Pre-ECDG</b>	An ECDG that is allocated based on patient status or contact with a health professional. Unlike other ECDGs it does not take into account a patient's diagnosis.
<b>Schematic</b>	A diagram defining the method in which ECDGs are allocated, using flow charts and tables.
<b>Systematized Nomenclature of Medicine – Clinical Terms Australian Extension (SNOMED CT-AU) Emergency Department Reference Set (EDRS)</b>	SNOMED CT-AU is a systematically organised computer-processable collection of medical terminology which provides codes, terms, synonyms, and definitions used in clinical documentation and reporting, maintained in Australia by the Australian Digital Health Agency (ADHA). The EDRS is a reference set of purpose-built terminology developed by the ADHA,



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